the agenda for the open Parole Commission meeting:

1. Approval of minutes of previous Commission meeting.
2. Reports from the Chairman, Commissioners, Legal, Case Operations, Program Coordinator, and Administrative Sections.
3. Discussion of Release Practices Relating to Geriatric and Infirm Prisoners.
4. Proposed Change in the Commission's Rules to Modify the Guideline Range for Very Poor Risk Offenders.
5. Discussion of Special Procedures for District of Columbia Code Offenders.
6. Revision of the Guidelines for the Imposition and Execution of Search and Seizure Special Conditions.
7. Discussion on the Applicability of Statutory Maximum and Minimum Terms of Transfer Treaty Cases.
8. Discussion on Initial Hearings for Prisoners with a Minimum Term of Parole Ineligibility of Ten Years or More.
9. Discussion on Supervision Matters.
10. Amendment of 28 C.F.R. Section 2.66 (Paroling policy for prisoners serving aggregate U.S. and D.C. Code sentences).

CONSENT AGENDA: The following matter has been placed on the consent agenda and will be considered at the open meeting only if a Parole Commissioner requests that it be discussed at the meeting:

1. Proposed Rules that were Voted for Publication at the Last Meeting.

AGENCY CONTACT: Tom Kowalski, Case Operations, United States Parole Commission, (301) 492–5962.

Dated: April 13, 1992.

Michael A. Stover,

General Counsel, U.S. Parole Commission.

[FR Doc. 92–8984 Filed 4–14–92; 1:57 pm]

BILLING CODE 4410–01–M

SECURITIES AND EXCHANGE COMMISSION

Agency Meeting

Notice is hereby given, pursuant to the provisions of the Government in the Sunshine Act, Pub. L. 94–409, that the Securities and Exchange Commission will hold the following meeting during the week of April 13, 1992.

A closed meeting will be held on Thursday, April 16, 1992, at 2:30 p.m.

Commissioners, Counsel to the Commissioners, the Secretary to the Commission, and recording secretaries will attend the closed meeting. Certain staff members who have an interest in the matters may also be present.

The General Counsel of the Commission, or his designee, has certified that, in his opinion, one or more of the exemptions set forth in 5 U.S.C. 552b(c)(4), (8), (9)(A) and (10) and 17 CFR 200.402(a)(4), (8), (9)(i) and (10), permit consideration of the scheduled matters at a closed meeting.

Commissioner Roberts, as duty officer, voted to consider the items listed for the closed meeting in a closed session.

The subject matter of the closed meeting scheduled for Thursday, April 16, 1992, at 2:30 p.m., will be:

Institution of administrative proceedings an enforcement nature.
Settlement of administrative proceedings of an enforcement nature.
Institution of injunctive actions.
Settlement of injunctive actions.

At times, changes in Commission priorities require alterations in the scheduling of meeting items. For further information and to ascertain what, if any, matters have been added, deleted or postponed, please contact: Kaye Williams at (202) 272–2400.

Dated: April 14, 1992.

Jonathan G. Katz,

Secretary.

[FR Doc. 92–8971 Filed 4–14–92; 1:42 pm]

BILLING CODE 8010–01–M

Corrections

Federal Register
Vol. 57, No. 74
Thursday, April 16, 1992

This section of the FEDERAL REGISTER contains editorial corrections of previously published Presidential, Rule, Proposed Rule, and Notice documents. These corrections are prepared by the Office of the Federal Register. Agency prepared corrections are issued as signed documents and appear in the appropriate document categories elsewhere in the issue.

THE PRESIDENT

3 CFR

Executive Order 12800 of April 13, 1992

Notification of Employee Rights Concerning Payment of Union Dues or Fees

Correction

In Executive Order 12800, in the issue of Tuesday, April 14, 1992, make the following corrections:

1. On page 12985, in the "NOTICE TO EMPLOYEES" in Section 2(a)"1":

a. The phrase "unionmembers" in the third sentence of the first paragraph should read "union members".

b. In the second paragraph, the words "greivance" and "furture" should read "grievance" and "future".

c. The phrase in the third paragraph reading "The National Labor Relations Board" should read "the National Labor Relations Board".

2. On page 12986, in Section 2(b), the phrase "Goverment contracts" should read "Government contracts".

BILLING CODE 1505-01-D

DEPARTMENT OF AGRICULTURE

Animal and Plant Health Inspection Service

[Docket No. 92-037]

Receipt of Permit Applications for Release Into the Environment of Genetically Engineered Organisms

Correction

In notice document 92-6186, beginning on page 9232, in the issue of Tuesday, March 17, 1992, make the following correction:

On page 9233, in the table, in the Application column, the entry for Application 92-049-05 is corrected to read as follows:

"92-049-05, renewal of permit 91-074-01, issued on 06-05-91".

BILLING CODE 1505-01-D

DEPARTMENT OF ENERGY

Office of Fossil Energy

[FE Docket No. 92-12-NG]

Energy Consultants, Inc., Application for Blanket Authorization To Export Natural Gas to Mexico

Correction

In notice document 92-7714 beginning on page 11475, in the issue of Friday, April 3, 1992, the Docket Number should read as set forth above.

BILLING CODE 1505-01-D

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Office of the Assistant Secretary for Community Planning and Development

[Docket No. N-92-3369; FR-3180-N-01]

Community Development Block Grant Program for Indian Tribes and Alaskan Native Villages; Notice of Fund Availability

Correction

In notice document 92-7515 beginning on page 11852 in the issue of Tuesday, April 7, 1992, make the following corrections:

On page 11853, in the first column, in the second column of the table, after the entry "1,501-3,000" insert "1-1,500" and in the third column of the table, after the entry "990,000" insert "810,000".

BILLING CODE 1505-01-D

DEPARTMENT OF TRANSPORTATION

Coast Guard

33 CFR Part 165

[CGD1 89-065]

Regulated Navigation Area; Kill Van Kull, NY-NJ

Correction

In rule document 92-7788 beginning on page 11683, in the issue of Tuesday, April 7, 1992, make the following corrections:

§ 165.165 [Corrected]

1. On page 11686, in the second column, in § 165.165(c)(2), in the second line, "18 June 1993." should read "18 June 1992.".

2. On the same page, in the same column, in § 165.165(d)(5), in the first line, "gross" was misspelled.

3. On the same page, in the same column, in § 165.165(d)(6), in the third line, "tubs" should read "tugs".

BILLING CODE 1505-01-D

DEPARTMENT OF THE TREASURY

Customs Service

[T.D.92-38]

Country of Orgin Marking for Former Soviet Republics

Correction

In notice document 92-8138 beginning on page 12373 in the issue of Thursday, April 9, 1992, make the following corrections on page 12373:

1. In the 2d column, under **Background**, in the 2d line, "919 U.S.C." should read "19 U.S.C."; in the 6th line, "indelibly" was misspelled; and in the 12th line, after "U.S." insert "C.".

2. In the same column, in the last paragraph, in the third line "and" should read "as".

3. In the third column, in the third line, "in" should be removed; and in the sixth line, "making" should read "marking".

4. In the same column, in the last paragraph, in the ninth line, insert quotation marks before "Union of Soviet" and in the tenth line before "U.S.S.R."

BILLING CODE 1505-01-D

federal register

Thursday
April 16, 1992

Part II

Environmental Protection Agency

40 CFR Part 80

Regulation of Fuel and Fuel Additives; Standards for Reformulated and Conventional Gasoline; Proposed Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 80

[AMS-FRL-4120-7]

Regulation of Fuels and Fuel Additives; Standards for Reformulated and Conventional Gasoline

AGENCY: Environmental Protection Agency.

ACTION: Supplemental notice of proposed rulemaking.

SUMMARY: This supplemental notice of proposed rulemaking (SNPRM) describes the standards and enforcement scheme for both reformulated gasoline and for conventional gasoline sold in other areas. It also includes specific proposals for the emission models to be used in gasoline certification and enforcement. The SNPRM reflects a consensus that was reached through regulatory negotiation regarding certain provisions of the reformulated gasoline program. The preamble reflects the basis and purpose of this proposed rulemaking. A copy of the proposed regulatory language discussed herein may be obtained from Public Docket No. A-91-02 or from the contacts in the **ADDRESSES** section and is deemed to be part of this document.

DATES: The comment period on this supplemental notice will extend through June 1, 1992. If no hearing is held on May 18, 1992, if a hearing is held to allow interested parties to comment on any specific provisions contained herein which were not in the NPRM for this rule, published July 9, 1991 (56 FR 31176). The comment period for the NPRM is also extended until such date. EPA will conduct a public hearing on this supplemental notice of proposed rulemaking on May 18, 1992, in Washington, DC, if anyone requests the hearing by May 1, 1992. The contact person listed below may be called regarding whether a public hearing will be held.

EPA will conduct a public workshop on April 27 and 28, 1992, at the Best Western Domino's Farms Hotel, 3600 Plymouth Road, Ann Arbor, Michigan 48105; telephone (313) 769-9800. Discussion on the 27th will begin at 1 pm and be devoted to the issue of whether or not and, if so, how carbon monoxide (CO) should be included into the definition of VOC (as discussed in section II.A.1. of this proposal). Discussion on the 28th will begin at 9 am and be devoted to the complex model. Additional information concerning the agenda for the workshop and its location may be obtained from the contact person listed below, or from Michael Sklar at (313) 741-7817.

ADDRESSES: Materials relevant to this SNPRM, including the regulatory language, are contained in Public Docket No. A-91-02, located at room M-1500, Waterside Mall (ground floor), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460. The docket may be inspected from 8 a.m. until 12 noon and from 1:30 p.m. until 3 p.m. Monday through Friday. A reasonable fee may be charged by EPA for copying docket materials.

FOR FURTHER INFORMATION CONTACT: Joanne I. Goldhand, U.S. EPA (SDSB-12), Emission Control Technology Division, 2565 Plymouth Road, Ann Arbor, MI 48105, Telephone: (313) 668-4504.

TO REQUEST COPIES OF THIS NOTICE CONTACT: Marie Tolonen, U.S. EPA (SDSB-12), Emission Control Technology Division, 2565 Plymouth Road, Ann Arbor, MI 48105, Telephone: (313) 668-4295.

SUPPLEMENTARY INFORMATION:

1. Background

This notice supplements the proposal for the reformulated gasoline program which was originally published July 9, 1991 (56 FR 31176) (hereafter, the NPRM). As did the NPRM, this notice describes the provisions of both a program to require the sale of gasoline which reduces emissions of toxics and ozone-forming volatile organic compounds (VOCs) in certain nonattainment areas and a program to prohibit the gasoline sold in the rest of the country from becoming more polluting. Since the NPRM was published, agreement has been reached through the regulatory negotiation process on an outline of these programs. This supplemental notice proposes adoption of the provisions of that agreement as well as detailed provisions not specifically covered by the agreement.

This section will describe the history of EPA's efforts to develop a reformulated gasoline program and especially the events which have occurred since the NPRM was published. That notice contains a more detailed discussion of the early development of the program and further information regarding portions of the program described today which were first proposed at that time. The sections which follow discuss the methods for reformulated gasoline certification (sections II through IV) and enforcement (sections V through XI), anti-dumping requirements (sections XII and XIII), compliance audits (section XIV), federal preemption (section XV), the economic and environmental impacts of the program (section XVI) and finally certain statutory requirements (sections XVII through XXII).

As described further in the NPRM, this rule has been developed through a process known as negotiated rulemaking as provided under the Negotiated Rulemaking Act of 1990, Public Law 101-648. That process involves creating an advisory committee under the Federal Advisory Committee Act [1] consisting of representatives of the groups which are likely to be substantially affected by the rule and the federal agency responsible for the rule. (See the NPRM for the members of the negotiating committee and a discussion of the process for selecting them.) In a negotiated rulemaking, such a committee meets to develop a proposed rule which will be acceptable to all parties. If consensus is reached on a proposed rule, it is published as an NPRM. The committee members and the entities they represent agree to support the proposal and not to seek judicial review of the final rule if it has the same substance and effect as the consensus proposal.

In this case, EPA published an NPRM while the advisory committee was still conducting negotiations. The Agency believed that although consensus of the members on an acceptable rule was possible, an NPRM was required at that time if the rule was to be completed by the statutory deadline. The notice which was published described the outline of the reformulated gasoline program and options that committee members were considering.

The negotiations continued after the NPRM was published and culminated in an Agreement in Principle which each of the regulatory negotiation committee members signed on August 16, 1991. The agreement stated the members' concurrence on an outline of the underlying principles of the reformulated gasoline and anti-dumping programs. The agreement, outline and several letters between EPA and the participants which further clarify the meaning of the outline are included in the docket for this rulemaking as items III-A-7 through 24.

Generally, the agreed upon reformulated gasoline program would provide refiners with two modeling options and a testing option for determining whether fuels sold in 1995 and 1996 meet the reformulated gasoline requirements. The simpler of the

[1] 5 U.S.C. App. 1, *et seq.*

modeling options (the simple model) is detailed in this SNPRM and allows certification based on a fuel's oxygen, benzene, heavy metal and aromatics content and Reid Vapor Pressure (RVP). Under the agreement, EPA would develop a more complex model (the complex model) through a rulemaking to be completed by March 1, 1993. The complex model is expected to provide a method of certification based on the above parameters plus sulfur, olefins and the temperature at which 90 percent of the fuel vaporizes (T90), as well as any other parameters for which sufficient data is available regarding their effects on ozone-forming volatile organic compounds (VOC), toxic air pollutants (toxics) or oxides of nitrogen (NOx) emissions. In the first two years of the program, testing would only be permitted to determine the NOx emission effects of oxygenates other than Methyl Tertiary Butyl Ether (MTBE). Testing would eventually be permitted to qualify for inclusion in the models the emission effects of such other parameters or the effects of fuel parameters beyond the range covered in the models.

The agreed upon program would allow refiners to produce reformulated gasoline, either by meeting the applicable standards on a per gallon basis or by meeting the standards on average. The agreed upon averaging program ensures that averaging will not result in smaller overall reductions in pollutants than if averaging were not permitted. It does so through the use of adjusted emission and fuel composition standards for averaged fuels, caps on per gallon levels of the relevant parameters, and compliance surveys to be performed at retail stations.

The outline contains two options for compliance with the requirement that conventional gasoline not cause greater emissions of certain pollutants than occurred in 1990. During 1995 and 1996 each refiner and importer may either use the complex model to show that its conventional fuel does not have greater toxics emissions than its fuel had in 1990 or meet certain exhaust benzene and fuel compositional caps. After 1997 each producer and importer must show using the complex model that its conventional fuel has no more emissions of exhaust toxics and NOx than its 1990 annual average.

This supplemental notice proposes detailed reformulated gasoline and anti-dumping programs based on the regulatory negotiation consensus. The statutory provisions which form the basis for the agreement and this SNPRM were described in the NPRM, which may be consulted for further information regarding these provisions.

II. Fuel Certification Requirements

In accordance with section 211(k) of the Clean Air Act, EPA requires that in order for a gasoline to be certified as reformulated, it must contain at least 2.0 weight percent oxygen, no more than 1.0 volume percent benzene, and no heavy metals (unless a waiver is granted); result in no increase in NOx emissions; and achieve required toxics and VOC emission reductions. Toxics and VOC emission requirements and EPA's derivation of them are set forth below.

Throughout the negotiation process, different procedures for certifying that a gasoline complies with the NOx, toxics, and VOC requirements were discussed. Pursuant to the consensus agreement, EPA proposes in this supplemental notice two modeling options and a testing method whereby the effects of fuel properties on emissions can be determined. Models offer several advantages over testing to determine emission effects. First, models can better reflect in-use emission effects since they can be based on the results of multiple test programs. Second, individual test programs may be biased, either intentionally or unintentionally, due to vehicle selection, test design, and analysis methods. Third, fuel compositions tend to vary due in part to factors beyond the control of fuel suppliers such as variations in crude oil compositions and the inherent variability of refining processes. As a result, without one or more modeling options, each batch of fuel would have to be tested to ascertain its emission performance. Such levels of testing are neither desirable (because of the potential for intentional bias in vehicle test programs) nor practical (because of the time and expense involved in vehicle testing). Fourth, models make more efficient use of scarce and expensive emission effects data than is possible otherwise. For these reasons, EPA believes that the modeling options outlined below are necessary for the reformulated gasoline program to achieve its environmental objectives and to minimize the costs of the program.

The first modeling option being proposed is a simple emissions model (described below in section II.A). Enough is known about the emission effects of several parameters in a range of fuels to model these effects with confidence at this time. These fuel parameters are Reid vapor pressure, fuel oxygen, benzene, and aromatics; the sources of information used to develop the simple model are described in this section's discussion of the simple model.

At the current time, not enough data is available on the fuel effects of other parameters to include them in the simple model without running the risk of under- or over-estimating the in-use emissions from reformulated gasolines. The available data, however, is sufficient to suggest that these other parameters (sulfur, T90, and olefins) have a directional effect on emissions. To prevent the emissions benefits that would be obtained from the reformulated gasoline program from being undercut by changes in the values of these parameters, EPA is further proposing that each refiner's annual average levels of sulfur, T90 and olefins in reformulated gasoline not be allowed to exceed their 1990 annual averages for these parameters.

EPA anticipates that as additional information becomes available through test programs in progress such as the Auto/Oil [2] program, it may be possible to include additional parameters in an emissions model. In particular, EPA anticipates that sufficient data will be available in 1992 or early 1993 from the Auto/Oil test program and other sources to quantify the emission effects of several additional parameters (including sulfur, T90, and olefins) for inclusion in an expanded model.

This expanded model would be the second modeling option for fuel certification and is referred to here as the complex emissions model (described below in section II.B). Pursuant to the Agreement in Principle, EPA will issue a proposed rule by November 30, 1992 and a final rule by March 1, 1993 which will contain the specific details of the complex model.

This complex model rulemaking would also address the "Phase II" reformulated gasoline VOC and toxics performance standards to take effect in the year 2000 as prescribed by section 211(k)(3). If EPA is unable to finalize the complex model rule by March 1, 1993, the required use of the complex model would be delayed one month for every month of delay in issuing the rule. This mechanism is intended to insure that the fuel producers continue to have sufficient lead time for refinery modifications prior to the effective date of the rule.

EPA believes that gasoline suppliers should be required to use the most accurate and complete model available

[2] The Auto/Oil Air Quality Improvement Research Program is a cooperative research effort undertaken jointly by a number of major automobile and oil companies.

to certify their fuels in order to better ensure that the emission reductions that Congress intended reformulated gasoline to achieve actually occur in-use. However, the gasoline suppliers should also be provided with an adequate lead time in order to avoid fuel production shortfalls and economic inefficiencies brought about by changes to their refineries. EPA believes that four years is adequate lead time for fuel producers to make the necessary changes to their refineries to meet the reformulated gasoline requirements under the complex model. Some guidance on lead time is given by the Act's provision of over three years' lead time between promulgation of the rule and the start of the 1995 high ozone season. The Agency continues to believe, for the reasons expressed below, that less than a four-year lead time would be insufficient for a requirement to determine emission effects using the complex model. To prepare for implementation of the complex model, suppliers will have to determine which fuel formulations are most cost-effective for them based on the parameters included in the model and the size of such parameters' emission effects, develop the plans for refinery modifications and design any necessary refining equipment (such as desulfurization units) needed to produce such formulations, obtain the necessary permits and capital, construct the equipment, and complete start-up and equipment shakedown. Given the magnitude of the effort involved, EPA considers it reasonable to implement the complex model with four years' lead time. Therefore, EPA proposes that fuel suppliers be permitted to determine the emission effects of specific fuels by using either model (possibly augmented by testing as described below) for fuels produced before March 1, 1997 or four years after promulgation of the complex model, whichever is later. Until this date, fuel suppliers would have the option of using the complex model instead of the simple model to take advantage of the effects of parameters contained in the complex model but not contained in the simple model (as described in the following paragraphs). EPA further proposes that suppliers be required to use the complex model (appropriately augmented through testing) for fuels produced beginning March 1, 1997 or four years after promulgation of the model, whichever is later.

EPA is further proposing that for fuel suppliers opting to use the simple model, each supplier's average annual levels of sulfur, T90 and olefins in reformulated gasoline not be allowed to exceed the refiner's 1990 annual average levels (as determined for the anti-dumping program described in sections XII and XIII). The available data strongly suggest that higher levels of sulfur, T90, and olefins result in higher emissions, although insufficient data exists at present to quantify these effects. These parameters therefore are not included in the simple model, and the effects of increases in the level of these parameters from their 1990 levels will not be reflected in predicted emissions using the simple model. Capping the levels of these parameters at their 1990 levels would help prevent in-use emissions from exceeding either the levels predicted by the simple model or the requirements of the Act. Further, EPA believes these levels will be achievable in 1995 since they were achieved in 1990.

The Agency also believes that testing has a role in certification as a means of supplementing the models. Section III of this notice contains a detailed discussion of EPA's proposals regarding the conditions under which testing would be permitted, the manner in which test results would be used to supplement the models, and the minimum requirements for vehicle testing programs.

Regardless of whether the emission effects of a gasoline are determined using the simple or complex model (with or without augmentation by vehicle testing results), each gasoline must comply with the requirements for reformulated gasoline individually, notwithstanding whether it is part of a slate of gasolines. On the other hand, credits earned from certain formulations of gasoline in a slate (including credits earned in part due to effects based on vehicle testing) may be used to show the compliance of other formulations in that slate. The credits provisions of the reformulated gasoline program are more fully discussed in section VIII.

A. Simple Model

As stated above, use of the simple model is a certification option for reformulated gasolines produced prior to March 1, 1997 (or until certification by the complex model is required). EPA proposes that a fuel be considered in compliance with the VOC, NOx, and toxics emission performance requirements under the simple model if it meets the compositional specifications described below.

1. VOC Emissions for Simple Model Fuels

The Act requires reductions in emissions of ozone-forming VOCs. This interpretation is consistent with the focus of section 211(k) on the areas with the most extreme ozone pollution problem. Since the ozone-forming potential of methane is more than one order of magnitude lower than that of other types of volatile organic compounds commonly emitted from motor vehicles (including ethane), EPA proposes that VOC emissions be determined on a non-methane basis. EPA proposes to include ethane in VOC emissions since its ozone-forming potential is of the same order of magnitude as other straight-chain hydrocarbons and is much greater than that of methane.[3] EPA currently includes ethane (but not methane) in its guidance regarding which VOC species should be included in airshed modeling used to support State Implementation Plans for ozone attainment.[4] If EPA should change its guidance on which VOC species should be included in ozone modeling in the future, the definition of VOCs discussed above will be reconsidered.

The Agency solicits comment on the following concept:

Carbon monoxide (CO) is not classified by EPA as a volatile organic compound. However, CO is a factor in ozone-forming photochemical reactions. A "mass-based carbon equivalent" could be assigned to CO emission reductions achieved by reformulated gasoline. This would provide a method by which the mass-based VOC increases attributable to increased volatility could be offset by a mass equivalent. Under this approach, EPA could assign the "mass carbon equivalent" by eliminating the oxygen mass from overall mass CO emissions, with adjustment made to account for the proportionately greater mass effect of carbon monoxide. It is suggested that EPA may have authority to limit such a provision to reformulated gasoline, given the requirement in section 211(k)(1) that EPA implement the program "taking into consideration * * * energy requirements." Under this approach, oxygen credits under section 211(k)(7) would not be applicable to reformulated gasoline to which the mass-based equivalent has been applied.

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[3] Carter, William P.L., "Development of Ozone Reactivity Scales for Volatile Organic Compounds," presentation to EPA, 1991. The maximum ozone potential of methane is 0.0074 g ozone/g VOC; corresponding figures for ethane, propane, and n-pentadecane are 0.097, 0.23, and 0.101.

[4] Draft Technical Memorandum entitled "Guidance for SIP Emissions for UAM Modeling," from William Laxton, Director, Technical Support Division, OAQPS, to all of EPA's regional offices. A final memorandum is expected by 12/31/91.

EPA takes no position on this concept at this time, and invites comments on its technical and policy merits, as well as its legal basis. The Agency also requests interested parties to suggest other approaches which could enhance the role of oxygenates in reformulated gasoline including how atmospheric photochemistry can be accounted for in this regulatory framework. EPA intends to include a discussion of this concept in the agenda for the next complex model workshop to be held April 27 and 28. This portion of the workshop will begin at 1:00 pm on April 27. The remainder of the agenda will be devoted to the complex model. Participants in the regulatory negotiation process as well as any other interested parties are encouraged to participate in the workshop and provide comments on this concept as well as providing comments during any hearing on this proposed rulemaking, or in written comments on this proposal. In developing the final rule EPA will evaluate the record of comments and science with a view to allow the greatest flexibility for all oxygenates to lawfully compete in the marketplace.

Under today's proposal, fuels sold at retail outlets must have an RVP during the high ozone season (June 1 through September 15) of no more than 7.2 psi in Class B areas and 8.1 psi in Class C areas.[5] This period was chosen for the high ozone season because most of the ozone violations occur during this period. (See 56 FR 24242 for a discussion of the determination of this period.) Here Class B and Class C areas refer to those designated by the Phase II volatility control regulation (40 CFR part 80, 55 FR 23659, June 11, 1990) as requiring RVPs of 7.8 psi and 9.0 psi, respectively. (Class B areas correspond generally to the southern states and Class C areas to the northern states. The differences in climate between these two types of areas requires a corresponding difference in gasoline volatility to achieve the same emissions effect.) As discussed above, only the VOC emission effects of RVP and oxygen are included in the simple model. EPA projects that the VOC emission reduction in Class C areas from a fuel with an RVP of 8.1 psi and 2.0 weight percent oxygen will be sufficient to achieve the minimum 15% VOC emission reductions specified in section 211(k)(3) of the Act relative to the Clean Air Act baseline gasoline (which has an RVP of 8.7 psi). In Class B areas, an 8.1 psi RVP fuel with 2.0 percent oxygen (which would meet the 15% reduction requirement relative to the CAA baseline fuel) would actually have greater emissions than a fuel meeting EPA's Phase II RVP control standards for Class B areas (maximum RVP of 7.8 psi). EPA believes that when Congress designated Class B cities for inclusion in the reformulated gasoline program that it intended the reformulated gasoline program to provide emissions reductions in addition to those provided by the Phase II RVP requirements. If EPA merely required reformulated gasoline in Class B areas to meet the RVP requirement for Class C areas, then no additional reduction in VOC emissions would accrue to Class B areas from the first phase of the reformulated gasoline program beyond those mandated by Phase II RVP standards. EPA projects that relative to Phase II RVP control levels, a fuel with 7.2 psi RVP and 2.0 weight percent oxygen is necessary to provide VOC emission reductions to Class B areas similar to those obtained in Class C areas.

While requiring reformulated gasoline sold in Class B areas to have an RVP of no more than 7.2 psi goes beyond the minimum requirement stated in section 211(k)(3), section 211(k)(1) authorizes EPA to require emission reductions in Class B areas of this magnitude because they are achievable considering costs (see the draft regulatory impact analysis; docket identification number II–F–7), other air quality, and non-air quality impacts and the energy implications of such a requirement. EPA cannot determine that greater reductions, by requiring even lower RVP levels, are warranted at this time for two reasons: (1) EPA's refinery modeling analyses have not examined the effects of RVP reductions on refinery operations at lower levels,[6] and (2) EPA does not have sufficient test data to demonstrate emission benefits of lower volatility levels with confidence. Furthermore, extrapolating the results of these studies to lower levels may not be appropriate since the cost and emission effects of lower RVP levels are expected to respond non-linearly as RVP is decreased (because different chemical species and reformulation technologies would be affected than were considered in previous modeling efforts). Hence EPA is unable at this time to determine whether the cost and air quality effects of lower volatility standards warrant establishing lower RVP levels pursuant to section 211(k)(1).

Furthermore, while greater reductions in RVP beyond 8.1 psi in Class C areas potentially may be cost effective, EPA believes that the 1995 implementation date provides insufficient leadtime for refiners to comply with a more stringent Class C standard in conjunction with a 7.2 standard in Class B areas and the toxics and NOx requirements. Given refiners' capacity to produce lower volatility gasoline with the available leadtime, requiring a greater reduction in RVP levels in Class C areas could be achieved only at the expense of relaxing the ability to produce 7.2 RVP gasoline for Class B areas. In addition, the lack of reliable refinery modeling data at this time, as discussed above, inhibits EPA's ability to determine whether further RVP reductions in Class C areas would be warranted. Therefore, EPA believes that to the extent the VOC reductions greater than section 211(k)(3) requires can be achieved, those greater reductions should be required in Class B areas, which otherwise would receive no benefit from the reformulated gasoline program.

EPA believes that additional VOC reductions are obtainable if refiners are allowed to meet the RVP and oxygen standards through averaging. In the case of those refiners who can take advantage of averaging, EPA believes that average RVP for both Class B and Class C areas can be reduced by 0.1 psi to 7.1 and 8.0 psi, respectively, and that average oxygen concentration can be increased to 2.1 weight percent oxygen. These increments were determined as part of the regulatory negotiation consensus and would recapture the margin of safety that refiners could be expected to build into their compliance with per gallon requirements to reduce the risk of being found in violation. (See section VI.B.2 regarding compliance margins.) EPA believes the greater flexibility provided by averaging would offset the cost and difficulty of achieving these more stringent averaging requirements. EPA believes it appropriate under section 211(k)(1) to consider the potential of averaging to make greater reductions achievable, and where, as here, EPA finds averaging could make greater reductions achievable, to set more stringent averaged standards. Since refiners differ

[5] Lower RVP limits apply for fuels that comply under averaging. RVP controls also apply from May 1 to May 31 for facilities upstream of retail outlets. These issues are discussed elsewhere in this proposal.

[6] The Bonner & Moore study ("Assessment of the Impacts on the Refining and Natural Gas Liquids Industries of Summer Gasoline Vapor Pressure Control," August 24, 1987, Bonner & Moore Management Science) examined the effects of reducing RVP outside of California to as low as 8.07 psi. Within California, the study examined the effects of RVP as low as 6.82 psi; however, the measurement of RVP for the study was subject to error on the order of 0.3 psi. The Turner Mason study (November 30, 1987) examined comparable RVP ranges.

in the extent to which they can make use of averaging, EPA is proposing that refiners that want to average be required to meet RVP and oxygen standards that are more stringent than the non-averaged standards, as noted above. These tighter, averaged standards should have the potential to increase the environmental benefits of the reformulated gasoline program at no additional cost over the non-averaged standards.

2. NOx Emissions for Simple Model Fuels

The Clean Air Act requires that there be no NOx emissions increase from reformulated fuels. Based on data available during the regulatory negotiations, it appeared that fuel oxygen content and the type of oxygenate used may have an impact on NOx emissions while no other simple model parameter appeared to have such an impact. Today's proposal was developed in the context of the negotiated agreement and the data then available. While the currently available data does not allow for quantifying relationships between oxygenate type and concentration and Nox emissions, it suggests that MTBE may contribute little or no NOx increase at concentrations of 2.0 to 2.7 weight percent oxygen, but that ethanol at a concentration of 3.5 weight percent oxygen may cause a NOx increase.[7] EPA cannot definitively determine the effect of oxygenates on NOx emissions, due to a general lack of adequate data, a variety of concerns with the data that do exist (e.g., confounding fuel effects, limited vehicle types, testing variability, etc.), and a lack of understanding as to why different oxygenates may show different NOx effects. At the same time, EPA is aware of the benefits of oxygenates for reducing exhaust VOC, CO, and toxics emissions on a mass basis.

EPA proposes that during those months with ozone violations, MTBE in concentrations up to 2.7 weight percent oxygen and other oxygenates in concentrations up to 2.1 weight percent oxygen be assumed not to increase NOx emissions, and thus be permitted for use in reformulated gasoline at any time and in any area. Because of the lack of data on the NOx effect of oxygenates, particularly at concentrations above 2.7 weight percent oxygen in the form of MTBE and above 2.1 percent in the form of other oxygenates, EPA cannot determine that all oxygen concentrations above the 2.1/2.7 limits will definitely increase NOx emissions. Given this, EPA proposes that each state have the discretion to waive the 2.1/2.7 weight percent oxygen limits during the months with ozone violations.

In view of the uncertainty about oxygenate effects on NOx emissions and because of the known benefits of oxygenates for reducing exhaust VOC, CO, and toxics emissions on a mass basis, EPA proposes under the simple model that during those months without ozone violations any oxygenate up to 3.5 weight percent oxygen be presumed to result in no NOx emission increase unless a state requests that oxygenate levels be limited to those applicable during those months with ozone violations. A state may make such a request when it believes that the use of higher oxygenate levels would interfere with attainment or maintenance of another ambient air quality standard (other than ozone) or another air quality problem. This proposal parallels the Regulatory Negotiation Agreement of August 16, 1991 and the letter to the Renewable Fuels Association dated August 14, 1991. EPA requests comments on any implementation and other issues that might arise as a result of this provision, particularly how EPA should define months with ozone violations.

EPA further proposes that parties wishing to market fuels with oxygen in excess of 2.1 weight percent in the form of oxygenates other than only MTBE (but subject to the oxygenate's waiver limit) during periods where they would be prohibited, as discussed above, may petition EPA to do so. Petitioners must demonstrate, through the use of data they generate, that use of the particular type and level of oxygenate will not adversely affect NOx emissions. EPA will expeditiously process such petitions. The detailed requirements for such test programs and the data required are described in section III. EPA requests comment on whether a less burdensome demonstration is warranted for approving oxygenate concentrations not up to 2.7 weight percent oxygen (as opposed to those above 2.7 weight percent) and if so, what such requirements should be.

EPA believes that the proposed approach to NOx is consistent with the intent of section 211(k)(1) that the greatest reduction in ozone-forming volatile organic compounds be achieved during that portion of the year when ozone exceedences occur, taking into consideration cost and other factors. Allowing for increased use of a wide variety of oxygenates will increase the supply of oxygenate available for use in reformulated gasoline, thereby having a controlling effect on the cost for oxygenates, especially in the first years of the program. This increased supply of oxygenate may also allow for more nonattainment areas to opt-in (See NPRM Section II.F.2 regarding opt-in) and obtain the air quality benefits of the reformulated gasoline program earlier than would have otherwise been possible. Furthermore, allowing the States the right to limit the concentration of oxygenates in reformulated gasoline should prevent the occurrence of any negative nonair-quality or other air-quality impacts that the proposed approach might otherwise permit. EPA believes that this is an appropriate treatment of concerns related to NOx emissions effects of oxygenates given the current limitations of the data and of understanding of the possible effects.

3. Toxic Emissions Under the Simple Model

Under section 211(k)(3), a reformulated gasoline's toxic emission performance must meet or exceed that of a specified formula fuel or a 15 percent reduction from that of baseline gasoline, whichever is greater. Under the simple model a fuel's toxic emissions are a function of its oxygen and benzene content, its VOC emission, and its level of benzene and non-benzene aromatics. If the fuel meets the requirements regarding oxygen and benzene content and VOC performance, its level of benzene and non-benzene aromatics must be sufficiently low such that the fuel meets or exceeds the toxic emissions requirements (described later in this section.). Since sufficient information either is not yet available or has not yet been fully analyzed to determine the proper coefficients for parameters that impact toxics emissions other than oxygenate type and oxygen, aromatics, and benzene concentration, the only variables which could be adjusted under the simple model to meet the toxic emission requirement are the benzene and non-benzene aromatic concentrations. The toxic emission equations proposed below would be used to determine a fuel's toxic emission reductions and could thereby determine the limits on aromatics content for fuels with various oxygenates, oxygen concentrations, benzene levels, and RVP levels.

All five of the toxic air pollutants that section 211(k)(10) of the Act specifies for control through reformulated gasoline (benzene, 1,3-butadiene, polycyclic organic matter (POM), formaldehyde, and acetaldehyde) also fall under the category of VOCs. Under high ozone (summer) conditions, all five toxics are

[7] Data from EPA's Emission Factor Database and results from the Auto/Oil test programs.

present in exhaust emissions, and only benzene is present in evaporative, running loss and refueling emissions (nonexhaust emissions). Benzene, an aromatic compound, is a natural component of gasoline and, as such, is present in gasoline vapor emissions. Exhaust emissions include unburned benzene and benzene formed from other aromatics during the combustion process. The four other toxic air pollutants subject to control by reformulated gasoline are not present in gasoline and hence are solely products of combustion.

EPA proposes to regulate aggregate toxics emissions based on the sum of both exhaust and nonexhaust toxic emissions during the summer (April 1 through September 15). (The definition of summer and winter periods for toxics control is explained later in this section.) Under winter conditions, on the other hand, EPA is assuming that nonexhaust benzene (and in fact all nonexhaust VOC) emissions will be negligible relative to exhaust toxic emissions due to low ambient temperatures. EPA therefore proposes to regulate aggregate toxics emissions during the winter period (September 16 through March 31) based exclusively on total exhaust toxic emissions.

As explained in the NPRM, since exhaust emission effects will likely vary between vehicles with varying emission performance levels, all data used to develop the exhaust emission correlations contained in the simple model are weighted by emitter subclass (based on available information) to reflect in-use fleet composition as per MOBILE4.1, consistent with the assumptions made concerning baseline exhaust emissions expressed in Section II.A.3.d below. Similarly, since nonexhaust emission effects vary between vehicles that pass and fail evaporative emission standards, all data used to develop the correlations contained in the simple model for nonexhaust emissions are weighted by evaporative emitter subclass (based on available information) to reflect the in-use fleet composition as per MOBILE4.1.

a. *Exhaust benzene emissions.* Exhaust benzene emissions can be affected by fuel modifications in two basic ways. Some fuel effects will change the fraction of benzene in the exhaust, regardless of the total VOC mass that is emitted as exhaust. For instance, increasing or decreasing the level of benzene in a fuel will lead to a direct increase or decrease in the benzene fraction of exhaust emissions. Moreover, changes in the level of benzene precursors (primarily nonbenzene aromatics) will affect the amount of benzene that is produced during combustion, also changing the benzene fraction of exhaust VOC emissions.

On the other hand, fuel modifications can affect the overall level of exhaust VOC emissions by affecting the efficiency of the engine or catalyst in burning hydrocarbons. In these cases, the benzene fraction of exhaust VOC emissions may stay relatively constant and benzene exhaust emissions will change proportionally with exhaust VOC emissions. Of course, some fuel modifications can produce a combination of these two effects.

EPA proposes to analyze the effect of fuel modifications on exhaust toxic emissions by separating the two types of effects described above. This applies not only to benzene but to all five toxic air pollutants. With this approach, fuel modifications which change the level of exhaust VOC emissions are considered to change the levels of exhaust toxic emissions proportionally. Under the simple model, exhaust VOC emissions for both Class B and Class C areas are affected only by fuel oxygen content according to the following relationship:

$$\text{Exhaust VOC (g/mi)} = \text{Exh} \times [1 - (0.127 \times \text{Ox})/2.7]$$

O_x refers to the fuel weight percent oxygen. Exh is the baseline level of nonmethane exhaust VOC emissions as determined from MOBILE4.1; for summer conditions Exh equals 0.46 g/mi, while for winter conditions Exh equals 0.68 g/mi. The term 0.127 represents the reduction in exhaust VOC emissions achieved when 2.7 weight percent oxygen is added to the fuel. This relationship is based on an analysis (contained in the docket to this rule) [8] of fuels containing MTBE in EPA's Emission Factor Database.

With respect to the effects of fuel modifications on the benzene fraction of exhaust VOC emissions, fuel benzene and fuel aromatics appear to be the primary factors. EPA proposes that the correlation used to relate fuel benzene and aromatics to the weight fraction of benzene in exhaust VOC (nonmethane) emissions for both Class B and Class C areas be:

$$\{1.818 + [0.9154 \times \text{Bz}] + [0.109 \times (\text{Arom} - \text{Bz})]\}/100$$

where Bz is the volume percent of fuel benzene and Arom is the volume percent of fuel aromatics. This equation is based on a study by Chevron [9] and indicates that exhaust benzene emissions depend on benzene content and on non-benzene aromatics content. Combining exhaust VOC emissions with the effects of benzene and aromatics on the benzene fraction of VOC emissions, benzene emissions (grams per mile) would be:

$$\{1.818 + [0.9154 \times \text{Bz}] + [0.109 \times (\text{Arom} - \text{Bz})]\}/100 \times \text{Exhaust VOC}$$

where Exhaust VOC is the level of VOC nonmethane exhaust emissions in grams per mile as described above. This equation is assumed to be valid for both summer and winter conditions, based on EPA test results [10] showing benzene emissions to be proportional to exhaust VOC emissions at various test temperatures.

b. *Nonexhaust benzene emissions.* Benzene is the only toxic air pollutant that is emitted in measurable quantities from evaporative, running loss, and refueling vapors. Reductions in fuel benzene may be expected to result in proportional reductions in benzene emissions from all of these nonexhaust emission sources. The Agency proposes to include this proportional effect of fuel benzene on nonexhaust benzene emissions in the emissions model.

In addition to fuel benzene content, two other fuel parameters—RVP and fuel oxygen content—can also affect nonexhaust benzene emissions. Both parameters affect both the total level and the benzene weight fraction of evaporative, running loss, and refueling VOC emissions. The effects of RVP on evaporative, running loss, and refueling VOC emissions are well characterized in MOBILE4.1 for Class C area summer conditions within a volatility range of 7.0 to 11.7 psi and for Class B summer conditions between 6.8 and 10.5 psi. The correlations used in the simple model are based on MOBILE4.1 and are valid for 6.6 to 9.0 psi for both Class B and Class C areas (the maximum RVP allowed under the simple model, however, is 8.4 psi). EPA further proposes the use of the formulae expressed below (based on the GM vapor model [11]) to model the effects of

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[8] Christian E. Lindhjem, "Effect of Oxygenates on Emissions."

[9] Communication to EPA summarizing the following studies: "Study to Determine the Fate of Benzene Precursors in Gasoline", NIPER (Under CARB Agreement 150128-32), 1988; "Exhaust Benzene Emissions from Late-Model Vehicles", API Publication No. 841-44700, 10/88; "Vehicle Evaporative and Exhaust Emissions as Influenced by Benzene Content of Gasoline", NIPER (Under CRC CAPE-35-83 and U.S. DOE), 4/86.

[10] (*Atmospheric Environment*, vol. 23, no. 2, pp. 307-320, 1989; *Atmospheric Environment*, vol. 24A, no. 8, pp. 2105-2112, 1990).

[11] Communication to C.E. Lindhjem from S.R. Reddy, April 16, 1991.

RVP and fuel oxygen content on the benzene fraction of evaporative, running loss, and refueling VOC emissions. Due to differences in temperature conditions, slight differences in nonexhaust VOC emissions occur between Class B and Class C areas. As a result, separate standards for toxics emission performance are provided for Class B and Class C areas.

Evaporative benzene emissions from a given vehicle include hot soak emissions (evaporative emissions from a warm vehicle after it has been running) and diurnal emissions (evaporative emissions from a sitting vehicle as the daily ambient temperatures rise and fall). Hot soak emissions occur at higher temperatures than diurnal emissions and the relative volatility of benzene is slightly greater at higher temperatures. Therefore, the benzene fraction of hot-soak VOC emissions tends to be higher for a given fuel than that for diurnal VOC emissions. Running loss emissions occur at roughly the same fuel temperature as hot-soak emissions, and therefore have similar benzene fractions.

Based on the emission factors contained in MOBILE4.1, evaporative and running loss benzene emissions tend to be dominated by emissions from vehicles with inoperative emission control systems (those vehicles likely to "fail" EPA's purge and pressure tests). The benzene fraction of evaporative and running loss emissions from vehicles with properly operating systems (those vehicles likely to "pass" EPA's purge and pressure tests) and from "fail" vehicles, however, are comparable. Hence EPA proposes that the benzene weight fraction of evaporative and running loss VOC emissions for a fuel be described by the following relationships, originally derived for "fail" vehicles. The hot soak and running loss benzene fraction of VOC equals:

$[Bz/100] \times [1.4448 - (0.080274 \times RVP) - (0.0684 \times MTBE/2.0)]$

The diurnal benzene fraction of VOC equals:

$[Bz/100] \times [1.3758 - (0.080274 \times RVP) - (0.0579 \times MTBE/2.0)]$

where Bz is the volume percent benzene, RVP is in psi, and MTBE is the weight fraction oxygen in the form of MTBE. The formulae for evaporative and running loss benzene emissions indicate that as oxygen in the form of MTBE increases, evaporative benzene emissions tend to decrease both in absolute terms and as a fraction of evaporative VOC emissions. Test data has shown that the presence of MTBE tends to reduce benzene's partial vapor pressure and, thus, evaporative and running loss benzene emissions.[12] Test data with ethanol has not shown an effect on benzene emissions separate from its effect on overall evaporative VOC emissions. Data with other oxygenates is not yet available to determine whether an effect similar to that of MTBE exists. Therefore, the oxygenate term in the formulae expressed here applies only to MTBE.

The formulae also indicate that as RVP decreases, evaporative and running loss benzene emissions also decrease but at a slower rate than total VOC emissions. Hence the benzene weight fraction of evaporative and running loss VOC emissions increases as RVP decreases.

Applying these equations to CAA baseline gasoline results in a hot-soak and running loss benzene emission fraction of 1.14 percent of VOC and a diurnal benzene emission fraction of 1.04 percent.

Evaporative and refueling benzene emissions (mg/mi) are then determined by the following formulae. Hot soak benzene emissions (mg/mi) equal:

$[Bz/100] \times Evap\ VOC \times 0.679 \times [1.4448 - (0.080274 \times RVP) - (0.0684 \times MTBE/2.0)]$

Diurnal benzene emissions (mg/mi) equal:

$[Bz/100] \times Evap\ VOC \times 0.321 \times [1.3758 - (0.080274 \times RVP) - (0.0579 \times MTBE)/2.0)]$

Running loss benzene emissions (mg/mi) equal:

$[1.4448 - (0.0684 \times MTBE)/2.0 - (0.080274 \times RVP)] \times [Bz/100] \times RunVOC$

Evap VOC is the evaporative VOC emissions in mg/mi, as determined below, 0.679 is the hot soak fraction of evaporative VOC emissions, 0.321 is the diurnal fraction of evaporative VOC emissions, and RunVOC is the running loss VOC emissions in mg/mi. These formulae are valid for fuel oxygen levels of up to 2.7 percent in the form of MTBE. Evaporative and running loss VOC emissions in mg/mi are determined by the following formulae. In Class B areas, Evap VOC (mg/mi) equals

$1000 \times [0.7952 - (0.2461 \times RVP) + (0.02293 \times RVP \times RVP)]$

In Class C areas, Evap VOC (mg/mi) equals

$1000 \times [0.813 - (0.2393 \times RVP) + (0.021239 \times RVP \times RVP)]$

In Class B areas, RunVOC (mg/mi) equals

$1000 \times [(0.1096 \times RVP) - 0.734 + (0.002791 \times RVP \times RVP)]$

In Class C areas, RunVOC (mg/mi) equals

$1000 \times [0.2963 - (0.1306 \times RVP) + (0.016255 \times RVP \times RVP)]$

The relationship of fuel benzene levels to refueling benzene emissions (mg/mi) using the General Motors model is given by:

$[1.3972 - (0.0591 \times MTBE/2.0) - (0.081507 \times RVP)] \times [Bz/100] \times RefVOC$

where RefVOC is the total refueling VOC emissions in mg/mi, given by:

$0.04 \times 1000 \times [(0.1667 \times RVP) - 0.45]$

The presence of MTBE tends to reduce benzene's vapor pressure and thus refueling benzene emissions; reductions in RVP tend to increase the benzene fraction of refueling VOC emissions while reducing refueling benzene emissions on a mass basis. Applying this equation to baseline gasoline results in a benzene fraction of refueling VOC emissions of 1.0 percent.

c. *Nonbenzene toxic emissions.* As discussed above, the only regulated toxic pollutant present in unburned gasoline is benzene; hence non-benzene toxic emissions are present only in exhaust emissions. For summer fuels EPA proposes to use the results from the Auto/Oil study to determine the 1,3-butadiene, formaldehyde, and acetaldehyde fractions of exhaust VOC emissions. The Auto/Oil data as released, however, were modified slightly to exclude the acetaldehyde and formaldehyde results for ETBE and ethanol from one of the vehicles (car #5A) due to emission results which were confirmed as being in error. Furthermore, the effect of ETBE on the weight percent of acetaldehyde was based on the test results for ethanol due to the lack of adequate fuel comparability for ETBE-containing fuels. However, for this case, the ethanol results were adjusted based on a comparison of the ETBE and ethanol results on similar fuels for which data was available. The toxics emissions for summer fuels are determined by the following formulae.

1,3-butadiene emissions in mg/mi equal:

$0.00539 \times 1000 \times (Exhaust\ VOC)$

where Exhaust VOC represents total exhaust VOC nonmethane emissions (including the effects of fuel oxygen) in grams per mile, and 0.00539 represents the weight fraction of 1,3-butadiene in

[12] Ibid.

baseline nonmethane VOC emissions (as determined by the Auto/Oil study [13].

Formaldehyde emissions in mg/mi equal:

0.01199×Exhaust VOC×1000×(1+(0.42/2.7)×(MTBE))

for MTBE containing fuels,

0.01199×Exhaust VOC×1000×(1+(0.358/3.55)×(ETOH))

for ethanol containing fuels, and

0.01199×Exhaust VOC×1000×(1+(0.137/2.7)×(ETBE))

for ETBE containing fuels,

where 0.01199 represents the weight fraction of formaldehyde in summer baseline nonmethane VOC emissions (as determined by the Auto/Oil study), Exhaust VOC represents total summer VOC (nonmethane) emissions in grams per mile, MTBE, ETOH, and ETBE refer to the weight fraction oxygen in the form of those oxygenates, and 0.42, 0.358, and 0.137 represent the increase in the weight fraction of formaldehyde emissions with the addition of 2.7 weight percent oxygen in the form of MTBE, 3.55 weight percent oxygen in the form of ethanol, and 2.7 weight percent oxygen in the form of ETBE, respectively.

Acetaldehyde emissions in mg/mi equal:

0.00854×Exhaust VOC×1000×(1+(0.078/2.7)×(MTBE))

for MTBE containing fuels,

0.00854×Exhaust VOC×1000×(1+(0.865/3.55)×(ETOH))

for ethanol containing fuels, and

0.00854×Exhaust VOC×1000×(1+(0.867/2.7)×(ETBE))

for ETBE containing fuels,

where 0.00854 represents the weight fraction of acetaldehyde in summer baseline nonmethane VOC emissions (as determined by the Auto/Oil study), and 0.078, 0.865, and 0.867 represent the increase in the weight fraction of acetaldehyde emissions with the addition of 2.7 weight percent oxygen in the form of MTBE, 3.55 weight percent oxygen in the form of ethanol, and 2.7 weight percent oxygen in the form of ETBE, respectively.

Emissions of polycyclic organic matter (POM) include a number of different, high molecular weight aromatics. There is no data quantifying the impacts of gasoline reformulations on POM emissions. At the present time, there are also no widely accepted test procedures for measuring POM in both the gaseous and particulate phases. In addition, POM emissions constitute a very small fraction of total toxic emissions (less than 2 percent). For these reasons, the Agency proposes that the emissions model consider POM emissions to be proportional to total exhaust nonmethane VOC emissions and not dependent on any particular fuel parameter.

POM emissions in mg/mi equal:

0.00304×1000×(Exhaust VOC)

where (based on EPA analyses [14]), 0.00304 equals 0.0014 (the emissions of POM from the baseline fuel in grams per mile divided by 0.46 (the exhaust VOC emissions from summer baseline fuel in grams per mile).

Under winter conditions, EPA test results [15] indicate that the proportion of 1,3-butadiene in exhaust VOC emissions is the same as under summer conditions, while the mass of formaldehyde, acetaldehyde, and POM emissions are estimated to be the same as summer emissions. As a result, for all non-benzene toxics except 1,3-butadiene, the winter emissions are given by the equations expressed above with Exhaust VOC set equal to summer baseline exhaust VOC emissions (0.46 g/mi) rather than the winter value (0.68 g/mi). Winter exhaust 1,3-butadiene emissions (mg/mi), however, are to be determined by using the winter baseline exhaust VOC emissions of 0.68 g/mi.

d. *Baseline emissions.* The derivation of baseline emissions used in the above formulae was described at length in section III.A. of the NPRM and the reader is referred to that document for discussion of that issue (56 FR 31179). Some changes and corrections have been made since the NPRM was published, and they are described below.

i. *Winter baseline gasoline.* The winter baseline parameter values developed for the NPRM (56 FR 31180) have been recalculated to account for change in the length of the summer period from May 1–September 30 to April 1–September 15. This data is thus valid for use only during that period. Average values for additional parameter have been computed as shown in Table II–3. As part of the recalculation, the methodology was changed slightly from that described in the NPRM. In the final calculation of an average fuel parameter value, the contribution of each survey city's fuel consumption by month or bi-monthly period to the entire winter period was used. The final average fuel parameter value was then determined by a summation of all the cities' contributions over the entire winter period. Previously, a single value was obtained for each month or bi-monthly period which included the contribution of each city during that month or bi-monthly period. These values were then averaged to obtain the average winter value. Comments are requested on the determination of the winter values of the baseline parameters, particularly regarding the computation methodology used.

TABLE II–3: WINTER BASELINE FUEL COMPOSITION

API Gravity	60.4
Sulfur, ppm	338
Benzene, volume percent	1.62
RVP, psi	11.7
Octane, R+M/2	88.1
IBP, degrees F	87
T10, degrees F	111
T50, degrees F	199
T90, degrees F	332
End Point, degrees F	404
Aromatics, volume percent	26.4
Olefins, volume percent	11.9
Saturates, volume percent	61.7

ii. *MOBILE4.1.* The goal of EPA in developing the procedures for certifying fuel as meeting the reformulated gasoline requirements is to assure that a certified fuel will achieve the required emission reductions in-use. This goal necessitates the use of a fuel effects model which predicts in-use emissions. For the simple model, EPA has therefore used the MOBILE4.1 emissions model to determine the proposed baseline emission levels. For further discussion of the rationale behind this decision the reader is referred to the discussion in the NPRM. The final version of MOBILE4.1 was released on July 29, 1991, and is available from any regional office of EPA (August 26, 1991, 56 FR 42053) and the docket for this rulemaking.

iii. *Temperature conditions.* MOBILE4.1 has been developed to predict motor vehicle emissions on an area-specific basis. In order to use MOBILE4.1, it therefore is necessary to specify a temperature range for the areas in which motor vehicle emissions are being evaluated. EPA proposes modeling baseline emissions under temperatures ranging from 71.6 to 91.6 degrees Fahrenheit in areas classified as Class C areas (9.0 psi RVP, classified as VOC Control Region 2 in section V.D.) and ranging from 69.4 to 94.0 degrees F in Class B areas (7.8 psi RVP, classified as VOC Control Region 1 in section V.D.). These temperatures represent the population-weighted average of minimum and maximum temperatures

[13] Data received by EPA from the Auto/Oil Air Quality Improvement Research Program.

[14] "Analysis of the Economic and Environmental Effects of Methanol as an Automotive Fuel," U.S. Environmental Protection Agency, September 1989.

[15] *Atmospheric Environment*, op. cit.

measured in each of 25 serious and worse ozone nonattainment areas during their ten worst ozone days in each of the months of July and August for the years 1986 to 1989 (in ten of the cities) and 1985 to 1987 (in the other fifteen cities).[16] Refueling emissions were derived assuming an ambient temperature of 90 °F for both Class B and Class C areas. Distinguishing between the different areas did not appear justified given the similarity of Class B and Class C area temperatures, the relatively low magnitude of refueling emissions, and the wide range of times and temperatures at which refueling occurs during a day. 90 °F was considered to represent a severe case in order to account for average in-use refueling emissions on high ozone days.

For determination of winter baseline emissions, an average low temperature and an average high temperature of 39 °F and 57 °F, respectively, were utilized. These temperatures were estimated from the historical 30-year average low and high temperatures for the months of October through April for the 25 serious and worse ozone nonattainment areas.[17]

iv. *Effects of Stage II refueling controls.* As discussed in the NPRM, baseline emissions are assumed to include the benefits of a Stage II refueling vapor recovery program. The only change from the NPRM is that the efficiency of Stage II controls is now assumed to be 86 percent. EPA's regulatory impact analysis supporting refueling emission regulations estimated the efficiency of Stage II equipment to be 86 percent in areas such as California where the program is very strictly enforced. Because of the severity of ozone pollution in areas that will be covered by the reformulated gasoline program and because strong measures will be required to bring these areas into attainment, it is assumed that Stage II programs in these covered areas will be strictly enforced.

v. *Assumptions regarding enhanced inspection and maintenance programs.* A large portion of motor vehicle emissions are attributable to a small fraction of vehicles whose emission levels are extremely high due to tampering or malmaintenance. Enhanced inspection and maintenance (I/M) programs, mandated by the Act for all serious, severe, and extreme ozone nonattainment areas, will address this category of emission sources by inspecting vehicles for proper maintenance of exhaust and evaporative emission control equipment. The Agency is in the process of developing the minimum criteria for enhanced I/M programs.

In the NPRM, the Agency proposed to include the impacts of enhanced I/M programs on baseline emission projections since enhanced I/M programs will be in place when requirements for reformulated gasoline take effect. While the minimum criteria for enhanced I/M programs are still undefined, for the purposes of the simple model proposed in this notice, the program is assumed to include an anti-tampering gas cap check for evaporative and running loss emissions and a 2500 rpm idle test for exhaust hydrocarbons. These tests were chosen because EPA is confident that the definition of enhanced I/M will include tests at least this stringent. The in-use emission impacts of these potential I/M provisions were included in the MOBILE4.1 modeling to determine baseline emissions. The assumptions regarding enhanced I/M programs, for the purposes of the complex model, will be defined in the complex model rulemaking.

e. *Simple model performance of toxic emissions.* Using the emissions effects proposed above and the assumptions described in section II.A.3.d. concerning baseline emissions, the following table lists EPA's estimated toxics emissions from Clean Air Act baseline summer gasoline and the formula fuel assuming the oxygenate type in the formula fuel is MTBE. The selection of MTBE for use in the formula fuel was based on the likelihood that MTBE will be the most heavily used oxygenate. In addition, MTBE yields slightly larger toxics emission reductions than other oxygenates tested to date due to its effect on nonexhaust benzene emissions. Since MTBE will be widely available for use in reformulated gasolines, EPA believes it is appropriate to base toxics emission standards on a formula fuel resulting in the greatest achievable reductions in toxic emissions.

TABLE II-4.—SUMMER TOXIC EMISSION PERFORMANCE OF FORMULA FUEL

[Summer Toxic Air Pollutants (TAPs), mg/mi]

	Baseline (8.7 RVP)		Formula w/ MTBE (8.7 RVP)	
	Class B	Class C	Class B	Class C
Exhaust VOCs (g/mi)	0.46	0.46	0.42	0.42
Total VOCs (g/mi)	1.23	1.23	1.19	1.19
Exhaust Benzene (mg/mi)	30.1	30.1	22.3	22.3
Evaporative Benzene	4.3	3.8	2.6	2.2
Running Loss Benzene	4.9	4.5	2.9	2.6
Refueling Benzene	0.4	0.4	0.3	0.3
1,3-Butadiene	2.5	2.5	2.2	2.2
Formaldehyde	5.5	5.5	6.6	6.6
Acetaldehyde	3.9	3.9	3.8	3.8
POMs	1.4	1.4	1.3	1.3
Total TAPs	53.1	52.0	41.9	41.3

Using the emissions effects proposed above and the assumptions described in section II.A.5 concerning baseline emissions, the following table lists EPA's estimated toxics emissions from winter baseline gasoline and from the formula fuel assuming the oxygenate type in the formula fuel is MTBE.

TABLE II-5.—Winter Toxics Performance of Formula Fuel

[Winter Toxic Air Pollutants (TAPs), mg/mi]

	Winter baseline		Formula w/ MTBE	
	Class B	Class C	Class B	Class C
Exhaust VOCs (g/mi)	0.68	0.68	0.62	0.62
Total VOCs[1] (g/mi)	0.68	0.68	0.62	0.62
Exhaust Benzene (mg/mi)	40.8	40.8	33.0	33.0
1,3-Butadiene	3.7	3.7	3.3	3.3
Formaldehyde	5.5	5.5	6.6	6.6
Acetaldehyde	3.9	3.9	3.8	3.8
POMs	1.4	1.4	1.3	1.3
Total TAPs	55.3	55.3	47.9	47.9

[1] Assuming that wintertime evaporative emissions are negligible. (See earlier discussion.)

Under section 211(k)(3), reformulated gasoline must meet the emissions performance of the formula fuel or the minimum performance standard specified in section 211(k)(3)(B), whichever is more stringent. For Class B areas, using the simple model with the formula fuel produces a 21.1 percent reduction in toxics emissions in the summer and a 13.5 percent reduction in the winter. For Class C areas, using the simple model and its modeling

[16] Memorandum II-A-2 from Jeffrey A. Herzog and Stephen Mayotte to Public Docket No. A-91-02.
[17] Ibid.

assumptions with the formula fuel produces a 20.7 percent reduction in toxics emissions in the summer and a 13.5 percent reduction in the winter.

For purposes of toxics emission control, the winter period is assumed to be September 16 through March 31 since this period coincides with the time period during which winter gasoline will be produced. While summer gasoline would not be required at retail outlets until June 1, it would be required at terminals by May 1 and hence would be produced or imported by fuel suppliers at some earlier date. Fuel producers have indicated that production of summer gasoline could begin as early as March 1. In some cases, production of summer gasoline would not begin until after April 1, but in no case would it begin later than May 1. EPA believes that April 1 represents a reasonable average date for the beginning of summer gasoline production and proposes its use to determine summer and winter time periods for the purposes of the toxics compliance periods. When weighted according to fuel consumption (53.2 percent of gasoline is consumed during the winter period and 46.8 percent is consumed during summer), the annual average toxic emissions reduction is 17.1 percent from baseline levels in Class B areas and 16.9 percent in Class C areas. Based on the simple model correlations presented in this section, EPA believes that refiners are capable of achieving toxic emission reductions of this magnitude in conjunction with the VOC emission reductions discussed earlier. EPA believes that without the flexibility provided by an averaging program, requiring greater reductions in toxic emissions is not warranted at this time given refiners' need to produce gasoline at current and projected octane levels (more stringent toxics emissions standards would likely necessitate lowering aromatics levels, which would also reduce fuel octane levels) and the overall cost effectiveness of toxics emissions reductions relative to the corresponding health benefits, as discussed in the Regulatory Impact Analysis.

As discussed in section VI.B.2, the Agency believes it appropriate for standards met on average to be more stringent than standards met on a per-gallon basis. Based on the discussion in section VI.B.2, EPA proposes that averaged toxic emission standards be 1.5 percentage points more stringent than the relevant per-gallon standards. Adding a 1.5 percentage point margin to the Class B and Class C results above would result in an 18.6 percent reduction requirement in Class B areas and an 18.4 percent reduction requirement in Class C areas; given the uncertainties in measuring toxic emission levels and the levels of fuel parameters that affect toxic emissions, and given the additional compliance and regulatory burden involved in establishing and enforcing separate Class B and Class C area standards, EPA believes that a single year-round standard is appropriate. EPA proposes that this standard be set at a level 18.5 percent lower than emissions from the annual average baseline emission level. Under the authority of section 211(k)(1) to set tighter standards, EPA believes that the greater flexibility and reduced cost afforded to gasoline refiners and importers by an averaging program allow EPA to require a greater reduction in toxics emissions than is required under section 211(k)(3). In addition, EPA estimates that the approximate 1.5 percentage point margin will be more than sufficient to recoup any compliance margin refiners would have otherwise had to maintain to ensure achievement of the toxics requirements in the absence of an averaging program. In sum, the tighter averaged standard should have the potential to increase the environmental benefits of the reformulated gasoline program while not increasing the cost of obtaining those benefits.

For suppliers who opt to certify their gasolines on a per-gallon basis, EPA proposes that separate summer and winter toxics performance standards be based on the performance of the formula fuel under summer and winter conditions, respectively. Using the simple model, the summer performance standard would be a 21.1 percent reduction in toxic emissions in Class B areas and a 20.7 percent reduction in toxic emissions in Class C areas, relative to summer baseline gasoline. The winter performance standard would be a 13.5 percent reduction in toxic emissions relative to winter baseline gasoline. EPA believes that applying the annual averaged emission reductions (17.1 in Class B areas and 16.9 in Class C areas) as separate summer and winter per gallon standards would not be appropriate, since such standards would essentially require a greater and less cost effective reduction in toxics emissions in the winter months than is achieved by the winter formula fuel but would not reduce total toxic emissions.

B. Complex Model

As stated in the introduction to this section, EPA will issue a proposed rule no later than November 30, 1992 and a final rule by March 1, 1993 which will contain the specifics of a complex model to evaluate the emissions effects of a larger number of fuel parameters than are included in the proposed simple model. The complex model will be developed in a fashion similar to the simple model. However, the specific relationships used to relate simple model parameters to emissions may change as additional data becomes available and as the Agency's projections of the effectiveness of enhanced I/M programs and Stage II refueling controls develop. These relationships will be defined as part of the development of the complex model.

While EPA believes that it is important to use the most accurate and complete model available for fuel certification, EPA also believes that fuel suppliers need adequate lead time to modify and adjust their production processes. Therefore, use of the complex model is not required prior to March 1, 1997. Beginning on March 1, 1997 (or four years after promulgation of the complex model, whichever is later), however, all reformulated gasoline must be certified by the complex model (augmented as appropriate by vehicle testing results). This timing was developed as part of the regulatory negotiation and, as discussed earlier, it provides the time required to develop the additional capacity needed to supply sufficient quantities of reformulated gasoline and provides adequate lead time for refiners to make any necessary refinery changes.

Until March 1, 1997, refiners who produce reformulated gasoline would have a choice of certifying their fuel by using the simple model, the complex model, or by augmenting the models with vehicle testing (section III). EPA has developed two options for application of the complex model during the first two years of the program. Under the first option, if a refiner opts to utilize the complex model before March 1, 1997, the reformulated gasoline can have no worse VOC, NOx, or toxic emissions performance than would be predicted by the complex model for a simple-model fuel (minimum 2.0 percent oxygen, maximum 1.0 percent benzene, and maximum RVP of 8.1 psi in Class C areas and 7.2 psi in Class B areas) having that refiner's average 1990 levels of sulfur, olefins, and T90. This requirement would prevent fuel suppliers from supplying higher-emitting fuels than would be required under the simple model by electing to use the complex model to evaluate emissions performance. Since the complex model may contain parameters capped under the simple model and may also attribute larger emission effects for one or more

simple model parameters, emission reductions for a fuel evaluated under the complex model may be larger than for the same fuel evaluated under the simple model. For example, under the simple model, a fuel producer with sulfur levels below the CAA baseline fuel level achieves a certain emission reduction due only to the parameters contained in the simple model. Under the complex model, however, that fuel producer would likely be able to claim an emissions benefit for its low sulfur level and relax the requirements on simple model parameters. The resulting fuel would meet the performance standards according to the complex model but would fall short of the standards according to the simple model. Because this option requires such producers to produce fuels that meet the required performance according to the simple model, such producers would be required to produce fuels that would achieve lower in-use emissions than required according to the complex model. However, once the complex model is required beginning March 1, 1997, such producers would be able to reduce the extent of reformulation needed to meet the requirements of the Act. As a result, this option may require capital expenditures during the first two years of the program from such producers that would not be required after March 1, 1997. For example, under this option, a fuel supplier with low levels of sulfur, T90, or olefins would be required to reduce RVP to a greater extent than would be required in 1997, when the complex model is required and they would be able to take credit for their low sulfur, T90, or olefin levels (assuming the complex model includes these parameters). To some extent, however, this added cost might be offset to the extent these expenditures would be required to meet the Phase II standards which take effect in 2000. This option would preserve the environmental benefits that would be realized using the simple model. However, it may also provide greater flexibility to fuel suppliers with higher 1990 baseline levels of sulfur, T90, and olefins, thereby effectively "rewarding" fuel suppliers with higher-emitting 1990 baseline fuels.

The second option EPA is considering would allow refiners to certify fuels using only the complex model during the initial years of the program without any reference to simple model fuel performance. This option is not included in the negotiated agreement and, as noted above, this option may result in higher emissions prior to 1997 than would the first option. However, this option would be more cost effective than the first option since it would allow refiners to make one refinery change which would be effective both before and after 1997. Additionally, the Clean Air Act sets absolute emission standards for reformulated gasoline, and the complex model will reflect the best available model of emissions by incorporating these parameters; hence, it arguably should be allowed to supplant the simple model as soon as possible. Finally, the many parameters of the complex model give refiners more methods of reformulating gasoline than does the simple model, thereby allowing refiners to choose the method which is most cost effective for them. On the other hand, the emission reduction requirements for reformulated gasoline under the simple model are considered to be achievable and cost effective; therefore, equivalent emission reductions under this option also would be achievable and cost effective, considering suppliers' freedom to choose either model and the additional flexibility the complex model offers refiners. Since this option would allow suppliers with low 1990 baseline levels of sulfur, T90, or olefins to claim these benefits of their fuels, this option effectively rewards suppliers of lower-emitting 1990 baseline fuels. However, under this option a supplier with very low levels of sulfur, T90, and olefins might be able to meet the standards using the complex model with RVP levels that exceed the per-gallon RVP caps established as part of the simple model and might thereby affect the ability of the Agency to enforce compliance with the requirements of the Act while the simple model is in use. Therefore, EPA proposes that this option include the caps on RVP included in the simple model averaging program. Finally, this option could result in smaller emission reductions during the first two years than the 15 percent emission reduction goal implied by the Act. Fuel suppliers with high levels of sulfur, T90, and olefins would meet (and in some cases exceed) the 15 percent reduction requirement relative to their 1990 fuels, but not necessarily relative to the Clean Air Act baseline fuel. At the same time, fuel suppliers with low levels of these parameters would be able to meet the requirements of the Act, but with smaller reductions in emissions relative to their 1990 fuels.

To resolve these problems, EPA proposes that the second option be restricted to Class A and Class B areas only. The VOC performance standard in such areas would be set equal to the projected emissions of a simple model fuel (7.2 psi RVP, 2 percent oxygen, 1 percent benzene, and other parameters set equal to 1990 industry average levels) using the complex model. The Agency believes that this performance standard is appropriate since it would require the same emissions performance for all fuel suppliers while still providing suppliers greater flexibility in meeting the requirements of the Act. EPA believes that providing this additional flexibility is of greater significance for Class B area fuels than for Class C area fuels because of the greater capital and operating expenditures needed to achieve the much lower Class B RVP levels. In addition, EPA believes that the second option would have a significantly smaller effect on enforcement in Class A and B areas than in Class C areas. The enforcement problems associated with this proposal are considerably simpler to overcome for areas that are geographically distinct and are served by distinct fuel distribution networks. Class C areas that are mandated for inclusion in this program often overlap, and many of the areas that either already have opted into the reformulated gasoline program or are eligible to do so are adjoining. Class A and B areas, by contrast, tend to be served by distinct fuel distribution systems. Finally, the Agency believes the potential diminution of emission reductions in Class A and B areas would be offset by the increase in the number of areas that would be able to opt into the reformulated gasoline program. The potential increase in opt-in would result from the enlarged supply of usable oxygenates resulting from this option: since the complex model is anticipated to include parameters with significant reduction potential for NOx as well as VOC and toxics emissions, this option would allow fuel suppliers the flexibility to utilize a wider range of oxygenates in Class B areas.

While EPA is not aware of any interactive effects (as defined in section III) among the parameters contained in the simple model, EPA anticipates that fuel parameters with dilution and interactive effects will be identified in the future, and that fuel suppliers may wish to have such parameters incorporated in the complex model to simplify certification of fuels with such parameters. If fuel parameters have negative dilution or interactive effects, then mixing of fuels containing these parameters in the fungible fuel supply could result in degradation of the emission performance of all fuel in the fungible fuel supply. Therefore inclusion of such fuel parameters in the complex model may not be appropriate. The issue

of how to include fuel parameters with dilution or interactive effects in the complex model will be dealt with in more detail in the subsequent rulemaking that will define the complex model. EPA requests comment on this issue at this time.

III. Vehicle Testing to Augment the Emission Models

The negotiated agreement is largely silent on the use of vehicle testing to augment [18] the emission models. The agreement does state that "vehicle testing will be permitted to qualify new parameters but not to modify the coefficients of existing model parameters" and further states that as new parameters are added to the complex model, the model shall be used to quantify the effect of the new parameters. To the extent that the proposals in this section go beyond those discussed in the NPRM or outlined in the agreement, EPA believes that they are consistent with the intent of the agreement and the provisions of the Act. Comments are requested on the specific proposals presented in this section.

A. Purposes, Objectives, and Limitations of Vehicle Testing

1. Purpose of Vehicle Testing

Vehicle testing is the primary way that the effects of various gasoline formulations on motor vehicle emissions can be determined. As described above and in the NPRM, data from vehicle testing programs forms the bulk of the basis for the simple model described above. This will also be the case for the complex model when it is developed. At the same time, when the subject of fuel certification by vehicle testing is discussed, most people envision a single test program of two or three fuels with the decision to certify being derived solely from the results of this single test program.

EPA believes that fuel certification through such a single test program is inherently less reliable than certification through a testing-based model due to the strong likelihood that a far greater amount of testing was used to develop the model than that involved in any single test program and due to the fact that the potentially varying and conflicting results of numerous test programs can be considered together in a model. Even when no other data on the emissions effect of a fuel parameter exists, the statistical variance associated with any limited testing program raises the concern that a fuel will show emission effects during testing that would not occur in-use.

Therefore, EPA proposes that testing only be permitted in conjunction with the models to augment them where fuel effects on emissions are not covered in the models. A distinction is drawn between "augmenting" a model and "updating" or "revising" a model. Augmentation involves modifying a model's predicted emission effects based on the results of vehicle testing submitted to EPA by industry that quantify the emission effects of new parameters or the extension of emission effects from already-included parameters, as discussed at length in this section. Augmentations to a model would be valid for a limited period of time and would apply only to those fuel suppliers requesting the use of the augmentation or claiming emission effects from the fuel parameter for which the augmentation was developed. Augmentations would be permitted on a temporary basis only as discussed below in Section III.A.5. Updates or revisions to a model would involve changes to the base model (to which further augmentations would be applied), and would affect all fuel suppliers. Revisions to the model would be developed by EPA and are expected to involve a rulemaking process. Revisions may involve new parameters, extension of the effects of already-included parameters, or changes to the coefficients of already-included parameters. EPA generally envisions that augmentations that are valid at the time the model is being revised would be proposed as revisions to the model. Although it is likely that any such augmentations would be proposed and accepted as a revision to the model given the extent of the data required for the augmentation, whether such augmentations would be proposed and finalized as revisions to the model would depend on the level of statistical confidence in the test result, various factors such as the existence of valid concerns with the original data since the time of the augmentation, and test results or other data obtained by EPA or other parties that dispute the conclusions drawn from the testing performed for the augmentation. The most likely time for concerns with the original data to come to light would be in comments provided on a proposal. As a result, in most instances, EPA would anticipate that augmentations would be proposed as revisions to the model.

As discussed in Section II, data with which to develop an emission model is limited for many fuel parameters. The simple model includes only some of the fuel parameters that are known to have an effect on emissions. EPA has chosen to include in the simple model only those parameters for which the emission effects have been quantified with sufficient assurance to justify their inclusion. The complex model required for use in 1997 and to be released in 1993 is intended to include a number of additional parameters whose effects on emissions are now being substantiated and quantified through ongoing Agency and industry test programs. These parameters include sulfur, T90, and olefins. Additional parameters which affect emissions will periodically be incorporated in the complex model as they are discovered and quantified over time. In order to encourage fuel suppliers to identify and develop innovative and cost effective fuel reformulations that reduce emissions and to permit their use prior to such time as they could be incorporated into the complex model, EPA considers the use of vehicle testing to augment the models to be an important alternative to fuel certification by modeling alone.

2. Objectives of the Vehicle Testing Process Under the Simple Model

EPA believes that fuels certified by vehicle testing should be evaluated in conjunction with the most complete emission model available to more accurately determine the emission benefits of the fuels being tested. Therefore, EPA proposes that with the following exception, vehicle testing not be permitted to augment the simple model. Approval to use oxygenates at concentrations greater than 2.7 weight percent oxygen in the form of MTBE [19] or 2.1 weight percent oxygen in the form of other oxygenates, up to the waivered limit for the oxygenate in question, would require the submittal to EPA of data that demonstrates that the oxygenate in question does not increase NOx emissions. EPA would evaluate such data, along with data already available and obtained from other sources, and process such petitions expeditiously. For such fuels, VOC and toxics emissions would still be determined using the simple model. States would be permitted to prohibit specific oxygenates in non-VOC controlled reformulated gasolines at levels in excess of 2.1 weight percent oxygen (2.7 weight percent oxygen in the

[18] The distinction between "augmenting" the complex model through vehicle testing and "revising" the model itself is discussed more fully in Section III.A.1.

[19] Note that the waivered limit for MTBE corresponds to an oxygen concentration of 2.7 weight percent. Hence a fuel supplier wishing to use MTBE at greater concentrations would have to complete the waiver process as well as the vehicle testing process outlined in this section.

form of MTBE) as per section II.A.2 unless the Administrator finds that specific oxygenates do not increase NOx at higher levels. If the Administrator were to make such a finding, the oxygenate in question would be permitted in reformulated gasolines up to the level specified in the finding without further restriction.

EPA further proposes that to obtain approval to use an oxygenate at such elevated levels, a formal vehicle testing program to augment the simple model be required as outlined in this section. Based on results from the testing program, petitioners would have to demonstrate that the oxygenate at such concentrations does not increase NOx emissions. For such fuels, VOC and toxics emissions still would be determined using the simple model. EPA requests comment on whether less burdensome requirements (relative to those outlined in the remainder of section III.) are appropriate for oxygenate concentrations between 2.1 and 2.7 weight percent oxygen, and if so, what such requirements should be.

3. Objectives of the Vehicle Testing Process Under the Complex Model

EPA believes that the objective of testing under the complex model should be to evaluate the emission effects of fuels whose emission effects cannot be adequately represented by the model. Such fuels would include fuels claiming emission effects from parameters not included in the complex model as well as fuels containing complex model parameters at levels beyond the range covered by the model. Without this constraint, it may be possible for a fuel producer to use the statistical variance associated with testing to demonstrate emission effects through the testing option which would not be demonstrated in-use, when tested to a greater degree, or when modeled. For example, a fuel that would fail to meet the VOC requirement by a small margin when evaluated under the complex model could be tested and potentially pass due to the testing error associated with any vehicle testing program. In addition, allowing testing of existing modeled parameters would essentially make the complex model, and thus, the emission performance standards, a fluid target. Fuel producers would lose the certainty associated with a fixed model and the confidence that their capital investments will be useful for at least a fixed amount of time. Therefore, EPA proposes that vehicle testing be used only to determine the emission effects of the parameter(s) not adequately represented by the complex model. The complex model would be used to determine the emission effects of fuel parameters covered by the model since the model would likely be based on more data than would be generated by any individual test program. The emission effects of the fuel in question would be determined by combining the emission effects determined through vehicle testing with the emission effects predicted by the complex model. Furthermore, EPA proposes that each testing program be used to identify the effects of only one new fuel parameter, unless the changes in other fuel parameters are a natural and inherent consequence of the primary fuel modification. These proposals, taken together, would alleviate the concerns raised above.

In addition, EPA proposes that fuel suppliers opting to augment the complex model through vehicle testing must examine the extent to which emissions are affected when fuels containing the fuel parameter(s) being tested are mixed with other fuels. The Agency is concerned with two potential problems when different fuels are combined. First, the emission effects of a parameter, as determined from vehicle testing, may not behave linearly as fuels with one level of the parameter are mixed with fuels with different levels of the same parameter. The degree to which this process occurs is referred to in this notice as the parameter's dilution effect. Second, the emission effects of various fuel parameters may be affected by the presence or level of other fuel parameters. The degree to which this process occurs is referred to in this notice as the interactive effect. If such effects were to be present, actual emission performance of the fuel mixture in-use could be worse than the emission performance predicted from the complex model augmented by vehicle testing results. Therefore, EPA proposes that the testing process be structured so as to identify dilution and interactive effects. Since the presence of adverse dilution and interactive effects could seriously undermine the in-use effectiveness of this program, EPA believes that the only alternative to testing for such effects would be to segregate the fuel in question throughout the distribution system. Even this alternative may not be fully satisfactory, since such fuels would still be mixed with other fuels in vehicle fuel tanks.

4. Limitations on Vehicle Testing

In addition to the limitations on testing described in the previous two sections, EPA proposes that petitioners be required to obtain advance approval from the Agency for proposed vehicle testing programs. EPA would only consider petitions to augment the model based on the results of approved testing programs. EPA would further retain the discretion to evaluate other data when evaluating petitions to augment the complex model and when determining the nature, extent, and limitations of the augmentation.

Petitioners would be required to include the following information when submitting a test program plan for approval: the fuel parameter to be evaluated for emission effects; the number and description of vehicles to be used in the test, including model year, model name, VIN number, mileage, emission performance, and technology type; the fuels to be used in the testing program, characterized as defined in section B.4.; the pollutants and emission categories intended to be evaluated; the methods and precautions to be used to ensure that the effects of the parameter in question are independent of the effects of other parameters already included in the complex model; a description of the quality assurance procedures to be used during the test program, and the identity and location of the organization performing the testing. For test programs that focus only on exhaust emissions, petitioners would have to include a justification as to why nonexhaust emissions should be assumed to be unaffected by the fuel parameter in question. EPA fully anticipates, and would encourage petitioners to submit the information listed above in stages beginning with the most general and ending with the most specific in order to streamline the approval process and eliminate wasted effort. EPA would provide petitioners with a justification for rejection of a proposed testing program that fails to provide adequate information and assurances as described above. Rejected programs could be modified to address Agency concerns and re-submitted for approval. These provisions would provide the Agency with greater assurance that petitioners would not selectively report test results to the Agency that support their petitions. Petitioners would still be able to "game" the testing process by pre-screening vehicles to obtain a test fleet with the desired sensitivity to the proposed parameter. However, such a test fleet would have to be re-tested as part of the formal test program and hence would be subject to the variability inherent in vehicle testing, which would tend to reduce the gaming benefits from pre-screening. EPA believes that the risks and costs associated with re-testing would dissuade petitioners from

attempting to manipulate the testing process in this manner.

EPA further proposes that the results of all approved testing programs be submitted to the Agency, even if the parameter in question proves not to provide an emission benefit. The Agency believes this requirement is necessary to ensure that all available data is at the Agency's disposal when evaluating proposed augmentations to the complex model and when updating the model itself. EPA does not intend to use this provision to limit legitimate, innovative test programs. Rather, EPA is only interested in preventing the creation of artificial fuel parameters that claim to be the source of emission effects which are in reality only normal statistical variability.

For example, a fuel's 10 percent distillation point (T10) is closely related to its RVP. A testing program to identify the effects of T10 may indicate that an emission effect from T10 exists when the effect is actually due to differences in the fuels' RVPs or to statistical variability. At the same time, some measure of a fuel's volatility above 100 °F (the RVP test is conducted at 100 °F) could be very relevant to running losses, where tank temperatures can reach 120–135 °F. A proposed test program to identify the effects of T10 would require the petitioner to identify specific measures to be taken to isolate the emission effects of T10 from those of RVP, which is anticipated to be included in the complex model. In this example, EPA might require that the candidate and candidate-baseline fuels contain identical RVP levels. This provision would eliminate one potential means by which petitioners would be able to "game" the testing process and produce fuels that meet requirements under the model but do not meet requirements in-use.

5. Duration of Acceptance of Emission Effects Determined by Vehicle Testing

The Agency is concerned that fuel suppliers not be allowed to claim emission effects in perpetuity based on the testing program described in this section due to the lower statistical confidence in the effects compared to those included in an updated complex model. The Agency also recognizes the need for fuel suppliers to recoup investments made to reformulate gasoline, including investments to utilize the emission effects identified through vehicle testing. EPA therefore proposes that petitioners be permitted to use emission effects determined through vehicle testing only for a limited period of time. In general, this period of time would extend until an updated version of the complex model takes effect. As discussed in section 1, EPA anticipates that most currently valid augmentations to the complex model would be proposed for inclusion in the updated model. Assuming that no serious, valid comments were received arguing against inclusion, such augmentations would be included in the updated model. Updates to the complex model will be proposed no more than five years apart. Since some augmentations may be in place for a relatively short period of time before the model is next updated, the Agency may not be able to adequately assess the augmentation. However, if a proposed update to the complex model is issued within three years of the time at which the augmentation takes effect, then in certain circumstances, fuel suppliers would be permitted to continue using the augmentation to determine the emission effects of reformulated gasolines.

Specifically, if the Agency does not formally accept, reject, or modify the augmentation in question for inclusion in the updated complex model, then the augmentation would remain available until the next update to the model takes effect. If the Agency reviews the augmentation and either excludes the augmentation entirely or includes the augmentation in a modified form, then the augmentation would remain available for five years from the date the augmentation took effect or for three years of fuel production, whichever is shorter. This provision, however, would apply only to those refiners that either contributed 50 percent or more of the costs directly attributable to testing in support of the augmentation, or that have already begun producing a fuel utilizing the augmentation at the time of the proposal. In the latter case, the refiner would be able to continue producing fuel utilizing the augmentation up to the maximum fraction of fuel production which had previously utilized the augmentation and only to the extent (on average) that the augmentation had been used (e.g., up to or down to the average concentration or level of a new parameter or the extension of an existing parameter). Fuel suppliers not meeting either of these two criteria would be able to use the augmentation until the date the update to the model is promulgated. The minimum allowable period of five years from augmentation approval or three years of production of a certified fuel, whichever is shorter, is intended to provide fuel suppliers which invested substantially in the augmentation through either vehicle testing or refinery modifications with essentially the same period of time to recoup the costs regardless of when EPA grants them the augmentation. By restricting the continued use of the augmentation only to those fuel suppliers who would otherwise be most economically disadvantaged, EPA believes it can minimize the environmental detriment that might otherwise occur. EPA requests comment on this proposal.

EPA further proposes that augmentations to the model for the effects of a given parameter over a particular range be permitted only once. Whether the emission effects of a parameter are either included in an updated model or not, once the minimum time period for use of a model augmented with the effects of that parameter has expired, the augmentation can neither be used or renewed (even with data from a second identical test program). Further testing would be permitted, however, to provide EPA with the additional data needed to include the effect in a future update to the model.

6. Application of Augmentations

The testing process outlined in this section is focused on certifying a specific fuel with a specific concentration of the relevant parameter(s). However, fuel suppliers may wish to produce a range of fuels incorporating parameters for which testing has already been performed without having to repeat the testing process. The Agency recognizes the need to preserve flexibility for fuel suppliers given variations in crude oil feedstocks and the refining process. However, the Agency also recognizes the need to ensure the emission reduction benefits of fuels deemed to be reformulated gasolines are actually achieved in-use. The emission benefits of parameters as determined through testing of particular fuel formulations are difficult to extrapolate to other formulations due to potential interactive and dilution effects. EPA therefore proposes that fuel suppliers be permitted to claim the emission effects of parameters determined through vehicle testing for other fuels subject to the following conditions. First, the concentration of the parameter must not exceed the concentration of the parameter in the candidate fuel for which testing was performed if increasing the concentration of the parameter is beneficial to emissions, or be less than the candidate fuel concentration of the parameter if the opposite is true, since the emission effects of the parameter at such levels would not be known. For example, if

testing of an emission-reducing additive at concentrations in excess of 5 percent had never been performed, then that additive would not be permitted at concentrations in excess of 5 percent; further, if a naturally-occurring emission-increasing ingredient had never been tested in reformulated gasoline at concentrations less than 10 percent, then gasolines would not be given credit for any marginal emission benefits of the ingredient at concentrations of less than 10 percent. Second, the parameter may only be introduced into fuels containing parameters for which interactive effects with the parameter in question have been tested as described in section III.B.6. This requirement would help assure that the emissions benefits predicted for a given fuel are actually achieved in-use by preventing fuel suppliers from introducing fuels with unknown and potentially unfavorable interactive effects into the fuel supply.

7. Exclusive Rights, Confidentiality, and Public Comment on Proposed Augmentations

The Agency recognizes that the provision of exclusive rights for the use of emission-affecting parameters to fuel suppliers who conduct vehicle testing may encourage more testing than would occur without exclusive rights. However, the Agency also recognizes that provision of exclusive rights may increase the overall cost of the reformulated gasoline program, since cost-saving reformulation methods would not be freely available. The Agency further recognizes that the regulatory burden of administering a system of exclusive rights would be significant and does not believe that the benefits of such a system (in the form of more rapid innovation) would justify its costs (in the form of less-widespread adoption of innovations once discovered and higher administrative costs). Further, there is some question whether EPA would have statutory authority to grant such exclusive rights, and in any case fuel suppliers are able to apply for patents on additives or reformulation process technology independent of any administrative system of exclusive rights for emission effects identified through vehicle testing. Therefore, EPA proposes that any fuel supplier be permitted to utilize any emission effect identified through vehicle testing, subject to the constraints of patent law or other applicable legal restrictions. EPA requests comment on this approach and on whether it might discourage the development of innovative formulations not protected by patents or other applicable legal restrictions. EPA also requests comment on whether the expected benefits of any additional innovations that may be stimulated by the granting of exclusive rights would warrant the regulatory burden and reduced market efficiency associated with a system of exclusive rights. EPA also invites comments on its statutory authority to grant exclusive rights.

The Agency also recognizes that, given the costs of vehicle testing and reformulated gasoline production, fuel suppliers may wish to keep vehicle testing results confidential for competitive reasons. However, confidentiality would eliminate the possibility of public comment on proposed augmentations to the model. The Agency anticipates that public comment on proposed updates to the model would be permitted, since model updates would be subject to the rulemaking process. The Agency also proposes that public comment on requests by fuel producers to augment the models through vehicle testing also be permitted. Providing for comment would allow interested parties to review and comment on the testing process employed and to submit supporting or countervailing data. Further, since proposed augmentations to the model would be likely to be considered for inclusion in future updates to the complex model, other fuel suppliers may have a significant interest in evaluating the impact of the proposed augmentation on their fuels and, in some cases, may undertake additional testing to confirm or disprove the proposed emission effect. The Act provides the Agency with 180 days to act on requests for fuel certification, which the Agency interprets to include verification of vehicle test results once a petition to augment the model is complete. EPA believes that this time is sufficient to permit public comment on vehicle test results. The Agency recognizes that provision for public comment implies that vehicle testing results could not be treated as confidential business information; however, EPA believes the potential gains in the quantity and quality of data used to determine augmentations are significant, and outweigh the potential benefits from additional testing that might be encouraged by treating the information as confidential. EPA requests comment on the proposals outlined above regarding non-exclusivity of rights to use emission effects established through vehicle testing and the opportunity for public comment.

B. General Vehicle Test Program Requirements

1. Seasonal Variation in Testing Requirements

In order to be certified as reformulated, a gasoline must meet VOC emission requirements in the high ozone season; separate toxic emission requirements in summer and winter or on an averaged year-round basis; and NOx emission requirements and the oxygen, benzene, and heavy metal content requirements year-round (see section III of the NPRM.) As discussed in Section II of this notice, the Agency does not have sufficient data to model winter emissions. While differences between the effects of fuel parameters under summer and winter conditions beyond those discussed in Section II may exist, the Agency does not have any evidence to date to suggest that they are significant. Therefore, EPA will apply the model developed for summer emissions to winter fuels as well for purposes of determining their VOC emissions. The Agency is concerned that allowing winter testing for some fuel parameters while modeling the effects of other parameters based on summer emission data creates the possibility of "gaming" the testing process. Fuel suppliers could use the summer model to determine the effects of parameters that would behave unfavorably under winter conditions and use winter testing to determine the effects of parameters that would behave favorably under winter conditions. This possibility may result in fuels being certified for winter use (through a combination of winter testing and summer modeling) that result in smaller emission reductions in-use than are intended by the Act or than would occur by using the summer model. Therefore, EPA proposes at this time that all testing be performed under summer ambient conditions. The Agency requests comment on this proposal, on whether winter testing should be permitted, and on the potential for gaming if winter testing were permitted.

2. Pollutants To Be Measured

When testing to augment the simple model (i.e., fuels containing oxygenates at levels beyond those covered by the model), EPA proposes that only the exhaust emissions of carbon monoxide (CO), carbon dioxide (CO_2), hydrocarbons, and nitrogen oxides (NOx) be reported. While only the NOx measurement would be used to determine whether the oxygenate at the levels in question increases NOx emissions, the Agency believes the

reporting of the other emission measurements would be necessary for test validation purposes and would add little, if any, cost to the test program.

To the extent testing is performed to augment the complex model, EPA proposes that it be performed to determine the emission effects on all the pollutants covered by the reformulated gasoline certification requirements, including toxics. (As discussed above, carbon monoxide and carbon dioxide emissions should be measured to permit validation of test results.) Failure to have such a requirement could allow fuel producers to "game" the certification requirements by permitting them to utilize the modeling option for one pollutant when it would be advantageous and the test results for another pollutant when it would be advantageous. Certified reformulated gasolines may then not meet all of the applicable emission reduction requirements in-use. For example, the model augmented by test results may indicate that a fuel meets the VOC requirement but fails the toxics requirement, while the model alone may indicate that the fuel meets the toxics requirement. Allowing the petitioner to claim the toxics emission effects predicted by the model while claiming VOC benefits determined through testing would ignore fuel effects on toxics that may not be addressed by the model.

Testing costs could be significantly reduced if only VOC and NOx emissions were measured by testing, and toxics emissions were allowed to be modeled. However, since the testing option could only be used when the candidate fuel's parameters fall outside of the range of the model, EPA believes that seldom will adequate information be available to allow toxics emissions to be adequately modeled if adequate information was not available to do so for VOC and NOx. If a fuel parameter is expected to affect VOC or NOx and is not covered by the model, toxics emissions may very well be affected and should be measured.

However, the Agency proposes that automatic testing for dilution and interactive effects be limited to NOx and VOC emissions. As discussed in section II, toxics emissions are largely (1) due to specific precursors contained in the fuel and (2) otherwise proportional to VOC emissions. Therefore, EPA expects that any dilution or interactive effects for toxics emissions should result from such effects on VOC emissions. However, EPA reserves the right to require that toxics be measured during such testing when evidence exists that adverse dilution and interactive effects may exist for toxics and not VOC and NOx emissions.

Furthermore, as discussed more fully in section III.D, the Agency proposes that in most cases duplicate testing not be required for the measurement of toxics emissions. This would also reduce the testing costs associated with evaluating the toxics emission impacts of the fuel parameter in question.

To better optimize the test program for the particular fuel parameter being evaluated, the Administrator may approve a request to waive certain of the pollutant measurement requirements proposed in this section. Any such waiver would have to be obtained in advance. A request for such a waiver should include an adequate justification for the requested change, including the rationale for the request and supporting data and information. Such a request must justify the reason that measurement of certain pollutants is clearly not necessary, and identify those pollutants for which additional testing may be warranted. An example might be a petition that reducing the concentration of a certain high molecular weight paraffin decreased VOC emissions even though the overall concentration of similar paraffins remained the same. In this case the petitioner may be able to justify a reduced need for toxics measurement, since the concentration of one high molecular weight paraffin relative to that of another would not be expected to impact toxics concentrations in the exhaust. However, given the uncertainty associated with such a fuel change significantly affecting VOC emissions, a greater amount of testing may be justified for VOC emissions to enable a greater degree of statistical confidence in the test results. As a result, the fuel supplier may be able to justify to EPA that a greater amount of testing for VOC emissions and a lesser amount of testing for toxics emissions may be warranted.

3. Types of Emissions to be Monitored

Under this rulemaking, when testing oxygenates to augment the simple model, the only pollutant of interest is NOx. EPA therefore proposes that such testing involve testing for exhaust emissions only, since NOx is present only in exhaust emissions. However, when testing to augment the complex model, NOx, VOC, and toxics emissions are all relevant to determining the parameter's emission effects; the latter two pollutants occur in both exhaust and nonexhaust emissions. Fuel parameters that affect nonexhaust emissions are likely to have an exhaust emission effect as well, while the opposite is not necessarily true. As a result, combining testing for some emission types with modeling for other emission types would reduce the cost of vehicle testing while not compromising the integrity of the testing process, while combining testing for some pollutants or seasons with modeling for other pollutants or seasons might compromise the integrity of the testing process. EPA therefore proposes that the testing option be coordinated with the modeling option such that a fuel producer could (1) test for all emission types (exhaust, evaporative, running losses, and refueling); (2) test for exhaust, evaporative, and running loss emissions and model refueling emissions, or (3) test for exhaust emissions only and model evaporative, running loss, and refueling emissions.

For example, the producer would likely choose to test for all emission types if the parameter in question were expected to favorably affect all emission types. However, if the parameter in question were expected to favorably affect exhaust and running emissions but not to affect refueling emissions, the producer would likely choose to model refueling emissions while testing for the other emission types. If the parameter in question were expected to affect exhaust emissions only, the fuel producer would likely choose to test for exhaust emissions while modeling evaporative, running loss, and refueling emissions in order to reduce the cost of the test program.

If the fuel supplier wishes to model nonexhaust emissions for a fuel or fuels undergoing exhaust emission testing, the fuel supplier would have to demonstrate that the candidate fuel's nonexhaust emissions can be determined accurately by the complex model. Limitations on the applicability of the complex model will be included in the complex model rulemaking. If the fuel supplier cannot demonstrate compliance with these limitations for the fuel or fuels in question, then nonexhaust emission testing would have to be conducted.

By allowing nonexhaust emissions to be modeled under appropriate circumstances even though exhaust emissions are determined through testing, EPA believes that the candidate fuel's emissions would be more accurately determined, and testing resources could be focused on those emission effects which the model predicts with the least degree of certainty (i.e., exhaust emissions). The model will be based on emission testing results from a large number of vehicles, resulting in greater accuracy from using

the model to predict nonexhaust emissions than from a vehicle testing program if the fuel can be modeled accurately. Additionally, by freeing resources for testing, the results from testing could then be used to improve the models over the long run.

4. Test fuels

To isolate the effects of compositional changes on emissions, EPA proposes that a candidate-baseline fuel be defined and produced for each candidate fuel. The candidate-baseline fuels would help ensure that emission effects identified through vehicle test programs reflect the emission effects of the parameter in question rather than the normal testing variability associated with the emission effects of other parameters. The candidate-baseline fuels also would more closely reflect the properties of the fuels found in-use and would more closely reflect the properties of the fuels for which the parameter effects would be claimed. The Clean Air Act baseline fuel would not satisfy these requirements; therefore, EPA proposes that the candidate-baseline fuel for augmentation of the simple model contain 25 volume percent aromatics, 1 volume percent benzene, and no oxygenates; have an RVP of 8.1 psi, and have Clean Air Act section 211(k)(10)(B)(i) baseline gasoline levels of all other parameters, including the parameter in question. EPA further proposes that the candidate-baseline fuel for augmentation of the complex model contain 25 volume percent aromatics, 1 volume percent benzene, and 2.0 weight percent oxygen in the form of MTBE (2.0 percent oxygen in the form of the parameter being tested if it is an oxygenate other than MTBE); have an RVP of 8.1 psi, and have Clean Air Act section 211(k)(10)(B)(i) baseline gasoline levels of all other parameters, including the parameter in question. If the parameter is not specified for CAA baseline gasoline, EPA proposes that the level of the parameter in the candidate-baseline fuel be comparable to the level found in gasoline representative of in-use reformulated gasolines; EPA further proposes that petitioners be required to obtain approval for the candidate-baseline level of this parameter from the Agency prior to beginning their vehicle test programs. Such approval would depend in part on the use of an appropriate basis for determining "representative" gasoline. EPA further proposes that the candidate fuel be compositionally identical to the candidate-baseline fuel except for the level of the parameter in question and, to the extent necessary to compensate for changes in the level of the parameter in question, the level of paraffins.

The level of the parameter in question would be zero for parameters neither defined in CAA baseline fuel, nor present in representative in-use reformulated gasolines. If the parameter is defined in CAA baseline fuel, then it would have to be present in the candidate-baseline fuel at CAA baseline fuel levels. If the parameter is not defined for CAA baseline fuel but is found in representative in-use reformulated gasolines, then it would have to be present in the candidate-baseline fuel at the levels found in such representative gasolines. EPA further proposes that petitioners be permitted to request the Administrator to establish alternative levels for the parameter in question in the candidate-baseline fuel as part of their initial petition in order to expedite the determination of the candidate-baseline fuel properties. EPA proposes that for all candidate-baseline fuels, paraffin content be altered to balance changes in the levels of other fuel constituents to best isolate the effects of the fuel parameter being varied in concentration. Paraffin content is proposed to balance other fuel composition changes since paraffin effects on emissions are thought to be more neutral than the effects of other, more complex major constituents of CAA baseline gasoline (such as olefins and aromatics) due to their straight chain molecular form. EPA requests comment on the proposed definition of the candidate-baseline fuel and on the use of paraffin levels to balance changes in other fuel components.

In determining the composition of candidate-baseline fuel, two other issues also would have to be addressed. First, non-compositional properties of the candidate and candidate-baseline fuels, such as RVP and T90, may differ as a natural result of compositional differences between the two fuels. EPA proposes that the complex model be used to compensate for such differences when evaluating vehicle testing results. Second, variations due to blending may cause properties not included in the complex model to vary between the candidate and candidate-baseline fuels, and such properties may have significant emission effects not predicted by the model. Hence EPA proposes that the properties of the candidate-baseline fuel be required to be the same as those of the candidate fuel within the tolerances defined in Table III-1. Failure to meet this requirement would reduce the certainty that emission effects found in vehicle testing are due to the parameter in question and not due to emission effects of parameters included in the complex model that differ from the effects predicted by the model. However, if a petitioner could show that it is not feasible to meet all such tolerances for the petitioner's candidate-baseline fuel due either to (1) naturally-resulting changes in fuel parameters arising from changes in the parameter(s) in question or (2) blending technology limitations, EPA would consider waiving the relevant tolerances. However, the request must come prior to the start of the test program. The Agency further proposes to use the complex model (including prior test results used to augment the model where appropriate) to adjust for differences between the candidate and candidate-baseline fuels.

Due to the difficulty in accurately measuring the initial boiling point (IBP) and the fact that its value tends to be controlled by the RVP and the 10% distillation point, EPA proposes that no limitations be placed on IBP blending tolerances for testing purposes. EPA further proposes that a minimum octane requirement of 87 (measured by the (R+M)/2 method) be met for all fuels used in vehicle testing.

TABLE III-1.—FUEL PARAMETER BLENDING TOLERANCES FOR CANDIDATE-BASELINE FUEL BLENDING, RELATIVE TO THE CANDIDATE FUEL

Parameter	Tolerance [1]
Sulfur, ppm	±25
Benzene, vol percent	±0.3
RVP, psi	±0.3
10%, °F	±5
50%, °F	±5
90%, °F	±5
End Point, °F	±20
Oxygenates, vol percent	±1.5
Aromatics, vol percent	±2.7
Olefins, vol percent	±2.5
Saturates, vol percent	±2.0

[1] Letter to Paul Machiele, EPA, from Robert H. Pahl, Manager, Fuels and Lubricants, Phillips Petroleum Co., May 13, 1991.

Blending tolerances for detergent additives have not been defined since the measurement methods for such additives have not yet been determined. EPA requests comment on the appropriateness of including such tolerances for detergent additives and the appropriate tolerances to use. The Agency is also concerned that including detergent additives in test fuels may improve the emission performance of some test vehicles independently of the effects of the fuel parameter(s) in question due to the removal of fuel injector and intake valve deposits. EPA requests comment on whether the

candidate and candidate-baseline fuels should include detergent additives and on what types of test procedures would avoid distortion of test results due to the effects of detergent additives.

EPA proposes that additional fuels be tested in order to determine the fuel's dilution and interactive effects. To determine the effects of diluting the parameter in question for parameters not included in the complex model, petitioners must test the effects of the fuel parameter at the level found in the candidate-baseline fuel, the level proposed for the candidate fuel, and at least one intermediate level half-way between the candidate-baseline fuel level and the candidate fuel level (±10 percent of the full range of levels being tested for the parameter in question). Other differences in the composition of the three fuels should be minimized, with paraffins used to offset changes in the level of the affected parameter among the three fuels (as described above for the candidate and candidate-baseline fuels).

If the fuel were to contain a complex model parameter at levels beyond the range covered by the model, and if the intermediate fuel described above were to fall within the range covered by the model, additional testing to determine dilution effects would not be necessary. Instead, EPA proposes that the test results for the candidate fuel be used in conjunction with the complex model to analyze the dilution effect for the parameter in question.

To determine the presence or absence of interactive effects, EPA proposes that at least two additional fuels be tested. The fuels would contain levels of each modeled parameter (within the limits of the complex model) and other parameters whose emission effects have been determined through vehicle testing (within the limits for which their effects have been determined) such that VOC and toxic emissions would be expected to be at a maximum level for the first fuel (based on fuels approved or likely to be approved for use in the fungible fuel supply for the area in which the fuel(s) containing the new parameter would be sold) and at a minimum level for the second fuel. Both fuels would contain the parameter in question at candidate fuel levels. Though the fuels would not have maximum and minimum levels of NOx, the Agency believes that any interactive effects on NOx would still be apparent from vehicle test results with the proposed fuels. EPA further proposes that the initial values of specific fuel parameters for the two fuels be defined as shown in Table III–2, and that the values shown in Table III–2 be modified as the range of values covered by the complex model changes or as fuels with values beyond those shown below are certified for inclusion in the fungible fuel supply in the areas in question. The Agency also proposes to expand Table III–2 to include new parameters identified through vehicle testing or added to the complex model.

TABLE III–2.—FUEL PARAMETER VALUES FOR FUELS USED IN INTERACTIVE EFFECTS TESTING

Fuel parameter	Parameter value	
	High VOC	Low VOC
Sulfur, ppm	700	50
Benzene, vol percent	1.3	0.8
RVP, psi	8.4	7.0
90% distillation point, °F	350	280
MTBE, vol percent	8.25	15
Aromatics, vol percent	32.0	20
Olefins, vol percent	5.0	20

The manner in which test results from these fuels would be used to determine whether interactive effects are present is described in Section 6 below.

In order to maximize the accuracy and confidence in the results from a test program of the magnitude under consideration here it is good practice to ensure that systematic changes have not occurred during the course of testing which might overwhelm the fuel effects being measured. As a result, EPA proposes that the first of the fuels described above to be tested in any given vehicle be retested in that vehicle at the end of the test program. EPA requests comment on this additional testing requirement.

To better optimize the test program to the needs of the particular fuel parameter, the Administrator may approve a request to waive certain of the test fuel requirements proposed in this section. Any such waiver would have to be obtained in advance. A request for such a waiver should include an adequate justification for the requested change, including the rationale for the request and supporting data and information. Such a request must demonstrate the lack of a need to test all of the test fuels, and identify those fuels for which additional testing may be warranted. An example might be a petition that is merely extending the range of a parameter already included in the model. In this case, it may be possible for the petitioner to demonstrate to EPA that previous testing for the parameter in question demonstrated the lack of dilution or interactive effects, and therefore extensive testing for these purposes would provide little additional benefit. However, if these fuels are not tested, a greater amount of testing may be warranted on the candidate and candidate baseline fuels to establish the effect of the parameter with a greater degree of certainty. As a result, the fuel supplier may be able to justify to EPA that a test program which increases testing of the candidate and candidate baseline fuels and decreases testing of the dilution and interactive effects test fuels may be more appropriate than one in which all fuels are tested equally.

5. Determination of Parameter Dilution Effects

To determine whether parameter dilution effects are acceptable, EPA proposes that a linear interpolation of the parameter's emission effects between baseline and candidate fuel levels of the parameter in question be developed to determine the estimated effect of the fuel parameter on VOC and NOx emissions assuming a linear relationship between parameter levels and emission effects. The reduction in emissions achieved by the intermediate fuel would then be compared to the reduction in emissions projected from the linear interpolation for the parameter levels found in the intermediate fuel; this comparison would be performed separately for VOC and NOx emissions. The emission reductions associated with the intermediate fuel would be determined through vehicle testing unless the effects of the fuel parameter, at the level under consideration, could be determined using the complex model. (As discussed in Section III.B.4, the complex model, augmented with prior vehicle testing results, would be used to compensate for differences in other fuel parameters among the three fuels.)

If the reductions achieved by the intermediate fuel exceed those expected from the linear interpolation for both VOC and NOx emissions, then the fuel parameter would be considered to dilute in a favorable manner. If the upper 90 percent confidence limits for the emission effects of the parameter at the intermediate fuel concentration were less than the expected effects based on the linear interpolation for either VOC or NOx emissions, then the fuel parameter would be considered to dilute in an unfavorable manner. If the reductions achieved by the intermediate fuel were less than the expected effect based on the linear interpolation but the upper 90 percent confidence limit of the emission effects for the intermediate fuel were to exceed the expected effect for both VOC and NOx emissions, the dilution effects would be considered to

be indeterminate but acceptable given the inherent uncertainties associated with vehicle testing. The determination of the 90 percent confidence limits is described more fully in section III.D.2.b.

For fuel parameters already included in the complex model, however, EPA is concerned that the approach outlined above ignores the information incorporated in the complex model regarding the effect of that fuel parameter on emissions. EPA desires to include this information when evaluating the dilution effect of the fuel parameter in question and requests comments on procedures to accomplish this objective.

Toxics emissions are directly related to VOC emissions. Therefore, unfavorable VOC dilution effects would be expected to cause unfavorable dilution effects on toxics emissions. However, a parameter's effects on toxics emissions may not be due solely to its effect on VOC emissions. Therefore, EPA proposes that the portion of a parameter's toxics emission effects which cannot be attributed to VOC emission effects be assumed to behave in a linear manner when the parameter in question is diluted. For example, consider a parameter that would achieve a 10 percent toxics reduction while reducing VOC emissions by 6 percent. Six percentage points of the toxics reduction would be attributed to the effects of the parameter on VOC emissions while four percentage points would be attributed to independent effects of the parameter on toxics emissions. If the parameter were to show an unfavorable dilution effect such that at one-half the candidate fuel concentration, VOC emissions were reduced by only 1 percent, the projected linear VOC emission effect of the parameter at candidate fuel levels would be a 2 percent reduction. The corresponding projected linear toxics emission effect of the parameter at candidate fuel levels would be a 6 percent reduction [2 percent due to the VOC effect and 4 percent due to the independent effects of the parameter on toxics emissions). EPA requests comment on these proposals and on other means of treating parameters having unfavorable dilution effects.

6. Determination of Interactive Effects

The absence of interactive effects could be demonstrated by showing that the VOC and NOx emission effects of the affected fuel parameter did not change as other fuel parameters vary. To determine whether interactive effects exist and/or would be acceptable, EPA proposes that the observed emission effects of the affected fuel parameter in the candidate fuel (relative to the candidate-baseline fuel) be compared to the emission effects for the fuel parameter in the high and low emission fuels described in section III.B.4 for both VOC and NOx emissions. To determine the VOC and NOx emission reductions due to the fuel parameter in question in the high and low emission fuels, the emissions measured from these two fuels would be compared to the emissions predicted by the complex model (augmented as necessary by testing results for parameters other than the one in question) for these two fuels.

EPA is considering a number of different tests of the statistical significance of such interactive effects, based on the 90 percent confidence intervals for the observed emission reductions from the candidate, high, and low emission fuels, and [for fuel parameters already in the model) the information on this parameter already available. At this time, EPA proposes to base the emission reductions of the candidate fuel parameter on the smallest of the mean emission reductions (for each pollutant separately) found above in the three evaluations of the candidate fuel parameter. This would provide the greatest assurance that the emission reductions granted via the testing option would be achieved in-use. The Agency requests comments on this proposal.

The Agency recognizes that the emission reductions calculated from the high and low emission fuels could be confounded by differences between the complex model's correlations and the measured effects of the complex model parameters in the particular test program. Therefore, EPA proposes that fuel suppliers be permitted to test the high and low emission fuels without the fuel parameter in question instead of predicting these emissions using the complex model. EPA requests comment on this proposed flexibility. EPA also requests comment on whether the testing of the high and low emission fuels without the fuel parameter in question should be required (i.e., not optional), avoiding the need to use the complex model to predict these emissions.

The preceding discussion assumes that the interactive effects identified through testing cannot be traced to a specific cause. If the cause of the interactive effect can be identified, it may be appropriate to determine a greater beneficial augmentation due to the parameter in question than the smallest effect identified through the procedure above, as well as include an interactive term in the complex model. Therefore, EPA proposes that petitioners be permitted to test additional fuels to identify the cause of the interactive effect and the magnitude of the effect for representative in-use fuels (again subject to Agency approval regarding the appropriateness of the petitioner's definition of representative gasoline). EPA further proposes that petitioners be required to obtain approval from the Administrator for the proposed additional testing before beginning such testing. Petitioners would be permitted to claim larger benefits for the parameter in question based on the results of such tests, subject to the approval of the Administrator. EPA requests comment on this issue and on appropriate methods for determining the size of the augmentation granted in such cases.

EPA also recognizes that the fuels specified in Table III–2 are extreme in their compositions and properties. EPA anticipates that as experience is gained with the reformulated gasoline program, the definition of the high and low emitting fuels may warrant revision to more closely reflect the range of fuels included in the fungible supply of reformulated gasoline. In addition, EPA recognizes that the range of fuel properties in certain regions may be substantially smaller than the national range; therefore, the Agency may consider basing its definitions of the high and low-emitting fuels on such regional fuel property ranges for fuels that would be sold only in specific regions. EPA requests comment on the fuel property ranges specified in Table III–2, on the proposals outlined above for regional or national fuel property ranges, and on whether the benefits of regionally-based augmentations to the complex model would be large enough to justify to additional distributional, administrative, and record-keeping costs.

C. Vehicle Testing Procedures

For the reformulated gasoline program to achieve actual in-use reductions in fuel-related VOC and toxics emissions, certification test results must correlate with reductions in in-use emissions. No test procedure, however, is completely representative of all in-use conditions. The range of vehicle uses and operating conditions and the range of geographical and climatic conditions throughout the country prevent a single test procedure from being entirely representative. However, EPA has developed or is in the process of developing test procedures which attempt to reflect a broad spectrum of in-use vehicle operating conditions. These test

procedures have been used in part to develop the emission factors in EPA's MOBILE4.1 emission model, which in turn has been used to develop the modeling option for fuel certification. To maintain consistency between the certification methods, these test procedures are also proposed below for fuel certification by vehicle testing.

As discussed in section III.A.4., EPA reserves the right to evaluate the quality of testing data submitted in support of petitions to augment the models, to reject test data or analyses submitted to the Agency if such data or analyses are found to be insufficient, flawed, or otherwise deficient, and to include test data or analyses from other sources when evaluating the proposed augmentation to the model.

1. Statistical Analysis Requirements

EPA proposes to base its determination of the emission effects for the parameter in question on only the mean emission effects from vehicle testing. EPA further proposes to specify the test fleet size, test fleet makeup, and number of tests to facilitate the accuracy of the mean emission effects. Given this level of specification for vehicle testing programs, EPA does not believe that additional statistical criteria need to be applied. This proposal is consistent with the use of the mean emission effects from test data to develop the simple model and is also consistent with the process expected to be used to develop the complex model.

2. High Ozone Season Exhaust Emission Testing

EPA proposes that exhaust emissions be measured through the use of the Federal Test Procedure (FTP) for new vehicle certification (subpart B of part 86 of the Code of Federal Regulations) with modifications to allow vehicle preconditioning between tests on different fuels and to provide for benzene, formaldehyde, acetaldehyde, and 1,3-butadiene sampling and analysis. POM, the fifth toxic regulated, is not a measurable quantity since there are many different compounds included in the term. A detailed discussion of this proposal is contained in section V.B.1.a. of the NPRM.

3. High Ozone Season Evaporative and Running Loss Emission Testing

EPA also proposes that the FTP, with some modifications, be used for the measurement of evaporative emissions. This test procedure, however, is currently being revised. The proposed revision was published at 55 FR 1914 on January 19, 1990 and the final procedure is projected to be issued in early 1992. The proposed procedure would improve the accuracy and scope of the evaporative emission test and incorporate a running loss emission test. EPA also proposes that the procedure be modified for reformulated gasoline vehicle testing to provide for the sampling and analysis of benzene emissions and to include a seven-day diurnal cycle. These modifications were discussed in section V.B.1.b. of the NPRM, and the reader is referred to that discussion for more detail.

As discussed in the section on modeling above, EPA proposes to use average temperatures for the ten highest ozone days from June through September in the 25 serious and worse ozone non-attainment areas to determine the temperatures to be used in evaporative and running loss emission testing. Using the highest temperatures experienced on ozone non-attainment days would overstate the magnitude of evaporative emissions experienced in-use and therefore would distort and reduce the in-use effectiveness of emission control strategies. For Class C areas, the average low and average high temperatures for the ten highest ozone days were 71.6 °F and 91.6 °F, respectively; for Class B areas, the corresponding temperatures were 69.4 °F and 94.0 °F. The differences between Class B and Class C temperatures are not large enough to alter evaporative and running loss emissions significantly; EPA therefore proposes that the Class C temperatures be used in evaporative and running loss emission testing.

4. High Ozone Season Refueling Emission Testing

There is currently no Federal Test Procedure for refueling emissions. However, in 1987 a test procedure for certifying onboard refueling controls was proposed by EPA (52 FR 31162, August 19, 1987). EPA proposes that the proposed version of the onboard test procedure be utilized for refueling emission measurement. EPA further proposes that if procedures are promulgated to certify onboard refueling controls that are different from the proposed procedures, then the modified version would apply. Because refueling emissions' contribution to total baseline emissions is low, and because refueling emissions are more easily modeled than other types of emissions, the Agency considers it unlikely that fuel suppliers would test for refueling emissions.

Because certain areas where reformulated gasoline will be sold have Stage II refueling controls, and all moderate and worse ozone nonattainment areas will have Stage II by 1995, EPA proposes that the actual emission result from any refueling testing performed be adjusted downward by 86 percent (see section II discussion of Stage II effectiveness). In addition, the air toxics sampling requirements proposed for evaporative and running loss emissions are proposed for refueling emissions, as well.

5. Fuel Parameter Measurement Precision

One source of error in testing programs as described in this section is uncertainty in the composition and properties of the fuels being tested. Since fuel testing is far less expensive than vehicle emission testing, EPA believes it is highly cost effective to measure the fuels' properties multiple times to reduce the uncertainty in projected emissions due to uncertainty in fuel composition. As a result, EPA proposes that, at minimum, the properties defined in Table III–1 be measured a sufficient number of times to reduce the 95 percent confidence interval, as calculated using a standard t-test, to the tolerances defined in Table III–3.

TABLE III–3.—FUEL PARAMETER MEASUREMENT TOLERANCES FOR FUEL CERTIFICATION BY VEHICLE TESTING

Parameter	Measurement tolerance (95% confidence interval)
API Gravity, °API	±0.1
Sulfur, ppm	±5
Benzene, vol percent	±0.05
RVP, psi	±0.08
Octane, (R+M)/2	±0.1
IBP, °F	None
10%, °F	±3
50%, °F	±3
90%, °F	±3
End Point, °F	±5
Total oxygenates, vol percent	±0.2
Total aromatics, vol percent	±0.5
Total olefins, vol percent	±0.3
Total saturates, vol percent	±1.0

EPA recognizes that fuels used in vehicle testing may differ significantly in composition in terms of specific chemical species while appearing to be identically composed in terms of broad chemical families. The Agency further recognizes that such compositional differences may result in emission effects, and that such differences may confound or be used to "game" testing programs. For example, the candidate fuel might have a hydrocarbon content with naturally low emissions while the candidate-baseline fuel might have a hydrocarbon content with naturally high emissions, independent of the parameter

in question. In such a case, emission effects determined through testing would not be the sole result of the parameter in question. Therefore, EPA proposes that the composition of fuels used in vehicle testing be fully characterized by gas chromatography or equivalent analysis methods (following the methodology used in the Auto/Oil study) and the results submitted to EPA. Petitioners would have the option of either submitting these results for approval prior to beginning vehicle testing or including these results in their completed petition. However, in either case, EPA would retain the authority to require modifications to the test fuels to ensure that their compositions are appropriate. Hence petitioners electing not to obtain prior approval of their fuel compositions would assume the risk that EPA may require modifications to the petitioner's test fuels upon receipt of the completed petition, thereby invalidating any testing the petitioner may have completed. The Agency requests comment on this proposal.

D. Vehicle Selection

General Requirements

Section 211(k)(3) of the CAA specifies that the required reductions in VOC and toxics emissions are to be measured from the emissions of those pollutants from "baseline vehicles." Section 211(k)(10)(A) defines baseline vehicles as representative model year 1990 (MY-90) vehicles. In the interest of simplifying test fleet vehicle selection, EPA proposes to allow the use of not only MY-90 vehicles, but also closed-loop MY-89 through MY-91 vehicles which are technologically equivalent (e.g., have adaptive learning) and are representative of MY-90 vehicles in terms of any vehicle characteristics which could affect emission performance and behavior. In addition, EPA requests comments on an option where 1985 through 1988 model year vehicles could be substituted for their 1990 model year counterpart if the 1990 version had an engine and exhaust system that was not different from the earlier model year versions in ways that could affect the emission performance of the vehicles (i.e., if the model's EPA emission certification data were "carried over" through the 1990 model year). This option would increase the availability of high-emitting test vehicles and thereby reduce the cost of vehicle test programs. One problem with this option is the possibility that "running changes" (changes in the engine or exhaust system which EPA considers, for vehicle certification purposes, not to affect emissions) may have occurred that affect the vehicle's response to fuel modification. EPA requests comments on the types of running changes which would be acceptable under this option and those which should disqualify a vehicle from the test program. Furthermore, EPA is proposing that heavy-duty gasoline vehicles need not be included in the test fleet. Given the overwhelming predominance of light-duty vehicles and light-duty trucks in the gasoline vehicle market, inclusion of heavy-duty vehicles in the test fleet would have an insignificant effect on the result of the vehicle test programs. Therefore, the added testing burden associated with heavy-duty engine/vehicle testing is not warranted.

Another consideration in vehicle selection is the condition of the test vehicles. EPA believes that Congress intended that the required VOC and toxics emission reductions be achieved not only at certification but also in-use. In order for this to be true, the test vehicles' condition should be representative of that of in-use vehicles. Therefore, for the purposes of the reformulated gasoline program, representative vehicles would be defined as having not only a technology mix representative of the 1990 model year fleet (as described below) but also emission performance typical of the in-use emission performance of 1990 vehicles over their lifetime. In addition, such vehicles should have accumulated a minimum of 4,000 miles of service to assure break-in of engine and emission control system components. No further mileage accumulation requirements are being proposed at this time; however, EPA requests comment on the appropriateness of additional mileage accumulation requirements.

While the goal is to test vehicles with emissions representative of in-use 1990 vehicle emissions, the actual in-use emission performance of 1990 model year vehicles over their time in service can only be predicted. Based on information in EPA's emission factors database [20] and MOBILE4.1, exhaust VOC emissions vary widely across the in-use fleet, with some vehicles emitting at levels more than 20 times the standard. Evaporative and running loss emissions also vary significantly, apparently due to the effects of component failure, poor maintenance, or tampering. Refueling emissions, which were not controlled on 1990 MY vehicles, are more a function of ambient conditions and fuel tank size than vehicle type. NOx emissions tend to vary much less than VOC emissions and essentially match the proportion of vehicles in each emitter group. Since exhaust CO and toxics emissions for the most part mirror exhaust VOC emissions, representative CO and toxics distributions should be obtained by obtaining a representative VOC distribution. EPA proposes that exhaust VOC emission performance be the primary basis for selecting vehicles for the test fleet. The Agency also proposes that evaporative emission performance be a secondary basis, which, as discussed below, would be handled through disabling key components of the evaporative systems on vehicles obtained through screening for exhaust emission performance. As discussed below, EPA proposes that the relative number of vehicles tested for the various emission types (exhaust, evaporative, running loss, and refueling) and the number of vehicles tested with various emission performance levels shall be based in large part on the contribution of each category to in-use emissions as estimated using MOBILE4.1 with an enhanced I/M program as defined in Section II. These estimates may change upon the introduction or update of the complex model.

2. Vehicle Selection Criteria for Exhaust Emission Testing

a. *Categorizing test vehicles by emission performance.* As discussed in the NPRM, it is the goal of EPA that the test fleet for emission testing have an emission performance which is representative of in-use emissions of 1990 MY vehicles. As a result, EPA proposed in the NPRM that the test fleet be divided into three exhaust VOC emitter subfleets (normal, high, and very-high and super). While EPA did not have information at that time demonstrating that vehicles from the different emitter groups would respond differently to fuel changes, EPA recognized that the potential existed and hoped that information would be forthcoming to support such a position. However, since the time of the NPRM, such information has not been forthcoming. Some data from the Auto/Oil test program as well as data from EPA's test program at ATL suggest that high, very-high, and super emitting vehicles may respond differently to some fuel changes than normal emitting vehicles, but this data does not allow for distinguishing between high, very-high, and super emitting vehicles. As a result, EPA proposes that the test fleet be divided into two exhaust VOC emitter subfleets consisting of normal emitters and all higher emitting vehicles. Based

[20] EPA's Emission Factors Database on MICRO in the Michigan Terminal System (MTS) computer network system.

on the assumptions made for the simple model and the consequent results from MOBILE4.1, EPA projects that the representation and in-use emission impact of each emitter group would be as expressed in Table III–4. EPA requests comments on this approach for determining test fleet composition.

TABLE III–4.—EMITTER GROUPS AND IN-USE EMISSIONS

Emitter group	Fraction of in-use fleet	Emission fraction	
		VOCs	NOx
Normal: <2×THC Standard (<0.82 g/mi)	0.82	0.50	0.81
All High or worse: ≥2×THC Standard (≥0.82 g/mi)	0.18	0.50	0.19

In order to simplify the process of obtaining a test fleet while still maintaining statistical confidence in the test results and assuring representativeness of the test fleet, EPA is considering and requests comment on a second option for test vehicle selection. Under this option, the test vehicles would not be subdivided into emitter classes, but the emission performance of the test fleet as a whole would be required to be representative of the in-use fleet. Specifically, under this option, EPA proposes that the test fleet have an average VOC (NMHC) emission rate of between 0.4 and 0.6 g/mi on the indolene test fuel. In this way, the test fleet would have an average emission rate generally representative of the average in-use exhaust emission rate of 0.46 g/mi (NMHC) for 1990 MY vehicles as predicted by MOBILE4.1 when the same inspection and maintenance program assumptions are made as were discussed in Section II.A.3 for the simple model. Under this option exhaust VOC emission rates for all vehicles in the test fleet would not exceed 1.6 g/mi. This restriction would reduce the potential that test programs would be based on unusual test fleets composed primarily of very clean vehicles with a small number of extremely high emitting vehicles (super emitters) to arrive at the average in-use emission rate. Since no fixed number of higher emitters and potentially fewer higher emitters could be tested under this option, it offers more flexibility for selecting vehicles for a test fleet than the option proposed above in which the test fleet would be subdivided into two emitter groups.

At the same time, EPA believes that this option may provide greater statistical confidence in the test results than the option proposed above, since the data from all vehicles can be treated as a single sample instead of dividing the test fleet into separate subfleets. This assumes, however that the two emitter groups do not respond in a substantially different manner to fuel changes. If higher emitting vehicles do respond differently to fuel changes, then there is the chance that some emission effects peculiar to vehicles with these emission performance levels may not be discovered. While EPA acknowledges this limitation, the data currently available is not adequate to draw a clear distinction between the emission effects on normal and higher emitting vehicles for the fuel parameters tested to date. Furthermore, the additional burden on test fleet selection caused by requiring the testing of a large number of higher emitting vehicles may be less warranted if more stringent inspection and maintenance program requirements are imposed than those assumed for this rulemaking, since higher emitters would be less likely to be found in the in-use fleet. EPA requests comments on whether higher emitters are likely to respond in a substantially different manner to fuel changes than normal emitters and whether this option would be more appropriate than the option proposed above for determining test fleet composition.

Requiring a test fleet with a certain emission performance distribution necessitates that vehicles be obtained which have the desired emission performance. Vehicles with such emission characteristics could be obtained either directly from the in-use fleet or through intentional disablement of emission control systems of normal emitting vehicles. EPA proposes that vehicles for reformulated gasoline testing be obtained by randomly selecting vehicles with the desired emission performance from the in-use fleet and testing those vehicles in their as-received condition. This method would help assure that the vehicles selected for testing would have emission control problems which would be truly representative of in-use emission problems.

However, the Agency also requests comment on an option whereby normal emitting vehicles would be intentionally disabled to produce higher emitting vehicles (high, very-high, and/or super emitting vehicles). Such an option may be able to provide some benefits in terms of reduced test variability, thereby increasing the statistical confidence in the test results. However, the Agency has concerns that it may be difficult to disable vehicles in a manner that would be representative of in-use vehicles. EPA requests comment under this option on ways to ensure that intentionally-disabled vehicles accurately reflect the emission effects of fuel changes in the in-use fleet.

Regardless of the vehicle selection methodology chosen, prescreening of test vehicles' emission performance would be necessary to place them in the appropriate emitter group. EPA proposes that prescreening tests be conducted using EPA vehicle certification fuel (Indolene) over the Federal Test Procedure since these were the conditions which were used to generate the data for the in-use emission distribution. EPA also proposes allowing prescreening tests to be performed using the Clean Air Act baseline gasoline and/or the I/M 240 test procedure. Results from such tests can be correlated with FTP test results with Indolene (as outlined in proposed § 80.62 of the accompanying regulations).

b. *Technology representation of the emitter group subfleets.* The Clean Air Act requires that representative model year 1990 vehicles achieve an emissions reduction when using reformulated gasoline compared to emissions when using a baseline gasoline. There were various engine and exhaust system technologies in use in 1990. To ensure that a fuel achieves the required emissions reductions when using reformulated gasoline, the vehicle technologies which should govern the selection of vehicles for the test fleet are those which are likely to impact the emission performance of a fuel in a vehicle. EPA proposed a number of options in the NPRM for how best to determine the technology representation in each emitter group sub-fleet, and the reader is referred to the NPRM for discussion of the various options. At this time, EPA proposes the option whereby the manufacturer is specified along with the four vehicle technology categories listed in Table III–5. This option provides greater assurance that the test fleet accurately represents the in-use fleet than do the other options discussed in the NPRM. In addition, EPA proposes that approximately 30 percent of the vehicles selected for each sub-fleet from Table III–5 be light-duty trucks (LDTs) to reflect the representation of LDTs in the light-duty vehicle fleet. EPA believes that the benefits of providing flexibility in determining the selection of LDTs for the test fleet outweigh the benefits of accuracy achieved by specifying which vehicles from Table III–5 should be LDTs.

EPA is evaluating whether the technology classifications used in Table III–5 are necessary and appropriate and whether other classification methods should be added or substituted. EPA requests comment on the proposed categories and technological distinctions used and whether others would be more appropriate.

Vehicles would be added to the test subfleet(s) in the order in which they appear in the table. If more vehicles would be included in a test subfleet than are represented in Table III–5, then the additional vehicles would be selected starting over with vehicle number one.

TABLE III–5.—TEST VEHICLE CHARACTERISTICS

Vehicle No.	Fuel system	Catalyst	Air injection	EGR	Tech. group	Manufacturer
1	Multi	3W	No Air	EGR	1	GM.
2	Multi	3W	No Air	NoEGR	2	Ford.
3	TBI	3W	No Air	EGR	3	GM.
4	Multi	3W	No Air	EGR	1	Honda.
5	Multi	3W+OX	Air	EGR	4	Ford.
6	Multi	3W	Air	EGR	5	Toyota.
7	Multi	3W	No Air	NoEGR	2	GM.
8	TBI	3W	No Air	EGR	3	Chrysler.
9	Multi	3W	No Air	EGR	1	Ford.
10	TBI	3W	Air	EGR	6	GM.
11	TBI	3W+OX	Air	EGR	7	Chrysler.
12	TBI	3W	No Air	NoEGR	8	Honda.
13	Multi	3W	No Air	EGR	1	Toyota.
14	Multi	3W	No Air	NoEGR	2	Chrysler.
15	TBI	3W	No Air	EGR	3	Ford.
16	Carb	3W+OX	Air	EGR	9	Toyota.
17	Multi	3W	No Air	EGR	1	GM.
18	Multi	3W+OX	Air	EGR	4	GM.
19	Multi	3W	No Air	EGR	1	Nissan.
20	Multi	3W	No Air	NoEGR	2	Mazda.
21	TBI	3W	No Air	EGR	3	GM.

It must be pointed out that the vehicle technology distribution discussed above would apply to each of the emitter group subfleets separately. Failure to have such a requirement could result in each subfleet being composed of vehicles which would not be representative of the in-use fleet as a whole, and thereby allow gaming of the test program. The results from each subfleet would be used independently of each other, which could result in inappropriate test results. However, if EPA adopts the option in which the test fleet is not divided into emitter group subfleets, then the vehicle technology distribution discussed above would apply to the test fleet as a whole.

c. *Number of test vehicles.* Exhaust emissions represent the emission category most likely to be tested due to the number of fuel parameters which may affect exhaust emissions. Furthermore, a much greater variability in the fuel effects would be expected with exhaust emissions than with the other emission types due to the complexity of combustion chemistry and engine behavior. As a result, statistical uncertainty in the exhaust emission reduction estimate would have the greatest impact on the uncertainty in the overall test result. For this reason, an adequate number of vehicles should be tested for their exhaust emissions. In order to keep statistical uncertainty reasonably low while at the same time limiting the test fleet size to reasonable levels, EPA proposes that the test fleet for exhaust emissions consist of a minimum of 20 vehicles. The basis for a 20-vehicle test fleet is discussed more fully below.

In addition, the Agency proposes that replicate testing be performed and reported to verify that the emission results obtained in the first set of tests are repeatable. The following replicate testing requirements would apply to emissions of each pollutant listed in Table III–6 and would apply independently to each vehicle tested, in addition to the requirements outlined elsewhere regarding vehicle testing. In recognition of the costly nature of testing for toxic emissions (adding toxics measurement increases the cost of a single test by roughly 50 percent), each vehicle-fuel combination would only be tested once for toxics. EPA believes that this may not unduly reduce confidence in the effect of the given fuel parameter on toxics emissions, because toxic emissions are dominated by benzene emissions, which appear to be well understood and to be primarily a function of fuel benzene and non-benzene aromatics and total VOC emissions.

Following replicate testing, the average of the two test results shall be used if emissions for the second test differ from emissions for the first test by less than the percentage shown in Table III–6. If emissions for the second test differ from emissions for the first test by more than the percentage in Table III–6, then a third test shall be performed. If the results of one of the three tests differs by more than the percentage in Table III–6 from the average of the other two, then the average of the two closest test results shall be used. If not, then the average of all three tests shall be used. If a third test was necessary because of variability in VOC or NOx emissions, then toxics would also be measured during this third test and the results averaged with the first toxics measurement unless the VOC and NOx results from the first test were discarded, in which case only the results from the third test would be used.

TABLE III–6.—REPLICATE TESTING REQUIREMENTS

Pollutant	Allowable percentage difference
VOC	10
NOx	10

EPA further proposes that the distribution of the test fleet among the emitter groups be defined so as to minimize statistical uncertainty. This is most straightforward for VOC emissions, since the emitter groups were based on VOC emission performance. (NOx emission levels in the in-use fleet

tend to follow a normal distribution making it more difficult to distinguish unique groups within the in-use fleet.) Since toxics emissions are strongly dependent on VOC emissions, EPA is reasonably confident that the uncertainty in toxics emissions would be minimized when the uncertainty in VOC emissions are minimized. In the case of NOx emissions, however, this is not necessarily the case. Emission changes often differ between VOC and NOx emissions, and this is expected to translate over to the effect of fuel changes on emissions as well. Nevertheless, statistical uncertainty in the measurement of fuel changes may not differ significantly between VOC and NOx emissions. At this time, EPA can not be certain that optimizing the test fleet to minimize the uncertainty in VOC emission measurement will or will not minimize the uncertainty for NOx emissions. Due to this lack of certainty on how best to optimize the test fleet for statistical confidence in NOx emissions, EPA proposes to focus on VOC emissions when distributing the test fleet among the emitter groups.

The uncertainty associated with VOC emissions is quite complex. The EF database and additional testing by EPA at ATL indicate that higher emitting vehicles tend to have significantly greater variability in emission effects than normal emitting vehicles. As such, in order to minimize statistical uncertainty, a proportionately greater number of higher emitting vehicles (relative to such vehicles' contributions to the in-use emissions inventory) should be tested than normal emitting vehicles. Based on EPA's experience during the ATL test program, however, it appears that a substantial portion of the variability in the emission performance of not only high emitting vehicles, but also normal emitting vehicles is due to vehicles exhibiting trends in emissions in each succeeding test unrelated to fuel changes or to vehicles with highly unstable emission performance, even when tested on the same fuel. EPA believes that by stabilizing vehicle performance before testing for emission effects, the variability of both normal emitting and higher emitting vehicles would be reduced to levels below those observed during the EF and ATL test programs without significantly affecting the representativeness of the test vehicles to those in the in-use fleet. Further, EPA believes that such pre-screening and stabilization would lower the variability of higher emitting vehicles to the level of variability for normal emitting vehicles. Since the contribution of normal emitting and higher emitting vehicles to total VOC emissions is approximately equal (as shown in Table III–4), EPA believes that vehicle testing programs should include equal numbers of normal and higher emitting vehicles. This emissions breakdown is based on the definition of enhanced I/M described in section II.A.3.v. above. Since these independent test programs will be used to augment the complex model and not the simple model, the distribution between normal and higher emitters here should be consistent with the emissions distribution utilized in developing the complex model later this year. Therefore, should EPA propose a different emissions distribution for the complex model, EPA would also propose that this new distribution also be utilized for testing purposes.

EPA further proposes that the test fleet used in vehicle testing consist of no fewer than 20 cars, distributed as discussed above between normal and higher emitting vehicles. The initial Auto/Oil test program (as reported in Technical Bulletin #1), which consisted of 20 vehicles, achieved 95 percent confidence intervals for emission effects of approximately plus or minus two percentage points. This level of statistical confidence was achieved by testing a large number of fuels (i.e., 8 pairs of fuels measuring the same emissions effect), testing only normal emitting vehicles, and including only low-mileage, properly maintained vehicles in their test fleet.

Since the proposed test program outlined in this section would require testing on fewer fuels, and would require the inclusion of vehicles with a larger range of emission performance and potentially greater emissions variability, EPA anticipates that such test programs would not be able to maintain equivalent levels of statistical confidence. However, by implementing programs to stabilize the emission performance of test vehicles prior to including them in the test program, EPA believes that the standard deviation in the test results can approach those achieved in the Auto/Oil test program. Since the size of emission benefits identified through vehicle testing could easily be as small as five percent, a test fleet of 20 vehicles should be maintained to reduce the relative impact of sampling uncertainty to acceptable levels. EPA therefore proposes this test fleet composition and further proposes that larger test fleets have proportionately larger emitter group sub-fleet sizes.

To improve the statistical power of test program results, EPA proposes and requests comment on an option whereby NOx emission effects for all vehicles included in a test program would be analyzed as a single population regardless of the VOC emission level of the vehicles. Given that the effect of fuel changes on NOx emissions may not be significantly different between vehicles from different VOC emitter groups, this may be a more appropriate means of analyzing the NOx data. While it will not improve the statistical confidence in the VOC emissions result, it should improve the statistical confidence in the NOx emission result. Under the option discussed in section 2.a. whereby test programs would consist of a set of vehicles with an average VOC emission rate of 0.4–0.6 grams/mile, however, VOC emission effects would be analyzed as a single population to improve the statistical confidence in the VOC test results as well as the NOx test results.

As discussed above, EPA's ATL test program indicated that for some vehicles, emissions decreased with each subsequent test, independent of fuel changes. This trend appears to contribute significantly to the high degree of variability found in this test program. Therefore, EPA proposes and requests comment on the following option to improve the confidence of test results. Under this option, all vehicles would be tested in their in-use condition and would be required to demonstrate consistent exhaust emission performance, using a reference fuel that includes deposit-control additives, before being tested to determine emission effects of fuel parameters.

An alternative solution to this problem might be to intentionally disable elements of normal-emitting vehicles' emission control system to produce higher emitting vehicles that would behave more consistently. However, the Agency is concerned that intentionally-disabled vehicles may not adequately reflect the emission effects of fuel modifications on in-use high and very high/super emitters. A final technique considered by the Agency to reduce test result variability involves increasing the required size of the test fleet. EPA requests comment on these and other techniques to reduce the variability of emission effects determined through vehicle testing and on the appropriateness of the levels of variability permitted.

As data regarding the frequency and emission effects of specific vehicle problems becomes available, the Administrator may choose to modify the required minimum composition of the test fleet to assure the inclusion of

representative high and super-emitting vehicles. The Administrator may also choose to modify the required minimum test fleet composition if the intentional disablement approach is chosen. These issues will be re-examined during the rulemaking process for the complex model.

To better optimize the test program to the needs of the particular fuel parameter, the Administrator may approve a request to waive certain of the requirements proposed in this section, specifically those relating to the number of test vehicles and their distribution among the emitter groups. Any such waiver would have to be obtained in advance. A request for such a waiver should include an adequate justification for the requested change, including the rationale for the request and supporting data and information.

With regard to the emitter group distribution, the petitioner should demonstrate that the contribution of normal and higher emitting vehicles to the total in-use emission inventory is different than that shown in Table III–4.

d. *Maximum required size of the test program.* In order to limit the testing burden, while at the same time maintaining the greatest degree of flexibility and permitting the greatest degree of optimization of the test program for the parameter in question, EPA has proposed in a number of places throughout Section III that if the petitioner can provide EPA with a rationale and supporting data they be permitted to deviate from the requirements otherwise specified. As long as EPA can be assured that equivalent statistical confidence is being achieved in the test program, the overall test burden can be lower than that specified, and in fact EPA anticipates that requests to optimize and reduce the overall test burden will comprise the majority of the requests to deviate from the specified requirements. However, in some cases, the petitioner may opt to take on a greater testing burden in order to better evaluate the fuel parameter or additive. While EPA will not prohibit a petitioner from taking on a greater testing burden, EPA proposes that in no case are more than 550 valid vehicle tests of exhaust emissions to be required of the petitioner by EPA to determine the exhaust emission effect. However, if the test variability is so high that little confidence could otherwise be placed in the test results, then EPA proposes that we retain the flexibility to increase the maximum required number of tests by 100. If reasonable confidence in the results from a test program of the magnitude being considered here is to be achieved, the standard deviation about the mean percent change in emissions between the candidate and candidate baseline fuels for the various vehicles in the test fleet should be less than 15 percentage points (e.g., if the mean measured effect was a 10 percent reduction, one standard deviation would consist of a range in the percent reduction of from −5 to 25). If the two optional fuels are tested, then the above calculation would be performed for both the low emission fuel and the high emission fuel, as well as the candidate baseline fuel. Separate standard deviations for VOC and NO_x would be calculated for each of the three fuel pairs. The three standard deviations for each pollutant would then be averaged for comparison with the 15.0 percentage point limit.

Testing performed under the Auto/Oil test program showed a standard deviation of 12–13 percentage points, so a limit of 15 percentage points should be readily achievable.[21] Without any attempt to reduce testing variability (i.e., by pre-testing on a standard baseline fuel), EPA found standard deviations ranging from 15 to 18 percentage points in its in-use emission factors test program, where the vehicles are found in all degrees of maintenance.

Since applying a limit on the maximum standard deviation separately to the variability in both VOC and NO_x emissions could result in the invalidation of all of the results from a test program even though the standard deviation for only one of the pollutants is marginally above the limit, EPA proposes and requests comment on a requirement that standard deviations for VOC and NO_x be averaged together and be less than 15 percentage points. EPA further proposes that for each test for which all pollutants, including toxics, are measured, the maximum number of required tests would be reduced by four sevenths of a test (rounded to the nearest whole number of tests) to take into account the increased cost associated with measurement of toxics emissions.

The maximum number of tests described above is roughly equivalent to those involved with a 20 vehicle test program with three measurements of VOC and NO_x emissions and two measurements of toxics per fuel-vehicle combination on a total of six test fuels (the two optional fuels described in this section could increase this number to eight). As indicated earlier, EPA believes that statistically valid results can be achieved within these testing limits. EPA is also committed to keeping these test costs below $1 million (in today's dollars) insofar as the above statistical considerations can be satisfied. EPA believes the above test limits would do so. EPA requests comments on both the statistical validity and cost of these test limits.

3. Vehicle Selection Criteria for Evaporative and Running Loss Emission Testing

a. *In-use emission performance.* In order to ensure that test vehicles have evaporative and running loss emission performance typical of the in-use emission performance of 1990 vehicles over their lifetime, EPA proposes that the test fleet include not only vehicles which have normal evaporative and running loss emissions, but also vehicles having high evaporative and running loss emissions. Since the causes of high evaporative and running loss emissions are far fewer and far better understood than those of exhaust emissions, obtaining high emitters from the in-use fleet would not be necessary to develop a representative test fleet. EPA therefore proposes that in-use high emitters need not be obtained unless the Agency later finds them necessary to better represent in-use emissions. Instead, EPA proposes that high emitters may be obtained through intentional disablement of the evaporative systems of normal emitting vehicles. This approach would permit vehicles selected for evaporative and refueling emission testing that have normal emissions to be the same ones that are tested as high emitters following disablement of their emission control systems. The disablements would be those which are representative of the evaporative emission control problems of tampered and poorly maintained vehicles in the in-use fleet. These emission control problems primarily involve inadequate purge of the evaporative emission canister and missing or defective gas caps. The Agency proposes that these problems be modeled by disconnecting the canister and removing the gas cap.

The proportion of "fail" vehicles with these intentional disablements would reflect the relative emission contribution of vehicles with these two emission control problems to the in-use emission inventory assuming an operative enhanced I/M program. At the present time EPA proposes that when testing vehicles in a "fail" condition, 25 percent of the test vehicles have their canisters

[21] Memorandum: "Vehicle Exhaust Testing Standard Deviations," From Steve Mayotte, Chemical Engineer, Regulation Development and Support Division, to Richard A. Rykowski, Senior Project Manager, Regulation Development and Support Division, March 11, 1992.

disconnected and 75 percent have their gas caps removed. While 42 percent of in-use "fail" vehicles would be expected to be disabled in both manners, emissions from such vehicles are not significantly greater than for vehicles with only their gas caps removed.

As an alternative to testing both properly operating and disabled vehicles as described above, EPA also proposes that testing of only normal emitting vehicles be permitted, with the emissions of the high emitters modeled. Evaporative and running loss emissions are fairly well understood, especially if they are uncontrolled as is the case if the evaporative canister is removed and/or if the gas cap is removed. As a result, the testing burden could be significantly reduced if emissions from these vehicles were modeled instead.

b. *Vehicle technology.* As discussed in the NPRM, EPA proposes that vehicles selected for exhaust emission testing should be adequate to represent evaporative emission control technology as well.

c. *Number of test vehicles.* As discussed in the NPRM, while it is important that evaporative and running loss emissions be determined with a high degree of certainty, the variance in emission results with these emissions is expected to be low since the relationship between these emissions and their causes is relatively simple, well-behaved, and consistent. As a result, fewer vehicles need to be tested for such emissions than for exhaust emissions to achieve comparable confidence intervals. Therefore, EPA proposes that a minimum of 10 normal emitters be tested. These vehicles are to be the first 10 vehicles listed in Table III–5. If "fail" vehicles were to be tested, then the same 10 vehicles would also be tested in a disabled condition according to the proportions discussed in section a. above.

4. Vehicle Selection Criteria for Refueling Emission Testing

EPA proposes that vehicles for refueling emission testing be selected from the test fleet used for exhaust emission testing, and that just the first five vehicles listed in Table III–5 be considered adequate. The relationship between refueling emissions and their causes is also very simple, well-behaved, and consistent from vehicle to vehicle. As a result, fewer vehicles need to be tested for such emissions than for other emission types to achieve comparable confidence intervals. For additional discussion of vehicle selection criteria for refueling emission testing, the reader is referred to section V.C.4 of the NPRM (56 FR 31201).

E. Use of Test Results in Fuel Certification

The manner in which the test data is to be analyzed should be consistent with the goal that the emission benefits from reformulated gasoline be realized in-use. Therefore, EPA proposes that for each pollutant, augmentation of the models with vehicle testing results reflect (1) an appropriate vehicle technology distribution and (2) the contribution of each category of emissions to total vehicle emissions. The vehicle selection criteria discussed in the previous section are intended to provide test data which reflect an appropriate technology distribution (as outlined in Table III–5).

In order to weight appropriately the contribution of each emission category to total vehicle emissions, EPA proposes the use of the emission category weightings used in EPA's MOBILE4.1 model to weight all of the different emission categories for use with the testing option. These weightings represent the Agency's most complete and accurate estimation of the relative contribution of each emission category to in-use emissions and have been used to determine baseline emissions. The thirteen different categories for both VOC and toxics emissions include: normal exhaust VOC emitter, high exhaust VOC emitter, and very-high/super exhaust VOC emitter; pass, purge fail, and pressure fail for hot soak, diurnal, and running loss; and refueling. The three NOx emission categories include normal exhaust VOC emitter, high exhaust VOC emitter, and very-high/super exhaust VOC emitter.

EPA proposes that the following method be used to determine a fuel's total emission effects for fuel certification. First, the emission reduction in each emission category due to the parameter in question would be determined separately for each pollutant through vehicle testing. In order to accomplish this, the test data would be manipulated in the following manner separately for each fuel tested.

For exhaust emissions, EPA proposes that: (1) an average emission rate be determined separately for the vehicles within each emitter class within each of the applicable vehicle technology groups on each fuel and that these average emission rates be used to calculate the average percent reduction in emissions for each technology/emitter group. EPA proposes that these percent reductions be weighted together based on the sales contribution of each technology group to the 1990 fleet. Furthermore, EPA proposes that for normal emitters the percent reductions of each technology group also be weighted based upon the average base emission rate of each of the technology groups, and that these emission rates be those which have been determined by EPA through testing on Indolene in EPA's emission factor (EF) test program. The EF data base does not contain information on toxic emissions. However, since exhaust toxic emissions tend to be roughly proportional to exhaust VOC emissions, the weightings developed for VOC emissions are assumed to also be valid for toxic emissions. A similar emissions weighting technique, though technically more accurate, is not feasible for high or very high and super emitting vehicles at this time because of insufficient data to distinguish the average emission rates among the vehicle technology groups. The sales fractions, average emission rates, and overall weighting factors for each of the nine vehicle technology groups for normal emitting vehicles are shown in Table III–6. If one or more of the technology groups is not represented in the test fleet, the weighting factors for the technology groups which are represented in the test fleet must be renormalized to total 1.0.

TABLE III–6.—VEHICLE TECHNOLOGY GROUP WEIGHTING FACTORS

Tech group	Sales [1] fraction	Normal exhaust emission rates		Normal vehicle weightings	
		VOC	NOx	VOC and toxics	NOx *
1	0.323	0.278	0.519	0.336	0.300
2	0.210	0.228	0.570	0.180	0.215
3	0.209	0.230	0.479	0.180	0.179
4	0.105	0.435	0.918	0.171	0.173

TABLE III-6.—VEHICLE TECHNOLOGY GROUP WEIGHTING FACTORS—Continued

Tech group	Sales [1] fraction	Normal exhaust emission rates		Normal vehicle weightings	
		VOC	NOx	VOC and toxics	NOx
5	0.077	0.179	0.389	0.052	0.054
6	0.022	0.200	0.460	0.017	0.019
7	0.021	0.389	0.613	0.030	0.023
8	0.017	0.278	0.583	0.017	0.017
9	0.016	0.285	0.712	0.017	0.020

[1] Note that for high and very-high and super emitting vehicles, the sales fraction represents the weighting factor for all pollutant types.

Once the exhaust emissions have been weighted based upon the vehicle technology categories to determine the average percent reduction for each emitter group, EPA proposes that these percentages be weighted together based upon the contribution of each emitter group to total in-use exhaust emissions as estimated by EPA's EF database and MOBILE4.1. Once again, due to a lack of data for toxics emissions, the value for VOC emissions will be assumed to apply. These emitter group weighting factors are shown in Table III-7.

TABLE III-7.—EMITTER GROUP WEIGHTING FACTORS FOR EXHAUST EMISSIONS

	VOC	Toxics	NOx
Normal	0.52	0.52	0.82
High	0.21	0.21	0.11
Very-High and Super	0.27	0.27	0.07

For evaporative and running loss emissions, EPA proposes that the average emission rate be determined separately for both pass and fail vehicles, and that these average emission rates be used to calculate the average percent reduction in emissions for the emitter group. EPA proposes that these percent reductions be weighted together based on the relative contribution of the pass and fail vehicles to total in-use evaporative and running loss emissions. These weighting factors, based upon MOBILE4.1 data, are shown in Table III-8. Since there are no vehicle technology classes or emitter group classifications for refueling emissions, the average percent reduction for refueling emissions would be based merely on the average emission rates from the vehicles tested.

TABLE III-8.—EMITTER GROUP WEIGHTING FACTORS FOR EVAPORATIVE AND RUNNING LOSS EMISSIONS

	Hot soak	Diurnal	Running loss
Pass	0.29	0.29	0.41
Fail	0.71	0.71	0.59

Once the emission effects for each pollutant type are determined, they would be modified to take into account any dilution or interactive effects determined through testing (as discussed in sections III.B.5 and III.B.6.) and used to modify the appropriate equations in the emission model. The determination of these effects would follow the procedure described above. The candidate fuel's total emission performance for VOC, toxics, and NOx would then be determined through use of the model as modified with vehicle testing results. The model would weight the emission effects to reflect emission values for each emission category and each pollutant type based on the distribution used by MOBILE4.1, thereby assuring that emission reduction estimates reflect in-use conditions. Finally, the total vehicle emission effects from the candidate fuel would be compared to the applicable emission standards to determine whether the standards would be met by the candidate fuel.

Confidentiality of test data and exclusive rights to the effects of parameters determined through vehicle testing were discussed in section III.A.6. EPA proposes that if confidentiality and exclusive rights are not granted, the Agency publish the augmented complex model equations based on emission effects as determined through testing. EPA requests comment on this proposal.

F. EPA Confirmatory Testing and Fee Schedule

EPA proposes that fuel producers perform the certification testing and that EPA confirm the accuracy of the test results and on that basis certify the reformulated gasoline, if appropriate. However, EPA proposes that the Agency reserve the right to observe and monitor the progress of test programs and if deemed necessary to perform some confirmatory tests of its own to assure the validity of the test results and the emission performance of the reformulated fuel before allowing augmentation of the model. EPA anticipates that if any confirmatory test is performed that it will be of a limited nature and focused only on those aspects of the test program which are unexpected. Nevertheless, EPA reserves the right to charge fees of an amount sufficient to recoup all costs associated with such confirmatory testing, and the Agency reserves the right to do so. The exact nature of the methods used to calculate and collect such fees and any limit on such fees is deferred to the complex model rulemaking.

IV. Fuel Certification Procedures

Section 211(k)(4) of the Clean Air Act requires that EPA include in the reformulated gasoline regulations procedures under which the Administrator shall certify reformulated gasoline as complying with the reformulated gasoline requirements. The procedures are to provide that any person may petition the Administrator to certify a fuel formulation or slate of fuel formulations as meeting the applicable requirements. They also are to require that the Administrator act on any such petition within 180 days of receipt. In the event that the Administrator fails to act within that time, section (k)(4) provides that the fuel shall be deemed certified until the Administrator completes action on the petition.

A. Emission Model Certification Procedures

For any fuel for which the model is used to determine VOC or toxics emission performance and for which the fuel supplier plans to and in fact does

produce reformulated gasoline that meets or exceeds the reformulated gasoline requirements on a per gallon or averaged basis (if the fuel supplier plans to meet the requirements on average, the "averaged" standards must be met), EPA proposes that such gasoline be deemed certified without submitting a petition to EPA unless EPA notifies the supplier otherwise. Because certification by the model is expected not to entail the exercise of expert judgment, but merely "plugging in" fuel parameter values, EPA does not believe that it must affirmatively approve a petition for certification for the fuel to be deemed certified in these situations. The Administrator would reserve the right to deny a fuel if it found a mistake to have been made.

If a fuel supplier, however, plans to produce only oxygen and/or benzene credit-requiring gasoline, the fuel supplier must submit a petition for certification to EPA. To ensure that the credits will in fact be available for use as needed, the petition also should include evidence of an agreement with a supplying refinery, importer, or oxygenate blender (for oxygen credits only) who intends to produce credit-generating gasoline and who will transfer enough credits for the credit-requiring gasoline to meet the requirements for each of the averaging periods during which the fuel is sold. Because of the need for EPA to review these submittals, credit-requiring gasoline could not be deemed certified upon receipt of the submittals, even if the gasoline was certified using the model.

EPA proposes that any certificate issued for a credit-requiring gasoline be conditioned on enough credits being obtained to demonstrate compliance with the reformulated gasoline requirements on average. If at the end of the compliance period sufficient credits had not been obtained, the certificate would be void *ab initio*, and penalties could be levied for all credit-requiring gasoline that had been produced or imported. It would not be a violation of the certificate for credits to be obtained from a source or sources different from that which had been identified in the certification application, or for the refiner or importer to produce or import credit-generating reformulated gasoline that generates enough credits to offset the credit-requiring reformulated gasoline that was produced, so that no credits were required. In the case of fuels for which credits were to be obtained from another refiner, importer, or oxygenate blender, the certificate would remain in effect for as long as the agreement with the other refiner, importer, or oxygenate blender lasted. This approach provides refiners with maximum flexibility in obtaining and selling credits subject to the constraints of the Act.

The advantage of this approach is that credit-requiring gasoline could only be sold as reformulated gasoline if the necessary agreements for the production of a sufficient quantity of the credit-generating gasoline had been reached. EPA thus would have adequate assurance that gasolines would be produced in the right mix and volumes to meet the reformulated gasoline requirements on average. This approach would not ensure, however, that the right mix and volumes of gasoline would actually be supplied to each covered area. Other provisions proposed today will address these issues, however. (See Section VI.B.)

B. Oxygenate demonstration

For gasoline containing oxygenates (other than just MTBE) above 2.1 weight percent oxygen and up to their maximum wavier concentration or other constraints under the substantially similar requirements of section 211(f)(1) of the Clean Air Act, EPA proposes that testing be permitted to augment the simple model for NOx emission effects, unless the reformulated gasoline is certified under the complex model to be promulgated in 1993. For such fuels, VOC and toxic emissions would still be determined using the simple model.

For any fuel for which oxygenate testing is used to determine the oxygenate's effect on NOx emission, EPA proposes that the fuel supplier petition EPA to revise the maximum oxygen content to allow concentrations of oxygenates other than MTBE up to 2.7% oxygen by weight, and that EPA grant such petition before the fuel containing the oxygenate may be certified and sold as reformulated gasoline. EPA believes that because of the many issues that must be properly addressed by a testing program for the test results to be considered reliable indications of emission performance, EPA will need to exercise its judgement to determine whether the fuel should be certified.

To permit EPA to do so, the petition to revise the maximum oxygen content provisions of § 80.41(e) must demonstrate the use of that oxygenate's effect on NOx emission through testing and would have to contain specific information describing the gasoline that was used as the baseline, the candidate oxygenate(s), the vehicles used (manufacturer, mileage; model year, model type, and vehicle identification number, the test facility, the number of tests and their results, both in the form of raw data and as summarized results incorporating the raw data and the statistical analysis methods utilized.

The certification procedures outlined in this section require effective compliance surveys to ensure that the mix of gasoline supplied to each covered area meets the standards on average for reformulated gasoline. These surveys are discussed in section VI-D of this notice.

V. General Enforcement Program Requirements

A. Introduction

Section 211(k)(5) of the Clean Air Act prohibits the sale of gasoline not certified as reformulated ("conventional gasoline") in certain ozone nonattainment areas ("covered areas") beginning January 1, 1995. Under the enforcement scheme proposed here, refiners and importers would be required to designate all gasoline as either reformulated or conventional; all reformulated gasoline would have to meet the certification requirements; and conventional gasoline would be marked to allow its detection if sold in a covered area and also labeled on the product transfer documentation as not for sale to ultimate consumers in a covered area.

EPA is proposing that averaging be permitted in demonstrating compliance with certification requirements regarding oxygen and benzene content, and VOC and toxics emission performance. This averaging program would require that all reformulated gasoline produced at each refinery or imported by an importer (with certain exceptions) which does not meet the standards on a per-gallon basis must meet somewhat more stringent averaged standards over an averaging period. The reasons for and derivation of the more stringent averaging standards are explained in the section of this notice on certification requirements. Refiners choosing to average toxics and VOC performance standards would have to demonstrate compliance with the more stringent standards on average by each of its refineries. Compliance with the more stringent oxygen and benzene averaging standards also would be required on a refinery basis, but credits could be purchased from other parties to achieve compliance. Companies could decide whether to meet one or more of the standards on average and the rest on a per gallon basis. (The NOx and heavy metals requirements cannot be averaged.)

Under the simple emission model being proposed for this rulemaking, VOC emission performance is a function of RVP standards and oxygen content. Therefore, each of these components must be met separately during the VOC averaging period by the refinery or importer to achieve VOC emission performance compliance. An oxygenate blender must meet the oxygen standards, either on a per-gallon basis or on average, for all reformulated gasoline blendstock for oxygenate blending received by the oxygenate blender.

Reformulated gasoline will be designated on a per-batch basis as to which specific requirements are being satisfied on a per-gallon basis and which requirements are being averaged to meet the standards over an averaging period. Gasoline which meets the reformulated gasoline requirements on a per-gallon basis for all requirements will reduce record keeping and reporting responsibilities for refiners, importers and oxygenate blenders while simplifying enforcement inspections. If some requirements are met on a per-gallon basis and other requirements are averaged over the control period, the refiner, importer or oxygenate blender will have increased record keeping and reporting responsibilities.

Oxygen and benzene credits could be transferred to other companies who may then use them to demonstrate compliance with the oxygen and benzene standards. Oxygenate blenders may create, transfer and use oxygen credits to demonstrate compliance with the oxygen standard. No credit trading program is being proposed for VOC and toxics emission performance.

B. Program Duration

By statute, the reformulated gasoline requirements for NOx, oxygen, benzene, heavy metals and toxics apply year round. The VOC standards apply only during the high ozone season. In a separate rulemaking involving gasoline volatility, EPA has proposed that the high ozone season be designated as June 1 through September 15 (56 FR 24248, May 29, 1991). For the reasons which are described in that proposed regulation, EPA believes June 1 through September 15 is the appropriate high ozone season for the reformulated gasoline program.

Retail outlets and wholesale purchaser-consumers would be required to sell or use VOC-controlled reformulated gasoline beginning June 1. For all parties upstream of the retail outlets or wholesale purchaser-consumers, EPA is proposing that VOC-controlled standards be met beginning May 1. EPA believes that it is necessary for upstream parties to be required to meet the VOC-controlled standards on May 1 in order to ensure that gasoline meeting this standard is available at all retail outlets by June 1. EPA believes most retail outlets will be able to replace non-VOC controlled gasoline with VOC-controlled gasoline, and thereby meet the VOC requirements by June 1 through normal product turn-over as opposed to more difficult means (e.g., by purging storage tanks of non-VOC-controlled gasoline).

In order for upstream parties to meet the VOC-controlled standards by May 1, reformulated gasoline meeting the VOC standard for each VOC-control region must be produced by refineries or imported by importers and shipped sufficiently in advance so that reformulated gasoline meeting the RVP standards will be supplied to terminals serving each covered area by May 1.

C. Geographic Scope

Effective January 1, 1995, only reformulated gasoline may be sold to ultimate consumers in any covered area. "Covered area" is defined in section 211(k)(10)(D) as follows:

> The 9 ozone nonattainment areas having a 1980 population in excess of 250,000 and having the highest ozone design value during the period 1987 through 1989 shall be covered areas for purposes of this subsection. Effective one year after the reclassification of any ozone nonattainment area as a severe ozone nonattainment area under section 181(b), such severe area shall also be a covered area for purposes of this subsection.

While Congress did not clearly specify the meaning of "nonattainment area" in this definition, EPA interprets nonattainment area in this context to mean metropolitan areas with boundaries as follows: The MSA/CMSA, excluding such portion of an MSA/CMSA which does not violate the ozone NAAQS and does not contribute significantly to the MSA/CMSA's violation of the ozone NAAQS, and including those counties near (or contiguous with) the MSA/CMSA that are in violation of the ozone NAAQS and which contribute to the MSA/CMSA's violation of the ozone NAAQS. EPA believes that both the statutory language and the legislative history amply support this approach. Proposed § 80.65 contains a detailed listing of the areas covered by the reformulated gasoline regulations.

Textually, this view is consistent with the statutory presumption in title I, section 107(d)(4)(A) (iv) and (v), that the boundaries for Serious, Severe and Extreme ozone nonattainment areas be the relevant MSA/CMSA. Although a single metropolitan area (such as Los Angeles), may comprise more than one nonattainment area in the title I designation process, EPA believes that Congress did not intend that this possibility would affect the identity of the nine reformulated gasoline "covered areas" under section 211(k)(10)(D).

The text of section 211(k)(10)(D) also clearly implies that Congress intended "covered area" to include, at a minimum, all existing Severe and Extreme ozone nonattainment areas meeting the population cut-off. This implication arises from the second sentence of section 211(k)(10)(D), which specifies that an ozone nonattainment area shall become a "covered area" one year after it is reclassified as a Severe ozone nonattainment area. Requiring that areas reclassified as Severe will become covered areas, while leaving any area originally classified as Severe out of the program indefinitely, would make little sense. Since designation under title I of ozone nonattainment areas could lead to a single metropolitan area (such as Los Angeles) containing more than one nonattainment area, Congress could not have intended for more than one portion of the same metropolitan area to be counted amongst the nine worst areas in section 211(k)(10)(D). Allowing such counting could potentially defeat Congress's clear intention that all Severe areas meeting the population cut-off be initially covered (if EPA designated the nine worst metropolitan areas under Title I to contain more than 9 Serious or Severe nonattainment areas). EPA therefore believes that Congress did not intend that this possibility could affect the identity of the nine reformulated gasoline "covered areas" under section 211(k)(10)(D).

The legislative history also supports EPA's interpretation that Congress intended to include nine metropolitan areas. References to reformulated gasoline coverage for "nine cities" appear repeatedly and invariably in the floor debates on the conference bill,[22] and Senator Durenberger cited "Los Angeles" in the singular as an example of "a nonattainment area." [23] The Conference Committee Report describes the reformulated gasoline provisions as mandating "[c]leaner, reformulated gasoline * * * in the nine cities with the most severe ozone pollution beginning in 1995." [24] No reference to any portion of a

[22] See Cong. Rec. S16922, S16961-62 (Oct. 27, 1990); Cong. Rec. H12856, H12927 (Oct. 26, 1990).

[23] Cong. Rec. S16923 (Oct. 27, 1990).

[24] H.R. Rep. No. 101-952, 101st Cong., 2d Sess. 336 (October 26, 1990).

metropolitan area appears anywhere in the legislative history of this provision. In addition, both the House and Senate committee reports' discussion of title I ozone nonattainment areas contain a virtually identical list of cities by classification.[25] Based on 1986–88 data, Los Angeles appears as a single entry in the Extreme category, and eight cities appear in the Severe category (with a design value cutoff of 0.19 parts per million).

The provision ultimately enacted references nine nonattainment areas with a minimum 1980 population of 250,000 and design values based on 1987–89 data. This was a change from the earlier versions of the legislation, which identified the reformulated gasoline covered areas as those with an ozone design value of 0.18 parts per million or above,[26] or as those classified under title I as Severe or Extreme.[27] This is most logically construed to show an intention to exclude certain areas by population, and to include an area or areas not previously covered. Based on then-available data and the lists in the committee reports, this change most reasonably should be read to exclude from coverage Muskegon, Michigan (a Severe area with a 1980 population of less than 250,000), and instead to include Hartford, Connecticut (a Serious area). Congress adopted the simplest means to reference this group of cities.

Section 211(k)(10)(D) also provides that effective one year after an area is reclassified as a severe ozone nonattainment area under section 181(b), that area will also be a "covered area." In addition, under section 211(k)(6) any other ozone nonattainment area will be included in the reformulated gasoline program at the request of the Governor of the State in which the area is located.

D. VOC-Control Regions

EPA is proposing that reformulated gasoline covered areas be grouped together into areas similar in scope to the classifications used in 40 CFR 80.27(a), the volatility control program for 1992 and later, termed in this proposal as VOC-Control Region 1 and VOC-Control Region 2.[28] These classifications are similar, but not identical, to the American Society of Testing of Materials (ASTM) Class B and C areas. The proposed regulations specify the states which are included in each region. Since a covered area cannot have two standards, covered areas which are partially in VOC-Control Regions 1 and partially in VOC-Control Region 2 would be included in VOC-Control Region 1 which has a more stringent RVP standard, with the exception of the Philadelphia area.[29] EPA believes that such a grouping would effectively satisfy Congressional intent that each covered area meet the reformulated standards, for reasons which are fully discussed in section VI below.

E. Effective Date

Section 211(k)(5) makes the reformulated gasoline program effective January 1, 1995, in the nine originally covered nonattainment areas. Under section 211(k)(6)(A), the effective date of the program in any area which opts into the program is January 1, 1995, or one year after EPA receives the request to include the area in the program, whichever is later. Section 211(k)(6)(B) provides that EPA may extend the effective date of the program for one or more opt-in areas by up to three years if, upon petition, the Agency finds that there is an insufficient domestic capacity to produce reformulated gasoline.

F. Simple Model vs. Complex Model

EPA is proposing that the simple model be used for fuel certification and enforcement purposes until March 1, 1997 with the expectation that the complex model will be promulgated by March 1, 1993. In the event that the complex model is not promulgated as expected, EPA is proposing that the simple model be used an additional month for every month the complex model is delayed.

G. Requirements for Refiners and Importers

EPA believes that refiners' and importers' actions after producing or importing reformulated gasoline are integral to ensuring that reformulated gasoline meets the requirements and goals of the Clean Air Act. EPA proposes that they be responsible for sampling and testing each batch of reformulated gasoline for properties and characteristics to determine whether it meets its certification requirements. Once properly tested and found to be in compliance, the gasoline would be designated for certain regions and time periods (e.g., VOC-controlled gasoline must be sold to the ultimate consumers in the high ozone season, and in the proper VOC Region). The refiner or importer would create the product transfer documents containing this information. These documents will accompany the gasoline and direct it to its destination of ultimate use during the appropriate control period. The proper execution of these responsibilities will be instrumental to an environmentally-effective reformulated gasoline program.

1. Determination of Characteristics

EPA proposes that the properties and characteristics of all reformulated gasoline produced by a refinery or imported by an importer be determined by sampling and testing before the gasoline leaves the refinery or import facility. Each batch of gasoline would be tested for each of the fuel properties relevant to determining whether the characteristics of the gasoline met the reformulated gasoline requirements. Prior to March 1, 1997, the test results for these properties could be used in the simple model to determine reformulated gasoline characteristics for accounting and compliance purposes. On or after March 1, 1997, the results would be used in the complex model, assuming the complex model is promulgated by March 1, 1993.

The accuracy of reformulated gasoline test results is of critical importance for the reformulated gasoline program. For this reason, under the proposed rule each refiner and importer also would be required to carry out a program of independent sampling and testing of the reformulated gasoline that is produced or imported. Under one option, every batch of reformulated gasoline would be sampled and tested by an independent laboratory. Under an alternative option, every batch would be sampled by an independent laboratory. EPA would select up to ten percent of these samples

[25] H.R. Rep. No. 101–490, 101st Cong. 2d Sess. 230 (May 17, 1990); S. Rep. No. 101–228, 101st Cong., 1st Sess. 35 (Dec. 20, 1989).

[26] See S. 1630, § 217; H.R. 3030, section 212(n).

[27] Cong. Rec. H2839–4 (May 23, 1990).

[28] Under Phase II volatility regulations, the RVP standard for VOC-Control Region 1 (Class B) is 7.8 RVP and for VOC-Control Region 2 (Class C) the RVP standard is 9.0 psi.

[29] The Philadelphia-Wilmington-Trenton (Philadelphia) area is located partially in VOC-Control Region 1 and partially in VOC-Control Region 2, but EPA is proposing that this area would be included in VOC-Control Region 2, because the portion of the area that is located in VOC-Control Region 1 is very small in comparison to the portion located in VOC-Control Region 2. The only portion of the Philadelphia area that is located in VOC-Control Region 1 is Cecil County, Maryland, which has a population of about 70,000 out of the total 6 million population for the Philadelphia area.

EPA believes that Cecil County, Maryland will be supplied with reformulated gasoline from Baltimore, Maryland, however, which is classified as VOC-Control Region 1, thus providing Cecil County with more environmentally beneficial Region 1 gasoline.

which then would be analyzed by the independent laboratory.

EPA is proposing confirmatory testing for several reasons. It would allow refiner or importer problems in sample analysis to be flagged by an independent company and corrected by the refiner or importer before the gasoline is shipped from the refinery or import facility or would allow the refiner or importer to adjust its books if the gasoline has already been shipped.

Based on the existing gasoline transportation system, EPA expects that reformulated gasoline almost always will be combined after it leaves the refinery into a fungible mixture with reformulated gasoline from other refineries. Once a refiner's or importer's reformulated gasoline is so mixed, it is not possible to verify its test results to determine whether the gasoline met its certification requirements at the time of production or importation. In many cases, mixing will occur at the refinery or importer facility even before the gasoline is transferred to another party. Under this scenario, there would be no opportunity to look behind the refiner's or importer's reported test results (unless EPA inspectors happened to be at the refinery or import facility at the time the gasoline was produced or imported).

An additional reason for confirmatory testing is that, without such a requirement, determining compliance on average would be based largely on the paper trail produced by a refinery or importer, without any corroborating evidence that such test results were actually obtained or that credits were actually created. Once the gasoline leaves the refinery or importer, it can only be tested for minimums and maximums, rather than for a particular refinery's or importer's specific compliance. Therefore, in an averaging program as compared to a mandatory per-gallon compliance program where gasoline can be tested at any point for per-gallon compliance, it becomes even more important that a safeguard against fraud be built into the system by being able to look behind the test results generated by the refinery or importer, especially in a program as complex as reformulated gasoline.

EPA believes independent confirmatory sampling and testing will reduce the risk of bias or mistake by a refinery or importer facility laboratory. For example, a refinery's laboratory could develop a practice of retesting results which indicate gasoline is out of compliance, but not retesting those results which indicate compliance, thus injecting an inappropriate bias into that laboratory's results overall. It also is possible that a laboratory could, through the use of improper equipment or procedures, produce systematically improper results.

Under EPA's proposal, refiners and importers would have two options for meeting the independent analysis requirement. Under one option, every batch of reformulated gasoline would be sampled and tested by the independent laboratory. This option probably would be appropriate in the case of a refiner or importer that does not operate its own laboratory. In such a situation, the refiner or importer could use the results of the independent laboratory to determine the properties of the reformulated gasoline produced or imported in order to demonstrate compliance.

The second option proposed by EPA would require that a refiner or importer implement a program whereby an independent laboratory would collect a representative sample of each batch of reformulated gasoline produced or imported, but conduct an analysis of only up to ten percent of the samples collected. This would be in addition to the refiner's or importer's own testing. Under this option, the independent laboratory would retain samples for thirty days (which could be extended to 180 days at EPA's request), and EPA would identify to the independent laboratory which samples to analyze. In this manner, the refiner or importer would not know in advance which samples would be subject to confirmatory analysis.

Under either option for independent analysis, each refiner and importer would be required to identify to EPA a designated independent laboratory for each of its refineries and import facilities. To be an independent laboratory, a laboratory must be independent from the refinery or importer. The only exception is where the laboratory is operated by a gasoline pipeline company that is owned and operated by a consortium of at least four autonomous refiners or importers. To qualify as autonomous, the refiners or importers must be financially independent of each other. As competitors in the gasoline market, each refiner or importer would be interested in ensuring accurate testing so that a particular company would not gain an unfair advantage over the others. The Agency believes that such a jointly-owned consortium would serve to create sufficient independence on the pipeline laboratory's part so that it could provide unbiased test results. Use of a laboratory that has been debarred or suspended under the Governmentwide Debarment and Suspension regulations, 40 CFR part 32, or the Debarment, Suspension and Ineligibility provisions of the Federal Acquisition Regulations, 48 CFR part 9, subpart 9.4, would not constitute compliance with the requirements of analysis by an independent laboratory.

In order to allow EPA and the independent laboratory to positively identify the gasoline that was sampled under the independent analysis program, the refiner or importer would be required to establish procedures under which the independent laboratory would independently determine the volume of each batch sampled and certain identifying features of the batch (e.g., date, time, tank number, etc.). The refiner or importer also would be required to have the independent laboratory submit reports to the refiner or importer and to EPA each calendar quarter, detailing analyses conducted on the samples collected, and the batch-specific information obtained at the refinery or import facility.

The proposed regulations include a methodology for comparing the results for each parameter from the refiner or importer's laboratory (if conducted) and the independent laboratory. This methodology includes use of reproducibility statistics for each of the properties which are included in the simple model. (The statistics included in the proposed regulations are the ASTM reproducibility figures for each of the parameters except oxygen; the reproducibility figure for oxygen was derived by EPA's motor vehicle emissions laboratory from the repeatability statistics for the oxygenate testing method being proposed in these regulations.)

Test results of the two laboratories within the listed ranges would indicate general agreement on the test results and the refiner or importer would use its test results for accounting and compliance purposes. If the test results vary by more than the range listed in the regulations, however, it would indicate that there is a problem with one or both of the tests. In this situation, the refiner or importer would have to choose one of two options. The refiner or importer could use the least favorable of the two results, which would be the larger number for the volume percent for all properties, except specified oxygenates, where the refiner or importer must use the smaller number for determining all parameters except RVP; for measuring RVP, the larger oxygen volume percent number would be used. The other choice for the refiner or importer would be to continue having the gasoline analyzed for the property at additional

independent laboratories until there is a 90% confidence that the value of the property falls within the acceptable listed ranges.

EPA is proposing an alternative to the independent analysis requirement for certain refiners that produce gasoline using computer-controlled in-line blending equipment. Under this alternative the refiner would have an independent audit conducted of the documents generated during the course of such in-line blending as confirmation of the refiner's reported batch properties. This audit option would be appropriate only in the case of relatively sophisticated in-line blending operations, where sufficient gasoline quality checks and cross-checks occurred to allow a meaningful audit. In order to use this audit option, a refiner would be required to petition EPA to allow its use for a particular in-line blending operation. EPA would then evaluate the petition on the basis of the particular equipment and procedures in place at the petitioner-refiner's refinery. The types of factors which would be relevant to EPA's review of the petition would include whether the operation had on-line analysis capability, and if so, for which parameters and the frequency of results; the frequency of off-line confirmatory analyses; the use of an accumulator device to collect a representative sample of the entire batch; the degree and nature of retention of analyses results; any analyses conducted on any of the batch downstream from the refinery (e.g., by a pipeline); and the overall quality assurance program of the operation.

EPA believes the audit alternative for certain in-line blending operations is appropriate both because of the difficulty of obtaining a representative sample of gasoline that has been produced through in-line blending in some cases, and because of the confidence in the results from a paper audit of such an operation. In certain in-line blending operations, the gasoline that is blended goes directly from the refinery into a pipeline, where it may be fungibly mixed with other gasoline. Such a blend may occur over a period of up to twenty-four hours, and result in the production of up to 300,000 barrels of gasoline. A sample collected at one time at the point of in-line blending would be representative only of the gasoline being blended at the time the sample was collected, and may not be representative of the gasoline that was produced in the blend before or after the sample was collected. A sophisticated in-line blending operation, however, has multiple safeguards to monitor (and record) the properties of the blend on an on-going basis. EPA believes a review of these records would provide a high degree of confidence as to the overall properties of the blend.

Under the audit alternative for in-line blending confirmation, the audit would be conducted by an independent auditor using the same standards and using the same methodologies that are specified for the independent refinery audit requirement described in section XIV of this preamble. EPA believes any in-line blending audits that are conducted would constitute partial compliance with this independent refinery audit requirement. The scope of these two audit requirements are different, however, in that a refinery audit requires the auditor to review in detail records which reflect only twenty percent of a refiner's production (unless material instances of regulatory noncompliance are discovered), whereas an in-line blending audit would require the auditor to review each of a refiner's in-line blends for consistency with the refiner's claimed properties for the blend.

2. Gasoline Designations

Also vital to a workable enforcement program is proper designation of the different categories of gasoline (e.g., VOC-controlled versus non-VOC-controlled) for accounting and product transfer documentation purposes. This allows any party in the distribution chain to ensure that it is in compliance by refusing gasoline without the proper designations on the product transfer documentation.

EPA proposes that refiners or importers designate each batch of gasoline as belonging to one of two major categories: Reformulated or conventional gasoline. Further, any conventional gasoline would have to be marked by the refinery or import facility with the marker phenolphthalein and clearly labeled as not intended for sale for use in motor vehicles within a covered area.

Reformulated gasoline would require more specialized designations, as a result of the varying requirements it must meet. Each batch of reformulated gasoline would have to be labeled VOC-controlled or not VOC-controlled. Only VOC-controlled gasoline could be sold to vehicle owners in covered areas during the high-ozone season (June 1—September 15) and only VOC-controlled gasoline could be sold by parties upstream of the retail outlets in the covered areas beginning May 1. VOC-controlled gasoline would be further categorized for use in one of two VOC regions: VOC Region 1 or VOC Region 2. For an explanation of the two VOC Regions, see section V–D. of this notice. Gasoline designated for either region would have to satisfy all requirements, including VOC control, of a certificate for the region of its intended use.

Reformulated gasoline also would have to be classified as oxygenated fuels program reformulated gasoline (OPRG) or not OPRG.[30] This classification reflects the fact that a reformulated gasoline covered area may also be an oxygenated fuels gasoline covered area. The reasons for this classification are discussed more fully below.

The above designations would direct gasoline to its appropriate ultimate destination during a particular time period. The following designations would provide additional information for those handling the gasoline downstream from the refinery or import facility.

EPA proposes that the refiner or importer designate as reformulated blendstock for oxygenate blending (RBOB) that petroleum product which, when blended with a specified type and percentage of oxygenate, meets the definition of reformulated gasoline, and to which any approved oxygenate is added at any place other than the refinery or import facility where this product is produced or imported. If the product is designated as not RBOB, it is fungible reformulated gasoline which meets its certification requirements, and can be treated as such. If the product is designated as RBOB, however, refiners, importers and oxygenate blenders are subject to requirements intended to ensure that the proper oxygenate type and amount are added before the gasoline is used, as discussed more fully below.

In addition, for each batch of gasoline produced, imported or blended, the refiner, importer, or oxygenate blender must designate which reformulated gasoline requirements are being complied with on a per-gallon basis and which are being complied with on average. This requirement is important for accounting purposes because the appropriate volumes and characteristics of averaged gasoline must be recorded and, more generally, the designation determines to which record keeping and reporting requirements a refiner, importer or oxygenate blender would be subject.

[30] State programs implemented pursuant to section 211(m) of the Clean Air Act.

H. Standards for Compliance on a Per Gallon Basis

The standards for compliance on a per-gallon basis are listed in Table V–1.

TABLE V–1.—STANDARDS FOR COMPLIANCE ON A PER-GALLON BASIS

Characteristic	Standard
RVP:	
VOC-Region 1 (psi maximum)	7.2
VOC-Region 2 (psi maximum)	8.1
Benzene (volume % maximum)	1.0
Toxics emission reduction (% minimum):	
Summer toxics controlled:	
VOC-Region 1	21.1
VOC-Region 2	20.7
Winter toxics controlled	13.5
Oxygen (weight %):	
Minimum	2.0
Maximum:	
VOC-controlled MTBE	2.7
Other than MTBE	[1]2.1
Non-VOC-controlled	[2]3.5
NOx emission (increase over baseline)	none
Sulfur, T-90, and Olefins (annual average increase over 1990 baseline)	none
Heavy metals	[3]none

[1] Another limit may be established through testing.
[2] Up to 3.5% oxygen will be presumed to result in no NOx increase (and may be used) except (1) during those months with ozone violations (at the discretion of the impacted state) and (2) in those areas where the state has notified the Administrator that the use of an oxygenate would interfere with attainment or maintenance of another ambient air quality standard or other air quality problem. Lawful use of any combination of these substances requires that they be "Substantially Similar" under section 211(f) of the Clean Air Act, or be permitted under a waiver granted by the Administrator under the authority of section 211(f)(4).
[3] The Administrator under section 211(k)(2)(D) may waive this requirement for a heavy metal other than lead if it is determined that addition of the heavy metal to the gasoline will not increase, on an aggregate mass or cancer-risk basis, toxic air pollutants from motor vehicles.

These per-gallon standards are less stringent than the compliance standards applicable for purposes of averaging (discussed in a later section of this preamble), with the exception of the standards for NOx emission, heavy metals, sulfur, T–90, and olefins, and the oxygen maximum standards which are the same for both per-gallon and average compliance gasoline. Caps are set for oxygen content for per-gallon compliance also in the event that a party decides not to average, but has added oxygen higher that the statutory standard. After a certain percentage of oxygen has been added, there is a concern that NOx emissions will increase. Oxygen maximums address the no NOx increase requirement in section 211(k)(2)(A) of the Clean Air Act, and were agreed to through the Regulatory Negotiation process.

Under the proposed regulations, on each occasion a refiner or importer produces or imports a batch of reformulated gasoline, the toxics emission reduction, RVP, benzene and oxygen content standards must be designated as having been met either on a per-gallon basis or on an averaged basis. For example, a refiner could designate one batch as meeting the benzene standard on a per-gallon basis and another batch as meeting that standard on an averaged basis during the same benzene averaging period.

EPA believes there are advantages to the per-gallon compliance approach. To the extent standards are designated for per-gallon compliance, refiners and importers have simpler and less costly accounting, record keeping, and reporting requirements. In addition, the independent compliance audits (discussed below) for gasoline designated for per-gallon compliance should be less complex and, as a result, less costly. Moreover, if all of a refiner's or importer's gasoline is designated for per-gallon compliance, that party would not be obligated to assist in payment for the covered area surveys (discussed below).

I. Downstream Oxygenate Blending

Section 211(k)(2)(B) of the Act requires that reformulated gasoline have an oxygen content of 2.0 percent or more by weight, and section 211(k)(7)(A) provides that oxygen credits may be generated and used to achieve compliance. The regulations being proposed by EPA allow the oxygen content requirement to be satisfied either based upon the oxygen content of gasoline produced at a refinery or imported, or based upon the oxygen content of a gasoline to which oxygenates have been added downstream of the refinery or import facility. In order to assure that reformulated gasoline which is produced through downstream oxygen blending meets other reformulated gasoline requirements, additional regulatory controls are being proposed.

Several new definitions are being proposed to address downstream oxygenate blending. An oxygenate blending facility is defined as a facility (including a truck) at which oxygenate is added to gasoline or blendstock, and an oxygenate blender is any person who owns, leases, operates, controls, or supervises such an oxygenate blending facility. The definition of oxygenate blender thus includes persons who blend oxygenate in terminal storage tanks as well as persons who "splash blend" oxygenates in gasoline delivery trucks. A new category of petroleum product, reformulated gasoline blendstock for oxygenate blending, or RBOB, is defined as a petroleum product which, when blended with a specific type and percentage of oxygenate downstream of the refinery or import facility, meets the definition of reformulated gasoline.

The characteristics of RBOB when blended with the specified oxygenate must conform with the values for RVP, toxics, and benzene designated by the refiner or importer which anticipated the addition of a specific type and amount of oxygen in the finished gasoline. As a result, it is proposed that refiners and importers be permitted to sell for use in covered areas RBOB only if the RBOB will meet the specifications of a particular reformulated gasoline certification after the oxygenate is added. Such a certification would specify the type or types (e.g., ethanol, MTBE or other oxygenates) and the minimum and maximum percentage of oxygenate in the finished gasoline, and would allow the finished gasoline to have an oxygen percentage within the allowable range and of the specified type or types. This is because the refinery or importer has relied on the addition of the specific type and amount of oxygenate in calculating its reformulated characteristics for compliance purposes. If a different amount or type of oxygenate was added, the refinery or importer's calculated numbers would no longer be accurate. In order to provide downstream oxygenate blenders with as much flexibility as possible, refiners and importers would be required to specify the full range of oxygenate types and percentages which would result in the resulting reformulated gasoline having a toxics emission reduction percentage which was at least as large as the refiner or importer calculated for the batch; a benzene content and RVP at least as small as the refiner or importer calculated for the batch; and other properties that conform to other reformulated gasoline requirements (e.g., no NOx increase).

The oxygen standards being proposed are stated in terms of weight percent oxygen. This must be distinguished from volume percent oxygenate, which is the typical measure for blending oxygenates, particularly at the terminal level. For example, a "ten percent ethanol blend" typically refers to a volume percent. In order to calculate the weight percent oxygen in an oxygenate blend, several factors must be taken into consideration. These are: temperature and specific gravity of the oxygenate and the gasoline, and, for ethanol, the amount of denaturant, which is some fraction of the volume ethanol added to the gasoline. Elsewhere in this notice, it

is stated that standard temperature will be 60 degrees Fahrenheit. In order to calculate the weight percent oxygen in the blend, the weight percent oxygenate must be calculated. Accordingly, to calculate the weight percent oxygenate from volume percent oxygenate, specific gravities of the oxygenate and the blend must be taken into consideration. (Specific gravities (or densities) as well as weight percent oxygen in the oxygenate may be found in Table V–2 for common fuel oxygenates.)

TABLE V–2.—SPECIFIC GRAVITY AND WEIGHT PERCENT OXYGEN OF COMMON OXYGENATES

Oxygenate	Weight % oxygen	Specific gravity at 60 °F
Methanol	0.4993	0.796
Ethanol	0.3473	0.794
Propanols	0.2662	0.789
Butanols	0.2158	0.810
Pentanols	0.1815	0.817
Methyl Tertiary Butyl Ether (MTBE)	0.1815	0.744
Hexanols	0.1566	0.823
Tertiary Amyl Methyl Ether (TAME)	0.1566	0.770
Ethyl Tertiary Butyl Ether (ETBE)	0.1569	0.755

The following equation describes the conversion from volume percent oxygenate to weight percent oxygenate:

$$W_{oxygenate} = V_{oxygenate} \times \frac{d_{oxygenate}}{d_{bl}}$$

Where
W = weight fraction (for percent, multiply by 100)
oxygenate = oxygenate in the blend
bl = blend
V = volume fraction
d = specific gravity.

The specific gravity of the oxygenate is known (see Table V–2) and, if the specific gravity of the blend has been measured and is, therefore, known, the calculation is straightforward. If, however, the specific gravity of the blend is unknown, it can be estimated as the volume weighted contribution of the specific gravities of the gasoline to which the oxygenate is added and the oxygenate itself:

$$d_{bl} = (V_{gas} \times d_{gas}) + (V_{oxygenate} \times d_{oxygenate})$$

Where
gas = gasoline to which oxygenate is added.

The weight fraction of oxygen in the blend is simply the product of the weight fraction of oxygen in the oxygenate (from Table V–2) and the weight fraction of oxygenate in the blend. Therefore, the weight fraction of oxygen in the blend is:

$$W_{oxygen} = W_{oxygenate} \times W_{oxygen(oxygenate)}$$

Where
oxygen/oxygenate = oxygen in the oxygenate.

Substituting equations (1) and (2) in equation (3), results in:

$$W_{oxygen} = \frac{V_{oxygenate} \times d_{oxygenate} \times W_{oxygen(oxygenate)}}{(V_{gas} \times d_{gas}) + (V_{oxygenate} \times d_{oxygenate})}$$

For blends with more than one oxygenate, the equation becomes:

$$W_{oxygen} = \frac{\Sigma(V_{oxygenate} \times d_{oxygenate} \times W_{oxygen(oxygenate)})}{(V_{gas} \times d_{gas}) + \Sigma(V_{oxygenate} \times d_{oxygenate})}$$

The following examples demonstrate use of the equation:

Question 1: Suppose nine gallons of neat ethanol are blended with 91 gallons of gasoline to make 100 gallons of ethanol blend gasoline. The specific gravity of the gasoline is 0.74. What is the weight percent oxygen in this blend?

Answer 1: In this case, the volume fraction of ethanol is 0.09 and the volume fraction of gasoline is 0.91. The specific gravity of neat ethanol (from Table V–2) is 0.794 and the specific gravity of the gasoline is stated to be 0.74. Hence, the weight fraction of oxygen can be calculated using equation (4) as follows:

$$W_{oxy} = \frac{0.09 \times 0.794 \times 0.3473}{(0.91 \times 0.74) + (0.09 \times 0.794)}$$

$$W_{oxy} = 0.0333$$

Therefore the weight fraction of oxygen in such a blend is 0.0333 or 3.33 percent.

Question 2: Suppose 1000 gallons of MTBE are blended with 6000 gallons of gasoline to make 7000 gallons of MTBE blend gasoline. The specific gravity of the gasoline is 0.75. What is be the weight percent oxygen in this blend?

Answer 2: In this case, the volume fraction of MTBE is 1000/7000 or 0.1429 and the volume fraction of gasoline is 6000/7000 or 0.8571. The specific gravity of neat MTBE (from Table V–2) is 0.744 and the specific gravity of the gasoline is stated to be 0.75. Hence, the weight fraction of oxygen can be calculated using equation (4) as follows:

$$W_{oxy} = \frac{0.1429 \times 0.744 \times 0.1815}{(0.8571 \times 0.75) + (0.1429 \times 0.744)}$$

$$W_{oxy} = 0.0258$$

Therefore the weight fraction of oxygen in such a blend is 0.0258 or 2.58 percent.

In the following example, multiple oxygenates are used.

Question 3: Suppose 800 gallons of MTBE and 200 gallons of TAME are blended with 6000 gallons of gasoline to make 7000 gallons of blend gasoline. The specific gravity of the gasoline is 0.73. What is be the weight percent oxygen in this blend?

Answer 3: In this case, the volume fraction of MTBE is 800/7000 or 0.1143, the volume fraction of TAME is 200/7000 or 0.0286 and the volume fraction of gasoline is 6000/7000 or 0.8571. The specific gravity of neat MTBE (from Table V–2) is 0.744, of neat TAME is 0.770 and the specific gravity of the gasoline is stated to be 0.75. Hence, the weight fraction of oxygen can be calculated using equation (5) as follows:

$$W_{oxy} = \frac{(0.1143 \times 0.744 \times 0.1815) + (0.0286 \times 0.770 \times 0.1566)}{(0.8571 \times 0.75) + (0.1143 \times 0.744) + (0.0286 \times 0.770)}$$

$$W_{oxy} = 0.0252$$

Therefore the weight fraction of oxygen in such a blend is 0.0252 or 2.52 percent.

Under the proposed rule, refiners and importers would be required to verify

through periodic sampling and testing that RBOB produced or imported will meet the specifications of the applicable certificate after the specified oxygenate is added. The specified type and amount or range of amounts of oxygenate to be added must be included in the product transfer documentation in order to inform the oxygenate blender of the oxygen requirements of the specific RBOB.

The oxygenate blender would be required to add at least the minimum amount of oxygen, and would be allowed to add additional oxygenate of the specified type or types up to the specified maximum. The oxygenate blender may then designate the resulting reformulated gasoline as achieving oxygen compliance either per-gallon (if the gasoline contains at least 2.0% oxygen) or on average. If average compliance is designated, the oxygenate blender is responsible for accounting for the oxygen percentage for average compliance purposes. At the end of the averaging period, the oxygenate blender would have to achieve the applicable oxygen average standard.

EPA is proposing that refiners and importers must take certain affirmative steps to ensure that RBOB produced or imported is in fact blended with the oxygenate type and amount specified by the refiner or importer. Because each separate RBOB is specific as to its oxygenate requirements, RBOB can be combined in the transportation system prior to oxygenate blending only with other RBOB which has oxygenate requirements which are exactly the same. If different RBOB's having different oxygenate requirements were combined before the oxygenate was added, or if RBOB were combined with finished reformulated gasoline, the gasoline resulting from an RBOB-oxygenate blend would not conform to the RBOB's certificate.

In order to ensure that RBOB is not contaminated with other RBOB or with reformulated gasoline before oxygenate blending, it is proposed that refiners and importers of RBOB be required to identify distinguishing properties of the RBOB (as opposed to the finished reformulated gasoline), and to include these properties on the product transfer documentation. With this information, parties downstream from the refinery or import facility (e.g., pipelines, distributors, etc.) may conduct quality assurance sampling and testing programs of the RBOB to the point of oxygenate blending.

The proposal would further require refiners and importers to conduct a quality assurance sampling and testing program of the blending operation of each oxygenate blender who receives any RBOB produced or imported by the refiner or importer. This program requires refiners and importers to determine whether its gasoline, subsequent to the oxygenate blending, meets the requirements of the certification under which the RBOB was produced or imported. Such a quality assurance program would monitor the quality of the RBOB to the point of blending, the quality and purity of the oxygenate blendstock, and the precision of the oxygenate blender's operation. EPA is proposing that the rate of sampling and testing, at each oxygenate blender's operation, be one sample for each 200,000 barrels of RBOB produced or imported by that refiner or importer which is blended by an oxygenate blender in a terminal storage tank, or one sample every month, whichever is more frequent. In the case of oxygenate blenders who splash blend in trucks without using computer-controlled in-line blending equipment, EPA is proposing a quality assurance sampling and testing frequency for refiners and importers of one sample for each 50,000 barrels of that supplier's RBOB which is blended by that blender, but at least one sample each month; in the case of oxygenate blenders who splash blend using computer-controlled in-line blending equipment, however, EPA is proposing a sampling and testing frequency of one sample for each 100,000 barrels of that supplier's RBOB that is blended, but at least one sample each two months. The sampling frequency for each particular blending situation reflects the different volumes of gasoline blended in each batch. RBOB which is blended with oxygenate in a terminal storage tank will produce many times the reformulated gasoline of that mixed in a truck. For example, a truck may only be able to blend 190 barrels, while a terminal storage tank may blend 29,000 barrels. As a consequence, the smaller the batch of RBOB blended with oxygenate, the more batches will need to be sampled to determine compliance.

If the testing results indicate the blended gasoline does not conform to the relevant certification, the refiner or importer is required to take several additional actions: immediately take steps to stop the sale of the sampled gasoline; determine the cause of the nonconformity in order to prevent future nonconformities; and increase the frequency of sampling and testing.

EPA is proposing that refiners and importers have a contract in place with each oxygenate blender who adds oxygenate to RBOB produced or imported by the refiner or importer, which gives the refiner or importer the authority to take the actions required by the results of the quality assurance program and to specify the procedures which are necessary in order to ensure proper oxygenate blending. Requiring such a contract also makes more certain that refiners and importers will be aware of the specific oxygenate blender who is blending the RBOB produced or imported by the refiner or importer. EPA believes this requirement is appropriate, because the refiner or importer is responsible for the blended gasoline meeting VOC and toxics emission reduction requirements. If the proper amount and type of oxygenate is not added, then the refiner or importer cannot demonstrate such compliance.

EPA is proposing, as an alternative to these contractual and oversight restrictions to the transfer of RBOB, that refiners and importers be allowed to assume as the basis for calculating toxics emission performance, benzene content, and RVP, that the "worst case" (for the environment) oxygen type and amount was added to RBOB that is produced or imported. This worst case assumes that the appropriate maximum and minimum oxygen requirements will be met downstream because they will be subject to downstream (including retail level) enforcement testing. Thus, all reformulated gasoline is required to contain a minimum 1.5% (by weight) oxygen. Moreover, reformulated gasoline also is subject to maximum oxygen standards: 2.7% (by weight) oxygen contributed by MTBE; 2.1% (by weight) oxygen contributed by other oxygenates in the case of gasoline designated as VOC-controlled (unless this limit is raised through testing); and 3.5% (by weight) oxygen contributed by ethanol in the case of gasoline not designated as VOC-controlled. EPA intends to monitor for compliance with these maximums, and because they are oxygenate type-dependent, to monitor the oxygenate type in addition to the weight percent.

In the case of toxics emission reduction percentage and benzene content, as the oxygen volume percent gets smaller, the toxics emission reduction becomes smaller, and the benzene content becomes larger (also worse for the environment); as a result, the "worst case" (worse for the environment) assumption would be 1.5% (by weight) of whichever of the approved oxygenates that has the smallest volume percentage at 1.5 weight percent. For ethanol and MTBE, for example, the volume percentages of these two oxygenates that are necessary to result in 1.5 weight percent oxygen (assuming RBOB which has a density of

0.7420) are 8.37% in the case of MTBE and 4.05% in the case of ethanol. Thus, if ethanol and MTBE were the only two approved oxygenates, the "worst case" assumption for calculating toxics emission reduction and benzene content would be 1.5% (by weight) of oxygen from ethanol.

In the case of RVP, as the ethanol percentage gets larger, the RVP becomes larger (worse for the environment); as a result, the "worst case" assumption would be the maximum allowed ethanol content. Reformulated gasoline that is designated as VOC-controlled currently is restricted to a maximum 2.1% (by weight) of oxygen contributed by ethanol. Also, the standard for RVP applies only to VOC-controlled reformulated gasoline. As a consequence, the "worst case" oxygenate blending assumption for RVP compliance calculations would be 2.1% (by weight) of oxygen from ethanol. Should a higher ethanol content be approved through testing, this higher amount would be used as the "worst case" assumption.

EPA is proposing requirements for oxygenate blenders that are intended to ensure the proper oxygenate is blended with RBOB. Oxygenate blenders who blend oxygenate with RBOB in gasoline storage tanks at terminals (i.e., other than splash blenders), are required to sample and test following each blending operation to determine if the resulting gasoline meets the certification under which the RBOB was produced or imported. EPA believes this frequency of sampling and testing is justified, because the volumes involved in such terminal blending normally are quite large.

EPA also is proposing that periodic sampling and testing for oxygenate type and percentage be carried out by the oxygenate blender in the case of oxygenate splash blending. The proposed rule requires in the case of splash blenders who use computer-controlled in-line blending equipment that at least one sample per every five hundred splash blended batches be sampled and tested, but at least as frequently as one sample every three months. In the case of splash blenders who do not use computer-controlled in-line blending equipment, the frequency would be the greater of one sample for every one hundred trucks loaded, or once per month. In either case, EPA is proposing increased testing frequency if a test result revealed the gasoline did not comply with its certification. Even though a periodic sampling program will not ensure that all gasoline blended meets relevant requirements, such a program will allow oxygenate blenders to monitor generally the quality of RBOB and blendstock and the mechanics of the blending operation.

EPA believes that a periodic (as opposed to an every-batch) sampling and testing requirement for splash blenders is appropriate because testing for each truck would be costly. An oxygenate blender would blend a much larger volume of gasoline in a tank than an oxygenate blender who splash blends in a truck. Therefore, a splash blender would have to test many more times for the same volume of reformulated gasoline than a tank blender, resulting in an economic advantage for the tank blender. Moreover, splash blenders rely on the motion of the delivery truck while being driven from the terminal to the retail outlet to mix the gasoline blendstock with the oxygenate. As a result, the sample normally would have to be taken from the truck after it has left the terminal.

One issue involving sampling and testing of splash blended gasoline is how the sample should be collected. Collecting a sample from most gasoline trucks requires opening the hatch at the top of the truck. EPA does not believe that opening a truck hatch for the purpose of collecting a sample would violate state or local vapor control rules, and, therefore, is proposing that samples of gasoline that has been splash-blended be taken in this manner. Comments on this issue are requested, however.

J. Penalties

Section 211(d)(1) of the Clean Air Act provides for penalties for violations of the reformulated gasoline requirements, as follows:

> (d)(1) Civil Penalties.—Any person who violates subsection * * * (k) * * * of this section or the regulations provided under subsection * * * (k) * * * shall be liable to the United States for a civil penalty of not more than $25,000 for every day of such violation and the amount of economic benefit or savings resulting from the violation * * *. Any violation with respect to a regulation prescribed under subsection * * * (k) * * * of this section which establishes a regulatory standard based upon a multiday averaging period shall constitute a separate day of violation for each and every day in the averaging period.

EPA is proposing regulations that would apply this Clean Air Act penalty provision to the regulations being proposed for reformulated and conventional gasoline, by specifying the number of days of violation that would result from the different types of regulatory requirements being proposed. The proposed regulations include provisions for calculating the number of days of violation for violations of: (1) Averaged standards; (2) per-gallon standards; (3) minimum and maximum content requirements; and (4) non-standard requirements and prohibitions. In addition, EPA is proposing rebuttable presumptions for the amount of economic benefit associated with the production of reformulated gasoline that does not meet applicable standards, for the length of time that gasoline remains in the gasoline distribution system, and for the properties of gasoline for which refiner/importer or independent analysis requirements are not met.

1. Averaged Standards Violations

In the case of violations of averaged standards, the proposed regulations restate the statutory provision regarding the number of days of violation and provide—in accordance with section 211(d) of the Act—that a violation of a multi-day average standard constitutes a separate violation for each day in the averaging period. In the case of a refiner that attempts (but fails) to meet the benzene content standard on average, for example, the number of days of violation would be 365, the number of days in the year-long benzene averaging period. The penalty in this example thus would be not more than $9,125,000 ($25,000×365=$9,125,000) plus the amount of the economic benefit or savings.

EPA also is proposing that violations of the credit creation requirements would constitute a violation for each day in the averaging period during which the credits were allegedly created. For example, the number of days of violation for a refiner that transfers bogus benzene credits would be 365 (the length of the benzene averaging period). This approach is consistent with section 211(d)(1) of the Clean Air Act, because the improper creation and transfer of credits is a "violation with respect to a regulation prescribed under subsection * * * (k) * * * which establishes a regulatory standard based upon a multi-day averaging period * * *." Under the reformulated gasoline regulations, credits can only be created or used by a party that achieves compliance on average (as opposed to per-gallon). As a result, the creation and transfer of credits is integral to the multi-day averaging portion of the reformulated gasoline regulations.

EPA considered, but rejected, an alternative of proposing that violations of the credit creation/transfer requirements would constitute a single day of violation, because it would create

an inadequate disincentive against cheating in some situations. For example, a refiner could produce only reformulated gasoline that achieves compliance per-gallon (and in fact meets these standards), obtain no credits from any other party, yet sell credits to another refiner. These credits would be bogus, because the refiner did not create or obtain any valid credits to transfer. The transferor of these bogus credits could receive millions of dollars for the sale of the bogus credits, in which case a penalty of up to $25,000 plus economic benefit (for a single day of violation) would not be an adequate deterrent. Under the proposed approach, the penalty would be up to $9,125,000 (in the case of the year-long benzene standard) plus economic benefit, which would constitute an adequate deterrent. The actual amount of the penalty would depend upon a number of different factors, such as the number of improper credits wrongfully created or transferred, the refiner or importer's degree of willfulness and/or negligence, its degree of cooperation or noncooperation, and its history of noncompliance.

2. Per-Gallon Standards Violations

EPA also is proposing the method for calculating the number of days of violation for gasoline manufactured or imported for which compliance is achieved on a per-gallon (as opposed to averaged) basis, and where the per-gallon standard is violated. EPA is proposing that refiners be under a continuing obligation to correct the violation, so that violations of such per-gallon standards would constitute a separate day of violation for each and every day the non-complying gasoline remains in the gasoline distribution system. EPA proposes that such a violation begin on the day such non-complying gasoline is produced or imported, and end when the violation is corrected, but if not corrected, then on the last day that any such gasoline is offered for sale or is dispensed to any ultimate consumer for use in a motor vehicle.[31]

EPA believes this approach to calculating the number of days of violation for gasoline produced in violation of per-gallon standards is appropriate because the adverse environmental consequence of producing or importing reformulated gasoline that fails to meet such a standard continues so long as this gasoline is, or has the potential for, being used to fuel motor vehicles. Under EPA's proposal, therefore, the days of violation would continue to accrue until the gasoline produced in violation of the per-gallon standard no longer is, or has the potential to be, dispensed into motor vehicles. The violation could be corrected (stopping the accumulation of additional days of violation) only if all of the violating gasoline is re-blended or re-refined in such a manner that it meets all per-gallon standards.

A violation of this type would not be considered corrected if, through fungible mixing with other gasoline, the gasoline mixture meets the per-gallon standard for the parameter that was violated originally. Rather, in order to correct a violation after such mixing occurs, the mixture would have to be adjusted so that its properties would be equal to the properties that would have existed if the violator's gasoline in the mixture had met the applicable standard when produced (if produced under a per-gallon standard) or had been equal to the properties claimed by the violator that produced the gasoline (if produced under an averaged standard).

For example, if a batch of gasoline produced by a refiner under the per-gallon benzene standard (not more than 1.0 vol % benzene) contains 1.2 vol % benzene, this gasoline would violate the per-gallon benzene standard. If the refiner does nothing to correct the violation, the number of days of violation would include every day beginning on the day the gasoline was produced, and continuing through the last day any of this gasoline was dispensed for use in motor vehicles. If the refiner is able to isolate this gasoline prior to fungible mixing, the violation could be corrected by adding a sufficient volume of gasoline to reduce the benzene content of the batch to 1.0 vol %, which would stop the increase in the number of days of violation.

In the event the gasoline in this example has been fungibly mixed, the tested benzene content of the mixture may be below 1.0 vol % as a result of lower benzene contents of other gasolines in the fungible mixture. The original violation, however, would not be considered corrected as a result of the overall benzene content of the mixture. In order to correct the violation of the fungible mixture, the refiner would have to add a sufficient quantity of low-benzene gasoline to the mixture, so that the mixture would have the same overall benzene content as would have existed if the refiner's gasoline had been produced to meet the benzene per-gallon standard.

For purposes of determining the number of days of violation for per-gallon violations, EPA is proposing that the length of time gasoline remains in the distribution system be deemed to be twenty-five days unless the regulated party or EPA provides evidence proving the gasoline remained in the distribution system for a shorter or longer time period. EPA is proposing this rebuttable presumption in order to avoid potentially difficult issues of fact in proving the precise movements of a particular volume of gasoline within the distribution system.

EPA believes that twenty-five days is an appropriate presumption for the length of time that gasoline remains in the distribution system. After gasoline is produced or imported, it must be transported to a bulk terminal, either by pipeline, coastal tanker, or barge, and may be further transported to a smaller bulk plant by truck or rail. The gasoline then must be transported by truck to the retail outlet where it will be dispensed into motor vehicles. The total length of time gasoline remains in the distribution system is thus the sum of the times required for each of the various transport legs, plus the storage times at the terminal, bulk plant (if applicable), and at the retail station.

A study conducted by Jack Faucett Associates has estimated the lengths of time required for each of these stages in the movement of gasoline from the refinery to the point of being dispensed into a motor vehicle; [32] the results of this study are summarized in Table V-3.

TABLE V-3.—ESTIMATED TRANSPORT AND STORAGE TIMES FOR GASOLINE

Stage in distribution system	Number of days required for stage	
	Average	Range
Transport:		
To the Bulk Terminal		
Pipelines		
May	9.4	0–20
September	10.7	0–24
Coastal Tanker	3.2	1.5–7.3
Inland Barge	3.0	0.5–17.5
To the Bulk Plant		
Rail	2.5	0.5–10
Truck	0.5	0.2–2
To the Retail Outlet	0.1	0.05–1
Storage:		
Bulk Terminals		
May	11.7	3–30
September	12.4	3–30
Bulk Plants	4	1–20
Retail Outlets	3.9	0.5–45

[31] EPA will discuss in a later paragraph its proposal for a rebuttable presumption that gasoline remains in the distribution system for twenty-five days.

[32] Jack Faucett Associates, "Petroleum Storage and Transport Times," presented to EPA September 26, 1986. A copy of this report has been placed in the public docket for this rulemaking.

According to the Faucett study, the average length of time gasoline remains in the distribution system is twenty-five days, with an overall range of less than one day to over fifty-five days.

While section 211(d) of the Act specifies the number of days of violation when a multi-day averaging period is involved, it does not specifically discuss the number of days of violation where averaging is not involved. The statute just states that the penalty is $25,000 for every day of violation, plus the economic benefit or savings. Today's proposal is designed to clarify, for different activities, the number of days a party may be in violation for such activities. The Agency seeks comments on its proposal for a rebuttable presumption for the length of time gasoline remains in the distribution system, including whether such a presumption is appropriate and if so, whether twenty-five days is an appropriate length of time.

For violations of per-gallon standards, EPA is in effect proposing an ongoing requirement on the refiner or importer to correct any violations of applicable per-gallon standards for each batch of gasoline introduced into commerce in violation of such per-gallon standards. This obligation to cure continues until the noncomplying gasoline either is brought into compliance or no longer remains in the gasoline distribution system. EPA is proposing that each day the refiner or importer fails to correct such violation shall be considered a separate violation by EPA.

EPA also is proposing rebuttable presumptions for the properties of gasoline that is produced or imported without the required refiner/importer sampling and testing to determine the gasoline's properties for purposes of determining whether the gasoline violated standards as well as whether any such violation has been corrected. EPA believes that presumed properties are necessary in such a situation, because the true properties of gasoline may be unknown if the gasoline is not sampled and tested before leaving the refinery. [33]

The properties that EPA is proposing are the "worst case" values for each of the relevant properties, and were derived from the Motor Vehicle Manufacturer's Association (MVMA) 1990 national fuel survey. [34] Refiners could rebut these values using other evidence of the properties of the gasoline in question. [35] This other evidence could consist of sampling and testing of the gasoline downstream from the refinery or import facility (e.g., by a pipeline company), or of evidence of the properties of the blendstocks used to produce the gasoline. EPA believes the 1990 MVMA data are an appropriate basis for setting the presumptions regarding "worst case" gasoline. Conventional gasoline that is produced in 1995 and subsequent years probably will be similar to gasoline that was produced in 1990 (the anti-dumping requirements are intended to prevent degradation below 1990 levels). EPA is aware of no reason why the dirtiest gasoline that was produced in 1990 is likely to be different from the dirtiest gasoline that could be produced in 1995 and later.

In the case of reformulated gasoline that is produced or imported without meeting the independent analysis requirements, and where this failure is the direct fault of the refiner or importer, EPA is proposing that a refiner or importer could not rebut the presumed "worst case" values using testing that was carried out by the refiner that produced, or the importer that imported, the gasoline. EPA is proposing this restriction on the means for rebutting the presumed gasoline values because of the risks for cheating in the absence of this limit. For example, a refiner could produce non-complying gasoline but generate false test results that show the gasoline met all standards. In the absence of the independent analysis process, the refiner's false results could be the only evidence of the properties of the gasoline in question. If the refiner in this example could merely present its test results to rebut the presumed values, EPA would have no basis to refute the refiner's evidence.

In the case of a failure to meet the independent analysis requirements that was not the fault of the refiner or importer, however, this risk of cheating would not be as great, so that in such a situation refiners and importers would be able to use their test results to rebut the presumed values. For example, if a refiner had a contract in place with an independent laboratory that required all of the procedures specified in the independent analysis provision, but the independent laboratory failed to retain a sample taken from a particular batch of reformulated gasoline for the required length of time, this would constitute a failure to meet the independent analysis requirement so that the worst case values would apply to this batch. If the refiner did not cause the sample retention violation in this example, the refiner's test results could be used to rebut the presumed worst case values for the batch.

Even in cases where refiners and importers are precluded from using their own test results to rebut the presumed worst case values, however, these parties would be able to present other evidence of the properties of the gasoline in question, such as the downstream testing or blendstock evidence described above.

3. Minimum and Maximum Requirement Violations

EPA is proposing that the number of days of violation for violations of the minimum and maximum requirements would be calculated based upon the number of days the gasoline actually fails to meet the minimum or maximum requirement (or as long as such non-complying gasoline remains in the gasoline distribution system). Thus, for example, if reformulated gasoline is found at a gasoline terminal that contains less than 1.2 wt % oxygen, the gasoline would be in violation of the 1.5

[33] Under the proposed independent analysis requirement, refiners and importers would have a sample collected of every batch of reformulated gasoline that is produced or imported, but only 10% of the samples would be analyzed normally. Industry contends that testing 100% of the samples imposes too large an economic burden, and that if necessary, 10% testing should be sufficient. In addition, if the independent analysis requirements are not met, there could be no independent sample collected. As a result, gasoline could be produced or imported where no independent analysis will be available.

[34] These values were obtained from the 1990 MVMA gasoline sampling database. The values for sulfur, benzene, 90% distillation, aromatics, and olefins were determined by adding three standard deviation units to the mean for each of these parameters. This approach yields a "reasonable worst case" value which is not determined by an unusually high maximum value, but rather reflects the upper boundary of approximately the central 99% of the values. As a result, this approach results in the exclusion of "outlier" values that may be contained in the dataset.

The value for RVP was determined in a similar manner, but from a restricted data set. Because RVP was regulated by zones in 1990, the data set used in the calculation was not that for the nation as a whole, but rather the summertime samples from Buffalo, New York, the city in the MVMA program with the highest average summer RVP. Because Oxygen is a component that is added to ordinary gasoline rather than being a naturally occurring constituent, its "reasonable worst case" value is taken to be zero percent by weight.

[35] EPA is proposing the worst case values for this rebuttable presumption because of the difficulty the Agency would have in proving the true properties of gasoline that had not been sampled and tested. By contrast, in the case of the presumption being proposed for the length of time gasoline remains in the distribution system (i.e., the average time) the proof of the true length of time would in many cases be fairly available to the Agency, through pipeline and other distribution records. Moreover, to the extent facts do exist regarding the true properties of gasoline that had not been sampled and tested (e.g., production records), these facts normally would be much more available to the refiner or importer than to the Agency for use in rebutting the presumed worse case values.

wt % oxygen minimum requirement. The number of days of this violation would be calculated beginning on the first day the oxygen content of the gasoline in question fell below 1.5 wt %, and would continue until the oxygen content of this gasoline reached 1.5 wt %. In contrast to the case of violations of per-gallon production/import standards, discussed above, the correction of minimum/maximum violations could be accomplished through fungible mixing only.

EPA believes it is appropriate to distinguish the number of days of violation for violations of the minimum and maximum requirements from such calculations for violations of per-gallon standards by refiners and importers. At the time gasoline is produced or imported, the minimum and maximum requirements would be relevant only to gasoline that is produced to meet an averaged standard.[36] Moreover, the requirements for meeting the minimum and maximum requirements would exist in addition to the requirements for meeting average standards. As a result, if a refiner violates both the minimum/maximum requirements and the average standards, penalties would apply to the average standard violation separately from penalties for the minimum/maximum violation.

In addition, the minimum and maximum requirements would apply to all persons in the gasoline distribution network, while the per-gallon and averaged standards would apply only to the refiner or importer that produced or imported the gasoline. Parties downstream from the refinery or import facility normally could determine only whether the gasoline on hand violates the applicable minimums and maximums, and not whether the gasoline was produced under, or in violation of, per-gallon or averaged standards. As a result, such a downstream party normally would have insufficient knowledge to take the actions described above that are necessary to correct a per-gallon production/import standard violation. A downstream party could, however, take actions to correct a minimum/maximum violation (e.g., by adding a sufficient volume of offsetting product).

4. Non-Standard Requirements and Prohibitions

The Agency is proposing that the number of days of violation for the violation of any affirmative requirement and/or prohibition not involving a gasoline standard (as discussed above) would be calculated to include each day the requirement remains unaccomplished or the prohibited activity remains uncorrected. In such cases, EPA is proposing regulations that impose an ongoing duty to comply with such affirmative requirement and/or prohibition, and it is therefore a continuing violation until the requirement is accomplished or the prohibited activity is corrected. For example, under the proposed regulations refiners would be required to have a compliance audit conducted at the conclusion of each calendar year of the refiner's activities during the calendar year, and to have a report of this audit submitted to EPA by May 30. In the event a refiner did not have this required report submitted to EPA by May 30, this would constitute a violation of an affirmative requirement. The number of days of this violation would be calculated by adding the number of days from May 30 until the day the required report is submitted to EPA. Where a prohibited activity is not subject to an ongoing obligation to correct, then the days of violation would be limited to the day or days on which the prohibited activity occurred.

5. Rebuttable Presumption Regarding Economic Benefit

The reformulated gasoline penalty provision at section 211(d)(1) of the Clean Air Act states that penalties are up to $25,000 per day per violation plus the economic benefit or savings resulting from the violation. In the case of violations of the reformulated gasoline or anti-dumping standards, the amount of economic benefit or savings accruing to the violator primarily would be a function of the properties of the gasoline that is produced. Gasoline that does not meet applicable standards normally would be less costly to produce than gasoline that meets applicable standards, and the economic benefit normally would reflect this difference.[37]

Because of the complexities of the economics of refinery operations, the proof of this economic benefit would be difficult for the Agency, and in most cases would require facts that are wholly within the control of the violator. In certain situations, moreover, the properties of the gasoline that is produced may not be known, which would make proof of the economic benefit extremely difficult or impossible. For example, if a refiner does not perform or does not properly perform the required sampling and testing of gasoline at the refinery, there may be little or no evidence of the properties of the gasoline that was produced. In such a case, EPA could have no basis for alleging the amount of economic benefit realized by the refiner, even if the refiner provided EPA with all of its refinery records.

For these reasons, EPA believes that a rebuttable presumption regarding the per-gallon economic benefit resulting from the production of reformulated gasoline that does not meet applicable standards would be appropriate. At this time, however, EPA is not proposing the specific amount of economic benefit that would be presumed. EPA anticipates that this amount, or the mechanism for deriving this amount, will be proposed as part of a later rulemaking involving reformulated gasoline, scheduled to be proposed by November 1, 1992. In order to facilitate this later rulemaking, EPA requests comments as to an appropriate level of economic benefit that should be presumed.[38]

EPA believes there are at least two different approaches for setting the level of this economic benefit presumption. First, the economic benefit could be determined by using the price difference between reformulated and conventional gasoline at the time the gasoline in question is produced. It is possible that a price index, such as the prices published by the New York Mercantile Exchange, could form a basis for setting the difference in price between conventional and reformulated gasoline. Setting the economic benefit through the use of such an index has the advantage of automatically adjusting to changes in market prices, which presumably would reflect changes in the costs of producing

[36] Per-gallon standards are more rigorous than the minimums and maximums in every case, so that gasoline properly produced to meet per-gallon standards could not violate the minimums or maximums.

[37] A violator could have economic benefit or savings resulting from a violation in addition to the lesser cost to produce the violating gasoline. For example, a violator could reap economic benefits from an increased market share generated by selling less expensive non-complying gasoline. In addition, economic benefit would include the time value of any ill-gotten money.

[38] The regulatory language that would implement such an economic benefit presumption could be proposed as follows:

The amount of economic benefit or savings resulting from the violation of any multi-day averaging standard, per-gallon standard, per-gallon minimum or per-gallon maximum under §§ 80.41(b)(1), (d)(1), or (e)(1), or requirement to determine the properties of gasoline produced or imported under §§ 80.70(b) or (c) shall be deemed to be [a worst case scenario amount, or a price determined through a petroleum industry index] for each gallon of gasoline giving rise to the violation; unless the respective party or EPA demonstrates by reasonably specific showings, by direct or circumstantial evidence, that the economic benefit arising from such violation was less than or more than the economic benefit described above.

reformulated and conventional gasoline. One disadvantage to this approach is that it generally would provide an average of the reformulated to conventional price difference, and may not accurately reflect the actual difference in the cost of production at any particular refinery.

Another method would be to determine how much savings could be achieved by producing the dirtiest "worst-case" gasoline. Under this approach, the "worst-case" (for the environment) could be determined for each parameter relevant for reformulated gasoline, and the incremental refinery savings could be calculated for producing gasoline having such "worst-case" properties as compared to the cost of producing gasoline that meets applicable standards. The advantage to this approach to setting the level of the economic benefit presumption is that it would constitute the worst case scenario, which would ensure that the economic benefit of noncompliance would be recovered in every case.[39] The disadvantage of this approach is that changing market conditions could render the presumed number inaccurate, and an understated economic benefit assumption could result in an inadequate deterrent against violations.

6. Anti-dumping Requirements and Prohibitions

The violation-day calculation methods being proposed also would apply, where applicable, to the standards, requirements, and prohibitions for anti-dumping, in the same manner as discussed above for reformulated gasoline. The primary difference between the reformulated gasoline and the anti-dumping programs, in this context, is that there are no per-gallon production/import standards nor any minimum/maximum requirements under anti-dumping. As a result, the violation-day calculation methods being proposed for these categories of requirements would have no application under anti-dumping. The violation-day calculation methods for violations of average standards and of affirmative requirements and prohibitions would apply under anti-dumping, however.

EPA also is proposing a rebuttable presumption for the properties of conventional gasoline that would apply in the case of a refiner or importer that failed to sample and test its gasoline for purposes of determining whether the party's gasoline violated standards as well as whether any such violation has been corrected. As is being proposed for reformulated gasoline, the presumed values represent the "worst case" levels for the parameters relevant to conventional gasoline. These presumptive values would not apply if a refiner or importer conducted the required sampling and testing, and these values could be rebutted in the same manner that was discussed for reformulated gasoline.

EPA believes that a rebuttable presumption regarding the economic benefit associated with violations of the anti-dumping requirements may be appropriate, similar to the economic benefit presumption discussed for reformulated gasoline. This presumption could be based upon the differences in the cost to produce the worst case conventional gasoline (similar to the worst case gasoline discussed above for reformulated gasoline benefit presumption), but compared to the cost to produce average conventional gasoline. The specifics of this presumption would be proposed by EPA in the later rulemaking involving reformulated gasoline, scheduled to be proposed by November 1, 1992. In order to facilitate this later rulemaking, EPA requests comments regarding whether such a presumption would be appropriate for conventional gasoline, and if so, an appropriate method for deriving such a presumed benefit.

VI. Compliance on Average

Section 211(k)(7) of the Act provides that credits may be created for reformulated gasoline which contains more oxygen, or less benzene or aromatic hydrocarbons than prescribed by the standards for these parameters,[40] and that such credits may be used, or transferred to another person for use within the same covered area where the credits were earned, to demonstrate compliance with the reformulated gasoline standards. This subsection also forbids the use of credits to achieve compliance to the extent that the average levels of oxygen and benzene in any covered area would exceed the levels which would occur in the absence of averaging, i.e., if all reformulated gasoline in the covered area complied on a per-gallon basis.

A. Geographic Scope of Averaging Program

As just noted, the Act specifies that credits earned for exceeding reformulated gasoline standards may be used in the covered area in which they were earned. In other words, to the extent reformulated requirements are being met on average, they should be met on average in each covered area. Otherwise, one covered area could receive less environmentally beneficial reformulated gasoline as a result of another area receiving more beneficial reformulated gasoline. One method of meeting this statutory requirement would be a separate averaging program in each covered area. Separate programs would require regulated parties to account for the ultimate destination of all reformulated gasoline and demonstrate compliance with averaged standards through record keeping, reporting, and auditing requirements. Such a covered area-based averaging program would be exceptionally complex to implement, however, especially as additional areas opt-in. This is because the current gasoline distribution system relies on transporting a basically fungible product to speed distribution and reduce costs. Moreover, as additional areas opt-in to the program, the complexities of keeping separate records for each covered area would become extremely time-consuming. This is especially true of local terminals serving more than one covered area. Furthermore, developing a distribution system to accommodate gasoline which can only be delivered to a specific covered area could result in a totally segregated distribution system, which would significantly increase costs. As a result, EPA is proposing a different averaging program. While not requiring averaging specifically by each covered area, EPA's proposal is designed to assure that in fact for each covered area the standards are met, on average, with the reformulated gasoline requirements. EPA proposes that any refinery be allowed to average across its entire reformulated gasoline product with an exception. During the VOC averaging period RVP and oxygen would be averaged by VOC-Control Regions and as OPRG or non-OPRG gasoline, as long as certain conditions are met to ensure that standards are met on average in each covered area.

EPA's proposal for refinery-based averaging has compelling advantages over a covered area-based averaging program. Because different covered

[39] EPA believes the worst case economic benefit presumption would be appropriate, as opposed to an average benefit presumption, because the facts necessary to rebut the presumption normally would be more readily available to refiners/importers than to the Agency.

[40] However, given EPA's determination that the VOC and toxics performance standards of section 211(k)(3)(B) are more stringent than the gasoline content standards of section 211(k)(3)(A), today's proposed regulations do not specify a standard for aromatic hydrocarbons content, and, for this reason, the proposed regulations do not include aromatic hydrocarbon credits.

areas would require reformulated gasolines with different properties, a covered area-based program thus would restrict the degree to which reformulated gasoline could be transported from the refinery to the covered areas in fungible mixtures, which could have serious market consequences. In addition, the regulated parties at the covered area level could have difficulty obtaining sufficient credit-generating reformulated gasoline to offset credit-requiring reformulated gasoline previously sent to the covered area, because in many cases the gasoline would be produced or imported by a different person.

Under the refinery-based averaging program being proposed, on the other hand, most reformulated gasoline produced or imported can be transported in fungible mixtures with other reformulated gasoline. Moreover, the refinery has control over the types and amounts of credit-generating and credit-requiring reformulated gasoline produced, and can take the steps it deems necessary to ensure, together with other refineries serving a covered area, that standards are met on average.

B. Mechanisms to Ensure Each Covered Area Receives the Full Benefits of Reformulated Gasoline

EPA believes that three program features of the proposed refinery-based averaging program would achieve the statutory goal of ensuring that the benefits of reformulated gasoline are fully realized by each covered area. First, EPA is proposing that reformulated gasoline included in the averaging program be subject to maximum and minimum per-gallon requirements for relevant parameters which are close to the statutory standard. The proposed minimums and maximums would significantly constrain potential fluctuations of these parameters compared to what would occur without such strict maximums and minimums. Second, the standards for average compliance would be more stringent than for per-gallon compliance, which provides additional assurance that the actual average levels of regulated parameters will not represent a degradation from the actual average levels expected in the absence of an averaging program. Third, a refiner would be required to conduct a program of surveys in each covered area to which the refiner supplies averaged gasoline to measure the average levels of regulated parameters. In covered areas where measured levels fall short of the reformulated standards, refiners and importers that supplied that area with averaged reformulated gasoline would be required to meet tighter reformulated averaged standards and minimums and maximums for the reformulated gasoline they produce or import in future averaging periods. The more stringent requirements would be expected to increase the likelihood that standards are met on average. Further, the threat of the more stringent standards being triggered by a showing that the reformulated standards are not being met on average would likely provide a more powerful incentive to participants in the averaging program to take steps adequate to ensure that standards are met on average in each covered area. Each of these components of the averaging program is discussed more fully below.

1. Minimums and Maximums

EPA proposes establishing maximum levels for RVP and benzene, and a minimum level is established for oxygen content for gasoline for which compliance is achieved on average. The proposed minimums/maximums are listed in Table VI–2. EPA believes minimum/maximums will reduce the risk of geographical and temporal spiking. The adverse health effects of VOC result from short term elevated levels of ozone (or smog).[41] These adverse health effects that could result from short term exposure to elevated VOC levels are prevented through the RVP maximum and the oxygen minimum (under the simple model, VOC emissions are a function of RVP level and oxygen content).

No minimum is being proposed for the toxics emission performance standard. EPA believes this approach is valid because a maximum is being proposed for benzene, which comprises approximately 75 percent of the toxics emission. Therefore, the benzene maximum indirectly will also control toxics emissions. In a covered area that fails a toxics survey, moreover, the averaged standard for toxics emission performance is made more stringent. In addition, the adverse health effects of toxic air pollutants are cumulative over long periods of time, so that temporal spiking of toxics emissions is not a concern as it is for VOC emissions. As a consequence, the control of average toxics emissions (which is being proposed) is more relevant for protecting human health than controls over each gallon of gasoline through a maximum per-gallon toxics standard (which is not being proposed).

EPA believes that the specific maximum and minimum levels being proposed are appropriate in that they allow the regulated parties production flexibility, while reducing the extent to which averaged gasoline may deviate from standards, thereby protecting against adverse health consequences.

2. Averaged Standards

The standards proposed for benzene content, oxygen content, RVP, and toxics emissions performance on average are numerically more stringent than those which apply on a per-gallon basis. The Agency believes the more stringent averaged standards fully recapture the margin of safety that gasoline suppliers can be expected to build into their fuels to comply with the per-gallon standards.

The need for refiners to build a margin of safety into their plans for compliance under the per gallon standards arises from the existence of error in the measurement of fuel properties. The possibility exists that fuel properties measured as being in compliance in one measurement may not be in compliance in a second measurement. Further, the possibility exists that the first measurement may show compliance even though the actual fuel properties would be out of compliance. Under the per gallon standards, if EPA determines that a fuel sample is out of compliance based upon valid Agency measurements, then the batch of fuel from which the sample was taken is out of compliance, regardless of whether other measurements show compliance with the standards.

Instead of including a margin of safety in the design and production of its fuel, fuel suppliers could measure the properties of each batch of fuel several times and in several different laboratories, thereby reducing the probability that the average measured properties differ significantly from the actual values. However, this method is costly, particularly for small batches of gasoline, and it does not eliminate the risk that EPA may still measure a different number in its compliance testing. Even more importantly, the time involved in obtaining multiple measurements from several different laboratories prior to distributing the fuel is impractical due to the amount of fuel that would have to be stored and the resulting disruption in fuel supply. Thus, EPA believes that the great majority of fuel suppliers will choose to utilize a compliance margin approach to avoid these problems. Under this approach,

[41] Ozone is created from a complex chemical reaction of VOC in the presence of sunlight. Ozone severely irritates the eyes, nose and throat and directly reduces lung function, and appears to have adverse effects on the body's immune system.

suppliers would establish target values for relevant fuel properties that are more stringent than the regulatory requirements. Suppliers would be confident that fuels measured to meet these more stringent target values would in fact conform to the regulatory requirements; further, they would be confident that measurements of fuel properties taken for enforcement purposes would show their fuel as being in compliance. EPA defines the margin of safety as being equal to the difference between the target value and the regulatory requirement for each fuel property.

This margin of safety would be based on the repeatability [42] and reproducibility [43] of the method used to measure the property in question. EPA proposes to base its estimate for the margin of safety on the 95% confidence interval for measurement reproducibility.[44] This interval can change over time, however, as analytical techniques improve and refinery technology becomes more sophisticated. Therefore, the Agency believes it appropriate to consider its experience with RVP repeatability in determining these confidence intervals.

Prior to the implementation of regulations requiring RVP control, the legal and economic incentives for accurate measurement and control of RVP were minimal. Standard analytical methods for measuring the RVP of gasoline were considered to have repeatability levels of approximately 0.6 psi. The implementation of Phase I volatility controls introduced legal and economic incentives for accurate determination of RVP levels, and the standard analytical methods were upgraded to achieve a repeatability level of approximately 0.3 psi. Recent improvements in existing analytical methods implemented in EPA's Ann Arbor laboratory have been able to consistently achieve repeatability levels of approximately 0.1 psi. The six-fold improvement in RVP measurement repeatability (and similar improvements in measurement reproducibility), achieved in a five-year time frame, reflect the increased importance of precise, accurate RVP measurements. EPA believes such improvement will continue to occur in the case of reformulated gasoline, because the cost of RVP control increases as the level of RVP drops.

The incentives for accurate measurement of aromatic content and benzene levels are at present comparable to those that existed for RVP measurement five years ago. Based on the Agency's experience with RVP repeatability, therefore, EPA believes it is appropriate to project increases in measurement precision and accuracy for these parameters as well. In the case of benzene, current standard procedures for benzene testing have reproducibility levels of approximately 0.3 volume percent at the maximum level of benzene permitted under the Act. Given the need to control benzene to meet the benzene limit specified in the Act for reformulated gasoline, the impact of benzene content on toxics emissions, and the ability of fuel suppliers to sell benzene credits, EPA believes it appropriate to project increases in benzene measurement precision that are comparable to those achieved for RVP (i.e., to 0.05 volume percent or lower). Alternative measurement methods with comparable or better reproducibility levels than the current standard procedures (such as ASTM procedure D4053 and D3606) currently exist, demonstrating the potential for improved precision.

A similar situation applies to oxygenate measurement since oxygen credits may be sold in a manner similar to benzene credits under today's proposal. Current incentives for precise oxygenate measurement are limited, but the reformulated gasoline program will create strong legal and economic incentives to improve oxygenate measurement reproducibility. Furthermore, unlike for RVP and benzene which are components of gasoline, fuel suppliers can more easily control the level of oxygenate in their fuels by measuring the amount of oxygenate added to a known quantity of non-oxygenated gasoline. Therefore, EPA believes it appropriate to project an improvement in current reproducibility levels for the most commonly used oxygenates to a level of approximately 0.1 weight percent oxygen or lower.

Aromatics are not directly controlled by the Act or by today's proposal. However, aromatics content affects toxics emissions (as do RVP levels, oxygen content, and benzene content), hence the ability to accurately measure aromatics affects the margin of safety that fuel suppliers would be likely to maintain for toxics compliance. Current standard practices for aromatics measurements yield reproducibility levels of between 2.5 and 3.5 volume percent for levels of aromatics found in current gasoline blends. EPA believes that substantial improvements in aromatics measurement are possible for the reasons outlined above, but EPA believes the incentives for such improvements are not as strong as for benzene since the benefits of more precise and accurate aromatics measurement are limited to the effect of aromatics on toxics emissions. EPA believes it reasonable to project improvements in aromatics reproducibility to 1.25 volume percent or less. Alternative measurement methods with reproducibility levels that are comparable or better than current standard methods (such as the procedures currently in use at EPA's Ann Arbor laboratory) demonstrate the potential for improved precision but are not currently in widespread use.

Using 1.25 volume percent as a conservative estimate for aromatics reproducibility, 0.05 volume percent for benzene reproducibility, 0.1 psi for RVP reproducibility, and 0.1 weight percent for oxygen content reproducibility, the implied margin of safety for toxics emissions can be calculated using the equations discussed earlier in Section II. This margin of safety can be calculated by taking the root mean square of the effect of the margin of safety for each parameter. The resulting calculation yields a toxics emissions margin of safety of approximately 1.5 percentage points or lower of emission reduction. Additional improvements in aromatics reproducibility to levels below 1.25 volume percent are expected to reduce the margin of safety that refiners can be expected to maintain. As such improvements are made, fuel suppliers will be able to maintain margins of safety smaller than 1.5 percentage points of toxics emissions. The incremental stringency of the toxics standards under averaging should therefore result in fully recapturing the margin of safety, as well as obtaining greater environmental benefits than would be obtained without averaging. The same is also expected for the VOC performance standards under averaging.

These projections and the associated proposed increment in the stringency of standards under averaging are summarized in Table VI–1.

[42] Repeatability is defined by the American Society for Testing and Materials (ASTM) as a "quantitative expression of the random error associated with a single operator in a given laboratory obtaining replicate results with the same apparatus under constant operating conditions on identical test materials within a short period of time." ASTM D 3244–77, paragraph 3.8.

[43] Reproducibility is defined by the ASTM as a "quantitative expression of the random error associated with operators working in different laboratories, each obtaining single results on identical test material when applying the same method." ASTM D–3244–7, paragraph 3.9.

[44] EPA believes that repeatability statistics need not be considered in estimating margins of safety, and that such estimates may be based upon reproducibility statistics only, because the error associated with repeatability is included in reproducibility statistics.

TABLE VI-1.—MARGINS OF SAFETY

Fuel parameter	Current reproducibility	Projected reproducibility	Increment
Benzene, vol %	0.3	0.05	0.05
Oxygen, wt %	0.6–0.75	0.1	0.1
RVP, psi	0.1–0.35	0.1	0.1
Aromatics, vol %	2.5–3.5	1.25	n/a
Toxics, % reduction	n/a	n/a	1.5

Under the proposed rule, the averaged toxics emissions reduction would be determined over an averaged period of January 1 through December 31. The summer toxics reduction model would be used to determine emissions for gasoline designated as summer toxics-controlled gasoline, and the winter toxics reduction model for gasoline designated as winter toxics-controlled gasoline. The Agency is proposing that each refinery would be required to designate gasoline using the summer toxics model beginning on the date it begins to produce VOC-controlled gasoline, and continuing until the date the refinery begins to produce gasoline that is not VOC-controlled, but for a maximum of five and one-half months. During the remainder of the year (a minimum of six and one-half months) the refinery would be required to use the winter toxics model. (This discussion applies equally to importers, but for clarity will be couched in terms of refineries only.)

The Agency is proposing that the time during which summer toxics designated gasoline could be produced be limited. An economic incentive to produce more summer toxics gasoline derives from the fact that it is easier technically and less costly for a refiner to meet the summer toxics reductions than the winter toxics reduction. Without the proposed time limit, there would be an economic incentive for refiners to produce more summer toxics gasoline for a longer time period than was used by EPA in determining the appropriate summer toxics emission model, thus skewing the averaged standards. The summer toxics emission model is based upon the time period from April 1 through September 15, described in section II-A.3.e.

EPA considered proposing that the summer model would be required for calculating toxics emissions for all gasoline produced during the high ozone season, June 1 through September 15. This option was rejected, however, because refiners will need to produce VOC-controlled gasoline substantially before June 1 to ensure that facilities upstream of the retailer meet the VOC-controlled gasoline standards on May 1. By requiring refiners to begin using the summer toxics model when they begin producing VOC-controlled gasoline, the production periods for gasoline designated as VOC-controlled and for gasoline designated for summer toxics will coincide totally or in large part.

Some refiners may find that they need to produce VOC-controlled gasoline for a longer time period than five and one-half months, in order to supply markets located at different distances from the refinery. For example, a hypothetical refinery located in Houston, Texas that supplies gasoline to Houston and also to New York City may have to begin producing VOC-controlled gasoline as early as March 15 in order to bring gasoline in the refiner's New York City terminals up to the VOC-controlled standards by May 1. This same refiner may have to continue producing VOC-controlled gasoline until September 15, in order that the gasoline in the refiner's Houston terminals meets the VOC-controlled standards until September 15. It may be necessary, therefore, for this refiner to produce VOC-controlled gasoline for six months (March 15 through September 15). This refinery would begin producing gasoline designated for summer toxics on March 15, but would be required to stop producing summer toxics gasoline on September 1, however, due to the five and one-half month maximum for summer toxics. During the September 1 through September 15 period, this hypothetical refinery would produce gasoline that is designated as VOC-controlled and winter toxics.

EPA is proposing that RVP for reformulated gasoline covered areas be averaged separately for VOC-Control Region 1 and VOC-Control Region 2. EPA believes this will ensure that VOC-Control Region 1 would receive an appropriate share of lower RVP gasoline. Otherwise, for example, gasoline having 7.1 psi RVP could be produced and shipped to VOC Region 2, and through averaging allow "dirtier" reformulated gasoline to be shipped to VOC Region 1.

3. Compliance Surveys

In an effort to maximize the benefits of an averaging program and still remain faithful to Congress' intent that each covered area be supplied with gasoline that meets the applicable requirements on average, EPA proposes alternative averaging requirements. First, as the statute provides, a fuel supplier may use any credits it earns (or obtains from another supplier in the case of oxygen and benzene credits) in the covered area in which the credits were earned. Under this approach, the supplier would have to maintain records sufficient to confirm where credit-generating and credit-requiring gasoline was sold. In the alternative, a fuel supplier could avoid direct monitoring of where its credits were earned and used, and instead prove that covered areas where it supplied reformulated gasoline received the correct mix of averaged gasoline by conducting a survey of the average quality of the gasoline in each covered area where it supplied averaged gasoline. (In the place of individual surveys, fuel suppliers could cooperatively conduct a comprehensive program of surveys that would determine the average quality of averaged fuel in affected covered areas.) If the survey revealed that the gasoline being sold in a covered area did not meet the reformulated gasoline standards on average, however, the supplier would be subject to more stringent averaged standards and minimum/maximum requirements in the following control periods. EPA expects that the threat of tighter standards would provide fuel suppliers with ample incentive to ensure that, indeed, the right mix of gasoline is sold in each covered area. In essence, the alternative averaging requirements would give fuel suppliers the opportunity to obtain greater administrative flexibility. The requirement that they conduct a survey to establish that the covered area meets the standards, on average, plus the threat of future tighter standards, provides an adequate assurance that the alternative averaging requirements will accomplish the statutory objective.

The compliance surveys being proposed by EPA would monitor the average benzene, oxygen, RVP, and toxics emission performance of gasoline being sold at retail outlets to determine if the levels for these parameters meet per-gallon (as opposed to average) standards. In the event a covered area fails a survey, both the standards for average compliance and the maximum/minimums would be made more rigorous than initial standards.

No adjustment in the oxygen minimum is being proposed. EPA believes this approach is appropriate, however, because VOC and toxics emission performance are a function of oxygen content; if the oxygen content is sufficiently low that a covered area is not achieving the requirements for VOC or toxics emission reductions, ratchets will occur. For example, if a covered area fails a toxics survey as a result of inadequate oxygen, a toxics ratchet will result. As discussed elsewhere in this

preamble, the VOC emission reduction requirement of section 211(k) is achieved only if both the oxygen and the RVP standards are met. As a result, a survey failure of either the oxygen or the RVP standards indicates the VOC emission reduction requirement has not been achieved in the covered area. Although no oxygen ratchet is included, an RVP ratchet is required in the case of a survey failure for either oxygen or RVP. EPA believes the RVP ratchet will provide an adequate incentive to deter both RVP and oxygen noncompliance.[45] EPA is seeking comments on this issue.

C. Standards for Compliance on Average

The initial standards for compliance on average, which are more rigorous than the standards for per-gallon compliance, are listed in Table VI–2. This table also includes the adjusted standards for averaged reformulated gasoline to be supplied to a covered area which fails a survey, which is discussed in the following section.

TABLE VI–2.—STANDARDS FOR COMPLIANCE ON AVERAGE [1]

Category	Initial standards		1st adjustment		2d adjustment	
	Average	Per gal max/min	Average	Per gal max/min	Average	Per gal max/min
RVP (psi):						
VOC Region 1	7.1	7.4 max	7.0	7.3 max	6.9	7.2 max
VOC Region 2	8.0	8.3 max	7.9	8.2 max	7.8	8.1 max
Toxics:						
Benzene (volume %)	0.95%	1.3% max	0.90%	1.2% max	0.85%	1.1% max
Toxics emission reduction (%)	18.5%	none	19.5%	none	20.5%	none
Oxygen:						
(Weight %)	2.1%	1.5% min	N/A	N/A	N/A	N/A

[1] Parties who achieve compliance on average must, in addition, meet the per-gallon requirements for NOx emission and heavy metals content, and the average requirements for sulfur, T–90, and olefins.

D. Adjustment of Standards for Average Compliance

1. Compliance Surveys—An Introduction

As noted above, EPA is proposing that each refinery and importer that chooses to comply with applicable requirements on average without the administrative burden of documenting the movement of each gallon of its averaged gasoline must conduct a gasoline quality survey in each covered area that is supplied with any reformulated gasoline produced at that refinery or imported. These surveys are intended to ensure that the statutory requirements for reformulated gasoline are met on average in each covered area by determining if the gasoline being sold in each covered area meets the reformulated gasoline requirements on average. In the event that the survey results in any particular covered area indicate that the gasoline does not meet these requirements on average, the standards for compliance on average for that covered area would be adjusted. This survey requirement would be a condition of averaging without required documentation of averaged gasolines' movement. If a refiner or importer did not conduct the required surveys or document the movement of each gallon of averaged gasoline, it would have to meet the per-gallon standards for all of its gasoline.

Under EPA's proposal, this survey requirement would be satisfied if a survey program covering all covered areas receiving averaged gasoline were carried out in lieu of each refiner and importer conducting independent survey programs. EPA believes that it would be possible for a consortium of refiners and importers who intend to average across covered areas to plan and carry out a comprehensive survey program, that would be significantly less expensive than the alternative of each party conducting a program individually.

EPA is proposing that either type of survey program be conducted by a company that is independent of any refiner or importer (the "surveyor") and pursuant to a survey plan which EPA has approved by December 1 of the year preceding the year in which the surveys are conducted. Moreover, under EPA's proposal, a contract would have to be in effect with the surveyor which includes each of the elements of the survey plan, and the surveyor must have been paid the amount of money necessary to complete the survey plan, or this money placed into an appropriate escrow account to assure the money necessary for the surveys is available. EPA believes these requirements (that the survey plan must be concurred in, and contracted and paid for in advance) are necessary in order to ensure before averaging takes place that the required surveys will occur. In the event that a survey program (either individual or comprehensive) does not occur, a refiner or importer would have violated the proposed regulations for all gasoline which does not meet per-gallon standards. Merely enforcing these violations, however, would not provide the information which would be generated by a survey, which EPA believes is essential to determining the effectiveness of the overall program if any average-compliance reformulated gasoline is produced.

EPA is proposing a mechanism for refiners and importers to seek EPA approval for survey program plans, whereby such approval must be requested of EPA by September 1 of the year preceding the year in which the surveys would occur. EPA would then have 90 days to decide whether to approve the survey plans. Because refiners and importers must have survey plans which EPA has approved by December 1 (91 days after September 1), EPA believes that in most cases it would be prudent for refiners and importers to work proposed survey plans with EPA and other interested parties well in advance of the September 1 deadline. EPA's evaluation of a survey plan petition would be based upon whether the plan satisfied each of the criteria included in the proposed regulations (which are discussed in this section).

EPA believes it is necessary under any survey program that refiners and importers who supply averaged

[45] As is explained above, the survey if focused on gasoline that meets average standards (samples that violate the minimums/maximums are excluded from the survey). A survey failure results from an excessive proportion of "high average" gasoline in a city during a survey.

reformulated gasoline to a covered area not know in advance when a survey will occur, in order to avoid any possibility that a refiner or importer could "game" the survey program by supplying non-representative clean gasoline for the survey period. In order to preserve the needed element of surprise, EPA is proposing that the surveyor obtain survey dates, and in the case of a comprehensive plan the locations, from EPA, and that EPA would not supply this information to the surveyor more than two weeks in advance of the date of any survey. EPA believes that this two-week interval is sufficiently short that a refiner or importer would be unable to replace gasoline at retail outlets in advance of the survey, even if the refiner or importer did learn of the impending survey. In addition, EPA is proposing that surveyors be required to keep the survey locations and dates confidential.

EPA is proposing that survey plans include several provisions which are intended to ensure that the survey is properly carried out. First, the surveyor is required to send to EPA, upon EPA's request made within thirty days of its receipt of the survey report, a duplicate of each gasoline sample taken during a survey, so that EPA can perform confirmatory analysis of the sample. In the event EPA's analysis of a sample is different from the surveyor's, EPA would have the discretion to substitute its results as the basis for calculating the parameter averages for the survey. In addition, EPA is proposing that surveyors be required to allow EPA representatives to periodically monitor the conduct of the survey, which gives EPA the ability to determine if the survey is being conducted in accordance with the survey plan.

EPA also is proposing that surveyors be required to submit reports of surveys to EPA at the conclusion of each survey. These reports are intended to include sufficient information for EPA to evaluate whether the survey was properly carried out, as well as providing EPA with the data necessary to determine whether a covered area passed or failed the survey.

Under EPA's proposal, a survey would be defined as all of the valid samples collected pursuant to an approved survey plan in a covered area during seven consecutive days.

2. Number of Surveys

a. *Number of surveys under an individual refiner survey program.* EPA is proposing that if a refiner or importer elects to satisfy the compliance survey requirement by conducting an individual survey program (as opposed to participating in a comprehensive program), that the refiner or importer be required to conduct a series of four surveys in each covered area which is supplied with reformulated gasoline by that refiner or importer. Each refiner or importer would be required to survey the covered area's gasoline supply, and not just that supplier's fuel in the area. EPA believes that every covered area (including any areas that could opt into the program) is supplied with gasoline by more than one refiner or importer, and in the case of the larger covered areas, by at least dozens of such parties. Because each such refiner and importer would be required to conduct the series of four surveys, each covered area potentially would be surveyed a relatively large number of times and at least at the frequency required under the comprehensive program (discussed below). EPA believes this frequency of sampling would be sufficient to determine whether each covered area is receiving reformulated gasoline which meets the applicable standards on average for the same reasons which are discussed below for the comprehensive program.

b. *Number of surveys under a nationwide program.* EPA believes that any difficulties in ensuring that standards are met on average in each covered area are more likely to occur near the beginning of the reformulated gasoline program than after it has been in place for some time. This belief is based upon knowledge that initial implementation of the program will involve adjustments in the distribution system for gasoline, different document-handling procedures, different refinery procedures, implementation of new pipeline specifications, and a variety of similar changes. As these new procedures are mastered, however, refiners and importers involved in the averaging program should be better able to comply on average in each covered area. Therefore, EPA believes that early in the program relatively more surveys should be conducted to determine whether standards are in fact being met on average.

For the nine covered areas specified in the Act, EPA believes that 120 separate unannounced surveys in 1995 would provide adequate indication of whether standards are being met on average in each area, and also would reveal the existence of any temporal "spikes" during the averaging period. This number of surveys would, on average, result in a survey being conducted in each covered area during each month of 1995. If these surveys were spaced evenly through the year, a covered area would receive about four separate surveys during the high ozone season, each of which would determine whether the VOC standard is being met, and the toxics survey series would be based upon about thirteen surveys, which would provide a relatively substantial data base for determining average toxics emission reduction levels.

If the 1995 surveys reveal that standards are being met in each area, the Agency believes that progressively fewer surveys will suffice to provide the necessary assurance, according to the following schedule:

1995	120 surveys.
1996	80 surveys.
1997	60 surveys.
1998 and thereafter	50 surveys.

These survey numbers would result in the annual average number of surveys being conducted in each covered area declining from more than one per month in 1995 (13.3 surveys per covered area) to just under one every other month in 1998 and later (5.5 surveys per covered area). EPA believes that even the smaller number of surveys in 1998 and later would provide sufficient basis for EPA to infer whether covered areas are meeting standards on average.

In the event that other ozone non-attainment areas opt-into the program, the number of surveys required for each year would be increased in proportion to the increase in total reformulated gasoline gallons likely to be produced as a result of these areas opting in. For example, if areas that opt-into the program as of 1995 consumed 10 billion gallons of gasoline in 1994, and if the nine originally covered areas consumed about 25 billion gallons in 1994, then the numbers of surveys for 1995 and subsequent years would be determined as follows:

1995	$120+(120\times(10/25))=168$
1996	$80+(80\times(10/25))=112$
1997	$60+(60\times(10/25))=84$
1998 and thereafter.	$50+(50\times(10/25))=70$

In the event that a covered area fails a survey according to the criteria discussed below, the presumption that compliance is getting easier over time and thus that non-compliance is less likely in subsequent years is obviously flawed, at least for the area in question. The Agency is thus proposing that in such situations the decrease in the number of surveys that would normally take place in the year after the failure(s) be reduced so that a higher level of

scrutiny is possible in the area(s) that failed. This general approach of increasing the level of survey activity upon finding a failure is analogous to increased intensity of inspection used in industrial quality control sampling.

Specifically, it is proposed that the otherwise applicable reduction in number of surveys be diminished in proportion to the failed areas' share of total gallons of reformulated gasoline in covered areas. For example, if an area with a 6-billion gallon volume in 1995 fails a survey in that year and total 1995 volume in covered areas is 35 billion gallons, then the number of surveys in 1996 would be 87 rather than the originally scheduled 80—a 17% cut in the 40-survey reduction that would otherwise have happened in 1996. This example assumes that no other areas have opted into the program. EPA proposes that the increased intensity of survey activity remain in place as long as the more stringent standard brought about by the failure is applicable.

At the outset of the program it is important to quickly establish whether the gasoline suppliers of each covered area are able and willing to comply. It is thus being proposed that each of the nine originally covered areas receive at least one VOC survey in 1995 and that opt-in areas receive at least one such survey during the first year in which they are covered by the program.

Beyond this basic distributional constraint and the requirement that a series of four surveys be used to determine toxics compliance (as discussed below), EPA believes that the rest of the surveys available in a given year should be available for allocation to monitor gasoline most closely in those areas where there is some reason to believe that standards are less likely to be met on average or where air quality problems are most severe. EPA believes further that it is in the best position to determine when and where these conditions exist, which is an additional reason for the requirement that EPA inform the surveyor of the dates and locations for surveys. EPA believes it is in this position as a result of its overall responsibility for monitoring nationwide gasoline quality, not only under the reformulated gasoline program but also for other gasoline quality programs (e.g., gasoline volatility). As a result, EPA has data and experience regarding the times and places where gasoline quality violations have occurred in the past, and which provides EPA with insight for scheduling the reformulated gasoline surveys.

3. Other Required Survey Design Features

a. *Survey duration.* Because of concerns that averaging could lead to possible short-term sharp peaks or "spikes" in undesirable gasoline qualities that could contribute to episodes of poor ambient air quality, EPA believes that the surveys must be of limited time duration. Specifically, the surveys should be designed in such a way as to make statistical inference at an acceptable precision level regarding gasoline quality for a non-attainment area during a period of time no longer than a week. While peak emission levels are not of as much concern for toxics as for VOC levels, the desire to capture any season-specific elevations in toxic emissions suggests that toxics surveys be similarly limited to a one-week period, though the results of four surveys will be combined for making toxics compliance determinations.

b. *Location of retail outlets for sample collection, and number of samples per survey.* EPA believes that the survey plan must include procedures which will result in samples being collected at a sufficient number of retail outlets having sufficient diversity that the resulting data is reflective of all gasoline which is being dispensed in the covered area. The types of diversity which must be addressed include the portion of the gasoline which is dispensed at retail outlets which operate under different brand names and as independents; the portion which is dispensed at retail outlets which dispense a large volume of gasoline versus those which dispense a small volume; the portions which are dispensed in different geographical sections of the covered area (e.g., downtown areas versus suburbs); the portions which are of different gasoline grades (e.g., regular, mid-grade, and premium); plus any other factors which could affect the available gasoline. For this reason, EPA believes that the survey approach of simply sampling each retail outlet located on a major road in the covered area probably would not be acceptable, because the retail outlets located on such a road may be disproportionate with regard any of the factors listed above.

The number of samples collected during a survey also must result in an appropriate degree of confidence in the average values for oxygen, benzene, aromatic hydrocarbons and RVP which result from the survey. Thus, EPA believes a survey should include a minimum number of samples which is sufficient to establish such that a one-sided 95% confidence interval can be created about the sample mean to assure that the error in predicting the mean is less than the an appropriate tolerance for each parameter. Under EPA's proposal, the appropriate tolerance level for RVP is 0.1 psi; for benzene content (by volume) is 0.05%; and for oxygenate content (by weight) is 0.1%. These tolerance levels are being proposed because they represent the incremental difference for each parameter between the per-gallon standard and the initial average standard. For example, the per-gallon oxygen standard is 2.0% and the average standard is 2.1%, or a 0.1% difference. EPA believes it is necessary for the survey to be able to detect differences in these parameters at least to this degree of precision. No tolerance level is being proposed for aromatic hydrocarbon, however, because EPA is unaware of an appropriate basis for setting a tolerance for this parameter. In addition, EPA believes that the sample numbers derived through the analysis for the remaining three parameters will result in a sufficiently large sample size to provide an appropriate level of confidence for the aromatic hydrocarbon average.

The equation for determining the number of samples required to meet this requirement is as follows:

$$N = \left(\frac{Z \times \sigma}{\epsilon} \right)^2$$

where

Z = 1.645 (the appropriate standard normal variate for 95% confidence)
ϵ = error tolerance
σ = standard deviation
N = sample size

For example, for calculating the number of samples required to provide the required confidence for the average level of RVP, then, $Z=1.645$; $\epsilon=0.1$; and $\sigma=0.496$. Solving the above equation for N results in 67 samples which must be collected.

One additional consideration which EPA believes must be addressed in the survey program plan is that the standard deviation, σ, for each of these parameters must be determined and justified in the plan. (In the example for calculating sample size for RVP, above, the standard deviation value used, 0.495, was derived from RVP testing data which previously had been conducted.) These standard deviation values may be based upon data from other testing programs, if available and appropriate for use in these programs. It may be

necessary, however, to conduct a pilot survey in a covered area in order to establish acceptable standard deviation values.

4. Determination of Compliance on the Average

The purpose of compliance surveys is to ensure that refinery/importer averaging achieves the same compliance on average with the reformulated gasoline standards as covered area averaging, and thus does not result in poorer air quality than would have otherwise occurred with covered area-based averaging or with straight per-gallon standards. Given this purpose, EPA believes that samples exceeding the prescribed minimum or maximums for oxygen, benzene, and RVP should be excluded from surveys on grounds that the maximums and minimums are included in this program in order to increase the likelihood that standards will be met on average. Refiners/importers whose product exceeds the minimum and maximum criteria are subject to detection (and are thus likely to be deterred) through auditing of their analysis program, by direct enforcement sampling programs, and by enforcement use of survey analysis results.

EPA is proposing that failure of a survey or survey series for a reformulated gasoline characteristic (benzene content, VOC, or toxics emission reduction) should be defined as when the average of the values for that characteristic for all samples in the survey falls short of the non-averaged standard for that characteristic. This approach imposes a significant level of risk on the refineries servicing an area if their product is, on average, precisely at the averaged emission reduction standard. The level of risk may be reduced by producing gasoline that is somewhat better than the averaged standard, and by selecting a relatively large sample size. The industry can exercise some control over the risk of incorrect survey failures through the setting of production targets. Industry also can propose survey plans which include larger numbers of samples per survey.

Survey determinations of average VOC emission reduction levels as determined by average RVP and oxygen levels (and the consequent adjustments of standards, maximum levels, and survey frequency that result if the survey shows the RVP or oxygen standards have not been met on average) are intended to provide assurance that averaging is not resulting in either short or long term air quality degradation relative to what would occur under covered area-based averaging or with straight per-gallon standards. Thus EPA is proposing that the average RVP and oxygen levels be determined from surveys conducted in a single week during the high ozone season and this average compared to the non-averaged standard to decide whether the requisite reductions have been achieved on average.

Since the chronic effect of toxic emission is considered to be of more importance than short-term exposure to toxic emission "spikes", determinations of average toxic levels are appropriately made on the basis of averaging over a longer period of time, but with provisions for assuring that the data set used be representative of the whole averaging period of one calendar year. Thus EPA is proposing that all of the compliance data collected in a covered area during a calendar year, but from a minimum of a series of four surveys (as defined above) be combined to determine average levels of toxics reduction. These four surveys would be timed so that two of them fall during the high ozone season and two fall outside of that season. The "simple model" would be applied separately to the analytic results for each sample and then the resulting emission reduction figures averaged. If the average benzene level or toxics emission reduction falls short of the non-averaged standard, then the area is considered to have failed for that characteristic.

5. Adjusted Standards for Compliance on Average Based Upon Survey Results

Under EPA's proposed regulations, the standards for compliance on average and the per-gallon maximums/minimums would be adjusted for covered areas which fail a survey or survey series. These adjusted standards are summarized in Table VI–2. EPA believes these adjustments are appropriate for achieving the goal of ensuring that each covered area receives the full benefits of reformulated gasoline, because each adjustment represents significant movement closer to the per-gallon standards. After a second adjustment, there is only minimal or no difference between the average standards and the per-gallon standards. For example, in the case of RVP standards for VOC-Control Region 1, the initial per-gallon maximum is 7.4 psi and the per-gallon standard is 7.2 psi; the first adjusted maximum is 7.3 psi; and the second adjusted maximum is 7.2 psi, which is equal to the per-gallon standard. Moreover, because averaging permits refiners and importers flexibility in achieving compliance, they would have a heightened incentive to assure compliance after a single ratchet, in order to avoid the loss of all flexibility (for practical purposes) which would result from a second ratchet.

The standards for a covered area would be tightened beginning in the year following the year in which a survey failure occurred. This would be true for a failure of a VOC emission performance survey or a benzene content or toxics emission performance survey series. Another approach would be to impose the adjusted standards immediately upon a survey failure, rather than waiting until the following year. However, there would necessarily be a time lag between the actual conduct of a survey and the availability of the results of that survey, because of the time needed for sample and data analysis. Moreover, additional time would be required for refiners and importers to begin producing gasoline to meet the new standards, and for this gasoline to travel through the distribution network to the covered area. In the case of a toxics or benzene failure, the survey series normally would encompass most of a calendar year, leaving little if any time to implement an adjusted standard in the year of the survey series. In the case of VOC, the earliest a VOC survey could be conducted is the first week of June; considering that the high ozone season ends on September 15, insufficient time would remain for gasoline to be produced to meet an adjusted standard and reach the covered area.

The proposal also provides for standards which have been tightened as a result of a survey failure to be relaxed if the affected covered area passes in two consecutive years all surveys for the particular standard (benzene, RVP, or toxics emission performance) that had been tightened. If a covered area that had such a previously tightened-then-relaxed standard later fails a survey for that standard, the standard is once again tightened and becomes ineligible for future relaxation regardless of the number of subsequent surveys.

For example, if a covered area failed a benzene survey series in 1995 (i.e., the average benzene content of all samples taken in a covered area during four surveys during 1995 was greater than 1.0% by volume), the averaged benzene standard for that covered area beginning in 1996 would be changed from 0.95% to 0.90%, and the maximum benzene level would be changed from 1.3% to 1.2%. If that same covered area passed the benzene surveys conducted in 1996 and 1997, the benzene average and maximum standards for that covered area would be relaxed to 0.95% and

1.3%, respectively, beginning in 1998. If, however, the covered area failed a benzene survey series in 1998, the average and maximum standards would once again be adjusted to 0.90% and 1.2%, and could not thereafter be made less stringent regardless of the results of subsequent benzene surveys.

6. Applicability of Adjusted Standards

As explained above, the proposed rules require that when a survey or series of surveys show the reformulated gasoline supplied to a covered area does not meet a reformulated gasoline standard on average, a tightened standard must be met in the following year. This adjustment is necessary to ensure that all standards are met on average in the covered area. As a result, the adjusted standard must apply to each refinery that produces gasoline, and to each importer that imports gasoline, that could reasonably be expected to be supplied to the affected covered area.

EPA is proposing, therefore, that any adjusted standard apply to all averaged gasoline produced at a refinery which supplies any gasoline to the affected covered area (subject to the *de minimis* exception, discussed below), rather than the alternative of applying an adjusted standard only to that portion of the refinery's averaged gasoline refinery which is actually supplied to the covered area. EPA believes the proposed approach is necessary to adequately increase the likelihood that the standard is met in all covered areas. This is because the averaged gasoline supplied to an area which failed a survey also was likely supplied to areas which were not surveyed [46] (and which could have failed a survey if one had been conducted). Adjusting the standard for all of a refinery's averaged gasoline increases the probability that all covered areas supplied by that refinery will meet all standards on average. Moreover, the fungible distribution of gasoline requires that the ratchet apply to all the averaged gasoline produced by a refinery to ensure that portion of the ratcheted gasoline is actually delivered to the covered area which failed the survey.

In addition, if different standards applied to different portions of averaged gasoline produced at the same refinery and delivered to different covered areas, affected regulated parties would be required to segregate the different gasolines in order to ensure that the proper gasoline goes to each covered area. This type of segregation would significantly constrain the transportation of gasoline as a fungible commodity with possibly serious market consequences.

EPA also is proposing that adjusted standards apply to each refinery which supplied any averaged gasoline to a covered area at any time during a year a survey failure occurred (subject to the *de minimis* exception, discussed below), regardless of whether that refinery supplies gasoline to that covered area during the period the adjusted standard is in effect. In other words, a refinery may not avoid an adjusted standard by discontinuing its supply of gasoline to a covered area having an adjusted standard. EPA believes this approach is appropriate because a refinery that supplied a covered area during a year there was a survey failure may have contributed to that survey failure. If the refinery merely changes the destination of its gasoline to another covered area, without applying the adjustment, the refinery could cause a survey failure in the second covered area.[47]

A potential consequence of applying adjusted averaged standards to refineries even if they no longer supply the area having a failed survey is that refiner decisions to change markets may be affected for reasons unrelated to the adjusted standard. For example, the refining costs of gasoline supplied to an area with standards adjusted to be more stringent may be higher than for gasoline subject to non-adjusted standards. A refiner, therefore, may feel compelled to stay in that market because the higher costs of producing gasoline to meet the adjusted standards may make it difficult if not impossible to compete in an alternative market with non-adjusted standards.[48]

EPA is proposing an exception to the requirement that adjusted standards would apply to a refinery that supplied any reformulated gasoline to a covered area that failed a survey. A refinery would not be required to adjust its standard for average compliance as a result of supplying gasoline to the covered area in the year of a survey failure or to an area having an adjusted standard, if the volume of gasoline supplied was very small, and where the refiner could show that it was unaware that any gasoline from the refinery supplied the covered area. For purposes of this proposed exception, the volume supplied would be less than one percent of the refinery's annual production of reformulated gasoline, or 100,000 barrels, whichever is less. Thus, for example, if a refinery's annual production of reformulated gasoline is 11 million barrels, the volume threshold for this exception would be 100,000 barrels (the lesser of 110,000 barrels (1% of 11 million barrels) or 100,000 barrels). If 60,000 barrels of gasoline from this hypothetical refinery were purchased on the spot market and transported to a covered area that had an adjusted standard in such a manner that the refiner had no knowledge of the delivery to this covered area, the refinery would not be subject to the adjusted standard.

EPA believes that this *de minimis* exception is appropriate, because of the small volumes of reformulated gas which are involved. A typical covered area may have gasoline sales of 150 million barrels per year; 100,000 barrels is such a small portion of this total that it is unlikely it could influence the overall gasoline quality in the area. On the other hand, a refiner could sell on the spot market gasoline that was produced at a particular refinery, that could be transported to a covered area outside that refinery's normal distribution. In such a case, the refiner may have no knowledge any gasoline from the refinery was in fact used in a covered area with a failed survey or adjusted standard. EPA is proposing 100,000 barrels as the minimum, because this represents the capacity of a typical offshore petroleum barge.

One additional exception to the requirement that adjusted standards apply to all of a refinery's averaged production relates to the difference in reformulated gasoline supplied to the different VOC-Control Regions. For example, if Houston, Texas, which is VOC-Control Region 1, failed an RVP survey, refineries which supply gasoline to Houston must apply the adjusted RVP standards only to gasoline produced for VOC-Control Region 1 and not for gasoline produced for VOC-Control Region 2.

Under EPA's proposal, refiners are required to inform EPA of each refinery participating in the averaging program and the covered areas which receive averaged gasoline from that refinery. This information would be submitted at the time of registration and as a part of each periodic and interim report. EPA will rely on these declarations to identify the refineries to which any

[46] Surveys are required in each covered area only in the first year in which averaged gasoline is supplied to a covered area.

[47] Surveys measure the quality of gasoline at retail outlets, which normally is a mixture of gasolines from numerous sources (due to fungible mixing, exchange agreements, etc.). As a result, in the event of a survey failure the extent to which any particular refinery or importer was responsible for the failure (if at all) normally would be unknown.

[48] A refiner also could avoid the extra cost of producing gasoline to meet the adjusted averaged standard by producing gasoline under the per-gallon standard, which is not subject to adjustments.

adjusted standards apply. As a portion of its enforcement and audit programs, moreover, EPA intends to scrutinize the ultimate destinations of averaged gasoline produced at each refinery. If a refinery is found to have supplied a covered area having an adjusted standard, the refiner will be found in violation if its production at that refinery does not meet the adjusted standards.

EPA is proposing that adjusted standards apply to all reformulated gasoline imported by an importer that supplied a covered area that failed a survey, but with a significant exception. Unlike a refinery, which is in a single fixed location with relatively fixed distribution systems, an importer may import gasoline at facilities located throughout the country, and may use different facilities at different times. As a result, there is less certainty of knowing in advance which covered areas are supplied with gasoline imported by a particular importer. In addition, due to the wide-ranging movement of gasoline in this country, through pipelines and by water transport, the ultimate destinations of gasoline arriving at a particular port of entry may be difficult to ascertain. At the same time, it is unlikely that gasoline which is imported at a facility located at one end of the country will be transported to covered areas located at the opposite end. In order to address these considerations, EPA is proposing that an importer must apply adjusted standards only to gasoline which it imports at a facility located in a region of the country from which there is significant gasoline movement to the region in which the covered area having the adjusted standards is located.

The plan being proposed by EPA for importers is based upon data on gasoline movement between Petroleum Administration for Defense Districts (PADDs) contained in Petroleum Storage and Transportation, National Petroleum Council, April 1989, which is summarized in Table VI–3.

TABLE VI–3.—GASOLINE MOVEMENTS FROM PADD TO PADD

(In thousands of barrels per day)

From	To				
	PADD I	PADD II	PADD III	PADD IV	PADD V
PADD I	n/a	225	5	0	0
PADD II	142	n/a	196	70	0
PADD III	2,579	871	n/a	0	60
PADD IV	0	47	34	n/a	41
PADD V	0	0	1	0	n/a

From these data, EPA constructed a matrix of PADDs from which it is likely that gasoline will be transported to any other PADD. For example, it is likely that gasoline supplied to covered areas located in PADD I comes from facilities (refineries and import facilities) located in PADDs I, II, and III, and it is unlikely that covered areas located in PADD I are supplied from facilities located in any PADD other than PADDs I, II or III. (In constructing its matrix, EPA discounted the possibility of gasoline movements from PADDs I and V to PADD III, because the volumes are relatively small.)

If a covered area located in PADD I failed a survey for toxics emission reduction in 1996, for example, each importer would be required to apply the adjusted standard to all reformulated gasoline for which compliance is achieved on average and which is imported into any facility located in PADDs I, II, or III during 1997 or later, but not to gasoline imported into facilities located in PADDs IV or V. If, however, imported gasoline entered the country at a facility located in PADDs IV or V and was then transported to a covered area with the adjusted standard, the importer also would be required to apply the adjusted standard to gasoline imported at that additional facility.

EPA requests comments on this proposal for identifying which imported gasoline must be subject to adjusted standards.

E. Averaging periods

Under EPA's proposal, the averaging period for toxics emission performance and benzene and oxygen content is the calendar year since they are year-round requirements. Since VOC emission performance is controlled only during the high ozone season, however, a flexible VOC averaging period (which requires that RVP and oxygenate standards be met for this time period) is proposed encompassing the time during which any particular refinery or importer produces or imports VOC-controlled gasoline.

The proper length of the averaging periods was explored during the regulatory negotiation process. Gasoline refiners and importers requested averaging periods which were as long as possible, as the longer averaging periods provided greater flexibility for achieving compliance. Other parties to the regulatory negotiations had suggested averaging periods that are much shorter (one week, or one month), in order to minimize the likelihood of large swings in the levels for the averaged parameters. EPA believes the longer averaging periods contained in EPA's proposal, both the one year period for toxics, benzene, and oxygen period, and the period for averaging VOC over the entire season for this gasoline are acceptable because achieving the overall environmental goals of the program is assured through the use of other regulatory safeguards, such as minimums and maximums and gasoline quality surveys in covered areas.

The date that a particular refinery or importer begins producing or importing VOC-controlled reformulated gasoline depends upon the length of time necessary to transport the gasoline from the refinery or import facility to the covered area where the gasoline will be used. For example, gasoline produced at a refinery on the Gulf coast for use in the Northeast may take a month or more to travel by pipeline to that market, while gasoline produced at a refinery located in the Northeast may have little or no travel time to that market. As a result, EPA is proposing that the VOC averaging period for each refinery and importer begin on the date the refinery or importer first begins producing or importing VOC-controlled gasoline, and end on the date it stops producing or importing VOC-controlled gasoline, however, the end of the VOC averaging period shall not be later than September 15. EPA believes this flexible VOC-averaging season would allow regulated parties to maximize operations without

compromising environmental benefits. Even though some gasoline which is designated as being VOC-controlled will be used outside the high ozone season (because of gasoline arriving at the covered area in advance of May 1 or remaining in the covered area after September 15), the minimum for oxygenate and the maximum for RVP will constrain the extent to which this gasoline is able to offset VOC-controlled gasoline which is used between June 1 and September 15. EPA will be conducting inspections during the VOC control period to determine compliance with RVP and oxygen standards and to audit product transfer documents to ensure that gasoline designated as VOC-controlled is being sold. An additional constraint on this possibility is the surveys, which will monitor for full compliance with the VOC emission performance requirements during the high ozone season.

F. Constraints on oxygen averaging

Section 211(m) of the Clean Air Act requires states with certain carbon monoxide nonattainment areas to require, by 1992 unless EPA grants a waiver, an oxygen content of no less than 2.7% by weight during the portion of the year prone to high ambient levels of carbon monoxide. In conjunction with this reformulated gasoline rulemaking, EPA has in separate **Federal Register** notices proposed various guidelines for states to follow in implementing this oxygenated fuels program.

Some areas in the country will be included both in the reformulated gasoline and the oxygenated fuels programs. One implication of such an overlap is that gasoline containing 2.7% oxygen or more in compliance with the oxygenated fuels program could be used to meet the 2.1% average oxygen content requirement of the reformulated gasoline program. Under such a scenario, the gasoline delivered to covered areas not included in the oxygenated fuels program would be prone to contain less than 2.1% oxygen, which would undercut the reformulated gasoline program. The compliance surveys will reduce the likelihood that this will occur, because, in the event oxygen levels were sufficiently low, the area would fail a VOC survey.

In order to address this concern, EPA is proposing that refiners, importers and oxygenate blenders may not use oxygen credits generated from reformulated gasoline which is produced or imported for use in oxygen program control areas during oxygen program control periods (or OPRG) to achieve oxygen requirements for reformulated gasoline not intended for this use. In short, parties would not be able to use the 2.7% oxygen levels required under the oxygen program to generate credits to meet the 2.1% oxygen requirement of reformulated gasoline distributed to non-oxygen program areas.

An additional concern is how to determine which gasoline containing higher than 2.1% oxygen is in fact OPRG. This determination is made more complicated because parties will have a legitimate need to ship OPRG gasoline to oxygen program control areas in advance of the beginning of the oxygen program control period, in order to "blend up" the oxygen content of gasoline in terminals and retail outlets to the oxygen levels required by that program. If, however, a party classifies highly oxygenated gasoline as not OPRG when in fact the gasoline is used to "blend up" for oxygenated fuels program purposes, the reformulated gasoline program is undercut because covered areas which are not in the oxygen program will be denied the full benefits of oxygen, on average. For this reason, EPA is proposing that parties be required to classify gasoline as OPRG if the gasoline contains in excess of 2.0% oxygen and arrives at a terminal serving an oxygen program control area beginning within five days of the beginning of the oxygen program control period and ending on the last day of the control period (unless the gasoline is segregated and clearly marked as not intended for use during the control period, and in fact is not delivered to any retail outlet during the control period). It would be inappropriate to deem all gasoline containing 2.7% oxygenate to be OPRG, however, because a refiner could produce gasoline with this oxygenate content for use in non-oxygenate program areas in order to boost average oxygenate levels for the refiner's non-OPRG gasoline.

EPA seeks comments to this approach for addressing the proper classification of OPRG.

An additional constraint on oxygen averaging and credit trading is that oxygen requirements (either per-gallon or on average) must be met for VOC-controlled gasoline, independent of the annual oxygen averaging standard. This constraint is necessary because under the simple model, VOC emission reduction is a function not only of RVP level, but also of oxygen content. Gasoline which has an acceptable level of RVP but less than 2.0% weight (per-gallon) or 2.1% weight (average) oxygen would not have an acceptable level of VOC reduction. In the case of average compliance, oxygen levels achieved for VOC-controlled gasoline could be used to meet the overall annual oxygen standard, but oxygen levels of non-VOC-controlled gasoline could not be used to meet the 2.1% oxygen standard for VOC-controlled gasoline.

When the OPRG, non-OPRG constraint on oxygen averaging and the VOC-controlled, overall oxygen constraint are combined, the result is four separate categories of reformulated gasoline which must each meet the per-gallon or average oxygen standard. These are: OPRG, VOC-controlled; non-OPRG, VOC-controlled; OPRG overall; and non-OPRG overall.

G. Credit trading

Under this proposal, credits created from reformulated gasoline which on average contains more than 2.1% oxygen or less than 0.95% benzene may be transferred for use by another refinery or importer to achieve compliance with the oxygen and benzene requirements. Credit trading is explicitly authorized for oxygen and benzene credits by section 211(7)(b). Under today's proposal, benzene credits may not, however, be used to achieve compliance with the toxics emission performance requirement, with the result that oxygen or benzene credits traded away or received do not alter a refiner or importer's compliance calculations for toxics emission performance. Moreover, oxygen credits from non-VOC controlled gasoline may not be used to meet the oxygen requirement for VOC-controlled gasoline. In addition, oxygen credits earned from OPRG gasoline may not be used to meet the oxygen standard for gasoline designated as non-OPRG. For example, oxygen credits earned from reformulated gasoline that is designated as being non-VOC-controlled and OPRG may not be used to achieve compliance for the category of gasoline designated as VOC-controlled (either OPRG or non-OPRG). Oxygen credits earned from gasoline in the VOC-controlled categories may, however, be used to achieve compliance with the overall oxygen requirement, so long as the OPRG, non-OPRG designations are not crossed. For example, credits earned from VOC-controlled, non-OPRG gasoline may be used to meet the overall oxygen requirement for non-OPRG gasoline, but not for OPRG gasoline.

EPA believes that the reformulated gasoline credit program, like all credit programs, must be based only upon credits which are validly created. In implementing the lead phasedown credit program, EPA identified situations where a transfer of "credits" occurred, but where the "credits" were not properly created. In some of these

situations, the transferee who ultimately attempted to achieve compliance using the bogus credits (and who may have been a third or fourth party transferee) acted in good faith, paying a fair price for what the transferee thought were valid credits. Even in this type of situation, however, EPA proposes that bogus credits not be allowed to achieve compliance, regardless of the good faith of the transferee. The risk of credits being determined bogus should be on the private parties to a transaction, as treating bogus credits as valid would lead to a failure to achieve the oxygen and benzene standards mandated by the Clean Air Act.

The best protection for purchasers of credits against the possibility that purchased credits are bogus is to use normal business methods of protection, such as dealing with reputable companies and requiring contract clauses which protect against any liability resulting from bogus credits.

EPA has included in its proposed regulations provisions which address this area. These provisions set forth the order in which credits are to be used, in situations where some credits are properly created and some are improperly created. The properly created credits will be applied first to any credit transfers before the transferor may apply any credits to achieve its own compliance. These provisions are not, however, intended to restrict persons who may facilitate trades between credit transferor and transferee.

H. Example of compliance calculations

This section seeks to illustrate the proposed method for calculating compliance using a hypothetical refinery which produces reformulated gasoline for both VOC Regions 1 and 2, for which no adjusted standards are in effect, which produces gasoline for both per-gallon and average compliance, which produces some reformulated gasoline for oxygenate blending, and which produces both oxygenated fuels program reformulated gasoline and non-OPRG, and winter and summer toxics gasoline.

This hypothetical refinery produced a total of six batches of reformulated gasoline or RBOB during the year under consideration; these batches are summarized in Table VI–4.

TABLE VI–4.—SPECIFICATIONS FOR BATCHES OF GASOLINE PRODUCED BY HYPOTHETICAL REFINERY

Batch Number	1	2	3	4	5	6
Date of production	3/1	4/15	9/1	10/1	11/1	12/1
Volume (gallons)	100	100	250	175	200	175
Designations:						
VOC-Control	Yes	Yes	Yes	No	No	No
RVP Region	1	2	2	1	1	2
OPRG	No	No	No	Yes	Yes	Yes
RBOB	No	No	No	No	Yes	No
Toxics	Summer	Summer	Winter	Winter	Winter	Winter
Average—Per-Gal Designations:						
RVP	average	average	average	n/a	n/a	n/a
Toxics	average	average	average	per-gal	average	average
Benzene	average	average	average	average	per-gal	average
Oxygenate	average	average	per-gal	average	average	average
Characteristics:						
RVP (psi)	7.3	6.8	7.8	n/a	n/a	n/a
Toxics (% reduction) [1]	18.5	18.3	18.1	13.2	18.2	18.3
Benzene (%)	0.90	0.85	0.92	1.20	0.98	0.80
Oxygenate (%)	2.3	1.7	2.2	2.7	0.0	2.7
Running Compliance Calculation [2]						
RVP (VOC Region 1) [3]	−20	−20	−20	−20	−20	−20
RVP (VOC Region 2)	0	30	80	80	80	80
Toxics [4]	0	−20	80	80	140	105
Benzene [5]	5	15	22.5	−21.25	−21.25	5
Oxygen (Non-OPRG; VOC only) [6]	20	−20	−20	−20	−20	−20
Oxygen (OPRG; overall)	0	0	0	105	105	210

[1] Toxics (% reduction) is calculated by use of the applicable summer or winter emission model.
[2] Running compliance is calculated as complying total minus actual total for RVP and benzene; and actual total minus complying total for oxygen and toxics emission performance.
[3] RVP compliance measurement is in RVP-gallons.
[4] Toxics compliance measurement is in toxics emission reduction percent-gallons.
[5] Benzene compliance measurement is in benzene content percent-gallons (by volume).
[6] Oxygen compliance measurement is in oxygen content percent-gallons (by weight). It is necessary to account for oxygen independently in four categories: VOC-controlled, OPRG; VOC-controlled, non-OPRG; overall OPRG; and overall non-OPRG. In this example, however, all VOC-controlled gasoline also is non-OPRG, so the listed oxygen averages account for all four categories.

Batch 1—100 gallons

Following its production of batch 1 on March 1 the refiner for the hypothetical refinery calculated the status of its compliance with the reformulated gasoline requirements at that time. It designated this batch as VOC-controlled for VOC-Region 1, and indicated the RVP standard would be met on average, so the refiner calculated the compliance total RVP-gallons using the 7.1 psi average compliance standard for VOC-Control Region 1 as follows:

Compliance total RVP-gallons = volume × RVP standard
= 100 × 7.1 = 710 RVP-gallons

and the actual total RVP-gallons for that batch as follows:

Actual total RVP-gallons = volume * RVP for batch = 100 × 7.3 = 730 RVP-gallons

Because actual total RVP-gallons must be less than or equal to the complying total RVP-gallons in order to be in compliance, the refiner subtracted the actual total from the complying total, and determined it had a deficit 20 RVP-gallons following batch 1.

The refiner also had designated benzene for average compliance for batch 1, so it calculated the benzene compliance status following this batch. The complying total benzene content percent-gallons were calculated using

the 0.95% standard for average benzene compliance as follows:

Compliance total benzene percent-gallons = volume × benzene standard = 100 × 0.95% = 95 benzene percent-gallons

and the actual total benzene content percent-gallons for that batch as follows:

Actual total benzene percent-gallons = volume × benzene for batch = 100 × 0.90% = 90 benzene percent-gallons

Because the benzene actual total must be less than or equal to the complying total in order to be in compliance, the refiner subtracted the actual total from the complying total, and determined it was a positive 5 benzene content percent-gallons following batch 1.

Toxics was designated for average compliance for batch 1, but because the toxics emission reduction for this batch of 18.5% was equal to the standard for average compliance for this characteristic, the refiner knew it was even for toxics emission reduction-gallons following batch 1. The refiner calculated the toxics emission reduction for this batch using the summer emission model since the gasoline was designated as summer toxics gasoline.

Lastly, the refiner calculated the status of his oxygen compliance, which also was designated for average compliance. Because batch 1 was designated as not oxygen program reformulated gasoline, and was VOC-controlled, the oxygen tally for this batch went into the non-OPRG, VOC-controlled category. In addition, because the batch was not designated as reformulated gasoline for oxygenate blending, the refiner would have to account for the oxygen status of this batch as opposed to a downstream oxygenate blender. The complying total oxygen content percent-gallons was calculated using the 2.1% standard for average compliance as follows:

Compliance total oxygen percent-gallons = volume × oxygen averaging standard = 100 × 2.1% = 210 oxygen percent-gallons

and the actual total oxygen content percent-gallons for that batch was calculated as follows:

Actual total oxygen percent-gallons = volume × oxygen content of batch = 100 × 2.3% = 230 oxygen percent-gallons

Because for oxygen actual total must be greater than or equal to complying total in order to be in compliance, the refiner subtracted the complying total from the actual total, and determined it was a positive 20 oxygen content percent-gallons for the non-OPRG, VOC-controlled category following batch 1.

Batch 2—100 Gallons

The refiner calculated the status of his compliance following batch 2. This batch also was designated as VOC-controlled for VOC-Region 2, and RVP again was designated for average compliance, so the refiner calculated the compliance total RVP-gallons using the 8.0 psi average compliance standard for VOC-Control Region 2 as follows:

Compliance total RVP-gallons = volume × RVP standard = 100 × 8.0 = 800 RVP-gallons

and the actual total RVP-gallons for that batch as follows:

Actual total RVP-gallons = volume × RVP for batch = 100 × 7.7 = 770 RVP-gallons

Because actual total RVP-gallons must be less than or equal to the complying total RVP-gallons in order to be in compliance, the refiner subtracted the actual total from the complying total, and determined it had a positive 30 RVP-gallons for batch 2.

Benzene was designated for average compliance for batch 2, making the benzene calculations as follows:

Compliance total benzene percent-gallons = volume × benzene standard = 100 × 0.95% = 95 benzene percent-gallons

and

Actual total benzene percent-gallons = volume × benzene for batch 2 = 100 × 0.85% = 85 benzene percent-gallons

The refiner subtracted the actual total from the complying total, and determined it was a positive 10 benzene content percent-gallons for batch 2 and a net positive 15 benzene percent-gallons for batches 1 and 2.

Toxics was designated as summer toxics for average compliance for batch 2, so the refiner calculated the compliance total using the 18.5% standard as follows:

Compliance total toxics reduction percent-gallons = volume × 18.5% standard = 100 × 18.5% = 1,850 toxics reduction percent-gallons

and the actual total toxics reduction percent-gallons as follows:

Actual total toxics reduction percent-gallons = volume × toxics reduction percent for batch = 100 × 18.3% = 1,830 toxics reduction percent-gallons

For toxics compliance, the actual total must be greater than or equal to the compliance total, giving the refiner a deficit 20 toxics reduction percent-gallons (1,850 − 1,830 = −20) following batch 2.

For batch 2, oxygen was designated for average compliance, as not OPRG, as not RBOB, and as VOC-controlled. As a result, the refiner included the oxygen for this batch in his non-OPRG, VOC-controlled category accounting as follows:

Compliance total oxygen percent-gallons = volume × oxygen averaging standard = 100 × 2.1 = 210 oxygen percent-gallons

and

Actual total oxygen percent-gallons = volume × oxygen content of batch = 100 × 1.7 = 170 oxygen percent-gallons

This constituted a deficit 40 oxygen content percent-gallons (170 − 210 = −40) for batch 2, and a net −20 oxygen content percent-gallons (non-OPRG, VOC-controlled) for batches 1 and 2.

Batch 3—250 Gallons

Batch 3, which had an RVP of 7.8 psi, was designated for average compliance and was designated as VOC-controlled for VOC–Region 2, so the refiner calculated the compliance total RVP-gallons using the 8.0 psi average compliance standard for VOC-Control Region 1 as follows:

Compliance total RVP-gallons = volume × RVP standard = 250 × 8.0 = 2,000 RVP-gallons

and the actual total RVP-gallons for that batch as follows:

Actual total RVP-gallons = volume × RVP for batch = 250 × 7.8 = 1,950 RVP-gallons

This gave the refiner a positive 50 RVP-gallons for batch 3. Moreover, because batches 2 and 3 were the only batches designated by the refiner as VOC-controlled for Region 2, the 80 RVP net represented the overall compliance calculation for the refiner for RVP for Region 2.

Benzene was designated for average compliance for batch 3, making the benzene calculations as follows:

Compliance total benzene percent-gallons = volume × benzene standard = 250 × 0.95% = 237.5 benzene percent-gallons

and

Actual total benzene percent-gallons = volume × benzene for batch 2 = 250 × 0.92% = 230 benzene percent-gallons

giving the refiner a positive 7.5 benzene percent-gallons for batch 3, and a net 22.5 benzene gallons for batches 1, 2, and 3 (5 + 10 + 7.5 = 22.5).

The toxics reduction for batch 3 was 18.1%, and was designated for winter

toxics, average compliance, making the compliance calculation as follows:

Compliance total toxics reduction percent-gallons = volume × 18.5% standard = 250 × 18.5% = 4,625 toxics reduction percent-gallons

and

Actual total toxics reduction percent-gallons = volume × toxics reduction percent for batch = 250 × 18.1 = 4,525 toxics reduction percent-gallons

The refiner was a positive 100 toxics reduction percent-gallons for batch 3 (4,625 − 4,525 = 100), and a net 80 toxics reduction percent-gallons for the first three batches (0 + −20 + 100 = 80).

Oxygen was designated for per-gallon compliance for batch 3 (and complied with the 2.0% oxygen per-gallon standard), so the refiner did not include batch 3 oxygen in his compliance calculation.

Batch 4—175 Gallons

Batch 4 had a benzene content of 1.2%, the compliance calculation of which was as follows:

Compliance total benzene percent-gallons = volume × benzene standard = 175 × 0.95% = 166.25 benzene percent-gallons

and

Actual total benzene percent-gallons = volume × benzene for batch 2 = 175 × 1.2% = 210 benzene percent-gallons

giving the refiner a negative 43.75 benzene percent-gallons for batch 4 (166.25 − 210 = −43.75), and a net −21.25 benzene gallons for the first four batches.

Toxics for batch 4 was designated for per-gallon compliance (and met the 13.5% reduction winter-time toxics per-gallon standard), so the refiner did not include batch 4 toxics reduction in his compliance calculation.

Oxygen in batch 4, of 2.7%, was designated for average compliance, non-RBOB, non-VOC-controlled, but was designated as OPRG. As a result, the refiner included the oxygen for this batch in his OPRG overall category accounting as follows:

Compliance total oxygen percent-gallons = volume × oxygen averaging standard = 175 × 2.1% = 367.5 oxygen percent-gallons

and

Actual total oxygen percent-gallons = volume × oxygen content of batch = 175 × 2.7% = 472.5 oxygen percent-gallons

yielding a positive 105 oxygen percent-gallons for the refiner's OPRG overall oxygen category following batch 4.

Batch 5—200 Gallons

Batch 5 was designated for per-gallon compliance for benzene (and at 0.98% benzene by volume met the 1.0% per-gallon benzene standard), so the refiner did not include batch 5 benzene in his compliance calculation.

The toxics reduction for batch 5 was 18.2%, and was designated for average compliance, making the compliance calculation as follows:

Compliance total toxics reduction percent-gallons = volume × 18.5% standard = 200 × 18.5% = 3,700 toxics reduction percent-gallons

and

Actual total toxics reduction percent-gallons = volume × toxics reduction percent for batch = 200 × 18.2% = 3,640 toxics reduction percent-gallons

yielding a positive 60 toxics reduction percent-gallons for this batch, and a net 140 toxics reduction percent-gallons through batch 5.

Batch 5, which has a zero oxygen content when it left the refinery, was designated as RBOB. As a result, the oxygen in this batch would be accounted for by the oxygenate blender, and the refiner did not include it in his compliance calculation.

Batch 6—175 Gallons

The benzene content of batch 5 was 0.8% and was designated for average compliance for this characteristic, making the compliance calculation:

Compliance total benzene percent-gallons = volume × benzene standard = 175 × 0.95% = 166.25 benzene percent-gallons

and

Actual total benzene percent-gallons = volume × benzene for batch 2 = 175 × 0.8% = 140 benzene percent-gallons

yielding a positive 26.25 benzene percent-gallons for batch 6, and a net 5 benzene percent-gallons for all six batches. This figure represented the overall compliance figure for the one year benzene averaging period, and indicated compliance for this refiner for this standard. In addition, this indicates the refiner has generated 5 benzene credits which could be transferred to another refinery or importer for use in achieving compliance with the benzene standard.

The toxics reduction for batch 6 was 18.3%, and was designated for average compliance, making the compliance calculation as follows:

Compliance total toxics reduction percent-gallons = volume × 18.5% standard = 175 × 18.5% = 3,237.5 toxics reduction percent-gallons

and

Actual total toxics reduction percent-gallons = volume × toxics reduction percent for batch = 175 × 18.3 = 3,202.5 toxics reduction percent-gallons

yielding a negative 35 toxics reduction percent-gallons for this batch, and a net positive 105 toxics reduction percent-gallons for all six batches. This represents compliance with the toxics reduction standard for the refiner for the one year toxics averaging period.

Batch 6 had a 2.7% oxygen content, was designated for average compliance and in the OPRG overall category (because this batch was non-VOC-controlled). Compliance was calculated as follows:

Compliance total oxygen percent-gallons = volume × oxygen averaging standard = 175 × 2.1% = 367.5 oxygen percent-gallons

and

Actual total oxygen percent-gallons = volume × oxygen content of batch = 175 × 2.7% = 472.5 oxygen percent-gallons

yielding a positive 105 oxygen percent-gallons in the OPRG overall oxygen category for this batch, and an overall positive 210 OPRG oxygen percent-gallons. This indicates the refiner is in compliance for this category, and has generated 210 oxygen credits for the OPRG category. The refiner could transfer the OPRG overall oxygen credits to another refinery or party for use in achieving the oxygen standard for OPRG overall-designated gasoline.

The net oxygen compliance calculation for the non-OPRG, VOC-controlled category includes only batches 1 and 2, and is a negative 20 oxygen percent-gallons. Because OPRG overall oxygen credits may not be used to achieve compliance for non-OPRG, VOC-controlled gasoline, the refiner could not apply the 210 OPRG overall oxygen credits to offset this non-OPRG, VOC-controlled oxygen deficit. As a result, it would be necessary for this refiner to acquire 20 non-OPRG, VOC-controlled oxygen credits generated by another refinery, importer, or oxygenate blender in order to achieve compliance for this category.

VII. Compliance Record Keeping and Reporting Requirements

A. Record keeping requirements

EPA is proposing that all parties in the gasoline distribution network who are involved with reformulated gasoline in any manner, from its production to its sale at retail outlets, should be required to maintain certain records. The scope

of the records retention requirement for each type of party, and therefore the cost to the party, reflects that party's opportunity to alter the quality of reformulated gasoline.

Refiners, importers and oxygenate blenders are required to maintain records which are adequate to allow independent auditors and EPA inspectors to determine if gasoline classified as reformulated in fact met all reformulated gasoline requirements, and in the case of reformulated gasoline blendstock for oxygenate blending, whether the required quality assurance programs were properly carried out.

All regulated parties, including refiners, importers, and oxygenate blenders, as well as retailers and all types of distributors, are required to maintain records of the product transfer documentation which must be transferred with all reformulated gasoline. These records are important in the case of gasoline found downstream of the refinery that does not conform to the reformulated gasoline requirements. EPA's proposed regulations create presumptive liability for most parties in the gasoline distribution network for the gasoline found in violation, from the refinery to the point of violation. Product transfer documents reveal at least who had transferred which gasoline to whom, which may assist EPA in determining the cause of the violation.

It has been EPA's experience in enforcing the lead contamination regulations, 40 CFR §§ 80.22–23, and the volatility regulations, 40 CFR 80.27–28, that some parties are unwilling to reveal to EPA some or all of their gasoline suppliers, and that other parties have incomplete information about the specifics of gasoline transfers (e.g., volumes, dates, properties of gasoline). This is caused in some cases by a retailer who has purchased gasoline on the spot market even though that retailer has an exclusive supply requirement with one distributor, making the retailer unwilling to reveal what amounts to a contract violation. The proposed requirement that transfer documents be maintained will cure this problem, or will create separate penalties for a party who is unwilling to reveal its gasoline suppliers.

In addition to product transfer documents, all regulated parties are required to maintain records of quality assurance (QA) programs they conduct. These programs (except for certain required QA programs for refiners, importers, and oxygenate blenders) are not mandatory, but are a required defense element if a violation is found. This records retention requirement will enable EPA to more effectively evaluate such quality assurance programs when violations are documented.

B. Reporting requirements

EPA is proposing that refiners, importers, and oxygenate blenders submit periodic reports to EPA. EPA's proposal is that reports be filed by January 31 of each year to demonstrate compliance with toxics emission performance and benzene and oxygen content (outside of the VOC averaging period) requirements for the previous calendar year, and that reports must be filed by October 15 of each year to demonstrate compliance with RVP and oxygen requirements for VOC-controlled reformulated gasoline.

EPA also is proposing that interim toxics, benzene and oxygen reports be filed by April 30, July 31, and October 31 of each year to cover the prior calendar quarter. These interim reports would not demonstrate compliance with averaging requirements for these parameters, *per se*, because compliance is based upon averages over the entire yearly averaging period. For example, a company could have produced or imported gasoline during any quarter which on average has less than the annual average standard for toxics emission performance reduction, and still meet this standard over the entire year. The advantage of interim reports is that they compel regulated parties to monitor the status of their annual compliance during the course of the year. Most companies probably would do so anyway, which would make the incremental cost of the interim reporting requirement small. In addition, the interim reports would allow EPA to monitor the status of compliance during the course of a year. In the event a particular regulated party's interim reports indicate one or more parameter is falling significantly short of the averaged standards, EPA may be able to take actions to prevent violations instead of merely reacting to violations after they occur.

EPA is proposing that annual reports be filed for reformulated gasoline which meets standards on a per-gallon basis. Such reports on per-gallon compliance gasoline would allow EPA to monitor the overall production and importation of reformulated gasoline and to better gauge its volumes and distribution. In addition, these reports would compel a regulated party to assert, in an officially signed and sworn document, that the gasoline in fact met standards on a per-gallon basis. A party who knowingly makes such a statement, if it is false, may be liable for criminal as well as civil penalties. As a result, EPA believes that requiring such affirmative act would result in some parties using greater care in ascertaining whether reformulated gasoline that is produced or imported in fact meets per-gallon standards.

VIII. Inability to Produce Conforming Gasoline in Extraordinary Circumstances

EPA is proposing that in appropriate extreme and unusual circumstances (e.g., a natural disaster or Act of God) that are clearly outside the control of a refiner, importer, or oxygenate blender and that could not have been avoided by the exercise of prudence, diligence, and due care, EPA may permit a refiner, importer, or oxygenate blender, for a brief period, to distribute gasoline that does not meet the requirements for reformulated gasoline.

Under EPA's proposed regulatory language, EPA would as a matter of enforcement policy, allow the distribution of noncomplying gasoline provided that (1) It is in the public interest to do so (i.e., distribution of the nonconforming gasoline is necessary to meet projected shortfalls that cannot otherwise be avoided); (2) the refiner, importer, or oxygenate blender (a) exercised prudent planning and was not able to avoid the violation and has taken all reasonable steps to minimize the extent of the nonconformity; (b) can show how the requirements for reformulated gasoline will be expeditiously achieved; (c) agrees to make up air quality associated with the nonconforming gasoline, where practicable; and (d) pays to the U.S. Treasury an amount equal to the economic benefit of the nonconformity minus the amount expended in making up the loss in air quality.

IX. Conventional Gasoline Marker

EPA is proposing that all conventional gasoline be marked with a marker by the refiner at the refinery or by the importer at the point of importation to allow its detection if it is sold in a covered area. Persons downstream of the refinery or import facility would be required to conduct quality assurance programs to test conventional gasoline for the presence of the marker and reformulated gasoline for the absence of a marker.

EPA is proposing use of the marker phenolphthalein. This chemical has been chosen because it satisfies most of the requirements EPA believes are important for a tracer. Phenolphthalein, $C_{19}H_{14}O_4$, in its pure form is a white solid which is soluble in methanol, water and gasoline. Phenolphthalein is non-toxic, is legal for use in gasoline

under section 211(f)(1) of the Clean Air Act,[49] and does not have an adverse impact on vehicle exhaust or evaporative emission. It is easily tested, readily available to the industry, and easily introduced at the refinery in known concentrations.

Under EPA's proposal, phenolphthalein, which costs approximately $10 per pound, would be added to conventional gasoline at the rate of 1 part per million. At this rate, one pound of phenolphthalein would treat 50,000 barrels of gasoline, at a cost of $0.00004 per gallon.

The presence of phenolphthalein in gasoline may be detected in the field using a simple screening test, which involves adding one teaspoon of a Ph negative water-based reagent (e.g., a mixture of washing soda and water) to a quart sample of gasoline. For gasoline which contains more than one percent ethanol, an additional step of adding one crystal of lye to the sample is necessary. A pink color at the bottom of the sample indicates the presence of phenolphthalein. This screening test would allow detection of phenolphthalein in concentrations as low as 50 ppb, which allows detection in the field of as little as five percent marked conventional gasoline in reformulated gasoline.

An additional quantitative laboratory procedure is being proposed for phenolphthalein in gasoline. Under EPA's proposed scheme, the field color screen would be used to indicate the presence of the marker (and, therefore, the presence of conventional gasoline), and the laboratory procedure would be used to establish the precise concentration.

EPA is proposing that all persons in the gasoline distribution network be responsible for requirements relating to the marker, with the exception of retailers and wholesale purchaser-consumers not located in covered areas. As a consequence, EPA intends to conduct compliance inspections at all points in the gasoline distribution network. Specifically, gasoline refineries and importers will be inspected and audited to monitor compliance with the requirement that the marker was added to all conventional gasoline produced or imported. EPA will inspect persons downstream from refiners and importers to monitor for the absence of the marker from reformulated gasoline and the presence of the marker in conventional gasoline.

EPA requests comments as to the suitability of phenolphthalein for use as a marker for conventional gasoline, and whether any other single additive may be more suitable for this use. EPA believes that the necessary properties for a marker are that it should be easy to detect in the field in low concentrations; be difficult to remove from gasoline; be readily available and inexpensive; be non-proprietary (including the marker and any chemicals or methods used in its detection); be non-toxic; and not cause gasoline to violate the "substantially similar" requirements of section 211(f)(1) of the Clean Air Act.

X. Blendstock, Export, and Storage Issues

Selling or dispensing conventional gasoline by any person for resale in any covered area without segregating such gasoline from reformulated gasoline and clearly marking such conventional gasoline as "conventional gasoline, not for sale to ultimate consumer in a covered area" is specifically prohibited by section 211(k)(5) of the Clean Air Act. EPA therefore proposes that conventional gasoline be labeled on the product transfer documentation as prescribed by the Act, as well as marked with a tracer (described above).

In certain limited situations, however, certain petroleum product which is not reformulated gasoline may not require the marker and might have a legitimate presence within a covered area. These limited situations include gasoline which is intended for export and product which is blendstock.

Gasoline which is intended for export, and thus is not sold or dispensed for resale in a covered area is, by statute, not covered by the reformulated gasoline requirements. Under the proposed rule, however, EPA will presume that all gasoline found within the United States is being offered for sale in the United States, unless the gasoline is segregated and the paperwork which accompanies the gasoline clearly indicates that the gasoline is solely for export.

In addition, EPA is proposing that all petroleum product found at terminals be classified as "gasoline" and not as blendstock unless (1) the product is segregated; (2) the accompanying paperwork clearly identifies the product as (a) blendstock which does not comply with requirements for reformulated or (b) RBOB which will comply with the requirements for reformulated gasoline subsequent to the addition of the proper type and volume of oxygenate or (c) conventional gasoline; and (3) some aspect of the product's quality makes the product unsuitable for use as gasoline (e.g., the product's octane is outside the normal range for gasoline). These presumptions are necessary to prevent the exemptions from the requirements for exports and blendstocks from being misused.

Gasoline which is not reformulated but which is intended for sale outside any covered area may properly be present in a covered area if the gasoline was produced at a refinery within the covered area for shipment outside the covered area or is being trans-shipped through the covered area. EPA's proposal assumes that all gasoline found inside a covered area is intended for sale in that covered area, however, unless the gasoline is segregated, the accompanying paperwork clearly identifies the gasoline as conventional and not for sale in any covered area, and the gasoline contains the required marker. When violations are found at a retail outlet or wholesale purchaser-consumer facility the above-described defenses will not be available because the gasoline has reached its ultimate destination. The gasoline is now clearly intended for sale to ultimate consumers at retail outlets and the wholesale purchaser-consumer has purchased the gasoline only for its own use and, therefore, is the ultimate consumer of the gasoline.

XI. Prohibitions, Liabilities, and Defenses

A. Prohibitions

Section 211(k)(5)(A) of the Clean Air Act prohibits "[t]he sale or dispensing by any person of conventional gasoline to ultimate consumers in any covered area." Section 211(k)(5)(B) of the Act prohibits the sale or dispensing "of conventional gasoline for resale in any covered area, without (i) segregating such gasoline, and (ii) clearly marking such conventional gasoline as 'conventional gasoline, not for sale to [an] ultimate consumer in a covered area.' " In addition, section 211(k)(5) provides that a party who "purchases properly segregated and marked conventional gasoline and thereafter labels, represents, or wholesales such gasoline as reformulated gasoline shall also be in violation of this subsection."

In addition to these statutory prohibitions, which, in effect, prohibit the sale of conventional gasoline for use in any covered area, the proposed regulations contain other prohibitions designed to ensure that the goals of the reformulated gasoline program are achieved. For example, the regulations prohibit gasoline from being represented

[49] The Clean Air Act requires that additives to gasoline be substantially similar to those used in certifying vehicles. The term "substantially similar" has been interpreted for unleaded gasoline at 56 FR 5352, (February 11, 1991).

as reformulated unless it meets the specifications of a reformulated gasoline certification and meets applicable maximums and minimums. The regulations also impose restrictions on reformulated gasoline relating to time or place of use (e.g., VOC-controlled gasoline must be sold during the high ozone season, and must meet the requirements for the appropriate VOC-Control Region). In addition, the regulations prohibit the combining of reformulated gasoline blendstock for oxygenate blending (RBOB) with any other gasoline or blendstock unless it is blended with the proper type and amount of oxygenate, and they prohibit RBOB from being represented as reformulated gasoline until such blending occurs.

B. Liabilities

EPA is proposing that when a violation of any of the prohibitions involving the nature of gasoline (properties, time/place of use, etc.) is found at a facility, the facility operator should be presumed liable for that violation. In addition, EPA is proposing that each person in the gasoline distribution network upstream from that facility should also be presumed liable for the violation. This regulatory scheme closely follows the liability regulations for lead contamination (40 CFR 80.21–23) and volatility (40 CFR 80.27–28).

The rationale for presuming liability not only on the part of the operator of the facility where the violation is found, but also on the part of the upstream parties, is that any of these parties could have caused the violation. For example, if gasoline containing the conventional gasoline marker is found being offered for sale at a retail outlet in a covered area, this violation could be the result of actions by any person from the refiner/importer through the retailer: The retailer could have purchased conventional gasoline and relabeled it as reformulated; a distributor could have relabeled conventional gasoline as reformulated and sold it to the retailer as such; a pipeline could have mixed conventional gasoline with reformulated, thereby rendering the mixture outside the definition of reformulated; or the refiner could have shipped gasoline represented to be reformulated when the gasoline in fact was conventional.

When a violation is found, the preferable approach would be for EPA to establish the person who caused the violation at the time of the inspection and to hold only that person liable for the violation. In practice, however, this approach usually is not possible. In a program like reformulated gasoline, it probably will be necessary to ship gasoline samples to a laboratory for testing to determine if the gasoline meets requirements, a process which takes a minimum of several days. As a result, the inspectors will not know at the time of an inspection if there is a violation. By the time test results indicating a violation are completed, the EPA inspectors will have traveled away from the facility, making it impracticable for the inspectors to conduct the in-depth follow-up necessary to determine the cause of the violation.

Moreover, even if inspectors know at the time of an inspection that a violation exists, it is not always possible to establish the cause of the violation. For example, a field screen test for gasoline volatility, which inspectors are able to conduct during an inspection at a gasoline facility, gives a fairly reliable indication of whether gasoline meets the volatility requirements. It has been EPA's experience in enforcing the volatility requirements, however, that even given this knowledge the inspectors are often unable to determine the cause of a violation, for a variety of reasons: relevant records may not be available; employees who are present may not have necessary knowledge; the violation could have been caused at a facility hundreds (or thousands) of miles away; or the companies involved may not cooperate with the EPA inspectors.

The regulatory device of presuming liability on the part of each person who may have been responsible for a violation resolves this dilemma by placing the burden of establishing the cause of the violation on those persons who are in the best position to do so; i.e., the persons who actually produced, imported, sold, offered for sale, dispensed, supplied, offered for supply, stored, transported, or caused the transportation of the gasoline (referred to collectively in this preamble as persons "involved with" the gasoline). This presumption of liability may be overcome by each party, however, as discussed in the next section of this preamble.

The presumptive liability for parties upstream from a facility found in violation includes each party who was involved with any of the gasoline contained in the storage tank found in violation. For example, if a gasoline storage tank at a retail outlet containing gasoline represented to be reformulated is found to contain the conventional gasoline marker, each distributor who supplied any of the gasoline contained in that storage tank would be presumed liable. This would include the distributor for the most recent delivery, and unless the storage tank was empty at the time of that delivery (which is almost never the case), the distributors for the several previous deliveries. These additional distributors are also presumed liable because the gasoline contained in the storage tank on the day of the inspection is to some extent a mixture of the gasoline delivered over the previous several deliveries.

Carriers are a sub-category of distributors that do not take title to the product they store or transport. As a result of this distinction, liability presumptions for carriers traditionally have been different from those of other distributors under 40 CFR part 80 enforcement schemes. For example, under the volatility regulations, carriers are presumed liable only for violations found at the carrier's facility, whereas all other parties (e.g., distributors and refiners) are presumed liable when a violation is found downstream from the party.

EPA believes that under the reformulated gasoline program, however, carriers should be treated equally with other parties who store or transport reformulated gasoline, and who thereby have opportunities to cause violations. Under EPA's proposal, therefore, carriers who stored or transported gasoline upstream from a facility found in violation would be held presumptively liable for the violation.

C. Defenses

EPA's proposed regulations include defenses for each party who is presumed liable for a violation. These defenses require that a party presumed liable show it did not cause the violation, that the product transfer documents for its gasoline met applicable requirements, and that the party had an on-going quality assurance program for its gasoline. In the case of violations found at facilities identified by a refiner's brand name, the refiner is also required to impose certain obligations on persons involved with the refiner's branded gasoline, which are intended to ensure that the gasoline meets all requirements.

The first defense element, that the party show it did not cause the violation, is best accomplished by establishing the cause of the violation, and that this cause was the fault of another person. A party who was involved with the gasoline found in violation, and who had some business relationship with the other parties involved with the gasoline, is in the best position to investigate the facts and ascertain the cause of the violation. It has been EPA's experience in enforcing

other gasoline quality regulations that the parties involved with the gasoline (and who are each thereby presumed liable and have these same defense requirements) often will work collectively to ascertain who among them caused the violation and thereby establish who did not cause the violation.

If a party is unable to determine the actual cause of a violation, it may be able to meet this defense element through circumstantial evidence indicating that it could not have caused the violation. Evidence of the other two defense elements (transfer documents showing all relevant gasoline met requirements and a quality assurance program) could be presented as part of this showing.

In the case of a refiner, sampling and testing results showing that the gasoline met requirements at the time it left the refinery normally would constitute strong circumstantial evidence that the refiner did not cause the violation. This type of testing evidence would not be conclusive in all cases, however, because the refiner could have been responsible for the violation as a result of actions which occurred downstream. For example, a refiner could ship to its own downstream terminal two products, one VOC-controlled and one not VOC-controlled, intended for use at different times. If these products become commingled after leaving the refinery, the product intended for the VOC-control period could be in non-compliance. The refiner thus could have "caused" this violation even though the product was in compliance when it left the refinery. This logic would apply equally to violations found downstream from importers and oxygenate blenders.

For any distributor, reseller, or carrier, other strong evidence that it did not cause the violation would be test results showing that the relevant gasoline met applicable standards when one of these parties delivered it to the next parties in the distribution chain. For a retailer or wholesale purchaser-consumer, test results showing that the gasoline in its storage tank was in compliance at the beginning of the control period is evidence that it did not cause the violation by mixing gasoline appropriate for different time periods. For example, in a case where gasoline violating the VOC-control requirements is found during the high ozone season at a retail outlet, the retailer could show he did not cause this violation by failing to replace non-VOC-controlled gasoline in the storage tank with VOC-controlled in advance of the high ozone season if he had test results for gasoline sampled on June 1 showing that the gasoline met VOC-control requirements on that date. Evidence accounting for all gasoline received and dispensed, and evidence establishing that the distributor represented all gasoline received met applicable requirements, would also assist a retailer in showing it did not cause the violation.

The second element of the defense is the requirement that all product transfer documents for all relevant gasoline met applicable requirements. For the operator of the facility found in violation, this would require product transfer documents covering all of the gasoline contained in the storage tank found in violation, including a sufficient number of previous deliveries to account for any product mixing that may have occurred in the tank. For example, if a 100,000 bbl capacity terminal storage tank containing 50,000 bbls is found to violate the benzene maximum standard, the distributor who operates the terminal would be required to produce product transfer documents covering his receipt(s) of all gasoline which comprised the 50,000 bbls. In addition, if the storage tank contained any gasoline at the time the 50,000 bbls was received (e.g., a tank "heel"), the product transfer documents for this additional gasoline must also be produced.

The product transfer documentation requirement is for all relevant gasoline, which requires a party to account for all of the gasoline. In order to show that all gasoline has been included in an accounting, a party normally would be required to provide evidence of the volume and timing of gasoline sold, dispensed, or transferred to another party, and to show that this balances with the volume and timing of gasoline received.

The third defense element requires that the party must have conducted a gasoline quality assurance sampling and testing program. This defense element is in addition to the elements previously discussed. Even if a party is able to establish it did not cause a violation and presents product transfer documents covering all relevant gasoline, the party still would be held liable if it had not conducted an appropriate quality assurance program.

Even though the quality assurance programs discussed here are not mandatory, but are elements of an affirmative defense, EPA believes the overall success of the reformulated gasoline program is closely linked to regulated parties' quality assurance programs. EPA inspectors cannot be in all places at all times to monitor compliance. As a result, for reformulated gasoline to perform as expected, it is incumbent on persons in the petroleum industry to implement procedures and to use care sufficient to ensure that reformulated gasoline is not contaminated and is used in the proper time and place. EPA believes that quality assurance programs play an indispensable role in informing parties whether their procedures and practices regarding reformulated gasoline have been successful.

Quality assurance programs provide parties the opportunity to detect tendered gasoline that does not meet requirements or conform to the shipping documents, to take appropriate steps to stop the use of noncomplying gasoline and correct the documents (or inform the gasoline's recipient of the correct specifications), and to take actions to prevent future violations. Such actions could include requiring a particular shipper to produce independent test results of future gasoline tendered to support the specifications documented, or in extreme cases, refusing to accept gasoline from a particular person.

EPA is proposing that, at all points in the distribution network, all parties (including retailers) should be responsible for monitoring gasoline classified as reformulated for the absence of the proposed phenolphthalein marker. Under other 40 CFR part 80 enforcement schemes, a quality assurance program is not a required defense element for retailers and wholesale purchaser-consumers, due in large part to the testing costs of those programs. For example, volatility compliance screening requires equipment which costs approximately $10,000 and must be used by a trained operator. In contrast, in the reformulated gasoline program, the screening method being proposed for the conventional gasoline marker costs only pennies per test, and the procedure is relatively simple. EPA believes that requiring this defense element for all parties is justified by the ease and low cost of the marker test, and the importance to the program of preventing conventional gasoline use in covered areas.

Under EPA's proposed regulations, an adequate quality assurance program for all parties upstream from the retailer or wholesale purchaser consumer would include testing every batch for the conventional gasoline marker. Retailers and wholesale purchaser consumers would be required to sample and test daily or after each load is delivered, whichever is less frequent. The retailer may choose to sample out of the storage tank or from the gasoline tanker delivery truck. In this manner, if the

retailer determines that conventional gasoline has been or is about to be delivered, it may take appropriate steps to correct the situation. EPA believes that this frequency of testing at the retail level will be adequate to prevent the introduction of conventional gasoline into the marketplace.

In addition, EPA is proposing that at points upstream from retail outlets or wholesale purchaser consumers, parties should be required to conduct quality assurance programs to ensure that reformulated gasoline meets requirements for minimums and maximums, and that the characteristics of reformulated gasoline are consistent with the time and place of use and are accurately stated in the product transfer documents. For example, if a violation of the oxygen minimum standard is found at a retail outlet, each distributor that supplied gasoline to that retail outlet would be required to present evidence of a quality assurance program for oxygen content conducted on that distributor's gasoline.

EPA believes that taking samples from the delivery truck or retail outlet storage tank does not violate state laws or OSHA regulations. At least one state has a law that prohibits the opening of the gasoline tanker delivery truck hatch while the gasoline is being dispensed, but this requirement does not prohibit the taking of samples from the truck or storage tank either before or after the gasoline is dispensed. Furthermore, OSHA regulations exempt workers downstream from bulk facilities from benzene exposure standards who store, transport, distribute or dispense gasoline. EPA recommends that regulated parties who deal with gasoline employ customary safe practices when sampling and testing.

The quality assurance program defense requires a party to show that upon discovering violating product, the party immediately stopped selling, supplying, storing, or transporting the product. The gasoline must be clearly designated as product that is not intended to be sold, supplied, dispensed, transported or distributed. Transportation is appropriate only for the purpose of correcting the violating product. Under such circumstances, the party may transport the gasoline to a geographic area having a standard, such as RVP, with which the gasoline complies, and must be clearly marked as not for sale within any covered area. The gasoline may be stored until a time period when the gasoline complies, or until the compliance period ends. Storage is appropriate only when the violating gasoline was discovered through an oversight program and the stored gasoline is sealed until a time when the product can be distributed. The party must also show that it promptly remedied the violation by removing the violating product or adding a sufficient quantity of complying product, and that it took actions to prevent future violations.

One other quality assurance program applies to certain special situations. In the event that a violation involving gasoline that is or previously had been classified as reformulated gasoline blendstock for oxygenate blending is found, parties presumed liable (including upstream distributors and carriers) would be required, in order to establish a defense, to present evidence of periodic sampling and testing of RBOB to show that this product had not been altered or contaminated.

In addition to the defense elements described above (showing non-causation, product transfer documents, and a quality assurance program), EPA is proposing that a branded refiner must meet additional requirements if the violation is found at a branded facility. Specifically, the named refiner must show that the violation was caused by an act in violation of law or sabotage or vandalism, or by an act in violation of a contractual obligation imposed by the refiner on the party operating under the refiner's brand name and designed to prevent such violations, and despite a periodic sampling and testing by the refiner to assure compliance with the contractual obligations and to prevent future violations. In the case of violation caused by a party not under contract with the refiner (e.g., a carrier), the refiner must show that the violation occurred in spite of efforts by the refiner (such as a periodic sampling and testing) designed to assure that violations do not occur.

EPA believes these additional requirements for branded refiners are appropriate because of the degree of control refiners have over gasoline that is sold under the refiner's brand name. This proposed defense element for branded refiners is closely modeled upon the enforcement schemes followed in the gasoline lead contamination, volatility, and diesel fuel sulfur content regulations.

These additional requirements would apply equally to branded importers.

XII. Anti-Dumping Requirements for Conventional Gasoline

A. Introduction

Section 211(k)(8) of the Act requires that the gasoline sold in areas not participating in the reformulated gasoline program not be more polluting than it was in 1990. The purpose of this "anti-dumping" section is to ensure that fuel components that cause harmful emissions and that are removed from or limited in reformulated gasoline not be "dumped" into conventional (nonreformulated) gasoline, and to likewise ensure that environmentally beneficial fuel components not be used to make reformulated gasoline to the detriment of conventional gasoline. The anti-dumping program regulates only conventional gasolines and their emissions of specified pollutants.

The following sections present the issues associated with the anti-dumping program and the proposed methods for implementing the anti-dumping provisions. First, the emission requirements of post-1994 conventional fuels are discussed in section B. In section C, individual baseline determination is discussed. Finally, in section D, data submission and baseline approval are discussed. Anti-dumping compliance and enforcement issues are covered in section XIII. Comments, data and technical analyses regarding all aspects of the anti-dumping provisions and EPA proposal are requested.

B. Emission Requirements

1. Emission Requirements

EPA proposes that in 1995 and 1996 the requirements of section 211(k)(8) of the Act be met by requiring that the exhaust benzene emissions of a refiner's [50] or importer's conventional gasoline not exceed its baseline exhaust benzene emissions. Described below are two proposed methods for meeting this requirement. EPA is proposing two methods for compliance with the anti-dumping requirements during 1995–96 for the same reason two compliance methods are being proposed for reformulated gasoline as discussed in section II. While a refiner may choose which of the two methods it wishes to use, it must use the same model for both the reformulated gasoline and the anti-dumping programs. The anti-dumping program is inherently tied to the reformulated gasoline program in that the specific model used to certify reformulated gasoline will affect which fuel components are likely to be dumped. The effect of these components on conventional gasoline emissions must be the same as on reformulated gasoline emissions. Otherwise, incentives will exist to shift dirty components to conventional fuel areas

[50] See section XIII.B for a discussion of the inclusion of "blender" in the definition of refiner.

using whichever model predicts the lowest emissions increase due to those components. Refiners making either only reformulated gasoline or only conventional gasoline may choose either model.

Under the first method, the exhaust benzene emissions due to conventional gasoline would be determined using the simple model discussed in section II.A. Of the nonoxygenate parameters which affect emissions, only the effects of fuel benzene and fuel aromatic content on exhaust benzene would be included in the model. This is sufficient during this period because, by the simple model, these are the only fuel components which will be removed from reformulated gasoline which affect toxic emissions. Effectively, this model would yield the weight fraction of benzene in the exhaust, adjusted to correct emissions units.

In addition, EPA proposes that compliance with this first method also require that the annual average sulfur, olefin and T90 values of a party's conventional gasoline not exceed its baseline values of those parameters by more than 25 percent. Increases in these fuel parameters are known to qualitatively increase VOC and/or NOx emissions, but were not included in the complex model because their effect could not yet be confidently quantified. These limits were part of the negotiated agreement and will provide some assurance that conventional gasoline emissions will not rise prior to use of the complex model. EPA does not expect the levels of these parameters in conventional gasoline to naturally increase due to the reformulated gasoline program, since the simple model for reformulated gasoline only places caps on these three fuel parameters and does not require their reduction. However, these relaxed caps for conventional gasoline will prevent future refinery modifications from negatively affecting these three parameters to a significant degree.

It should be noted that 125 percent of 330 °F, the weighted [51] average baseline value of T90, is about 413 °F, which is about 5 °F higher than the average endpoint temperature. Additionally, the ASTM maximum T90 is about 370 °F, or about 112 percent of 330 °F. Thus, the magnitude of the 125 percent "cap" on T90 may be inconsequential with regard to gasoline production (i.e., no "substantially similar" [52] gasoline is likely to be produced which has a T90 in this range). The 125 percent caps on sulfur and olefins may, for some refineries, also result in fuels which are not substantially similar, but this is less apparent than for T90.

The second method for determining compliance during 1995 and 1996 is to use the complex model described in section IV.B. The nonoxygenate parameters that will likely be included in this model include, at minimum, benzene, aromatics, RVP, sulfur, olefins, and T90. Under this method, all the parameters affecting exhaust benzene emissions would be part of the model, and thus there would be no need for separate "caps" on other fuel parameters as in the method of compliance described above.

To determine compliance with the exhaust benzene requirement by either model, a refiner's baseline fuel parameter values would be plugged into the model and would yield a resulting baseline emissions value. At the end of a compliance period, the average fuel parameter values of a refiner's conventional gasoline over that period would be plugged into the model. The resulting emissions value would then be compared to the baseline emissions value to determine if the party is in or out of compliance with the anti-dumping requirements.

The issue of how to treat oxygen content in the baseline and for compliance purposes was not addressed by the negotiated agreement. Several issues surround the decision of whether to include or exclude oxygen as a baseline and/or compliance parameter.

First, if the actual oxygen content of conventional gasoline had to be maintained [53] at some non-zero value, this required oxygen plus the spillover of reformulated gasoline could result in the conventional gasoline areas receiving much more oxygen than they received in 1990, possibly to the detriment of those areas opting into the reformulated gasoline program. As discussed in the NPRM in section IX.C.3.d, no increase in emissions is expected in conventional gasoline areas because the spillover of reformulated gasoline and the use of oxygenated fuels in those CO nonattainment areas which are not receiving reformulated gasoline is expected to increase the average oxygen content of fuel in the anti-dumping area(s) over 1990 levels. Any localized decreases and increases in emissions which may occur are unlikely to be in CO nonattainment areas, and are also unlikely to be in ozone nonattainment areas as more areas opt into the reformulated gasoline program.

Second, certain combinations of inclusion or exclusion of fuel oxygen content in the baseline and compliance calculations could be beneficial or detrimental to a refiner's compliance with the anti-dumping provisions and could ultimately have negative environmental consequences. For instance, if a refiner's 1990 gasoline contained oxygen and oxygen was required to be accounted for in both the baseline and compliance calculations, the refiner would have to adjust its conventional gasoline composition (in order to maintain its emissions at 1990 levels) if its post-1994 oxygen content was less than that of its 1990 gasoline. This adjustment would have to be made despite the fact that some of its reformulated gasoline was sold in anti-dumping areas. If the oxygenate in that spillover could be included in the compliance calculation, the refiner would likely not have to adjust its conventional gasoline composition unless other parameter changes caused increased emissions. This scenario thus penalizes those who produced reformulated gasoline early or who were producing cleaner gasoline in general in 1990 because they would have to adjust their conventional gasoline composition while those who had no oxygen in 1990 do not face this consequence. Thus, EPA does not believe that inclusion of oxygen in both the baseline and compliance calculations in this manner is a viable option.

On the other hand, if oxygen was not a baseline parameter but was included in compliance calculations, a refiner who used oxygen in its post-1994 conventional gasoline would benefit because it would have relatively high baseline emissions since there would be no oxygenate in its baseline. Its compliance emissions would be reduced due to any level of oxygenate use thereby allowing other components to be "dumped" into its conventional gasoline up to its baseline. Under this scenario, although spillover oxygen would not be accounted for, the oxygen used in the CO nonattainment areas (not receiving reformulated gasoline) would be included in a refiner's conventional gasoline compliance calculation. As previously stated, oxygenated fuel use in those CO nonattainment areas that do

[51] Based on a 5½ month summer, 6½ month winter weighting.

[52] Absent a waiver, section 211(f) of the Act prohibits introducing gasoline or gasoline additives into commerce which are not substantially similar to those used in the certification of new motor vehicles. EPA recently updated an interpretive rule concerning what is substantially similar unleaded gasoline (56 FR 5352 (February 11, 1991)).

[53] If oxygen content were included in the simple model for exhaust benzene, oxygen content would be required to be maintained to show compliance with the exhaust benzene requirement if the values of the other parameters which affect exhaust benzene emissions did not change.

not receive reformulated gasoline, plus spillover of reformulated gasoline, are expected to increase the average oxygen content in the anti-dumping areas over 1990 levels. However, neither spillover nor oxygenated fuel use alone are expected to increase post-1994 oxygen levels over 1990 levels. This option effectively credits the oxygen contribution of oxygenated fuels twice, once explicitly, once implicitly. Thus EPA also does not believe this to be a viable option.

Finally, oxygen content was not included in the statutory definition of summertime baseline fuel. Clearly, Congress could have included an oxygen content value for the summertime statutory baseline gasoline since oxygenate use in 1990 could easily have been calculated. While oxygen content is not required to be excluded from the statutory wintertime baseline, EPA proposed to exclude it as discussed in 56 FR 31179–31180.

Based on the discussion above, EPA considers the following two methods of dealing with oxygen content in the baseline and compliance calculations to be viable options. Comments are requested on these proposed options:

a. Include in either model only a positive difference between a refiner's or importer's post-1994 annual average oxygen value and its individual baseline oxygen value (i.e., in the actual calculation, include oxygen in the baseline and include the larger of the baseline oxygen value or the annual average post-1994 oxygen level in the compliance calculation). If the difference is negative (i.e., less oxygen in post-1994 conventional gasoline than in the 1990 gasoline) no effect of oxygen would result because the baseline oxygen value would be used in the compliance calculation as well as in the baseline emissions determination. This option would assume that the oxygen in reformulated gasoline spillover and use of oxygenated fuels outside of reformulated gasoline areas would more than counteract any decrease in the oxygen content of a refiner's conventional gasoline. It also allows a refiner to get credit for a real increase in its conventional gasoline oxygen content and the associated reduction in emissions.

b. Exclude oxygen content in the baseline and exclude it in compliance calculations. This option does not penalize a refiner for a reduction in oxygen content (i.e., sufficient oxygen assumed due to spillover and oxygenated fuel) from 1990 but also does not give credit for a real increase in the oxygen content of its conventional gasoline. With no credit for increased oxygen content, there would be less flexibility in adjusting the other conventional gasoline components in the model.

EPA requests comments on the inclusion or exclusion of oxygen content as a baseline and compliance parameter, and on the options presented above.

2. Emission Requirements in 1997 and Beyond

Based on the negotiated agreement, EPA proposes that in 1997 and beyond, section 211(k)(8) of the Act be implemented by requiring that the exhaust toxic emissions and the NO_x emissions of a party's conventional gasoline not exceed that party's baseline exhaust toxic and NO_x emissions, and that compliance with this requirement be determined using the complex model described in Section II.B. The exhaust toxics emissions requirement for 1997 and beyond differs from the 1995–6 requirements in that all five pollutants section 211(k)(10)(C) defines as toxics are included. These are exhaust benzene, formaldehyde, acetaldehyde, 1,3-butadiene and POM.

The 1997 and beyond requirements also differ from the 1995–6 requirements in that, in 1997, NO_x emissions are controlled. In 1995–6, no adjustment to reformulated gasoline composition will be necessary to reduce NO_x emissions. Thus, there should be no dumping of high NO_x emission components in conventional gasoline. Although EPA is concerned that high oxygenate levels may contribute to increased NO_x emissions, the Act states that any NO_x emissions increase due to oxygenate use can be offset by VOC, CO and toxic emissions reductions which are also due to oxygenate use. The VOC and CO emissions reductions which occur with oxygenate use are clearly much greater than any potential NO_x increase as discussed in sections III.B, IX.C.2.c and IX.C.3.c in the NPRM. Thus, EPA proposes to disregard any deleterious oxygenate effects on NO_x emissions for anti-dumping purposes.

All the fuel parameters identified as affecting toxic emissions will be included in the complex model. As stated previously, these will likely include oxygen, benzene, aromatics, RVP, sulfur, olefins and T90. The sum of the baseline exhaust toxic emissions is the value that must not be exceeded by the annual average exhaust toxic emissions due to a refiner's or importer's post-1996 conventional gasoline.

C. Baseline and Compliance Determination

1. Introduction

Section 211(k)(8) of the Act provides that an individual baseline (comprised of individual baseline fuel parameter and exhaust emission values) be determined for each refiner (including blenders, see discussion in section XIII.B) and importer if sufficient data exist from which to determine a baseline representative of that party's 1990 gasoline. Additionally, the Act states that if no adequate or reliable data exist regarding the gasoline sold by a refiner or importer in 1990, the refiner or importer must use the statutory baseline gasoline fuel parameters (found in section III.A) as its baseline fuel parameters.

After consulting with refiners and importers, EPA believes that there likely will be insufficient directly measured 1990 parameter data available, even in the case of some of the largest refiners, from which to determine representative individual baseline parameters. At the same time, EPA is concerned about the use of the statutory baseline parameters by those without individual baseline data. Since the statutory baseline gasoline is supposed to approximate the average 1990 gasoline quality and composition, some refiners and importers presumably supplied 1990 gasoline that was more polluting than the CAA baseline and others presumably supplied less polluting gasoline. Thus, if the statutory baseline gasoline parameters are required for those without sufficient data, some would be able to produce "dirtier" gasoline than they did in 1990 and others would be penalized because they would have to meet a stricter emissions standard than would be required based on their 1990 gasoline. Even if the average emissions would be the same whether individual baselines or the CAA baseline were used, EPA believes the competitive effects could be extreme.

Detailed in sections 2 through 5 below are the Agency's proposed methods for baseline determination. Proposed compliance requirements are briefly discussed in these sections and are more fully discussed in section XIII. These proposed methods are intended to make best use of available data while attempting to eliminate loopholes and prevent gaming (e.g., the "dumping" of emission-increasing components or the creation of unfair competitive situations). Thus, different methods of baseline determination are proposed for different refinery operational modes, as

discussed in section IX.D of the NPRM. Section 6 details the statutory baseline fuel parameters for anti-dumping. Section 7 discusses baseline determination for parties involved in both domestic gasoline production and importation of gasoline. Section 8 details potential concerns for isolated distribution areas. Section 9 discusses the option of obtaining a refinery-specific individual baseline. Section 10 discusses the limitation on individual baseline applicability with regard to production volume. Comments are requested concerning any and all aspects of individual baseline determination.

2. Producers of Blendstocks and Finished Gasoline

a. Baseline. The Agency proposes the following methods for the determination of a refiner's individual baseline when the gasoline under consideration is produced at a refinery engaged in the production of gasoline blendstocks from crude oil and the subsequent mixing of those blendstocks to form finished gasoline. A refinery shall have been in normal operation for a minimum of six months in 1990 in order to develop an individual baseline.

Method 1: By Method 1, a required fuel parameter would be determined from a refiner's records of 1990 shipments of finished gasoline and gasoline blendstocks [54], as follows. Gasoline blendstocks, of the types listed in Table XII–1, which left a refinery in 1990 would be included in a refiner's or refinery's baseline determination if the refiner could show that the blendstocks were blended with other components to form gasoline. If the blendstocks so identified were used by a refiner who would have its individual baseline parameters determined by the three methods proposed here, that refiner would subtract the qualities and volumes of such blendstocks from its individual baseline determination. This requirement is intended to minimize double-counting of blendstock properties in the baseline determination. The measured parameter value and volume of each shipment of gasoline or blendstock would be used in the determination of the overall value of a parameter at a single refinery.

Table XII–1.—Gasoline Blendstocks

Reformate
Light coker naphtha
Straight run naphtha
FCC naphtha
C5 + Isomerate
Hydrocrackate
Alkylate
Poly gasoline
Dimate
Toluene/xylene
Isobutane
Normal butane
Raffinate
Natural gasoline
Pyrolysis gasoline
Aromatics
Light paraffins
FC Gas

The blendstocks listed in Table XII–1 are intended to represent the range of blendstocks which are likely to be used in the production of gasoline. The "names" of the listed blendstocks should be considered the names by which a blendstock or stream is commonly or commercially known, based on its composition, the unit in which it was produced and other characteristics. EPA realizes that within a refinery, blendstock streams of approximately the same composition and characteristics as the listed blendstocks may have different names. If a refiner has a blendstock or stream which is similar in composition or characteristic to the listed blendstocks, that blendstock should be included in the baseline determination, if appropriate based on this discussion. EPA believes the inclusion of blendstocks in the baseline determination is authorized under section 211(k)(8) of the Act. Inclusion of blendstocks is necessary to implement Congressional intent for the anti-dumping provisions of section 211(k), and will limit, if not preclude, the use of blendstocks to "cheat" or otherwise subvert the goals of the anti-dumping program. EPA also believes that section 211(c) provides independent authority for inclusion of blendstocks in today's anti-dumping proposals. EPA's statutory authority for this proposal is therefore based on both section 211(k) and section 211(c) of the Act.

Method 2: By Method 2, a required fuel parameter would be determined from a refiner's 1990 gasoline blendstock composition data and 1990 production records. This would apply to those blendstocks used in the production of gasoline within the refinery. Additionally, gasoline blendstocks, of the types listed in Table XII–1, which left a refinery in 1990 would be included in a refiner's or refinery's baseline determination if the refiner could show that the blendstocks were blended with other components to form gasoline. If the blendstocks so identified were used by a refiner who would have its individual baseline parameters determined by the three methods proposed here, that refiner would subtract the qualities and volumes of such blendstocks from its individual baseline determination. This requirement is intended to minimize double-counting of blendstock properties in the baseline determination. By this method, the average parameter value of each type of gasoline blendstock would be determined from the measured parameter value and associated volume of each type of blendstock. As will be discussed below, the associated volume would be the volume of a batch of blendstock, or for a continuous process, a volume proportional to the amount of the blendstock blended to form finished gasoline in that month.

Method 3: By Method 3, a required fuel parameter would be determined from a refiner's 1991/2 blendstock composition data and 1990 production records. This would apply to those blendstocks used in the production of gasoline within the refinery. Additionally, gasoline blendstocks, of the types listed in Table XII–1, which left a refinery in 1990 would be included in a refiner's or refinery's baseline determination if the refiner could show that the blendstocks were blended with other components to form gasoline. If the blendstocks so identified were used by a refiner who would have its individual baseline parameters determined by the three methods proposed here, that refiner would subtract the qualities and volumes of the blendstocks from its individual baseline determination. This requirement is intended to minimize double-counting of blendstock properties in the baseline determination. By this method, the average 1991/2 parameter value of each type of gasoline blendstock would be determined from the measured parameter value and volume of each 1991/2 batch of that type of blendstock. The average 1991/2 parameter value and the total 1990 volume of each type of blendstock would then be used to determine the overall value of the parameter at a single refinery.

EPA proposes to issue technical guidelines for an EPA-certified auditor (as discussed in paragraph D.1) to follow when performing the audit of baseline submission data. Such guidelines would require that operational and other types of changes in a refinery were accounted for, and that based on these changes it would be possible to estimate a baseline representative of 1990 production.

[54] For a discussion of why EPA believes gasoline blendstocks should be included in both baseline determinations as well as compliance calculations, see section XIII.C.

In order that the fuel parameter values obtained by Method 3 adequately represent the 1990 values of those parameters the refiner must provide detailed documentation of its 1990 and 1991/2 refinery operations. This documentation will allow the baseline auditor (discussed in paragraph D.1) to compare 1990 and 1991/2 operations, intermediates and products and adjust the baseline parameter determination accordingly.

EPA also proposes to allow 1991/2 finished gasoline data to be used to estimate 1990 baseline parameters. In addition to requiring the same detailed documentation of 1990 and 1991/2 operations as above, the volumetric fraction of *each* blendstock in 1991/2 finished gasoline must be within five (5) percent of the volumetric fraction of the blendstock used in 1990 finished conventional gasoline. For example, if a refiner's 1990 finished gasoline contained 30 volume percent reformate, 1991/2 finished gasoline data may be used (provided all other parameter values also conformed to these requirements) as long as it contained 28.5–31.5 volume percent reformate. Allowing the use of 1991/2 finished gasoline data may reduce the costs associated with sampling and testing.

Application of these methods is hierarchical in that the method drawing on the best available data must be used to determine the baseline value of a fuel parameter. If a refiner has data available for a baseline parameter determination by Method 1, then the value of that baseline parameter must be established using that method. If insufficient data is available for a Method 1 determination, but sufficient data exists for a Method 2 determination, then the refiner must use Method 2. If insufficient data is available for a Method 2 determination but sufficient data exists for baseline determination by Method 3, then Method 3 must be used. This hierarchical application of the three methods applies separately to each fuel parameter at each refinery.

As previously stated, EPA believes that to avoid potentially detrimental air quality and competitiveness effects, use of the statutory baseline parameters should be avoided if baseline parameters can be estimated with reasonable accuracy. While the data needed for Method 1 is obviously more reliable than that required for Method 3, EPA considers the data needed for Method 3, as well as that for Methods 1 and 2, to be reliable and adequate for the purposes of determining baseline fuel parameter values for the anti-dumping program. Thus, EPA proposes that all gasoline produced in the type of refinery discussed in this Section be subject to baseline determination by Methods 1, 2 or 3. Further discussion on the use of Methods 2 and 3 can be found in Section IX.D.2 of the NPRM.

The proposed equations for calculating baseline fuel parameters by each of the above methods are listed in § 80.91 of the proposed regulations. EPA is also proposing that samples that have been retained but not yet analyzed may be mixed together in volumes proportional to the volume of the batch or shipment from which the sample was taken and the mixture analyzed for the required fuel parameters. Blendstock samples obtained from continuous processes over a calendar month may be mixed together in equal volumes to form one blendstock sample (e.g., all samples of reformate taken in a calendar month may be mixed) and the sample analyzed for the required fuel parameters. Blendstock parameter values so obtained from sampling of continuous processes shall be weighted according to the volumetric fraction of that blendstock in the finished gasoline produced in that calendar month. EPA believes that this type of linear blending and determination of parameters is satisfactory for baseline determination, as it is implicit in Congress' direction to the Administrator with regards to the determination of an average winter baseline gasoline in section 211(k)(10)(B)(ii) of the Act. Analyzing such mixtures may reduce testing costs significantly.

EPA is also proposing that the sampling and measurement techniques used to determine baseline parameters must yield results which would be equivalent to the results obtained per the techniques and methodologies proposed under the reformulated gasoline program. The baseline auditor would verify that historical data (i.e., 1990 and 1991 data) were obtained using test procedures which yielded equivalent results.

In order to use any method, a sufficient number of shipments or blendstock batches (of one type of blendstock) must have been sampled, or a sufficient number of samples taken from continuous processes, in a calendar month over a minimum of 6 months that will enable an auditor to determine the baseline parameters of the refinery, for instance, by a material balance around the refinery, including the tank farm. This requirement will insure that the average parameter values calculated by the above methods will adequately represent a refiner's 1990 gasoline quality and composition, including representative summer and winter data. EPA proposes that the 6 month period must consist of 3 summer months and 3 winter months. Assuming that summertime gasoline is produced beginning in March, EPA proposes that summertime gasoline for Method 3 be gasoline produced from April 1 through September 15, inclusive, and that wintertime gasoline be gasoline produced from September 16 through March 31, inclusive. The above segregation also applies to blendstock production. Average parameter values will be determined for each season and the seasonal values weighted on a 46.8/53.2 percent summer/winter split to yield an annual average parameter value. These percentages represent the volumetric fraction of gasoline consumed in 1990 during the summer and winter periods listed above and are consistent with the splits used in the reformulated gasoline program. It should be noted that all available samples must be analyzed and the results used in baseline determination if more than the minimum number of samples are available. Comments are requested on this proposal, specifically on whether the sampling requirements for each method are sufficient.

Comments are requested on the proposed methods of baseline parameter determination, the likely availability of data for each parameter by each method, the extent to which the data obtained by each method will be representative of actual 1990 data, and any other aspects of these proposed methods and associated proposed regulations.

b. *Baseline adjustment for work-in-progress.* Prior to passage of the CAA Amendments of 1990 some refiners had made significant financial commitments to change their future gasoline quality through the construction or upgrading of certain process units critical to gasoline production. Many of these projects were "work-in-progress" (WIP) and were not completed in 1990, the baseline year for the anti-dumping controls. These projects were, in many cases, initiated (at least in part) to comply with some other regulatory requirement such as EPA's diesel desulfurization rules promulgated in 1989 and due to take effect in 1993. Some refiners' strategies for complying with these prior regulatory requirements entail changing their gasoline quality in ways that will increase some types of emissions over 1990 levels. In the case of at least some of these refiners, compliance with the anti-dumping requirements (to not exceed 1990 emissions levels) could only

be accomplished by not operating, or not fully operating, the new or upgraded unit. The inability to make use of the new or upgraded unit could in turn threaten the financial viability of some companies. At the same time, the likely increase in total emissions in anti-dumping areas as a result of the new or upgraded units at the small number of refineries that had WIP in 1990 is not expected to be great.

As explained in *Alabama Power Company* v. *Castle*, 636 F.2d 323, 357 (D.C. Cir 1979), agencies possess "equitable discretion . . . to afford case-by-case treatment—taking into account circumstances peculiar to individual parties in the application of a general rule to particular cases, or even in appropriate cases to grant dispensation from the rule's operation." EPA proposes to exercise its "equitable" discretion to afford limited relief to refiners that would be extraordinarily burdened by application of the anti-dumping requirement that they not exceed their 1990 emissions. Specifically, EPA proposes that any refiner that meets the criteria listed below be allowed to modify its baseline determination to account for WIP. Based on the negotiated agreement, the requirements for obtaining a modification include that the refiner would have to petition the Agency in order to obtain this modification and would have to show all of the following:

i. That at least a five (5) percent difference exists between the refiner's baseline exhaust benzene emissions with and without the work-in-progress (WIP) adjustment.

ii. That the WIP was associated with other regulatory requirements.

iii. That failure to grant this adjustment would result in an extraordinary regulatory burden, i.e., a substantial portion of the refiner's capital would be at risk if the adjustment were not granted. Based on comments received from refiners concerning the minimum value for a refiner's capital to be at risk, EPA proposes that "substantial portion of the refiner's capital" be that the capital (including capitalized engineering costs) involved in the WIP exceed 10 percent of the refinery's depreciated plant and equipment value as of the WIP start-up date. EPA believes that above this level, the economic viability of some refiners, particularly smaller refiners, could be jeopardized. Comments are requested on the appropriateness of this value.

iv. That such an adjustment would not cause a refiner's baseline exhaust benzene emissions to exceed the exhaust benzene emissions due to the statutory baseline parameters by more than five (5) percent. However, a refiner whose WIP-adjusted baseline emissions exceeds 105 percent of CAA baseline emissions does not have to reduce its emissions further to 105 percent of the CAA baseline if its WIP-adjusted baseline emissions are less than its pre-WIP baseline emissions.

The "five percent" values proposed in i and iv above were deemed to be reasonable by those participating in the regulatory negotiation process. Comments are requested on the effect of allowing this modification of baseline determination and the criteria which might be required to establish the right to modify a Method 1, 2 or 3 baseline determination as discussed.

c. Baseline recalculations. Sometime after a refiner's initial baseline fuel parameters and emissions are determined and approved, several potential situations could occur which would necessitate recalculation of a refiner's baseline. For instance, a refinery could be sold or be started up after not having been in operation in 1990. EPA proposes that the baselines of all parties involved in such, or similar, transactions be recalculated to reflect these changes.

For example, in the case of a refinery which was sold, both the buyer's and seller's baseline fuel parameter values would have to be recalculated to reflect the addition and subtraction of the fuel parameter values and associated volumes of the refinery being exchanged. In the case of a refinery not in operation in 1990 but started up at a later date, the refiner's baseline would be recalculated to reflect the addition of the restarted refinery's volume of gasoline. Since there would be no 1990 baseline for that refinery's gasoline, pursuant to section 211(k)(8), the CAA baseline gasoline parameters would be used for that gasoline in the recalculation of the refiner's baseline.

EPA is proposing that within 30 days of a refiner's baseline fuel parameter values becoming incomplete or inadequate due to the events described, or to similar events, the refiner would submit the appropriate documentation to an auditor which is certified for baseline verification and recalculation as discussed in section D. Comments are requested on this proposal.

EPA proposes that when a refinery is permanently shut down, the refiner would not recalculate its baseline. EPA believes that a refinery should not have to be left open (particularly a dirty refinery) to retain an individual refiner baseline. If a baseline recalculation was required, a refiner could just minimally run the refinery to retain its individual refiner baseline. Likewise, should a refinery which was in operation in 1990 be shut down and started up at a later date, the refiner or refinery would still have its 1990 baseline characteristics.

d. *Compliance.* EPA proposes that a refiner whose gasoline is produced in a refinery operating as described under this heading would determine its compliance with the anti-dumping provisions as discussed briefly below and in detail in section XIII.

The post-1994 finished gasoline, and gasoline blendstocks of the types listed in Table XII–1, which left a refinery would be included in a refiner's or refinery's compliance calculation (and thus be accounted for). Transfer documentation would be issued on such gasoline and gasoline blendstocks in accordance with the requirements specified in section XIII.C. Certain blendstocks would be excluded from a refiner's or refinery's compliance calculation, including those blendstocks which are:

i. accounted for by another refiner,

ii. sold at certain prices indicative of use in nongasoline products,

iii. to be used as feedstock, or

iv. never to be used in finished gasoline.

The parameter values of the post-1994 finished gasoline, and blendstocks of the types listed in Table XII–1, which were acquired by a refinery and were accounted for by another refiner would be volumetrically subtracted from the acquiring refiner's or refinery's compliance calculation. Unaccounted for blendstocks of the types listed in Table XII–1 which were acquired by a refinery for use in gasoline blending would be included in the acquiring refiner's or refinery's compliance calculation.

3. Producers of Blendstocks Only

a. *Baseline.* Certain industries, such as the petrochemical and natural gas liquids industries, supply gasoline blendstocks to refiners and blenders. EPA believes that if such parties did not produce gasoline in 1990 and will not produce gasoline in the future (since gasoline production is not their business), they could not "dump" gasoline components from reformulated into conventional gasoline, nor could they purchase "dumped" components for blending with finished gasoline.

EPA proposes that those parties which produced gasoline blendstocks but not finished gasoline in 1990, and which will not produce finished gasoline in the future, not have an individual baseline. The blendstocks purchased from these parties would be accounted for by the refiner or blender who

purchases them. Comments are requested on this proposal.

b. *Compliance.* Because parties under this heading did not produce gasoline in 1990 and would not produce gasoline in the future, they would not have a baseline, and thus would not be subject to compliance under the anti-dumping program.

4. Purchasers of Blendstocks and/or Finished Gasoline

a. *Baseline.* An issue not addressed by the negotiated agreement is the determination of individual baselines for those refiners who exclusively purchase blendstocks and/or finished gasoline and mix these purchased components to form another finished gasoline. Refiners engaged in this type of refinery operation are commonly called "blenders". EPA proposes requiring the use of Method 1 (discussed in paragraph C.2) for baseline fuel parameter determination for gasoline produced in a refinery where gasoline blendstocks and/or finished gasoline are simply purchased or otherwise received (including intra-company transfers) and mixed to form finished gasoline. If a blender does not have the data required for a Method 1 determination of all of the required parameters, EPA proposes that the blender have the CAA baseline parameters as its individual baseline parameters.

b. *Compliance.* For compliance purposes (which are further discussed in section XIII), EPA proposes that the average emissions of unaccounted for blendstocks could not exceed the blender's baseline, either as determined by Method 1 or, if the blender did not have the data required for a Method 1 determination of all of the required parameters, the CAA baseline.

As will be discussed in Section XIII, the blender would determine its post-1994 parameter values by volume weighting the parameter values of the blendstocks it adds to other blendstocks or to finished gasoline. The blender would also be allowed to mix finished gasoline and blendstocks, which have been accounted for by a refiner with an individual baseline, and oxygenates without accounting for the composition and resulting emissions due to those components. EPA also proposes that a blender be allowed to include oxygenates in its compliance calculation if EPA chooses to include oxygen content in the compliance calculation under the option discussed in paragraph B.1. This would give blenders who only blend oxygenates, gasoline and "accounted for" blendstocks the ability to blend without regulatory burden while giving credit for the emission reduction benefits of oxygenates which blenders who combine unaccounted for blendstocks can utilize. A blender could not blend those blendstocks which have been "marked" (indicating the blendstock is not for use in finished gasoline) by a refiner with an individual baseline.

EPA believes this proposal will allow blenders to purchase fungible gasoline and will not reduce the availability of blendstocks yet will maintain air quality since the emissions from the blendstocks mixed to produce gasoline or added to finished gasoline cannot exceed the Clean Air Act baseline emissions or, if calculable, the blender's individual baseline emissions. This accounting will require the purchase of blendstocks which consist of low-emissions producing components (e.g., natural gas liquids) to offset the use of high-emissions producing components (e.g., toluene) in order that the emissions do not exceed the blender's baseline emissions.

Additionally, EPA does not believe that blends of accounted for and unaccounted for components (i.e., finished gasoline, oxygenates and blendstocks) will result in emission increases or air quality deterioration because the finished gasolines would have been previously accounted for under some other refiner's baseline and the addition of oxygenate would at worst only increase NOx emissions. Under the provisions of section 211(k)(8) of the Act, NOx emission increases, when due to oxygenate, can be offset by equivalent mass reductions in exhaust toxic, VOC and CO emissions due to oxygenate. As discussed in Section B.2, any increase in NOx emissions will be more than made up for by decreases in toxic, VOC and CO emissions. Comments are requested on this proposal.

5. Importers

a. *Baseline.* EPA proposes requiring the use of Method 1 (discussed in paragraph C.2 above) for baseline fuel parameter determination for an importer who imported gasoline and gasoline blendstocks into the U.S. in 1990. If the importer does not have the data required for a Method 1 determination of all of the required parameters for every batch of gasoline or gasoline blendstocks imported, the Agency proposes that the importer have the CAA baseline parameters and resulting emissions as its individual baseline parameters and emissions. An importer who did not import gasoline and/or gasoline blendstocks into the U.S. in 1990 but who does so after 1994 would have the CAA baseline parameters as its individual baseline parameters. Additionally, EPA proposes that if an importer, which is also a refiner, can show that it imported more than 75 percent of its 1990 gasoline production into the U.S. in 1990, it may determine a baseline per the methods described in paragraph C.2. EPA believes that this percentage (75) represents a significant portion of a refiner's gasoline production. Use of the methods described in paragraph C.2 would require baseline verification by an EPA-approved auditor, and thus gaming would be prevented. Comments are requested on the appropriateness of this 75 percent requirement.

This proposal differs slightly from that proposed in Section IX.D.4 in the NPRM, but EPA believes that this proposal will avoid the risk of baseline emissions that could be artificially high due to the inability to track the 1990 gasoline and blendstock imports of most importers. Since artificially high baselines would not be allowed, it is also being a more environmentally beneficial proposal. EPA believes that this approach is still fair and equitable to importers. EPA does not believe that, in general, importers, particularly those who are not refiners, will have adequate 1990 composition data on their imported gasoline and blendstocks from which to establish an individual baseline under Method 1. If importers were allowed to establish individual baselines based on 1991–2 data (except for those importers who meet the 75 percent criteria described above), it is likely these baselines could be very high compared to that of a domestic refiner since there would be no way (1) to prevent the importer from choosing high emission gasoline to import in 1991–2 simply to get an advantageous baseline and (2) to insure the 1991–2 gasoline was the same as 1990 gasoline imported. While EPA expects the proposed use of a baseline auditor to adequately verify domestic refiners' baselines, it does not believe such a system would be effective in dealing with importers' baselines, unless the importer was also a refiner which met the 75 percent criteria. EPA believes that to allow importers to develop high baseline emissions without the data required by Method 1, would encourage gaming, i.e., high-emissions producing gasoline and blendstocks could leave the U.S. (from a refiner with a relatively low baseline) and come back in via an importer with a high baseline. This clearly would be dumping, and thus would be environmentally, as well as competitively, detrimental. It would also allow importers to meet a less stringent standard overall than domestic refiners.

Comments are requested on this proposal.

b. *Compliance.* As discussed in section XIII, the emissions of an importer's post-1994 gasoline and gasoline blendstocks could not exceed its individual baseline emissions as determined above. Additionally, an importer would be subject to the compliance requirements discussed under paragraph C.2 with regard to the subtraction of accounted for blendstocks and finished gasoline acquired by the importer and the inclusion of unaccounted for blendstocks in its compliance calculation.

6. Anti-Dumping Statutory Baseline Parameters

EPA is proposing an annual compliance period (which is discussed in section XIII) for conventional gasoline. Thus only one set of statutory baseline gasoline parameters is required since there are no seasonal compliance requirements. The annual average baseline parameters shown below were determined by weighting the summer and winter baseline gasoline parameters on a 46.8/53.2 percent summer/winter split to yield an annual average parameter value. These percentages represent the volumetric fraction of gasoline consumed in 1990 during the summer period of April 1–September 15 and winter period of September 16–March 31 and are consistent with the splits used in the reformulated gasoline equations. This baseline parameter set contains no oxygen.

TABLE XII-2.—ANNUAL AVERAGE BASELINE PARAMETERS

Benzene, volume percent	1.58
Aromatics, volume percent	29.0
Olefins, volume percent	10.6
Saturates, volume percent	60.4
RVP, psi	10.3
IBP, degrees F	89
T10, degrees F	119
T50, degrees F	208
T90, degrees F	331
End Point, degrees F	409
Octane, (R + M)/2	87.7
API Gravity	59.0
Sulfur, ppm	338

Based on the proposals for baseline determination discussed in several sections above, no refiner (who is not considered a "blender") would be allowed to use the baseline parameters above as part of its individual baseline determination unless it obtained and started up a refinery which was not in operation in 1990 (i.e., had achieved relatively normal operation for at least 6 months in 1990) or unless its post-1994 production volume exceeded its 1990 maximum gasoline production (per the requirements discussed in paragraph C.10). A refiner who is considered a "blender" would use these parameters as its baseline parameters unless it had adequate data for a baseline determination by the proposed Method 1. An importer would also have these parameters as its individual baseline parameters unless it had adequate data for a baseline determination by the proposed Method 1 or met the "75 percent" criteria discussed in paragraph C.5. Comments are requested on the parameter values listed above and on the methodology used to obtain them.

7. Multiple Modes of Operation

The Agency proposes and requests comments on the following requirements for a refiner's baseline determination if a refiner engages in the production of gasoline from one or both of the two types of refinery operational modes discussed in sections 2 and 4 above and/or also imports finished gasoline and/or blendstocks. The Agency proposes that separate baselines be established for each of the different modes of refinery operation, on a domestic and import basis. For instance, a refiner who owns a refinery which produces blendstocks, and who also owns a refinery which purchases blendstocks and who also imports gasoline which is produced in both types of refineries (i.e., it imports gasoline which was produced in a refinery from which it imported more than 75 percent of the refinery's 1990 gasoline production into the U.S. and for which it developed an individual baseline and it also imported gasoline which must meet the CAA baseline, i.e., which was not from its own refinery meeting the "75 percent" criteria discussed in paragraph 5) would have four (4) individual baselines. As will be discussed in paragraph C.9, a refiner with more than one refinery operating as discussed in paragraph C.2 may choose to have separate baselines for each of its refineries.

An equation governing the determination of a refiner's baseline is listed in § 80.91(f)(iii) in the proposed regulations. Each of a refiner's domestic baselines would be determined from the average fuel parameter values and total 1990 gasoline shipment volume of each of its domestic refineries operating in a single mode. An importer's baseline would likewise be determined from the average fuel parameter values and total 1990 gasoline shipment volume of each refinery which operates in one of the two modes and from which it receives finished gasoline.

EPA believes that this approach prevents anticompetitive effects which could hurt smaller refiners, blenders and importers. A larger, more versatile entity which engages in more than one of the operations (refining, blending, importing) could potentially average its gasoline properties over the different operations whereas a smaller, less versatile entity does not have this opportunity. EPA also believes that this approach prevents dumping and prevents the production or importation of significant quantities of "dirtier" than average gasoline which was not part of a refiner's or importer's 1990 production or sales. Additionally, accounting for (1) a refiner's individual baseline, (2) the limit of individual baseline applicability (discussed in paragraph 10 below) and (3) gasoline from most blending and import operations having the CAA baseline parameters could raise difficult compliance and even baseline questions. For example, a refiner who had a relatively low baseline in 1990 and did not import in 1990 may decide to import in 1995. The imported gasoline could be required to meet the CAA baseline emission level or the lower emission baseline of the refiner, or the refiner's baseline could be recalculated to account for the imported gasoline. Likewise, in the case of a refiner with a relatively high baseline, it could potentially import gasoline under its high baseline with potentially no volume limit on the imported gasoline. Comments are requested on the proposed method of baseline determination.

8. Geographic Considerations

As stated in section IX.D.6 of the NPRM, in certain geographical areas, "localized dumping" could occur. In these areas, EPA proposes to allow any person to petition EPA to establish an individual refinery baseline for refineries under certain circumstances. The refinery would have to be located in an isolated gasoline distribution system which contains a reformulated gasoline opt-in area surrounded by a conventional gasoline area, and where it is shown that significant increases in toxic emissions are occurring in the conventional gasoline area. If EPA found that localized dumping was occurring, it would grant the petition, define refineries in the affected area as individual refiners and establish baselines for each refinery. EPA's authority to establish such individual baselines is based on section 211(c) of the Act which allows the Administrator to regulate fuels or fuel additives to protect the public health or welfare.

A refinery's individual baseline so established would not be incorporated into the refiner's baseline if those facilities were owned by a larger entity. However, a refiner that has two or more refineries in a defined area may determine a baseline for that area by incorporating all of the refineries in that area. In no case is a refinery to have an individual baseline and to also be included in the baseline of the larger entity. Comments concerning this proposal are requested.

9. Establishment of Refinery-Specific Individual Baselines

In certain instances, a refiner may desire to have an individual baseline for each of its refineries. For instance, suppose a refiner has a refinery which has low baseline emissions and a refinery which has high baseline emissions, and the low emission refinery will soon be producing primarily reformulated gasoline. If the operations of the high emission refinery do not change, the refiner would be out of compliance with the anti-dumping requirements because the contribution of the low emission refinery fuel in the anti-dumping calculation would be less. Thus, the refiner would be penalized for producing reformulated gasoline while maintaining conventional gasoline operations that are very similar to its 1990 operations. EPA proposes to allow a refiner to establish individual baselines for each of its refineries. Thus, the refiner would not have its own individual baseline. A refiner may only establish an individual baseline for each of its refineries or none of its refineries (i.e., use a refiner-wide baseline). This is analogous to and consistent with the reformulated gasoline situation. Although the Clean Air Act refers to gasoline sold by a refiner, blender or importer (section 211(k)(8)(A)), EPA believes that refinery specific baselines are allowed. The Act does not specify an averaging unit for baseline determination, though it does provide for emissions averaging between refineries for compliance. There are three possible options for baseline determination. Baselines could be determined on a refinery basis, on a refiner basis or on some combination of the two. During the regulatory negotiation, it was agreed that the pure refiner basis would be unfair to certain refiners. Allowing refiners to simply pick a combination of averaged and individual refinery baselines would give large refiners an opportunity to game the system and potentially grant them a significant advantage over small refiners. Therefore, EPA is proposing to allow refiners to choose only refiner-wide averaging or refinery-by-refinery baselines. It is likely that less localized dumping would occur in those locales where individual refineries have individual baselines.

If refinery-specific individual baselines are allowed, all requirements applicable to refiners would also apply to refineries with individual baselines for compliance purposes. Comments are requested on this proposal, specifically regarding whether this should be allowed without restrictions, or if not, what requirements should be considered.

10. Limitation on Applicability of Individual Baseline

In order that new gasoline production capacity or purchased volumes of blendstock or gasoline do not allow the production of conventional gasoline which is worse, with respect to emissions, than a gasoline having the parameters listed in section 6, the Agency proposes to limit the application of a refiner's individual baseline to a certain portion of its post-1994 conventional gasoline production and to apply the values of the parameters listed in section 6 (i.e., the CAA baseline parameters) to the volume in excess of this amount. This proposal would also apply to the imported gasoline of importers which have an individual baseline as discussed in section 5. The application of the CAA baseline parameters would only apply to those refiners whose post-1994 production of gasoline (reformulated plus conventional) exceeded their 1990 gasoline production volume. In these cases, the growth in total gasoline production (post-1994 minus 1990) would be allocated to conventional and reformulated gasoline production according to the ratio of post-1994 conventional and reformulated gasoline production. The refiner's individual baseline would apply to all conventional gasoline production except for the growth in production which was allocated to conventional gasoline. The CAA baseline parameters would be applied to the calculated growth in conventional gasoline production.

For example, assume that a refiner produced 100 barrels of gasoline in 1990 and 120 barrels (combined reformulated and conventional gasoline production) in 1995. The refiner's total growth would be 20 barrels. Also assume that of the 120 barrels produced in 1995, 65 barrels were reformulated gasoline and 55 barrels were conventional gasoline. The conventional fraction of the refiner's 1995 total production would be 55/120. The fraction of the refiner's total growth which would be allocated to conventional gasoline production would be about 9.2 barrels, or 55/120 times 20. The difference between its 1995 conventional production (55 barrels) and this calculated conventional growth (9.2 barrels) would be the refiner's 1990 conventional base volume (45.8 barrels). In this case, the refiner's individual baseline would be applied to the 45.8 barrels and the CAA baseline parameters (listed in Table XII–2) would be applied to the 9.2 barrels. It should be noted that a refiner or importer would not have to produce or import two kinds of conventional gasoline. The refiner or importer would be simply required to comply with the production weighted average of the two resulting baseline emission figures.

For a refiner, its 1990 total volume would be its 1990 actual gasoline production, or WIP-adjusted production, (including oxygenate volume). Note that the 1990 conventional base gasoline volume (to which is applied the refiner's individual baseline) changes as both the total volume of post-1994 gasoline produced or imported, and the fraction of that which is conventional gasoline changes.

EPA believes that actual 1990 production better accounts for day-to-day operations, including normal down times, and would thus better reflect future refinery and gasoline production operations since all refinery units are not likely to run at their maximum production ability for the entire year as might be assumed in a modeling demonstration. Additionally, 1990 gasoline production in the U.S., in general, approached near-full capacity.

EPA also proposes that if a refiner could demonstrate that extenuating circumstances (i.e., catastrophic failure by fire, explosion, accident, weather, etc.) resulted in down time of at least one (1) month for one or more units, the baseline auditor could adjust the 1990 gasoline production volume to account for operation of the unit at the average production capacity of the other units which produced gasoline blendstocks in 1990.

EPA believes this proposal for a volume limitation with respect to individual baseline applicability will create a level playing field and avoid market distortions. EPA believes this is necessary to prevent the purchase and subsequent blending of low emission gasoline up to the higher CAA baseline emissions. In addition to increased motor vehicle emissions, this could result in increased market share for some entities and anti-competitive effects. EPA believes the proposed limitation on the amount of conventional

gasoline which is compared to the individual baseline, as outlined above, is authorized under section 211(c) of the Act. EPA is exercising its discretion under section 211(c) because of the increase in emissions that otherwise could occur, as described above. Comments are requested on this proposal.

Comments are also requested on a second option which would apply a refiner's or importer's individual baseline to all of its post-1994 conventional gasoline produced or imported regardless of growth. This option would replace the earlier option which would apply the CAA baseline fuel parameters to "new" conventional gasoline volume (i.e., individual refiners would not be able to choose between the two options).

D. Individual Baseline Data Submission and Approval

1. Auditor Certification

EPA proposes that Agency-certified auditors be utilized to verify a refiner's data submission package. EPA also proposes that an auditor be independent of the refiner. EPA would certify auditors based on criteria developed by the Agency in consultation with persons who are knowledgeable in the technical aspects of the refining industry, including refinery and terminal operations. In addition to developing auditor certification criteria, the Agency, again in consultation with technical experts, would develop technical guidelines for an auditor to consider while conducting the audit of baseline data submissions.

EPA plans to have consulted with the appropriate technical experts by March 31, 1992. Comments on the use of an auditor for baseline data verification, relationship of the auditor to the submitter, technical expert consultations, criteria the auditors of baseline data should be required to meet, and any dates proposed here are requested.

2. Data Submission

The Agency proposes that refiners and importers submit their baseline data package to a certified auditor on or before January 31, 1993. EPA believes this is sufficient time for refiners and importers to gather and prepare the required data. Data submissions are required from all refiners, including blenders, and importers. An entity which is permitted under this proposal to utilize the CAA baseline parameters as its individual baseline parameters, and does so, shall submit a letter by the chief executive officer or designee indicating that insufficient data exists for a baseline determination by the methods allowed for that entity.

The Agency proposes the submission requirements found at § 80.92(b) of the proposed regulations. Data submissions are to include all data required for Method 1 determination of each parameter. If the data available are insufficient for a baseline parameter determination by Method 1, all data available for a Method 2 parameter determination would also be submitted. Likewise, if insufficient data exists for determination of a parameter by Method 2, then all data for a Method 3 determination would also be submitted. Thus if a Method 3 determination is to be used for a baseline parameter determination, all of the refiner's available data on determining that parameter would be submitted. The submission package must also include a letter signed by the chief executive officer of the company, or designee, stating that the data submitted is the extent of the data available for the determination of all the required baseline fuel parameter values.

For each of the three proposed methods of baseline fuel parameter determination, EPA proposes that the data include the sampling dates of each shipment, batch or stream, the volume associated with each sampled shipment, batch or stream, fuel parameter measurement dates and the values of measured fuel parameters. Supporting details such as test procedure identification and name and address of testing facility would need to be included to the extent they are available. EPA also proposes that additional support data include identification of batches or shipments as either produced at the refinery, purchased from within or outside of the company, or transferred from within or outside of the company. Also, a summary sheet detailing each incidence of blendstock transfer or purchase and each incidence of gasoline shipment is required. Summary sheets are intended to limit the amount of paperwork submitted and for ease of reviewing the data.

For use of a Method 3 determination, the supporting data comparing 1990 and 1991/2 blendstock composition include key process operating conditions (e.g., feed and product stream compositions, catcracker cutpoints, catalyst types, operating temperatures, reformer RON, etc.), intermediate feedstocks and other information an auditor may need to compare 1990 and 1991/2 operations. Comments are requested as to the adequacy and necessity of this type of data and on any other details that should be included as required supporting documentation.

Concerning use of a work-in-progress modified baseline, EPA proposes that submissions include all the data required to determine the refinery unadjusted baseline plus the corresponding data required for supporting and calculating a work-in-progress adjusted baseline. EPA is also proposing that if, due to work-in-progress, a refiner was not able to collect reliable 1991 data, the refiner's baseline be calculated using estimated values for the refinery as it will be affected by the work-in-progress, once completed. The estimated values would be established from production records, lab analyses, engineering data, historical and comparative data and refinery models. Within 6 months of the facility achieving normal operation, actual operating data would be used to reconcile such estimates and the resultant modified baseline calculations. Such reconciliation must be provided to an auditor who will verify that the refiner's original estimate was reasonably accurate employing criteria developed by the technical panels discussed in paragraph D.1 above. If the refiner calculates a new baseline exhaust emissions value which is within five (5) percent of the estimated value, the refiner need not have the auditor verify the new, actual baseline, but may simply submit the new baseline data to EPA. If the baseline exhaust emissions value is different by more than five percent, the data must be submitted to an auditor for verification.

EPA proposes that submitted data be reported in tabular form by parameter, calendar month and refinery for the following parameters: benzene content; aromatic content; olefin content; sulfur content; distillation temperatures at 10, 50 and 90 percent evaporated points; oxygen content and oxygenate type; and RVP. The submission would also include the refiner's estimate of its overall baseline fuel parameter values and its baseline emissions values. This estimate must of course be verified by the auditor.

Comments on the details of these submission requirements are requested, particularly concerning the amount and type of data requested.

3. EPA Approval

EPA proposes that the auditor verify the accuracy of the submitted data. Comments are requested on the methods to be used by an auditor to verify data. The Agency further proposes that the auditor forward results of verification to EPA within three (3) months of receipt of

the submitted data. In order to benefit from public comment while the Agency evaluates the data, EPA would publish individual baseline data in the Federal Register within two (2) months of receipt from the auditor without first evaluating it. The Agency proposes to publish baseline data in the form of fuel parameter values by refiner or importer and for each refinery of a refiner or importer with more than one refinery.

EPA would decide on the adequacy and reliability of submitted individual baseline data and notify the affected party of approval within five (5) months of publication of the data in the Federal Register. The Agency proposes to conduct investigations of potential baseline discrepancies in a confidential manner involving EPA, the auditor and the refiner or importer.

Comments concerning any aspect of the suggested methods for implementing these anti-dumping provisions, as well as comments on any issues not discussed, are requested.

XIII. Anti–Dumping Compliance and Enforcement Requirements for Conventional Gasoline

A. Introduction

Under EPA's proposed anti-dumping program, refiners and importers average the exhaust benzene emission (benzene) of all conventional gasoline and certain refinery products produced or imported on an annual basis across all facilities in the country operated by a single regulated party, except in those cases where the refiner has established a separate baseline for each of its refineries, or for those refiners distributing conventional gasoline into an approved specified geographic area as discussed previously. In addition, sulfur, olefins and T–90 would not be allowed to exceed 125% of their average 1990 baseline levels on an annual basis. Refiners and importers with insufficient data to establish a 1990 baseline, would use the baseline values provided in the Clean Air Act. Refiners that both operate a domestic refinery and import gasoline or gasoline blendstocks would have separate baselines and would have to determine compliance for such operations separately.

EPA considered implementing separate summer and winter averaging periods, rather than an annual averaging period. However, EPA determined that the environmental benefits from the implementation of two averaging periods were not significant enough to justify the record keeping and reporting requirements needed for two averaging periods. In addition, industry representatives to the negotiated rulemaking strongly advocated the longer averaging period in that it provided greater flexibility in meeting the anti-dumping requirements.

Under EPA's proposal, the anti-dumping enforcement program would consist of a combination of the following enforcement mechanisms to monitor compliance with the regulations, including: (1) Registration of regulated parties, (2) record keeping, (3) reporting, (4) company-commissioned audits, and (5) Agency audits. The Agency believes all the mechanisms proposed are necessary to ensure compliance with the regulations. This belief is based, in large part, on the Agency's experience in enforcing the lead phasedown program. In that program, compliance improved dramatically when the Agency shifted from an enforcement program based merely on the review of periodic reports to one that included enforcement audits.

B. Regulated Parties

Under EPA's proposal, the anti-dumping requirements would fall into two general categories. Under the first general category of requirements, persons who produce or import gasoline or certain gasoline blendstocks would be required to meet the average standards for exhaust benzene emissions, sulfur, T–90, and olefins. Under the second general category of requirements, refiners and importers would be required to add a chemical marker to certain specified gasoline blendstocks that could not be used in blending gasoline. In addition, any person in the gasoline distribution network could not transport, store, or sell gasoline containing this marker.

The first category of anti-dumping requirements, that gasoline and gasoline blendstocks must meet standards for exhaust benzene emissions, sulfur, T–90, and olefins, would apply to refiners and importers. The anti-dumping requirements of section 211(k)(8) of the Clean Air Act apply to any refiner, blender, or importer. The terms "refiner" [55] and "importer" [56] have been defined and applied in earlier environmental regulatory programs involving gasoline.[57] EPA proposes that these definitions continue to apply for purposes of the anti-dumping requirements. Section 211 does not define gasoline "blenders," nor has EPA defined it previously as a separate category of regulated party for purposes of gasoline regulations. Under other gasoline regulations, blenders have been generally included within the definition of refiner.

Thus, under existing regulatory programs involving gasoline, any person who adds any gasoline blendstock [58] to gasoline [59] or who combines gasoline blendstocks to produce gasoline (i.e., a "blender") is included in the definition of refiner, because such a person is "producing" gasoline. [60] The proposed anti-dumping regulations would follow this approach.

The second proposed category of anti-dumping requirements involves specified petroleum products which could not be used for gasoline blending. These requirements would apply to all persons in the gasoline distribution network, from refiners and importers through retailers. Under EPA's proposal (discussed more fully below), refiners and importers would be required to add a chemical marker to these blendstocks in order to identify this product to persons downstream in the gasoline distribution network. In order to ensure that marked blendstocks are not added to gasoline, EPA proposes that all persons in the gasoline distribution network (including refiners, importers, distributors, resellers, carriers, retailers, and wholesale purchaser-consumers), be prohibited from selling, dispensing, storing, or transporting these marked blendstocks for use in blending gasoline. A similar prohibition applies to selling, dispensing, storing, or transporting

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[55] "Refiner" is defined as "any person who owns, leases, operates, controls, or supervises a refinery," 40 CFR 80.2(i), and "refinery" is defined as "a plant at which gasoline is produced," 40 CFR 80.2(h).

[56] "Importer" is defined as "a person who imports gasoline or gasoline blending stocks or components from a foreign country into the United States * * *" 40 CFR 80.2(r).

[57] Current regulatory programs that involve gasoline include the lead phasedown program, 40 CFR 80.20, and the gasoline volatility program, 40 CFR 80.27–28.

[58] "Gasoline blending stock or component" is defined as "any liquid compound which is blended with other liquid compounds or with lead additives to produce gasoline," 40 CFR 80.2(s).

[59] "Gasoline" is defined as "any fuel sold in any State for use in motor vehicles and motor vehicle engines, and commonly or commercially known or sold as gasoline (footnote omitted)," 40 CFR 80.2(c).

[60] Under the gasoline volatility program, a special category of refiner was created for any person who adds ethanol to gasoline, termed an "ethanol blender."

"Ethanol blender" is defined as "any person who owns, leases, operates, controls, or supervises an ethanol blending plant," 40 CFR 80.2(v), and "ethanol blending plant" is defined as "any refinery at which gasoline is produced solely through the addition of ethanol to gasoline, and at which the quality or quantity of gasoline is not altered in any other manner," 40 CFR 80.2(u). A separate definition was created for ethanol blenders under the gasoline volatility program because special provisions are included for gasoline containing 9 to 10 volume percent ethanol, 40 CFR 80.27(d), and, as a result, special regulatory requirements were necessary for ethanol blenders, see, e.g., 40 CFR 80.28(g)(6).

marked gasoline for use as a motor vehicle fuel.

C. Accounting for Gasoline and Gasoline Blending Stocks

Under EPA's proposal, the anti-dumping requirements would apply to all gasoline and, with certain exceptions, all petroleum products usable for gasoline blending that the refiner produces. Similar provisions would apply to importers. Under the proposal, refiners and importers would have to demonstrate that the annual average properties of the total conventional gasoline and these products do not exceed the specified requirements.

The regulations identify those petroleum products that are produced at a gasoline refinery and that are normally used as gasoline blendstock, or RPAD, which must either be accounted for by the refiner or importer in its anti-dumping compliance calculations or designated not for use in blending gasoline. "APP" is the term used in the proposal for blendstocks included by a refiner or importer in their anti-dumping compliance calculations. The term for those blendstocks not accounted for in compliance calculations is "NAPP."

EPA is proposing that all petroleum products that are produced at a refinery, plus all finished conventional gasoline, be either accounted for in anti-dumping compliance calculations (APP), or, if not accounted (NAPP), be prohibited from use in blending gasoline. With certain exceptions, NAPP would be marked with an easily detectable chemical marker. This will ensure that the environmental benefits envisioned by Congress for the anti-dumping program are actually achieved, and will avoid anticipated distortions of the market. These problems stem from the economic incentives created by the differences in baselines between different refiners and importers. Certain refiners (i.e. downstream blenders) may likely have standards for anti-dumping compliance that will be more lenient than for other refiners, which could create a mechanism and incentive for parties to add dirtier fractions to finished gasoline. This discrepancy in anti-dumping standards occurs because under the proposed regulations refiners who operated crude oil refineries in 1990 would have baselines that are based upon gasoline produced in 1990, while refiners that were not in operation in 1990 (i.e., some downstream blender-refiners) would have the Clean Air Act statutory baselines.[61]

For example, a refiner having a rigorous 1990 baseline could produce conventional gasoline meeting its baseline, and have additional "dirty" fractions left over from its production of reformulated gasoline that could not be used within the refiner's standards for compliance. This refiner then could sell both the finished conventional gasoline and the dirty fractions to a blender-refiner who has a less rigorous default baseline. Because of the blender-refiner's less rigorous baseline, the blender-refiner could simply add the dirty fractions back into the gasoline. There are many other similar situations which could occur. The goal of preventing the "dumping" of the refiner's dirty fractions thus would be frustrated.

This issue was discussed at great length during the advisory committee negotiations with this rulemaking, with no clear resolution. It was recognized that certain segments of the industry, such as downstream blenders or new refiner-blenders, could derive a significant competitive advantage as a result of their less stringent baseline. Several regulated parties that operate refineries have brought this competitive advantage risk to EPA's attention subsequent to the initial notice of proposed rulemaking. EPA believes there will be blendstocks, such as aromatics, available in the marketplace as a result of the stringent requirements placed on reformulated gasoline, and they will have a high potential of being "dumped" in conventional gasoline. If the cost of these components is below the cost of conventional gasoline, they will almost assuredly be dumped if there is no regulatory mechanism to prevent it. EPA's experience in the 1970's and 1980's with enforcement of the lead contamination rules showed that the few cents wholesale price differential between leaded and unleaded gasoline provided the necessary incentive for significant fuel-switching. Today's proposal, to account for blendstocks in anti-dumping compliance determinations, would provide both an environmental benefit and address this potential competitive advantage.

EPA's proposal should prevent this subversion of the anti-dumping program by requiring a refiner to account not only for the finished gasoline it produces, but also for those specified refinery products which have a significant potential of being blended in gasoline. EPA has limited the scope of the applicable requirements by defining the specific refinery produced products or mixtures of these products that either must be accounted for or designated not for use in gasoline. The Agency seeks comments on the adequacy of the list of products proposed as it relates to the specific requirements discussed below. Thus a refiner or importer would have either to account for the properties of these petroleum products or APP in its determination of compliance under the anti-dumping requirements or designate it as NAPP.

The primary mechanism proposed for assuring that non-accounted for petroleum products are not blended with gasoline, would be to prohibit the downstream blending of these products. In addition, in order to notify potential downstream blenders if blendstocks have or have not been accounted for, refiners would be required to add a chemical marker to all NAPP, with certain exceptions as described below, and to identify accounted-for blendstocks in the product transfer documents.

An exception to the marking requirement for NAPP is being proposed where it is sold by the refiner or importer for a cost that is sufficiently high that there would be no economic incentive for use in gasoline blending. EPA had considered establishing a fixed minimum price or fixed percentage above the cost of gasoline, above which the refiner or importer would not have to mark the product. Instead the Agency decided to propose a cost threshold which more realistically reflects the product's likelihood to be used as blendstock. This would be predicated not only on the product's cost but also on its octane value relative to the octane [62] of both regular and premium grades of gasoline. The proposal, therefore, provides for the computation of a "minimum price" which is based on the octane of the product as well as the octane and price of both regular and premium gasoline. The computation is based on the price charged by that refiner or importer for gasoline over the last two months or, in the absence of such information, the price charged for

[61] The Clean Air Act statutory baseline represents the nationwide average properties of all gasoline produced in 1990, so that approximately half of the gasoline produced in 1990 was cleaner than the statutory baseline, and approximately half was dirtier. Refiners who in 1990 produced the cleaner half of the gasoline thus would have baselines that are more rigorous than the statutory baseline.

[62] The octane of a particular petroleum product is relevant to the likelihood of its use in gasoline blending because much gasoline blending has the purpose of increasing the octane of the gasoline being blended. For example, premium grade gasoline often is produced simply by raising the octane of regular grade gasoline through the addition of higher-octane blendstocks. For this reason, the value of a petroleum product as a blendstock rises as the product's octane rises.

gasoline within the state over the time period. EPA believes such information is generally available, however, there may be other sources for pricing information which may be more reliable or appropriate for this purpose such as the New York Mercantile Exchange. EPA requests comment on this aspect of the proposal.

Any refiner or importer that produces or imports any of the products identified in the regulations as RPAD would not be required to mark such products if they exceed the minimum price. Refinery produced products which require a high degree of purity, for which the marker could be a potential contaminant, would likely exceed the proposed cost threshold. EPA believes that persons who purchase a petroleum product costing sufficiently more than gasoline would have little or no incentive to add such product to gasoline.

Two other exceptions to the requirement for marking NAPP are being proposed. A refiner or importer that produces or imports RPAD may be selling that product to the next purchaser for use by that purchaser in some chemical process other than for blending gasoline in the United States. EPA is proposing that if the seller obtains certain contractual commitments from the purchaser regarding its use, the requirement for marking the product would not apply. This contractual commitment would require that the purchaser agree not to use the product in blending gasoline in the United States (but that would not restrict exports of the product). EPA also is proposing that the product could not be transferred to a third person in the United States, in order to provide more certainty in the product's use. EPA believes that the contractual restrictions would be less effective in preventing the use of NAPP in gasoline blending if the NAPP were transferred through several persons. In addition, the contract must require that the purchaser provide records regarding the use of the product and that the seller retain these records. If EPA discovers that such product has been used in the blending of gasoline, the refiner that sold the product will be deemed in violation. EPA has proposed that the seller can establish a defense to liability based, in part, on implementing a quality assurance program of oversight designed to assure the purchaser's compliance with the requirements of the contract.

Another exception to marking NAPP involves product that will be used by the next purchaser as a feedstock in a refinery process. If the refiner sells a particular product directly to a refiner and the seller obtains a contractual commitment that the product will be used as a feedstock, the requirement for marking would not apply. Use of a product as a feedstock would require that it undergo a substantial change in its chemical properties or be separated substantially into its fractional constituents. The mere blending of such product with other product(s) would not constitute use as a feedstock. If EPA discovers that such product is not being used as a feedstock, the seller would be in violation. Here too, the proposal establishes that an adequate quality assurance program to ensure compliance with the requirements of the contract would constitute a partial defense to liability.

EPA has considered alternatives to the requirement for marking refinery products. One such alternative could be to require a continuous paper trail with every product that tracked its ultimate use. However, because of the extensive "brokering" and commingling that could occur with any product, it is unlikely that any paper trail would be effective or meaningful. Another option would be to require that all refinery produced products which have the potential of being used to produce gasoline and are included on the list for RPAD would have to be included in compliance calculations unless it meets one of the exceptions. This would eliminate the marking requirement and many of the proposed liability scheme and defense issues. The Agency believes the more reasonable approach is to try to limit the extent of products that would have to be marked as proposed through the various exceptions discussed previously. EPA recognizes that the requirement for marking is not without controversy and, therefore, requests comments on other approaches that would provide a mechanism to account for the properties of products that are ultimately used in blending gasoline and would not provide an opportunity for parties to "dump" as discussed previously.

Importers of gasoline or gasoline blending stock or RPAD would be subject to these same requirements and restrictions. Under EPA's proposal, any person who imports any product that is produced at a crude oil refinery that produces any gasoline would be considered an "importer" for purposes of the anti-dumping requirements, and would be required to meet these regulatory responsibilities for all gasoline and RPAD.

EPA's proposed regulations would not reach a person who is not a refiner (i.e., a person who does not own, lease, operate, control, or supervise any facility that produces gasoline) or an importer as described above. For example, a person who produces natural gas liquids (NGL) but does not produce any gasoline, would be able to sell NGL for use as a gasoline blending component without accounting for or marking it. Any person who would add any non-refiner produced NGL to finished gasoline, however, would be a refiner subject to the anti-dumping requirements and as such would have to account for the properties of these products in its compliance calculations. EPA believes the exclusion of non-refiners from regulatory control is appropriate, because by definition these persons do not produce gasoline (reformulated or otherwise), and as a result cannot "dump" dirty fractions. Moreover, to the extent products produced by non-refiners are used by a blender-refiner in the production of gasoline, the blender-refiner would be required to include the product in its anti-dumping compliance calculations.

A similar distinction is proposed for importers; importers of products that are not produced at a gasoline refinery would not be subject to the anti-dumping requirements. A blender-refiner who does add any non-accounted for imported product to gasoline would be required to account for the product for anti-dumping purposes.

Under EPA's proposal, gasoline and other petroleum products would be included in the anti-dumping compliance calculations only once, in order to avoid double counting of products. Thus, a refiner would not include in its compliance calculations gasoline it did not produce or gasoline blendstocks accounted for by others. The regulations require the producer or importer of a feedstock, subject to a contractual commitment, to exclude such product from its compliance calculations. However, the refiner that uses the feedstock shall include the final volume and fuel properties of the product after refinery processing in its compliance determination. A refiner that uses a blendstock accounted for by another, or APP, as a feedstock would have to "back out" the properties and volume of the original blendstock and include the volume and properties of the product after refinery processing.

Also under EPA's proposal, the inclusion of oxygenates in anti-dumping accounting by refiners and importers would be optional. Any refiner or importer that elects to include oxygenates in its compliance calculations, however, would be required also to include oxygenates in

its baseline calculations. This approach for the addition of oxygen to conventional gasoline is appropriate, because such oxygen blending only makes the gasoline cleaner with regard to those properties regulated under anti-dumping. For example, as the volume of conventional gasoline is expanded through the addition of oxygenate, the values for benzene, sulfur, T–90 and olefins become smaller. Thus, a refiner that adds only oxygenate to finished gasoline would not be required to demonstrate compliance with the anti-dumping averaging requirements.

Refiners who are downstream "blenders" in most cases would have limited responsibilities under the anti-dumping program. Such blender-refiners would not be required to meet anti-dumping averaging standards for products in the following categories that are combined in the blending operation: finished gasoline; oxygenates; or gasoline blending stocks that already have been accounted for by a refiner or importer or APP, (and for which the blender-refiner has product transfer documentation identifying such prior accounting). These blender-refiners would be required to account for any gasoline blending stocks that are used that have not already been accounted for (i.e., blending stocks for which the blender-refiner does not have product transfer documents identifying prior accounting). This would generally be limited to non-refinery produced blendstocks, for example Natural Gas Liquid.

Although section 211(k)(8) of the Act specifies that the gasoline of each refiner, blender and importer shall be subject to the anti-dumping requirements, EPA believes that inclusion of blendstocks in a refiner's or importer's anti-dumping compliance calculations is necessary in order to accomplish Congressional intent with the anti-dumping provisions, i.e., that emissions in the "anti-dumping areas" not increase due to the production and use of reformulated gasoline.

EPA believes that section 211(k)(8) authorizes the inclusion of blendstocks in a refiner's or importer's compliance calculations, because blendstock is, by definition, any product that is added to gasoline. In effect, then, blendstock merely is "gasoline" that has not yet been combined to achieve its final form.

EPA believes that additional authority for inclusion of blendstocks can be found at section 211(c) of the Act. This section requires consideration of: (1) All relevant and available scientific evidence, and (2) other technologically or economically feasible methods of control of emissions when public health could be endangered due to use of fuel or fuel additive. As discussed below, the exhaust benzene emissions of gasoline blendstocks could increase if blendstocks were not controlled as proposed. Additionally, inclusion of blendstocks in the anti-dumping compliance determination can be shown to be a very economical as well as a technologically feasible method for achieving compliance with the anti-dumping provisions.

The anti-dumping requirements for 1995–6 require that the exhaust benzene emissions of a refiner or importer not exceed its 1990 exhaust benzene emissions. Benzene is an EPA Class A carcinogen (proven human carcinogen).[63] The weight fraction of benzene in exhaust emissions depends on the average benzene and aromatic levels of the fuel (oxygen effects benzene exhaust emissions to the extent that it effects exhaust VOC emissions).

Because reformulated gasoline requires a minimum oxygen content of 2.0 weight percent, approximately 5–11 volume percent of reformulated gasoline will be oxygenate, depending on the type of oxygenate. With the additional restriction of a maximum aromatic content of 25 volume percent in reformulated gasoline, it is conceivable that the blendstock displaced by the oxygenate could be high aromatic blendstock (i.e., reformate). If sufficient economic incentives exist, this blendstock could be "dumped" into conventional gasoline. For example, in the nine extreme and severe ozone nonattainment areas, reformulated gasoline will comprise about 22 percent of the nation's annual gasoline market. If 11 percent of this reformulated gasoline is oxygenate, approximately 3.1 percent of conventional gasoline could be "dumped" high aromatic blendstock. Assuming an average aromatic content of this blendstock to be about 65 volume percent, the average aromatic content of the Clean Air Act statutory anti-dumping baseline increases from 29 to 30.1 percent. A proportional change could occur in the benzene content, increasing it from 1.58 to 1.64 volume percent. The benzene exhaust emission weight fraction increases from 5.51 to 5.68, or about 3 percent, when the high aromatic blendstocks are dumped into conventional gasoline. EPA believes this outcome could occur if blendstocks are not controlled as proposed. Control of blendstocks is thus expected to play an important role in minimizing detrimental health and environmental effects in the anti-dumping areas.

The cost of eliminating this increase in benzene emissions should be quite low if blendstocks are included in the anti-dumping compliance determination as proposed. In 1990, high aromatic streams, other refinery process streams and oxygenate were used to achieve desired octane levels. In fact, there was excess octane. Thus the ability and capacity to attain certain octane levels existed in 1990 and likely still exists. If blendstocks are included in the anti-dumping compliance determination of a refiner, EPA expects that the production of high aromatic streams will decrease because the refiner has the choice of producing inexpensive premium gasoline or reducing reformer severity. EPA believes the latter would occur and that the cost of this proposal would thus be low because the non-high aromatic streams used for octane purposes in 1990 will be sufficient to account for any decrease in octane due to a decrease in aromatic, and these other processes are already in place. However, if blendstocks are not included in a refiner's compliance determination, the incentive to reproduce high aromatic blendstocks could be great because of the existing reformer capacity which could be utilized to produce aromatics for even small profits.

Additionally, if blendstocks are not included in each refiner's compliance determination, the refining industry could be encouraged to make and use relatively inexpensive, high aromatic blendstock streams for conventional gasoline (for octane purposes) rather than only slightly more expensive, "cleaner" alternate streams such as alkylate. This could create market distortions since refiners with high baselines could use more aromatics, if blendstocks are not counted, to produce more premium conventional gasoline than those with low baselines. Those with low baselines would likely be the producers of such high aromatic streams since it would not be included in their compliance determination. Thus, different incentives would be created to increase production and remain in various markets.

Based on the above discussion, EPA believes that the environmental benefits would be large, at a relatively small cost, if blendstocks are included in a refiner's or importer's anti-dumping compliance calculation.

D. Petroleum Products Banned for Use as Gasoline Blendstock, or NAPP

Under EPA's proposal, petroleum products not accounted for in

[63] "Cancer Risk From Outdoor Exposure to Air Toxic, External Draft Review," U.S. EPA, OAR, OAQPS, September 1989.

compliance calculations, or NAPP, could not be used by refiners as a gasoline blendstock in the production of conventional gasoline. EPA's proposal involves prohibitions, liabilities and defenses that are similar to those being proposed under the reformulated gasoline program for preventing the use of conventional gasoline as reformulated. Regulated parties' facilities found with gasoline containing NAPP (i.e., found containing the NAPP marker) would be deemed to be in violation, as would all parties in the gasoline distribution network upstream of the facility where the marked gasoline was found. The same provision applies to facilities found with blendstocks for use in gasoline that are marked. Similar to the proposal under reformulated gasoline, any person that is presumed liable would have the opportunity to establish a defense based on showing that it did not cause the violation; that all of the person's gasoline is supported by transfer documentation that is appropriate for the product; and that the person has in place a quality assurance program of periodic sampling and testing to detect the presence of the NAPP marker.

The NAPP marker quality assurance sampling and testing provision EPA is proposing would not create an affirmative requirement that regulated parties must conduct such a program. Rather, this program would constitute one required defense element if and when EPA found a violation involving NAPP at a regulated party's facility. In addition, the proposed NAPP marker provision specifies periodic sampling and testing, as opposed to sampling and testing following every batch or every day.

EPA does not anticipate issuing regulations on the specific frequency at which sampling and testing must occur under such a periodic program, but does intend to provide guidance on suggested frequencies for parties at different points in the distribution chain (e.g., distributors vs. retailers), and criteria for adjusting the frequency of sampling and testing (e.g., when a party finds NAPP-marked gasoline). In order to assist EPA in formulating this guidance, EPA requests comments as to the sampling and testing frequencies and adjustments which would be appropriate.

At this time, EPA is not proposing the specific chemical that would be used as the NAPP marker. EPA anticipates that this chemical will be proposed as part of a later rulemaking involving reformulated gasoline, scheduled to be in 1992. In order to facilitate this later rulemaking, EPA requests comments as to an appropriate marker. EPA believes that the necessary properties for a NAPP marker are the same as those discussed above for the conventional gasoline marker:

(1) It should be easy to detect in the field in low concentrations;

(2) Difficult to remove from gasoline;

(3) Readily available and inexpensive;

(4) Non-proprietary (including the marker and any chemicals or methods used in its detection);

(5) Non-toxic; and

(6) Not cause gasoline to violate the "substantially similar" requirements of section 211(f)(1) of the Clean Air Act.

E. Compliance Determination

EPA proposes that refiners and importers would be required to demonstrate compliance for finished conventional gasoline and APP that is produced or imported. Several options are being proposed for determining the relevant properties for compliance purposes.

A refiner or importer could analyze for the relevant properties of each batch of finished gasoline and accounted-for refined products. As an alternative, refiners that produce gasoline other than through refining crude oil would be allowed to determine compliance on the basis of the analyzed properties of each batch of non-accounted blendstock received. The blendstock-analysis alternative is appropriate because EPA believes the properties controlled under this program react in a linear manner when combined; i.e., the net values for exhaust benzene emissions, sulfur, T–90, and olefins are the same whether measured before or after blendstocks are combined with gasoline or with other blendstocks.

Under the blendstock-analysis option, the refiner would be required to account for blendstock as of the date it was received by the blender-refiner, as opposed to the date this product was used in the production of gasoline. Date-of-receipt accounting is necessary because blendstock that is received by a refiner during one averaging period could be used to produce gasoline during more than one averaging period. For example, on December 20, 1995, a refiner could receive a batch of blendstock and add it to a tank containing blendstocks that were received earlier. These combined blendstocks could then be used in the production of gasoline until February 1, 1996, which means the blendstock would have been used to produce gasoline both in the 1995 and 1996 averaging periods. The refiner in this example would have difficulty accounting for the blendstock as of the date it is used in gasoline production, but no difficulty accounting as of the date the blendstock is received.

Parties that use gasoline or blendstock that already have been accounted for would be required to exclude such product from compliance calculations. As a result, parties that use the gasoline-analysis option would be required also to analyze each batch of accounted-for gasoline and blendstock received, and subtract the volume and properties of this accounted-for product from the party's gasoline analysis results. In this manner, the prior accounted-for product would not be double counted. Under the blendstock-analysis option, a party would be able to analyze only the non-accounted-for blendstock, and base compliance calculations of the volumes and analyses results from this product only.

Under either the gasoline-analysis or the blendstock-analysis options, parties would have the additional option of analyzing each batch of gasoline or blendstock, or of combining the samples taken from more than one batch for composite analysis. Under the composite analysis option, parties would be required to store samples under conditions calculated to ensure the samples do not deteriorate prior to analysis, and to combine samples in volumes that are proportional to the volumes of the batches from which the samples were taken. The analyses results from the composite sample then would be representative of the total of the volumes from all the batches represented in the composite. Under EPA's proposal, parties would be allowed to combine samples collected over no more than one month in a single composite.

EPA believes the composite analysis option is appropriate because of the linear reaction of the parameters regulated under anti-dumping when combined (as discussed above). This option would provide regulated parties significant cost savings, moreover, in that parties would be required to conduct only twelve analyses during a year, instead of the alternative of analyzing each batch.

EPA recognizes that if certain refiners significantly increase their production of conventional gasoline in 1995 and later years there could be a corresponding degradation in quality of the overall nationwide conventional gasoline pool. This would occur if those refiners with "dirtier" than Clean Air Act baselines increase their production of conventional gasoline significantly in 1995 and/or if refiners with "cleaner" than Clean Air Act baselines decrease their production from 1990 levels. This,

therefore, raises the question of which baseline should be applied to such increased conventional gasoline production to mitigate this potential problem.

A related problem occurs because of the absence, in 1990, of both conventional and reformulated gasoline, to form a basis for comparison with conventional and reformulated gasoline volumes in 1995 and later. For example, a refiner's total 1990 production would be considered conventional gasoline, while its 1995 production will typically include both reformulated and conventional gasolines. As a result, post-1994 conventional gasoline volume will most likely be less than 1990 volumes and, therefore, not provide a basis for meaningful comparison in 1995.

For this reason, EPA is proposing that a compliance baseline should be calculated which would then be the standard for the average fuel properties for determining compliance with anti-dumping requirements. The compliance baseline would be calculated as a weighted average of a refiner or importer's 1990 baseline and the Clean Air Act statutory baseline. This weighting would be based on the volume of conventional gasoline and blendstocks produced during the averaging period and the volume produced in excess of the 1990 "equivalent" volume produced during the averaging period.

EPA believes it is appropriate and even-handed to require refiners and importers that expand volumes over 1990 levels to determine compliance using the Clean Air Act statutory baseline for a portion of these expanded volumes. A refiner that has a more stringent baseline (requiring the production of "cleaner" than average gasoline) would be able to use the less stringent (for that refiner) Clean Air Act baseline for a portion of its excess volume; a refiner that has a less stringent baseline (allowing the production of "dirtier" than average gasoline) would be required to use the more stringent (for that refiner) Clean Air Act baseline for a portion of its excess volume.

F. Registration

EPA is proposing that all refiners and importers of conventional gasoline would be required to register with EPA prior to the first averaging period during which the refiner or importer would produce or import conventional gasoline. The purpose of a registration requirement is to allow EPA to accurately identify all the refiners and importers of conventional gasoline and establish a data base for compliance monitoring. The proposal also would require timely notification to EPA of any change in the registration information that had been submitted by any such parties.

G. Record Keeping

EPA is proposing that all refiners and importers of conventional gasoline would be required to maintain records that describe the composition of conventional gasoline and gasoline blendstocks produced or imported as well as unaccounted for blendstocks received from others that are subject to the anti-dumping requirements. This generally would include records related to the determination of applicable fuel properties for all gasoline and blendstocks utilized in the determination of compliance, as well as the determination of all product volumes. Refiners and importers would also be required to keep all transfer documentation for gasoline, APP and NAPP produced or imported and gasoline blendstocks received. All contractual documents related to the sale or purchase of feedstocks or products sold to parties not for use in blending gasoline would have to be kept as well. The purpose of these record keeping requirements would be to support all tests, analyses and measurements for all components or properties necessary for the determination of compliance with the anti-dumping requirements and to establish a defense to liability if EPA discovers any violations. Retention of such documents by the appropriate parties would also enable EPA to trace conventional gasoline back to the appropriate refiner or importer, would allow the preparation of necessary reports, would allow independent auditors to complete all audit requirements, and would allow the production of documents necessary for comprehensive compliance audits by the Agency. EPA is proposing that such records be retained for a period of five years.

Refiners who blend only already-accounted-for finished gasoline and blending stocks, and/or oxygenates (e.g., ethanol splash blenders), would be required to retain product transfer documents for all finished gasoline and blending stocks used. Such a refiner thus would be able to demonstrate that, in fact, all of the blending stocks had product transfer documents stating that the product had been accounted for. In addition, such a refiner would be required to retain documents showing the volumes of finished gasoline, blending stocks, and oxygenates used. These documents would allow independent auditors (and EPA auditors) to verify that the volume of all gasoline sold matches the sum of the volumes of finished gasoline, accounted-for blending stocks, and oxygenates used.

H. Independent Sampling and Testing

Under EPA's proposal, compliance with the average anti-dumping standards for benzene, sulfur, T–90, and olefins would be based upon the properties and volumes of the conventional gasoline and blendstock produced by a refiner, excluding previously accounted-for gasoline and blend stocks as discussed in the previous section. (This discussion applies equally to importers, but for simplicity of language, will be couched in terms of refiners only.) These properties and volumes would be determined through sampling, testing, and volume measurement of the conventional gasoline produced by the refiner. As a result, the accuracy of a refiner's compliance demonstration would be no greater than the accuracy of the refiner's sampling, testing, and volume measurement methodologies.

Because the proposed standards for anti-dumping compliance are averaged standards, without any maximum's or minimum's, no sample of conventional gasoline would indicate a violation of the anti-dumping standards, regardless of the levels of benzene, sulfur, T–90 and olefins for that sample. Rather, the properties of a sample of gasoline are relevant to anti-dumping compliance only when combined with the properties (and volumes) of all other conventional gasoline produced by the refiner.

An additional constraint on the relevance of a single sample of conventional gasoline would exist in the case of refiners who determined compliance based upon analysis of composite samples rather than upon analysis of each batch of gasoline produced. For the composite sample case, the refiner would not have separate book entries of the properties of each batch of gasoline produced, but rather would have a single set of test results from the analysis of the composite sample, from the end of the composite period.

EPA believes it is important that the anti-dumping program include a mechanism to enable EPA to detect if a particular refiner has inappropriately analyzed a batch or batches of gasoline or has purposefully falsified the laboratory results. Given the anti-dumping program's sole reliance on the results of the laboratory analyses, EPA is concerned about the absence of a

mechanism to independently verify the refiner's laboratory results. Moreover, in its enforcement of other gasoline programs (e.g., lead phasedown), EPA has discovered refiners who make the decision to cheat when they believe the cheating may not be discovered. EPA believes the propensity for such cheating is proportional to the profit that can be derived, minus the likelihood of the cheating being detected. Under the anti-dumping program being proposed, however, it may be possible to cheat and thereby make substantial illegal profits.

One option for preventing unintentional or intentional inaccurate gasoline analyses would be to require refiners to have an independent laboratory collect a sample and determine the volume of each batch of conventional gasoline that is produced. This is the approach that is being proposed for reformulated gasoline. Even if the independent laboratory did not analyze each sample it collected, the refiner would not know which batches would be scrutinized. (The option of having random sample collection and analysis is flawed, because under random sampling a unscrupulous refiner would know which batches were sampled, and, therefore, which to enter into its books correctly.) Under the composite analysis approach, the independent laboratory could independently create composite samples (based upon the independently determined batch volumes), and the refiner would not know which composites would be scrutinized. Thus, independent sample collection (and random sample analysis) would constitute a significant deterrent against most forms of refiner cheating.

However, EPA is concerned about the added expense that independent sampling and testing would add to the cost of the anti-dumping program, both to the regulated parties and to EPA. Moreover, the impact will likely be greater on smaller refineries and importers. On the other hand, significant environmental degradation and anti-competitive effects may be prevented by further ensuring that anti-dumping requirements are met through independent sampling and testing. EPA, therefore, encourages comment on whether any independent sampling and testing should be imposed for anti-dumping, the cost of such a requirement, the environmental and competitive benefits of such a requirement, and, if imposed, what level of sampling and testing is appropriate.

I. Company-Commissioned Audits

All refiners and importers are required to have the results of independent audits submitted to EPA. These required audits are similar to those required for reformulated gasoline enforcement (discussed in more detail in section XIV below). These audits are to be distinguished from the audits required in establishing a refiner's or refinery's baseline.

J. Agency Audits

The Agency intends to implement a program of enforcement audits of importers and refiners to help determine compliance with the anti-dumping requirements. These audits aid the review of compliance with the registration, record-keeping, reporting and auditing requirements. Directed field inspections can be utilized in conjunction with an Agency audit if evidence is revealed through an Agency audit that necessitates additional investigation. The Agency has found from its enforcement of the lead phasedown program that on-site audits are an extremely effective method of looking behind records and reports submitted to the Agency to determine a regulated party's compliance. Therefore, the Agency believes that this would be an effective approach for this program as well.

K. Examples of Anti-Dumping Compliance Calculations

Example 1

The hypothetical refiner in this example produced gasoline in 1990, and has established a baseline for anti-dumping purposes based on that production. The refiner's 1990 baseline is described in Table XIII–1.

TABLE XIII–1.—1990 GASOLINE PRODUCTION BY HYPOTHETICAL REFINER

Property	1990 value
Volume of gasoline and blendstock produced (bbls × 1,000)	1,000
Sulfur (ppm)	340
T-90 (deg F)	325
Olefins (vol %)	11.5
Aromatics (vol %)	27.5
Benzene (vol %)	1.68
Oxygen (wt %)	0.5
Exhaust Benzene	6.03

The exhaust benzene value in Table XIII–1 was calculated by the refiner based upon the refiner's baseline average values for aromatics, benzene, and oxygen, using the formula at § 80.104(b) of the proposed regulations,[64] as follows:

$$EXHBEN = [1.818 + (0.9154 \times 1.68) + (0.109 \times (27.5 - 1.68))] \times [1 - (0.127 \times (0.5/2.7))] = (1.818 + 1.5379 + 2.814) \times (1 - 0.0235) = 6.171 \times 0.9765 = 6.03$$

In 1995, the hypothetical refiner produced and received the conventional gasoline and other petroleum products described in Table XIII–2. In addition, the refiner produced 700 thousand barrels of reformulated gasoline in 1995.

[64] For the purposes of this hypothetical, the exhaust benzene option that includes oxygen is being used. In the event the final regulations adopt the option that does not include oxygen in exhaust benzene calculations, the alternative formula that excludes oxygen would be used for calculating exhaust benzene.

TABLE XIII–2. GASOLINE AND OTHER PETROLEUM PRODUCTS PRODUCED AND RECEIVED BY A HYPOTHETICAL CRUDE OIL REFINER

Batch number	1	2	3	4	5	6	7	8
Volume (bbl × 1,000)	105	150	150	125	170	130	50	15
Product type	gasoline	gasoline	gasoline	gasoline	gasoline	natural gas	toluene/ xylene	toluene/ xylene
Produced/received	produced	produced	received	produced	produced	received	produced	produced
Designation (APP, NAPP, Other)						Other	APP	NAPP
Sulfur (ppm)	350	375	365	325	330	65	37	37
T-90 (deg F)	350	336	295	330	345	250	242	242
Olefins (vol %)	11.1	11.8	12	11.7	10	2.5	0.1	0.1
Aromatics (vol %)	19	23	26	23	25	6.2	97.1	97.1
Benzene (vol %)	1.42	1.4	1.6	1.34	1.35	1.45	7	7
Oxygen (vol %)	2.4	2.1	0	2.1	2.3	0	0	0

After the end of 1995, the hypothetical refiner was able to calculate its compliance baselines for each of the parameters regulated under anti-dumping, using the formula at § 80.103(a)(1) of the proposed regulations. To do this, the refiner first calculated its 1990 equivalent conventional gasoline volume ("V_{eq}") according to the formula at § 80.103(a)(1)(i) as follows:

$$V_{eq} = 450 - \left(\frac{((700 \cdot 450) - 1{,}000) \cdot 450)}{700 \cdot 450}\right)$$

$$= 391.3$$

Because the total volume of the conventional gasoline and blendstock produced by the refiner in 1995 (net 450 kbbls [65]) was greater than the refiner's 1990 equivalent conventional gasoline volume (300 kbbls), the refiner used the equation at § 80.103(a)(1)(iii) to calculate the compliance baseline for each parameter regulated under anti-dumping. The refiner's compliance baseline ("CB") calculation for sulfur was based upon the refiner's 1990 baseline for sulfur (340 ppm), the refiner's equivalent conventional gasoline volume for 1990 (391.3 kbbls), the Clean Air Act default baseline for sulfur (338 ppm), and the refiner's production volume of conventional gasoline and APP in 1995 (450 kbbls) as follows:

$$CB_{sulfur}\ (ppm) = ((340 \times 391) + (338 \times (450 - 391)))/450 = 339.51$$

Based upon this calculation, in order for the hypothetical refiner to achieve compliance with the anti-dumping sulfur requirements the average sulfur content of the hypothetical refiner's conventional gasoline and APP would have to be less than 125% of 339.51 ppm.

The remainder of the refiner's compliance baseline values were calculated in a similar manner, and were as follows:

T-90 (deg F)	325.79
Olefins (vol %)	11.38
Exhaust benzene	6.05

The refiner then calculated its averages for each of these parameters, to determine if it was in compliance. This required the refiner to evaluate all of the gasoline and other petroleum products produced and received during 1995, to determine which products must be included in the refiner's compliance calculations, which must be excluded from these calculations, and which must be subtracted from the refiner's calculations.

Batches 1, 2, 4, and 5 were of finished gasoline that was produced by the hypothetical refiner during 1995. As a result, the volumes and the properties of these batches were included in the refiner's compliance calculations. Batch number 3 was of gasoline that was received from another refiner, and used by the hypothetical refiner as a blendstock in producing its gasoline. Because the refiner that produced the gasoline from batch 3 was required to account for its volume and properties, the hypothetical refiner was required to subtract the volume and properties of batch 3 from the remainder of its compliance calculations to prevent double counting.[66]

Batch number 6 was of natural gasoline that the hypothetical refiner purchased from a non-refiner (i.e., a company that neither produced nor imported any gasoline during 1995), and that the hypothetical refiner used as a blendstock in the production of its gasoline. As a result, this product was neither APP nor NAPP, and could be used by the hypothetical refiner to produce gasoline provided that this refiner included the product in its compliance calculations. Because the hypothetical refiner used the natural gasoline as a blendstock, the natural gasoline's volume and properties were subsumed in the volume and properties of the gasoline the natural gasoline was used to produce, and which the refiner included in its compliance calculations. For this reason, the refiner did not separately add the volume and properties of batch number 6 to its compliance calculations.

Batch number 7 was toluene/xylene that was produced by the hypothetical refiner as part of its refinery operations. As a result, this product met the definition of RPAD (Refinery produced Product that must be Accounted for or Designated as not for use in gasoline blending). The refiner thus had two options for this product: It could include the volume and properties in its compliance calculations (i.e., designate the product as APP) which would allow a downstream blender-refiner to use the toluene/xylene as a gasoline blending stock; or it could take the required steps to insure the product would not be used in gasoline blending (i.e., designate the product as NAPP). The refiner elected to sell this batch of toluene/xylene to a downstream blender-refiner for use in gasoline blending, and as a result the hypothetical refiner included the volume and properties of the batch in its compliance calculations.

Batch number 8 was also of toluene/xylene, but the hypothetical refiner decided to not sell this batch for gasoline blending, and declared it as NAPP. As a result, the hypothetical refiner was required to meet one of the three requirements designed to ensure that the product is not used by any refiner in the production of gasoline: (1) add the chemical marker to the product; (2) sell the product for a price that exceeded the price calculated using the formula at § 80.101(b)(1) of the proposed regulations; or (3) sell the product under the terms of a contract that meets the requirements of § 80.101(b)(2) of the proposed regulations. To aid in its decision, the hypothetical refiner calculated the price for which the toluene/xylene could be sold without adding the marker or having the specified contractual terms. This calculation was based upon the maximum prices and minimum octanes of the regular and premium grades of gasoline sold by the hypothetical refiner in the two months preceding the date the toluene/xylene was sold, which were as follows:

Premium:	
Price (per gal)	$0.75
Octane (R+M/2)	92
Regular:	
Price (per gal)	$0.60
Octane (R+M/2)	87

In addition, the refiner determined that the blending octane of the toluene/xylene was 110. Applying these figures to the equation at § 80.101(b)(1) of the proposed regulations, the refiner

[65] The refiner's net production volume of conventional gasoline and APP during 1995 was based upon the sum of the volumes of batches 1, 2, 4, 5, and 7, and subtracting the volume of batch 3 (105+150+125+170+50−150=450). The volumes of batches 6 and 8 were excluded from this calculation altogether. The reasons the batches of conventional gasoline and blendstocks were treated in these manners are discussed below.

[66] The hypothetical refiner would be required to exclude the volume and properties of batch 3 regardless of how this gasoline was used by the hypothetical refiner. Because the hypothetical refiner used the batch 3 gasoline as a blendstock for other gasoline that was being included in compliance calculations, the batch 3 gasoline volume and properties had to be "backed out" of the hypothetical refiner's calculations. The batch 3 volume and properties also would have had to be backed out if this gasoline was used as a feedstock by the hypothetical refiner. If the hypothetical refiner had merely resold the batch 3 gasoline without making any changes to it, the hypothetical refiner could have prevented double counting batch 3 by excluding the batch 3 volume and properties from the refiner's compliance calculations altogether.

calculated the minimum price ("MP_{prd}") as follows:

$$MP_{prd} = 1.4 \times \left(\frac{\$0.75 \quad \left(\$0.60 \times \left(\frac{110 - 92}{110 - 87} \right) \right)}{\left(\frac{92 - 87}{110 - 87} \right)} \right)$$

$$= 1.4 \times \left(\frac{\$0.75 - (\$0.60 \times 0.783)}{0.217} \right)$$

$$= 1.4 \times \$1.29$$

$$= \$1.81$$

Thus, the hypothetical refiner could sell the toluene/xylene without meeting the marking or contract requirements for NAPP if it charged at least $1.81 per gallon for this product.

The compliance calculation method required for the hypothetical refiner is the equation at section 103(c)(1) of the proposed regulations, because this refiner has an individual baseline. Using this formula, the refiner's compliance calculation ("APARM") for sulfur (in ppm) was as follows:

$$APARM_{sulfur} = \{(105 \times 350) + (150 \times 375) - (150 \times 365) + (125 \times 325) + (170 \times 330) + (50 \times 37)\} / \{105 + 150 - 150 + 125 + 170 + 50\} = (36750 + 56250 - 54750 + 40625 + 56100 + 1850)/450 = 304.06$$

Because the refiner's compliance calculation for sulfur (304.06 ppm) was less than the 125 percent of the refiner's compliance baseline for sulfur (339.51 × 1.25 = 424.39 ppm), the refiner was in compliance for sulfur for the 1995 anti-dumping averaging period.

The refiner calculated the compliance values for the remainder of the parameters regulated under anti-dumping in the same manner as it used for the sulfur calculation, with the following results:

Parameter	Compliance calculation	Compliance baseline	Compliance standards [1]
Sulfur	304.06	339.51	424.39
T-90	344.22	325.79	407.24
Olefins	9.56	11.38	14.22
Exhaust benzene	5.80	6.05	6.05

[1] Compliance standards are calculated by multiplying the compliance baseline times 1.25 in the case of sulfur, T-90, and olefins. In the case of exhaust benzene emissions, the compliance standard is equal to the compliance baseline.

In the case of each of these parameters, the hypothetical refiner's compliance calculation was less than the refiner's compliance standard, indicating that the refiner was in compliance for each parameter during the 1995 averaging period.

2. Example 2

In 1995, the hypothetical refiner in this example operated a terminal at which ethanol and other petroleum products were splash blended with base gasoline in gasoline delivery trucks owned and operated by the hypothetical refiner. The refiner-blender was not in operation in 1990, and as a result does not have an individual baseline for anti-dumping purposes. The compliance baseline for this refiner is, therefore, the Clean Air Act default baseline, which is as follows:

Sulfur (ppm)	338
T-90 (deg F)	331
Olefins (vol %)	10.6
Exhaust benzene	6.17

During 1995, this hypothetical blender-refiner received the shipments of gasoline and gasoline blending stocks, and produced the gasoline, described in Table XIII-3.

TABLE XIII-3.—GASOLINE AND BLENDING STOCKS RECEIVED, AND GASOLINE PRODUCED, BY A HYPOTHETICAL DOWNSTREAM BLENDER-REFINER

Batch number	1	2	3	4	5
Volume (bbl × 1,000)	5	0.5	1	3.5	[2] 10
Product type	gasoline	ethanol	raffinate	NGL [1]	gasoline
Produced/received	received	received	received	received	produced
Designation (APP, NAPP, Other)		other	APP	other	
Sulfur (ppm)	350	0	65	149	
T-90 (deg F)	350	180	250	206	
Olefins (vol %)	11.1	0	2.5	0.8	
Aromatics (vol %)	19	0	6.2	2.6	
Benzene (vol %)	1.42	0	1.45	0.4	
Oxygen (vol %)	0	34.7	0	0	
Exhaust benzene	5.03	0	3.66	2.42	

[1] NGL is Natural Gas Liquids, that in this hypothetical was produced as a by-product of natural gas generation by a company that does not produce any gasoline.

[2] The volume of gasoline produced (10,000 bbls) represents the sum of the volumes of the gasoline and blending stocks that were splash blended in gasoline delivery trucks by the hypothetical refiner.

The hypothetical refiner in this example did not use any feedstock in the production of gasoline (i.e., did not substantially change the chemical properties of any gasoline or blendstock, as occurs in a petroleum refinery), and as a result the refiner has the option of calculating compliance on the basis of the volumes and properties of the gasoline and blendstocks that was received during the averaging period, rather than on the basis of the volumes and properties of gasoline that was produced. Because it would be very difficult for this hypothetical refiner to sample and test each truck subsequent to splash blending (the process that would be required for determining compliance based upon gasoline production), this refiner elected to use the gasoline/product-receipt option.

In determining its compliance, the hypothetical refiner was required to include only batches 2 and 4 in its calculations. Batch 1 was excluded from the refiner's compliance calculations because it was gasoline that would have been included in the compliance calculations by the refiner that produced it. This exclusion was necessary to prevent double counting this product. Similarly, batch 3 was raffinate that was designated as APP by the refiner that produced it, indicating the original refiner had already accounted for this product.

Batch 4, on the other hand, was natural gas liquids that the hypothetical refiner purchased from a natural gas production company. As a result, this petroleum product was not APP (i.e., had not been accounted for by any refiner), and the hypothetical blender-refiner in this example was required to include it in its compliance calculations.

Batch 2 was ethanol, which the refiner included in its calculations. [67]

Because the hypothetical refiner in this example used the Clean Air Act default baseline for anti-dumping, the compliance calculation method at § 80.104(c)(2) of the proposed regulations were used by this refiner. This method requires the refiner first to calculate the complying total for each regulated parameter using the formula at § 80.71(e)(1) of the proposed regulations, based upon the volumes of the relevant batches, and the relevant standard.

The hypothetical refiner's complying total calculation for sulfur was based upon the volumes for batches 2 (.5 kbbls) and 4 (3.5 kbbls), and the standard for sulfur (338 ppm) as follows:

$$\text{Complying total}_{\text{sulfur}} = (0.5 + 3.5) \times 338 = 1{,}352$$

The complying totals for the remainder of the regulated parameters were calculated in a similar manner, and are the following:

T-90	1,324
Olefins	42.4
Exhaust benzene	24.68

The compliance standards for these parameters were calculated by multiplying sulfur, T-90 and olefins times 125 percent, and exhaust benzene emissions by 1, to yield the following:

Sulfur	1,690
T-90	1,655
Olefins	53.0
Exhaust benzene	24.68

The refiner next calculated the actual totals for each of the regulated parameters using the formula at § 80.71.(e)(2) of the proposed regulations, based upon the volumes and tested levels of the regulated parameters for each relevant batch. The refiner's actual total calculation for sulfur, based upon the volumes of batches 2 and 4, and the sulfur levels for these batches (zero and 325 ppm, respectively), was as follows:

$$\text{Actual total}_{\text{sulfur}} = (0.5 \times 0) + (3.5 \times 149) = 521.5$$

The actual totals for the other parameters also were calculated using this formula, with the following results:

T-90	811
Olefins	2.8
Exhaust benzene [68]	8.47

In the case of each parameter, because the compliance total was less than the compliance standard, the hypothetical refiner was in compliance for the 1995 averaging period.

XIV. Compliance Audits

Under the reformulated gasoline and anti-dumping programs, EPA is proposing that, as a part of the reporting requirement, each refiner, importer, and oxygenate blender commission an audit of the information which forms the basis of the reports. EPA is proposing that each of these regulated parties should be required to commission such an audit at the conclusion of each calendar year, the scope of the audit to cover the activities of the party relative to the reformulated gasoline and anti-dumping requirements for the previous calendar year and which are the subject of the required reports to EPA. The purpose of a compliance audit is to corroborate the reports submitted by the regulated party to EPA. Reports of the compliance audits must be filed with EPA by May 30 of each year. Under EPA's proposal, submission of the auditor's report is required, and failure to do so will constitute a reporting violation by the refiner, importer, or oxygenate blender.

This compliance audit requirement is a new concept for EPA report filers, although other governmental agencies (e.g., the Securities and Exchange Commission) also require compliance audits of reports filed. The compliance audits being proposed are an outgrowth of EPA's experience with the lead phasedown program, which included averaging, credits, and periodic reports, and for which EPA-conducted audits are an essential part. Because the reformulated gasoline program is significantly more complex than is the lead phasedown program, EPA believes that audits are correspondingly more important than in lead phasedown. These audits are not intended as a substitute for enforcement audits conducted by EPA, but are intended to serve as a means of improving compliance with the reformulated gasoline program by identifying problem areas to the regulated parties. Such audits would also assure parties that the records on which they base periodic reports will be reviewed and cross-checked for accuracy by a disinterested third party (as well as possibly by EPA); will lead to the correction of simple arithmetic errors; will aid in correcting misconceptions about regulatory requirements; and generally will deter the making of false reports.

A. Standards for Audits

The proposed regulations require that an audit must be conducted by a certified public accountant in accordance with the Statement on Standards for Attestation Engagements (Am. Inst. of Certified Pub. Accountants 1991), which provide general professional guidance to certified public accountants in the conduct of audits for other than historical financial statements. The proposed regulations also include specific instructions relating to the subject areas which must be included in each audit, and the minimum records and audit procedures which are appropriate for each subject area.

The Attestation Standards deal with the need for technical competence, independence in mental attitude, due professional care, adequate planning and supervision, sufficient evidence, and appropriate reporting. These Standards require that audits of this type must be performed by a practitioner having adequate technical training and proficiency in the attest [69] function and adequate knowledge of the subject matter of the audit.

The proposed regulations contain a detailed description of the specific audit requirements for each of the elements of the reformulated gasoline and anti-dumping programs which are subject to audit review, and the records and procedures which must be included in the audit. The records and audit procedures which are specified are the minimum necessary for an audit, however, and an auditor is expected to use professional judgement to devise audit procedures to correspond with the facts of each individual audit in light of the internal company's accounting, operating and administrative controls. The proposed regulations provide also that in the event the specified audit procedures are not followed for any reason, the deviation and the reason therefore must be included in the audit report. This type of deviation normally would occur when, because of the nature of the operation or records at a

[67] Section 80.104(a)(1)(ii) of the proposed regulations contains two options regarding the inclusion of oxygen in anti-dumping calculations. This hypothetical assumes the option under which a refiner includes the oxygen used, to the extent such use exceeds the refiner's baseline oxygen use. Because the Clean Air Act default baseline oxygen use is zero, the hypothetical refiner in this example (who used the Clean Air Act default baseline) is able to include all of the oxygen it used during the averaging period.

[68] The exhaust benzene emissions calculation for batch number 2 results in a negative result. The actual total used for batch number 2, therefore, is zero, because exhaust benzene emissions cannot be less than zero.

[69] An attest engagement is defined as "one in which a practitioner is engaged to issue or does issue a written communication that expresses a conclusion about the reliability of a written assertion that is the responsibility of another party." Attestation Standards § 100.01 (footnotes omitted).

particular company and based upon the auditor's professional judgment, the auditor concludes that different procedures are appropriate.

Audits of all regulated parties should include a comprehensive examination of the systems and procedures employed to assure compliance with the regulations. Such review should include a examine of the administrative, operating, and accounting controls established by the company. The documentation and audit procedures to be examined are of necessity different for refiners, importers and oxygenate blenders and should be specific to the reformulated gasoline or anti-dumping requirements as applicable. The auditor is required to submit a report that discusses conclusions and reservations with respect to the regulated party's compliance with the applicable requirements. Final reports should be prepared in accordance with the appropriate Attestation Standards and a copy submitted directly to the EPA.

EPA is proposing that information collected during the course of an independent audit could be used in any enforcement action against the party whose operation was audited. EPA believes this use of audit-obtained information is appropriate because such information is analogous to that contained in a regulated party's report to EPA, and information in a party's report to EPA is a principal means of demonstrating compliance or non-compliance in any enforcement action.

B. Use of debarred auditors not permitted

EPA is proposing that audits must be performed by auditors who have not been debarred or suspended under the terms of the Governmentwide Debarment and Suspension regulations at 40 CFR part 32, or the Debarment, Suspension, and Ineligibility provisions of the Federal Acquisition Regulations, FAR subpart 9.4. Actions which can result in a company being so debarred include, among others, the commission of fraud or a criminal offense in connection with obtaining or performing a public or private transaction; violation of antitrust statutes; commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, making false claims or obstruction of justice; and commission of an offense indicating a lack of business integrity or business honesty. The companies and individuals who have been debarred are identified in Lists of Parties Excluded from Federal Procurement or Non-Procurement Programs, which is published monthly by the Government Printing Office.

EPA believes it is appropriate to exclude the use of auditors who have been debarred because of the serious questions debarment raises about an auditor's honesty, integrity, or ability to perform an audit properly. Because of the complexity of the reformulated gasoline program, it is particularly critical that only the most competent and scrupulous companies be allowed to perform these audits. As a result, if a regulated party's submission under the compliance audit requirement is from an auditor who is debarred, the party will be considered to have violated the compliance audit requirement. Moreover, in the event that EPA discovers that a auditor, in the conduct of a compliance audit under this program, violates the standards of the debarment regulations referenced above, EPA will consider referring the matter to EPA's debarring official for a debarment action under 40 CFR part 32.

XV. Federal Preemption

Whenever the federal government regulates in an area, the issue of preemption of State action in the same area is raised. The regulations proposed here will affect virtually all of the gasoline sold in the United States. As opposed to commodities that are produced and sold in the same area of the country, gasoline produced in one area is often distributed to other areas. The national scope of gasoline production and distribution suggests that federal rules should preempt State action to avoid an inefficient patchwork of potentially conflicting regulations. Indeed, Congress provided in the 1977 Amendments to the Clean Air Act that federal fuels regulations preempt non-identical State controls except under certain specified circumstances (see, section 211(c)(4) of the Clean Air Act). EPA believes that the same approach to federal preemption is desirable for the reformulated gasoline and anti-dumping programs. EPA, therefore, is issuing today's proposed rule under the authority of sections 211 (k) and (c), and propose under section 211(c)(4) that dissimilar State controls be preempted unless either of the exceptions to federal preemption specified by section 211(c)(4) applies. Those exceptions are:

> (B) Any State for which application of section 209(a) [of the Clean Air Act] has at any time been waived under section 209(b) [of the Clean Air Act] may at any time prescribe and enforce, for the purpose of motor vehicle emission control, a control or prohibition respecting any fuel or fuel additive.
>
> (C) A State may prescribe and enforce, for the purposes of motor vehicle emission control, a control or prohibition respecting the use of a fuel or fuel additive in a motor vehicle or motor vehicle engine if an applicable implementation plan for such State under section 110 [of the Clean Air Act] so provides. The Administrator may approve such provision in an implementation plan, or promulgate an implementation plan containing such a provision, only if he finds that the State control or prohibition is necessary to achieve the national primary or secondary ambient air quality standard which the plan implements. The Administrator may find that a State control or prohibition is necessary to achieve that standard if no other measures that would bring about timely attainment exist or if no other measures exit and are technically possible to implement, but are unreasonable or impracticable. The Administrator may make a finding of necessity under this subparagraph even if the plan for the area does not contain an approved demonstration of timely attainment.

The Regulatory Negotiation agreement was not intended to modify the provisions of section 211(c)(4)(B). Under this provision, once the State of California has received a waiver under section 209(b) of the Clean Air Act, it has the ability to regulate fuels and fuel additives without the need for a waiver under section 211 of the Clean Air Act. In accordance with the intent of Congress in enacting sections 209(b) and 211(c)(4)(B) of the Clean Air Act, California has used, and EPA understands will continue to use, these provisions to design a program to meet its unique needs.

EPA believes that the limited federal preemption proposed here appropriately balances the utility and efficacy of uniform national rules with States' needs to address their unique pollution problems.

XVI. Environmental and Economic Impacts

The contents of this supplemental proposal are not expected to affect the environmental or economic impacts of the reformulated gasoline program as it was proposed in EPA's notice of proposed rulemaking (56 FR 31176). These impacts are also described in greater detail in the Regulatory Impact Analysis supporting the rulemaking, which is available in Public Docket No. A-91-02, located at Room M-1500, Waterside Mall (ground floor), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460.

XVII. Public Participation

A. Comments

EPA desires full public participation in arriving at its final decisions, and therefore solicits comments on all aspects of this supplementary proposal

from all interested parties. However, EPA does request that comments be limited to issues affected by this SNPRM and not address issues in the NPRM which remain unchanged here. Wherever applicable, full supporting data and detailed analysis should be submitted to allow EPA to make maximum use of the comments. Commenters are especially encouraged to provide specific suggestions for changes to any aspects of the regulations that they believe need to be modified or improved. All comments should be directed to the EPA Air Docket, Docket No. A–91–02 (See "**ADDRESSES**").

Commenters desiring to submit proprietary information for consideration should clearly distinguish such information from other comments to the greatest possible extent, and clearly label it "Confidential Business Information." Submissions containing such proprietary information should be sent directly to the contact person listed above, and not to the public docket, to ensure that proprietary information is not inadvertently placed in the docket.

Information covered by such a claim of confidentiality will be disclosed by EPA only to the extent allowed and by the procedures set forth in 40 CFR part 2. If no claim of confidentiality accompanies the submission when it is received by EPA, it may be made available to the public without further notice to the commenter.

B. Public Hearing

Any person desiring to testify at the public hearing (see "**DATES**") should notify the contact person listed above of such intent at least 7 days before the hearing date. Persons wishing to testify at the hearing should also provide an estimate of the time required for the presentation of the testimony and notification of any need for audio/visual equipment. It is suggested that sufficient copies of the statement or material to be presented be brought to the hearing for distribution to the audience (suggested number of 300). In addition, a sign-up sheet will be available at the registration table the morning of the hearing for scheduling of the order of testimony.

The official record of the hearing will be kept open for 30 days following the hearing to allow submission of rebuttal and supplementary testimony. All such submittals should be directed to the EPA Air Docket, Docket No. A–91–02 (See "**ADDRESSES**").

The hearing will be conducted informally, and technical rules of evidence will not apply. Written transcripts of the hearing will be made and a copy thereof placed in the docket. Anyone desiring to purchase a copy of the transcript should make individual arrangements with the court reporter recording the proceedings.

XVIII. Compliance with the Regulatory Flexibility Act

Under Section 605 of the Regulatory Flexibility Act, the Administrator is required to certify that a regulation will not have a significant adverse economic impact on a substantial number of small business entities or perform a regulatory flexibility analysis. EPA has determined that the reformulated gasoline program will be likely to have a significant adverse economic impact on a substantial number of small business entities and accordingly has prepared the following proposed regulatory flexibility analysis. Comments on this analysis are welcomed and will be included in a final regulatory flexibility analysis to be included in the final rule.

As part of the Administrator's effort to ensure that the regulations did not unnecessarily affect small business entities, the small business entities which will be affected by this rulemaking have been represented in the negotiated rulemaking processes which led, in substantial part, to this supplemental proposal. The following organizations which represent in whole or in part the interests of affected small businesses were formal participants in the negotiated rulemaking process and signatories to the agreement in principle: National Corn Growers Association, Renewable Fuels Association, Oxy-fuels Association, Rocky Mountain Refiners Association, National Council of Farmer Cooperatives, Society of Independent Gasoline Marketers of America, Petroleum Marketers of America Association, Independent Liquid Terminals Association, Association of Independent Refiners of America.

EPA believes that the participation of these parties has assured adequate consideration of the special position of smaller entities in the marketplace. During the negotiated rulemaking sessions and the public hearing on the July NPRM, the small businesses which are potentially affected by the rule made their interests known. Pursuant to the Regulatory Flexibility Act, this draft regulatory flexibility analysis will summarize the issues small businesses have raised and the resolutions (if any) of their concerns contained in today's proposal. EPA requests comment on the topics in this analysis and any other issues affecting small businesses, if any.

Many of the affected small businesses were concerned about the treatment of oxygenates. Some made oxygenates and were thus concerned that EPA not favor certain oxygenates in the way that it ensured that there would be no NOx increase. The evidence about the effect of oxygenates on NOx emissions is not complete. Some testing has been done which shows that while oxygen in fuel lowers CO and VOC emissions, at some concentrations and in some forms it may raise NOx emissions. In order to avoid any unnecessary discrimination against oxygenates EPA has developed a two step process for determination of NOx effects. Generally, all oxygenates will be treated equally and deemed to create no NOx increase up to 3.5% oxygen or the waiver limit for such oxygenate. In some cases, states may determine that because the area has summertime ozone problems or NOx would interfere with the attainment of another NAAQS, the area needs to make even more conservative assumptions about the relationship between oxygenates and NOx. In such cases and during the relevant months, the regulations presume that MTBE (the most thoroughly tested oxygenate) will cause no NOx increase to 2.7% (by weight) oxygen and that other oxygenates will cause no NOx increase to 2.1% (by weight) oxygen. In all events, EPA will review petitions regarding new oxygenates as soon as possible to determine whether there is evidence of a NOx increase due to their use and at what levels. If no NOx increase is found to occur at levels higher than 2.1% (by weight) then EPA will approve their use at higher levels during such periods.

Given the review accorded oxygenate testing, any detrimental effects on other oxygenates may be temporary or even avoided. The differing treatment of MTBE and other oxygenates will have the greatest impact on use of ethanol because it is one of the widest used oxygenates. It is likely that a limitation on ethanol use will tend to affect small (and large) ethanol makers adversely since the market for ethanol may not grow as much as the market for MTBE. It may be that terminal operators not affiliated with major oil companies would be adversely affected because they may be more likely to do ethanol blending than terminals associated with large refiners. EPA has attempted to deal with the needs of blenders in its proposed reformulated gasoline and antidumping enforcement schemes by enabling them to use already certified blendstocks and/or baseline comparisons as appropriate.

Smaller businesses were also concerned with the definition of domestic capacity to produce reformulated gasoline. There is currently

no fixed definition of that term in the regulatory negotiation agreement or the Clean Air Act. Suggested definitions have required all constituents of reformulated gasoline to be domestically produced or available at domestic ports. If the Administrator finds that there is insufficient domestic capacity to produce reformulated gasoline, he may extend the date for the start of the program in opt-in areas for up to three years. Thus this issue may affect both the market for imported oxygenates and the certainty refiners can have about the effective date of opt-ins and thus the demand.

While some of the commenters were concerned with creating a strong domestic market for their oxygenates many more were concerned that the definition be as broad as possible. If domestic capacity were broadly construed, EPA would not extend the start of the program in opt-in areas due to insufficient supply. An unexpected extension might make a small refiner's investments in improvements useless. Small refiners have less of an ability to absorb risk or to obtain financing for risky investments than do their larger competitors. Thus small refiners want a broad definition. It is in the interest of domestic oxygenate producers to have a limited definition in order that demand for their supplies be high. But they, as indeed all gasoline and gasoline component suppliers, will be able to operate most efficiently if uncertainty about opt-ins is minimized.

EPA is concerned that there may be an impact on terminal operators and gasoline distributors who currently blend unfinished gasoline components with ethanol for attainment area use. If these blenders are not producing their own ethanol, the cost of ethanol to them will rise. There will be no associated rise in the price they will receive for their gasoline since they sell into unaffected areas. EPA does not know the extent to which these blenders do not produce ethanol and requests comment on this issue.

Several small business commenters are refiners with only one refinery. These commenters were concerned with the ability of larger refiners to average their baseline fuels across many refineries for the anti-dumping provisions. They believed that such an averaging provision gave a competitive advantage to large refiners and permitted degradation of air quality in non-reformulated fuel areas which was not intended by Congress. While EPA is sympathetic to their concerns, the Act clearly requires the baseline to be determined on a refiner basis and therefore EPA cannot take away this right. EPA allows baseline determination on a refiner or refinery basis, at the refiner's option, to enhance flexibility; however, to protect small refiners and the environment a refiner must choose either to determine the baseline for its refineries on a refinery by refinery basis or a refiner basis. If one refinery's baseline is determined based on its own data, then the calculation of the baseline for the other refineries of that refiner must not include that refinery.

The smaller refiners were also concerned that there be some variance procedure in cases when they could not produce reformulated gasoline through no fault of their own. Since these refiners generally have only one refinery and can often supply only one market, they are more prone to suffer from being unable to supply reformulated gasoline than a major refiner with refineries proximate to the pipeline. Section 80.73 of the regulations proposed today provide a mechanism for sale of conventional gasoline in covered areas under certain very circumscribed conditions. The smaller refiners acknowledged that these conditions (i.e., no fault, return of economic advantage, continuing efforts, etc.) were necessary to avoid abuse of the provision.

XIX. Statutory Authority

The statutory authority for the standards proposed today is granted to EPA by sections 114, 211(c) and (k) and 301 of the Clean Air Act, as amended; 42 U.S.C. 7414, 7545(c) and (k), and 7601.

XX. Administrative Designation and Regulatory Analysis

Pursuant to Executive Order 12291, EPA must judge whether a regulation is "major" and therefore subject to the requirement that a Regulatory Impact Analysis be prepared. Major regulations have an annual effect on the economy in excess of $100 million, have a significant adverse impact on competition, investment, employment or innovation, or result in a major price increase. The Administrator has determined that reformulated gasoline will cost well in excess of $100 million per year and therefore should be classified as a major rule.

A Draft Regulatory Impact Analysis (RIA) for the reformulated gasoline program has been prepared and placed in the docket. The final RIA will be completed contemporaneously with the final reformulated gasoline rule. The Draft Regulatory Impact Analysis was submitted to the Office of Management and Budget (OMB) for review as required by Executive Order 12291. Any written comments from OMB and any EPA response to those comments as placed in the public docket for this rulemaking.

XXI. Reporting and Recordkeeping Requirements

Under the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.*, EPA must obtain OMB clearance for any activity that will involve collecting substantially the same information from 10 or more non-Federal respondents. (As stated in the notice of proposed rulemaking, these information collection requirements have been submitted for approval to the Office of Management and Budget (OMB) under the *Paperwork Reduction Act*, 44 U.S.C. 3501 *et seq.* An Information Collection Request document has been prepared by EPA (ICR No. [1591]) and a copy may be obtained from Sandy Farmer, Information Policy Branch; EPA; 401 M St., SW. (PM–223); Washington, DC 20460 or by calling (202) 382–2740.)

Send comments regarding the collection of information, including suggestions for reducing the burden of this collection to Chief, Information Policy Branch; EPA; 401 M St., SW. (PM–223); Washington, DC 20503; and to the Office of Management and Budget, Washington, DC, 20503, marked "Attention: Desk Officer for EPA." The final Rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

XXII. Regulatory Language

A copy of the proposed regulatory language discussed in this preamble may be obtained from Public Docket No. A–91–02 or from the contacts listed in the **ADDRESSES** section.

List of Subjects in 40 CFR Part 80

Fuel additives, Gasoline, Motor vehicle pollution, Penalties, Reporting and recordkeeping requirements.

Dated: March 31, 1992.

William K. Reilly,

Administrator.

[FR Doc. 92–8449 Filed 4–15–92; 8:45 am]

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federal register

Thursday
April 16, 1992

Part III

Environmental Protection Agency

40 CFR Part 52

State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; Proposed Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[FRL-4120-2]

RIN 2060-AD12

State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990

AGENCY: Environmental Protection Agency (EPA).

ACTION: General preamble for future proposed rulemakings.

SUMMARY: Title I of the Clean Air Act Amendments (CAAA) of 1990 revamped the requirements for areas that have not attained the national ambient air quality standards (NAAQS) for ozone, carbon monoxide (CO), particulate matter (PM_{10}), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), and lead. In addition, title I made numerous changes in the requirements for State implementation plans (SIP's) in general, including the provisions governing EPA's processsing of SIP revisions, as well as the repercussions of State failures to meet the various SIP requirements. Many of these requirements call for early action by the States. For example, under title I, States with pre-enactment ozone nonattainment areas were to begin submitting SIP revisions 6 months after enactment (May 15, 1991).

This General Preamble principally describes EPA's preliminary views on how EPA should interpret various provisions of title I, primarily those concerning SIP revisions required for nonattainment areas. Although the General Preamble includes various statements that States must take certain actions, these statements are made pursuant to EPA's preliminary interpretations, and thus do not bind the States and the public as a matter of law. In the near future, EPA will begin to take action, pursuant to notice-and-comment rulemaking, on SIP revisions submitted by the States, and issue rules, pursuant to notice-and-comment rulemaking, on various title I provisions. During the comment periods for those subsequent actions, members of the public will have the opportunity to comment on the relevant issues. This General Preamble is an advance notice of how EPA generally intends, in those subsequent rulemakings, to take action on SIP submissions and to interpret various title I provisions.

FOR FURTHER INFORMATION CONTACT: Mr. Brock Nicholson, Chief, Policy Development Section, Ozone/CO Programs Branch (MD-15) at (919) 541-5517, for issues related to ozone or carbon monoxide; Mr. Eric Ginsburg at (919) 541-0877, Sulfur Dioxide/Particulate Matter Programs Branch (MD-15), for issues related to sulfur dioxide, particulate matter, or lead; Mr. Gary McCutchen at (919) 541-5592, Permits Programs Branch (MD-15), for issues related to new source review, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; Ms. Paula Van Lare at (202) 260-3450 for issues related to mobile sources, 401 M Street, SW., Washington, DC 20460.

SUPPLEMENTARY INFORMATION:

Note: In accordance with 1 CFR 5.9(c), this document is published in the Proposed Rules category.

A list of cited references are contained in the appendices which are available from the public docket, A-91-35 at EPH, 400 M Street, S.W. Washington, D.C. Appendices A through E will be published in a subsequent Federal Register.

OUTLINE

I. Purpose

The primary purpose of this preamble is to provide the public with advance notice of how EPA generally intends to interpret various requirements and associated issues that have arisen under title I of the CAAA. The information

provided in this preamble is therefore intended to guide States and to help ensure that they prepare and submit SIP's or SIP revisions that adequately comply with the title I provisions. For quick reference, title I submittals and other actions concerning ozone and CO nonattainment areas required during the early years following the November 15, 1990 enactment of the 1990 CAAA, are listed chronologically (by the date each action is due) on Table 1.

TABLE 1.—MAJOR REQUIRED STATE SUBMITTALS AND ACTIONS

Submittal/action	Ozone classification					CO classification	
	Marginal	Moderate	Serious	Severe	Extreme	Moderate	Serious
By March 15, 1991 (120 days after enactment) [1]:							
A request for more time to study boundaries for serious + area that was designated and classified as of enactment (due 45 days after classification).			X	X	X		X
List of all areas with proposed designations and boundaries (except boundaries for serious + areas with requests for more time to study).	X	X	X	X	X	X	X
A request for more time to study boundaries for serious + area that was designated and classified at 240 days after enactment (requested to be in March 15, 1991, submittal; latest date for request is August 27, 1991).			X	X	X		X
Commitment to submit SIP revision to correct I/M program (i.e., implement previously-required program) ("immediate submittal" of revision for I/M) [1a].	X					X	
Commitment to submit SIP revision to implement basic I/M program ("immediate submittal" of revision for I/M) (plus serious areas where urbanized population < 200,000) [1a].		X					
By May 15, 1991 (6 months after enactment):							
Submit RACT Corrections	X	X	X	X	X		
Northeast ozone transport commission convenes (applies to Northeast transport region).							
By May 15, 1992 (18 months after enactment):							
Commence actions to adopt and implement enhanced monitoring program requirements.			X	X	X		
By November 15, 1992 (24 months after enactment):							
Submit comprehensive emission inventory	X	X	X	X	X	X	X
Submit requirements for emission statements	X	X	X	X	X		
Submit VOC RACT rules (existing CTG's; non-CTG major sources).		X	X	X	X		
Submit NSR rules	X	X	X	X	X		
Submit Stage II vapor recovery program		X	X	X	X		
Submit Enhanced I/M program; begin implementation [1a]			X	X	X		
Submit requirements for transport region (VOC, NO_x, RACT and NSR; Enhanced I/M) (applies across transport region).							
Submit conformity requirements [2]	X	X	X	X	X	X	X
Submit measure for reducing VMT				X	X		X
Submit CO attainment demonstration						[3]X	X
Submit contingency measures (if VMT forecasts exceeded)						[3]X	X
Submit transportation control measures (TCM's)				X	X		X
Submit revision requiring employer trip reduction programs (25% vehicle occupancy rate reductions).				X	X		
Submit oxygenated fuel program						X	X
By November 15, 1993 (36 months after enactment):							
Submit "15% SIP" (i.e., measures showing 15% reduction in VOC baseline).		X	X	X	X		
Submit demonstration re: additional VOC, NO_x reductions as necessary to attain.		X					
Submit NSR program (CO)						X	X
Submit contingency measures for failures to meet milestones			X	X	X		
By November 15, 1994 (4 years after enactment):							
Submit attainment demonstration (photochemical dispersion modeling).			X	X	X		
Submit RFP demonstration showing 3% average annual reductions commencing 6 years after enactment.			X	X	X		
Submit clean-fuel vehicle program			[4]X	X	X		
Submit Stage II program (or "reflect comparable measures") in transport region.							
Submit plans to incorporate EPA's emission diagnostic rules (estimated time).	X	X	X	X	X		

[1] Certain submittals/actions may actually be required before the end of the time period specified. Check the narrative portion of the document for specific submittal time schedules. Also, the NO_x requirements of CAA section 182(f) will be addressed in supplements to the General Preamble.
[1a] See Preamble discussion regarding compliance with submittal dates.
[2] Submittal dates will be delayed pending EPA rulemaking.
[3] Applies to ares with design values >12.7 ppm.
[4] As applicable in regards to Title II requirements.

The EPA's interpretation of title I provisions provided in the preamble will also provide a basis for subsequent EPA approval or disapproval of SIP submittals concerning NAAQS nonattainment areas. While this preamble should reflect the majority of the SIP requirements under title I, unique circumstances or as yet

unrecognized issues are likely to cause case-by-case exceptions to arise. The EPA intends to provide the public with a formal opportunity to comment on the provisions of this preamble, and other issues that may arise during subsequent rulemakings that take action on SIP revisions submitted by the States under title I and that set out EPA policy on various aspects of title I. This preamble is a General Preamble for those subsequent actions.

This preambles focuses primarily on the SIP submissions required for nonattainment areas under part D of the amended Act. It discusses specific issues concerning the proper interpretation of the title I requirements of areas designated nonattainment (and, for some pollutants, classified) under part D, title I, as well as the proper treatment of nonattainment areas that fall outside of the classification schemes. This preamble discusses requirements for the SIP submissions required for ozone, CO, PM–10, SO_2, NO_2, and lead nonattainment areas. In addition, this preamble discusses interpretation issues that have arisen concerning redesignations at attainment, some general SIP requirements, and EPA action on SIP submissions, as well as the various types of possible State failures to meet certain requirements and the consequent sanctions and Federal implementation plans (FIP's).

This preamble also sets forth EPA's interpretation of the various provisions in the amended Clear Air Act (Act) which change new source review (NSR) requirements for new and modified sources in nonattainment areas. The discussion includes EPA's intended interpretation of the minimum changes all States must make in their SIP's in order to comply with the amended NSR requirements and the deadlines for making these changes. States should use this General Preamble as guidance for revision of their NSR programs and submittal of their NSR SIP's. The Act mandated deadlines for NSR SIP submittals are: May 15, 1992 for areas without approved SO_2 SIP's prior to enactment; November 15, 1993 for all other SO_2 nonattainment areas designated prior to enactment; May 15, 1992 for NO_2; July 6, 1993 for lead nonattainment areas designated January 6, 1992; June 30, 1992 for PM–10 nonattainment areas; November 15, 1992 for ozone nonattainment areas and transport regions; November 15, 1993 for CO nonattainment areas with a design value of 12.7 ppm or less; and November 15, 1992 for CO nonattainment areas with a design value above 12.7 ppm. For future designations, NSR SIP submittals are due within 18 months from redesignation of all SO_2, NO_2, PM–10 and lead nonattainment areas, and within 2 years of redesignation for ozone and many CO nonattainment areas (within 3 years for CO nonattainment areas with design values less than 12.7 ppm).

Note also that these changes apply not only in designated nonattainment areas, but in ozone transport regions, certain tribal lands that are either in nonattainment areas or ozone transport regions, and to specified sources in the Outer Continental Shelf (OCS) area. The EPA intends to amend its existing NSR regulations (see 40 CFR 51.165, 51.166, 52.21, and 52.24) to reflect the changes mandated by the 1990 CAAA. Certain changes to the NSR requirements of the prevention of significant deterioration (PSD) program, part C, title I, will be addressed in a separate EPA proceeding and are not addressed in this preamble.

The timeframe, or scope, of this General Preamble covers the 6-year period following enactment. The SIP submittals for all affected areas are required to be developed, submitted, and approved by EPA within this time period. Complete plan submittals are required for certain PM–10 areas within 1 year of enactment. For ozone and CO nonattainment areas, regulations, emission inventories, control-measure strategies, and attainment demonstrations are due at varying dates from 6 months to 5 years after enactment. Generally, the guidance provided this document is intended to guide nonattainment SIP development until further statutory requirement are issued or EPA determines that revisions are appropriate.

The scope of this General Preamble is limited regarding several new provisions of the 1990 CAAA concerning emissions of the oxides of nitrogen (NO_x). Specifically, the General Preamble does not include a discussion of the new NO_x provisions with respect to the following topics: reasonably available control technology, new source review, interaction of titles I and IV, ozone transport region, section 185B report, and section 182(f). However, EPA recongizes the importance of providing timely guidance to the states to help assure the development and implementation of cost-effective control measures to reduce ozone levels. Accordingly, EPA will issue guidance as soon as possible, as in supplements to the General Preamble.

Six years is a significant milestone in the 1990 CAAA. Within 6 years of enactment, ozone nonattainment areas classified as moderate and above must achieve a 15 percent reduction in volatile organic compound (VOC) emissions, and moderate areas must attain the NAAQS. In addition, moderate CO nonattainment areas must also attain the NAAQS by December 31, 1995. Sulfur dioxide, PM–10, lead, and NO_2 nonattainment areas must also meet significant statutory milestones within the 6-year period.

The appropriate SIP components necessary to meet these goals by the sixth year and to provide adequate plans (due within the first 6 years) for attaining the NAAQS by the appropriate dates beyond the sixth year are covered in this General Preamble. To some extent, this preamble also applies to the period beyond 6 years. For example, it includes much of the guidance applicable to areas designated nonattainment for SO_2, PM–10, and lead beyond the 6-year period. Other guidance that covers the period beyond 6 years from enactment, demonstrating attainment of milestones or NAAQS and future planning for cities with the most significant air pollution problems, will be covered in future supplements to this General Preamble, as necessary.

This preamble is organized to meet the needs of individuals wanting either an overview of EPA's preliminary interpretation of the various provisions of title I of the 1990 CAAA or a detailed discussion of SIP submittal requirements for a specific NAAQS nonattainment classification. An area with a higher nonattainment classification (i.e., it more greatly exceeds a NAAQS than do areas with lower nonattainment classifications for the same NAAQS) generally must adopt all measures required of areas with lower nonattainment classifications, along with specific measures required for the higher classification. Therefore, the general introductory material at the beginning of the preamble and the material describing SIP requirements for all those levels of NAAQS nonattainment equal to or lower than the classification promulgated for a particular nonattainment area, are applicable to the area.

The General Preamble includes citations to its own sections and to sections of various Act (or CAAA) versions. Citations usually comply with the following conventions:

1. General Preamble sections begin with a roman numeral.

2. The Act is referenced by section (or by title (I–V), part (A–D of title I, A–C of title II)).

3. Earlier versions of the Act and the 1990 (or earlier) CAAA are identified by date or other specific reference.

A glossary listing the various acronyms used in this document is in appendix A. The bibliography for and list of cited references in this preamble is in appendix B.

II. Background

A. History

The long history of the Clean Air Act (Act) extends back before 1970. A summary of significant events occurring during its development is given in 52 FR 45044 (November 24, 1987).

That summary was part of EPA's proposed Post-1987 Ozone and CO Policy, which focused on requirements for areas that failed to attain the NAAQS by the statutory deadline of December 31, 1987. These proposed requirements included correcting certain SIP deficiencies and fully implementing the 1982 SIP's, adopting enhanced inspection and maintenance (I/M) programs, and submitting revised SIP's that demonstrated attainment over an expanded planning area as expeditiously as practicable by achieving at least a 3 percent per year reduction in the base year emissions.

On May 26, 1988 (in accordance with section 110(a)(2)(H)), EPA began issuing notices of SIP inadequacy (SIP calls) contained in letters to the Governors of States with areas that failed to attain the ozone and CO standards or that contributed to violations of the standards (see 53 FR 34500 (September 7, 1988)). These letters called on States to complete "Phase I" of their SIP call response. Under that phase, the States were to correct the SIP where it failed to meet EPA's existing part D guidance relating to control of VOC and CO emissions from stationary sources, satisfy unimplemented SIP commitments by adopting any missing control measures, and begin updating the base year emissions inventory for future attainment plans.

Beyond the basic attainment planning requirements discussed in the proposed Post-1987 Ozone and CO Policy, the 1977 CAAA included preconstruction permitting requirements for major new and modified sources under two programs, PSD and nonattainment NSR (respectively, parts C and D of title I). In nonattainment areas, new or modified sources as part of a preconstruction review process must (among other things): Obtain emissions offsets, and adopt control technology meeting a lowest achievable emission rate (LAER) standard. In 1980, EPA adopted new final regulations detailing SIP requirements to implement the NSR programs of parts C and D (see 45 FR 52676). The preamble to these regulations should be consulted for an in-depth discussion of the history of the NSR provisions of title I as well as a detailed explanation of program requirements prior to the 1990 CAAA.

B. Overview of Title I of 1990 CAAA

One of the main goals of the 1990 CAAA was to overhaul Act provisions that concerned planning for NAAQS attainment. Although one of the chief motivations for amending the Act was the failure of areas to attain the ozone and CO standards, the process of amending the statute provided an opportunity to address on a comprehensive basis the defects in existing law.

Title I of the CAAA (Provisions for Attainment and Maintenance of NAAQS) for the most part amends and supplements title I of the Act (Air Pollution Prevention and Control).[1] In light of the massive sweep and complexity of title I (1990 CAAA), the reader may find it helpful to view the Title as a collection of six sets of requirements. The following discussion provides a brief overview of these six sets:

1. Designations/Classifications

This set of requirements amends section 107 and the classification provisions in part D (Plan Requirements for Attainment) of the Act. For instance, section 181 addresses ozone classifications and section 186 addresses CO classifications. Specific requirements, by classification, are discussed in section III.A. and section III.B. of this notice.

2. Pollutant-specific requirements

Pollutant-specific requirements for designated ozone; CO; PM–10; and SO_2, NO_2, and lead nonattainment areas are found in part D at subparts 2, 3, 4, and 5, respectively. Where a conflict exists, the pollutant-specific requirements override the new-source permit requirements of section 173.

3. General Requirements

The revised general requirements for all plans regardless of the attainment demonstration required appear early in title I of the CAAA.

Note: The amendments modify numerous sections of the Act, including sections 107, 110, and 171 through 179. These general requirements include procedures for EPA review of SIP submittals (new Act section 110(k)); action on SIP revisions (section 110(1)) and a revised list of requirements for all plans (section 110(a)(2)).

4. Part D, subpart 1

This set includes general requirements for all designated nonattainment areas, especially those designated under new and revised NAAQS. In Subpart 1, Congress repealed the 1987 attainment deadlines for ozone and CO. In some cases, the pollutant-specific requirements contained in subparts 2–5 of part D override subpart 1's general provisions. Subpart 1 also includes a process governing sanctions for State failure to meet statutory requirements. Beyond that, it includes revised new-source permit requirements (section 172(c)(5) and section 173).

5. Miscellaneous

Other provisions of the Act address a variety of topics. Most of these provisions appear toward the end of title I of the CAAA. For example, new Act section 193 (technically in a new subpart 6 of part D) sets forth a "General Savings Clause" governing retention of certain types of previously enacted or mandated requirements. The new Act section 301(d) contains provisions related to Indian tribes. The miscellaneous provisions also include guidance on planning and transportation-related provisions.

6. Relationship Between Titles I and II of 1990 CAAA

Title I generally addresses the nonattainment SIP requirements and title II deals with control of mobile source emissions. While title II principally deals with Federally implemented programs [e.g., Federal Motor Vehicle Control Program (FMVCP)], requirements related to SIP's, such as fuels programs and Reid vapor pressure (RVP), are also contained in the title. Therefore, guidance on implementing these programs will also be provided in this document.

III. SIP requirements

A. Ozone

1. General

(a) *Classifications.* New subpart 2 of part D (section 181) sets a new classification structure for ozone nonattainment areas based on the severity of the nonattainment problem. For each area classified under this section, the attainment date shall be as expeditious as practicable but no later than the date in the following table. The classification scheme is as follows:

[1] The CAAA also amend other titles; for example, new section 301 of the Act adds provisions regarding treatment of Indian tribes to title III of the Act.

Area classification	Design value, ppm	Primary standard attainment date
Marginal	0.121 up to (but not including) 0.138.	November 15, 1993.
Moderate	0.138 up to (but not including) 0.160.	November 15, 1996.
Serious	0.160 up to (but not including) 0.180.	November 15, 1999.
Severe	0.180 up to (but not including) 0.280.	November 15, 2005.
Extreme	0.280 and above.	November 15, 2010.

Additionally, a severe area with a 1986 to 1988 ozone design value of 0.190 up to, but not including, 0.280 parts per million (ppm) has 17 years (until November 15, 2007) to attain the NAAQS.

The designation/classification process for ozone was described in 56 FR 56694 (November 6, 1991).

(b) *Special classifications.* In addition to the five air quality-based classifications, some nonattainment areas do not fit into the classification scheme of section 181(a). The EPA has classified these areas as transitional, submarginal, or areas with incomplete data. Section III.A of this preamble describes the requirements for all areas (marginal to extreme and the special classifications) in much the same way as they are described in section 182.

(c) *Planning.* As provided in subpart 2, emission inventories, provisions for Stage II gasoline vapor recovery, motor vehicle I/M, NSR, stationary-source reasonably available control technology (RACT), and certain other planning or control measures are required within 2 years after enactment (November 15, 1992) for most of the previously and newly designated nonattainment areas. For a very few nonattainment areas, final determination of the nonattainment area boundries may not occur until only a few months before several major rules (e.g., Stage II, I/M, transportation control measures (TCM's), NSR, RACT) and the emission inventory must be submitted. These nonattainment areas should not delay their adoption of rules or preparation of inventories while the boundary determinations are proceeding. Rather, these areas should be prepared to readily adopt rules and complete their emission inventories for the broadest area under consideration should EPA conclude that such broader area is appropriate. The 1990 CAAA require all submittals due within 2 years (November 15, 1992) to address the entire nonattainment area; these submittals can not be delayed due to the final boundaries rulemaking under section 107(d).

(d) *Enforceability.* The EPA has recently developed new model RACT rules (which supersede the previously issued model rules) for controlling VOC emissions from source categories covered by the Group I, II, and III control technique guidelines (CTG's). These model rules are intended to be used by areas subject to RACT "fix-up" requirements in correcting existing RACT rules, as required by section 182(a) (see section III.A.2, marginal areas below), and by areas subject to RACT "catch up" requirements that are required to apply RACT measures in accordance with section 182(b)(2) of the Act (see section III.A.3, moderate areas below). The model RACT rules include provisions for compliance certification, recordkeeping, reporting, monitoring, and test methods and procedures to enable EPA and the States to determine compliance with the requirements of the regulations. For a number of source categories, these compliance provisions have been added to the model RACT rules to improve enforceability because the CTG's and previous guidance for these sources did not include such requirements.

In general, for a SIP regulation to be enforceable, it must clearly spell out which sources or source types are subject to its requirements and what its requirements (work practices, emission limits, etc.) are. The regulation also needs to specify the time frames within which these requirements must be met, and must definitively state recordkeeping and monitoring requirements appropriate to the type of sources being regulated. The recordkeeping and monitoring requirements must be sufficient to allow determinations on a continuing basis whether sources are complying. An enforceable regulation must also contain test procedures in order to determine whether sources are in compliance.

(e) *Structure of requirements.* for areas classified marginal to extreme, virtually all requirements are additive (e.g., a moderate area has to meet all marginal and moderate requirements, unless otherwise specified). The text below presents the requirements in the first applicable classification, then repeated only if the requirements are different for a higher classification.

2. Marginal Areas

(a) *Emission inventory.* See appendix B for pertinent guidance on emissions inventory requirements.

(1) *Schedule.* Section 182(a)(1) requires all nonattainment areas to submit a final, comprehensive, accurate, and current inventory of actual ozone season, weekday emissions from all sources within 2 years of enactment (November 15, 1992). The EPA requests that the draft inventory be submitted between January 1 and May 1, 1992 in order to facilitate early review and allow the submittal of an acceptable inventory in November 1992.

(2) *Requirements.* This initial inventory is for calendar year 1990 and is denoted as the base year inventory. It includes both anthropogenic and biogenic sources of VOC, NOx and CO. The inventory is to address actual VOC, NOx, and CO emissions for the area during the peak ozone season, which is generally the summer months. All stationary point sources and area sources, as well as highway and nonhighway mobile sources within the nonattainment area, stationary sources with emissions of 100 tons or greater per year within a 25-mile wide buffer of the designated nonattainment area, and any OCS sources are to be included in the compilation. Including sources within a 25-mile buffer is necessary to ensure that all sources capable of affecting air quality within the nonattainment area are adequately accounted for in modeling demonstrations and strategy development. For nonattainment areas that are required to do photochemical grid modeling pursuant to section 182(c)(2)(A) (see sections III.A.4.e, serious areas, and III.A.9, multi-State areas), the modeling domain will determine the appropriate size of the area that must be inventoried for modeling purposes.

As one of the first steps in developing the base year inventory, the States are to prepare an inventory preparation plan (IPP), which is due in final form to EPA by October 1, 1991. The IPP should briefly state how the State intends to develop, document, and submit its inventory. Another early step in the inventory development process is preparation of the point source portion of the base year inventory. Guidance for preparing emission inventories was issued in May 1991 ("Procedures for the Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone, Volume I"). Because the point source portion of this guidance is essentially the same as it was for the post-1987 SIP's, States should have already begun gathering data on those

sources. States are encouraged to submit the point source portion of the inventory to EPA as early as January 1, 1992.

States that have fully completed portions of their base year inventories for 1987, 1988, or 1989 may request EPA approval to update these portions. Otherwise, States are required to prepare a completely new inventory with a 1990 base year. The EPA guidance on the procedure to request an update was provided in May 1991 ("Procedures for the Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone, Volume I").

In July 1991, EPA issued an updated version of MOBILE4, its mobile source emissions estimation model. The updated version MOBILE4.1, replaces and supersedes MOBILE4. States, with the exception of California, are required to use MOBILE4.1 in determining highway mobile source emissions for all of their base year emission inventories under the CAAA. California will consult with the EPA Region IX Office in determining the appropriate mobile source model to use. If other States adopt California tailpipe standards, they should consult with their EPA Regional Office to determine the appropriate mobile model because MOBILE4.1 would not correctly reflect emissions from these States in the future. However, for the base year inventory, and until new California cars are introduced into an area, MOBILE4.1 should be used. The majority of the enhancements in the revised model are internal to the model and do not require the States to make any special procedural adjustments when running MOBILE4.1. The EPA's "Emission Inventory Requirements for Ozone State Implementation Plans," should be referred to for more information. The States will also be required to develop new 1990 base year inventories for highway mobile sources to account for fleet turnover, newly opened-to-traffic highway sections resulting in changes in vehicle miles traveled (VMT) and VMT patterns, and changes in speed limits. States are to follow new guidance for estimating VMT to be published in the **Federal Register** notice expected to be issued in [OMS to fill in].

New methodologies have been developed to calculate emissions from certain area of off-highway mobile source categories. The categories are solvent uses, railroads, and aircraft. The emission factors for nonroad engines and vehicles have not yet been changed, but may be revised as the result of a study required by the 1990 CAAA. Therefore, for these categories, new emission estimates must be developed by the States using the new methodologies. The new methodologies for calculating emissions for solvent use are contained in the May 1991 document "Procedures for the Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone, Volume I"; and for railroads and aircraft in the July 1991 final draft chapters of the document "Procedures for the Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone, Volume IV." The States will be required to use these methods when preparing the area and off-highway mobile source portions of their emission inventories.

The EPA document "Procedures for Estimating and Applying Rule Effectiveness in Post-1987 Base Year Emission Inventories for Ozone and Carbon Monoxide State Implementation Plans" (June 1989) should be consulted for information on how to consider rule effectiveness when calculating emissions from stationary sources. One hundred percent rule effectiveness is the ability of a regulatory program to achieve all the emission reductions that could be achieved by full compliance with the applicable regulations at all sources at all times. For the purpose of base year inventories under the CAA, EPA will require the use of an 80-percent-effectiveness default value except as follows. The States are encouraged to derive local category-specific rule effectiveness factors, consistent with the tests and protocol prescribed in the March 31, 1988 memorandum from John S. Seitz, Director, Stationary Source Compliance Division, to Regional Air Division Directors regarding "Implementation of Rule Effectiveness Studies," or complete the questionnaire procedure for all of their source categories as prescribed in "Procedures for Estimating and Applying Rule Effectiveness in Post-1987 Base Year Emission Inventories for Ozone and Carbon Monoxide State Implementation Plans." Finally, the reader should refer to section III.A.9 on multi-State area requirements for additional information related to base year inventories.

By meeting the specific inventory requirements discussed above, the State will also satisfy the general inventory requirements of section 172(c)(3).

(3) *Other uses.* Many other inventories can be derived from the base year inventory. For example, areas may use their base year inventory as part of statewide inventories for purposes of regional modeling in transport areas. The base year inventory also plays an important role in modeling demonstrations for areas classified as moderate and above outside transport regions. Guidance has been developed to aid States in preparing emission inventories for photochemical grid modeling (for serious and above areas and multi-State moderate areas) ("Procedures for the Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone, Vol. II," May 1991, "UAM Applications Guidance" and "User's Guide for the Urban Airshed Model, Vol. 4." The reader should also refer to the discussion of attainment demonstration requirements for serious areas (section III.A.4.(e)). Guidance on emission inventory preparation for EKMA (for nonmulti-State moderate areas) is described in "Procedures for Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone, Volume I," May 1991.

(b) *RACT corrections.* Section 182(a)(2)(A) requires ozone nonattainment areas to submit within 6 months of classification all rules and corrections to existing VOC RACT rules that were required under the RACT provision, section 172(b)(3) of the old law (and related guidance). The EPA published a **Federal Register** (56 FR 54554) notice describing this provision and the success of States in meeting the correction deadline, and the readers should refer to that notice. As explained in that notice, areas that were designated nonattainment under section 107 just prior to enactment of the 1990 CAAA are the only areas affected by this requirement because they are the only areas that were then subject to the RACT requirements of section 172(b). These areas were again designated attainment on the date of enactment of the 1990 CAAA, and were then classified under section 181(a)(1) by operation of law. Thus, those areas were required to submit their RACT "fix-ups" as a SIP revision by May 15, 1991.

Newly designated nonattainment areas are not subject to the RACT "fix-ups" required by section 182(a)(2)(A) because they were not subject to section 172(b) of the old law. This is the case even if the State has already adopted rules for the area as part of statewide RACT for purposes other than meeting pre-1990 Act section 172(b). For nonattainment areas that will be expanded to contain portions that were not designated nonattainment prior to enactment, the RACT corrections are due in 6 months (by May 15, 1991) only for the original nonattainment area. However, for moderate areas, the newly designated portions of a nonattainment

area will be subject to the RACT "catch-ups." As explained below in section III.A.3., each moderate nonattainment area (including the newly designated portion) is subject to the RACT "catch-up" requirements of section 182(b)(2), which provide for SIP submittals by November 15, 1992. The RACT "fix-ups" refer to corrections States are required to make to RACT rules that are already in force and to adoption by States of rules that were required by pre-1990 Act section 172(b) to be in force. The RACT "catch-up" refers to the application of RACT for all applicable sources listed in section 182(b)(2), regardless of what was previously required. For purposes of the RACT "fix-ups" requirement, areas that were treated as rural nonattainment areas under EPA policies implementing the pre-amended Act must submit corrections only for previously required rules (Group I and II CTG sources with maximum theoretical VOC emissions greater than 100 tons per year). Other rules (Group III CTG's and non-CTG rules) will be due by November 15, 1992 as part of the catch-up for those previously designated rural nonattainment areas that are classified as moderate or above upon enactment and are not otherwise designated as rural transport areas under the new Act.

(1) *Definition of corrections.* A deficiency is any rule, or in some cases a portion of a rule, that is less stringent than RACT as that requirement was interpreted in pre-1990 Act EPA guidance (issued under sections 108 and 172(b) of the old law). The EPA provided a list of deficiencies for each area as part of the ozone SIP call letters to each State (May–June 1988 and November 1989, notification published 53 FR 34500, September 7, 1988 and 55 FR 30973, July 30, 1990). The EPA also provided States with existing guidance documents and asked them to review rules independently to determine consistency with this guidance.

(2) *Consequences of failure to make corrections.* Sections 179 (a) and (b) and 110(m) provides for the imposition of sanctions and section 110(c) provides for promulgation of a FIP if EPA finds that a State failed to make a required submittal. Under section 179(a), EPA must impose at least one of the two mandatory sanctions listed in section 179(b) 18 months after EPA makes such a finding, unless EPA finds that the State has made a complete submittal in the interim to correct the rules. The second of the two sanctions must be imposed if the deficiency has not been corrected 6 months after the first sanction is imposed. Section 110(m) also includes provisions on sanctions. The EPA will be discussing those provisions in a subsequent **Federal Register** notice. Refer to section IV.B. for more discussion on sanctions. Under section 110(c), EPA also must promulgate a FIP no later than 2 years after finding a failure to submit.

On October 22, 1991, EPA published a notice (56 FR 54554) finding that nine States and the District of Columbia failed to make a RACT fix-up submittal required under section 182(a)(2)(A). The EPA also plans to publish a set of model Federal VOC regulations. The EPA will use these model regulations as a starting point for Federal promulgation of regulations under section 110(c) as necessary, and will provide an opportunity for comment at that time. To the extent practicable, EPA will formulate any Federal regulations on the model regulations. Federal regulations will be promulgated if the States do not correct the regulations before the end of the 2-year period commencing from the finding.

The EPA will also use the model regulations as the basis for Federal regulations to apply where EPA disapproves any regulation that has been submitted. Finally, EPA expects States may want to use the model rules as a guideline for developing acceptable State rules.

(c) *I/M Corrections.* Section 182(a)(2)(B) requires States that contain marginal ozone nonattainment areas with existing I/M programs, or that were required to include I/M programs in their SIP's by the pre-1990 Act, to submit to EPA immediately upon (1990 CAAA) enactment of any revisions necessary to provide for a program no less stringent than that required prior to enactment or committed to in the SIP in effect at enactment, whichever is more stringent. The section also requires EPA to review, revise, update, and republish in the Federal Register within 1 year of enactment, the guidance for I/M programs required by the Act, taking into consideration the Administrator's investigations and audits of such programs. In short, ozone nonattainment areas must maintain existing I/M programs and must make corrections to those programs to meet existing I/M policy; when updated policy is published, these areas must submit revisions to address any new guidance.

More specifically, section 182(a)(2)(B) requires States to meet the basic I/M performance standard that has been in effect since 1977. This standard is based on a "model" program design consisting of a centralized program that annually tests tailpipe emissions on all light-duty vehicles, using emission standards for 1981 and later model vehicles of 1.2 percent CO and 220 parts per million hydrocarbons (HC) and a 20 percent stringency for pre-1981 vehicles. A compliance rate of 100 percent and a waiver rate of 0 percent are assumed. States must demonstrate an emission reduction for the I/M program included in the SIP that is at least as great as that produced by the "model" basic program (or the program already included in the SIP, whichever is greater), using the most current available version of EPA's mobile source emission model. The I/M programs are required in the urbanized portions, as defined by the Bureau of the Census in 1980, of the marginal nonattainment area.

The EPA expects to issue the policy for I/M programs in the near future. When published, the policy will state the date when such programs are to be implemented. The EPA intends that the policy will allow all areas ample time after publication of the policy to adopt and submit basic or enhanced I/M programs and/or I/M corrections as referenced in section 182(a)(2)(B). States that have both basic and enhanced I/M programs may opt to implement enhanced programs in all affected urbanized areas. States which are only required to implement basic programs (under section 182(a)(2)(B) or the requirements for moderate ozone nonattainment areas and certain CO nonattainment areas, as discussed later in this notice) must submit SIP revisions for I/M programs addressing any revised policy. The guidance will address the elements of the SIP revision.

As mandated by section 202(m), the Administrator will promulgate regulations requiring manufacturers to install diagnostic systems on all new light-duty vehicles and light-duty trucks. The purpose of these systems is to identify and track emission-related systems deterioration or malfunction. According to section 202(m)(3), within 2 years of EPA's promulgating regulations requiring States to do so, all States with I/M programs must amend their SIP to provide for inspection of these onboard diagnostics systems. The EPA will issue revised I/M guidance which addresses onboard diagnostic inspections.

(d) *Periodic inventory.* Section 182(a)(3)(A) requires the States to submit periodic inventories starting the third year after submission of the base year inventory required by section 182(a)(1) (i.e., November 15, 1995) and every 3 years thereafter until the area is redesignated to attainment. However, complete actual inventories will be used to demonstrate whether or not the milestone required in section 182(g) has

been achieved. These inventories must be submitted within the prescribed period following the milestone date. The EPA is recommending that States synchronize their schedules for developing the periodic inventories so that the second periodic inventory (the third inventory overall), which would be due in 1998, will actually be submitted early in 1997 (by February 13, 1997) and will address emissions in 1996. In this way, the milestone demonstration (required under section 182(g)) that is due for serious and above areas in early 1997 can be based on the periodic inventory developed by the States. Future periodic inventories then would also coincide with the subsequent milestone demonstrations rather than the later dates associated with the periodic inventory requirement. The EPA will be issuing guidance on the synchronization of the periodic inventory with the milestone compliance deadlines in the near future.

The first periodic inventory due no later than November 15, 1995 covers actual emissions for the 1993 time period. The States will be involved in significant planning activities during this time. The EPA will, in the future, provide guidance on how to integrate these emission inventory and planning activities. There could be a significant resource and effort savings effect to States that elect to accelerate the second periodic inventory so that it can also be used to demonstrate milestone attainment. Otherwise at least one additional emission inventory would be required by 1998. More information on these assessments and periodic inventories will be provided to States in guidance on emission tracking to be completed shortly.

The periodic inventory shall meet the same requirements as the base year inventory. This periodic inventory shall be based on actual emissions and shall cover VOC, NO_x, and CO emission sources. Like the base year inventory, the periodic inventory shall be based on peak ozone season temperatures, industrial activity, etc. Additional guidance is available in the "Procedures for the Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone, Volume I," May 1991.

By meeting the specific periodic inventory requirements discussed above, States will also satisfy the general periodic inventory requirements of section 172(c)(3).

(e) *Emissions statements.* Section 182(a)(3)(B) requires States to submit a SIP revision by November 15, 1992 that requires the submission of annual statements from owners or operators of each stationary source of NO_x and VOC showing the actual emissions of NO_x or VOC. The first statements are due by November 15, 1993, and should show emissions during calendar year 1992.

Each statement shall contain a certification that the information contained in the statement is accurate to the best knowledge of the individual certifying the statement. The EPA will issue additional guidance on the form and content of the statement.

States may waive the requirement for emissions statements for classes or categories of sources that emit less than 25 tons per year of NO_x or VOC if the class or category is included in the base year and periodic inventories, and emissions are calculated using emission factors established by EPA (such as those found in EPA publication AP–42) or other methods acceptable to EPA.

The EPA believes that the emission statement can aid in the development of the periodic emission inventory, serve as the AIRS Facility Subsystem (AFS) update, and track progress for point sources greater than 25 tons/year.

(f) *NSR.* The statutory NSR permit requirements for marginal ozone nonattainment areas are generally contained in the Act under section 172(c)(5), revised section 173, and in newly enacted subpart 2 of part D. These are the minimum requirements that States must include in an approvable implementation plan. A discussion of general NSR permit requirements is contained in section III.G. of this preamble. Section 182(a)(2)(C) requires that States adopt and submit revised NSR regulations for all ozone nonattainiment areas classified as marginal or above which incorporate the new provisions of the 1990 CAA, and correct existing regulations to incorporate all NSR provisions in effect immediately before the date of enactment.

(1) *Major stationary source.* For ozone nonattainment areas classified as marginal areas, the term "major stationary source" means any stationary source that emits or has the potential to emit 100 tons per year or more (see discussion in section III.A.9). Lower size thresholds apply to other area classifications and the VOC, to ozone transport areas.

(2) *Offset ratios.* For the purpose of satisfying the emissions offset reduction requirements of section 173(a)(1)(A), the emissions offset ratio is the ratio of total actual emissions reductions to total allowable emissions increases of such pollutant from the new source. For ozone nonattainment areas classified as marginal areas, the emissions offset ratio is at least 1.1 to 1. As per section 173(c)(1), the new or modified source may obtain offsets from the same source or other sources in the same nonattainment area, and in some cases from another nonattainment area if the other area has equal or higher nonattainiment classification, and the emissions from the other area contribute to a violation of the ambient standard in the area where the new or modified source is locating. In addition, prior to permit issuance under section 173, the nonattainiment plan provisions must demonstrate reasonable further progress (RFP) by requiring sufficient emission reductions to offset emissions increases from new or modified small (nonmajor) sources in the area.

(g) *Rural transport areas.* If an area meets the requirements discussed below and is treated by the Administrator as a rural transport area (RTA) as determined using procedures consistent with the EPA guidance "Criteria for Assessing the Role of Transport of Ozone/Precursors in Ozone Nonattainment Areas," the SIP for such area need only meet those section 182 plan and submission requirements, including NSR provisions, that apply to marginal areas. It should be noted that the NSR requirements applicable in ozone transport regions (e.g., offsets at a 1:1.15 ratio and major VOC source threshold of 50 tons per year) supersede the marginal requirements for RTA's. If, however, a State's request that an ozone nonattainment area be treated as an RTA is denied, the area will be classified according to its design value and all section 182 requirements for that classification will apply.

According to section 182(h), the Administrator's decision to treat an ozone nonattainment area as an RTA is discretionary. This discretion may be exercised only if the Administrator finds that the area neither borders on nor contains any portion of an MSA or CMSA and if VOC (and if EPA deems them relevant, NOx) emissions emanating from the area do not significantly contribute to ozone concentrations measured within or outside of the area. This showing depends upon whether ozone concentrations within or downwind of the area results from "overwhelming transport" of ozone or precursors from sources external to the area. Guidance on determination of "overwhelming transport" is found in "Criteria for Assessing the Role of Transport of Ozone/Precursors in Ozone Nonattainment Areas." A finding of no significant contribution will be based on analysis submitted to EPA by the concerned State in advance of the

required SIP. These results must reasonably implicate an upwind area as the source of the measured ozone concentrations. Also, the area must demonstrate that its emissions are not causing a nonattainment problem in its downwind area.

Any RTA that fails to meet the marginal area attainment deadlines is subject to bump-up to the appropriate higher nonattainment status (discussed at section III.A.2.(i) of this document). However, if the area still qualifies as an RTA, although the area will be subject to the attainment date for the higher classification, it remains subject only to the submittal and implementation requirements for marginal areas. If it is found that the area no longer qualifies as an RTA, the area will be treated as the higher classified area for SIP requirements as well.

State plans for RTA's located within the interstate ozone transport regions established under section 184 must meet applicable provisions required by section 184 (b) and (c). In particular, provisions of section 184(b)(1)(B) requiring implementation of RACT with respect to all sources of VOC covered by a CTG, and the section 184(b)(2) requirements concerning implementation of vehicle refueling controls identified by the Administrator, must be implemented in a State plan covering an RTA. In addition, an RTA SIP must be revised to include whatever additional control measures are recommended under section 183(c) and whatever best available air quality monitoring and modeling techniques are identified under section 184(d). These plan revisions must be approved by the Administrator.

(h) *Reformulated gasoline "opt-in."* The Governor of any State with a marginal, moderate, serious, or severe ozone nonattainment area may apply to the Administrator to opt-in to the reformulated gasoline program established under section 211(k). Refer to section III.A.4.(o) for more discussion of the program requirements.

(i) *Bump-up provisions.* Although the primary focus of this General Preamble is on the criteria EPA will use in determining the adequacy of the many SIP submittals that are required under the 1990 CAAA, it is useful to describe the amended Act provisions regarding failures to attain or to make emission reduction milestones. The EPA believes that certain areas (in particular, marginal ozone areas) face some important issues related to the consequences of failures to attain by the applicable deadlines. The following discussion describes the basic requirements and procedures for determining and responding to failures to attain to make adequate progress and the specific implications for marginal ozone areas.

(1) *Failure to attain.* Section 181(b)(2) of the Act requires a marginal, moderate, or serious ozone nonattainment area to be reclassified to the higher of the next higher classification, or the classification associated with the area's design value at the time EPA determines that the area failed to meet the standard by the applicable attainment date. The EPA uses the term "bump-up" to describe this reclassification process. An area cannot be bumped up to the extreme classification under this provision.

The EPA must determine within 6 months after the attainment date whether an area has attained. In making this determination, EPA will use the most recently available, quality-assured air quality data covering the 3-year period up to and including the attainment date. For ozone, the average number of exceedances per year shall be used to determine whether the area has attained. For marginal ozone nonattainment areas, this means that the air quality data for the period 1991 to 1993 will be used to determine whether the area has attained by November 15, 1993. (Areas that show attainment prior to this period may be redesignated prior to November 1993 in accordance with section 107(d)(3).)

As provided in section 181(a)(5) for ozone areas, up to two 1-year extensions of the attainment date can be granted to the State if the State has met all applicable requirements, and if no more than one exceedance of the level of the NAAQS has occurred at any monitor in the year in which the area was to have attained. Because EPA will be reviewing available data to determine the attainment status, the State should submit its application for this extension as soon as the necessary air quality data are available.

If EPA determines that an area has not attained, EPA will publish a notice, and the area will be reclassified by operation of law. The Administrator may adjust the submittal dates for the requirements of the "new" classification (to "assure consistency among the required submissions" (section 182(i)), but the attainment date will be the date originally specified for that classification in Table 1 of section 181(a). For example, a marginal area has an attainment date of November 15, 1993. If the area does not attain by then, the new attainment date will be November 15, 1996 (the "original" attainment date for moderate areas at enactment) or, if its air quality would make it a higher classification, the later date associated with that classification.

States should be aware that if an area voluntarily bumps up late in its attainment period, the discretion granted by section 182(b)(1) for the Administrator to adjust schedules for implementing SIP requirements associated with the next higher classification may be seriously limited. In other words, areas that wait until the end of their attainment period before requesting to bump up after already missing implementation requirements, falling behind on their 15 percent RFP (if applicable), and experiencing continuing deterioration in air quality, are likely to have insufficient time for implementing the more stringent requirements of the next higher classification. The EPA, therefore, encourages any area that believes that it will be unable to attain by its applicable deadline, to voluntarily bump-up early enough to maximize the available time for implementing the requirements of the next higher nonattainment level. Early bump-up will help areas avoid sanctions and/or FIP implementation that could result from failure to meet SIP submittal or implementation requirements.

Although section 182(a) specifically excludes marginal areas from the contingency requirements of section 172(c)(9), marginal areas should carefully consider the benefits of contingent or advanced adoption of certain measures that could be implemented quickly should the area not attain by the 1993 date. If a marginal area fails to attain by November 15, 1993, it will become subject to the requirements for moderate areas, in particular the I/M, RACT, and 15 percent reductions requirements. These requirements would have to be met and the standard achieved by November 15, 1996, an extremely tight timeframe for these accomplishments if no prior planning and adoption actions have occurred. If the RACT rules cannot be developed and implemented and the 15 percent requirement cannot be met by November 15, 1996, the area could miss the attainment date for moderate areas and would face the even more stringent requirements for serious areas.

(2) *Special issues for marginal areas.* The retention of the moderate area attainment date for a marginal area that has been bumped up raises some important issues for marginal areas that will have difficulty attaining by the November 15, 1993 deadline. These issues become even more significant if the marginal area applies for and receives one or two of the 1-year

attainment date extensions (section 181(a)(5)).

The EPA believes that marginal areas should carefully consider the consequences of not attaining by November 15, 1993, and should take certain preliminary steps to minimize the potential of being subject to possibly unnecessary major control and planning actions. For example, according to the statutory time frames, it could be the middle of 1994 before a marginal area is bumped up to the moderate classification. If an area had not commenced any early planning and rule development activities, the area would have only 2½ years to meet all of the requirements for moderate areas (e.g., RACT rules, Stage II, 15 percent emission reduction requirement, etc.). While just making the submittals for these requirements would be difficult, it could be even more difficult for the State to implement the measures early enough to reduce emissions and have a significant impact on ozone levels by the end of 1996. As a result, the area could face the possibility of missing the 1996 attainment date for moderate areas and be bumped up again, this time to the serious classification. If the marginal area had earlier received one or two extensions (under section 181(a)(5)), the difficulty of adopting and implementing required measures before the attainment date for moderate areas would be even greater.

Given this potentially difficult situation for marginal areas, EPA strongly urges States with marginal areas that may be unable to attain by the 1993 deadline, to initiate preliminary planning and rule development activities well before that date. Furthermore, EPA proposes to require that States that request attainment date extensions for marginal areas (under section 181(a)(5)) must show in their requests that they have made a significant effort to initiate planning activities and rule development associated with the moderate classification, and that they have taken steps to begin any necessary monitoring activities to develop required information (such as ambient VOC and NO_x data) for the modeling analysis that will be required for the moderate classification. For certain control measures which would be required under the moderate classification, such as I/M, States should show that they have taken any necessary preliminary steps to ensure that the controls could be adopted and implemented quickly. For example, States should consider whether their legislative and regulatory procedures would enable these controls to be fully implemented and to achieve needed emission reductions before the attainment date for moderate areas.

Finally, EPA is considering requiring States that request attainment date extensions under section 181(a)(5) to submit their air quality data on an accelerated time schedule. This early reporting of data could help alert the State and EPA to the need to quickly begin developing and adopting the additional measures for the moderate classification, if the data in the "extension year" reveal more than one exceedance of the national standard.

(3) *Basic I/M.* In the event that a marginal ozone nonattainment area fails to attain the ozone standard by the applicable deadline or extended deadline, and is reclassified to moderate, a basic I/M program must be implemented, regardless of whether the area had an I/M program in place. The EPA intends to exercise its authority under section 182(i) to require such areas to submit a SIP meeting the basic I/M requirements within one year of the reclassification.

3. *Moderate Areas*

Moderate areas are required to meet all marginal area requirements, unless otherwise noted, as well as the following additional requirements.

(a) *Requirement for 15 percent reduction in emissions.* Section 182(b)(1) requires all ozone nonattainment areas classified moderate and above to submit by November 15, 1993, a plan revision that reflects an actual reduction in typical ozone season weekday VOC emissions of at least 15 percent during the first 6 years after enactment. The 15 percent emission reductions must be calculated from the 1990 baseline of actual emissions (adjusted per section 182(b)(1)(B)) and must account for any net growth in emission (i.e., net of growth). While section 182(b)(1) requires a reduction in VOC emissions of 15 percent, the 1990 CAAA do not require any specific numerical percentage of NO_x emission reductions prior to 1996.

The EPA's focus on typical ozone season, weekday VOC emissions—an interpretation of the requirement in section 182(b)(1)(B) for a 15 percent reduction of actual emissions during the "calendar year" of enactment—is consistent with prior EPA guidance. This guidance stems from the fact that the ozone NAAQS is an hourly standard that is generally violated during ozone-season weekdays when conditions are conducive for ozone formation. These ozone seasons are typically the summer months.

A 15 percent reduction is generally appropriate for moderate areas to attain the ozone NAAQS within the applicable timeframe. In some cases, modeling will show that less than a 15 percent reduction would be required for attainment of the standard. However, the 15 percent rate of progress requirement is intended to be the base program that all moderate and above areas must meet. This base program is necessary to ensure actual progress toward attainment in the face of uncertainties inherent with SIP planning, such as emission inventories, modeling and projection of expected control measures. Also, this base program would provide greater assurance of maintenance of the standard after attainment.

In those cases where modeling shows that reductions greater than 15 percent are necessary to attain the standard, the area will be required to achieve those additional emission reductions.

Section 182(b)(1) (B) and (D) define baseline emissions as "the total amount of actual VOC or NO_x emissions from all anthropogenic sources in the area during the calendar year of enactment," excluding the emissions that would be eliminated by FMVCP regulations promulgated by January 1, 1990, and RVP regulations promulgated by November 15, 1990, or required to be promulgated under section 211(h), which requires RVP no greater than 9.0 pounds per square inch (psi) during the high ozone season. The base year emission inventory for calendar year 1990 must be adjusted to remove the aforementioned emissions, as well as biogenic emissions and any emissions from sources outside the designated nonattainment boundary (e.g., within the 25-mile zone around the nonattainment boundaries if included in the emissions inventory). The adjusted base year inventory (i.e., baseline emissions) must contain only actual emissions occurring in the base year, 1990, within the designated nonattainment area boundaries. The baseline emissions should not include pre-enactment banked emission credits since they were not actual emissions during the calendar year of enactment.

(1) *Adjusted base year inventory calculation.* The adjusted base year inventory should be calculated in two steps. The first step consists of developing a 1990 inventory of non-mobile anthropogenic VOC emissions. The second step consists of determining the mobile portion of the inventory after the FMVCP and RVP reduction program (promulgated by the data of enactment or required by section 211(h)) are factored out.

The determination of the baseline will require the use of MOBILE4.1 to model

the effects of fleet turnover and RVP changes. For 1996, the baseline will be determined by applying the 1990 VMT to a hypothetical emission factor for 1996.

The hypothetical emission factor for the 1990 baseline in 1996 is the 1996 emission factor determined by running MOBILE4.1 using 1996 as the evaluation year and the same input parameters used to describe the FMVCP and SIP requirements in 1990, with the addition of RVP at 9 psi (or appropriate level for area). Multiplying this emission factor by the 1990 VMT results in 1990 motor vehicle baseline emissions which exclude the emissions reductions that would be eliminated in 1996 as a result of fleet turnover under the pre-enactment FMVCP and the section 211(h) RVP requirements. The 1990 motor vehicle baseline emissions for 1996 are added to the 1990 inventory of non-motor vehicle anthropogenic VOC emissions to calculate the 1990 total baseline emissions for 1996. This number is the adjusted base year inventory needed to calculate the amount of emissions reductions needed by 1996, as well as the target level of emissions in 1996.

(2) *Calculation of target level of emissions.* After the adjusted base year inventory is developed, the 1996 target level of emissions would be calculated by multiplying the adjusted base year inventory by 0.85 and then subtracting from this product the emission reductions expected to result by 1996 from corrections to RACT rules and I/M programs.

Once the 1996 target level of emissions is calculated, States must develop whatever control strategies are needed to meet that target. Some air planning agencies may be used to thinking in terms of the emissions reduction required relative to a current control strategy projection (particularly for stationary sources), rather than a target level of emissions. Projections of 1996 emissions would be used to calculate the required emissions reduction expressed on such a basis by simply taking the difference between the 1996 projection inventory (without controls applied) and the 1996 target level of emissions. However, States that choose this approach should be aware that the 1996 target level is dependent only on the 1990 emissions inventory, whereas the calculation of an emission reduction required relative to the current control strategy projection depends on the accuracy of the 1996 projection, which in turn depends on the estimate of future growth in activities. The assessment of whether an area has met the RFP requirement in 1996 will be based on whether the area is at or below the 1996 target level of emissions, and not whether the area has achieved a certain actual reduction relative to having maintained the current control strategy. The following formulas describe how to calculate the 1996 target level of emissions.

Formulas:

BE_{96} = 1990 Baseline Emissions
= 1990 Nonmotor vehicle emissions + (1990 VMT × hypothetical 1996 MOBILE4.1 emission factor)
TL_{96} = 1996 target level of emissions
Corrections = RACT rules and I/M program corrections
$TL_{96} = BE_{96} \times (0.85) -$ corrections

(3) *Emission factor adjustments.* Emission factors, as well as inventory calculation methodologies, are continually being improved. If emission factors or methodologies change significantly, EPA may advise the States to correct the base year emission inventory to reflect such changes. If significant changes occur in emission factors or methodologies between enactment and November 15, 1993 (due date for 15 percent demonstration), EPA may require States to make corrections to the base year emission inventory, as well as to the adjusted baseline and the 1996 target level of emissions. If, however, changes occur after the 15 percent demonstration is submitted but before November 15, 1996, then the States would not have to make corrections for purposes of reconciling attainment of the 15 percent milestone. Serious areas should also refer to the discussion on the rate of progress demonstration (section III.A.4(f)) for guidance on changes that might occur before November 15, 1994, and the impact on the post 6-year 3 percent rate of progress demonstration.

(4) *Creditable emission reductions.* In developing the 15 percent reduction control strategy required to be submitted as a SIP revision, States must keep in mind that the 1990 CAAA explicitly disallowed certain reductions from counting toward fulfilling the 15 percent reduction in emissions requirement.

All emission reductions from State or Federal programs are creditable toward the 15 percent progress requirement except for the following:

1. The FMVCP tailpipe or evaporative standards promulgated prior to 1990.

2. Federal regulations on RVP promulgated by November 15, 1990, or required under section 211(h).

3. State regulations required under section 182(a)(2)(A) submitted to correct deficiencies in existing VOC RACT regulations or previously required RACT rules.

4. State regulations required under section 182(a)(2)(B) submitted to correct deficiencies in existing I/M programs or previously required I/M programs.

However, all real/actual reductions, regardless of origin, will contribute to attainment even if they are not creditable toward the 15 percent requirement. While emission reductions resulting from required corrections to VOC RACT rules or I/M programs are not creditable toward the required 15 percent reduction, any future reductions resulting from measures not associated with the required corrections would be creditable. For example, reductions are creditable where the State revises the emission limit or changes the applicability threshold beyond the level required previously for the area in EPA guidance, and these modifications result in further emissions reductions. Other examples of creditable reductions include applying regulations to the new portions of a pre-enactment nonattainment area not previously subject to the regulations, and adopting TCM's listed in section 108(f) that are not already in the SIP. Reductions achieved through rules adopted pursuant to any new CTG are creditable only to the extent that the reductions were not required by a SIP or FIP developed under the pre-amended Act. For example, a non-CTG rule in a SIP, or required to be included in such a SIP prior to enactment, required an 81 percent reduction in VOC emissions. The SIP is then revised to include a post-enactment CTG which recommends a 90 percent reduction in VOC emissions. To the extent that a specific source achieves the 90 percent reduction, only 9 percent would be creditable. In addition, if a State was required to adopt a RACT rule for a particular source under the pre-amended Act but failed to do so, adoption of a rule for that source would be considered part of the RACT fix-ups. Therefore, any reductions achieved by such a rule would not be creditable.

Pre-enactment banked emissions reductions credits are not creditable toward the 15 percent progress requirement. However, for purposes of equity, EPA encourages States to allow sources to use such banked emissions credits for offsets and netting. When States use such banked credits for offsets and netting to the extent otherwise creditable under the part D NSR regulations, these pre-enactment emissions credits must be treated as growth. Consequently, this "growth" must be accounted for, as is the case with all other anticipated growth, in order to ensure that it does not interfere with the 15 percent rate of progress

requirement (which is "net" of growth). In addition, when such growth emissions are used as offsets, they must be applied in accordance with the offset ratio prescribed for the area of concern (e.g., 1.3 to 1 for severe areas, etc.). All pre-enactment banked credits must be included in the nonattainment areas attainment demonstration for ozone to the extent that the State expects that such credits will be used for offsets or netting prior to attainment of the ambient standards. Credits used after that date will need to be consistent with the area's plan for maintenance of the ambient standard. The EPA expects to provide additional clarification on the use of banked emissions in its NSR regulatory update package.

States can only count emissions reductions toward the 15 percent requirement if such emissions meet the creditability and reduction requirements. All creditable emission reductions must be real, permanent, and enforceable. States must keep careful records of all emissions reductions to ensure that the same reductions are not "double-counted" or, more simply, used more than one time (i.e., reductions cannot be used for offsets and to meet the 15 percent rate of progress requirement).

Many states with pre-existing nonattainment areas have already adopted rules defining RACT for most of the larger sources, including non-CTG categories. In such cases, there is considerable concern about what additional measures are needed to meet the 15 percent rate of progress requirement.

One method of achieving creditable reductions from stationary sources in such areas is to improve implementation of rules for existing regulations. This is referred to as "rule effectiveness" improvement. These improvements are subject to the same creditability constraints as are the other emissions reductions. For example, rule effectiveness improvements resulting from corrections to the existing VOC RACT rules made pursuant to section 182(a) are not creditable. Rule effectiveness improvements must reflect real emissions reductions resulting from specific implementation program improvements. Actual emissions reductions must result from improving rule effectiveness; simply improving the methods for calculating rule effectiveness is not creditable.

Rule effectiveness improvements resulting in emissions reductions must be adequately documented before being credited toward meeting the rate of progress requirement. Two methods exist for adequately documenting rule effectiveness improvements. First, a rule effectiveness test meeting EPA's protocol requirements can be performed before and after the improvement is implemented (for further information refer to the March 31, 1988 memorandum from John S. Seitz, Director Stationary Source Compliance Division, to Regional Air Division Directors, regarding "Implementation of Rule Effectiveness Studies"). For example, if rule effectiveness increases from 50 to 75 percent, then the emissions reductions associated with this improvement would be creditable. Second, if the default value of 80 percent is assumed before the improvement and an EPA protocol test is performed after the improvement, only the amount greater than 80 percent is creditable. Thus, if the EPA Protocol test indicates an 85 percent rule effectiveness, then the increase in emissions reductions associated with the improvement from 80 to 85 percent would be creditable toward meeting the VOC progress requirement. If the EPA protocol test indicates that the 80 percent default was incorrect and the rule effectiveness was actually less than 80 percent, then the emissions inventory and the 15 percent requirement must be recalculated.

The CAAA require that the 15 percent emissions reductions come from the baseline emissions. The baseline emissions are defined to be all emissions "in the area," (less required adjustments) which EPA interprets to mean emissions emanating from the designated nonattainment area. All emissions reductions must therefore come from within the designated nonattainment area. Of course, emissions reduction strategies applied to sources just outside the nonattainment area may have a beneficial effect on the nonattainment problem within the designated area.

After the control strategy is developed, the regulations needed to implement the control strategy must be developed and adopted by the State. The control strategy along with the associated regulations must be submitted to EPA by November 15, 1993. The adjusted base year inventory and the 1996 projection inventory (without control measure reduction applied) should be submitted no later than November 15, 1992.

States should be aware of the implications of late implementation of control measures. Section 182(b)(1)(A) requires that the control strategy contain provisions for such specific annual reductions as necessary to attain the standard by the applicable attainment date. If the control strategy effort for a moderate area shows that an amount greater than 15 percent of creditable reductions when combined with the noncreditable reductions is needed to attain the ozone NAAQS by November 15, 1996, the State should plan on achieving the emissions reductions as early as possible. For that matter, any moderate area should plan on implementing control measures as expeditiously as practicable, since EPA will look at air quality data for 1994–1996 to determine if a moderate area has attained the ozone NAAQS. Section 182(b)(2) requires EPA to determine within 6 months after an applicable attainment date whether the area attained the standard by that date, which will dictate the use of the most recent 3 years of air quality data prior to that date. By delaying the implementation of measures until 1996, and thus delaying the resulting emissions reductions, moderate areas may be reclassified as serious areas because emissions reductions will not be achieved early enough to affect the air quality and to attain the ozone NAAQS. In fact, any regulations required to meet the greater than 15 percent rate of progress requirement to attain the ozone NAAQS must be submitted with the control strategy by November 15, 1993, per the requirement making specific annual VOC and NO_x reductions needed to attain the NAAQS due by November 15, 1993.

A moderate nonattainment area can achieve less than the 15 percent required reductions under certain rather restrictive circumstances. The State must demonstrate that the area has an NSR program equivalent to the requirements in extreme areas (section 182(e)), except that "major source" must include any source that emits, or has the potential to emit, 5 tons/year. Additionally, all major sources (down to 5 tons per year) in the area must be required to have RACT-level controls. The plan must also include all measures that can be feasibly implemented in the area, in light of technological achievability. The term "technological achievability" refers to measures that can be successfully implemented in actual practice, not measures that merely appear feasible in a research setting, for example. The EPA will consider on an area-by-area basis what these measures may be, with no presumption beyond that specifically given in the last sentence of section 182(b)(1)(A)(ii), which states to qualify for a less than 15 percent reduction, the State must at least demonstrate that the SIP for the area includes all measures achieved in practice by sources in the same source category in nonattainment

areas of the next higher classification. The term "achieved in practice" is intended to include those measures that have been successfully implemented in one or more nonattainment area of the next higher category. The waiver for the 15 percent progress requirement does not, under section 182(e), apply to nonattainment areas classified as extreme.

All multi-State ozone nonattainment areas should refer to section (III.A.9) for further instructions on coordinating SIP revisions and on developing the attainment demonstration.

By meeting the specific 15 percent reduction requirement discussed above, the State will also satisfy the general RFP requirements of section 172(c)(2) for the time period discussed.

(b) *Attainment demonstration.* Section 182(b)(1)(A) requires a SIP for a moderate ozone nonattainment area to provide for specific annual reductions in VOC and NO_x emissions "as necessary to attain the national primary ambient air quality standard for ozone." This requirement can be met through applying EPA-approved modeling techiniques described in the current version of EPA's "Guideline on Air Quality Models (Revised)." The Urban Airshed Model, a photochemical grid model, is recommended for modeling applications involving entire urban areas. In addition, for moderate areas contained solely in one State, the empirical model, city-specific Empirical Kinetic Modeling Approach (EKMA), may be an acceptable modeling technique. The State should consult with EPA prior to selection of a modeling technique. If EKMA is used, the attainment demonstration is due by November 1993.

In other cases, a State might choose to utilize a photochemical grid model instead of EKMA. Grid modeling will generally provide a better tool for decision makers and the necessary additional time may, therefore, be justified. In such cases, States should consult with EPA on a case-by-case basis on an acceptable approach to meeting the section 182(b)(1)(A) requirement through an interim SIP submittal by November 1993 and a completed attainment demonstration by November 1994. The interim submittal would include, at a minimum, evidence that grid modeling is well under way and a commitment, with schedule, to complete the modeling and submit it as a SIP revision by November 1994. The completed attainment demonstration would include any additional controls needed for attainment. Separate attainment demonstration requirements apply to multi-State moderate areas, as described in section III.A.9.

When projecting motor vehicle emissions for the attainment demonstration, States should use the same procedures as given in EPA VMT forecasting and tracking guidance for moderate CO nonattainment areas. The use of this guidance is limited to projecting motor vehicle emissions, and the information on the reporting requirements for moderate CO areas is not applicable.

The EPA realizes that in some cases certain demonstrations will be complicated by the impact of ozone and precursor transport, and by the RFP requirements and attainment deadlines that apply to areas of different classifications. For example, a moderate area located within the transport region is still subject to the 6-year attainment deadline and to the section 182(b)(2)(A) requirement to provide annual emissions reductions in its plan to attain by the deadline. However, this area is (at least, presumptively) being affected by transport from another area(s) and is, as well, possibly affecting other areas itself. If the "other" area that are affecting air quality levels in this moderate area are classified as serious or severe, those areas will be reducing their emissions over a longer timeframe in order to attain the standard. That is, these "other" areas could still be having significant effects on the moderate area at the time when the moderate area must demonstrate attainment. This same phenomenon can also arise in areas that may be impacted by transport but are not yet in a transport region established under section 176A or section 184.

The EPA believes that these situations are somewhat analogous to the situations addressed in section 182(h) for rural transport areas and in section 182(j) for multi-State ozone nonattainment areas. Section 182(h) recognizes that the ozone problem in a rural transport area is almost entirely attributable to emissions in an upwind area. Therefore, the only requirements for the rural area are the minimal requirements specified for marginal areas, the assumption being that the controls in the upwind area will solve the problem in the rural transport area as well. In a similar way, section 182(j)(2) for multi-State nonattainment areas and section 179B for international areas recognize that an area in one State may not be able to demonstrate attainmemt if other States or area(s) in another country do not meet similar requirements under section 182. In such cases, even though the area would not be able to demonstrate attainment, the sanction provisions of section 179 shall not apply.

In the above cases, there is a recognition in the CAAA that at some point, an area being affected by emissions from another area(s) may not be able to achieve sufficient emissions reductions on its own to demonstrate attainment. In these cases the area is relieved from certain requirements in the CAAA which would require additional controls. There is no explicit recognition in the CAAA of this occurring in other situations. The EPA believes, however, that other similar situations (as discussed above) are likely to arise, and that a reasonable approach is needed to ensure equitable treatment of the areas and expeditious attainment of the standard.

In particular, there are two situations in which an area might be subject to additional emissions reductions requirements related to the demonstration of attainment. In the first situation, an area might be receiving such high levels of transport that even if it reduced its emissions dramatically (e.g., totally eliminated its own emissions), the incoming ozone and precursors would be high enough to continue to cause violations of the standard beyond the applicable attainment date. In the second situation, the area might be able to achieve additional reductions (beyond those already required under section 182). Even where those additional reductions could be achieved to demonstrate attainment, the question arises whether it is equitable to require those reductions or to allow more time for the reductions in the "upwind" area to take place. As described above, however, the statute provides no express relief for these situations. The area does have the option of requesting to be classified to the next higher classification. Thus, where the demonstration of attainment is complicated by transport between two areas of different classifications, the State is still responsible for developing and submitting demonstrations which show that the standard will be attained by the applicable date. In other words, the State must provide for sufficient emissions reductions on a schedule that will ensure attainment in its moderate area, for example, within 6 years after enactment. The EPA believes that the wording in section 182(b)(1)(A)(i) requires the State to develop a plan providing such emissions reductions.

(c) *Contingency measures.* The general requirements for nonattainment plans under section 172(c)(9) specify that each plan must contain additional measures that will take effect without

further action by the State or EPA if an area either fails to make RFP or to attain the standard by the applicable date. These provisions do not apply to marginal ozone nonattainment areas (section 182(a)). This important issue for marginal areas is discussed further under the section on bump-ups (reclassifications upon failure to attain the standard). Additional contingency provisions are included in section 182(c)(9) for serious ozone nonattainment areas and in section 187(a)(3) for CO nonattainment areas with design values above 12.7 ppm. These latter provisions are similar to the section 172(c)(9) requirements except that the focus in section 182 (ozone areas) is on meeting emissions reductions milestones (section 182(g)), and the focus in section 187 (CO areas) is on consistency between previously projected and actual or subsequently projected VMT levels, as well as failure to attain by the required deadline. These contingency measures for SIP's, as required under the CAAA, supersede the contingency requirements contained in the 1982 ozone and CO SIP guidance, 46 FR 7182 (January 21, 1981).

Ozone areas classified as moderate or above must include in their submittals, which are due by November 15, 1993 as set by EPA under section 172(b), contingency measures to be implemented if RFP is not achieved or if the standard is not attained by the applicable date. This contingency submittal date is appropriate since States must demonstrate attainment of the 15 percent milestone at this time. The 1990 CAAA do not specify how many contingency measures are needed or the magnitude of emissions reductions that must be provided by these measures. Assuming that all of the State measures may fail to produce their expected reductions, one interpretation of the CAAA is that a State would have to adopt sufficient contingency measures in this November 15, 1993 plan to make up for this entire shortfall. In other words, the State would have to adopt "double" the measures needed to satisfy the applicable emissions reduction requirements. The EPA believes that this would be an unreasonable requirement given the difficulty many States will already have in identifying and adopting sufficient measures to meet RFP and other requirements.

The EPA believes that the contingency measures should, at a minimum, ensure that an appropriate level of emissions reduction progress continues to be made if attainment of RFP is not achieved and additional planning by the State is needed. Therefore, EPA will interpret the Act to require States with moderate and above ozone nonattainment areas to include sufficient contingency measures in the November 1993 submittal so that, upon implementation of such measures, additional [2] emissions reductions of up to 3 percent of the emissions in the adjusted base year inventory [3] (or such lesser percentage that will cure the identified failure) would be achieved in the year following the year in which the failure has been identified. This "additional" reduction would ensure that progress toward attainment occurs at a rate similar to that specified under the RFP requirements for moderate areas (i.e., 3 percent per year), and that the State will achieve these reductions while conducting additional control measure development and implementation as necessary to correct the shortfall in emissions reductions or to adopt newly required measures resulting from the bump-up to a higher classification. Under this approach, the State would have 1 year to modify its SIP and take other corrective action needed to ensure that milestones are achieved and that RFP toward attainment continues. However, if a State can show that its SIP can be revised to correct any possible failure in less than 1 year, then proportionally less than 3 percent may be considered. In the case of moderate areas, contingency measures would be needed when the area fails to attain the standard by the attainment date (or, for serious and above areas, if the area fails to meet the rate-of-progress requirements for any milestone other than one falling on an attainment year, e.g., the 15 percent required by the end of 1996). If the area fails to attain, it would be bumped up to the serious classification [4] and become subject to the requirements that apply to that classification. Therefore, the contingency measures would be implemented while the State developed and adopted the new measures associated with the serious classification.

One way that contingency measures could meet this requirement is by requiring the early implementation of measures scheduled for implementation at a later date in the SIP. For example, a State could include as a contingency measure the requirements that measures which would take place in later years if the area met its RFP target or attainment deadline, would take effect earlier if the area did not meet its RFP target or attainment deadline. Within 1 year of the triggering of a contingency requiring the early implementation of control measures, the State must submit a revision to the SIP containing whatever additional measures will be needed to backfill the SIP with replacement measures to cure any eventual shortfall that would occur as the result of the early use of the contingency measure.

If EPA notifies an area that a shortfall exists, and that the shortfall is less than 3 percent, the State may choose which contingency measures in its intital (3 percent) contingency plan to implement to meet the shortfall.

The EPA believes that a 3-percent contingency will be adequate for most areas; however, there is the possibility that in some cases 3 percent may be inadequate especially if corrective action is not instituted in a timely manner prior to a milestone date.

To address this possible shortfall (i.e., more than a 3-percent shortfall), EPA will require moderate and above areas to submit both contingency measures providing for a 3-percent reduction and an enforceable commitment to submit an annual tracking program describing the degree to which it had achieved its projected annual emissions reduction (see "Tracking Plan Implementation," section III.A.3(d)). In that annual report, the State must describe what actions it will take to make up for any shortfall before the next milestone, e.g., adopt and implement additional measures (aside from the contingency measures) so as to prevent failure to meet the milestone and therefore not triggering the 3-percent contingency measures. Alternatively, the States must provide for additional contingency measures sufficient to cover the additional shortfall expected due to the milestone failure. Within 1 year from the submittal of such report, the State must submit whatever additional measures will be needed to cure this shortfall. Therefore, more than the "3 percent" of contingency measures could be available as a reserve, even though EPA would only require sufficient contingency measures to be implemented to compensate for the degree of failure. In other words, a shortfall of 2 percent would require implementation of sufficient measures to make up for the 2 percent, not the entire

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[2] These emission reductions would be in addition to those that were already scheduled to occur in accordance with the plan for the area.

[3] The adjusted base year inventory is that inventory specified by the provisions under section 182(b)(1)(B).

[4] The moderate area would actually be bumped up to either of the next higher classifications (i.e., serious or severe; areas cannot be bumped up to extreme for failure to attain), if justified by the air quality levels (the design value) at the time.

3 percent (or possibly more, due to the above procedure).

Sections 172(c)(9), 182(c)(9), and 187(a)(3) specify that the contingency measures shall "take effect without further action by the State or the Administrator." The EPA interprets this requirement to be that no further rulemaking activities by the State or EPA would be needed to implement the contingency measures. The EPA recognizes that certain actions, such as notification of sources, modification of permits, etc., would probably be needed before a measure could be implemented effectively. 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 review. In general, EPA will expect all actions needed to affect full implementation of the measures to occur within 60 days after EPA notifies the State of its failure.

(d) *Tracking plan implementation.* Section 182(b)(1)(A) of the Act requires States with ozone nonattainment areas classified as moderate or higher to submit plans that contain certain "specific annual reductions in emissions of volatile organic compounds and oxides of nitrogen as necessary to attain the national primary ambient air quality standard for ozone by the attainment date applicable under this Act."

Even though the 1990 CAAA contain more specifications for evaluating whether the required emissions reductions have been achieved than the Act previously did, EPA believes that additional actions are needed to assess "interim" State progress in achieving the milestones, which occur (for serious and above areas) 6 years after enactment and every 3 years thereafter (as discussed in section III.A.4.(f)). Furthermore, sections 171(1) and 172(c)(2) provide that all SIP's must require annual incremental emissions reductions as needed to attain by the applicable date.

To meet the section 182(b)(1)(A) requirements, the State plans for moderate and above ozone areas must project the annual progress (i.e., the implementation of measures with the appropriate schedules and the expected emissions reductions) that will result from their control strategies. (See discussion under section III.A.3.(a), requirement for 15 percent reduction in emissions.) These projections must be contained in the State submittal due by November 15, 1993, and must demonstrate that the area will achieve a 15 percent net reduction in VOC emissions (plus whatever additional reductions are needed to attain) by November 15, 1996.

The primary means of demonstrating rate of progress will be through the periodic inventories (i.e., complete, actual inventories) submitted every 3 years. At this time, EPA intends to rely on existing reporting requirements such as emissions statements, compliance certifications, periodic inventories, and the annual AIRS update, rather than imposing additional reporting requirements on the States.

(e) *Major stationary source definition.* For ozone nonattainment areas classified as moderate areas, the term "major stationary source," for purposes of the NSR program and (as discussed below) the RACT requirements for major non-CTG sources, means any stationary source that emits or has the potential to emit 100 tons per year or more.

(f) *RACT "catch-ups"*—(1) *Applicability.* The 1990 CAAA require moderate areas to adopt RACT standards for three types of sources or source categories. This requirement is in addition to the RACT "fix-up" requirement of section 182(a)(2)(A), discussed in section III.A.2.(b) above. The RACT catch-up requirement is meant to ensure that all moderate and above nonattainment areas, regardless of time of designation, have in place all RACT for source categories covered by the CTG's and for major sources that are not subject to a CTG. Stated differently, it requires moderate and above nonattainment areas that previously were exempt from certain (or all) RACT requirements, to "catch up" to those nonattainment areas that were subject to those requirements during that earlier period.

All States should submit negative declarations for those source categories for which they are not adopting CTG-based regulations (because they have no sources above the CTG recommended threshold) regardless of whether such negative declarations were made for an earlier State implementation plan. This is necessary since there may now be sources in the nonattainment area that previously did not exist, or in areas where the boundaries of the nonattainment area have expanded, there may be sources in the new portion of the nonattainment area which should not be overlooked.

Under the first category of requirements in section 182(b)(2) (subparagraph [A]), nonattainment areas are required to adopt RACT for all VOC sources covered by any CTG document issued by the Administrator after enactment and before the area is required to attain the standard. The EPA is required to adopt 11 CTG's before November 15, 1993 (section 183). Although EPA has not yet issued these 11 CTG's, EPA has issued a CTG document in which it lists the 11 CTG's that the Agency plans to issue in accordance with section 183, and establishes the time tables for submittal of RACT rules applicable to the sources covered by those CTG's. This document is located in appendix E.

Under the second set of RACT requirements (subparagraph [B]), the State must adopt provisions applying RACT requirements to all VOC sources covered by any CTG issued before the date of enactment of the new law, even if the CTG was not previously applicable in the area under the previous law. Under the requirements established for implementing the Act prior to the 1990 CAAA, some nonattainment areas were not required to apply RACT to all sources for which there were CTG's. These include areas that originally projected attainment by 1982 and that were not subject to a later EPA call letter for SIP revisions. These areas had to apply RACT for the source categories covered by the Group I and II CTG's that had been issued before the 1982 attainment date; however, they were not required to apply RACT to the categories covered by the Group III CTG's, which were issued after the 1982 attainment date. Thus, for example, the new law requires any nonattainment areas not previously subject to all the CTG's to "catch up" and apply RACT to all sources covered by all the CTG documents. Nonattainment areas not previously required to apply RACT to sources covered by Group III CTG's will have to do so in the SIP revisions. In addition, areas previously consider rural nonattainment areas, which had to apply RACT only to certain major sources in certain CTG categories under prior policy, will have to revise their SIP's to apply RACT to all sources, including nonmajor sources that are covered by any CTG. This requirement does not apply, however, to RTA's that satisfy section 182(h) as discussed in section III.A.2.(g).

In the third case (subparagraph [C]), States are to adopt plans that apply RACT to all other major stationary sources of VOC's in the area, even if no CTG has been issued by EPA with respect to that source. The burden falls on the State to determine individual RACT rules for each of the sources or a "catch-all" RACT rule that would cover major non-CTG sources. In the past, only certain nonattainment areas were required to adopt such "non-CTG"

RACT rules. Under subparagraph (C), all other moderate to extreme nonattainment areas must "catch up" by adopting RACT rule requirements for major non-CTG sources.

(2) *Schedule.* For sources subject to a post-enactment CTG document, States must adopt RACT rules in accordance with the schedule set forth in a post-enactment CTG document. The EPA has issued its first post-enactment CTG document, attached as Appendix E, which establishes the list of the 11 CTG's EPA plans to issue and the applicable dates for submittal of RACT rules for sources subject to a post-enactment CTG. In the CTG document, EPA has provided that States must comply with the RACT submittal time tables established in an applicable CTG. These time tables will establish RACT submittal dates and implementation dates. However, if no CTG has been issued and, therefore, no time table has been established by November 15, 1993, for one or more source categories, the State must submit RACT rules applicable to that source or source category by November 15, 1994. In such a case, those rules must provide that the source must implement those requirements by May 15, 1995.

Areas must submit RACT "catch up" rules for sources covered by a pre-enactment CTG and for major sources not subject to a pre-enactment CTG or covered by the CTG document in Appendix E in the form of a SIP revision request, within 2 years of enactment (i.e., by November 15, 1992). This submittal should also identify sources that are major but which are subject to a post-enactment CTG document. The SIP revisions must provide for the implementation of the RACT measures as expeditiously as practicable, but no later than May 31, 1995.

(3) *Interface with early reductions.* The EPA is required to promulgate maximum achievable control technology (MACT) standards under section 112 for sources which emit hazardous air pollutants (at a minimum, the 189 pollutants listed in section 112(b)(1)). These standards will be promulgated by November 15, 2000 (section 112(e)). The EPA must promulgate the first set of MACT standards by November 15, 1992. Section 112 also provides a mechanism whereby sources may elect to defer compliance with an applicable standard by achieving an early 90 percent (95 percent for particulate matter) reduction in emissions of hazardous air pollutants at specified units (section 112(i)(5)). For sources subject to the first round of MACT standards, a source can obtain the 6-year extension if it commits to make the 90 percent reduction prior to proposal of the MACT standard and actually achieves the 90 percent reduction prior to January 1, 1994. For later standards, the applicant must demonstrate that the 90 percent reduction has been achieved prior to proposal of the applicable MACT standard. Therefore, within the next few months, the sources that are affected by the first phase of MACT standards may begin to submit enforceable commitments for the early reductions program.

In some instances, a source that elects to participate in the early reductions program will also be subject to a future RACT requirement under section 182. Sources may be hesitant to participate in the early reductions program because of the uncertainty regarding future, as yet unspecified, RACT requirements. To alleviate concern about certain RACT requirements, where a source is not subject to a RACT requirement (State is not yet obligated to adopt under the CAAA) at the time it submits an early reductions plan but subsequently becomes subject to such a requirement, EPA believes that it is reasonable to consider the early reductions program in its analysis of what RACT is for that source. In other words, when the State does submit a SIP revision with new RACT requirements that would be applicable to a source that elected to participate in the early reductions program, EPA will consider the reductions made through the program as a factor in determining if the source has implemented a RACT level of control. The EPA anticipates that the fact that a source has made a 90 percent reduction in overall VOC emissions from specified emissions points will be a major consideration in establishing RACT for those emissions points.[5] This issue will be discussed in more detail in the rulemaking on the early reductions program.

As a general rule, EPA will not revisit the RACT issue once the deferment of compliance with a MACT standard has ended. In most cases, the MACT controls should be more stringent than the reductions achieved through the early reductions program. Therefore, once MACT is in place, VOC emissions should not increase.

[5] These principles are based on the assumption that a source is not reducing its hazardous air pollutants by replacing them with nonhazardous VOC's. While EPA recognizes this as a legitimate approach for reducing hazardous air pollutants, EPA would not be able to consider this type of program as a factor in establishing RACT for the source if it does not achieve any real reductions of VOC emissions.

(4) *Guidance.* Under section 183, EPA is to issue several forms of guidance that should help the States meet the requirements of section 182(b)(2). The EPA is required to issue CTG's for VOC emissions from 11 categories of stationary sources for which CTG's have not previously been issued. In addition, EPA must issue CTG's to control VOC emissions from aerospace coatings and solvents and to control emissions from paints, coatings, and solvents used in shipbuilding operations and ship repair. All of these documents are due within 3 years of enactment. The EPA must also conduct a study of VOC emissions from consumer or commercial products and submit a report to Congress not later than 3 years after enactment. Based on the study and report, EPA is required to regulate categories of consumer and commercial products within the time frame set forth in section 183(e)(3)(A).

In addition, the CAA require EPA to recommend alternative control techniques (ACT's) for all categories of stationary sources of VOC and NOx that emit or have the potential to emit 25 tons per year or more of such pollutant. These documents are also due within 3 years of enactment. While these documents will not contain presumptive RACT, they will contain much of the background information on control technologies, costs, etc., which can be used by the States in supporting RACT determinations for major non-CTG sources.

Finally, within 1 year of enactment, EPA is to issue guidance on evaluating the relative cost effectiveness of various control options for controlling emissions from existing stationary sources that contribute to nonattainment. In addition, under section 108(h), EPA is to establish a central data base to make information available concerning emissions control technology, including information from SIP's requiring permits.

(g) *Gasoline vapor recovery.* (Stage II Vapor Recovery Systems). Section 182(b)(3) mandates that States submit a revised SIP by November 15, 1992 that requires owners or operators of gasoline dispensing systems to install and operate gasoline vehicle refueling vapor recovery ("Stage II") systems in ozone nonattainment areas designated as moderate and above. Private fueling facilities (such as government and company fleet fueling facilities) as well as retailers, are subject to the Stage II requirements. Stage II is required at gasoline dispensing facilities that dispense more than 10,000 gallons of gasoline per month (or 50,000 gallons per month for the "independent small business marketers" defined under

section 324). States must require Stage II to be effective under a specified phase-in schedule of 6 months after the State adopts the required regulation for stations constructed after November 15, 1990; 1 year after the adoption date for stations dispensing at least 100,000 gallons per month, based on the 2-year period before the adoption date; and 2 years after the adoption date for all other facilities required to install controls. Also, as appropriate, EPA shall issue guidance concerning the effectiveness of Stage II systems.

Stage II systems have been installed and operated in California for over 10 years and in some other portion of the country for a shorter period. Areas with existing Stage II programs have been implementing their programs using the same approach used in California. The California Air Resources Board (CARB) has been testing and certifying systems for at least 95 percent vapor recovery using established test procedures and methods. Once a system has been certified, a station can install the same Stage II system design without needing to test for 95 percent control effectiveness. To ensure that they are properly installed and maintained, systems are tested with low-cost vapor leakage and blockage tests at installation and then subjected to periodic enforcement inspections.

The EPA intends to require all States to adopt a similar Stage II program approach. That is, States would be required to prescribe the use of Stage II systems that achieve at least 95 percent control of VOC's and that are properly installed and operated.

As an alternative to testing each station for 95 percent control effectiveness, States may require installed Stage II systems to be certified to achieve at least 95 percent either by CARB, or by using CARB test procedures and methods or equivalent test procedures and methods developed by the State and submitted as a SIP revision. In addition, States must require the installed systems to be tested for proper installation and must perform all necessary enforcement.

Supporting and background material for developing, implementing, and enforcing this type of program is provided in technical ("Technical Guidance—Stage II Vapor Recovery Systems for Control of Vehicle Refueling Emissions at Gasoline Dispensing Facilities—Volume 1," November 1991) and enforcement ("Enforcement Guidance for State II Vehicle Refueling Control Programs," December 1991) guidance that the Agency has issued. The Agency now notifies the public that this is guidance issued by the Administrator pursuant to section 182(b)(3)(A).

Additional Stage II provisions contained in section 202(a)(6) concern onboard (on-the-vehicle) vehicle refueling control standards, which are to be developed after consultation with the Secretary of Transportation regarding the safety of onboard systems. Under this section, States are not required to apply the Stage II requirements of section 182(b)(3), gasoline vapor recovery, to facilities located in moderate ozone areas if EPA promulgates onboard refueling control standards. These provisions will be addressed in a separate Federal Register notice.

(h) *Basic I/M.* Section 182(b)(4) requires moderate ozone nonattainment areas to implement basic I/M programs at least as stringent as those required in section 182(a)(2)(B) immediately upon enactment, regardless of whether an I/M program was previously required. Therefore, all moderate areas must either continue existing I/M programs and make corrections to programs required by existing policy or to programs committed to in the SIP in effect at enactment, whichever is more stringent; or develop basic I/M programs consistent with EPA guidance. These areas must also submit revisions addressing revised basic I/M program policy for new and existing programs once revised policy is published. The I/M programs are required in the urbanized area portions of the nonattainment area.

The statute requires these plans "immediately" after enactment, even though in a few cases such areas may be subject to this requirement for the first time. The EPA would normally provide at least 1 year for an area newly subject to such requirements to adopt and implement an I/M program. The EPA will use its authority under the new section 110(k)(4) to conditionally approve basic I/M programs in the case of moderate ozone areas that were newly subject to this requirement at the time of enactment, based upon the State's commitment to develop such a program within 1 year from conditional plan approval, or by the date established EPA's guidance, whichever is sooner.

The EPA will, under section 182(i), require SIP revisions to provide for a basic I/M program within 1 year in areas newly subject to basic I/M requirements in the future as a result of redesignation or reclassification to moderate ozone nonattainment. Where the boundaries of a nonattainment area are changed any time after enactment pursuant to section 107(d)(4)(A), EPA will again conditionally approve SIP revisions based upon commitments submitted promptly after designation to adopt I/M programs within 1 year of conditional plan approval, or consistent with EPA guidance, whichever is sooner in any areas newly subject to I/M requirements by virtue of the boundary change.

The EPA expects to issue the policy for I/M areas in the near future. When published, the policy for I/M programs will state the date when such programs are to be implemented. States that have both basic and enhanced I/M areas may opt to implement enhanced programs in all affected urbanized areas. States which are only required to implement basic programs must submit SIP revisions for I/M programs addressing any revised policy. The guidance will cover the elements of the SIP revision.

In the event that a moderate ozone nonattainment area fails to attain the ozone standard by the applicable deadline or extended deadline, and is reclassified to serious or worse, an inhanced I/M program must be implemented, if the population criteria (an urbanized area, as defined by the Bureau of the Census in 1980, with a population greater than 200,000) are met. The EPA will, under section 182(i), require a SIP revision to provide for an enhanced I/M program within 2 years of the reclassification. As mandated by section 202(m), the Administrator will promulgate regulations requiring manufacturers to install diagnostic systems on all new light-duty vehicles and light duty trucks. The purpose of these systems is to identify and track emission-related systems deterioration or malfunction. According to section 202(m)(3), within 2 years of EPA's promulgating regulations requiring States to do so, all States with I/M programs must amend their SIP to provide for inspection of these onboard diagnostics systems. The EPA will issue revised I/M guidance which addresses onboard diagnostic inspections.

(i) *NSR*—(1) *NSR offset ratio.* For the purpose of satisfying the emissions offset reduction requirements of section 173(a)(1)(A), the emissions offset ratio is the ratio of total actual emissions reductions to the total allowable emissions increases of such pollutant from the new source. For ozone nonattainment areas classified as moderate, the emissions offset ratio is at least 1.15 to 1.

(j) *Bump-up requirements.* As discussed in section III.A.2(i) marginal, moderate, and serious areas will be bumped up if they fail to attain. When a moderate area is bumped up to serious,

section 107(d)(4)(A)(iv) requires that the boundaries reflect the MSA/CMSA unless within 45 days the State notifies EPA of its intent to study the appropriate boundaries for that area. If a State does make such notification, a final determination of boundaries must be made by EPA within 8 months of reclassification to serious.

4. Serious Areas

Serious areas are required to meet all moderate area requirements, unless otherwise noted, as well as the following additional requirements.

(a) *Major stationary source definition.* For ozone nonattainment areas classified as serious areas, the term "major stationary source," for purposes of the NSR program and the RACT requirement for major non-CTG sources, includes any stationary source or group of sources located within a contiguous area and under common control that emits or has the potential to emit at least 50 tons per year.

(b) *RACT.* In serious areas, the same RACT requirements apply as for marginal and moderate areas. However, the major source cutoff is reduced to 50 tons per year sources. This lesser cutoff would result in the need for additional RACT rules in cases where no existing CTG applies to a source located in a serious area and emitting above 50 tons per year, or an existing CTG for the source category subject to a 50 ton per year cutoff only applies to sources above a higher cutoff. Rules for these sources would be subject to the same schedule and requirements of non-CTG RACT specified by section 182(b)(2)(C) (i.e., rules are due by November 15, 1992).

(c) *NSR*—(1) *Offset ratio.* For the purpose of satisfying the emissions offset reduction requirements of section 173(a)(1)(A), the emissions offset ratio is the ratio of total actual emissions reductions to total allowable increased emissions of such pollutant. For ozone nonattainment areas classified as serious, the emissions offset ratio is at least 1.2 to 1.

(2) *Special rules for modification.* State NSR permit requirements for major modifications must be revised in accordance with new rules for modifications under section 182(c) (6), (7), and (8) of the Act. These new rules apply to proposed emissions increases resulting from modifications of major stationary sources in serious and severe areas for ozone. As explained below, these new rules change the way in which proposed modifications must be evaluated to determine whether a major modification will occur, and establish new requirements for sources which are determined to be major modifications.

(i) De Minimis rule. New section 182(c)(6) revises the de minimis test which must be applied to any proposed emissions in a serious (or severe) area. The new de minimis rule establishes an emissions threshold of 25 tons aggregated over a 5-year period to replace the current EPA threshold of 40 tons per year. It also requires an evaluation of past net increases even when the proposed increase itself is below the de minimis level.

Thus, an emissions increase resulting from a proposed modification of a major stationary source is de minimis if the net emissions increase—which is to be calculated by aggregating the proposed increase with all other creditable increases and decreases in emissions from the source from the 5 prior calendar years (including the calendar year of the proposed change)—is 25 tons or less. In a break with previous EPA policy, this provision requires this 5-year evaluation even if the proposed increase standing alone would not exceed the de minimis threshold of 25 tons. Consequently, even a small proposed increase (itself less than 25 tons) may not be de minimis and could cause the proposed change to be treated as a major modification subject to the special modification provisions described in the following two sections.

(ii) Modifications of sources emitting less than 100 tons per year. For a proposed modification that is not de minimis (according to the special de minimis rule under section 182(c)(6)), a major stationary source emitting or having the potential to emit less than 100 tons per year must satisfy special rules, delineated under new section 182(c)(7) for such modifications. Under these rules, the proposed modification is subject to the part D NSR permit requirements as a major modification unless it can offset the proposed emissions increase with greater emissions reductions at the source at an internal offset ratio of at least 1.3 to 1. Section 182(c)(7) provides that in the absence of sufficient internal offsets, the part D permit requirements of section 713 must be met, except that when applying the requirement of section 173(a)(2) to such modification, the source shall apply best available control technology (BACT), as defined in section 169 of the Act, as a substitute for the lowest achievable emissions rate (LAER). All other permit requirements of section 173(a) must be satisfied, including the requirement for an emissions offset ratio of at least 1.2 to 1.

(iii) Modifications of sources emitting 100 tons per year or more. If a proposed modification which is not de minimis would occur at a major stationary source emitting or having the potential to emit 100 tons per year or more, then rules consistent with section 182(c)(8) of the CAAA must apply. Section 182(c)(8) provides that such modification is a major modification and is subject to the part D permit requirements. However, the source may elect to offset its proposed emissions increase with a greater reduction in emissions at the source at an internal offset ratio of 1.3 to 1 in order to avoid the requirements of section 173(a)(2) concerning LAER. If the source elects not to obtain the appropriate internal offsets, then LAER will apply with respect to the major modification. In any case, all other part D permit requirements, including emissions offsets at the prescribed ratio 1.2 to 1, must be satisfied by the major modification.

(d) *Enhanced monitoring.* Section 182(c)(1) requires that all SIP's for serious ozone nonattainment areas contain a program of measures designed to enhance and improve both ambient air quality monitoring and emissions monitoring. The program for enhanced ambient air quality monitoring should contain measures for ozone, NO_x, and VOC pollutants. The program for enhanced emissions monitoring should contain measures for NO_x and VOC's. States are required to take immediate action to adopt and implement an enhanced monitoring program upon the issuance of rules to be promulgated by EPA. Upon promulgation of these rules, EPA will provide further direction as to the required actions and schedules for States.

(e) *Attainment demonstration.* Section 182(c)(2)(A) requires a SIP for a serious ozone nonattainment area to provide an attainment demonstration by November 15, 1994. The "attainment demonstration must be based on photochemical grid modeling or any other analytical method determined by the Administrator, in the Administrator's discretion, to be at least as effective" (section 182(c)(2)(A)). This requirement can be met through applying EPA-approved modeling techniques for SIP revisions (see EPA's "Guideline on Air Quality Models (Revised)," 1986). The Urban Airshed Model is recommended for modeling applications involving entire urban areas.

Serious areas generally must meet all requirements of moderate ozone nonattainment areas. As discussed above, moderate ares are required to provide for reductions in VOC and NO_x emissions "as necessary to attain the national primary ambient air quality

standard for ozone" (section 182(b)(1)(A)). To determine the "necessary" emissions reductions, an attainment demonstration is generally required by November 1993, if a photochemical grid model is not used. Serious (and higher) areas, however, must complete photochemical grid modeling analyses and have longer attainment deadlines. In consideration of the additional time necessary to gather data to support and to perform a grid modeling analysis, Congress provided an additional year for serious (and higher) areas to submit their demonstrations of attainment. In light of the fact Congress allowed this additional year, EPA believes that the section 182(c) requirement for serious and higher ozone nonattainment areas to submit photochemical grid modeling by November 1994 supersedes the attainment demonstration otherwise applicable under section 182(b).

When projecting motor vehicle emissions for the attainment and rate of progress demonstration after 1996, States should use the same procedures as given in the EPA VMT forecasting and tracking guidance for serious CO nonattainment areas. For VMT projections up through 1996, States may follow the procedures for VMT forecasting and tracking for moderate CO nonattainment areas. The use of this guidance is limited to projecting motor vehicle emissions; the information in the reporting requirements for moderate or serious CO areas is not applicable.

(f) *Rate of progress demonstration.* Section 182(c)(2)(B) requires that serious ozone nonattainment areas must submit by November 15, 1994 (4 years after enactment), a rate of progress demonstration. The plan must provide for reductions in ozone season, weekday VOC emissions of at least 3 percent per year net of growth averaged over each consecutive 3-year period beginning in 1996 until the attainment date. This is in addition to the 15 percent reduction over the first 6-year period required in areas classified as moderate and above. The baseline for the 3 percent per year rate of progress reductions and creditability requirements are the same as for the 15 percent progress requirement under section 182(b)(1). See section III.A.3.(a) above for a discussion of EPA's focus on ozone season weekday VOC emissions.

Similar to the calculations for the 15 percent requirement (see section III.A.3.(a) of this document), the State must first calculate the 1990 adjusted base year inventory.

(1) *Adjusted base year inventory calculation.* The adjusted base year inventory should be calculated in two steps. The first step consists of developing a 1990 inventory of non-mobile anthropogenic VOC emissions. The second step consists of determining the mobile portion of the inventory after the FMVCP and RVP reduction programs (promulgated by the date of enactment or required by section 211(h)) are factored out. Since the effect of the pre-enactment or current FMVCP as a cumulative reduction from 1990 levels increases each year because of fleet turnover, there will actually be a separate 1990 baseline applicable to each evaluation year specified (e.g. 1999, 2002, etc.).

The determination of the baselines will require the use of MOBILE4.1 to model the effects of fleet turnover and RVP changes. For a given evaluation year, the baseline will be determined by applying the 1990 VMT to a hypothetical emissions factor for the evaluation year. The hypothetical emissions factor for the 1990 baseline in 1999 (or 2002, 2005, etc.) is the 1999 (or 2002, 2005, etc.) emissions factor determined by running MOBILE4.1 using 1999 (or 2002, 2005, etc.) as the evaluation year and the same input parameters used to describe the FMVCP and SIP requirements in 1990, with the addition of RVP at 9 psi (or less where approporiate). Multiplying this emissions factor by the 1990 VMT results in 1990 motor vehicle baseline emissions which exclude the emissions reductions that would be eliminated in 1999 (or 2002, 2005, etc) as a result of fleet turnover under the pre-enactment FMVCP and the section 211(h) RVP requirements. The 1990 motor vehicle baseline emissions for 1999 (or 2002, 2005, etc.) are added to the 1990 inventory of non-motor vehicle anthropogenic VOC emissions to calculate the 1990 total baseline emissions for 1999 (or 2002, 2005, etc.). This number is the adjusted base year inventory needed to calculate the target level of emissions in 1999 (or 2002, 2005, etc.).

Any emissions reductions expected to result by the evaluation year (e.g., 1999, 2002, etc.) from corrections to RACT rules or I/M programs should be subtracted after the baseline has been used to calculate (according to the procedure discussed below) the target level of emissions.

The target level of emissions for a milestone year is the total amount of emissions allowed in the area in order to meet the rate of progress requirement for the year in question. The 1999 target level of emissions can be calculated from 1990 total baseline emissions for 1999 and the 1996 target level of emissions. However, an additional correction factor is needed to account for the mobile source emissions reductions that would have occurred under the pre-enactment FMVCP and section 211(h) RVP requirements between 1996 and 1999 as a result of fleet turnover (assuming that all I/M deficiencies have been fixed). This correction factor is simply the difference between the 1990 total baseline emissions for 1996 and the 1990 total baseline emissions for 1999. The 1999 target level of emissions is therefore calculated by subtracting this fleet turnover correction factor, and 9 percent of the 1990 total baseline emissions for 1999, from the 1996 target level of emissions.

In subsequent milestone years, the fleet turnover correction factor is the difference between the 1990 baseline emissions for the previous milestone year and the 1990 baseline emissions for the current milestone year. The target level is calculated by subtracting this fleet turnover correction factor and 9 percent of the 1990 total baseline emissions for the current milestone year, from the target level of emissions in the previous milestone year.

Once the target level of emissions for a milestone year is calculated, States can develop whatever control strategies are needed to meet that target. Some air planning agencies may be used to thinking in terms of the emissions reductions required relative to a current control strategy projection (particularly for stationary sources), rather than a target level of emissions. Projections of milestone year emissions would be used to calculate the required emissions reductions expressed on such a basis, by simply taking the difference between the milestone year projection inventory (without controls applied) and the milestone year target level of emissions. However, States that choose this approach should be aware that the milestone year target level is dependent only on the 1990 emissions inventory, whereas the calculation of an emissionsreduction required relative to the current control strategy projection depends on the accuracy of the milestone year projection, which in turn depends on the estimate of future growth in activities. The assessment of whether an area has met the reasonable further progress requirement in the milestone year will be based on whether the area is at or below the milestone year target level of emissions and not whether the area has achieved a certain actual emissionsreduction relative to having maintained the current control strategy.

Formulas:

BE_x = 1990 baseline emissions calculated relative to year x

x = milestone year
x = 1999, 2002, 2005, 2008
BG_9 = 9 percent emissionsreduction requirement
TL_x = target level of emissions permitted for year x
$BG_9 = BE_x \times (0.09)$
FT_x = Fleet turnover correction factor
$FT_x = BE_x{-}3 - BE_x$
$TL_x = TL_{x-3} - BG_9 - FT_x$
Example: x = 1999
$TL_{99} = TL_{96} - BG_9 - FT_{99}$

For areas with attainment dates occuring in 2007 and 2010 (i.e., Severe 2 and Extreme areas, respectively), the following formulas should be used for calculating the target level of emissions for the attainment year. The final emissions reductions requirement prior to attainment for these areas is 6 percent over a 2-year period (i.e., the time between the last milestone and the attainment date is 2 years).

x = milestone year
x = 2007, 2010
BE_x = 1990 baseline emissions calculated relative to year x
BG_6 = 6% emissions reduction requirement, before growth
TL_x = target level of emissions permitted for year x
$BG_6 = BE_x \times (0.06)$
$TL^x = TL_{x-2} - BG_6$
$FT_x = BEx - 2 - BE_x$
Example: x = 2007
$TL_{07} = TL_{05} - BG_6 - FT7$

(**Note:** The correction factor for RACT rule and I/M program correction is not included in these calculations because the associated emissions reductions should have been realized prior to the end of 1996. If this is not the case, an adjustment should be made as in the calculation of the target level of emissions for the first 6 years.)

As discussed in section III.A.3.(a) of this preamble, if changes in emissions factors or in methodologies for developing emissions inventories occur after the 15 percent demonstration is submitted, but before November 15, 1996, then States need not correct the base year inventory—the adjusted baseline on the projection inventory for purposes of reconciling the 15 percent demonstration. However, if such changes occur after November 15, 1991, but prior to November 15, 1994, a serious or above area may be required to make corrections to the base year inventory and attainment year projection inventory for the purposes of developing the 3 percent rate of progress demonstration. If such changes occur after November 15, 1994, EPA will advise on when it would be appropriate for the States to make corrections in future supplements to this General Preamble.

The statute explicitly states that, after 1996, emissions reductions from NOx sources can be substituted for VOC emissions reductions if the resulting reduction in ozone concentrations is at least equivalent to that which would result from VOC emissions reductions. Emissions reductions of NOxare subject to the creditability provisions under section 182(b)(1)(C) and (D). Additionally, any actual NOx emmissions reductions in excess of growth in NOx emissions during the 1990–1996 period may be used to meet post-1996 emissions reductions requirements for ozone nonattainment areas classified as serious. Like VOC reductions, these NOx reductions must be real, enforceable, permanent, net of growth, and meet the creditability requirements. In addition, the NOx reductions must meet the guidance under which NOx reductions can be substituted for VOC reductions. If an area substitutes NOx reductions for VOC reductions, then a rate of progress curve (similar to the one required for VOC) must also be developed for NOx.

Certain NOx emission reduction requirements may also be averaged consistent with EPA guidance. The CAAA encourage the use of market-based approaches in both titles I and IV. The use of economic incentives is explicitly allowed in sections 110(a)(2) and 172(c)(6) of title I. Provisions for averaging emissions of NOx over two or more units are contained in section 407(e). However, compliance with relevant titles would have to be maintained.

If the State elects to allow any pre-enactment banked emissions reductions credits to be used for purposes of new source offsets during the period between 1996 and attainment, then these emissions must be treated as growth (i.e., banked credits become emissions upon use). As such, the increase in emissions must be accounted for in order to ensure the rate of progress requirement is achieved.

States can only count emissions reductions toward the 3 percent per year requirement if such emissions meet the creditability and reduction requirements. All creditable emissions reductions must be real, permanent, and enforceable. States must keep careful records of all emissions reductions to ensure that the same reductions are not used more than one time (i.e., reductions cannot be used for offsets and to meet the rate of progress requirement). Any creditable VOC emissions reductions achieved beyond the required 15 percent during the first 6 years after enactment of the 1990 CAAA (November 15, 1990–November 15, 1996) can be counted toward meeting the 3 percent rate of progress requirement. For example, if an area achieves 20 percent creditable VOC emissions reductions during the first 6 years, then the area can apply the 5 percent surplus reductions toward the 9 percent requirement for years 1996–1999.

Actual NOx emissions reductions exceeding growth in NOx emissions since the 1990 base year may be used to meet post-1996 emissions reductions requirements for ozone nonattainment areas classified as serious and above. Section 182(c)(2)(C) grants EPA broad discretion in determining the conditions under which NOx control may be substituted for, or combined with, VOC control to maximize reduction in ozone air pollution. The EPA believes that since VOC reductions in 1990–1996 (in excess of the required progress amount of 15 percent, which in turn is net of growth) can be carried over to the post-1996 period, NOx reductions in excess of growth since 1990 (there is no progress requirement for NOx) may be carried over as well. Note that these NOx emissions reductions are subject to the substitution requirements of section 182(c)(2)(C) and to the same creditability constraints dictated by section 182(b)(1)(C) and (D) as apply to VOC emissions reductions.

Rule-effectiveness improvements are creditable during the post-1996 period. The same requirements apply as in the 15 percent reduction requirement (see section III.A.3.(a)).

All emissions reductions that are to be credited against the percent reduction requirements must come from within the designated nonattainment area. Of course, emissions reductions strategies applied to sources just outside the nonattainment area may have benficial effects on the nonattainment problem within the designated area. The CAAA require that the rate of progress emissions reductions be calculated from the baseline emissions. The baseline emissions are defined to be all emissions "in the area," which EPA interprets to mean in the designated nonattainment area.

After the control strategy is developed, regulations needed to implement the control strategy must be developed and adopted by the State. The control strategy along with the associated regulations must be submitted to EPA by November 15, 1994. The adjusted base year inventory and the attainment year projection inventory must be submitted no later than November 15, 1994; however, EPA may require an earlier draft submission of these documents to allow early review. If the attainment demonstration for a serious nonattainment area shows that an amount greater than 3 percent per

year averaged over the 3-year period of creditable reductions, when combined with the noncreditable reductions, is needed to attain the ozone NAAQS by the applicable attainment date, areas should plan on achieving the emissions reductions as early as possible. In any case, it will be to an area's advantage to implement control measures early since EPA will look at air quality data for the 3 years leading up to the attainment date (i.e., for serious areas, air quality data from years 1997–1999 will be evaluated) to determine if an area has attained the ozone NAAQS. Delaying the implementation of measures until near the attainment date may result in reclassification to the next higher category because emissions reductions would not have come in time to produce timely attainment of the ozone standard. Any regulations required to achieve the annual reductions necessary to attain the standard must be submitted with the control strategy by November 15, 1994.

A nonattainment area can achieve less than the 3 percent per year required reductions if the State can demonstrate that the plan includes all measures that can be feasibly implemented in the area, in light of technological achievability. The EPA will consider on an area-by-area basis what these measures may be, with no presumption beyond that specifically given in section 182(c)(2)(B)(ii), which states that to qualify for a less than 3 percent reduction the State must at least demonstrate that the SIP for the area includes all measures achieved in practice by sources in the same source category in nonattainment areas of the next higher classification. The 3 percent per year requirement cannot be waived for areas classified as extreme. A determination of the waiver from the 3 percent per year requirement will be reviewed at each milestone under section 182(g) and revised to reflect the availability of any new technologies or other control measures for sources in the same category.

By meeting the specific 3 percent reduction requirements discussed above, the State will also satisfy the general RFP requirements of section 172(c)(2) for the time period discussed.

All multi-State ozone nonattainment areas should refer to the multi-State section (III.A.9) for further instructions on coordination of SIP revisions and on the development of the attainment demonstration.

(g) *Milestone compliance.* Serious and above ozone areas must show that they did achieve their rate of progress emissions reductions (called milestones) in the "compliance demonstrations" required by section 182(g)(2). These demonstrations are due 90 days after each milestone was to have been achieved and shall be submitted as an areawide inventory of actual emissions. The EPA is suggesting that the States synchronize their periodic emissions inventories with their milestone compliance demonstrations (see section III.A.2. of this preamble). The EPA will provide further guidance on acceptable approaches to allow for synchronizing periodic emissions inventories and milestone demonstrations so as to meet the 90-day requirement. Consistent with the tracking provisions discussed in section III.A.3.(c), the submittals for serious and above areas due by November 15, 1994, must contain annual projections of control measure implementation and emissions reductions to occur from November 15, 1996 until the attainment date.

(h) *Bump-up requirements.* As discussed in section III.A.2.(i), marginal, moderate, and serious areas can be bumped up if they fail to attain. Section 182(g) adds additional bump-up provisions for serious and severe areas that miss a milestone. Under those provisions, such areas may elect to bump up to the next higher classification as their means of satisfying the milestone requirements (see discussion in section III.A.4.(i)). The States with serious or above ozone areas must submit compliance demonstrations within 90 days after a milestone was to have occurred, and EPA must determine within 90 days of submittal whether the States' demonstrations are adequate (section 182(g)). The milestones are essentially the emissions reductions required by section 182(b)(1) and (c)(2)(B). For example, serious ozone areas must demonstrate that they have achieved the 15 percent emissions reductions requirement of section 182(b)(1) within 90 days after such milestone should have occurred (e.g., 90 days after November 15, 1996, or February 13, 1997).

Any area newly classified as a severe ozone nonattainment area due to bump-up provisions or reclassification under section 181(b) is subject to the reformulated gasoline program under section 211(k). The effective date of such program is 1 year after reclassification.

(i) *Failure to meet a milestone (Economic Incentive Program).* Under section 182(g)(3), if a State fails to submit a milestone compliance demonstration for any serious or severe area as required by section 182(g)(2), the State shall choose from three options: To be bumped up to the next higher classification, to implement additional measures (beyond those in the contingency plan which will already be triggered and implemented) to achieve the next milestone, or to adopt an economic incentive program (as described in section 182(g)(4)). Based on the schedule in section 182(g)(3) for State election, EPA review of election, and the associated SIP revision (section 182(g)(3)), the time available to develop and implement required additional measures or an economic incentive program will be extemely limited if the State waits until a failure occurs to initiate the program of choice. Thus, EPA urges States to initiate program development as soon as they determine that a failure is likely. States are encouraged to consider inclusion of economic incentive programs where appropriate in the SIP submission due 3 or 4 years after enactment to be of use in meeting the first milestone. Submittal at that time would be more likely to allow for sufficient time to develop, implement, and evaluate the effectiveness of the program. Economic incentive programs are discussed in more detail in section III.G.3.

(j) *Enhanced I/M.* Section 182(c)(3) requires "enhanced" I/M programs in each urbanized area of serious and above ozone nonattainment areas as defined by the Bureau of Census, with 1980 populations of 200,000 or more. The section calls for EPA to establish a performance standard for I/M that programs must achieve, and also sets some minimum design requirements. The Act specifies that the State program must include, at a minimum, computerized emissionsanalyzers, on-road testing, denial of waivers for warranted vehicles or repairs related to tampering, a $450 cost waiver requirement (adjusted annually based on the Consumer Price Index) for emissions-related repairs not covered by warranty, enforcement through registration denial unless an existing program with a different mechanism can prove greater effectiveness, annual inspection unless a State can demonstrate that less frequent testing is equally effective, centralized testing unless the State can prove decentralization is equally effective, and inspection of the emissions control diagnostic system (when required by the Administrator). In addition, each State must report biennially to EPA on emissions reductions achieved by the program

In some cases, areas may have become newly subject to both basic and enhanced I/M requirements at the time of enactment, with the basic I/M requirements due shortly prior to the deadline for submission of the SIP revision providing for the enhanced I/M

program. In such cases, EPA regards enhanced I/M requirements as superseding the basic I/M requirements, and therefore will not require the submission of the basic I/M requirements discussed previously. The EPA will, under section 182(i), require SIP revisions to provide for an enhanced I/M program within 2 years in areas newly subject to this requirement in the future as a result of redesignation or reclassification to serious or worse ozone nonattainment.

The SIP's for enhanced I/M programs are due no later than November 15, 1992. In the event that EPA's enhanced I/M performance standard is not finalized soon enough to provide sufficient time for full SIP development, EPA will use its authority under section 110(k)(4) to conditionally approve SIP submittals committing to adopt enforceable enhanced I/M programs consistent with EPA's guidance. The guidance will cover the elements of a full SIP. The SIP must demonstrate that the I/M program will be operated until the area is redesignated to attainment based on EPA's approval of a section 175A maintenance plan without an enhanced I/M program.

As mandated by section 202(m), the Administrator will promulgate regulations requiring manufacturers to install diagnostic systems on all new light-duty vehicles and light-duty trucks. The purpose of these systems is to identify and track emission-related systems deterioration or malfunction. According to section 202(m)(3), within 2 years of EPA's promulgating regulations requiring them to do so, all States with I/M programs must amend their SIP to provide for inspection of these onboard diagnostics systems. The EPA will issue revised guidance which addresses onboard diagnostic inspections.

(k) *Clean-fuel vehicle program*—(1) *Schedule.* The statute contains in sections 182(c)(4) and 246 certain SIP requirements for areas classified as serious or above ozone nonattainment (based on 1987, 1988, and 1989 calendar year data) and with a 1980 population of 250,000 or more. According to these requirements, SIP provisions for implementing the clean-fuel vehicle program for centrally fueled fleet vehicles prescribed in title II, part C, must be submitted to EPA by May 15, 1994. Areas with a 1980 population of 250,000 or more that are reclassified at some future date as serious or above ozone nonattainment areas must also submit such revisions within 1 year of classification. The Administrator may adjust the compliance deadlines for newly classified areas where compliance with the deadlines would be infeasible.

(2) *Clean-fuel fleet program.* The programs must require a specified percentage of certain fleet vehicles purchased in model year 1998 and thereafter to be clean-fuel vehicles and use clean alternative fuels when operating in the area. For light-duty vehicles and light-duty trucks, the required percentage must be 30 percent in 1998, 50 percent in 1999, and 70 percent in 2000 and thereafter. For heavy-duty trucks, the percentage must be 50 percent in each such year. Light-duty vehicles and light-duty trucks in fleets participating in this program for the above model years must meet the low emissions vehicle (LEV) standards for model year 2001. Fleet phase-in requirements for light-duty vehicles and light-duty trucks (6,000 pounds Gross Vehicle Weight Rating [GVWR] or less) depend on the availability of qualifying vehicles in California by 1998 to 2000. If such vehicles are not available in California in advance of model year 2001, the phase-in schedules for these vehicles will be delayed accordingly.

Some of the major program requirements include: Requirements for fuel providers to make clean alternative fuel available to fleet operators; coverage of Federal fleets (except for certain vehicles certified by the Secretary of Defense as needing an exemption based on national security grounds); provisions for issuing credits, consistent with EPA regulations due 1 year from enactment, for purchasing more vehicles than required or vehicles that meet more stringent standards or for purchasing vehicles prior to the effective date of the program. Such credits may be banked and traded within the same nonattainment area; credits may not be traded between light-duty and heavy-duty vehicle classes.

The Administrator will promulgate rules under section 246(h) to ensure that certain TCM's that restrict vehicle usage based on time-of-day or day-of-week consideration will not apply to any vehicles that comply with the fleet program requirements, notwithstanding the relevant provisions of title I.

Additional information on the requirements for clean-fuel vehicle fleet programs for serious CO nonattainment areas is found in clean-fuel vehicle fleet program, section III.B.3.(c).

(3) *Substitutes for the clean-fuel program.* Each State subject to the fleet program may submit a SIP revision by November 15, 1992, consisting of fully adopted control measures as a substitute for all or a portion of the clean-fuel vehicle program required by section 246. The substitute measures must demonstrate to the satisfaction of the Administrator that the long-term reductions in air emissions of ozone precursors and toxic substances are, at a minimum, equal to those that would be achieved under the clean-fuel vehicle program, or a percentage thereof which would be attributed to the portion of the program for which the revision is to substitute. Substitute measures may not include any measures otherwise required by the Act; however, they would count toward the rate of reduction requirements (i.e., 15 percent).

(l) *California Pilot Test Program.* By November 15, 1992, California must submit a SIP revision requiring that sufficient clean alternative fuel be produced and distributed in California to support the title II, part C, section 249(c) mandatory clean-fuel vehicle pilot program, which begins in model year 1996. Sufficient fuel to allow all vehicles required under the program to operate exclusively, to the maximum extent practicable, on clean alternative fuel while operating in California (section 249(c)) must be available. The revision must require an adequate number of supply locations that are sufficiently distributed to ensure convenient refueling of such vehicles. The revision must apply to all classifications of nonattainment areas as well as to attainment areas within California.

Although EPA, in its April 1991 report on "Getting Started on title I," indicated that California could opt out of the California pilot program, EPA now believes that such a procedure is not contemplated under section 182(c)(4)(B), which provides for opt out of clean fuel vehicle programs in certain circumstances. That is because the part of the California pilot program under which vehicle manufacturers will be required to produce and sell clean-fuel vehicles is a mandatory Federal program administered by EPA; unlike the clean-fuel fleet program, it is not a SIP-based program that depends on the existence of SIP revisions for its implementation. Moreover, while California is to implement the fuel availability aspects of the program through SIP revisions, it would deprive the Federal program of its effectiveness if California could opt out of the fuel availability aspects of the program. The clean-fuel vehicles required under the program would not be assured of having the necessary fuels on which to operate. The conclusion that California should not be able to opt out of the fuel availability aspects of the pilot program is buttressed by section 249(c)(2)(F), which requires EPA to establish Federal

fuel availability requirements for California under its section 110(c) FIP authority, if California fails to submit a SIP revision that satifies the fuel availability requirements of section 249(c)(2).

Section 249(f) provides that any serious, severe, or extreme ozone nonattainment area outside of California may opt in to the pilot program by submitting a SIP revision to EPA that provides incentives for selling or using the clean-fuel vehicles and clean alternative fuels as mandated in the California program. Such revisions must comply with EPA regulations to be promulgated within 2 years of enactment and may not take effect until 1 year after a State has notified vehicle manufacturers and fuel suppliers of such requirements.

The incentives may include a registration fee on non-clean fuel vehicles, provisions to exempt clean fuel vehicles from certain TCM's, or preferential parking provisions for clean-fuel vehicles. The revisions may not include any production or sales mandates for clean-fuel vehicles or clean alternative fuels and may not provide sanctions or penalties for failure to produce or sell such vehicles or fuels. The incentives may not apply to fleet vehicles covered by the clean-fuel vehicle fleet program.

(m) *Gasoline vapor recovery.* The Administrator may by rule revise or waive the section 182(b)(3) requirements for stationary source gasoline vapor recovery for serious, severe, or extreme areas, if the Administrator determines that onboard emissions control systems are in widespread use throughout the motor vehicle fleet. The EPA will address this provision in a separate **Federal Register** notice concerning section 202(a)(6).

(n) *Transportation controls.* Section 182(c)(5) requires that beginning 6 years after enactment and at 3-year intervals thereafter, serious areas must submit a demonstration of whether current aggregate vehicle mileage, aggregate vehicle emissions, congestion levels, and other relevant parameters are consistent with those used for the area's demonstration of attainment. If the levels projected in the attainment demonstration are in fact exceeded, the State has 18 months to develop and submit a revision of the applicable implementation plan. This plan must include a TCM program consisting of measures from, but not limited to, section 108(f) that, in combination with other mobile source measures, will reduce emissions to levels that are consistent with emissions levels projected in the attainment demonstration. Areas could alternatively submit a new attainment demonstration accounting for the increased vehicle emissions projections. The EPA will release an update of "Transportation—Air Quality Planning Guidelines" in June 1992 and several TCM information documents which will address the section 108(f) measures.

It is important to note that nonattainment areas are not locked into the estimates of future emissions given in the initial SIP submittal. At any time before an area reaches attainment, the State can amend the area's SIP to get a greater reduction from nonvehicle sources. This change would have the effect of increasing the motor vehicle emissions allowed at the next milestone date.

(o) *Reformulated gasoline for conventional vehicles.* The EPA expects to promulgate regulations this year prohibiting the sale of gasoline that has not been reformulated to be less polluting ("conventional gasoline"). Under section 211(k)(10)(D), the prohibition is to apply in the nine areas having the highest ozone design value during the 1987–1989 period and with 1980 populations over 250,000, and within 1 year, to any area reclassified as a severe ozone nonattainment area. The effective date for the prohibition against the sale of conventional gasoline in these nonattainment areas in January 1, 1995.

The prohibition may be extended to any marginal, moderate, serious, or severe ozone nonattainment area at the request of the Governor of the State in which the area is located. Upon receiving a Governor's application, the Administrator will apply the prohibitions set forth in section 211(k)(5) against the sale or dispensing of conventional gasoline in the "opt-in" area effective no later than January 1, 1995, or 1 year after the application is received, whichever is later. The effective date of the prohibition in the opt-in area may be extended by 1 year up to three times by the Administrator if he finds that there is insufficient domestic capacity to produce enough reformulated gasoline for all areas in which conventional gasoline is to be prohibited. The Administrator must make such extensions for areas with lower classifications before making them for areas with higher classifications.

(p) *Contingency provisions.* For serious areas as required by sections 172(c)(9) and 182(c)(9), the contingency measures could be additional measures not already adopted to meet the RFP or other requirements, or the accelerated implementation of measures already planned to meet a future milestone (see section III.A.3.(c) for additional discussion of contingency measures). In the second case, the State would have to adopt additional measures to backfill the SIP with replacement measures to replace those that were previously used as early-implementation contingency measures, and to assure the continuing adequacy of the contingency program.

The contingency measures for serious and above ozone nonattainment areas are required by section 182(c)(9) to be adequate to correct any shortfall in meeting an emissions reductions milestone (e.g., the 3 percent reduction required by late 1999).[6] This requirement presents the problem mentioned above as to the moderate area contingency requirement (it is difficult to predict how much shortfall an area will face at a milestone and hence how much extra reduction its contingency measures should provide for, and it would be unreasonable to require the State to submit contingency measures adequate to address a hypothetical 100 percent shortfall—i.e., submit contingency measures that essentially double what the basic progress demonstration provides). The solution to the problem of setting the appropriate level of contingency measures described in section III.A.3.(c) (as to contingency measures for areas subject to the 15 percent reduction requirement) would also apply to serious and above areas preparing contingency measures as to post-1996 emissions-reductions milestones.

(q) *Long-term measures.* The EPA recognizes that some serious ozone nonattainment areas (and perhaps areas with long-term attainment dates for other pollutants) will have such large emissions reduction requirements that identifying, developing, and adopting in final form the control measures that represent the areas preferred strategy for their demonstrations of attainment may present an unreasonable burden. The EPA believes that these areas may need additional time to fully develop and adopt certain "long-term" measures that would be the preferred means to reach attainment. These measures would include those that require complex analyses and decisionmaking and coordination among a number of government agencies.

The EPA intends to allow these areas reasonable additional time to complete

[6] If the strategy for an area relies on NO_x substitution in lieu of or in addition to VOC reductions, the State should also submit NO_x contingency measures as necessary to meet the 3 percent requirement.

full development and adoption under the following conditions:

(1) The plan containing the demonstration of attainment must identify each measure for which additional time would be needed for full development and adoption.

(2) The plan must show that the long-term measures cannot be fully developed and adopted by the submittal date for the attainment demonstration.

(3) The plan must contain an enforceable commitment by the relevant agency that development and adoption will occur on an expeditious schedule to achieve specified emissions reductions from each long-term measure for each year through the attainment year.

(4) The plan must contain "backstop" measures that would be implemented to achieve equivalent emissions reductions unless the long-term measure is adopted on schedule.

(5) The long-term measures must not be needed to meet any emissions reduction requirement during the first 6 years after enactment.

The "backstop" measures required under condition #4 must be submitted with the 1994 attainment demonstration in fully adopted form. The "backstop" measures must be designed to go into effect automatically on a schedule sufficient to achieve all of the reductions identified with each long-term measure for each year through the attainment year. The "backstop" measures may represent broad, across-the-board reductions in emissions, rather than thoroughly analyzed and developed control measures. For this reason, EPA does not anticipate the actual implementation of "backstop" measures in most cases as States will have ample opportunity to submit SIP revisions incorporating the fully developed long-term measures and deleting the "backstop" measures from the SIP. Additionally, if a long-term measure cannot be developed, then that State has the option to submit a SIP revision identifying a fully developed and adopted alternative measure to replace the original long-term measure prior to any necessary implementation of "backstop" measures.

Thus, a State may find that progress can be achieved with measures that are fully developed by the 1994 SIP submittal date. However, the State may determine that expeditious attainment of the NAAQS is impossible unless the SIP also includes measures which cannot be fully developed until after the 1994 SIP is due. In its 1994 SIP submittal, the State must clearly describe each of these long-term measures and show that each measure cannot be fully developed and adopted until a specified future date, despite expeditious implementation efforts. The 1994 SIP must include with each long-term measure an enforceable schedule binding responsible agencies to achieve identified emissions reductions from each measure.

Along with these provisions, the State's 1994 SIP submittal must include "backstop" measures. The "backstop" measures must be fully adopted and scheduled for implementation to achieve reductions equivalent to those assigned each year by the long-term measures. When each long-term measure is fully developed, it must be submitted to EPA as a SIP amendment. This amendment would also propose deletion of the associated "backstops." The EPA's approval of the long-term measures would also rescind from the SIP the "backstop" measures.

5. Severe Areas

Severe areas are required to meet all serious area requirements [7], unless otherwise noted, as well as the following additional requirements.

(a) *Major stationary source definition.* For ozone nonattainment areas classified as severe, the terms "major source" and "major stationary source," for purposes of the NSR program and the RACT requirement for major non-CTG sources, include any stationary source, or group of sources, located within a contiguous area and under common control that emits or has the potential to emit at least 25 tons per year.

(b) *RACT.* Section 182(d) requires that the same RACT requirements apply to severe areas as apply to serious areas. Moreover, as in serious areas, the lower applicability cutoff for major non-CTG sources would result in the need for additional non-CTG RACT rules in cases where no existing CTG applies to a source in the area emitting 25 tons per year, or an existing CTG for the source category subject to a 25-tons-per-year cutoff applies only to sources above a higher cutoff. Rules for these sources would be subject to the same schedule and requirements of non-CTG RACT specified by section 182(b)(2)(C) (i.e., rules are due by November 15, 1992 for major sources not covered by an existing or expected CTG).

(c) *NSR*—(1) *Offset ratio.* For the purpose of satisfying the emissions offset reduction requirements of section 173(a)(1)(A), the emissions offset ratio is the ratio of total actual emissions reductions to total allowable increased emissions from the new or modified source. For severe ozone nonattainment areas, the emissions offset ratio is at least 1.3 to 1 unless the SIP requires all existing major sources in the nonattainment area to use BACT, as defined in section 169(3). In this case, the ratio shall be at least 1.2 to 1.

(d) *TCM's to offset growth in emissions from growth in VMT.* Section 182(d)(1)(A), VMT, applies to severe ozone nonattainment areas. This section requires that States submit revisions to their SIP's by November 15, 1992 that identify and adopt "specific and enforceable transportation control strategies and TCM's to offset any growth in emissions from growth in VMT and numbers of vehicle trips" and to achieve reductions in mobile source emissions as necessary in conjunction with other measures to comply with the periodic emissions reduction and attainment requirements of the CAAA. When projecting motor vehicle emissions for this SIP revision, States should use the same procedures as given in EPA's "Section 187 VMT Forecasting and Tracking Guidance" for serious CO nonattainment areas which will be published separately. The use of this guidance is limited to projecting motor vehicle emissions; the information on the reporting requirements for serious CO areas is not applicable.

The TCM offset provisions apply only to emissions of VOC's. In developing their progress and attainment strategies, however, States may wish to adopt similar offset goals for NO_x emissions from mobile sources, in cases where NO_x reductions are beneficial to attainment.

Section 182(d)(1)(A) also requires States to choose and implement such measures as are specified in section 108(f), to the extent needed to demonstrate attainment. In selecting the measures, Congress directed that States "should ensure adequate access to downtown, other commercial, and residential areas and should avoid measures that increase or relocate emissions and congestion rather than reduce them." In order to avoid future SIP deficiencies, findings of nonimplementation, and mandatory sanctions, EPA encourages States to select realistic TCM's. As part of this effort, States should establish aggregate targets for implementation where the TCM involves actions by numerous local jurisdictions unless the State has obtained, in advance, binding implementation commitments from all responsible jurisdictions.

The EPA interprets this provision to require that sufficient measures be adopted so that projected motor vehicle

[7] See discussion under section III.A.3.f ("RFP Demonstration," Serious Areas) regarding the adoption of long-term measures in severe areas.

VOC emissions will never be higher during the ozone season in one year that during the ozone season in the year before. When growth in VMT and vehicle trips would otherwise cause a motor vehicle emissions upturn, this upturn must be prevented. The emissions level at the point of upturn becomes a ceiling on motor vehicle emissions. This requirement applies to projected emissions in the years between the submission of the SIP revision and the attainment deadline and is above and beyond the separate requirements for the RFP and the attainment demonstrations. Which requirements will be more constraining in an area may vary with time, with the areas's mix of sources, and with control measures adopted for other sources. Reductions from any discretionary measures adopted to satisfy this provision are creditable to the RFP requirements.

While the above requirement is simple in concept, its application could encourage areas to delay VMT or emissions reduction measures suitable for use as offsets until the trend in motor vehicle emissions reaches its minimum point and is about to turn upwards. This incentive for delay would exist because earlier implementation would bring the trend to a lower minimum, but would not change the date when the trend line began to increase. Later implementation would, however, delay the date when the trend line would increase. To implement the VMT offset provision while avoiding this counterproductive incentive for delay, EPA has developed the approach described below.

If projected total motor vehicle emissions during the ozone season in one year are not higher than during the ozone season the year before, given the control measures in the SIP, the VMT offset requirement is satisfied. However, if the State plans to implement control measures over and above those specifically required by the Act and those required to demonstrate RFP and attainment earlier than would be necessary and sufficient to prevent an emissions upturn, a projected subsequent growth-related increase to the level of emissions that would occur if these measures were scheduled later will not be considered to violate the requirement to offset emissions increases due to growth in VMT or vehicle trips. The latter situation should be viewed as a temporary reduction in emissions to a level below that required by the provision rather than an increase above the required level, with no effect on emissions at or after the point at which offsetting measures become essential to compliance.

The EPA will approve a SIP revision as meeting this provision despite a forecasted upturn in vehicle emissions, as long as motor vehicle VOC emissions in the ozone season of a given year do not exceed a ceiling level which reflects a hypothetical strategy of implementing otherwise specifically required measures on schedule and saving offset measures until the point at which VMT growth would otherwise cause an emission upturn. The ceiling level is therefore defined (up to the point of upturn) as motor vehicle emissions that would occur in the ozone season of that year, with VMT growth, if all measures for that area in that year were implemented as required by the Act. When this curve begins to turn up due to growth in VMT or vehicle trips, the ceiling becomes a fixed value. The ceiling line would include the effects of Federal measures such as new motor vehicle standards, Phase II RVP controls, and reformulated gasoline, as well as Clean Air Act-mandated SIP requirements such as enhanced I/M, the fleet clean-fuel vehicle program, and the employer trip reduction program. The ceiling line would also include the effect of forecasted growth in VMT and vehicle trips in the absence of new discretionary measures to reduce them. The ceiling line must, in combination with projected emissions from nonvehicle sources, satisfy the RFP requirements for the area. Any VMT reduction measures or other actions to reduce motor vehicle emissions adopted since November 15, 1990 and not specifically required for the area by another provision of the Act would not be included in the calculation of the ceiling line.

Forecasted motor vehicle emissions must be held at or below the minimum level of the ceiling line after the ceiling line reaches its minimum level. If an area implements offset measures early, the forecasted emissions will be less than the ceiling line, and forecasted motor vehicle emissions could increase from one year to the next, as long as forecasted emissions never exceed the ceiling line.

The EPA has received comment indicating that section 182(d)(1)(A) should be interpreted to require areas to offset any growth in VMT above 1990 levels, rather than offsetting VMT growth only when such growth leads to actual emissions increases. Under this approach, areas would have to offset VMT growth even while vehicle emissions are declining. Proponents of this interpretation cite language in the House Committee Report which appears to support the interpretation. The report states that "(t)he baseline for determining whether there has been growth in emissions due to increased VMT is the level of vehicle emissions that would occur if VMT held constant in the area." (H.R. No. 101–490, part 1, 101st Cong. 2d Sess., at 242.)

Although the statutory language could be read to require offsetting of any VMT growth, EPA believes that the language can also be read so that only actual emissions increases resulting from VMT growth need to be offset. The statute by its own terms requires offsetting of "any growth in emissions from growth in VMT." It is reasonable to interpret this language as requiring that VMT growth must be offset only where such growth results in emissions increases from the motor vehicle fleet in the area.

While it is true that the language of the H.R. 101–490 appears to support the alternative interpretation of the statutory language, such an alternative interpretation would have drastic implications for many of the areas subject to this provision. Since VMT is growing at rates as high as 4 percent per year in some cities such as Los Angeles, these cities would have to impose draconian TCM's such as mandatory no-drive restrictions, to fully offset the effects of increasing VMT if the areas where forced to ignore the beneficial impacts of all vehicle tailpipe and alternative fuel controls.

Although the original authors of the provision and H.R. 101–490 may in fact have intended this result, EPA does not believe the Congress as a whole, or even the full House of Representatives, believed at the time it voted to pass the CAAA that the words of this provision would impose such severe restrictions. There is no further legislative history on this aspect of the provision; it was not discussed at all by any member of the Congress during subsequent legislative debate and adoption.

Given the susceptibility of the statutory language to these two alternative interpretations, EPA believes that it is the Agency's role in administering the statute to take the interpretation most reasonable in light of the practical implications of such interpretation, taking into consideration the purposes and intent of the statutory scheme as a whole. In the context of the intricate planning requirements Congress established in title I to bring areas towards attainment of the ozone standard, and in light of the absence of any discussion of this aspect of the VMT offset provision by the Congress as a whole (either in floor debate or in the

Conference Report), EPA concludes that the appropriate interpretation of section 182(d)(1)(A) requires offseting VMT growth only when such growth would result in actual emissions increases.

Section 182(d)(1)(A) requires that specific, enforceable measures selected by the State be submitted by November 15, 1992, along with a demonstration that they are adequate to hold vehicle emissions within the ceiling described above. It also states that these measures, beyond offsetting growth in emissions, shall be sufficient to allow total area emissions to comply with the RFP and attainment requirements. These requirements create a timing problem of which Congress was perhaps not fully aware. Ozone nonattainment areas affected by this provision are not otherwise required to submit a SIP demonstration which predicts attainment of the 1996 RFP milestone until November 15, 1993, and likewise are not required to demonstrate post-1996 RFP and attainment until November 15, 1994. The EPA does not believe that Congress intended the offset growth provision to advance the dates for these broader submissions. Even without the requirement that the offset growth measures be sufficient to allow overall RFP and attainment in conjunction with other measures, EPA believes that the November 15, 1992 date would not allow sufficient time to develop a set of measures that would comply with the offset growth provision over the long term.

To deal with this timing problem so as to allow a more coordinated and comprehensive planning process, EPA will accept committal SIP revisions for the offset growth requirement under the authority of section 110(k)(4). This will allow States 1 year from EPA conditional approval of the committal revision to submit the full revision containing sufficient measures in specific and enforceable form. This may not stretch the effective deadline for the full revision dealing with the post-1996 period all the way to November 15, 1994. The affected States may need to submit their post-1996 RFP and attainment demonstrations somewhat earlier than nominally required by the provisions establishing the requirements for those demonstrations, so that EPA can assess the adequacy of the growth-offsetting measures against all three criteria specified by the 1990 CAAA. With the extra time allowed through the use of a committal SIP revision, States should be able to use procedures for projecting VMT as given in EPA forecasting and tracking guidance for serious CO areas.

(e) *Employer trip reduction program.* Section 182(d)(1)(B) requires that States with severe and extreme ozone nonattainment areas shall submit a SIP revision requiring employers with 100 or more employees in such areas to implement programs to reduce work-related vehicle trips and miles traveled by employees. Guidance on the implementation of the employee trip reduction program will be provided in a supplement to this general preamble.

6. Extreme Areas

Extreme areas are required to meet all severe area requirements, unless otherwise noted, as well as the following additional requirements.

(a) *Major stationary source definition.* For ozone nonattainment areas classified as extreme, the terms major source and major stationary source, for purposes of the NSR program and the RACT requirement for major non-CTG sources, include any stationary source, or group of sources, located within a contiguous area and under common control that emits or has the potential to emit at least 10 tons per year.

(b) *RACT.* Section 182(e) governs extreme areas. In these areas, the same RACT requirements apply as for the severe ozone nonattainment areas. However, the major source cutoff for non-CTG sources is reduced to 10 tons per year. As in the other areas, this lesser cutoff could result in the need for additional non-CTG RACT rules in cases where no existing CTG applies to a source in the area emitting above 10 tons per year, or an existing CTG for the source category subject to a 10-ton-per-year cutoff applies only to sources above a higher cutoff. Rules for these sources would be subject to the same schedule and requirements of non-CTG RACT specified by section 182(b)(2)(c) (i.e., rules are due by November 15, 1992 for major sources not covered by a new or expected CTG).

(c) *NSR*— (1) *Offset ratio.* For the purpose of satisfying the emissions offset reduction requirements of section 173(1)(A), the emissions offset ratio is the ratio of total actual emissions reductions to total increased allowable emissions of such pollutant(s) from the new or modified source. For an extreme ozone nonattainment area, the emissions offset ratio is at least 1.5 to 1, unless the State requires all existing major sources in the nonattainment area to use BACT as defined in section 169(3), in which case the emissions offset ratio shall be at least 1.2 to 1.

(2) *Special NSR rules.* For the purposes of determining the applicability of the NSR permit requirements under section 173(a), the de minimis rule in section 182(c)(6) and the special rules in section 182(c) (7) and (8), as discussed above for serious and severe areas, do not apply in extreme ozone nonattainment areas.

(3) *Modifications in extreme areas.* For modifications of major stationary sources located in extreme areas, the 1990 CAAA eliminate the concept of de minimis altogether for the purposes of determining a major modification. New section 182(e)(2) provides that any physical change of, or change in the method of operation, at the source that results in any increase in emissions from any discrete operation, unit, or other pollutant-emitting activity at the source generally must be considered a modification subject to the part D NSR permit requirements.

Section 182(e)(2) does, however, provide for an exemption from section 173(a)(1) offset requirements if the owner or operator of the major stationary source agrees to offset any proposed increase by a greater amount of onsite reduction in emissions from other discrete operations, units, or activities at an internal offset ratio of 1.3 to 1. In addition, this new section stipulates that the offset requirements do not apply in extreme areas if the modification consists of installing equipment required to comply with the applicable implementation plan, permit, or the Act itself.

(d) *Clean fuels for boilers.* Section 182(e)(3), "Use of Clean Fuels or Advanced Control Technology," applies to certain boilers in extreme ozone nonattainment areas. The State is required to submit a SIP revision by November 15, 1993 that requires affected boilers to use either clean fuels or advanced control technology by November 15, 1998. Affected boilers are individual new, modified, or existing electric utility, industrial, or commercial/institutional boilers that emit more than 25 tons per year of No_x. The Act specifies, for purposes of this section, that clean fuels are "natural gas, methanol, or ethanol (or a comparably low polluting fuel)," advanced control technology generally means "catalytic control technology or other comparably effective control methods," and the clear fuel must be "used 90 percent or more of the operating time."

A boiler should generally be considered as any combustion equipment used to produce steam. This would generally not include a process heater that transfers heat from combustion gases to process streams, a waste heat recovery boiler that is used to recover sensible heat from the exhaust of process equipment such as a

combustion turbine, or a recovery furnace that is used to recover process chemicals. Boilers used primarily for residential space and/or water heating are not affected by this section.

Only boilers that actually emit more than 25 tons per year of NO_x are affected. Emissions vary from year to year, however, making applicability difficult to determine. Boilers with rated heat inputs of greater than 10–20 million Btu generally have the potential to exceed the 25-tons-per-year limit depending on the fuel type. A source with these high rated heat inputs should therefore be considered affected unless its federally enforceable permit specifically restricts NO_x emissions below 25 tons per year from each boiler. Boilers with rated heat inputs less than 10 million Btu which are coal-fired and less than 15 million Btu which are oil-or gas-fired, may be considered de minimis and exempt from these requirements since it is unlikely that they will exceed the emissions limit, and those few that do will emit very little in the aggregate. The State is free to impose more stringent requirements.

(e) *TCM's during heavy traffic hours.* Section 182(e)(4) (in Title I) authorizes the SIP's for extreme areas to contain provisions establishing TCM's applicable during periods of heavy traffic that reduce the use of high polluting or heavy-duty vehicles. The section states that this authority is granted notwithstanding any other provision of law.

In contrast, section 246(h) requires the Administrator to promulgate regulations to ensure that certain TCM's including time-of-day or day-of-week restrictions and similar measures that restrict vehicle usage, do not apply to any clean-fuel vehicles that meet the requirements of the title II clean-fuel vehicle fleet program. That section states that it applies notwithstanding title I.

The EPA believes that these two provisions can be harmonized by interpreting section 246(h) as allowing only regulations that impose traffic controls on vehicles other than heavy-duty, clean-fuel fleet vehicles. The EPA believes that controlling the nonclean-fuel, heavy-duty fleet vehicles along with all nonfleet, heavy-duty vehicles will effectively reduce congestion and emissions during peak traffic conditions. Sections 182(e)(4) and 246(h) can thus be harmonized by allowing SIP's for extreme areas to include traffic controls on high polluting and most heavy-duty vehicles, but not on heavy-duty, clean-fuel fleet vehicles that have been exempted under EPA regulations promulgated pursuant to section 246(h).

The EPA intends to promulgate its regulations on the fleet program transportation control exemptions shortly. These regulations will address the eligibility of fleets for the TCM exemptions. States may at any time submit TCM's that apply to high polluting or heavy-duty vehicles not subject to the clean-fuel fleet program in extreme areas during periods of heavy traffic.

(f) *New technologies.* The Act recognizes that extreme areas may have to rely to a certain extent on new or evolving technologies to meet certain of the emissions reduction requirements. The relatively long time between developing the initial SIP and attaining the NAAQS, and the degree of emissions reductions needed to attain the standard, guarantees that some control technologies will not be fully demonstrated by the time of SIP development. These measures would include those that may anticipate future technological developments as well as those that may require complex analyses and decision making and coordination among a number of government agencies. Section 182(e)(5) allows the Administrator to approve an extreme area SIP and attainment demonstration that anticipate development of new control technologies, or improvement of existing control technologies if the SIP satisfies the following criteria:

(1) The plan containing the demonstration of attainment must identify all measures, including the long-term measure(s) for which additional time would be needed for development and adoption.

(2) The plan must show that the long-term measure(s) cannot be fully developed and adopted by the submittal date for the attainment demonstration and must contain a schedule outlining the steps leading to final development and adoption of the meaure(s).

(3) The plan must contain commitments from those agencies that would be involved in developing and implementing the schedule for the measure.

(4) The plan must contain a commitment to develop and submit contingency measures (in addition to those otherwise required for the area) that could be implemented if the measure is not developed or if it fails to achieve the anticipated reductions.

(5) The long-term measure(s) must not be needed to meet any emissions reductions requirements within the first 10 years after enactment. The State must submit its contingency measures no later than 3 years before the original long-term measure was to have been implemented. The measures must be adequate to produce emissions reductions sufficient, in conjunction with other approved plan provisions, to achieve the periodic emissions reductions and to attain the ozone NAAQS by the applicable dates. If the Administrator determines that the extreme area has failed to achieve an emissions reductions requirement set forth in section 182 (b)(1) or (c)(2) and that such failure is due in whole or part to an inability to fully implement provisions (related to new technologies) described in section 182(e) (1 through 4) and approved pursuant to section 182(e)(5), the Administrator will require the State to implement the contingency measures to the extent necessary to ensure compliance with the emissions reduction requirements of section 182 (b)(1) and (c)(2). The EPA will set a schedule for implementing contingency measures upon making a finding of failure to meet a milestone.

(g) *Milestone failures (economic incentive programs).* Under section 182(g)(5), if the State fails to submit a compliance demonstration for any extreme area as required by section 182(g)(2), or if the area has not met an applicable milestone as required by section 182(g)(1), the State shall submit a plan revision to implement an economic incentive program (as described in section 182(g)(4)) within 9 months of such failure. The EPA urges the State in this instance to initiate the development of an economic incentive program as soon as it can reasonably define the objectives and scope of an appropriate program, without waiting until such a failure occurs. The EPA belives that early initiation is important so as to allow for sufficient time to develop, implement, and evaluate the effectiveness of the program. Economic incentive programs are discussed in more detail in section III.H.3.

7. Nonclassifiable Nonattainment Areas

(a) *General.* Nonclassified ozone areas consist of transitional, submarginal, incomplete/no data areas. An area is considered transitional under section 185 if it was designated nonattainment both prior to enactment and (pursuant to section 107(d)(1)(C)) at the time of enactment, and did not violate the primary NAAQS for ozone over the 3-year period 1987–1989 (i.e., measured equal to or less than 1.0 exceedances per year based on a full set of quality-assured data from a properly sited monitor(s)). Submarginal areas fall into one of two categories that arise under the provisions of the 1990 CAAA.

This situation exists due to the adjustment for missing or incomplete data when calculating expected exceedances. The first category (Category I) consists of areas presently designated nonattainment that are violating the ozone standard. The second category (Category II) consists of areas designated attainment at enactment that are violating the ozone standard. Finally, if an area retained its nonattainment designation at enactment (under section 107(d)(1)(C)) but adequate data are not available to indicate whether one or more violations of the standards have occurred, the area is considered an incomplete data or no data area.

Section 185A specifically exempts transitional areas from subpart 2 requirements until December 31, 1991. However, the CAAA are silent on whether such areas should be exempt from subpart 1 requirements as well. The CAA provide no specific guidance for submarginal and incomplete/no data areas concerning applicable requirements for these categories. Subpart 1 contains general SIP planning requirements, and EPA believes that subpart 2 is not applicable to submarginal and incomplete/no data areas. Nevertheless, because these areas are designated nonattainment, some aspects of subpart 1 necessarily apply. The EPA's interpretation of the section 172(c) requirements for these areas is given below. Under section 172(b), applicable revisions to the SIP are due 3 years from designation under section 107(d).

(1) *RACT/Reasonably available control measures (RACM)*—(i) Transitional areas. To satisfy section 172(c)(1), transitional areas (section 185A) that continued to show no violations as of December 31, 1991 must ensure, at a minimum, that any deficiencies regarding enforceability of an existing rule are corrected. While section 185A exempts transitional areas from all Subpart 2 requirements until December 31, 1991, and that exemption continues until the area is redesignated to attainment (assuming the area satisfactorily demonstrated attainment by December 31, 1991), States should be aware that in order to be redesignated to attainment such areas must correct any RACT deficiencies regarding enforceability.

(ii) Incomplete/no data areas. Since it is not known whether these areas are violating the standard or not, it is EPA's position that requiring RACT corrections is unreasonable. However, like transitional areas, incomplete/no data areas must correct any RACT deficiencies regarding enforceability of existing rules in order to be redesignated to attainment.

(iii) Sub-marginal areas. Since it is known that sub-marginal areas are violating the standard (only their design value is lower than the threshold for which an area can be classified), it is EPA's position that such areas must make the same RACT corrections (if previously required) as marginal areas. Like marginal areas, sub-marginal areas are exceeding the ozone standard and therefore should apply the same level of RACT as was required before enactment. Under section 172(b), these RACT corrections must be included in the SIP revision due November 15, 1993. However, to the extent an area is subsequently reclassified to one of the nonattainment classifications in Table 1 of section 181, it will be subject to the time schedule of subpart 2.

(2) *Attainment demonstration.* Section 182(a)(4) specifically exempts marginal areas from any attainment demonstration requirement. Since marginal areas are exempt from this requirement, it would be unreasonable to apply this requirement to an area that was either not violating the standard or recorded a design value so low as to be unclassifiable. Therefore, EPA will presume that the existing SIP requirements and any existing and future Federal requirements (e.g., the title II rules) wil be sufficient to provide for attainment in these areas.

(3) *RFP.* A reasonable further progress requirement assumes a long nonattainment period or a large amount of reductions required to attain. Because a transitional, submarginal, or incomplete data area is or is likely to be already in or near attainment, EPA will treat a SIP that includes NSR and RACT corrections (if needed) coupled with Federal measures, as meeting the RFP requirement.

(4) *Emissions inventory.* An emissions inventory is specifically required under section 172(c)(3), and is not tied to an area's proximity to attainment. Moreover, even if these areas are already attaining or near attainment, they will need such an inventory to develop an approvable maintenance plan under section 175A.

(5) *NSR.* Like the emissions inventory requirement, the NSR requirement is not tied to an area's proximity to attainment and therefore exempting a nonattainment area from NSR requirements would clearly violate the Statute. Furthermore, the new NSR program is one of the CAAA's major bulwarks against further deterioration of the Nation's air quality. Therefore, all nonattainment areas, including submarginal, transitional and incomplete/no data areas, are required to adopt NSR programs meeting the requirements of section 173, as amended.

(6) *Monitoring.* Section 172 (b) and (c) explicitly states that nonattainment areas must meet the "applicable" monitoring requirements of section 110(a)(2).

(7) *Contingency measures.* Since submarginal and incomplete/no data areas generally present less serious ozone problems than marginal areas, which are expressly exempted from the requirement for contingency measures under section 182(a), contingency measures are not likely to be necessary to assure attainment for these areas, EPA believes it appropriate not to apply the requirement for contingency measures for these areas under a de minimis approach. The approach is authorized by *Alabama Power* v. *Costle*, 636 F.2d 323, 360–61, 404–05 (DC Circuit 1980), which held that EPA may exempt de minimis actions from a statutory requirement when the burdens of regulation would yield little or no value.

(8) *Attainment dates for nonclassifiable areas.* Section 172(a)(2) requires an attainment date of no later than 5 years from an area's designation as nonattainment. For areas designated nonattainment under section 107(d)(1)(C)(i) (pre-enactment nonattainment areas), the attainment date is November 15, 1995. For newly designated areas, the attainment date will be 5 years from the effective date of the nonattainment designation. For submarginal and incomplete/no data areas that fail to attain in 5 years, EPA is considering one or more of the following options in enforcing a 5-year attainment date for nonclassifiable areas:

(i) If an area fails to attain 5 years from designation, the area would be bumped up to marginal or a classification commensurate with the area's design value if the design value is at least 0.121 ppm.

(ii) If an area fails to attain 5 years from designation either due to incomplete/no data or a submarginal design value, the area retains its status but EPA will tighten subpart 1 requirements. This could include further RACT measures, or possibly a basic I/M program.

The following sections further discuss the applicability of the Act's requirements to each of the three types of nonclassifiable areas.

(b) *Transitional.* A transitional area will have to meet the requirements described below.

(1) *Section 185A requirements.* The Administrator announced in the November 6, 1991 **Federal Register** which ozone nonattainment areas did not violate the NAAQS during the 36-month period from January 1, 1987 to December 31, 1989. For such areas, the requirements under subpart 2 (of title I part D), including any RACT fix-up obligations, were suspended until December 31, 1991. By June 30, 1992, the Administrator will determine on the basis of the area's average number of exceedances whether the area had in fact attained the NAAQS for ozone by December 31, 1991. Where the Administrator determines that the area attained the NAAQS, the State must submit a maintenance plan for the area within 12 months of such determination. In addition, the other four redesignation requirements under section 107(d)(3)(E) must be met, including RACT fix-ups regarding enforceability.

(2) *Redesignation of transitional areas.* The State must submit complete monitoring data for the transitional area that supports redesignation to attainment (i.e., showing no measured violations during the 36-month period from January 1, 1989, to December 31, 1991) in sufficient time for the Administrator to make a finding of attainment and to promulgate such finding by June 30, 1992. If the Administrator finds the area has attained, the State must submit a maintenance plan within 1 year of the finding along with documentation to support the conclusion that the redesignation requirements under section 107(d)(3)(E) have been met. For a discussion of the specific State actions required in order to satisfy the five redesignation requirements, see "Redesignations" under section III.H.5 of this document.

(3) *NSR.* By November 15, 1992, all nonattainment areas, including transitional areas that have failed to attain, must submit rules to implement the new part D NSR requirements under section 173.[8] In the meantime, the existing part D NSR requirements will remain in effect until the area is redesignated to attainment, at which time the PSD requirements of part C will apply. If the area does not have an approved part D plan for NSR permitting and it issues a permit for a major stationary source or major modification in the transitional area during the interim period before redesignation, the State permit should comply with the requirements in 40 CFR part 51, appendix S.

(4) *Failure to attain.* If a transitional area violates the NAAQS during the 3-year period from January 1, 1989 to December 31, 1991, then it shall be classified in accordance with Table 1, section 181(a). Upon classification, the area shall continue to be subject to the general requirements under subpart 1 not addressed in subpart 2, and those specific provisions under subpart 2 appropriate to the area's classification that would have applied had the area been so classified at the time of the notice of other nonattainment areas' initial classifications under section 181(a)(3). For example, such an area would need to submit RACT fix-up requirements of section 182(a)(2)(A) within 6 months of classification. The Administrator may, however, adjust any applicable deadlines (other than attainment dates) to the extent that such adjustment is necessary or appropriate to ensure consistency among the required submissions.

If complete monitoring data reveal that a transitional area is violating the standard but its design value is less than 0.121 ppm [9]—below the design value ranges in Table 1 (section 181[a])—then the area will be considered submarginal. Refer to the category below entitled "Submarginal."

(c) *Submarginal*— (1) *Category I—(Previously designated nonattainment).* If the area's average expected exceedance rate was more than 1.0 during the 3-year period 1987–1989, it is violating the standard. However, if the area's design value was less than 0.121 ppm, below the threshold for which it can be classified as marginal, the area is submarginal.

(2) *Category II—(New nonattainment areas).* Category II areas are those areas designated unclassified/attainment on the date of enactment, but with an average expected exceedance rate more than 1.0 during the 3-year period 1987–1989. These areas are violating the standard, yet their design values were less than 0.121 ppm, below the threshold for which they can be classified as marginal under Table 1 section 181(1). The EPA also describes such areas as submarginal.

(3) *Requirements.* As discussed above, all nonattainment areas, including submarginal areas, are subject to several of the requirements in subpart 1. Specifically, section 172(b) requires a SIP revision within 3 years of designation that must meet several requirements, in particular, NSR.

If a State submits a request for redesignation to attainment, then a proper and adequate maintenance plan, as defined in section 107(d)(1)(E), must be submitted.

(4) *Failure to attain.* If, at some time in the future (before the area has demonstrated that it has met the five requirements for redesignation under section 107(d)(3)(E)), a submarginal area violates the NAAQS and the design value is equal to or exceeds 0.121 ppm, it is EPA's position that the area will at that time be classified under Table 1, section 181(a), according to its design value.

Once classified, the area will continue to be subject to those subpart 1 requirements not addressed in subpart 2 and the specific provisions of subpart 2 determined by its classification. Under section 182(i), these provisions apply as if the area had been so classified at enactment, except the EPA may adjust any applicable deadlines (other than attainment dates) to the extent necessary or appropriate to assure consistency among the required submissions.

(5) *NSR.* By November 15, 1992, all ozone nonattainment areas, including submarginal areas (both Category I and Category II) must submit rules in approvable form to EPA to implement the new NSR requirements under section 173. In the meantime, the existing part D NSR requirements remain in effect.

If a submarginal area does not have an approved part D NSR permitting program, and the State wishes to issue a permit for a major stationary source or major modification in that area, the State permit must comply with the requirements of 40 CFR part 51,

[8] If a transitional area has not recorded any violations by December 31, 1991, and is in the process of developing a maintenance plan per section 185A, then EPA may not require nonattainment NSR rules. However, these areas must continue to apply their existing NSR program or comply with the NSR permitting requirements of 40 CFR part 51, appendix S. Prior to redesignation, these areas also must adopt and be prepared to implement a permitting program that satisfies the requirements of part C and EPA's regulations implementing the PSD program. Areas should consider the need for offsets under the part C program to insure that new sources do not "cause or contribute" to an increase in pollutant levels that would take the area out of compliance. If the area is found to be out of compliance and the statutory deadlines for adopting amended part D permitting rules for the pollutant in question have passed, EPA may impose a construction ban pursuant to section 113(a)(5) until such time as the area adopts a part D program satisfying the NSR requirements of the CAAA.

[9] Readers are reminded that for purposes of determining exceedances, an exceedance is a daily 1-hour maximum which is equal to or greater than 0.125. In order to be classified under Table 1 section 181(a)(1), a design value must be equal to or greater than .121.

appendix S, until the State adopts the necessary part D NSR provisions.

(6) *Redesignation to attainment.* In order to be redesignated to attainment, the State must demonstrate that the five redesignation requirements (i–v) under section 107(d)(3)(E) have been met. See section III.H.5. which describes the specific actions that will determine compliance with each of these requirements.

(d) *Incomplete data or no data*—(1) *Requirements.* As discussed above in the Introduction, all nonattainment areas, including incomplete data or no data areas, are subject to the requirements in subpart 1. Specifically, section 172(b) requires a SIP revision within 3 years of designation.

If a State submits a request for redesignation to attainment, then a proper and adequate maintenance plan, as defined in section 107(d)(1)(E), must be submitted. The discussion under "Redesignation" in section III.H.5 of this preamble describes the specific actions that will determine compliance with each of these requirements.

(2) *NSR.* By November 15, 1992, all ozone nonattainment areas, including incomplete or no data areas, must submit rules to implement the new NSR requirements of sections 172(c)(5) and 173. In the meantime, the existing part D NSR requirements remain in effect. If the area does not have an approved part D NSR permitting program, and the State issues a permit for a major stationary source or major modification in the area, the State permitting program should comply with the requirements in 40 CFR part 51, appendix S, until the new part D NSR requirements become effective.

8. Transport Areas

Section 176A allows the Administrator to establish a transport region covering multiple States whenever interstate transport of pollutants contributes significantly to violations of the NAAQS. Section 184(a) specifically created at enactment, by operation of law, an ozone transport region comprising the States of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont, and the CMSA that includes the District of Columbia. Section 184(b) contains the specific requirements for States in the ozone transport region(s).

(a) *Specific requirements.* States within ozone transport regions must revise their SIP's to include specific measures by November 15, 1992 in the case of the region established by section 184(a), or within 9 months of inclusion in a transport region in the case of a State subsequently included in a transport region under section 176A. The discussion here will focus on the region established under section 184(a), and, for convenience, that region will be referred to as the Northeast transport region or just the transport region. If other ozone transport regions are established under section 176A, States in these regions must also adopt and implement the specific controls discussed below.

(1) *Enhanced I/M.* A State within the transport region must adopt a program pursuant to section 184(b)(1)(A) meeting the requirements of section 182(c)(3), "Enhanced Vehicle Inspection and Maintenance Program," for any MSA (or portion of an MSA) within the State that has a population of 100,000 or more. The Act does not address the census year for this population; EPA believes the year of enactment (1990) is the correct year to use in this case.

(2) *RACT on VOC sources.* Each State in a transport region must adopt VOC RACT regulations for sources located within that portion of the State included in a transport region.[10] Under section 184(b)(1)(B), the RACT rules that apply to sources for which a CTG was issued before or after enactment must be submitted by November 15, 1992.

Section 184(b)(1)(B) specifies that the State must submit by November 15, 1992, a plan containing RACT rules for sources covered by a CTG issued after enactment. However, many past-enactment CTG's will not be issued by November 15, 1992; indeed, Congress did not contemplate that all would be issued until November 15, 1993 (see section 183(a)). For that reason it would be impossible for a State to submit actual RACT rules reflecting consideration of the post-enactment CTG's by November 15, 1992. Therefore, in order to meet the submittal requirement, the State must submit an enforceable commitment to adopt and implement RACT rules for sources covered by CTG's issued after enactment in accordance with the schedules contained in each of the CTG's. The CTG document in Appendix E lists the 11 CTG's EPA plans to issue under section 183. The States should refer to that document.

Furthermore, section 184(b)(2) provides that VOC sources with the potential to emit at least 50 tons per year are effectively subject to the moderate area requirements. Therefore, EPA believes that the schedule for submitting and implementing these RACT rules should be consistent with the requirements of section 182(b)(2) which requires submittal by November 15, 1992 and implementation no later than May 31, 1995.

(3) *NSR for VOC sources.* Since section 184(b)(2) requires that stationary sources of VOC having the potential to emit at least 50 tons per year shall be considered major sources and subject to the same requirements that apply to major sources in ozone areas classified as moderate (section 182[b]), the State must also adopt rules to apply the part D NSR permitting provisions [11] for ozone statewide, unless a portion of the State has been excluded from the transport region under section 176A(2). These rules, which are due by November 15, 1992, include requirements that a new or modified major stationary source will apply controls representing LAER, and that the source will obtain an emissions offset prior to operation. The emissions offset is based on the ratio of actual emissions reductions of VOC to total allowable increases in emissions that would result from construction and operation of the source. In this case, the required ratio is at least 1.15 to 1 (the ratio applicable to moderate ozone areas). It should be noted that in these areas classified as serious or higher, a higher offset ratio would apply. State rules must ensure that the offsets obtained for a new or modified stationary source will be consistent with any State or regional attainment strategies. All NSR requirements of part D must be met for permit issuance.

In nonattainment areas within the transport region, offsets must generally be obtained from the nonattainment area where the source wishes to locate except as allowed by section 173(c) of the amended Act. Section 173(c) allows offsets from other nonattainment areas if the area has equal or higher nonattainment classification than the area where the source is located, and emissions from such other area contribute to a violation of the standard

[10] Section 176A(a)(2) provides a process for modifying the boundaries of a transport region. However, EPA will not allow a delay in the adoption of measures under section 184(b) due to a State request to exclude a portion of the State from the transport region. The EPA expects the States within a transport region and the transport commission to consider requests for deletion of areas quickly so as to minimize the uncertainty States may have regarding plan submittals due 2 years from enactment (for the Northeast transport region) or 9 months after subsequent inclusion of an area and transport region. Although section 184(b) does not specifically discuss how much less than the entire State can be subject to the requirements, EPA interprets section 176A as establishing a process whereby a protion of a State can be removed from the region and exempted from the requirements.

[11] See section III.G for a complete discussion of the NSR provisions.

in the nonattainment area in which the new source is located. For attainment areas within the transport region, guidance for location of offsetting emissions at 40 CFR part 51, appendix S, should be followed. Appendix S specifies that emissions offsets for VOC may be obtained from sources located anywhere within the broad vicinity of the proposed new source. Generally, VOC offsets may be obtained if within the same Air Quality Control Region (AQCR) as the new source or from other areas that may be contributing to the ozone problem at the proposed new source location. It is desirable to obtain offsets from sources located as close to the proposed new source site as possible. If the proposed offsets would be from sources located at greater distances from the new source, the reviewing authority should increase the ratio of the required offsets and require a showing that nearby offsets were investigated and reasonable alternatives were not available.

The PSD provisions of part C (as well as the nonattainment provisions discussed above) continue to apply to stationary sources in the areas designated attainment or unclassifiable that are within the ozone transport region. Title I does not exempt these sources from the PSD requirements. Likewise, the major stationary source thresholds defined in the PSD rules continue to apply when determining PSD applicability.

(4) *Gasoline vapor recovery.* Section 184(b)(2) requires the Administrator to complete a study identifying control measures capable of achieving emissions reductions comparable to those achievable through vehicle refueling controls contained in section 182(b)(3) by November 15, 1993. All areas within a transport region are then required, within 1 year of completion of this study, to adopt and submit as an SIP revision the comparable measures or the section 182(b)(3) Stage II vapor recovery measures. However, pursuant to section 182(b)(3), ozone nonattainment areas classified as moderate or above must adopt and submit Stage II rules by November 15, 1992. Although moderate nonattainment areas that are located within an ozone transport region may become exempt from the section 182(b)(3) requirement due to the adoption of onboard regulations (see section 202[a][6]) such areas will remain subject to the transport requirement of section 184(b)(2). The exemption and waiver provision of section 202(a)(6) applies only to the section 182(b)(3) Stage II requirement, not to he the requirement of section 184(b)(2) to adopt Stage II or measures identified as achieving equivalent reductions. The transport provision is a separate requirement that focuses not on Stage II, but on means to get reductions equivalent to what would be achieved under section 182(b)(3).

(b) *Other requirements.* The transport region or portions thereof may also be subject to additional control requirements resulting from recommendations from the transport commission under section 184(c). If EPA approves a recommendation from the commission submitted under section 184(c), EPA will issue a finding that the SIP for the appropriate State(s) is inadequate and must be revised within 1 year to incorporate the recommendations of the transport commission.

Each ozone nonattainment area located within the transport region is still subject to the applicable requirements for a demonstration of attainment under section 182 (b)(1)(A) and (c)(2). The EPA realizes that in some cases certain demonstrations will be complicated by the RFP requirements and attainment deadlines that apply to areas of different classifications.[12] For example, a moderate area located within the transport region is still subject to the 6-year attainment deadline and the section 182(b)(2)(A) requirement to provide annual emissions reductions in its plan to attain by the deadline. However, this area is (at least, presumptively) being affected by transport from another area(s) and is, as well, possibly affecting other areas, itself. If the "other" areas that are affecting air quality levels in this moderate area are classified as serious or severe, those areas will be reducing their emissions over a longer time frame in order to attain the standard. That is, these "other" areas could still be having significant effects on the moderate area at the time when the moderate area must demonstrate attainment.

As discussed within the context of demonstrations for moderate areas, EPA believes that this situation is somewhat analogous to the situations addressed in section 182(h) for RTA's and in section 182(j) for multi-State ozone nonattainment areas. In these cases, the 1990 CAAA recognize that at some point, an area being affected by emissions from another area(s) may not be able to achieve sufficient emissions reductions on its own to demonstrate attainment. In these cases, the area is relieved from certain requirements in the CAAA that would require additional controls. There is no explicit recognition in the CAAA of this occurring in other situations.

In general, two situations exist in which an area might be subject to additional emissions reductions requirements related to the demonstration of attainment. In the first, an area might be receiving such high levels of transport that even if it reduced its emissions dramatically (e.g., totally eliminated its own emissions), the incoming ozone and precursors would be high enough to continue to cause violations of the standard beyond the applicable attainment date. In the second situation, the area might be able to achieve additional reductions (beyond those required under section 182), but even where those additional reductions could be achieved to demonstrate attainment, the question arises whether it is equitable to require those reductions or to allow more time for the reductions in the "upwind" area to take place. As described above, however, the statute provides no express relief for these situations. Thus, where the demonstration of attainment is complicated by transport between two areas of different classifications, the State is still responsible for developing and submitting demonstrations which show that the standard will be attained by the applicable date. In other words, the State must provide for sufficient emissions reductions on a schedule that will ensure attainment in its moderate area, for example, within 6 years after enactment. The EPA believes that the wording in section 182(b)(1)(A)(i) requires the State to develop a plan providing such emissions reductions. The area does not have the option of requesting to be reclassified to the next higher classification.

At this time, EPA is not sure to what degree the situation described above is likely to occur or know of any real cases where this will be a problem. If such a situation were to occur, EPA intends to look at the facts specific to that area. Considerations would include the results of the area's attainment analyses along with any region-wide modeling results in evaluating available SIP approval options. When such areas develop the demonstration of attainment due in November 1994, they should provide a comprehensive assessment of the impacts of all control measures being implemented in both the local and upwind areas. States should clearly show the extent to which the downwind

[12] The discussion here regarding areas within an existing transport region also applies to areas that are impacted by ozone and precursor transport but are not yet in transport regions. Therefore, much of this discussion also occurs under section III.A.3.(b) for moderate areas.

area is dependent on upwind strategies while fully meeting its own requirements associated with its classification.

9. Multi-State Ozone Nonattainment Areas

Section 182(j) defines a "multi-State ozone nonattainment area" as a single ozone nonattainment area that covers more than one State. Section 182(j)(1)(A) and (B) set certain requirements for such areas. First, each State in a multi-State ozone nonattainment area must take all reasonable steps to coordinate the implementation of the required revisions to SIP's for the given nonattainment area (section 182(j)(1)(A)). Next, section 182(j)(1)(B) requires the States to use photochemical grid modeling or any other equally effective analytical method approved by EPA for demonstrating attainment. The EPA is prevented by section 182(j) from approving any SIP revision submitted under that section if a State has failed to meet the above requirements.

A State within a multi-State ozone nonattainment area that fails to provide a demonstration of attainment for that State's portion of the area is allowed by section 182(j)(2) to petition EPA to determine whether such State could have demonstrated attainment but for the failure of one or more States in the area to adequately implement the required measures under section 182 for the given area. If EPA so finds, then the sanctions provisions under section 179 shall not apply to the State whose failure to make an adequate attainment demonstration was due to failure by other States to implement section 182 measures.

Pursuant to section 182(j)(1)(A), EPA is calling on each multi-State ozone nonattainment area to develop a joint work plan as evidence of early cooperation and integration. The work plan must include a schedule for developing the emissions inventories, the 15 percent progress requirement SIP revision (if applicable), the 3 percent per year progress requirement SIP revision (if applicable), and the attainment demonstration for the entire multi-State area. Each State within a multi-State ozone nonattainment area is responsible for meeting all the requirements relevant to the given area.

Marginal multi-State ozone nonattainment areas are excluded from undertaking photochemical grid modeling for submittal in attainment demonstrations by section 182(a)(4), which excludes any marginal area from the requirement to submit attainment demonstrations. (The EPA believes that the section 182(a)(4) exemption supersedes the applicability of the multi-State area modeling requirement for marginal areas.)

Moderate and above multi-State ozone nonattainment areas must submit attainment demonstrations which use photochemical grid modeling (or equivalent). This section 182(j)(1)(B) requirement can be met through application of EPA approved modeling techniques for SIP revisions as recommended in the current version of EPA's "Guideline on Air Quality Models (Revised)." The Urban Airshed Model is recommended for modeling applications involving entire urban areas. Care should be taken to coordinate strategies and assumptions in a modeled area with those in other, nearby modeled areas in order to ensure that consistent, plausible strategies are developed.

Section 182(j) requires States in which a moderate multi-State nonattainment area occurs to use photochemical grid model to demonstrate that prescribed controls are sufficient to attain the NAAQS. The section is silent concerning the timing for such an analysis. However, one of the distinctions between section 182(b) and section 182(c) is that serious areas (for which grid models are required) are given an extra year (until November 1994 instead of November 1993) to submit a SIP reflecting an attainment demonstration. This is in recognition of the time required to gather data to support to perform a grid modeling analysis. Thus, a reading of section 182 (b), (c), and (j) implies that the requirement that multi-State moderate nonattainment areas perform grid modeling effectively extends for 1 year (from November 1993 to November 1994), the deadline for moderate multi-State areas to submit a SIP containing an attainment demonstration. Stated differently, the requirement for grid modeling imposed on multi-State moderate areas by section 182(j) supersedes the requirement to have the November 1993 SIP transmittal contain an attainment demonstration. Instead, for practical reasons, the requirement imposed by section 182(j) implies a need for a November 1994 SIP revision reflecting provisions needed to attain the NAAQS as determined through a grid modeling analysis.

The effect of this interpretation of section 182 (b) (c) and (j) is that the timing for SIP submittals in moderate inter-State nonattainment areas is identical to that in serious nonattainment areas. That is, a SIP revision providing for 15 percent reduction in VOC emissions from 1990 through 1996 is due by November 1993. A second SIP revision containing necessary provisions to demonstrate attainment of the NAAQS is due in November 1994.

B. Carbon Monoxide

The 1990 CAAA create a new classification structure for CO nonattainment areas based on the severity of the nonattainment problem. For each area classified under this section, the attainment date shall be as expeditious as practicable, but no later than the date in the following table. The classification scheme is as follows:

Area classification	Design value, ppm	Primary standard attainment date
Moderate	9.1–16.4 ppm	December 31, 1995.
Serious	16.5 and above.	December 31, 2000.

As provided in part D subpart 3, Emission Inventories, rules for I/M, NSR rules for areas with a design value greater than 12.7 ppm, and certain other planning or control measures are required within 2 years after enactment (November 15, 1992) for both previously and newly designated nonattainment areas. If an area's boundaries are subject to adjustment under section 107(d)(4)(A)(iv) (for serious CO areas), final designation may be promulgated as late as 14 months after enactment, or March 1992—just 8 months before major rules (e.g., I/M, NSR) and the emission inventory must be submitted. These nonattainment areas should not delay their adoption of rules or preparation of inventories while the boundary determinations are proceeding. Rather, EPA believes these areas should be prepared to readily adopt rules and complete their emission inventories for the entire MSA/CMSA, should it be concluded that the nonattainment boundaries will be the MSA/CMSA. The EPA will require those submittals, which are due by November 15, 1992, to address the entire nonattainment area.

In addition to the two classifications, some nonattainment areas do not fit into the classification scheme and are nonclassified areas. The CO section will describe the requirements for all areas (moderate and serious and the special classifications) in much the same way as the 1990 CAAA describes the requirements. The requirements are additive (i.e., a serious area has to meet all moderate requirements and all serious requirements, etc.). Requirements discussed for moderate areas will be repeated for serious areas only if the requirements are different.

1. Moderate Areas 12.7 ppm and Below

(a) *Emission inventory.* Section 187(a)(1) requires moderate CO areas to submit by November 15, 1992, "a comprehensive, accurate, current inventory of actual emissions from all sources, as described in section 172(c)(3)." Draft base year inventories must be submitted between January 1, and May 1, 1992. The inventory is defined as the base year inventory and is a "current inventory." The EPA interprets the requirement that the inventory be "current" to mean that it be an inventory for 1990 (year of enactment). The inventory is to address actual CO emissions during the peak CO season for the area (generally the winter months). All stationary point, area, highway/nonhighway mobile, and OCS sources (if any) are to be included in the compilation.

As one of the first steps in developing the base year inventory, the States are to prepare an IPP, which is due in final form to EPA by October 1, 1991. The IPP should include a brief statement of how the State intends to develop, document, and submit its inventory. Another early step in the inventory development process is preparing the point source portion of the base year inventory. Updated guidance for preparing emission inventories was issued in May 1991; however, the point source portion is essentially the same as it was for the post-1987 SIP's. Thus, States should have already begun gathering data on point source emissions. States are encouraged to submit the point source portion of the inventory to EPA as early as possible.

States that have fully completed portions of their base year inventories for 1987, 1988, or 1989 may request EPA approval to update these portions. Otherwise, States will have to prepare a completely new 1990 base-year inventory. Guidance on the procedure to request an update was provided in May 1991 ("Procedures for te Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone, Volume I [Revised]"). However, for purposes of accuracy and compliance with the goals of the 1990 CAAA, EPA encourages all areas to prepare new 1990 base-year inventories even if they already assembled base-year inventories for 1987/1988/1989.

The EPA issued an updated version of MOBILE4, its mobile source emissions estimation model, in July 1991. The updated version is MOBILE4.1, and it replaces and supersedes its predecessor. States, except for California, are required to use MOBILE4.1 in determining highway mobile-source emissions for all of their base-year emissions inventories under the Act. California should consult with EPA Region IX in determining which mobile model to use. The majority of the enhancements in the revised model are internal to the model and do not directly affect the use for base-year inventory emission factor generation purposes. The reader should refer to EPA's "Emission Inventory Requirements for Carbon Monoxide State Implementation Plans" for more information.

The July 1991 guidance also contains information related to some area and off-highway mobile source categories that may significantly affect how emissions are to be determined. For these categories (railroads and aircraft), States must use the new methodology and develop new emission estimates. The States will also be required to develop new 1990 base-year inventories for highway mobile sources that account for fleet turnover, road construction resulting in changes in VMT patterns, and changes in speed limits. The new 1991 guidance on MOBILE4.1 and off-highway mobile sources guidance on VMT should be consulted for additional detail.

The EPA guidance should also be consulted for information on how to account for rule effectiveness when calculating emissions from stationary sources of CO. Rule effectiveness is a measure of the ability of a regulatory program to achieve all the emission reductions that could be achieved by full compliance with the program by all sources at all times. For the purpose of base-year inventories under the 1990 CAAA, EPA will allow the use of an 80 percent default value but will also give States the option to derive local category-specific rule effectiveness factors within some tightly prescribed guidelines discussed in the guidance.

Finally, the reader should refer to section III.B.6 for additional information related to base year inventories for multi-State nonattainment areas.

By meeting the specific inventory requirements discussed above, the State will also satisfy the general inventory requirements of section 172(c)(3).

(b) *I/M corrections.* Section 187(a)(4) requires States with moderate CO nonattainment areas that already include I/M programs or that were required by the pre-1990 Act to include I/M programs in their SIP's, to submit to EPA immediately upon enactment any revisions necessary to provide for a program no less stringent than that required prior to enactment or committed to in the SIP in effect at the time of enactment, whichever is more stringent. Requirements for these I/M programs are contained in section 182(a)(2)(B). This section requires EPA to review, revise, update, and republish in the **Federal Register** within 1 year of enactment, the guidance for I/M programs required by the Act, taking into consideration the Administrator's investigations and audits of such programs. In short, the moderate areas must maintain existing I/M programs and make corrections to those programs to meet existing I/M policy; when updated policy is published, these areas must submit revisions to address any revised guidance.

More specifically, section 182(a)(2)(B) requires States to meet the basic I/M performance standard that has been in effect since 1977. That performance standard is based on a "model" program design consisting of a centralized progam that annually tests tailpipe emissions on all light-duty vehicles using emission standards for 1981 and later model vehicles of 1.2 percent CO and 220 ppm HC and 20 percent stringency for pre-1981 vehicles. A compliance rate of 100 percent and a waiver rate of zero percent are assumed. States must demonstrate an emission reduction for the I/M program included in the SIP that is at least as great as that produced by the "model" basic program (or the program already included in the SIP, whichever is greater), using the most current available version of EPA's mobile source emission model. The I/M programs are required in the urbanized area portions, as defined by the Bureau of the Census, of the nonattainment area.

The EPA expects to issue the policy for I/M areas in the near future. When published, the policy will state the date when such programs are to be implemented. The EPA intends to allow all areas ample time to adopt and submit required I/M programs, including I/M corrections under section 187(a)(4). States that have both basic and enhanced I/M areas may opt to implement enhanced programs in all affected urbanized areas. States which are only required to implement basic programs must submit SIP revisions for I/M program addressing any revised policy. The guidance will cover the elements of the SIP revision.

As mandated by section 202(m), the Administrator will promulgate regulations requiring manufacturers to install diagnostic systems on all new light-duty vehicles and light-duty trucks. The purpose of these systems is to identify and track emissions-related systems deterioration or malfunction. According to section 202(m)(3), within 2

years of EPA's promulgating regulations requiring States to do so, all States with I/M programs must amend their SIP to provide for inspection of these onboard diagnostics systems. The EPA will issue revised I/M guidance which addresses onboard diagnostic inspections.

(c) *Periodic inventory.* According to section 187(a)(5), moderate CO nonattainment areas are required to submit periodic inventories starting by September 30, 1995, and then every 3 years thereafter until the area is redesignated to attainment. The periodic inventory shall meet the same requirements as the base year inventory. Additional guidance is available on inventory procedures (see section III.A.2.(a)).

By meeting the specific periodic inventory requirements discussed above, the State will also satisfy the general periodic inventory requirements of section 172(c)(3).

(d) *Attainment demonstration.* No attainment demonstration is required for moderate CO areas when the CO design value is 12.7 ppm or below.

(e) *Oxygenated fuels*—(1) *Schedule.* Section 211(m) requires that SIP revisions containing oxygenated fuel requirements be submitted to EPA in adopted form by any State containing all or part of a nonattainment area for CO with a design value of 9.5 ppm or above based on 1988 and 1989 data. Section 187(b) of the Act calls for SIP revisions to implement oxygenated gasoline requirements in certain CO nonattainment areas within 2 years of enactment. Because section 211(m) is more detailed than section 187(b) and applies to a greater number of CO nonattainment areas, the substantive requirements of section 211(m) should be followed in preparing SIP revisions. The design value is to be calculated according to the most recent interpretation methodology issued by the Administrator prior to November 15, 1990, which is contained in June 18, 1990 memorandum from William Laxton, Director, Technical Support Division, to the Regional Division Directors. The statute provides that States with areas having design values of 9.5 ppm or above for any 2-year period after 1989, e.g., 1990 and 1991, have 18 months after such 2-year period or designation as nonattainment, whichever is later, to submit a SIP revision meeting the requirements of this section.

The revision must require that any gasoline sold or dispensed by retailers and wholesale purchasers/consumers in the nonattainment area must contain not less than 2.7 percent oxygen by weight. This oxygen content requirement will also apply to gasoline sold or dispensed by refiners or marketers within the larger of the MSA/CMSA containing the nonattainment area. These gasoline content requirements apply during the time of the year determined by the Administrator to be when the area is prone to high ambient CO concentrations. This yearly period can be expected to be no less than 4 months. The EPA issued proposed guidance on the length of the control periods on July 9, 1991 (56 FR 31151).

States may, at their option, include provisions for marketable oxygen credits in their SIP revisions. Under such a program, gasoline with a higher oxygen content than required could offset gasoline with a lower oxygen content than required. The EPA issued proposed guidelines for such marketable oxygen credit programs on July 9, 1991 (56 FR 31154).

At the request of a State, EPA will consider reducing the time period required for an oxygenated gasoline program. The State must demonstrate that, because of meteorological conditions, a reduced period will ensure that there will be no exceedances of the CO air quality standard outside of such reduced period. The demonstration should include consideration of meteorological conditions, peak periods of CO emissions, and historical ambient air quality data, including peak periods of CO concentrations. The demonstration should use EPA-approved dispersion modeling techniques.

For areas with a design value of 9.5 ppm or more as of November 15, 1990 based on 1988 and 1989 data, the oxygenated gasoline requirements must generally take effect no later than November 1, 1992. For areas which have a design value of 9.5 ppm or greater for any 2-year period after 1989, the oxygenated gasoline requirements must generally take effect no later than November 1 of the third year after the second year of the applicable 2-year period. In both cases, the November 1 date may change based either on EPA's determination of when the area is prone to high ambient concentrations of CO, or on an EPA determination to reduce the control period based on meteorological conditions.

Requirements for oxygenated gasoline need not apply to the attainment area outside of the CMSA or MSA. However, oxygenated gasoline requirements shall continue to apply for nonattainment areas that EPA redesignated as attainment, to the extent needed to maintain the CO standard. The revision shall cover gasoline offered for sale or supply, dispensed, transported, or introduced into commerce.

(2) *Waivers.* The statute provides for a waiver from oxygenated gasoline requirements under certain conditions described below. A waiver from the oxygenated gasoline requirements may be granted to a State which demonstrates to EPA's satisfaction that using oxygenated gasoline would prevent or interfere with the attainment by the area of a NAAQS or a State or local ambient air quality standard for any air pollutant other than CO. A waiver from the oxygenated gasoline requirement may similarly be granted upon demonstration by the State to the satisfaction of EPA that mobile sources of CO do not contribute significantly to CO levels in the area. Finally, EPA may waive for 1 year the effective date of the requirement for oxygenated gasoline in a nonattainment area upon petition from any person asserting that there is an inadequate domestic supply of, or distribution capacity for, such oxygenated gasoline or oxygenate additives necessary to meet the requirements, if EPA finds this assertion to be true. To facilitate EPA review, all claims asserted should be demonstrated and documented in the petition. Upon another petition, EPA may again delay the effective date of the requirement in a nonattainment area for 1 additional year. The EPA issued proposed guidelines for waivers based on inadequate domestic supply of, or distribution capacity for, oxygenated gasoline or oxygen additives on September 3, 1991 (56 FR 43593). These guidelines discuss the contents of such petitions, guidelines for, and decisions on such petitions, as well as other relevant factors.

(f) *NSR.* The part D NSR permit requirements of section 173 apply in CO nonattainment areas. All moderate CO nonattainment areas with a design value of 12.7 ppm or less must submit proposed part D NSR programs no later than November 15, 1993. The provisions of these plans must be developed in accordance with the requirements of sections 172(c)(5) and 173. The major stationary source threshold for all moderate areas remains unchanged at 100 tons per year of CO. If the area does not have an approved part D NSR permitting program and a State wishes to issue a permit for a major stationary source or major modification in such area during the interim period, the State permit should comply with the requirements in 40 CFR part 51, appendix S, until new NSR provisions are in effect.

(g) *Bump-up requirements.* According to section 186(b)(2), moderate CO nonattainment areas that fail to attain

the standard must be reclassified to serious and are then subject to the serious area requirements. This reclassification process is referred to as "bump-up." The EPA must determine within 6 months after the attainment date whether an area has attained the NAAQS for CO. The determination of attainment will be based on the design value for the area as of the attainment date. In making this determination, EPA will use the most recently available, quality-assured air quality data covering the appropriate 2-year period up to and including the attainment date. If EPA determines that an area has not attained, EPA will publish a notice and the area will be reclassified by operation of law. As specified by section 187(f), the Administrator may adjust any applicable deadlines (other than the attainment date) where such deadlines are shown to be infeasible.

As provided in section 186(a)(4), up to two 1-year extensions of the attainment date can be granted for an area if the State has met all applicable requirements contained in its implementation plan, and if the NAAQS has been exceeded no more than once during the year in which the area was to have reached attainment. Because EPA will be reviewing available data to determine the attainment status, the State should submit its application for this extension as soon as the necessary air quality data are available.

2. Moderate Areas Above 12.7 ppm

Unless otherwise noted, all moderate areas above 12.7 ppm shall meet those requirements applicable to moderate areas below 12.7 ppm, as well as the following requirements.

(a) *VMT forecasts.* Section 187(a)(2)(A) requires that States include a forecast of VMT for each year before the attainment year in the SIP revision for CO submitted to EPA by November 1992 under section 187(a)(7). The SIP revision must provide for annual updates of the forecasts and annual reports on the extent to which the forecasts were accurate, as well as estimates of actual VMT in each year for which a forecast was required. The forecast and reporting requirement applies to each CO nonattainment area having a design value above 12.7 ppm at the time of its classification. States should follow EPA guidance on VMT forecasting to be issued shortly.

The first set of forecasts is due with the SIP revision. Subsequent forecasts are to be submitted to EPA together with annual reports. The first forecast year should begin with 1993 (the first forecast year) and should include all subsequent years up to the year of attainment. The first annual report is due September 1994 and should be accompanied by updated forecasts of 1994 and all subsequent years up to the attainment year.

Annual reports must contain annual updates of the VMT forecasts and must discuss the extent to which such forecasts proved to be accurate. These reports must also contain estimates of actual vehicle miles traveled in each year for which a forecast was required.

Recognizing that a certain amount of statistical variability is present in the VMT estimation process, EPA believes it is appropriate to allow a margin of error to be applied to VMT comparisons but that this margin should be reduced over time to account for improvements in VMT estimation methodologies. Consequently, EPA will allow a 5 percent margin of error for VMT comparisons made in 1994, a 4 percent margin for comparisons made in 1995, and a 3 percent margin for comparisons made in comparisons made in 1994, 1996 and later years. But since each revised forecast becomes the VMT baseline for triggering contingency measures, the application of a margin of error every year could allow the forecasts to increase without bound, without ever triggering contingencies. To avoid this occurrence, EPA believes it is appropriate to limit cumulative VMT growth to no more than 5 percent above the VMT forecast used as the basis for the area's attainment demonstration.

If estimated actual VMT or an updated forecast exceeds the most recent prior forecast by more than the margin of error allowed for a particular year, and/or if estimated actual VMT or forecasted VMT exceeds the cumulative 5 percent cap above the attainment demonstration forecast, contingency measures will be triggered in the nonattainment area. These contingency measures are to be adopted and enforceable in the SIP.

(b) *Contingency measures.* Section 187(a)(3) requires areas with design values above 12.7 ppm to implement contingency measures if any estimate of actual VMT in the nonattainment area, or any updated forecast of VMT contained in an annual report for any year prior to attainment, exceeds the number predicted in the most recent VMT forecast. Contingency measures must also be implemented if the area fails to attain the NAAQS for CO by the attainment date, unless it is granted an extension. For CO area with design values at or below 12.7 ppm, contingency measures are needed to satisfy the provisions under section 172(c)(9) and are due by November 15, 1993, as set by EPA under section 172(b). These provisions require contingency measures to be implemented in the event that an area fails to attain by the applicable attainment date. All contingency measures for CO areas with design values above 12.7 ppm must be adopted and enforceable and submitted to EPA by November 15, 1992, as set by EPA under section 172(b). This is the date by which the State must submit to EPA the CO SIP with demonstrations of attainment for moderate areas having a design value at or above 12.7 ppm. These contingency requirements for SIP's supersede the contingency requirements contained in the 1982 ozone and CO SIP guidance, 46 FR 7182 (January 21, 1981).

The 1990 CAAA do not specify how many contingency measures are needed or the magnitude of emission reductions (or VMT reductions) they must provide. The EPA believes that for serious nonattainment areas, a logical contingency measure for failure to attain by the attainment date would be the adoption of a requirement for a minimum 3.1 percent oxygen content of gasoline subject to the waiver provisions in section 211(m)(3). This suggested contingency measure parallels the requirement under section 211(m)(7) for serious areas which fail to attain the CO NAAQS to adopt and implement an oxygenated fuels program of at least 3.1 percent. For serious areas that fail to meet rate of progress requirements, for moderate areas that fail to attain by the attainment date, and for all areas that exceed a VMT forecast, States may select contingency measures for the reduction of CO emissions.

The EPA believes that for exceedance of a VMT forecast, one appropriate choice of contingency measures would be to provide for the implementation of sufficient VMT reductions or emissions reductions to counteract the effect of 1 year's growth in VMT while the State revised its SIP (including VMT projections) to provide for attainment by the applicable date. These measures may offset either the excess VMT in the nonattainment area or the additional CO emissions in the area that are attributable to the additional VMT. Since EPA will require the State to revise its SIP within 1 year of finding that VMT levels are exceeding forecasts considering the tolerance discussed earlier, the contingency measures should be capable of reducing VMT or resultant emissions by an amount equal to the projected annual growth rate for VMT. In other words, if VMT is expected to increase at a rate of 2 percent per year, the contingency measures under this alternative should be capable of

reducing future VMT (or offsetting VMT growth) by 2 percent.

As discussed above for ozone areas, EPA Interprets the requirement for contingency measures to "take effect without further action by the State or the Administrator" to mean that no further rulemaking activities by the State or EPA would be needed to implement the measures. Certain actions, such as notification of sources, modification of permits, etc., would probably be needed before a measure could be implemented effectively. States must show that their contingency measures can be implemented with minimal further action on their part and with no additional rulemaking actions.

(c) *Special rule on TCM's for Denver.* The requirements of section 187(a)(2)(B) have the same effect as sections 182(d)(1)(A) and 187(b)(2), discussed below in section III.B.3.(b) (TCM's equivalent to severe ozone TCM's). Readers are referred to that discussion for a description of this requirement.

(d) *Enhanced I/M.* Section 187(a)(6) requires moderate or above CO nonattainment areas with a design value greater than 12.7 ppm to implement enhanced I/M programs in urbanized areas within the nonattainment areas, as defined by the Bureau of Census, with 1980 populations of 200,000 or more. The section requires that the plan meet the requirements of section 182(c)(3), as discussed in the section in this preamble concerning enhanced I/M in serious and above ozone nonattainment areas.

In some cases, areas may have become newly subject to both basic and enhanced I/M requirements at the time of enactment, with the basic I/M requirements due shortly prior to the deadline for submission of the SIP revision providing for the enhanced I/M program. In such cases, EPA regards enhanced I/M requirements as superseding the basic I/M requirements, and therefore will not require the submission of the basic I/M requirements discussed previously. The EPA will, under section 182(i), require SIP revisions to provide for an enhanced I/M program within 2 years in areas newly subject to enhanced I/M requirements in the future as a result of redesignation or reclassification.

The SIP's for enhanced I/M programs are due no later than November 15, 1992. In the event that EPA's enhanced I/M performance standard is not finalized soon enough to provide sufficient time for full SIP development, EPA will use its authority under section 110(k)(4) to conditionally approve SIP submittals committing to adopt enforceable, enhanced I/M programs consistent with EPA guidance. The guidance will cover the elements of the SIP.

If a moderate nonattainment area fails to attain the CO standard by December 31, 1995, and is reclassified to serious, an enhanced I/M program must be implemented if the area meets the population criterion (urbanized area population, as defined by the Census Bureau, of 200,000 or more). The EPA will, under section 182(i), require SIP revisions to provide for an enhanced I/M program within 2 years of redesignation or reclassification.

As mandated by section 202(m), the Administrator will promulgate regulations requiring manufacturers to install diagnostic systems on all new light-duty vehicles and light-duty trucks. The purpose of these systems is to identify and track emissions-related systems deterioration or malfunction. According to section 202(m)(3), within 2 years of EPA's promulgating regulations requiring States to do so, all States with I/M programs must amend their SIP to provide for inspection of these onboard diagnostics systems. The EPA will issue revised I/M guidance which addresses onboard diagnostic inspections.

(e) *Attainment demonstration.* Section 187(a)(7), "Attainment Demonstration and Specific Annual Emission Reductions," applies to CO nonattainment areas with a design value greater than 12.7 ppm at the time of classification. A demonstration of attainment is required by November 15, 1992, and can be met through application of a modeling analysis, following the guidance contained in EPA "Guideline on Air Quality Models (Revised)."

The attainment demonstration must include a SIP control strategy, which is also due by November 15, 1992. The SIP control strategy for a given nonattainment area must be designed to ensure that the area meets the specific annual emission reductions necessary for reaching attainment by the deadline.

(f) *Tracking plan implementation and milestone compliance.* Section 187(a)(2) requires States containing CO nonattainment areas with design values above 12.7 ppm to submit plans that contain forecasts [13] of VMT for each year before the year in which the plan projects attainment. Subsequently, the States must submit annual updates to those forecasts and report on how accurate the previous forecasts proved to be. The annual reports containing estimates of VMT must be preapred for each year in which a forecast was required. Contingency measures, developed in accordance with section 187(a)(3) (see section III.B.2.(b)), must be implemented if either the annual estimates of actual VMT or any new VMT forecasts exceeds the earlier forecasts included in the State plan, considering the tolerance discussed above. The first annual reports for CO areas (with design values above 12.7 ppm) must be submitted to EPA within 9 months after the first full calendar year after the attainment demonstration is due (i.e., the reports must be submitted by September 1994). These reports must contain estimates of actual VMT in the previous year, forecasts of VMT in future years, and verification that contingency measures are being implemented if the actual VMT estimates for the previous year or any new VMT forecasts for any year until the attainment year exceed any earlier forecasts in the State plan. The reports must also show that the control strategies are being implemented as projected in the plan. The EPA wants to use the annual reports to ensure that VMT forecasts are consistent with VMT estimates. Furthermore, a serious CO nonattainment area must demonstrate by March 31, 1996 that it has "achieved a reduction in emissions of CO equivalent to the total of the specific annual emission reductions required by December 31, 1995" (section 187(d)(1)—Milestone Demonstration).

(g) *NSR.* All CO nonattainment areas with a design value greater than 12.7 ppm part D NSR programs meeting sections 172(c)(5) and 173 requirements not later than November 15, 1992, in accordance with section 187(a)(7).

3. Serious Areas

(a) *Major stationary source definition.* As specified in section 187(c)(1), for serious CO nonattainment areas in which stationary sources contribute significantly to CO levels (determined according to guidance issued in the May 13, 1991 memorandum from William Laxton, Director, Technical Support Division, to Regional Air Division Directors), a SIP shall be submitted by November 15, 1992 that provides that the term "major stationary source" includes any stationary source that emits or has the potential to emit 50 tons per year or more of CO. If such determination is not made by EPA under section 187(c)(1), then "major stationary source" includes any stationary source that emits or has the potential to emit 100 tons per year or more of CO.

(b) *TCM's equivalent to severe ozone TCM's.* Serious CO areas (and Denver, Colorado) must adopt and implement

[13] Guidance for preparing the forecasts of VMT is contained in the section 187 VMT Forecasting and Tracking Guidance.

enforceable TCM's in conjunction with other control measures necessary to comply with the periodic emissions reduction requirements of the 1990 CAAA. The TCM's, which are required to offset any growth in emissions from growth in VMT and number of vehicle trips and to achieve necessary reductions in mobile source emissions, are due by November 15, 1992. States should choose from the list of TCM's and other measures in section 108(f). These requirements are contained in section 187(b)(2) for CO areas and section 187(a)(2)(B) for Denver. See section III.A.5.(d) above (severe ozone TCM's) for a discussion of how to calculate growth in emissions from growth in VMT.

All serious CO areas covered by the clean-fuel vehicle fleet program (except for areas in New York State, should any such area ultimately be bumped to serious), as well as Denver, must explain why any section 108(f) measure is not adopted, what proposed emission reduction measures will provide comparable reductions, or why such reductions are not necessary to attain the CO NAAQS. This requirement may be met by an attainment demonstration using EPA modeling techniques that shows the other adopted control measures are sufficient to provide for attainment by the required date.

This requirement must be met by any serious CO area meeting the section 246 definition of "covered area." Section 246 defines "covered areas" as areas with a CO design value of 16 ppm or greater, excluding those areas in which mobile sources do not contribute significantly to CO exceedances. Of the three existing areas with CO design values above 16 ppm, EPA anticipates that one (the Steubenville, Ohio area) may be able to show that mobile sources do not contribute significantly to CO exceedances. Thus, at the minimum, this requirement would apply to the Denver and Los Angeles areas. Areas that are not "covered areas" are not required by this provision to justify their rejection of TCM's.

(c) *Clean-fuel vehicle fleet program.* Section 246(a)(2)(B) requires that all CO nonattainment areas with 1980 populations of 250,000 or more and design values of 16.0 ppm or higher, submit SIP revisions providing for clean-fuel vehicle fleet programs by May 15, 1994 (42 months from enactment).

The programs must require a specified percentage of fleet vehicles in model year 1998 and thereafter to be clean-fuel vehicles that use only clean alternative fuels when operating in the area. For light-duty vehicles and light-duty trucks, the required percentage must be 30 percent in 1998, 50 percent in 1999, and 70 percent in 2000 and thereafter. For heavy-duty trucks, the percentage must be 50 percent in each such year. Light-duty vehicles and light-duty trucks in fleets participating in this program for these model years must also meet the title II clean-fuel vehicle standards for model year 2001. If light-duty vehicles and light-duty trucks of 6,000 pounds GVWR or less are not available in California before model year 2001, the phase-in schedules will be delayed accordingly.

Some of the major program requirements include the following: That fuel providers make clean alternative fuel available to fleet operators; that Federal fleets (except certain vehicles certified by the Secretary of Defense as needing an exemption based on national security grounds) be included in the program; and that credits consistent with EPA regulations due 1 year from enactment be issued for purchasing more vehicles than required, for purchasing vehicles that exceed the established standards, or for purchasing vehicles prior to the effective date of the program. In addition, certain TCM's may not apply to covered fleet vehicles consistent with EPA regulations.

Areas where mobile sources do not contribute significantly to CO exceedances may be able to obtain a waiver from the clean-fuel program. The reader is referred to the discussion in this preamble that addresses guidance on waivers for mobile source measures, section III.B.7.

Each State subject to the fleet program may submit a SIP revision by November 15, 1992 consisting of fully adopted control measures as a substitute for all or a portion of the clean-fuel vehicle program required by section 246. The substitute measures must demonstrate to the satisfaction of the Administrator that the long-term reductions in CO emissions and toxic substances are, at a minimum, equal to those that would be achieved under the clean-fuel vehicle program or the percentage of the emissions reductions attributable to the portion of the program for which the revision is to substitute. Substitute measures may not include any other measures required by the Act.

(d) *Milestone and attainment failures (economic incentive programs).* Economic incentives and transportation control programs (as described in section 182(g)(4)) are required for serious areas under several different types of failure: Failure to submit a milestone demonstration (as defined in section 187(d)(1)), failure to meet the milestone (section 187(d)(3)), or failure to attain the standard by the applicable attainment date (section 187(g)). In all such cases, the State shall submit a plan revision with such incentives within 9 months of failure. The EPA urges such a State to initiate the development of a program of economic incentives and transportation controls as soon as it can reasonably define the objectives and scope of an appropriate program, without waiting until such a failure occurs. The EPA believes that early initiation is important so as to allow for sufficient time to develop, implement, and evaluate the effectiveness of the program. Economic incentive programs are discussed in more detail in section III.G.3.

(e) *Long-term measures.* The EPA recognizes that some serious CO nonattainment areas (and perhaps areas with long-term attainment dates for other pollutants) will have such large emissions reductions requirements that identifying, developing, and adopting in final form the control measures that represent the areas preferred strategy for their demonstrations of attainment may present an unreasonable burden. The EPA believes that these areas may need additional time to fully develop and adopt certain "long-term" measures that would be the preferred means to reach attainment. These measures would include those that require complex analyses and decision making and coordination among a number of government agencies.

The EPA intends to allow these areas reasonable additional time to complete full development and adoption under the following conditions:

(1) The plan containing the demonstration of attainment must identify each measure for which additional time would be needed for full development and adoption.

(2) The plan must show that the long-term measures cannot be fully developed and adopted by the submittal date for the attainment demonstration.

(3) The plan must contain an enforceable commitment by the relevant agency that development and adoption will occur on an expeditious schedule to achieve specified emission reductions from each long-term measure for each year through the attainment year.

(4) The plan must contain "backstop" measures that would be implemented to achieve equivalent emission reductions unless the long-term measure is adopted on schedule.

(5) The long-term measures must not be needed to meet any emission reduction requirement before December 31, 1995.

The "backstop" measures required under condition 4 must be submitted with the 1992 attainment demonstration in fully adopted form. The "backstop" measures must be designed to go into effect automatically on a schedule sufficient to achieve all of the reductions identified with each long-term measure for each year through the attainment year. The "backstop" measures may represent broad, across-the-board reductions in emissions, rather than thoroughly analyzed and developed control measures. For this reason, EPA does not anticipate the actual implementation of "backstop" measures in most cases, as States will have ample opportunity to submit SIP revisions incorporating the fully developed long-term measures and deleting the "backstop" measures from the SIP. Additionally, if a long-term measure cannot be developed, then the State has the option to submit a SIP revision identifying a fully developed and adopted alternative measure to replace the original long-term measure prior to any necessary implementation of "backstop" measures.

Thus, a State may find that progress can be achieved with measures that are fully developed by the 1992 SIP submittal date. However, the State may determine that expeditious attainment of the NAAQS is impossible unless the SIP also includes measures which cannot be fully developed until after the 1992 SIP is due. In its 1992 SIP submittal, the State must clearly describe each of these long-term measures and show that each measure cannot be fully developed and adopted until a specified future date, despite expeditious implementation efforts. The 1992 SIP must include with each long-term measure an enforceable schedule, binding responsible agencies to achieve identified emissions reductions from each measure.

Along with these provisions, the State's 1992 SIP submittal must include "backstop" measures. The "backstop" measures must be fully adopted and scheduled for implementation to achieve reductions equivalent to those assigned each year by the long-term measures. When each long-term measure is fully developed, it must be submitted to EPA as a SIP amendment. This amendment would also propose deletion of the associated "backstops." The EPA's approval of the long-term measures would also rescind from the SIP, the "backstop" measures.

4. "Not Classified" Nonattainment Areas

(a) *General.* Nonclassifiable CO areas consist of "not classified" areas. The EPA describes areas as "not classified" if they were designated nonattainment both prior to enactment and (pursuant to section 107(d)(1)(C) at enactment, and if they did not violate the primary NAAQS for CO in either year for the 2-year period 1988 through 1989.

Although it seems clear that the CO-specific requirements of subpart 3 of part D do not apply to CO "not classified" areas, the 1990 CAAA are silent as to how the requirements of subpart 1 of part D, which contains general SIP planning requirements for all designated nonattainment areas, should be interpreted for such CO areas. Nevertheless, because these areas are designated nonattainment, some aspects of subpart 1 necessarily apply. The EPA interprets the requirements under section 172(c) for these areas below. Applicable revisions to the SIP are due 3 years from designation under section 107(d) (see 56 FR 56694).

(1) *RACM.* Reasonably available control measures are required for areas needing to achieve attainment. Because "not classified" areas may be already attaining or are presumably very near attainment, the EPA believes that additional RACM controls beyond what may already be required in the SIP are not necessary to achieve attainment and are therefore not required.

(2) *Attainment demonstration.* Section 187(a)(7) specifically exempts moderate areas with design values less than 12.7 ppm from requiring an attainment demonstration. Because these moderate areas are exempt from this requirement, it would seem unreasonable to subject this requirement to an area that was not violating the standard. Therefore, EPA will presume that the existing SIP requirements and any existing and future Federal requirements (e.g., the title II rules) will be sufficient to provide for attainment in these areas.

(3) *RFP.* A RFP requirement assumes a long nonattainment period. The fact that a "not classified" area is already in or near attainment obviates the need for an RFP requirement.

(4) *Emissions inventory.* An emissions inventory is specifically required under this section and is not tied to an area's proximity to attainment. Moreover, even if these areas are already attaining or near attainment, they will need such an inventory to develop an approvable maintenance plan under section 175A. Therefore, an emissions inventory must be included in the SIP revision due 3 years from designation.

(5) *NSR.* Like the emissions inventory requirement, the NSR requirement is not tied to an area's proximity to attainment, and therefore exempting a nonattainment area from the NSR requirements is not allowed by the Act. Furthermore, the new NSR program is one of the Act's major bulwarks for preventing further deterioration of the Nation's air quality. Therefore, all nonattainment areas, including "not classified" areas, are required to adopt NSR programs meeting the requirements of section 173, as amended.

(6) *Monitoring.* Section 172 (b) and (c) explicitly states that nonattainment areas should meet the "applicable" monitoring requirements of section 110(a)(2).

(7) *Contingency measures.* Contingency measures are not required for "not classified" areas in light of the fact that moderate areas with a design value less than 12.7 ppm are exempt from the contingency measures requirement.

(b) *Attainment dates for "not classified" areas.* Section 172(a)(2) requires an attainment date of no later than 5 years from an area's designation as nonattainment. For areas designated nonattainment under section 107(d)(1)(C)(i) (pre-enactment nonattainment areas), the attainment date is November 15, 1995. For newly designated areas, the attainment date will be 5 years from the effective date of the nonattainment designation. For areas that fail to attain in 5 years, EPA is considering one or more of the following actions:

(1) If an area fails to attain 5 years from designation, the area is bumped up to moderate if the area's design value is at least 9.1 ppm.

(2) If an area fails to attain 5 years from designation the area retains its "not classified" status, but EPA will tighten Subpart 1 requirements. This could include a showing of enforceable rules or possibly a basic I/M program.

(c) *"Not classified" CO areas.* Violations are determined by the number of nonoverlapping exceedances greater than or equal to 9.5 ppm during the 2-year period 1988–1989. If the number of exceedances in either year was greater than or equal to 2, the area is violating the CO NAAQS.

Once it has been established that the area is violating the standard, the highest second-highest, nonoverlapping 8-hour measured value over the 2-year period is the design value for the area. The design value determines classification. A CO area cannot be classified submarginal because a design value of <9.5 ppm is not violating the standard (i.e., there are less than two exceedances in each of the 2 years), and an area can only be submarginal if it is violating the standard.

(1) *Requirements.* The CO areas termed "not classified" are analogous to ozone transitional areas. The amended Act does not provide guidance in subpart 3 for CO areas that fall into the "not classified" category. However, all nonattainment areas, including "not classified" areas, are subject to several of the requirements in subpart 1 of the Act as discussed above. Specifically, section 172(b) requires a SIP revision within 3 years of designation. The SIP revision must meet several requirements, in particular, NSR.

If a State submits a request for redesignation to attainment, then a proper and adequate maintenance plan as defined in section 175A, is required. The Administrator announced in the November 6, 1991 **Federal Register** those CO nonattainment areas that did not violate the NAAQS during the 24-month period between January 1, 1988 and December 31,1989. For such areas, the requirements under subpart 3 do not apply.

In order to be redesignated to attainment, a "not classified" area must provide documentation to support the conclusion that the five redesignation requirements of section 107(d)(3)(E) have been met. For a discussion of the specific State actions required for satisfying these five redesignation requirements, see "Redesignations" under section III.H5 of this notice.

(2) *NSR.* By November 15, 1993, all such "not classified" areas must submit rules to implement the new part D NSR permit requirements of sections 172(c)(5) and 173 of the 1990 CAAA. In the meantime, all existing NSR rules will remain in effect. If the area does not have an approved part D NSR permitting program and a State wishes to issue a permit for a major stationary source or major modification in such area during the interim period, the State permitting program should comply with the requirements in 40 CFR part 51, appendix S, until the new part D NSR requirements become effective.[14]

(3) *Failure to attain.* If a "not classified" area violates the NAAQS at some time in the future, then it will be classified in accordance with Table 3, section 186(2). Upon classification, the area will continue to be subject to the requirements under subpart 1 and those specific provisions under subpart 3 appropriate to the classification that would have applied to the area had it been so classified at the time of the notice under section 186(a)(2). Under section 187(f), the Administrator may adjust any applicable deadlines (other than attainment dates) if the deadlines are shown to be infeasible.

5. Multi-State CO Nonattainment Areas

Section 187(e) defines a "multi-State CO nonattainment area" as a single CO nonattainment area that covers more than one State. Section 187(e) also establishes certain requirements for such areas. First, each State in a multi-State CO nonattainment area must take all reasonable steps to coordinate both the SIP revisions required and the implementation of SIP's that apply in the given nonattainment area. Section 187(e) also prevents EPA from approving any SIP revision submitted under this section if a State has failed to meet the above requirements.

Finally, section 187(e)(2) allows a State that fails to provide a demonstration of attainment for that State's portion of a multi-State CO nonattainment area to petition EPA to make a finding that such State could have demonstrated attainment, but for the failure of one or more other States in the area to adequately implement measures required under section 187 for the given area. If EPA makes such a finding, then the sanctions provisions under section 179 for failure to make an adequate attainment demonstration shall not apply to the State awarded the finding.

Pursuant to section 187(e)(1), EPA is calling on each multi-State CO nonattainment area to develop a joint work plan as evidence of early cooperation and integration. The work plan must include a schedule for developing the emissions inventories, the VMT forecasts, and the attainment demonstration for the entire multi-State area. Each State within a multi-State CO nonattainment area is responsible for meeting all the requirements relevant to the given area.

In order to be sufficient to avoid a section 187(e)(2) finding of failure to demonstrate attainment, an attainment demonstration must meet the requirements in section 187(a)(7). Refer to section III.B.3.(e) for guidance on developing attainment demonstrations. Note that moderate multi-State CO nonattainment areas with a design value of 12.7 ppm or lower at the time of classification are not required to meet the requirement of developing an attainment demonstration since section 187(a) excludes all such areas from any requirement for attainment demonstrations.

6. Areas With Significant Stationary Source Emissions

Section 187(c)(3) calls for the Administrator to issue guidelines and rules for determining whether stationary sources contribute significantly to CO levels in an area. In the case of a serious area in which stationary sources contribute significantly to CO levels, section 187(c)(1) requires the State to revise the definition of major stationary source in that area to include any stationary source that emits, or has the potential to emit, 50 tons per year or more of CO.

Guidance on the definition of a significant CO stationary source area is available in an EPA memorandum dated May 13, 1991, from William G. Laxton, Director, Technical Support Division, regarding "Guidance for Determining Significant Stationary Sources of Carbon Monoxide." The guidance defines a significant CO stationary source area through the use of the results of dispersion modeling of one or more stationary sources of CO in the area. The reader should refer to that guidance for further information.

7. Guidance on Waivers for Mobile Source Measures

The waiver provisions of section 187(c)(2) provide the Administrator with discretionary authority to waive certain mobile source requirements in both moderate and serious CO nonattainment areas where mobile sources do not contribute significantly to CO levels in the area. Specifically, the Administrator may on a case-by-case basis waive any requirements that pertain to transportation controls, I/M, or oxygenated fuels where the Administrator determines by rule that mobile source contribution is convincingly demonstrated to be insignificant in relation to the cause of the area's overall CO problem. The EPA will only consider granting a waiver from controls on mobile CO sources under section 187(c)(2) if it is clear that mobile sources in the aggregate do not

[14] If a "not classified" area has not recorded any violations by December 31, 1991, and is in the process of developing a maintenance plan per section 175A, then EPA may not require nonattainment NSR rules. However, these areas must continue to apply their existing NSR program or comply with the NSR permitting requirements of 40 CFR part 51, appendix S. Prior to redesignation, these areas also must adopt and be prepared to implement a permitting program that satisfies the requirements of part C and EPA's regulations implementing the PSD program. Areas should consider the need for offsets under the part C program to ensure that new sources do not "cause or contribute" to an increase in pollutant levels that would take the area out of compliance. If the area is found to be out of compliance and the statutory deadlines for adopting amended part D permitting rules for the pollutant in question have passed, EPA may impose a contruction ban pursuant to section 113(a)(5) until such time as the area adopts a part D program satisfying the NSR requirements of the CAAA.

contribute significantly to the CO nonattainment problem, and there is a SIP submittal demonstrating attainment of the CO NAAQS by the required date without such mobile source controls. This would be in addition to a showing under section 187(c)(3) pertaining to stationary sources that "contribute significantly to carbon monoxide levels in the area." The attainment demonstration should use EPA-approved modeling techniques; i.e., a complete modeling analysis is needed, considering point, area, and mobile source emissions. The waiver would be granted upon approval of the CO SIP. The waiver of mobile source measures would no longer apply if a subsequent maintenance plan demonstration relied on such mobile source measures.

C. Particulate Matter

1. Statutory Background

(a) *Designations.* On the date of enactment of the 1990 CAAA, PM–10 areas meeting the qualifications of section 107(d)(4)(B) of the amended Act were designated nonattainment by operation of law. These areas included all former Group I areas identified in 52 FR 29383 (August 7, 1987) and clarified in 55 FR 45799 (October 31, 1990), and any other areas violating the PM–10 NAAQS prior to January 1, 1989 (many of these areas were also identified in the October 31, 1990 **Federal Register** notice). All other areas were designated unclassifiable. A **Federal Register** notice announcing all of the areas designated nonattainment for PM–10 at enactment of the 1990 CAAA and classified as moderate was published in 56 FR 11101 (March 15, 1991). A subsequent notice correcting certain information in the March 15, 1991 notice was published in 56 FR 37654 (August 8, 1991). Subsequent to the 1990 CAAA enactment date, EPA may redesignate any of these unclassifiable areas to nonattainment in accordance with section 107(d)(3). On April 22, 1991 EPA announced in 56 FR 16274 that it had initiated the redesignation process for 16 areas.

(b) *Classifications and attainment dates.* Once an area is designated nonattainment, section 188 of the amended Act outlines the process for classification of the area and establishes the area's attainment date. In accordance with section 188(a), at the time of designation, all PM–10 nonattainment areas are initially classified as moderate by operation of law. A moderate area can subsequently be reclassified as serious either before the applicable moderate area attainment date, if at any time EPA determines the area cannot "practicably" attain the PM–10 NAAQS by this attainment date; or following the passage of the applicable moderate area attainment date, if EPA determines the area has failed to attain (see section 188(b)).

For those areas which were designated nonattainment upon enactment of the 1990 CAAA by operation of law, where EPA determines that the area cannot "practicably" attain the NAAQS by December 31, 1994, the amended Act specifies certain dates by which EPA must propose to reclassify appropriate moderate areas as serious (see 56 FR 58656, November 21, 1991) and take final action. The EPA also has discretionary authority under section 188(b)(1) to reclassify any of these areas as serious at any time, if EPA determines they cannot practicably attain the PM–10 NAAQS by December 31, 1994.[15] The EPA may exercise this discretion where, for example, EPA originally believed an area could attain the PM–10 NAAQS by December 31, 1994 but later determines that it cannot attain. For example, EPA may find an area cannot practicably attain by December 31, 1994 after reviewing the November 15, 1991 SIP submittal for an area. Or, if a State fails to submit a PM–10 SIP for an area, EPA could conclude that the area could not practicably attain the standards by the applicable attainment date based, for example, on the severity of the nonattainment problem, the feasibility of controls, and other pertinent factors. Any decision by EPA to reclassify an area as serious will be based on facts specific to the nonattainment area at issue and will only be made after providing notice in the **Federal Register** and an opportunity for public comment on the basis for EPA's proposed decision.

The EPA does not believe that reclassifying moderate areas as serious at any time EPA determines that an area cannot practicably attain the standards by the applicable attainment date, rewards areas who delay development and implementation of PM–10 control measures. Rather, EPA believes its policy creates an incentive for the timely submittal and effective implementation of moderate area SIP requirements and facilitates the PM–10 attainment objective. For example, if an area that fails to submit a timely moderate area SIP is reclassified, this does not obviate the requirement that the area submit and implement RACM consistent with the moderate area schedule. Accordingly, the area could be subject to sanctions for its delay in submitting the RACM SIP requirement (see sections 110(m) and 179). Further, reclassification before the applicable attainment date will ensure that additional control measures (i.e. in addition to RACM, serious areas must implement best available control measures (BACM), are implemented sooner and will expedite the application of more stringent new source review requirements to the area (see sections 188(b)(1) and 189(b)(3)). Similarly, where an area submits a timely moderate area SIP, EPA may not discover that the area cannot practicably attain until some time after it begins implementing its moderate area control measures. The EPA then may want to reclassify the area in order to facilitate the development and implementation of BACM. Finally, a reclassified area must demonstrate attainment "as expeditiously as practicable" and no later than specified dates (see section 188(c)(2)). Accordingly, EPA may reclassify an area and conclude that the most expeditious attainment date practicable for the area is a time prior to the latest possible attainment deadline.

For areas designated nonattainment after enactment of the 1990 CAAA, EPA must reclassify appropriate areas as serious within 18 months of the required submittal date for the moderate area SIP. Taken together with the statutory requirement that these SIP's be submitted 18 months after being designated nonattainment, the statute thus requires that EPA reclassify the appropriate moderate area as serious within 3 years of the nonattainment designation.

Finally, in those cases where EPA determines that an area has failed to

[15] One commenter questioned whether EPA has discretionary authority to reclassify an area "at any time" EPA determines the area cannot practicably attain the PM–10 standards by the applicable moderate area attainment date. Under the plain meaning of the terms of section 188(b)(1) EPA has general discretion to reclassify at any time before the applicable attainment date any area EPA determines cannot practicably attain the standards by such date. Accordingly, section 188(b)(1) is a general expression of delegated rulemaking authority. In addition, subparagraphs (A) and (B) of section 188(b)(1) mandate that EPA reclassify at specified timeframes any areas it determines appropriate for reclassification at those dates. These subparagraphs do not restrict the general authority but simply specify that, at a minimum, it must be exercised at certain times. This interpretation furthers the overarching purpose of the statute in that reclassification would expedite the application of additional control measures in the situation where EPA finds, after the mandated reclassification rulemaking and before the applicable attainment date, that an area cannot practicably attain the standards. This, in turn, would expedite ultimate attainment of the PM–10 standards. In summary, EPA believes it is a reasonable interpretation and consistent with the plain language of the statute to construe section 188(b)(1) such that it authorizes EPA to reclassify an area, as appropriate, at any time before the applicable attainment date and mandates that, at a minimum, EPA make this inquiry at specified times.

attain the NAAQS by the applicable attainment date, the area is reclassified as serious by operation of law. The EPA must publish a notice in the Federal Register of such determinations and consequent reclassifications within 6 months following the applicable attainment date.

Since this General Preamble addresses only the control measures recommended for moderate PM–10 nonattainment areas, the following discussion has been limited to the attainment dates for moderate nonattainment areas. Section 188(c)(1) of the amended Act specifies that the initial moderate nonattainment areas (those designated nonattainment upon enactment of the 1990 CAAA) are to attain the PM–10 NAAQS as expeditiously as practicable but no later than December 31, 1994, unless they are reclassified as serious (as described above). Areas designated nonattainment after enactment of the 1990 CAAA and classified as moderate must attain the PM–10 NAAQS as expeditiously as practicable but no later than the end of the sixth calendar year after the area's designation as nonattainment.

(c) *General SIP requirements.* As discussed above, States must develop and submit a SIP providing for the attainment of the PM–10 NAAQS for every area designated nonattainment and classified as moderate for PM–10 under the amended Act. Under section 189(a)(2), States must submit a SIP revision (e.g. RACM/RACT and attainment demonstration) for the moderate PM–10 areas designated nonattainment upon enactment of the 1990 CAAA by November 15, 1992. The NSR program provisions for these areas are due June 30, 1992. States must submit SIP's for those PM–10 areas designated nonattainment after enactment of the 1990 CAA within 18 months of these areas' being designated nonattainment for PM–10.

The specific PM–10 SIP requirements applicable to moderate nonattainment areas are set forth in the PM–10 subpart (subpart 4 of part D, title I). These requirements include section 189(a) (NSR permit program, attainment demonstration, and RACM/RACT); section 189(c) (quantitative milestones); and section 189(e) (PM–10 precursors). The SIP's for moderate PM–10 nonattainment areas must also meet the general provisions applicable to nonattainment areas set forth in subpart 1 of part D, title I of the amended Act to the extent that these provisions are not otherwise subsumed by, or integrally related to, the more specific PM–10 requirements. Whenever possible during this discussion of PM–10, EPA has clarified the relationship between subparts 1 and 4. All SIP's must also meet the applicable regulatory requirements set forth in 40 CFR part 51 except to the extent those requirements are inconsistent with the amended Act.[16] The EPA will provide guidance at a later date for those SIP requirements not addressed in this General Preamble. The discussion below is intended to provide additional background on some of the statutory requirements for moderate PM–10 nonattainment area SIP's and, in some cases, to provide guidance on these statutory requirements.

(d) *NSR permit program.* Section 189(a)(1) of the amended Act provides that for the purpose of meeting the requirements of section 172(c)(5), each State with a PM–10 nonattainment area classified as moderate must submit an implementation plan which contains a permit program meeting the requirements of section 173 for the construction of new and modified major stationary sources of PM–10 (and in some cases PM–10 precursors). For the initial moderate PM–10 nonattainment areas designated according to section 107(d)(4), States must submit the NSR permit program SIP revision to EPA by June 30, 1992. For PM–10 nonattainment areas designated after enactment of the 1990 CAAA, States must submit a SIP containing the NSR permit program within 18 months after designation of each affected area. The EPA intends to issue proposed regulations for the NSR program SIP's. However, in today's General Preamble, EPA has provided guidance on the NSR permit program requirements which is intended to assist States in developing and timely submitting their June 30, 1992 NSR SIP revision for the initial moderate PM–10 nonattainment areas, and any NSR SIP revision submittal due for any additional areas designated nonattainment for PM–10 before the NSR regulations are finalized.

(1) *Moderate areas.* To meet the requirements of section 172(c)(5), States must implement a permit program that meets all the permit requirements of section 173 for the construction and operation of new and modified major stationary sources of PM–10. As defined in section 302(j), the term major stationary source means any stationary source which directly emits, or has the potential to emit, 100 tons per year or more of PM–10. The emissions offset ratio for such sources is equal to or grater than 1:1 as specified in section 173(c).

Section 189(e) makes the control requirements applicable to major stationary sources of PM–10 also applicable to major stationary sources of PM–10 precursors. For the purposes of implementing the requirements of section 189(e), precursors of secondarily-formed PM–10 may include VOC's which form secondary organic compounds, SO_2 which form sulfate compounds, and NO_x which form nitrate compounds. Therefore, the control requirements applicable under PM–10 SIP's for major stationary sources of PM–10 shall also apply to major stationary sources of these potential precursors, except where the Administrator determines that such sources do not significantly contribute to PM–10 levels that exceed the PM–10 ambient standards in the area. The Act leaves unaddressed the question of whether each specific PM–10 precursor should be considered together or independently in determining major source size and the applicability of section 173 (e.g., permit requirements). However, with respect to ozone, EPA's practice has been to consider each specific ozone precursor independently when making similar determinations. Accordingly, EPA proposes to treat PM–10 precursors analogous to ozone precursors and also consider each specific precursor independently when determining source size and whether section 173 provisions apply. Nothing in this guidance, however, would preclude a State from adopting a stricter standard and, thus, proposing to consider all specific PM–10 precursors together.

(2) *Serious areas.* Section 189(b)(3) defines the terms "major source" and "major stationary source" to include any stationary source or group of stationary sources located within a contiguous area and under common control that emits, or has the potential to emit, at least 70 tons per year of PM–10. Such new and modified major stationary sources that emit PM–10 are subject to the permit requirements of section 173 and the PM–10 precursor provisions of section 189(e).

(e) *Attainment demonstration.* Section 189(a)(1)(B) provides that States with moderate PM–10 nonattainment areas must submit a demonstration (including air quality modeling) showing attainment by the applicable attainment date. Alternatively, the State must show

[16] The 1990 CAAA includes a General Savings Clause (see section 193) which provides that regulations (or guidance, etc.) in effect before the enactment of the 1990 CAAA shall remain in effect after enactment. However, the Savings Clause also provides that such regulations (or guidance, etc.) shall remain in effect "except to the extent otherwise provided under this Act, inconsistent with any provision of this Act, or revised by the Administrator." *Id.*

that attainment by the applicable date is impracticable. This SIP submittal is due on November 15, 1992 for the moderate areas designated nonattainment for PM–10 at enactment of the 1990 CAAA and within 18 months for those moderate areas designated nonattainment after enactment of the 1990 CAAA. As a necessary adjunct to the demonstration of attainment, the SIP submittal must contain a comprehensive, accurate, current inventory of actual emissions from all sources of PM–10 in the area, as prescribed in section 172(c)(3).

In general, attainment demonstrations for the initial moderate nonattainment areas should follow the existing modeling guidelines addressing PM–10 (e.g., "PM–10 SIP Development Guideline" (June 1987); "Guideline on Air Quality Models" (Revised); memorandum from Joseph Tikvart and Robert Bauman dated July 5, 1990) and any applicable regulatory requirements. The EPA also has developed a supplemental attainment demonstration policy that may be followed for initial moderate PM–10 nonattainment areas facing special circumstances. That policy statement is provided in appendix C5. Attainment demonstrations for moderate areas designated after enactment of the 1990 CAAA will be reviewed in accordance with the general guidance addressing PM–10, cited above, and any other applicable EPA guidance or regulations. The supplemental policy also noted above will not apply to these areas.

(f) *RFP/quantitative milestones.* The PM–10 nonattainment area SIP's must include quantitative emissions reductions milestones which are to be achieved every 3 years and which demonstrate RFP, as defined in section 171(1), until the area is redesignated attainment (section 189(c)). Under the milestone requirement, the States must demonstrate to EPA that the SIP measures are being implemented and the milestones have been met, within 90 days after the milestone due date. The EPA must then determine whether or not the State's demonstration is adequate, within 90 days of receiving the demonstration.

Under section 189(c), the State is required to submit a SIP revision if it fails to submit the quantitative milestone demonstration, or EPA determines that a milestone was not met. The SIP revision is due within 9 months of either the missed reporting date or EPA's determination that a milestone was missed. The SIP revision must assure that the State will achieve the next milestone by the applicable date and/or meet the PM–10 attainment date if there is no next milestone.

There is a gap in the law that the text of section 189(c) does not articulate the starting point for counting the 3-year period. The EPA believes it is reasonable to begin counting the 3-year milestone deadline from the due date for applicable implementation plan revisions containing the control measures for the area. The EPA believes it is reasonable to key the milestone clock to the SIP revision containing control measures which will give rise to emission reductions. Further, control measures must be implemented in less than 3 years after the SIP revision containing them is required to be submitted. Therefore, it is reasonable to expect that some reduction in emissions will have occurred 3 years after the SIP revision due date. The EPA believes that measuring the 3-year period from the SIP revision due date is also reasonable. Essentially, EPA believes it would be unreasonable to begin counting the 3-year period whenever the SIP revision is submitted, in disregard of its due date. The statute contains specific SIP submittal and attainment deadlines. These deadlines and the framework they set up inform EPA's interpretation of this requirement. Here, EPA believes that the law contemplates that some improvement in air quality be made between the SIP submittal due date and ensuring 3-year increments. Further, to begin counting from the date of actual SIP submittal and not its due date would allow those States that submit SIP's late to defer meeting their quantitative milestones and, consequently, to defer making RFP toward attainment of the PM–10 standard. Thus, the first quantitative milestone deadline for the initial PM–10 moderate nonattainment areas is November 15, 1994; 3 years after November 15, 1991 when SIP revisions containing RACM (including reasonably available control technology) are due for these areas.

For the initial PM–10 moderate nonattainment areas, the emissions reductions progress made between the SIP submittal (due date of November 15, 1991) and the attainment date of December 31, 1994 (only 46 days beyond the November 15, 1994 milestone date) will satisfy the first quantitative milestone. The de minimis timing differential makes it administratively impracticable to require separate milestone and attainment demonstrations. Thus, EPA's policy is to deem that the emissions reductions progress made between the SIP submittal due date and the attainment date will satisfy the quantitative milestone requirement for these areas. This is consistent with the purpose of the milestone requirement which is to "provide for emission reductions adequate to achieve the standards by the applicable attainment date" (H.R. Rep. No. 490, 101st Cong., 2d Sess. 267 (1990)). However, the Administrator is required to determine within 6 months after the applicable attainment date whether a nonattainment area has attained the standards (sections 179(c) and 188(b)(2)). Therefore, consistent with the milestone requirement, within 90 days after the attainment date, States must demonstrate that the SIP has been implemented and the area has attained the standards or alternatively, qualifies for a 1-year extension of the attainment date (section 188(d)). The EPA will issue future guidance on the RFP/quantitative milestone requirements for those areas designated moderate PM–10 nonattainment after enactment of the 1990 CAAA and for the serious PM–10 nonattainment areas.

(g) *PM–10 precursors.* Section 189(e) provides that the applicable control requirements under PM–10 nonattainment area SIP's in effect for major stationary sources of PM–10 are also applicable to major stationary sources of PM–10 precursors, except where EPA determines that the sources of PM–10 precursors do not contribute significantly to PM–10 levels which exceed the PM–10 NAAQS in the area. This determination will be based upon air quality analysis in which States assess the contribution of precursors. The contribution of precursors may be nonexistent. Alternatively, if precursors do contribute to nonattainment, States will need to consider both the source-receptor relationship and the significance of precursor contributions to overall nonattainment. Factors which may be considered in determining the source-receptor relationship include source mix and density, nonattainment area size, meteorology, and topography. In making a determination regarding significance and the need to control precursors in a specific area, EPA will rely in part on the technical information contained in the State's submittal, including filter analysis, the relative contribution of precursors to overall nonattainment, and the State's RACT/RACM strategy, among other factors. States, however, are encouraged to submit additional material for consideration, with all findings made on a case-by-case basis due to the high degree of variability among nonattainment areas. There will be variability, for example, in the characteristics of the area-wide

nonattainment problem in Spokane, Washington, which may warrant a finding of significance that differs from that made for a point source in Clairton, Pennsylvania. The EPA is required to issue guidance on this requirement. This General Preamble contains a lengthy discussion on control requirements for PM–10 precursors in moderate nonattainment areas and is intended to satisfy the requirement for guidance to the extent such guidance is required for moderate area SIP's having control requirements applicable to major stationary sources of PM–10. The EPA intends to provide additional guidance, if necessary, on control requirements for major stationary sources of PM–10 precursors when it issues proposed regulations for the NSR permit program applicable to PM–10 nonattainment areas, and when it issues guidance on the control technology requirements applicable to major stationary sources in serious PM–10 nonattainment areas.

(h) *RACM/RACT.* Section 189(a)(1)(C) of the amended Act requires that moderate area SIP's contain "reasonably available control measures" for the control of PM–10 emissions. Section 172(c)(1) of the amended Act, in turn, provides that RACM for nonattainment areas shall include "such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology * * *." Thus, read together, these provisions require that moderate area PM–10 SIP's include RACM and RACT for existing sources of PM–10 emissions.

Under section 189(a) (1), (2) of the amended Act, initial moderate PM–10 nonattainment areas (i.e., those areas designated nonattainment upon enactment of the 1990 CAAA) must submit SIP's containing RACM/RACT control measures by November 15, 1991, and these SIP's must provide for the implementation of RACM/RACT no later than December 10, 1993. Those areas designated nonattainment and classified as moderate after enactment of the 1990 CAAA must submit SIP's containing RACM/RACT control measures 18 months after the nonattainment designation (see section 189(a)(2)(B)). These SIP's must provide for the implementation of RACM/RACT no later than 4 years after the affected areas are designated nonattainment, which is 30 months after the applicable SIP submittal deadline (see section 189(a)(1)(C)).

Note that serious area control requirements are briefly described here as background for subsequent discussion regarding the relationship between moderate and serious area control measures. As discussed above, moderate PM–10 nonattainment areas may be reclassified as serious. Pursuant to section 189(b), States having areas that are reclassified as serious must submit SIP's for the areas containing BACM which includes "the application of best available control technology to existing stationary sources" (H.R. Rep. No. 490, 101st Cong. 2d Sess. 267 (1990)).[17] The SIP's containing BACM/BACT provisions must be submitted within 18 months after the affected area is reclassified as serious (see section 189(b)(2)). These SIP's must provide for the implementation of BACM/BACT no later than 4 years after being reclassified, which is 30 months after the BACM/BACT submittal is due (see section 189(b)(1)(B)).

Under section 190, EPA must issue technical guidance for RACM and BACM by May 15, 1992 for three area source categories: Urban fugitive dust, residential wood combustion, and prescribed silvicultural and agricultural burning. This General Preamble satisfies EPA's obligation to issue guidance on RACM for these source categories. This guidance also updates previously-issued guidance regarding RACT for large stationary sources. The BACM guidance to facilitate SIP development in serious PM–10 nonattainment areas will be issued at a later date.

In addition to requiring RACM guidance for urban fugitive dust, residential wood combustion, and prescribed silvicultural and agricultural burning, section 190 requires that EPA examine other source categories contributing to nonattainment of the PM–10 NAAQS, determine if additional guidance for RACM and BACM is needed, and issue any such guidance by November 15, 1993. This document provides RACM guidance for sources of fugitive dust (including urban), residential wood combustion, and prescribed burning (including silvicultural and agricultural). The EPA believes, at this time, that these categories of sources are contributing to nonattainment of the PM–10 NAAQS. To the extent that these categories of sources are broader than, or in addition to, those expressly identified in section 190, the Administrator is by today's notice, determining that RACM guidance should be issued for these sources and is issuing such guidance. Section 190 also requires that EPA take into account the emission reductions achieved or expected to be achieved under title IV and other provisions in "issuing guidelines and making determinations under this section." In deciding whether to issue guidance for the categories of sources addressed in this document and in issuing this guidance, EPA has considered such emission reductions. The EPA does not believe, at this time, that actual or expected reductions from Title IV or other provisions will significantly reduce emissions from these sources. Preliminary guidance on many of the issues addressed herein was issued by EPA staff on April 2, 1991 to facilitate PM–10 SIP development for moderate nonattainment areas.

2. Determination of RACM/RACT

(a) *RACM.* The suggested starting point for specifying RACM in each SIP is the listing of available control measures for fugitive dust, residential wood combustion, and prescribed burning contained in appendices C1, C2, and C3. If a State receives substantive public comment demonstrating through appropriate documentation that additional control measures may well be reasonably available in a particular circumstance, those measures should be added to the list of available measures for that area. The RACM is then determined for the affected area's SIP. While EPA does not presume that these control measures are reasonably available in any or all areas, EPA expects States to prepare a reasoned justification for rejection of any available control measures. If it can be shown that one or more measures are unreasonable because emissions from the sources affected are insignificant (i.e., de minimis), those measures may be excluded from further consideration as they would not represent RACM for that area.[18] The resulting available control measures should then be evaluated for reasonableness, considering their technological feasibility and the cost of control in the

[17] The Act does not expressly define "best available control measures" (including "best available control technology") for PM–10 nonattainment purposes. Guidance on "best available control measures" (including "best available control technology") requirements to facilitate SIP development for serious PM–10 nonattainment areas will be issued by EPA at a later date.

[18] Where the sources affected by a particular measure contribute only negligibly to ambient concentrations that exceed the NAAQS, EPA's policy is that it would be unreasonable and therefore would not constitute RACM to require controls on the source. In this regard, it is worth noting that the inherent authority of administrative agencies to exempt de minimis situations from regulation has been recognized in contexts such as this where an agency is invoking a de minimis exemption as "a tool to be used in implementing the legislative design" [see *Alabama Power Co.* v. *Costle*, 636 F.2d 323, 360 (D.C. Cir. 1979)].

area to which the SIP applies. In the case of public sector sources and control measures, this evaluation should consider the impact of the reasonableness of the measures on the municipal or other governmental entity that must bear the responsibility for their implementation (e.g., paving of unpaved public roads). It is important to note that a State should consider the feasibility of implementing measures in part when full implementation would be infeasible. The SIP submittal to EPA should contain a reasoned justification for partial or full rejection of any available control measures, including those considered or presented during the State's public hearing process, that explains, with appropriate documentation, why each rejected control measure is infeasible or otherwise unreasonable. When the process of determining RACM for an area is completed, the individual measures should then be converted into a legally enforceable vehicle (e.g., a regulation or permit program) (see sections 172(c)(6) and 110(a)(2)(A)). The regulations or other measures should meet EPA's criteria regarding the enforceability of SIP's and SIP revisions. These criteria were stated in a September 23, 1987 memorandum (with attachments) from J. Craig Potter, Assistant Administrator for Air and Radiation; Thomas L. Adams, Jr., Assistant Administrator for Enforcement and Compliance Monitoring; and Francis S. Blake, General Counsel, Office of the General Counsel, entitled "Review of State Implementation Plans and Revisions for Enforceability and Legal Sufficiency." As stated in that memorandum, SIP's and SIP revisions which fail to satisfy the enforceability criteria should not be forwarded for approval. If they are submitted, they will be disapproved if, in EPA's judgment, they fail to satisfy applicable statutory and regulatory requirements.

The technical guidance that discusses in detail the suggested initial measures in appendices C1, C2, and C3 and that a State should consider in determining which of the measures in appendices C1, C2, and C3 are technically feasible and economically reasonable in a particular area is contained in four documents: "Control of Open Fugitive Dust Sources," (EPA–450/3–88–008) September 1988; "Guidance Document for Residential Wood Combustion Emission Control Measures," (EPA–450/2–89–015) September 1989; "Prescribed Fire Smoke Management Guide" (NFES No. 1279), February 1985; and "Prescribed Fire Plan Guide" (NFES No. 1939), August 1986. These documents have been in use for several years and are based on substantial input from State and local agencies, trade groups and associations, and control experts. "Control of Open Fugitive Dust Sources" may serve as an example in analyzing control costs for a given area. Copies of these documents may be obtained by contacting National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161.

(b) *RACT.* This guidance follows EPA's historic definition of RACT as the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.[19] The RACT applies to the "existing sources" of PM–10 stack, process fugitive, and fugitive dust emissions (e.g., haul roads, unpaved staging areas) (see section 172(c)(1)). The EPA recommends that major stationary sources be the minimum starting point for RACT analysis. Generally, EPA recommends that available control technology be applied to those existing sources in the nonattainment area that are reasonable to control in light of the attainment needs of the area and the feasibility of such controls. Thus, EPA recommends that a State's control technology analyses for existing stationary sources go beyond major stationary sources in the area and that States require control technology for other sources in the area that are reasonable to control in light of the area's attainment needs and the feasibility of such control.[20] Specific guidance on the evaluation of the technological and economic feasibility of control technology for existing stationary sources is contained in appendix C4.

(c) *PM–10 precursors.* Section 189(e) of the amended Act provides that for all PM–10 nonattainment areas, the control requirements applicable under PM–10 SIP's in effect for major stationary sources of PM–10 are also applicable to major stationary sources of PM–10 precursors, except where EPA determines that such sources do not contribute significantly to PM–10 levels which exceed the PM–10 NAAQS in the area. Thus, for example, because moderate PM–10 nonattainment area SIP's should contain RACT for major stationary sources of PM–10, they should also contain RACT for major stationary sources of PM–10 precursors, unless EPA determines otherwise. Section 189(e) also requires that EPA issue guidance for the control of PM–10 precursors. This discussion represents EPA's guidance for controlling PM–10 precursors for major stationary sources in moderate PM–10 nonattainment areas.

As explained earlier (see section III.C.1.(g)), pursuant to the requirement of section 189(e), EPA intends to make a formal determination as to whether major stationary sources of PM–10 precursors contribute significantly to PM–10 levels in a particular area when it takes rulemaking action on the individual moderate area SIP's. However, a determination will be based on air quality analyses, on any additional technical information discovered by individual States during SIP development, and on any other studies conducted by the State or EPA which may help to indicate whether major stationary sources of specific precursors contribute significantly to PM–10 concentrations in a particular area. Therefore, while the subsequent discussion provides guidance as to EPA's implementation of section 189(e), and gives an indication of some of the factors that will guide EPA's findings under this section, none of the general views expressed herein are intended to preclude specific findings based on reviews of individual SIP's for PM–10 nonattainment areas.

The following discussion is intended to provide initial guidance with respect to each of the above named potential

[19] See, for example, 44 FR 53726 (September 17, 1979) and footnote 3 of that notice. Note that EPA's emissions trading policy statement has clarified that the RACT requirement may be satisfied by achieving "RACT equivalent" emissions reductions from existing sources.

[20] Note that Congress has not used the word "all" in conjunction with RACT in either the earlier law or as now amended. Thus, it is possible that a State could demonstrate that an existing source in an area should not be subject to a control technology especially where such control is unreasonable in light of the area's attainment needs or infeasible. Even if EPA was required to impose control technology on every existing stationary source, where a State demonstrates that available control technology for a source is infeasible or otherwise unreasonable, EPA would conclude that "reasonably" available control technology for that source constitutes no control or, stated differently, that no control technology for the source is "reasonably" available. As referenced above, section 172(c) of the amended Act provides that RACT should apply to "existing sources in the area. This is the same language that appeared in the RACT requirement under the CAA prior to the 1990 Amendments (see section 172(b)(3) of the pre-1990 CAAA law). Under the pre-amended law, EPA in effect interpreted the phrase "existing sources in the area" as it is interpreted here. EPA believes that Congress has placed its imprimatur on, if not adopted, EPA's prior interpretation of RACT (see, e.g. section 182(a)(2)(A) of the amended Act; see also section 193 of the amended Act (savings clause preserving prior EPA guidance except where inconsistent with the Clean Air Act Amendments)).

PM–10 precursors. Since the potential of SO_2 and NO_2 emissions to contribute significantly to PM–10 exceedances is more regionally dependent than VOC emissions, the following discussion focuses on general regional characteristics attributable to SO_2 and NOx emissions. In the western United States, (considered west of the 100th meridian for the purpose of this discussion), EPA believes that sources of SO_2 and NOx emissions may contribute to exceedances of PM–10 levels in several major metropolitan areas (e.g., Los Angeles, Salt Lake County, Utah County, Denver and the San Joaquin Valley). The EPA's conclusion with respect to these areas is based on the presence of factors which enhance the likelihood of secondary formation from these precursors, such as source mix and density, nonattainment area size, particular meteorology, and topography. Where nonattainment areas are relatively small in size, precursors are usually transported out of the area before secondary particles can form in significant quantity. However, due to the greater size of the areas mentioned above, pollutant transport between airsheds is considerably diminished; consequently, locally emitted PM–10 precursors remain in the area long enough to form secondary particles and make a significant contribution to the PM–10 problem in that area.[21] The particular combination of source mix, meterology, and topography in these major metropolitan areas rarely occurs in other areas in the West. For this reason, EPA believes that sources of SO_2 and NOx emissions are not as likely to be significant contributors to the nonattainment problem in those other areas. Therefore, if EPA determines, based on information contained in SIP submittals and any other available information, that major stationary sources of SO_2 and NOx in the Western United States do not contribute significantly to exceedances of the PM–10 standard, such sources would not be expected to meet the requirements that apply to major stationary sources of PM–10, (e.g., RACT). Further discussion on the need to apply RACT in PM–10 nonattainment areas is found in the sections below addressing control requirements for PM–10 nonattainment areas that do/do not demonstrate attainment.

Unlike the case in the Western United States, as a general matter, pollutant transport between airsheds in the Eastern United States can be responsible for a relatively large portion of secondary particle concentrations in nonattainment areas. Thus, the determination as to whether sources of PM–10 precursors in the nonattainment area would contribute significantly to PM–10 concentrations in the same area is correspondingly more difficult. Moreover, the characteristic contributions of the subject precursors vary. Sulfate compounds, for example, are generally known to be present in significant quantities in many eastern areas, while historically, nitrate compounds have been measured in relatively low concentrations throughout the East. As explained earlier, and as with VOC's, EPA will determine the applicability of section 189(e) based on technical and any other available information provided by States in their individual SIP submittals. However, when considering whether sources in PM–10 nonattainment areas should be required to adopt PM–10 precursor control, EPA will assess the reasonableness of the SIP submittal in light of the fact that substantial region-wide reductions of SO_2, NOx, and VOC emissions are expected to result from the implementation of the Act. These emissions reductions may mitigate precursor contributions due to PM–10 concentrations. The EPA will also take into account the historically low nitrate concentrations in the Eastern United States.

The EPA will also consider the information submitted by States containing major stationary sources of VOC's in areas which are in nonattainment for PM–10 to determine whether VOC emissions from such sources do/do not contribute significantly to exceedances of the ambient standard in their particular area. In considering the reductions to be achieved by controlling PM–10 precursors under section 189(e), Congress has indicated that EPA should take into account reductions achievable from control requirements imposed by other sections or titles of the 1990 Act.[22] Thus, along with their information addressing whether VOC's contribute significantly to PM–10 nonattainment in their area, States may wish to include in their SIP submittals a showing that control of VOC emissions under other Act requirments may suffice to relieve them of the need to adopt PM–10 precursor controls under section 189(e). Any such finding will be made by EPA based on information provided in the individual SIP submittal. Other Act control requirements which could be considered as contributing to VOC reductions are where, for example, areas which are nonattainment for PM–10 are also nonattainment for ozone and, thus, are already required to apply RACT on sources of VOC under section 182(b)(2). The VOC reductions may also be realized from new or modified major stationary sources due to the implementation of NSR programs in ozone nonattainment or attainment areas. When reviewing a SIP submittal containing a request for an exemption from PM–10 precursor controls under section 189(e) in pat because of actual or expected VOC reductions from other control requirements of the 1990 Act, EPA's determination will include an assessment of the reasonableness of the submission. This assessment by EPA will take into account the possible significance of differences between control strategies for PM–10 and other pollutants (e.g., requirements imposing BACT as opposed to RACT, and differences in attainment deadlines).

(d) *Condensible PM–10.* Condensible particulate matter (CPM) refers to particles which form in the atmosphere as the exhaust gases from a source cool. The CPM emissions form particles in the PM–10 size range and are considered PM–10 emissions (see, e.g., "PM–10 SIP Development Guideline," (June 1987) at p. 5–32 and 55 FR 41547 (October 12, 1990)). The EPA issued guidance on CPM in a December 24, 1990 memordandum from John Calcagni and William Laxton entitled "Interim Guidance on Emission Limits and Stack Test Methods for Inclusion in PM–10 SIP's." Generally, RACT for sources of CPM will be reviewed consistent with this guidance. In addition, EPA believes it is reasonable and therefore

[21] The focus here and elsewhere on transport between airsheds and on the characteristics of the nonattainment area flow from the statutory language of section 189(e) which states that in determining not to require RACT for major stationary sources of precursors, EPA must find that the sources do not contribute significantly to PM–10 levels which exceed the NAAQS "in the area." Thus, this provision EPA may determine that major stationary sources of precursors in a nonattainment area should not be subject to RACT because the sources do not contribute significantly to PM–10 levels in the same area.

[22] Congress recognized that sources of PM–10 precursors may be otherwise controlled. For example, the House Report states that "[t]he Committee notes that some of these precursors may well be controlled under other provisions of the Act" (H.R. Rep. No. 490, 101st Cong., 2d Sess. 268 (1990)). Moreover, Congress expressly recommended that EPA consider other provisions of the CAA in addressing precursors. The House Report states as follows: "The Committee expects the Administration to harmonize the PM–10 reduction objective of this section with other applicable regulations of this Act regarding PM–10 precursors, such as NOx" (H.R. Rep. No. 490 at 268). Throughout the discussion of PM–10 precursors EPA has relied on the actual and expected reductions from other CAA requirements and has attempted to reconcile these with the CAA's PM–10 attainment objective.

constitutes RACT to control CPM only where CPM is a significant portion of the emissions from an existing stationary source.[23] Further guidance on the identification of sources where a State's RACT analysis should consider CPM is found in "Assessment of the Controllability of Condensible Particulate Matter," published in October 1990. The EPA recognizes that this document is interim guidance and is still subject to review. Also, note that EPA has recently proposed to add a method for measuring CPM emissions from stationary sources to appendix M of 40 CFR part 51 (55 FR 41546, October 12, 1990).

(e) *Total suspended particulate (TSP) RACT.* Since 1979, EPA has taken action to approve a number of TSP nonattainment area SIP's that require RACT for existing stationary sources of TSP. As a technical matter, RACT level measures to control TSP emissions generally utilize technology that also effectively controls PM–10 emissions. Thus, EPA believes it is reasonable to generally presume that control technology which represents RACT for TSP emissions from a source satisfies the requirement of RACT for PM–10 emissions under the amended Act. However, the reasonableness of this control technology may be refuted for a particular source in a PM–10 nonattainment area by information which indicates that a level of PM–10 control greater than that achieved by the TSP RACT would constitute RACT for PM–10. Further, with respect to controls on stack and process fugitive emission points that represent RACT in currently-approved TSP SIP's, EPA specifically recommends that the emission limits be reviewed in light of improvements in control technology and reductions in control costs that may now make lower emission limits reasonable. In addition, regulations submitted as part of the PM–10 SIP should be reviewed to determine whether they meet EPA criteria regarding enforceability, as noted above (see sections 172(c)(6) and 110(a)(2)(A)). Consistent with the previous discussion on RACM, EPA will not approve any PM–10 SIP containing RACT measures that fail to meet applicable statutory and regulatory requirements for SIP enforceability.

In those PM–10 nonattainment areas that do not have previously-approved part D TSP nonattainment area plans, the particulate matter regulations for existing sources should be reviewed to determine if:

(1) Additional controls are necessary to meet RACT requirements.

(2) The regulations meet EPA's enforceability criteria. Similarly, existing regulations controlling emissions of specific PM–10 precursors should be reviewed on a case-by-case basis for major stationary sources in those areas and RACT analysis conducted unless the Administrator determines the source does not contribute significantly to PM–10 levels which exceed the NAAQS in the area.

Section 110(n)(1) of the amended Act provides that all TSP SIP's, including any revisions, that were approved or promulgated by EPA before enactment of the 1990 CAAA shall remain in effect until EPA approves or promulgates a revision to the SIP under the new law. Further, the General Savings Clause, section 193 of the amended Act, states that any control requirement in effect or required to be adopted by a SIP in effect before enactment of the 1990 CAAA for any area that is a nonattainment area for any air pollutant may not be modified unless the modification ensures equivalent or greater emissions reductions of such air pollutant. Thus, under section 110(n)(1), existing provisions of TSP SIP's remain in effect until such provisions are revised under the new law. Also, under section 193, modifications to TSP control requirements, such as TSP RACT, cannot be approved unless at a minimum they ensure equivalent emission reductions of PM–10.[24]

3. SIP's That Demonstrate Attainment

The SIP's for moderate nonattainment areas should provide for the implementation of control measures for area sources and control technology for stationary sources of PM–10 emissions which demonstrate attainment of the PM–10 NAAQS as expeditiously as practicable and no later than the applicable statutory attainment dates. Therefore, if a State adopts less than all available measures but demonstrates, adequately and appropriately, that (a) RFP and attainment of the PM–10 NAAQS is assured, and application of all such available measures would not result in attainment any faster, then a plan which requires implementation of less than all technologically and economically available measures may be approved.[25] The EPA believes it would be unreasonable to require that a plan which demonstrates attainment include all technologically and economically available control measures even though such measures would not expedite attainment. Thus, for some sources in areas which demonstrate attainment, it is possible that some available control measures may not be "reasonably" available because their implementation would not expedite attainment.

As provided in section 172(c)(9) of the amended Act, all moderate nonattainment area SIP's that demonstrate attainment must include contingency measures. These measures must be submitted by the initial moderate nonattainment areas no later than November 15, 1993 (See section 172(b)).[26] These measures become effective without further action by the State or EPA, upon determination by EPA that the area has failed to make RFP or to attain the PM–10 NAAQS by the applicable statutory deadline. These contingency measures should consist of other available control measures that are not included in the control strategy.

One basis EPA recommends for determining the magnitude of contingency measures is the amount of actual PM–10 emissions reductions required by the SIP control strategy to attain the standards. When developing a control strategy and demonstrating attainment with dispersion modeling, the State may determine that some actual emissions must be reduced and also some allowable emission limits must be reduced to the levels that the sources are actually emitting.

The contingency measures to be implemented if an area does not attain the standards on schedule should be a portion of the actual emissions reductions required by the SIP control strategy to bring about attainment. Therefore, the contingency emissions reductions should be approximately equal to the emissions reductions

[23] Where CPM emissions are a negligible portion of the emissions from an existing stationary source, EPA's policy is that such control may be excluded as being unreasonable for that source (See also *Alabama Power Co.* v. *Costle*, 636 F.2d 323, 360 (D.C. Cir. 1979), discussed above). RACT for the source would therefore be no control or, stated alternatively, EPA would conclude that control technology for the source is not "reasonably" available.

[24] A moderate PM–10 area is a nonattainment area for any air pollutant within the meaning of section 193. Thus, for these areas, any modifications to any control requirements, including TSP, would have to ensure equivalent emission reductions of PM–10.

[25] See, e.g., 44 FR 20375 (April 4, 1979). See also 56 FR 5460 (Feburary 11, 1991).

[26] This deadline constitutes the formal establishment of the schedule according to which the initial PM–10 moderate nonattainment areas must submit the contingency measure requirement. The initial PM–10 nonattainment areas were designated nonattainment upon enactment by operation of law. See section 107(d)(4)(B). Under the schedule established today, contingency measures must be submitted no later than 3 years from the nonattainment designations for these areas which, in this instance, is no later than November 15, 1993.

necessary to demonstrate RFP for one year. For instance, reductions equal to 25 percent of the total strategy would be appropriate for a moderate nonattainment area since the control strategy must generally be implemented within a 3- to 4-year period between SIP development and the attainment date, and since RFP generally requires annual incremental reductions in emissions to attain the standards.

The contingency measures should consist of other available control measures beyond those required to attain the standards and may go beyond RACM. It is important not to allow contingency measures to obviate an adequate and appropriate control strategy demonstration.

Contingency measures must be implemented immediately after EPA determines the area has failed to make RFP or to attain the standards, i.e., if the shortfall constitutes a fraction of the area's annual reduction target, the measures to be implemented should address the specific deficiency indentity. The purpose of the contingency measure provisions is to ensure that corrective measures will automatically become effective at the time that EPA makes such a determination. The EPA is required to determine within 90 days after receiving a milestone demonstration and within 6 months after the attainment date (or 1 or 2 years later if extensions of the attainment date are granted), whether these requirements have been met (sections 179(c), 188(b)(2) and 189(c)(2)). Contingency measures must be fully adopted and take effect within 1 year without further legislative action once EPA makes such determinations.

Moderate areas that EPA finds have failed to attain the standards by the applicable date are reclassified as serious areas by operation of law (section 188(b)(2)). Guidance for serious areas addressing the contingency measure requirement will be issued at a later date.

4. SIP's That Do Not Demonstrate Attainment

In those moderate PM–10 nonattainment areas where the State's control strategy cannot demonstrate attainment by the applicable date mandated in the Act, the State should document that its control strategy represents the application of RACM, consistent with the "determination of RACM" discussion above, to existing sources. The EPA believes it is reasonable for all available control measures that are technologically and economically feasible to be adopted for areas that do not demonstrate attainment.

Areas that cannot practically demonstrate attainment of the PM–10 standards by the applicable attainment date will be reclassified as serious areas under section 188(b) and will be required to implement BACM, which includes the application of BACT to existing stationary sources (see H.R. Rep. No. 490, 101st Cong., 2d Sess. 276 (1990)). As discussed below, for those areas that will be reclassified as serious, EPA believes it may be reasonable, in some limited circumstances, for States to consider the compatibility of RACM and RACT with the BACM and BACT that will ultimately be implemented under the serious area plans for those areas.

In the case of RACM for area sources, EPA anticipates that any future implementation of BACM for these sources will be additive to, and hence compatible with, RACM. This is because BACM will generally consist of a more extensive implementation of the RACM measures (e.g., paving more unpaved roads, strengthening the components of a smoke management program, imposing additional requirements to improve the performance of wood burning devices). Since EPA anticipates that RACM and BACM for these sources will be compatible, the SIP's for these areas should reflect the application of available control measures to existing sources in moderate nonattainment areas as determined by the analysis described above for RACM.

As discussed previously, the determination of RACT for specific stack and process sources includes consideration of the technological and economic feasibility of control measures. In the case of those moderate PM–10 areas that were designated nonattainment upon enactment of the 1990 CAAA, EPA plans to reclassify those areas which EPA believes cannot practicably attain by December 31, 1994. Implementation of BACT will be required for sources in the initial moderate areas that EPA so reclassifies approximately 2 years after the deadline for implementation of RACT.[27] In many instances, the installation of pollution controls representing RACT may involve substantial capital expenditures. In the event that BACT is later required for those sources, this may require controls significantly incompatible with those recently installed as RACT, largely wasting those recent expenditures. Under such circumstances, the installation of controls in the first round of SIP planning would be unreasonable. Accordingly, SIP's for the initial moderate areas reclassified as serious in the mandatory reclassification rulemaking for these areas need not require major changes to the control systems for specific stack and process sources where a State reasonably demonstrates that such changes will be significantly incompatible with the application of BACT-level control systems. A State's demonstration should include, for example, showing what the State believes RACT and BACT are for the source and why they are significantly incompatible.

In the case of fugitive dust associated with stationary sources, EPA anticipates that the implementation of BACT will be compatible with the implementation of RACT. This is based on the fact that control of such emissions under BACT will generally be additive to RACT controls (i.e., consist of a more extensive application of fugitive dust control measures imposed as RACT). Therefore, EPA expects that to the extent that control of these sources is technologically and economically feasible, the SIP's for these areas must reflect the application of available control technology to address fugitive dust emissions associated with stationary sources.

(a) *Attainment date waiver nonanthropogenic sources).* Under section 188(f) of the amended Act, EPA may waive attainment dates for a moderate area where EPA determines that nonanthropogenic sources of PM–10 contribute significantly to a violation of the PM–10 NAAQS in the area. Thus, those States having moderate PM–10 nonattainment areas where significant contributions to PM–10 emissions come from sources not caused by humans directly or indirectly may request an attainment date waiver. However, EPA may only waive the attainment date for those moderate areas that fully implement their moderate area SIP requirements (see H.R. Rep. No. 490, 101st Cong., 2d Sess. 265 (1990)). Thus, any State having a moderate nonattainment area that the State believes may qualify for an attainment date waiver should be nevertheless

[27] Under section 189(a), moderate areas designated nonattainment at enactment must implement RACM (including RACT) by December 10, 1993. Under section 189(b) areas reclassified as serious must implement BACM (including BACT) within 4 years after reclassification. Thus, if EPA takes final action to reclassify areas in 1992, they will be required to implement BACT approximately 2 years after the December 10, 1993 implementation deadline for RACT.

proceeed with SIP development and implementation.

In addition, the legislative history suggests that Congress contemplated a narrow definition of what may qualify as "nonanthropogenic" and would limit it to activities where the human role in the causation of the pollution is highly attenuated (see generally H.R. Rep. No. 490). "The term 'anthropogenic sources' is intended to include activities that are anthropogenic in origin. An example of such sources is the dry lake beds at Owens and Mono Lakes in California, which give rise to dust storms that are a result of the diversion of water that would otherwise flow to such lakes and should be considered anthropogenic sources" (H.R. Rep. No. 490 at 265). The EPA intends to issue additional guidance on the scope of the waiver provision as it applies to both moderate and serious PM–10 nonattainment areas in the near future.

(b) *International border areas.* Under section 179B of the amended Act, a SIP for a moderate PM–10 nonattainment area affected by emissions originating from sources outside the United States shall be approved by the Administrator provided such plan meets all the applicable requirements under the Act (including, for example, RACM/RACT), other than a requirement that such a plan or revision demonstrates attainment of the PM–10 NAAQS by the applicable moderate area attainment date; and the SIP demonstrates that the area would attain by that date, but for the emissions emanating from outside of the United States. Generally, EPA expects that such areas will be adjacent to international borders (e.g., El Paso, Texas; Nogales, Arizona; Imperial Valley, California).

D. Sulfur Dioxide

1. Designations

The Act, following the 1977 CAAA, gave the primary authority for initiating designations to State Governors. Although State Governors continue to have authority to initiate the designation process (section 107(d)(3)(D)), the 1990 CAAA also give the EPA the authority to initiate and to promulgate designations (sections 107(d)(1), (3)).

(a) *Classification categories.* In general, areas may be designated as nonattainment, attainment, or unclassifiable for the NAAQS (section 107(d)(1)(C)), and they provide authority and schedules for designations of areas following promulgation of a new or revised NAAQS (section 107(d)(1)(A), (B)).

(b) *Basis of designation.* The SO_2 designations can be made on the basis of modeling or monitoring information which indicates attainment or nonattainment of the NAAQS. For example, an area might be designated nonattainment for violation of the primary SO_2 NAAQS, the secondary SO_2 NAAQS, or both.[28] More detailed information about the basis for designations under the new law is provided in the following discussions.

(c) *Methods of designations.* Some areas were designated "by operation of law" upon enactment of the 1990 CAAA based upon their status immediately before enactment. Areas which were designated nonattainment by operation of law (section 107(d)(1)(C)) are listed in 40 CFR part 81.

The EPA now has the authority to redesignate additional areas as nonattainment for SO_2. The first step in this process is for EPA to notify the affected State's Governor that available information indicates that the designation of an area in the State should be revised (section 107(d)(3)(A)). Section 107(d)(3)(A) provides that EPA may act (i.e., notify the Governor that an area should be redesignated) "on the basis of air quality data, planning and control considerations, or any other air quality related considerations the Administrator deems appropriate." No later than 120 days after receiving this notification, the Governor should submit appropriate redesignations to EPA (section 107(d)(3)(B)). If the Governor fails to act within 120 days of this notification, EPA shall promulgate the appropriate designation (section 107(d)(3)(C)). If the Governor does respond, within 120 days after EPA receives the Governor's response, EPA must promulgate a redesignation making any modifications EPA deems necessary (section 107(d)(3)(C)). If EPA intends to modify the Governor's redesignation submittal, then EPA must notify the Governor of the modifications no later than 60 days prior to the date EPA promulgates the redesignation (section 107(d)(3)(C)).

(d) *Criteria for redesignation.* The revised law sets forth specific requirements which govern the redesignation of an area from nonattainment to attainment (section 107(d)(3)(E)). The particular criteria for redesignating nonattainment areas to attainment (section 107(d)(3)(E)) include the following: The area has attained the NAAQS, the area has a fully approved (section 110(k)) implementation plan, the improvement in air quality is due to permanent and enforceable emissions reductions, the area has a maintenance plan meeting the requirements of section 175A, and the area meets all applicable requirements under section 110 and part D. The Agency will issue detailed guidance for States seeking redesignation of nonattainment areas to attainment at a later date.

2. Classifications

The classification provisions (section 172(a)(1)) give EPA the authority to classify nonattainment areas for the purposes of applying attainment dates (section 172(a)(2)(A)). In exercising this authority, EPA may consider such factors as the severity of the nonattainment problem or the availability and feasibility of the pollution control measures. Based upon the classification, EPA may set later attainment dates for areas with more severe air quality problems (section 172(a)(2)(A)). At the present time, EPA does not intend to establish a specific classification scheme for areas which violate the primary or the secondary SO_2 NAAQS.

3. Plan submission Deadlines

Submission deadlines for States to submit implementation plans (part D Plans) for SO_2 NAAQS are given in section 191. Explicit plan submission deadlines are given for nonattainment areas which violate the primary SO_2 NAAQS (section 191). Explicit plan submission deadlines are not given for nonattainment areas that violate only the secondary or both the primary and secondary SO_2 NAAQS, however.

(a) *Initial nonattainment areas.* States with existing nonattainment areas for the primary SO_2 NAAQS where those areas lack fully approved SIP's, including part D plans, must submit implementation plans (section 191(b)). These implementation plans must meet the requirements of subpart 1 of part D, and they must be submitted within 18 months after enactment of the 1990 CAAA (i.e., by May 15, 1992).

(b) *Subsequent nonattainment areas.* States with areas that are designated or redesignated, after 1990 CAAA enactment, as nonattainment areas for the primary SO_2 NAAQS must submit implementation plans (section 191(a)). These implementation plans must meet the requirements of part D and the plans must be submitted within 18 months of the designation or redesignation.

(c) *Secondary NAAQS.* In the past, Congress and the Agency has required more expeditious resolution of nonattainment for primary NAAQS than

[28] The primary SO_2 NAAQS, is that level which is "requisite to protect the public health" (section 109(b)(1)). The secondary SO_2 NAAQS, is that level which is "requisite to protect the public welfare" (section 109(b)(2)).

for secondary NAAQS. Examples of this are the availability of 18-month extensions for implementation plan submittals for secondary NAAQS (section 110(b)), and the discretion allowed in dates for attainment of secondary NAAQS (section 110(a)(2)(A)).

For areas which violate both primary and secondary NAAQS, allowing separate schedules for secondary and primary plans unnecessarily complicates the plan implementation and processing. Therefore, EPA expects secondary NAAQS attainment plans to be submitted on the same schedule as plans for the primary NAAQS for these areas.

As a result of the 1990 CAAA, EPA has the authority to establish a schedule for submittal of a secondary NAAQS plan or plan revision (section 172(b)). The EPA must establish this schedule at the time of the nonattainment designation. The SIP must be submitted no later than 3 years from the date of the nonattainment designation. Although the law allows up to 3 years for SIP submittal, because the level of control is no more difficult to establish than for the primary NAAQS, and absent compelling justification by a State, EPA will require SIP's for these areas within 18 months of nonattainment designation.

4. Attainment Dates.

In the 1990 CAAA, Congress set specific attainment dates for nonattainment areas which were found to violate the primary SO_2 NAAQS.[29] Attainment dates for nonattainment areas violating either just the secondary or both the primary and secondary SO_2 NAAQS were not specified although Congress deleted the requirement that the secondary NAAQS be attained by a "reasonable" time for attainment of secondary NAAQS (section 110(a)(2)(A)).

The 1990 CAAA require attainment of both the primary and secondary NAAQS "as expeditiously as practicable" (section 172(a)(2) (A) and (B)). Although the 1990 CAAA give EPA authority to establish flexible attainment dates (section 172(a)(2)(A)–(C)), this flexibility does not apply to areas which have specific attainment dates (section 172(a)(2)(D)). Specifically, the flexibility does not apply to attainment of the primary SO_2 NAAQS because the attainment date is specified for primary SO_2 nonattainment areas (section 192), but it does apply to secondary SO_2 NAAQS because the 1990 CAAA do not specify an attainment date for secondary SO_2 nonattainment areas.

(a) *Initial nonattainment areas.* Areas which were designated nonattainment at the time of enactment (i.e., areas which are nonattainment by operation of law), must attain the primary NAAQS as expeditiously as practicable but no later than 5 years after enactment of the 1990 CAAA (i.e., by November 15, 1995) (section 192(b)).

(b) *Subsequent nonattainment areas.* Areas which are redesignated as nonattainment, subsequent to the November 15, 1990 date of enactment, must attain the primary NAAQS "as expeditiously as practicable," but not later than 5 years after the nonattainment designation (section 192(a)).

(c) *Inadequate plan areas (SIP call areas).* Some nonattainment areas have plans which were approved by EPA before enactment of the 1990 CAAA. If, subsequent to the plan's approval, EPA finds that such a plan is substantially inadequate, the plan must be revised to provide for attainment. The revised plan must provide attainment of the primary NAAQS within 5 years from the finding of inadequacy (section 192(c)).

(d) *Attainment of secondary NAAQS.* The 1977 CAAA set the attainment date for secondary NAAQS as "a reasonable time" (section 110(a)(2)(A)). This was consistent with the requirements of the 1970 Act. At the same time, for the new part D nonattainment areas, section 172(a)(1) established the attainment date for secondary NAAQS as "as expeditiously as practicable." The EPA reiterated in regulations that "a reasonable time" after plan approval was allowed for attainment of the secondary NAAQS (40 CFR 51.110(c)(1)).

In the 1990 CAAA, Congress provided for attainment "as expeditiously as practicable" in both primary and secondary nonattainment areas (section 172(a)(2)). Congress set a specific attainment date of 5 years for primary NAAQS (see above) but did not set a specific deadline for attainment of secondary NAAQS (section 192). At the same time, Congress deleted section 110(a)(2)(A), which had stated that attainment dates should generally not exceed 3 years from plan submittal (section 110(a)(2)(A)). This implies that the only test for the approvability of a secondary NAAQS attainment date is whether or not the date is "as expeditiously as practicable" (section 172(a)(2)(B)).

To maintain continuity with past program guidance, EPA plans to allow attainment with the secondary NAAQS to be scheduled on the basis of what is expeditious for the area (section 193). Areas which are nonattainment for the secondary SO_2 NAAQS may be allowed additional time for attainment beyond the deadlines mandated for the primary NAAQS. In general, EPA will rely on the substantive provisions of 40 CFR 51.340 (subpart R) to determine expeditiousness.

Areas which are nonattainment for both the primary and secondary NAAQS may split their attainment dates, i.e., attain the primary NAAQS within 5 years and attain the secondary NAAQS as expeditiously as practicable. This will be acceptable provided that the State can demonstrate that the secondary NAAQS cannot be attained within the same timeframe as the primary NAAQS.

5. Nonattainment Plan Provision

(a) *Overview.* The 1970 Act required States to submit implementation plans which would indicate how the State would attain and maintain the NAAQS. The requirements for these general SIP's were listed in part A, section 110. In the 1977 CAAA, requirements for implementation plans in nonattainment areas were given in part D (section 171–178). These requriements addressed a number of issues including, but not limited to, attainment dates, permit requirements, and planning procedures.

The 1990 CAAA have not made significant changes in the plan requirements for SO_2 nonattainment areas (section 172). For this reason, States may generally continue to rely on past guidance for SO_2 programs. This position is further supported by the General Savings Clause contained in section 193. A summary of existing policy and guidance may be found in the "SO_2 Guideline," the "Guideline On Air Quality Models (revised)," and other documents listed in Appendix B. Despite the continued validity of past guidance in the implementation of the amended Act for SO_2 NAAQS, there are some areas of policy that need to be clarified. One area that will need policy clarification is the issue of plan approval. The EPA intends to consider only the final rulemaking status of the

[29] The 1977 CAAA continued the requirement from the 1970 CAA that States submit implementation plans which provided for attainment of primary NAAQS "as expeditiously as practicable but * * * in no case later than three years" from the date of approval of the plan (1977 CAAA section 110(a)(2)(A)). For secondary NAAQS, attainment was required within "a reasonable time" (section 110(a)(2)(A) after the 1977 CAAA).

For part D nonattainment areas, the 1977 CAAA required attainment for both primary and secondary NAAQS nonattainment areas "as expeditiously as practicable" but for primary standards, a deadline of December 31, 1982 was also given (part D, section 172(a)(1) after the 1977 CAAA).

SIP at the time of enactment in relationship to the requirements of the 1990 CAAA. This is consistent with the Savings Clause for existing plan provisions (section 110(n)(1)). If the nonattainment area had a part D plan that was approved prior to enactment, the EPA will not require a new part D SIP. For these areas, a new part D SIP will not be required regardless of whether the attainment date for the area had passed at the time of encactment of the 1990 CAAA. However, if the approved plan was not a part D plan, the State will have to submit a complete part D plan to EPA for approval because part D plans are requried for nonattainment areas (section 191(b)).

Policy clarification is also needed concerning the status of areas that lack approved part D plans and that contain a SO_2 emission source that has permanently shut down. A minimum of two actions are required for States wishing to establish that these areas are inoperative for SIP purposes.

The first action is that the State must provide EPA with sufficient evidence to establish that the source has in fact been permanently shut down. Three criteria exist for establishing permanent source shutdown. These criteria require proof that the source has been inoperative for at least the 2 preceding years, that the source is precluded from resuming operations, and that the source has been withdrawn from the State's emissions inventory.

The second action is that the State must establish that fully-approved NSR and PSD programs are in place so that the source would be required to undergo NSR prior to start-up if it were reactivated.

After the State has completed these actions, EPA will consider additional plan requirements of such areas on a case-by-case basis. Alternatively, the State may choose to submit complete part D plans to EPA for these areas. As discussed in a previous section on redesignation, section 107(d)(3) provides that a nonattainment area must meet all the requirements set forth in section 107(d)(3)(E), including a maintenance plan consistent with section 175A, before it may be redesignated to attainment. The EPA recognizes that this issue is of immediate concern to some States and Regions. The EPA will issue guidance concerning plan requirements and redesignation requirements in the future.

(b) *Issues*—(1) *RACT.* For most criteria pollutants, RACT is control technology that is reasonably available considering technological and economic feasibility (see memorandum from R. Strelow, December 9, 1976). The definition of RACT for SO_2 is that control technology which is necessary to achieve the NAAQS (40 CFR 51.100 (o)). Since SO_2 RACT is already defined as the technology necessary to achieve NAAQS, control technology which failed to achieve the SO_2 NAAQS would, by definition, fail to be SO_2 RACT.

The EPA intends to continue defining RACT for SO_2 as that control technology which will achieve the NAAQS within statutory timeframes.

(2) *RFP.* Section 171(1) of the amended Act defines RFP as "such annual incremental reductions in emissions of the relevant air pollutant as are required by this part (part D) or may reasonably be required by EPA for the purpose of ensuring attainment of the applicable national ambient air quality standard by the applicable date." This definition is most appropriate for pollutants which are emitted by numerous and diverse sources, where the relationship between any individual source and the overall air quality is not explicitly quantified, and where the emission reductions necessary to attain the NAAQS are inventory-wide. The definition is generally less pertinent to pollutants such as SO_2 which usually have a limited number of sources, relationships between individual sources and air quality which are relatively well defined, and emissions control measures which result in swift and dramatic improvement in air quality. That is, for SO_2, there is usually a single "step" between pre-control nonattainment and post-control between pre-control nonattainment and post-control attainment.

Therefore, for SO_2, with its discernible relationship between emissions and air quality and significant and immediate air quality improvements, RFP will continue to be construed as "adherence to an ambitious compliance schedule." [30]

(3) *Contingency measures.* Section 172(c)(9) of the amended Act defines contingency measures as measures in a SIP which are to be implemented if an area fails to make RFP or fails to attain the NAAQS by the applicable attainment date. Contingency measures become effective without further action by the State or EPA, upon determination by EPA that the area has failed to (1) make reasonable further progress or (2) attain the SO_2 NAAQS by the applicable statutory deadline. These contingency measures shall consist of other available control measures that are not included in the control strategy.

The EPA interprets the contingency measure provisions as primarily directed at general programs which can be undertaken on an areawide basis. Again, SO_2 presents special considerations. First, for some of the other criteria pollutants, the analytical tools for quantifying the relationship between reductions in precursor emissions and resulting air quality improvements remain subject to significant uncertainities, in contrast with procedures for pollutants such as SO_2. Second, emission estimates and attainment analyses can be strongly influenced by overly-optimistic assumptions about control efficiency and rates of compliance for many small sources. In contrast, controls for SO_2 are well understood and are far less prone to uncertainty. Since SO_2 control measures are by definition based upon what is directly and quantifiably necessary to attain the SO_2 NAAQS, it would be unlikely for an area to implement the necessary emissions control yet fail to attain the NAAQS. Therefore, for SO_2 programs, EPA interprets "contingency measures" to mean that the State agency has a comprehensive program to identify sources of violations of the SO_2 NAAQS and to undertake an aggressive follow-up for compliance and enforcement, including expedited procedures for establishing enforceable consent agreements pending the adoption of revised SIP's.

This definition of minimum contingency measures for SO_2 does not preclude a State from requiring additional contingency measures that are enforceable and appropriate for a particular source or source category.

(4) *Stack height issues and remand.* Three provisions of the stack height rules have been remanded to EPA as a result of the court decision in *NRDC* v. *Thomas,* 838 F.2d 1224 (D.C. Cir.), cert. denied, 109 S.Ct. 219 (1988). The EPA has allowed States to move ahead on affected SIP revisions without regard to the remanded section of these rules, but with the caveat that the States must remain aware of the status of these rules, and may be required to take action at a later date to respond to any rule revisions resulting from the remand (see, "Interim Policy on Stack Height Regulatory Actions," J. Craig Potter, April 22, 1988.)

(5) *Existing modeling protocols.* The amended Act requires submittal of a complete SIP 18 months from enactment or nonattainment designation (section

[30] U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, "Guidance Document for Correction of part D SIP's for Nonattainment Areas," (Research Triangle Park, North Carolina: January 27, 1984), page 25.

191). This 18-month submittal, supported by a guideline model, must be completed even in cases where the modeling protocol is currently under review. Equivalent models to those approved for regulatory use in EPA's "Guideline on Air Quality Models (Revised)" might not be approved in sufficient time to complete SIP development and submittal within the statutory deadline. Therefore, States should proceed with existing guideline models, without deviation from the model guideline, to fulfill the requirements of the 18-month SIP submittal.

If States and/or source owners wish to complete work on alternative models, they may do so. If EPA accepts the alternative models, then the SIP may be revised accordingly. However, if the alternative model is not completed in a timely fashion, or if the alternative is unacceptable, an acceptable regulation must be in place to assure expeditious attainment and to avoid sanctions for failure to submit a SIP (section 172(c)(8)).

The Act as amended in 1990 gives EPA authority to prescribe modeling procedures to determine the effect of emissions on ambient air quality (Part D and section 110(a)(2)(K)(i)). The EPA plans to rely on its "Guideline on Air Quality Models (Revised)" as the basis for all prescribed procedures and is in the process of revising 40 CFR part 51 to effect this requirement.

(6) *Test methods and averaging times.* The NAAQS are expressed as maximum ambient concentrations that are to be met on a continuous basis. Consequently, States must demonstrate that source emission limitations, averaging times, and compliance monitoring methods are sufficient to assure compliance with the air quality standards. The choice of a monitoring technique should consider regulatory needs, monitoring technology costs, and the relative benefits of one technique versus another.

Continuous emission monitoring systems (CEMS) are a reliable technique for continuously monitoring emissions of SO_2 for many source categories. Detailed guidance documents for determining CEMS feasibility in indiviudal cases are listed in section III.D.6. of this preamble (see letters from W. Reilly to J. Dingell, April 10, 1991). Further guidance is being developed. In general, the criteria for determining when CEMS are appropriate are as follows:

i. Any source where there is an established new source performance standard (NSPS) which requires CEMS for determining compliance should rely on this method in the SIP. For example, any utility boiler that physically meets the applicability requirements of 40 CFR part 60, subpart Da, whether it is an "existing boiler" under 40 CFR part 60, subpart Da or not, must have CEMS for NSPS compliance and should therefore rely on CEMS for SIP compliance as well.

ii. Any source that has other regulatory requirements with CEMS as the compliance method should rely on CEMS as the SIP compliance method as well.

The feasibility of using CEMS as the compliance method has already been established for sources that fall into these two categories. For example, in developing NSPS, the Agency has already considered cost, environmental, and energy impacts for these standards. Where CEMS are not technically or economically feasible in other cases, other appropriate continuous monitoring techniques, such as continuous compliance of relevant process parameters or alternatives approved by EPA under title IV, would be appropriate.

(7) *Enforceability.* The SIP measures should be converted into a legally-enforceable vehicle (e.g., a regulation or permit). The regulations or other measures should meet EPA's criteria regarding the enforceability of SIP's and SIP revisions.

Guidance on enforceability requirements has been provided to Regional Offices in various memoranda (see Bauman/Biondi and Potter/Adams/Blake memoranda listed in section III.D.6. of this preamble. Those SIP's and SIP revisions which fail to satisfy the enforceability criteria should not be forwarded for approval. If they are submitted, they will be disapproved if, in EPA's judgement, they fail to satisfy applicable statutory and regulatory requirements.

(8) *Maintenance plans.* As discussed previously, section 107(d)(3) of the amended Act (see subparagraphs A and E of section 107(d)(3) as well as section 175A) requires that nonattainment areas must have a fully-approved maintenance plan meeting the requirements of section 175A before they can be redesignated to attainment. Section 175A(a) mandates, among other things, that a State must submit a SIP revision which provides for maintenance of the NAAQS for at least 10 years after the redesignation to attainment (section 175A(a)). A subsequent SIP revision providing for maintenance of the NAAQS for an additional 10 years is due 8 years into the first 10-year maintenance period.

The law does not provide any exceptions to the maintenance plan requirement. Therefore, in addition to meeting all pre-existing requirements, areas which are designated nonattainment by operation of law (section 107(d)(1)(C)(i)), as well as areas which are designated nonattainment in the future (section 107(d)(3)), must all submit maintenance plans before they can be redesignated to attainment.

The EPA will issue guidance on the contents of section 175A maintenance plans at a later date.

(9) *NSR.* As specified in section 302(j), for SO_2 nonattainment areas the term major stationary source means any stationary source which directly emits, or has the potential to emit, 100 tons per year or more of SO_2. To meet the requirements of section 172(c)(5), States must submit a permit program that meets all the permit requirements of section 173 for the construction and operation of new and modified stationary sources of SO_2.

6. Sources of SO_2 Policy and Guidance

Unless otherwise noted, the guidance documents and sources listed below were developed by the EPA's Office of Air Quality Planning and Standards (OAQPS) located in Research Triangle Park, North Carolina. The EPA plans to address additional policy questions by periodically issuing memorandums which offer guidance in a question-and-answer format. See also:

(a) *SO_2 Guidance.*

(1) SO_2 Guideline, October 1989.

(2) SO_2 Guideline Appendices, October 1989.

(3) Letter from William Reilly to Representative John Dingell, in response to questions and GAO report, April 10, 1991.

(4) Memorandum from Craig Potter, Thomas Adams, and Francis Blake to Air Division Director, Regions I–X, "Review of State Implementation Plans and Revisions for Enforceability and Legal Sufficiency," September 23, 1987.

(5) Memorandum from Gerald A. Emison, Director, OAQPS, to Air Division Director, Regions I–X, "Transmittal of Reissued OAQPS CEMS Policy," March 31, 1988.

(6) "Approval and Promulgation of Implementation Plans; Dearborn, Lake, and Porter Counties, Indiana, " 54 FR 612, January 9, 1989.

(7) Memorandum from Robert Bauman and Rich Biondi to Air Branch Chiefs, "SO_2 SIP Deficiency Checklist," November 28, 1990.

(8) Memorandum from Gerald Emison, Director, OAQPS, to David Kee, Director, Air Management Division, Region V, "Need for a Short-Term BACT Analysis for the Proposed William A. Zimmer Power Plant," November 24, 1986.

(b) *SIP Guidance.* (1) Guidance Document for Correction of Part D SIP's for Nonattainment Areas, January 27, 1984.

(2) Memorandum from R. Strelow to Regional Administrator, Regions I–X, "Guidance for Determining Acceptability of SIP Regulations in Non-Attainment Areas," December 9, 1976.

(c) *Modeling Guidance.* (1) "Guideline on Air Quality Models" (Revised), July 1986.

(2) "Interim Procedures for Evaluating Air Quality Models: Experience with Implementation," July 1985.

(3) Model Clearinghouse.

(d) *New Source Review Guidance.* (1) Memorandum from Richard Rhoads, Director CPDD, to Division Director, Regions I–X, "Growth Restrictions in Secondary NAAQS Nonattainment Areas," October 28, 1980.

(2) New Source Review Prevention of Significant Deterioration and Nonattainment Area Guidance Notebook, January 1988.

(3) Guidance on State Operating Permit Programs, **Federal Register** notice, June 1989.

(4) NSR Electronic Bulletin Board, Computerized Compilation of Previous and Latest NSR Policy Memoranda and Technical Information Items, **Federal Register** notice, January 1990.

(5) "Draft Workshop Manual for New Source Review (NSR) Programs," December 1990.

(6) Memorandum from J. Seitz, OAQPS, to Air Division Director, Regions I–X, "New Source Review (NSR) Program Transitional Guidance," March 11, 1991.

E. Lead

1. Statutory Background

(a) *Designations.* In 1978, when EPA promulgated the lead NAAQS, EPA believed that implementation and maintenance of the lead NAAQS should be in accordance with the SIP requirements set forth in section 110 and not part D. The EPA believed that section 107—and and part D requirements—were intended by Congress to apply only to NAAQS which were set prior to 1977. In these cases, SIP's had already been adopted, the attainment dates had already passed, and the SIP's had proven to be inadequate. The designation process was intended as a mechanism to initiate new SIP revisions for those existing NAAQS. Since the attainment date for the lead NAAQS at that time had not yet arrived, no lead SIP's had yet been proven inadequate. Consequently, lead did not meet the circumstances which initially resulted in a need for nonattainment designations and plan revisions under part D.

The Act, as amended, clearly defines EPA's authority to designate areas for lead. Section 107(d)(5) authorizes EPA to require States to designate areas (or portions thereof) as nonattainment, attainment or unclassifiable with respect to the lead NAAQS in effect as of the date of enactment of the 1990 CAAA.[31] As provided in section 107(d)(5), these lead areas are to be designated pursuant to the procedures outlined in section 107(d)(1)(A) and (B) except that certain timeframes of subparagraph (B) have been modified by section 107(d)(5). Section 107(d)(1)(A) permits EPA to require the Governors of affected States to submit recommended designations for the areas EPA seeks designated in a timeframe that EPA deems reasonable. This timeframe, however, can be no sooner than 120 days nor later than 1 year after the date EPA notifies the State of the requirement to submit such designations. Section 107(d)(1)(B) requires that EPA must then promulgate these designations no later than 1 year after notifying the State of the requirement to designate areas for lead. The EPA may make any modifications deemed necessary to the designations submitted by the State (see generally section 107(d)(1)(B) of the Act). However, no later than 120 days before promulgating a modified area, EPA must notify the affected State and provide an opportunity for the State to demonstrate why any proposed modification is inapporpriate.

If the Governor of an affected State fails to submit the required lead designations, in whole or in part, EPA is required to promulgate the designation that it deems appropriate for any area (or portion thereof) not designated by the State.

(b) *Area boundaries.* States should identify the boundaries of the nonattainment areas when submitting nonattainment designations for lead. A lead nonattainment area consists of that area which does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the lead NAAQS (see section 107(d)(1) of the amended Act). Generally, EPA recommends that the lead nonattainment boundary be defined by the perimeter of the county in which the ambient lead monitor(s) recording the violation is located. In addition, if the ambient monitor measuring violations is located near another county, then EPA recommends that the other county also be designated as nonattainment for lead. In some situations, however, a boundary other than the county perimeter may be appropriate. States may choose alternatively to define the lead nonattainment boundary by using any one, or a combination, of the following techniques: Qualitative analysis, spatial interpolation of air monitoring data, or air quality simulation by dispersion modeling. These techniques are more fully described in "Procedures for Estimating Probability of Nonattainment of a PM–10 NAAQS Using Total Suspended Particulate or PM–10 Data," December 1986. The EPA recommends that the State submit a defensible rationale for the boundary chosen with the Governor's designation for an area.

(c) *Classification.*[32] Section 172(a)(1)(A) of the amended Act authorizes EPA to classify areas designated as nonattainment for the purposes of applying an attainment date pursuant to section 172(a)(2) or for other reasons. In determining the appropriate classification, EPA may consider such factors as the severity of the nonattainment problem and the availability and feasibility of the pollution control measures (see section 172(a)(1)(A) of the amended Act). The EPA may, but is not required to, classify lead nonattainment areas. At this time, EPA does not intend to classify lead nonattainment areas with respect to the lead NAAQS in effect on date of enactment of the 1990 CAAA. That is, while section 172(a)(1)(A) provides a mechanism to classify nonattainment areas, section 172(a)(2)(D) provides that the attainment date extensions described in section 172(a)(2)(A) do not apply to nonattainment areas having specified attainment dates under other provisions of part D. Section 192(a) specifically provides an attainment date for areas designated as nonattainment for the lead NAAQS in effect at the date of enactment of the 1990 CAAA. Therefore, EPA has legal authority to classify lead nonattainment areas, but

[31] Section 107(d)(5) of the amended Act does not indicate that all areas of the State must be designated. At this time, EPA has only requested that specified areas within affected States be designated. Therefore, most States and the vast majority of the areas within affected States will still have no designations, i.e., will not be designated as attainment, nonattainment, or unclassifiable for lead.

[32] It is important to note that classifications and designations are separate concepts. Designations refer to an area's attainment status (i.e., the area is designated attainment, nonattainment, or unclassifiable). Classifications are applied to areas designated nonattainment and are a mechanism for addressing differences among nonattainment areas. For example, classifications usually result in applying additional control measures and providing longer attainment deadlines for those areas having more serious nonattainment problems.

the 5-year attainment date under section 192(a) cannot be extended pursuant to section 172(a)(2)(D), and EPA deems it inappropriate to establish a classification scheme within the 5-year interval.

(d) *Plan submission.* Generally, the date by which a plan must be submitted for an area is trigggered by the area's nonattainment designation. For areas designated nonattainment for the primary lead NAAQS in effect at enactment of the 1990 CAAA, States must submit SIP's which meet the applicable requirements of part D of the Act within 18 months of an area's nonattainment designation (see section 191(a) of the amended Act).

(e) *Attainment dates.* Generally, the date by which an area must attain the lead NAAQS also is triggered by the area's nonattainment designation. For areas designated nonattainment for the primary lead NAAQS in effect at enactment of the 1990 CAAA, SIP's must provide for attainment of the lead NAAQS as expeditiously as practicable but no later than 5 years from the date of an area's nonattainment designation (see section 192(a) of the amended Act).

2. Pre-SIP Submittal Activities

As discussed above, any States containing an area designated as nonattainment with respect to the lead NAAQS in effect at enactment of the 1990 CAAA must develop and submit a part D SIP providing for attainment. Most of the general part D nonattainment plan provisions are set forth in section 172(c). The SIP's submitted to meet the part D requirements must, among other things, include RACM, RACT, provide for RFP, contain contingency measures and require permits for the construction and operation of major new and modified stationary sources. This portion of the General Preamble does not address more specifically RACM, RFP, contingency measures, or some of the other part D SIP requirements for lead nonattainment areas. States should nonetheless proceed, consistent with more general guidance on part D requirements to collect information and data necessary to complete SIP analyses. A listing of some of the specific SIP activities States should be completing is described below. The EPA will continue to evaluate the need for more detailed guidance on the part D lead SIP requirements as it proceeds with nonattainment designations for lead.

(a) *Nonattainment NSR.* Previously, areas that were not attaining the lead NAAQS were not designated as nonattainment and therefore were not required to have a nonattainment NSR program consistent with section 173 of the Act. However, now that there will be areas designated nonattainment for lead, a nonattainment NSR program is required for such areas. Specifically, section 172(c)(5) requires that States having areas designated nonattainment for lead submit as part of the applicable SIP, provisions requiring permits for the construction and operation of new or modified major stationary sources anywhere in the nonattainment area, in accordance with section 173. Further guidance is provided in the March 11, 1991 memorandum from John Seitz, entitled "New Source Review (NSR) Program Transitional Guidance to Implement the Clean Air Act Amendment Changes that Affect NSR" which is found in Appendix D. Among other things, the March 11, 1991 memorandum addresses the interim NSR requirements applicable to an area upon its designation as nonattainment for lead but before the amended law provides for submittal of its NSR program. The EPA generally recommends that States evaluate their existing rules to determine whether there are any impediments to implementing a nonattainment NSR program in the areas designated as nonattainment for lead.

(b) *Emission inventories.* An emissions inventory is required to determine the nature and extent of the specific control strategies that are needed. Emissions inventories should be based on measured emissions or documented emission factors. The more comprehensive and accurate the inventory, the more effective the control evaluation (see section 172(c)(3) of the amended Act which specifies that nonattainment area SIP's include "a comprehensive, accurate, current inventory of actual emissions from all sources of the relevant pollutant or pollutants in such area * * *"). The States should begin to evaluate the type of emissions inventory that needs to be developed and the type of information that needs to be collected to support a SIP submittal. Postponing completion of the emissions inventory could jeopardize the submittal of the lead SIP within the statutorily-mandated deadlines.

The following documents provide further information for lead emissions inventory development: Draft Manual "Updated Information on Approval and Promulgation of Lead Implementation Plans," EPA, July 1983; "Guideline Series. Development of an Example Control Strategy for Lead," April 1979; and "Guideline Series, Supplementary Guideline for Lead Implementation Plans," August 1978.

(c) *Modeling and meteorological monitoring.* The lead SIP regulations at 40 CFR 51.117 require that atmospheric dispersion modeling be employed for the demonstration of attainment for areas in the vicinity of point sources listed in 40 CFR 51.117(a)(1).[33] To complete the necessary dispersion modeling, meteorological and other data will be necessary. At this time States should be evaluating whether the necessary meteorological data are available and, if not, determine what needs to be done to obtain these data. Dispersion modeling should follow the procedures outlined in the "Guideline On Air Quality Models (Revised)." The "Guideline" indicates that if on-site meteorological stations are used, 12 months of data are required. Postponing the decision to determine whether on-site stations need to be established could jeopardize the submittal of the lead SIP within the statutorily-mandated deadlines.

(d) *Control measures.* As indicated above, EPA is not at this time providing guidance on the RACM measures specific to lead SIP's. States should, however, continue to rely on guidance issued for the control of particulate emissions. In light of the fact that some SIP's are due July 6, 1993, EPA recommends that States focus their efforts more specifically now on evaluations of the affected lead sources. The EPA believes that the efforts States should undertake include an assessment of operation and maintenance (O & M) and work practice measures. In addition, State efforts should identify and analyze control measures which reduce process fugitive and lead-bearing open dust emission sources. These evaluations should consider the technological feasibility of additional control measures, as well as the cost of the identified options.

3. Transition Issues

(a) *Transition from pre-amended law.* As mentioned, under the pre-amended law there were no designations for lead,

[33] Generally, in addition to meeting applicable requirements under part D of title I of the amended Act, SIP's for those areas designated nonattainment for lead must also meet the applicable regulatory requirements set forth in 40 CFR part 51 except to the extent those requirements are inconsistent with the amended Act. The 1990 CAAA include a General Savings Clause which provides that regulations (or guidance, etc.) in effect before the enactment of the Amendments shall remain in effect after enactment (see section 193). However, the Savings Clause also provides that such regulations (or guidance, etc.) shall remain in effect "except to the extent otherwise provided under this Act, inconsistent with any provisions of this Act, or revised by the Administrator." *Id.*

and States were required to submit SIP's in accordance with section 110. The amended law, as discussed, now authorizes EPA to designate areas for lead. There are transitional issues raised by the changes in the new law including, for example, the status of the obligation to submit adequate section 110 SIP's under the pre-amended law and the status of any approved section 110 SIP's.

(b) *Unapproved or inadequate section 110 SIP's.* Before enactment of the 1990 CAAA, a State may have failed to submit a section 110 SIP to EPA, it may have submitted a section 110 SIP which was not approved by EPA, or it may have submitted and had approved a section 110 SIP which EPA subsequently found substantially inadequate. The last situation is true of at least three States. Specifically, prior to the enactment of the CAAA, EPA issued SIP calls for three States having substantially inadequate section 110 SIP's. Except for those areas designated nonattainment for lead, section 110(n)(2) requires these States to continue their section 110 planning in accordance with the SIP calls (or, as the case may be, in response to EPA's 1978 promulgation of the quarterly 1.5 $\mu g/m^3$ lead standard) and to attain the NAAQS by the applicable date specified in section 110(m)(2). Any area in these States that is designated nonattainment under the new law for the existing lead NAAQS must instead submit a part D SIP that comports with the applicable requirements in subpart 1 and subpart 5, including the SIP submittal material deadlines and attainment dates in sections 191 and 192 of subpart 5.

The EPA intends to ensure that a State whose SIP needed correction prior to enactment of the 1990 CAAA and that expects to have an area designated as nonattainment under the new law, continues to progress with its plan development and implementation for that area as provided in section 110(n)(2). Once areas are designated nonattainment for the existing lead NAAQS, the State must complete a SIP providing for attainment by the date that is as expeditious as "practicable" for any such newly-designated nonattainment area. In reviewing any future SIP's under sections 191 and 192, EPA will consider what progress could reasonably have been accomplished both prior to enactment of the new law and after enactment but before the area was designated nonattainment.

(c) *Approved section 110 SIP's.* In the situation where a State submitted and EPA approved or promulgated a section 110 lead SIP before the 1990 CAAA enactment, then all provisions of such SIP shall remain in effect unless and until EPA approves a revision under the new law (see section 110(n)(1)).

F. Nitrogen Dioxide

This section applies primarily to the South Coast Air Basin of California, which is the only designated NO_2 nonattainment area in the Nation. The basin was designated nonattainment by operation of law (section 107(d)(1)(C). The requirements described in this section would also generally apply to any subsequently designated NO_2 nonattainment areas. Nothing in this guidance prevents a SIP for a nonattainment area from containing measures more stringent than the guidance recommends.

In general, the Act, as amended in 1990, does not require significant revisions in the NO_2 NAAQS program. The General Savings Clause (section 193) provides for general program continuity by explicitly preserving existing rules, policies, and guidance that are not affected by Act changes.

1. Designations

The 1977 Act gave the primary authority for initiating designations to State Governors. Although State Governors continue to have authority to initiate the designation process (section 107(d)(3)(D)), the 1990 CAAA also give the Administrator the authority to initiate and to promulgate designations (section 107(d) (1) and (3)).

In general, areas may be designated as nonattainment, attainment, or unclassifiable for the NAAQS (section 107(d)(1)(A) (i), (ii), and (iii)). The 1990 CAAA provide for designations of areas based upon the attainment status for the current NAAQS (section 107(d)(1)(C)); they also provide authority and schedules for designations of areas following promulgation of a new or revised NAAQS (section 107(d)(1) (A) and (B)).

The revised law sets forth specific requirements that govern the redesignation of an area from nonattainment to attainment (section 107(d)(3)(E)). The particular criteria for redesignating nonattainment areas to attainment (section 107(d)(3)(E)) include the following determinations: The area has attained the NAAQS, the area has a fully approved (section 110(k)) implementation plan, the improvement in air quality is due to permanent and enforceable emissions reductions, the area has a maintenance plan meeting the requirements of section 175A, and the area meets all applicable requirements under section 110 and part D. See "Redesignations and Maintenance" under III.H.6 of this document.

2. Plan Deadlines

Submission deadlines for States to submit implementation plans (part D Plans) for NO_2 are given in section 191. Plan submission deadlines are explicitly given for nonattainment areas which violate the primary NO_2 NAAQS (section 191). The NO_2 primary and secondary NAAQS are identical. Thus, the South Coast Air Basin must submit an implementation plan that meets the requirements of subpart 1 of part D, and the plan must be submitted within 18 months after enactment of the 1990 CAAA (i.e., by May 15, 1992).

States with areas that are designated or redesignated, after enactment, as nonattainment areas for the NO_2 NAAQS must submit implementation plans (section 191[a]). These implementation plans must meet the requirements of part D and the plans must be submitted within 18 months of the designation or redesignation.

3. Attainment Dates

In the 1990 CAAA, Congress set specific attainment dates for nonattainment areas that were found to violate the NO_2 NAAQS. The 1990 CAAA require attainment of the NAAQS "as expeditiously as practicable" (section 172(a)(2) (A) and (B)). Although the 1990 CAAA give EPA authority to establish flexible attainment dates (section 172(a)(2) (A)–(C)), this flexibility does not apply to areas that have specific attainment dates (section 172(a)(2)(D)). Specifically, the flexibility does not apply to attainment of the NO_2 NAAQS because the attainment date is specified in section 192.

Areas that were designated nonattainment at the time of enactment (i.e., areas that are nonattainment by operation of law) must attain the primary standard as expeditiously as practicable, but not later than 5 years after enactment of the 1990 CAAA (i.e., by November 15, 1995) (section 192(b)). This requirement applies to the South Coast Air Basin.

Areas that are redesignated as nonattainment, subsequent to the November 15, 1990 date of enactment, must attain the primary standard as expeditiously as practicable, but not later than 5 years after the nonattainment designation (section 192(a)).

4. Nonattainment Plan Provisions

The 1970 Act required States to submit implementation plans that would

indicate how the State would attain and maintain the NAAQS. The requirements for these general SIP's were listed in part A, section 110. In the 1977 CAAA, requirements for implementation plans in nonattainment areas were given in part D (sections 171–178). These requirements addressed a number of issues including, but not limited to, attainment dates, permit requirements, and planning procedures.

The 1990 CAAA have not made significant changes in the plan requirements for NO_2 nonattainment areas (section 172(c)). For this reason, States may generally continue to rely on past guidance for NO_2 programs in meeting those requirements. This position is further supported by the General Savings Clause contained in section 193.

G. New Source Review (NSR) Nonattainment Permit Requirements

This section of the General Preamble describes the new or revised NSR nonattainment permit program requirements under part D of the amended Act and generally explains EPA's interpretation of these requirements. For these new or revised provisions, the provisions discussed below are the minimum statutory requirements States must use to revise their existing NSR nonattainment permit plan provisions (or to adopt such provisions if none exist) which must be submitted to EPA for approval by the deadlines set forth in the CAAA of 1990. In keeping with past practice, EPA intends to issue regulations setting forth in more detail the requirements for an approvable NSR program.

1. Construction Bans

Under the 1977 Amendments to the Act, section 110(a)(2)(I) of the statute required EPA to place certain nonattainment areas under a federally-imposed construction moratorium (ban) that prohibited the construction of all new or modified major stationary sources in nonattainment areas where the State failed to have an implementation plan meeting all of the requirements of part D of the Act. The amended Act repeals the provisions previously found in section 110(a)(2)(I). The amended Act also contains a Savings Clause in section 110(n)(3) that preserves certain existing section 110(a)(2)(I) construction bans in place before November 15, 1990, if the ban was imposed by virtue of a finding that the plan for the area did not contain an adequate NSR permitting program as required by section 172(b)(6) of the 1977 Act, or the plan failed to provide for timely attainment of the SO_2 NAAQS by December 31, 1982. All other construction bans imposed pursuant to section 110(a)(2)(I) are lifted as a result of the new statutory provision. In accordance with new section 110(n)(3), the construction bans that are retained remain in effect until the EPA determines that the SIP meets either the new part D permit requirements or the new requirements for attainment of the NAAQS for SO_2 under subpart 5 of part D, as applicable.

Section 173 and the various subparts of title I of the amended Act contain the requirements for issuance of a NSR contruction permit to a new or modified major source in a nonattainment area or ozone transport region. To issue such permits, the permit authority must first find per section 173(a)(4) that "the Administrator has not determined that the applicable implementation plan is not being adequately implemented for the nonattainment area" in accordance with the requirements of part D. If the Administrator determines that the SIP for the part D requirements is not being adequately implemented for the nonattainment area where the new source or modification wants to locate, permits that would otherwise meet the requirements of section 173 cannot be issued.

While EPA policy generally is to impose a FIP where States fail to adopt Clean Air Act NSR provisions, section 113(a)(5) of the amended Act provides that EPA may prohibit the construction or modification of any major stationary source in any area, including an attainment area, where there is a violation of the statute's NSR requirements. Specifically, EPA may apply section 113(a)(5) whenever the Administrator finds, on the basis of available information, that a State is not acting in compliance with any requirement or prohibition of the Act relating to construction of new sources or the modification of existing sources. Upon such a finding, the Administrator may issue an order prohibiting the construction or modification of any major stationary source in any area to which such requirement applies, issue an administrative penalty order in accordance with the requirements of section 113(d), or bring a civil action under section 113(b). Nothing in section 113(a)(5) precludes the EPA from taking other enforcement action or commencing a criminal action under section 113(c) at any time for any such violation. Section 113(a)(5) is discussed in greater detail in section IV.B.2.

2. Emissions Offsets

The 1990 CAAA clarify and expand the basic requirements for emissions offsets already contained in section 173 of part D. Moreover, in limiting the States' opportunities to set up a growth allowance (described in section III.G.3), the 1990 CAAA establish emissions offsets as the primary regulatory mechanism for accommodating major new source growth without jeopardizing the Act's mandate for reasonable progress toward NAAQS attainment. In light of such statutory changes, each State should review the emissions offset requirements in its current NSR rules and determine what revisions are necessary to conform those rules with the criteria described below.

(a) *RFP.* The basic requirement in section 173(a)(1) remains the same in that to issue a permit the State must demonstrate that the new source growth does not interfere with the approved demonstration of reasonable progress for the area. Such growth results from new or increased emissions potential from major stationary sources, as well as from emissions from minor source growth unaccounted for by the control strategy in the EPA-approved SIP.

The EPA interprets section 173(a)(1)(A) to ratify current EPA regulations requiring that the emissions baseline for offset purposes be calculated in a manner consistent with the emissions baseline used to demonstrate RFP. Regarding the amount of offsets that is necessary to show noninterference with RFP, EPA will presume that so long as a new source obtains offsets in an amount equal to or greater than the amount specified in the applicable offset ratio (or, where the statute does not specify an offset ratio, in an amount greater than 1:1), the new source will represent RFP. In general, this presumption may be overcome only if the applicable SIP expressly relies on new sources to generate a greater amount of reductions than set forth in the statutory offset ratios. The offsets still must satisfy the section 173(c) requirements as discussed below.

The EPA regulations at 40 CFR 51.165(a)(3)(i) presently require that offset be based on allowable or actual emissions, depending on which currency is used for RFP and attainment demonstration purposes. Historically, RFP often has been tracked primarily by a yearly assessment of the net actual emissions reductions that have occurred, because actual emissions best correlate with ambient air quality concentrations. In such cases, EPA regulations disallow the use of "paper" offsets based on SIP allowable emissions in excess of actual emissions, and the statutory changes do not call for any change in this approach.

(b) *Geographic location of offsets.* New section 173(c)(1) stipulates that emissions offsets generally must be obtained by the same source or other existing sources in the same nonattainment area. However, the statutory provision does allow offsets to be obtained in another nonattainment area under two specific conditions. First, the other nonattainment area must have an equal or higher nonattainment classification than the nonattainment area in which the source would construct. In applying this provision, the other nonattainment area must have an equal or higher nonattainment classification for the same pollutant. For example, a proposed major new source of VOC seeking to locate in a nonattainment area classified as serious for ozone could possibly obtain emission offsets in another ozone nonattainment area if such area were designated serious, severe or extreme for ozone.

The second condition is that the emissions from such other nonattainment area must contribute to a violation of the NAAQS in the nonattainment area in which the source would construct. The showing that such contribution from sources in another nonattainment area exists should be acknowledged and verified by the permitting authority. Generally, dispersion modeling is used to identify the existence of such impacts.

(c) *Timing of offsets.* New section 173(c)(1) also adds the condition that any emissions offsets obtained in conjunction with the issuance of a permit to a new or modified source must be, "by the time a new or modified source commences operation, in effect and enforceable * * * *." This new statutory condition for offsets augments an existing requirement under section 173 that provides that offsets must be "legally binding" before a permit may be issued. The 1990 CAAA clarified the existing requirement by requiring that the offsets be federally enforceable before permit issuance (see revised section 173(a)). Accordingly, while it is possible for a State to issue a permit to construct once sufficient emissions offsets have been identified and made federally enforceable (generally through a permit condition made to the permit of the existing source), the State must also ensure that the required emissions reductions actually occur no later than the date on which the new source or modified source would commence operation.

(d) *Actual emissions reductions.* New section 173(c)(1) includes the provision that the:

> * * *Total tonnage of increased emissions from the new or modified source shall be offset by an equal or greater amount, as applicable, in the actual emissions of such air pollutant from the same or other sources in the area.

The Act was previously silent on this issue; however, EPA's current policy concerning the baseline for emissions offsets, as contained in the part 51 NSR nonattainment regulations, provides that the offset baseline is the emissions limit under the applicable SIP in effect at the time the permit application is filed, unless the State's demonstration of RFP and NAAQS attainment is based on actual emissions, or the applicable SIP does not contain an emissions limitation for that particular source or source category (see existing § 51.165(a)(3)(i)). The new statutory requirement provides that emissions increases from the new or modified source must be offset by real reductions in actual emissions. As noted above, RFP and attainment demonstrations generally are based on actual emissions. However, to the extent that these plans are based on allowable emissions, offset credit for reductions in allowable emissions (as necessary to conform with the requirements of section 173(a)(1)) is appropriate, but will be deemed inadequate if there is not a real reduction in actual emissions that equals or exceeds, as applicable, the increase in emissions resulting from the operation of the major new or modified source.

(e) *Creditable reductions.* The final condition, added under new section 173(c)(2), prevents emissions reductions otherwise required by the Act from being credited for purposes of satisfying the part D offset requirement. For example, reductions required to meet RACT and acid rain reductions pursuant to statutory requirements are not creditable for emissions offsets. However, the statutory language does allow reductions that are achieved indirectly pursuant to a requirement of the CAAA (incidental emission reductions) to be credited if they meet the other criteria for offsets contained in section 173(c)(1) as described above. Section 112 of the CAAA contains source requirements for hazardous air pollutants. The listed hazardous air pollutants in section 112(b)(1) are not exempt from regulation under the nonattainment provisions of part D. New and existing sources must meet, where applicable, the MACT emissions limitations as promulgated under section 112(d). As part of the schedule to comply with an applicable MACT standard, an existing source may elect to comply with the early reductions requirements of section 112(i)(5). By electing to achieve early reductions, an existing source may, under certain conditions outlined below, meet an alternative emission limit in lieu of meeting an applicable MACT standard for a period of 6 years from the compliance date of an otherwise applicable MACT standard. Except as follows, to obtain the MACT compliance extension, the reduction must be achieved before the otherwise applicable standard is first proposed. A source may also obtain an extension if it achieves the early reductions after the proposal of an applicable MACT limitation but before January 1, 1994, and it makes an enforceable commitment to achieve such reductions before the proposal of the MACT standard.

Emissions reductions of the hazardous air pollutants listed in section 112(b)(1) to meet a standard under section 112(d), including emissions reductions to meet the early reductions requirements of section 112(i)(5), are not creditable emissions reductions. These reductions are required by the Act and therefore are not creditable for offsetting emission increases under part D (section 173(c)(2)).

However, any emissions reductions in excess of the required MACT standards or, in the case of early reductions under section 112(i)(5), any emissions reductions in excess of 90 percent (or in excess of 95 percent for particulates) should be considered surplus and therefore should be creditable for offsetting purposes if all other applicable requirements are met. Also, if emissions of a pollutant other than one of the specific pollutants required to be controlled are reduced as a result of complying with a MACT standard (e.g., reductions in nontoxic VOC's that are incidental to reductions of a toxic VOC that is subject to the MACT standard), or if reductions are achieved pursuant to a State requirement that goes beyond the requirements of the Act, such emissions reductions are considered incidental and, therefore, should be considered as creditable reductions if all other conditions for a creditable offset are met.

For purposes of equity, EPA encourages States to allow sources to use pre-enactment banked emissions reductions credits for offsetting purposes. States may do so as long as the restored credits meet all other offset creditability criteria and such credits are considered by States as part of the attainment emissions inventory when developing their post-enactment attainment demonstration. For VOC offsets, it is important to note that such reductions must be used in accordance

with the offset ratios established by the 1990 CAAA for the different ozone nonattainment area classifications. Existing EPA regulations (40 CFR 51.165(a)(3)(ii)(C)(1)) prohibits certain pre-enactment banked emissions reduction credits, i.e., reductions achieved by shutting down existing sources or curtailing production or operating hours, from being used in the absence of an EPA-approved attainment plan.

3. Creditable Emissions Reductions for Netting

Except for the provisions of subpart 2 of title I, the 1990 CAAA generally do not affect EPA's current procedures for netting emissions decreases and increases (see section III.A.3–5). Netting emissions increases and decreases should be determined consistent with EPA's current NSR rules and EPA's "Emissions Trading Policy Statement (ETPS)" (51 FR 43823, December 4, 1986). Use of pre-enactment reductions for netting with post-enactment emissions increases continues to be available to the extent allowed under State rules. However, because these reductions represent emissions that are not included in the 1990 base year inventory, States should consider the post-enactment increases (less post-enactment decreases) as growth even though, for applicability purposes, the source's net emissions change is de minimis.

Early reductions of hazardous air pollutant (HAP) emissions under section 112(i)(5) may also be creditable emissions reductions for netting. The EPA considers early reductions under section 112(i)(5) to be "surplus" under the ETPS and creditable for netting. As stated above, early reductions cannot be used as creditable reductions for offset purposes due to the statutory limitations of section 173(c)(2).

4. Growth Allowances

Before the enactment of the 1990 CAAA, the Act provided in general that States could establish a pollutant-specific allowance for additional growth in any designated nonattainment area by controlling existing source emissions beyond the amount of reduction required to demonstrate RFP. Based on the amount of excess control of existing emissions, section 172(b)(5) of the 1977 Act provided that States could "expressly identify and quantify the emissions, if any, of any such pollutant which will be allowed to result from the construction and operation of major new or modified stationary sources" in a particular nonattainment area. Before the 1990 CAAA, section 173(1)(A) implied that the emissions reductions used to "allow" the new emissions from the proposed source could be furnished by controlling existing major sources to a greater degree than that required by RACT or by controlling minor sources.

Commensurate with the above provision, section 173(1)(B) of the 1977 Act required that, before a part D permit to construct could be issued to any major new or modified stationary source, the permitting agency had to have determined that "emissions of such pollutant from the proposed source would not cause or contribute to emissions levels which exceed the allowance permitted * * *." Alternatively, when a major new or modified stationary source applied for a part D permit (in the absence of an approved growth allowance), corresponding emissions reductions (offsets) were to be obtained from existing sources as a prerequisite for approving the new construction. These provisions formed the basis for States to develop "growth allowances" in their SIP's.

The revised Act restricts where new allowances may be established and voids certain existing growth allowances. Revised sections 172(c)(4) and 173(a)(1)(B) limit new growth allowances to only those portions of a nonattainment area which have been formally targeted for economic growth by the Administrator, in consultation with the Secretary of Housing and Urban Development. New section 173(b) of the Act invalidates by operation of law any existing growth allowance in any nonattainment area that either received a notice that the SIP was substantially inadequate under section 110(a)(2)(H)(ii) of the 1977 Act, or receives a notice of inadequacy under new section 110(k)(1) of the amended Act. Again, section 173(a)(1)(B) lifts this restriction from targeted economic growth areas. Where a growth allowance is no longer valid or cannot be established, a proposed major new or modified stationary source in a nonattainment area is required to obtain emissions offsets on a case-by-case basis in order to obtain construction approval.

5. Analysis of Alternatives

Before the enactment of the 1990 CAAA, section 172 of part D contained a provision requiring that, in the case of implementation plans that could not demonstrate attainment of the NAAQS for ozone or carbon monoxide by December 31, 1982, such plans must include

> * * * A program which requires, prior to the issuance of any permit * * * an analysis of alternative sites, sizes, production processes, and environmental control techniques for such proposed source which demonstrates that the benefits of the proposed source significantly outweight the environmental and social costs imposed as a result of its location, construction, or modification.

The 1990 CAAA removed this provision from section 172 and added it as new section 173(a)(5). Consequently, such analysis and demonstration are now prerequisites to the issuance of any part D permit.

6. Control Technology Information

Per section 173(d), the States must provide that the control technology information from permits issued under section 173 be promptly submitted to EPA's RACT/BACT/LAER clearinghouse, to other States, and to the general public.

7. Innovative Controls for Rocket Engines and Motors

Under section 173(e) States are authorized to allow offsetting, by alternative or innovative means, of emission increases from rocket engine and motor firing, and cleaning related to such firing. This authorization applies to any existing or modified major source that tests rocket engines or motors under the conditions found at section 173(e) (1) through (4). The conditions require that a proposed modification be solely for the purpose of expanding the testing of rocket engines or motors at a facility already permitted for such purposes, and that the testing is required for a program essential to the national security as certified in writing by the appropriate departments and agencies of the Federal government. Also, the source must have used all reasonable means to obtain offsets, all available offsets must already have been used, and sufficient offsets must not be available to the source. Once these criteria are met, the source will comply with an alternative measure, imposed by the permitting authority, designed to offset any emissions increases not directly offset by the source.

In lieu of requiring alternative offset measures, the permitting authority may impose an emissions fee to be paid to, and used by, the State to maximize emissions reductions in the area of the test facility. Section 173(e)(4) caps such fees at 1.5 times the cost of stationary control costs adopted in the area during the previous 3 years.

8. Exemptions for Stripper Wells

Section 819 of the CAAA provides a limited exclusion for activities related to stripper wells, where such activities occur in certain designated nonattainment areas. The statutory provision as written applies to the production of oil or natural gas from a stripper well, and the equipment used in the exploration, production, development, storage, and processing of such stripper well oil and natural gas. Stripper wells are low-production wells. Oil stripper wells produce less than 10 barrels of oil per day and natural gas stripper wells (as defined in the National Gas Policy Act; 15 U.S.C. section 3318(b)) cannot exceed an average of 60,000 cubic feet per production day during a 90-day production period.

While still subject to the general requirements under sections 172 and 173 of the Act for NSR nonattainment area permits, including requirements applicable under those sections pursuant to subpart 1 of part D of the amended Act, these activities are not required to satisfy the additional nonattainment area requirements enacted under new subparts 2, 3, 4 and 5 of part D of the amended Act. Section 819 of the 1990 CAAA limits this exclusion to PM–10, ozone, or CO nonattainment areas classified as marginal, moderate, or serious (and having a population of less than 350,000). (subpart 5 of part D provides no additional NSR requirements for sulfur oxides, nitrogen dioxide, or lead nonattainment areas.) No exclusion from the additional requirements of subparts 2 through 5 is provided for serious PM–10, ozone or CO nonattainment areas having a population of 350,000 or more, or in severe and extreme ozone nonattainment areas.

9. OCS source Applicability

Section 801 of the 1990 CAAA adds a new section 328 to the Act entitled "Air Pollution from Outer Continental Shelf Activities". This section contains provisions pertaining to the control of air pollution from OCS sources. These provisions necessitate a revision of the Federal NSR regulations under both the PSD and NSR nonattainment permit programs to facilitate implementation of OCS regulations. The OCS regulations will be proposed in a separate EPA action and codified at 40 CFR part 55. The reader is referred to the separate OCS proposal package for more specific information on the OCS rules.

10. Tribal Lands Applicability

As discussed more fully in section V.B. of this preamble, the 1990 CAAA grant EPA the authority to treat Indian tribes in certain respects as States, and specifically allows Tribes to develop tribal implementation plans for implementating the NAAQS on tribal lands. Like SIP's, these plans must include all implementation requirements set out in the Act, including complete NSR programs for constructing or modifying existing sources located on tribal lands. Further guidance on the treatment of Indian tribes will be provided as part of a separate rulemaking required by section 301(d)(2) of the Act.

11. Stationary Source Definition

The 1990 CAAA added a new definition of "stationary source" in section 302(z) of title III of the Act, and amended the existing definition already contained in section 111(a)(3). The addition of the new definition appears to strengthen congressional intent that certain internal combustion engines must be subject to control under State permit programs, while requiring the exclusion of those internal combustion engines which fall under the newly defined category of "nonroad engines." Congress authorized EPA to establish emissions standards for categories of nonroad engines that are deemed to contribute significantly to pollution problems. Such authorization preempts States from further regulating such sources of pollution under the stationary source permit process. The EPA presently believes that most internal combustion engines used in stationary applications should be subject to the State permit process for stationary sources.

12. Temporary Clean Coal Technology Demonstration Projects

Section 415(b)(2) of the amended Act provides under certain conditions an exemption from the part D requirements of title I for the installation, operation, cessation, or removal of a temporary clean coal technology demonstration project. Section 415(b)(1) specifies that clean coal technology projects are those funded under the Department of Energy-Clean Coal technology appropriations or similar projects funded by EPA and limits the applicability of section 415 to existing facilities.

Under section 415(b)(2), to qualify for this exemption, a temporary clean coal demonstration project must operate for no more than 5 years. The project must also comply with any applicable SIP for the area in which the project is located and all other requirements for the attainment and maintenance of ambient air quality standards, both during and after the project. Section 415(b)(4) requires EPA to issue rules or interpretive rulings to implement this exemption. As required, EPA has proposed such changes to the rules for steam electric utility units. These proposed changes were published in the **Federal Register** on June 14, 1991 (56 FR 27630). Readers are referred to this notice for more details on the applicability of this exemption. Under section 415(b)(4), these rules are limited to those areas where EPA is the permitting authority. Where the State is the part D permitting authority, the State may, but is not required to, adopt and submit to EPA for approval rule changes incorporating the section 415(b)(2) exemption in its SIP.

13. Failure to Submit NSR Rules By Statutory Deadlines

The 1990 CAAA require States to adopt SIP revisions subject to EPA approval that incorporate the new preconstruction permitting requirements for new or modified sources that were discussed in the preceding sections. For instance, new permit rules for PM–10 nonattainment areas must be submitted to EPA by June 30, 1992; new rules for ozone nonattainment areas must be submitted by November 15, 1992; new rules for most CO nonattainment areas are due 3 years from the date of the nonattainment designation. The EPA has previously announced its interpretation that the new NSR requirements did not go into effect with passage of the 1990 CAAA but rather become effective in accordance with the schedule for State adoption of SIP revisions (see J. Seitz, "New Source Review (NSR) Program Transitional Guidance," p. 6 (March 11, 1991) (appendix D)).

If these deadlines pass without States submitting NSR revisions, EPA may impose sanctions on delinquent States. Specifically, the Act (in two separate provisions) grants EPA the authority to impose sanctions based on several different types of State failures including a State's failure to submit a SIP or SIP element, or a State's submitting an inadequate SIP or SIP element (see section IV.B.2). The sanctions include reducing a State's highway funds (section 179(b)(1)) or increasing emissions offsets (to at least 2 to 1) for new and modified sources (section 179(b)(2)). In addition to these general sanctions, section 113(a)(5) provides that when the Administrator finds that a State is not acting in compliance with

any requirement or prohibition relating to NSR, the Administrator may issue an order prohibiting the construction or modification of any major stationary source in any area where such requirements apply. In States that delay in revising their SIP's to include the new preconstruction permitting requirements by the statutory deadline, EPA may exercise this authority by proceeding under section 113(a)(5) whenever a particular new source attempts to construct without meeting the NSR requirements added by the 1990 CAAA, or by issuing a general construction ban. As an alternative, the Administrator could issue a contingent order prohibiting construction of any major new or modified source that failed to obtain a permit that met the amended statutory NSR requirements. The EPA will provide additional information on this issue in its NSR regulatory package.

In addition to imposing statutorily required sanctions, EPA is also required by the statute to promulgate a FIP when it finds that a State has failed to make a required SIP submittal or has made an incomplete submission (see section IV.C). Pursuant to this authority, EPA is developing revised NSR regulations that would include, at 40 CFR part 52, a Federal NSR nonattainment permitting program that EPA (or the State pursuant to a delegation agreement) could implement as a FIP in those States that fail to submit NSR regulations by the statutory deadlines. Because of the importance of the increased offset ratios, reduced source thresholds, and other NSR changes to States' overall attainment effort, EPA presently intends to impose this NSR FIP on any State that fails to adopt its own NSR regulations within the deadlines established by the Act. In addition, or until such time as the FIP is in place, EPA may impose any of the sanctions identified above. Of course, once it receives and approves the State's NSR regulations, EPA would, under ordinary circumstances, withdraw the FIP and any sanctions that may have been imposed.

H. General

1. Part D, Subpart 1/Section 110 (to the Extent Not Covered Under Pollutant-Specific)

Subsections (A) through (M) of section 110(a)(2) set forth the elements that a SIP must contain in order to be fully approved. Although Congress substantially amended section 110(a)(2) upon enactment of the amended Act, many of the basic requirements remain the same.

Amended subsection (A) includes the pre-amended subsection (B) requirement that all measures and other elements in the SIP be enforceable. The amended provision specifically authorizes SIP's to contain certain nontraditional techniques for reducing pollution—economic incentives, marketable permits, and auctions of emissions rights. The EPA reads this language to require even these other means of achieving reductions to be enforceable. Section 172(c)(6), one of the general SIP requirements for nonattainment areas, also includes this requirement in essentially the same language.

Subsection (B) carries forth the pre-amended subsection (C) requirement to monitor and compile data on ambient air quality. The EPA historically has promulgated regulations in part 58 of the CFR, indicating the necessary data States need to collect and submit as part of their SIP. The existing regulations remain in effect, pursuant to section 193, to the extent they are not inconsistent with the new law, until EPA elects to amend them.

The enforcement provisions of pre-amended subsection (D) are now under subsection (C). While this provision retains the preexisting requirement that the SIP include a pre-construction review for all new and modified stationary sources, it deletes the previous provision's specific reference to pre-construction review of sources subject to NSPS.

Amended subsection (D) also contains provisions that essentially remain unchanged. It incorporates language from pre-amended subsection (E) requiring States to include SIP provisions prohibiting sources from emitting pollutants that would contribute significantly to nonattainment, interfere with maintenance of the standard, or interfere with PSD or visibility.[34]

Subsection (E) of the amended Act incorporates one provision from pre-amended subsection (F)—clause (E)(ii) reinforces the section 128 requirement that the SIP contain certain requirements as to State boards. In addition, clause (E)(i) of the amended Act includes the pre-amendment subsection (F) requirement that States ensure that the State and/or local governments have adequate resources to implement the plan. This includes a new requirement that the State ensure that nothing in the SIP is otherwise prohibited by any other State or Federal law. Finally, clause (E)(iii) adds a new requirement—that the State retain responsibility for ensuring adequate implementation in cases in which it relies on local implementation of plan provisions.

Subsection (F) carries forth the requirements of pre-amended subsection (F) that concern emission monitoring. The EPA promulgated monitoring regulations at § 51.210 of the CFR and in appendix P to part 51. Under section 193, the existing regulations remain effective to the extent they are not inconsistent with the new law, until EPA elects to amend them.

Amended subsection (G) also carries forth a provision of pre-amended subsection (F). States must provide authority to bring emergency actions (comparable to that granted to EPA in section 303) in cases where a source or a group of sources present an imminent and substantial endangerment to the public health. The EPA has also adopted regulations regarding such authority in 40 CFR 51.150, and these regulations will remain effective under section 193, to the extent they are not inconsistent with the new law, until EPA amends them.

Subsection (H) was not revised by the amendments. It still requires States to provide for the revision of their SIP's (commonly referred to as "SIP calls") in two circumstances: if the NAAQS were revised, or if EPA made a finding that the plan was substantially inadequate to attain the standard. New section 110(K)(5) gives EPA the authority to issue a SIP call.

Amended subsection (I) adds a new requirement to section 110(a)(2). It now states explicitly that any plan or plan revision must meet the applicable requirements of part D (provisions relating to nonattainment areas). Although this is a new section 110(a)(2) provision, it does not add a new requirement to the Act as a whole. The SIP's for nonattainment areas have always been required to meet the part D requirements.

Subsection (J) has also been retained in its preexisting form. It continues the requirement that SIP's meet the applicable PSD and visibility requirements and the associated consultation and public notification provisions of sections 121 and 137, respectively.

[34] The pre-amended section 110(a)(2)(E) required SIP's to contain a provision prohibiting stationary sources from emitting an air pollutant in amounts which will "prevent attainment" in another State. The amended version of this language requires a SIP provision that prohibits emissions that will "contribute significantly to nonattainment" in another State. However, EPA interpreted the pre-amended language in the manner that Congress expressed in the amended Act. See Air Pollution Control Dist. v. U.S. EPA., 739 F.2d 1071, 1090–93 (6th Cir. 1984). In the Senate Report, Congress noted that the pre-amended language presented an impossible standard and noted that it was adopting "significantly contribute" to clarify when a violation of that requirement would occur. S. Rep. No. 228, 101st Cong., 1st sess. 21 (1989).

Amended subsection (K) reinforces EPA's authority to require States to do air quality modeling. Although this is a section 110(a)(2) provision, EPA has always had the authority to require appropriate modeling. This requirement will be met if the State submits its actual modeling in its SIP submittal, and EPA determines that the submitted SIP measures are approvable. The EPA currently does not have regulations concerning modeling for the SIP demonstration purposes,[35] but has issued guidance (e.g., "EPA's Guideline on Air Quality Modeling" (1987)).

The pre-amended provisions concerning permitting fees has been carried over in subsection (L). Although the language of this provision has not changed, in light of the new permit provisions of the amended Act (title V), these requirements could have a different impact from under the pre-amended Act.

Amended subsection (M) is a new provision requiring States to provide for consultation and participation by local political subdivisions affected by the SIP. This section builds on several other section 110(a)(2) requirements that require consultation and participation in regard to specific SIP elements.

2. Conformity

(a) *General requirements.* Section 176(c) provides the framework for ensuring that Federal actions conform to air quality plans under section 110. Under section 176(c), before any agency, department, or instrumentality of the Federal Government engages in, supports in any way, provides financial assistance for, licenses, permits, or approves any activity, that agency has an affirmative responsibility to ensure that such action conforms to the SIP or FIP.

"Conformity to an implementation plan" is defined in section 176(c)(1) (A and B) of the Act as meaning "conformity to an implementation plan's purpose of eliminating or reducing the serverity and number of violations of the national ambient air quality standards and achieving expeditous attainment of such standards; and that such activities will not cause or contribute to any new violation of any standard in any area; increase the frequency or severity of any existing violation of any standard in any area; or delay timely attainment of any standard or any required interim emission reductions or other milestones in any area."

The intent of these provisions is explained in the Committee Report:

> Through the evaluation of the air quality impacts of proposed projects before they are undertaken, the conformity provision is intended to foster long range planning for the attainment and maintenance of air quality standards, and to assure that Federal agencies do not take or support actions which are in any way inconsistent with the effort to achieve NAAQS or which fail to take advantage of opportunities to help in the effort to achieve the NAAQS. (Committee expects that the new conformity provisions will be especially helpful in assuring that air quality considerations play a greater role in Federally supported transportation planning efforts, which can have a major impact on air quality and, in some severely polluted areas, are essential as part of the program for achieving the NAAQS ("Committee Report," page 222.)

Section 176(c)(4) required EPA to promulgate general criteria and procedures for determining conformity by November 1991. In the case of transportation plans, programs, and projects, the EPA Administrator, with the concurrence of the Secretary of Transportation, was required to promulgate criteria and procedures for "demonstrating and assuring" conformity by November 1991. Section 176(c)(4)(C) requires EPA to include in such procedures a requirement that each State submit to EPA and the DOT by November 1992 a revision to the implementation plan that includes criteria and procedures for assessing the conformity of any plan, program, or project subject to the conformity requirements. Until this revision is approved by EPA, existing conformity provisions in the SIP remain in effect. The criteria for determining transportation conformity ultimately require the existence of SIP's which contain estimates of emissions from motor vehicles. Until such times as EPA approves these SIP's however, there exists an interim period with criteria for determining transportation conformity which are different from those that will apply after the SIP is approved. These interim criteria are contained in section 176(c)(3). The EPA and DOT jointly issued guidance on transportation conformity for this interim period based on these criteria in June 1991.

The EPA's transportation conformity regulations are still under development, in coordination with DOT. On October 24, 1991, EPA and DOT jointly issued further guidance indicating that the interim transportation guidance issued on June 7, 1991 would continue in effect until the agencies promulgated final conformity regulations. It is unlikely that final regulations will be available significantly before November 1992 to allow States to submit SIP revisions addressing conformity by November 15, 1992, the date the statute requires EPA to call for such submittals in its regulations. The EPA consequently anticipates that in its conformity regulations, it will establish a later date for such SIP submittals in recognition of the impossibility of imposing the 1992 date. The EPA intends to provide States with a reasonable period to develop conformity regulations, such as the year that Congress had in mind in section 176(c)(4)(C). The EPA notes for clarification that States are under no duty to submit conformity regulations until EPA promulgates its regulations and establishes a date for such submittals. Detailed guidance on the overall conformity program will be provided in later rulemaking actions. The guidance below concerns section 176(c)(1)(B)(iii) as applied to nonattainment areas.

(b) *Establishment of emission budgets for transportation-related actions in ozone or CO nonattainment areas.* In general, Federal actions may not delay timely attainment of any standard or any required interim emission reductions or other milestones in any area. More specifically, after the interim period, conformity cannot be determined for a transportation plan or program unless a determination has been made by the metropolitan planning organization that emissions expected from implementation of such plans and programs are consistent with estimates of emissions contained in the applicable SIP. The EPA interprets these provisions to mean that the combination of highway capacity expansion, highway extensions, support for transit, and TCM's in the transportation plan and program must result in vehicle emissions that are not in excess of those contained in the SIP's demonstration of RFP and attainment, despite any difference that may exist between the area's current and forecasted population, employment, and travel demand and those that were assumed at the time of SIP preparation and adoption. In other words, the conformity provisions envision that the SIP will create an emissions budget (for the criteria pollutant and its precursors) for highway vehicles, and that the transportation planning process will be required to produce plans and programs that will result in emissions within that budget. For regional pollutants (ozone, NO_2, CO in some areas, and PM-10 in some areas) the transportation planning process is not required to demonstrate

[35] Under the PSD provisions of section 320, EPA has historically had such modeling rules. In addition, EPA has used these rules as guidance for other purposes, using the guidance as a basis for what is adequate modeling. This new subsection (K) requirement ratifies EPA's past application of the rules, as rules for PSD purposes and as guidance for other purposes.

again that the budgeted emission level will result in attainment. (For pollutants capable of forming hot spots of nonattainment, an air quality determination is required.)

(1) *Areas required to demonstrate RFP and attainment.* For nonattainment areas that are required to demonstrate RFP and attainment by a future year, the SIP revision that contains those demonstrations will necessarily contain statements of the motor vehicle emissions for future years on which those demonstrations are based. These statements will become the emissions budgets that will be used for later conformity determinations. Budgets will thereby be defined for a number of future dates, depending on the RFP and attainment showings required for the area based on its nonattainment status. States should make sure that these budgets are stated clearly and unambiguously in the SIP. For example, assumed temperature inputs and the geographic area of the inventory must be stated so that comparisons can be made later on an accurate basis. The RFP milestones will usually be defined in terms of typical seasonal weekday emissions, like the base and periodic inventory. Attainment demonstrations may be based on individual episode days, however. If so, the SIP must contain an attainment year inventory expressed on the same basis as the other milestone inventories.

The 1990 CAAA allow a single budget for a nonattainment area for a given criteria pollutant or percussor. However, States have the option of specifying the budgets in more detail or disaggregation. For example, an ozone attainment demonstration using a grid model will contain estimates of vehicle emissions for many small grid squares. The SIP may provide that only the sum of vehicle emissions from all grids within the nonattainment area will apply for purposes of conformity determination, or it may divide the area into subareas and establish a budget for each. This approach would provide additional assurance that transportation plans and programs will result in emission patterns that will produce attainment. Such an approach will of course constrain the transportation planning process, and it may later be found useful for the State to submit a SIP revision showing that some other distribution of emissions, or even a different emission total, is also consistent with attainment. A SIP may also provide for alternative emission budgets each of which is shown to produce milestone compliance and/or attainment, for example, different combinations of VOC and NO_x emissions. Finally, a SIP that demonstrates a margin of safety with respect to milestones may identify a budget for conformity purposes which is higher than expected to result from the measures in the SIP, but is consistent with the milestone and attainment date requirements, for purposes of providing the transportation planning process with a cushion for unexpected growth or less than expected effectiveness from TCM's. This sort of cushion for unexpected growth is only a suggestion and EPA wants to affirm its confidence in the SIP planning process. This does not change the substantive requirements for SIP approval, however.

(2) *Other nonattainment areas.* Transitional, submarginal, and marginal ozone nonattainment areas, not-violating CO areas, and moderate CO areas with design values of 12.7 ppm or less are not required to include specific attainment demonstrations or to show compliance with interim milestones. Consequently, they are not required to contain statements of future emissions which could be used as emissions budget for later conformity determinations. Nevertheless, EPA believes that the intent of section 176(c) is to make conformity a meaningful process for these areas, rather than to release the transportation planning process of all rsponsibility for area-wide motor vehicle emissions. On the other hand, the need to provide emissions criteria for future conformity determinations should not defeat the evident congressional intent to temporarily excuse these areas from having to develop and implement control strategies beyond vehicle fleet turnover, Federal measures, and required measures specified for them in the Act. It also seems clear that Congress did not intend these areas to be subject to any serious constraint on VMT and industrial activity growth prior to the date on which they are vulnerable to being reclassified for failure to attain. To satisfy these intents, these States should choose from two options as described below, and clearly indicate their selection in the SIP.

First option: The State may elect to extend the interim conformity criteria of section 176(c)(3)(A) for the entire period prior to EPA approval of either a section 175(A) maintenance SIP or—following bump up—a SIP that meets RFP and attainment requirements. These interim criteria would otherwise expire when EPA approves the conformity SIP revision described in section III.H.1.a. The most important of these criteria is that the transportation plan and program must contribute to emissions reductions, i.e., that implementation of the plan and program will cause lower emissions than if new projects were not implemented. This option requires the least analysis by the State, but precludes transportation plan-caused increases in emissions that might in fact not interfere with attainment by the deadline due to the large reductions resulting from other measures. In the joint EPA/DOT interim conformity guidance, these areas were implicitly placed under this option and will remain there unless a SIP revision exercising the second option is approved.

Second option: The State may voluntarily submit, as a SIP revision, an attainment demonstration and corresponding motor vehicle emissions budget, like higher classified areas. This may show that transportation plans that cause emissions increases are in fact compatible with attainment, thereby providing the transportation planning process flexibility to adopt such plans later.

(3) *Maintenance plan.* More specific guidance on the content of maintenance plans may be provided at a date closer to when States will be preparing these plans. For now, States should be aware that transportation planning in areas redesignated to attainment and operating under a maintenance plan will also be subject to the emissions budget concept. A budget for motor vehicle emissions must be establishment in the maintenance plan and shown to be consistent with the maintenance demonstration in light of expected emissions from other sources.

(4) *Emission budgets during the replanning period immediately following failure to meet a milestone or failure to attain.* Failure to meet a milestone or to attain by the expected date may be due to inaccurate inventorying of 1990 emissions, inaccurate air quality modeling, excess growth in nonvehicle emissions, or excess growth in vehicle emissions despite the operation of the conformity process. In such cases, the adequacy of the emissions budgets for motor vehicles is called into question and new budgets must be developed as part of the replanning that is required by the 1990 CAAA. Until a new SIP is approved or a Federal plan is promulgated, the previous budgets will continue to be applied for demonstrating conformity.

(c) *Identification and scheduling of transportation control measures.* Section 176(c)(2)(B) requires that transportation improvement programs provide for timely implementation of TCM's consistent with schedules included in the applicable SIP. In

general, EPA will allow emission reduction credit only for TCM's that are fully adopted and for which a sponsoring agency has made an enforceable commitment of its own; nevertheless, the provision regarding transportation improvement programs will be an important aid to implementation. Effective implementation of this provision will require that SIP's adequately describe TCM's with respect to their design, location, scope, scale, and implementation schedule including milestones prior to full adoption.

3. Planning Requirements Including Section 174

Section 174, Planning Procedures, was broadened to ensure that State and local authorities share in the development, implementation, and enforcement of the SIP. This section requires the State to certify the planning organization and to identify the specific State, local, or regional agencies that will develop, adopt, and implement the elements of the SIP. In addition, a new subsection was added to clarify that when a nonattainment area includes more than one State, the affected States may jointly undertake planning procedures. States are required to review and update, as necessary, their SIP planning procedures by November 1992.

Two options are generally available to States through section 174: To continue using the planning organization previously certified, or to certify a new planning organization. If a new planning organization is certified, section 174 requires that organization to include elected officials or local governments in the affected area and representatives of the State air quality planning agency, the State transportation planning agency, the metropolitan planning organization designated to conduct the continuing cooperative and comprehensive transportation planning process for the area under section 134 of title 23, U.S.C., the organization responsible for the air quality maintenance planning process, and any other organization with responsibilities for developing, submitting, or implementing any aspects of the SIP.

The EPA encourages the States to certify either the previous organization or a new organization well before the November 1992 deadline. Early certification will be helpful to the various agencies that must meet deadlines by this date.

Additional guidance on the new section 174 provisions is contained in the update of the 1978 Transportation-Air Quality Planning Guidelines by EPA and DOT, due in November 1991. Previous guidance issued by EPA and DOT in 1977 specific to section 174 was superseded by this 1991 update. The EPA will soon update Subpart M, Intergovernmental Consultation, of the "Code of Federal Regulations" to reflect the new section 174 requirements.

4. Economic Incentives

Since 1980 EPA has developed several programs to allow industry and States more flexibility in meeting statutory requirements of the 1977 Act. One of these initiatives is the Emissions Trading Policy Statement (ETPS) (51 FR 43814, December 4, 1986). The ETPS allows source-specific SIP revisions for sources to trade emissions reductions credits (ERC's) with other sources to meet some emission limitations. All ERC's must be permanent, real, quantifiable, (federally) enforceable, and surplus (i.e., not otherwise needed for an attainment strategy or other already existing control requirements). The ETPS also allows States to develop and adopt generic emission trading programs into their SIP. To receive EPA approval, a generic emission trading program must contain replicable procedures to ensure that all ERC's meet the criteria above.

As discussed below, the CAAA include several new economic incentive programs as well as changing statutory language that may lead to modification to existing policies, including updating of the ETPS. The EPA has started work to inventory potential discrepancies between the ETPS and the CAAA. If warranted, EPA would issue a policy interpretation of the ETPS that EPA will use when applying the ETPS for the SIP approval process.

The 1990 CAAA encourage innovation through the use of market-based approaches, not only in the title IV acid rain program, but also in title I SIP provisions. The use of economic incentives are explicitly allowed for in the general SIP requirements (section 110(a)(2)), the general provisions for nonattainment SIP's (section 172(c)(6)), and in the system of regulations for controlling of emissions from consumer or commercial products (section 183(e)(4)).

Beyond these general allowances for economic incentives, use or considering the use of an option to implement economic incentives is mandated in certain cases. These cases include State failure to submit a compliance demonstration or to meet applicable milestones for RFP for serious, severe, and extreme ozone nonattainment areas (sections 182(g)(3) and 182(h)) and State failure to submit a milestone demonstration, to meet a required specific emissions reductions milestone, or for serious CO nonattainment areas to attain the standard (sections 187(d)(3), 187(g)).

Section 182(g)(4)(A) defines such a State economic incentive program as one that is consistent with EPA rules, the publication of which is mandated by November 15, 1992 (section 182(g)(4)(B)). According to section 182(g)(4)(A), the State program may include but is not limited to, systems of emissions fees, marketable permits, or State fees on the sale or manufacture of products, as well as incentives and requirements to reduce vehicle emissions and VMT's, including any of the TCM's in section 108(f).

One such TCM is the accelerated retirement of vehicles. It is estimated that in some areas of the country, as few as 20 percent of the vehicles produce up to 60 percent of the total vehicle emissions. Because of less stringent emission standards, deterioration, tampering, malmaintenance, old vehicles can emit at very high levels. An accelerated retirement program encourages the removal and destruction/recycling of these older vehicles by offering individuals money of their "old" cars. An incentive is created for owners to voluntarily trade in these vehicles for new, lower emitting vehicles.

The EPA believes that an accelerated retirement program can be an important part of an attainment strategy by providing greater flexibility to industry in complying with emission standards. By this notice, EPA is announcing the availability of an information document of the accelerated retirement of vehicles programs, as required under section 108(f). The document outlines the theory behind accelerated vehicle retirement, considers desirable elements of program design, and discusses the experience of a pilot program sponsored by UNOCAL Corporation in Southern California.

States may include scrappage programs in SIP submissions. Scrappage emissions reductions will get full credit toward SIP attainment demonstrations. To the extent permissible by law, credits generated through scrappage programs may be used to meet air quality limitations.

The EPA interprets 182(g)(4)(A) as allowing a broad range of market-based strategies. The State program is to be "nondiscriminatory" and consistent with inter-State commerce laws (section 182(g)(4)(A)).

The EPA's economic incentive rules are to include model plan provisions for permitted stationary sources, area sources, and mobile sources, as well as

guidelines that specify how revenues generated by the plan provisions shall be used (section 182(g)(4)(B)). These rules will address issues such as setting baselines, banking provisions, administrative requirements and consistency with the title V Permitting Program, title VII Enhanced Monitoring and Compliance Certification Program, and other provisions discussed elsewhere in this notice. The EPA currently views these rules as guidance that is intended to encourage early implementation of appropriate economic incentive programs to potentially avoid such failures in the future. The EPA hopes that the rules will stimulate innovative, market-based approaches, where appropriate, in meeting long-term milestones and goals. The EPA also will give consideration to using these rules as guidance in developing Federal rules and FIP strategies when necessitated by State failures in meeting RFP milestones. The EPA will solicit comments on its economic incentive program rules at the time of proposal of that rulemaking.

The EPA encourages the development of economic incentive programs that increase flexibility and stimulate the use of more cost-effective strategies, as well as provide incentives for continuing to develop and implement innovative emissions reductions technology and strategies beyond those specifically mandated through standards and regulations. However, EPA believes that the implementation of economic incentive programs must also meet the standards of enforceability currently found in traditional regulatory programs.

The Agency wishes to clarify its position regarding mobile/stationary source trading. The agency is very supportive of efforts to trade emission reductions among mobile and stationary sources to the extent such trades would result in a less costly mix of measures to attain the standards and would meet the relevent Clean Air Act requirements. EPA will work with states and individual sources to highlight and develop such trading opportunities and will be taking various steps to encourage such trades.

In particular, EPA will clarify which Clean Air Act requirements can be met by trading emission reductions among mobile and stationary sources and how such trading can be implemented, through guidance it will issue as part of the economic incentive rules and elsewhere as necessary. This guidance will encourage states to consider such trades as they develop their state implementation plans.

Mobile source programs which could generate tradeable credits include, but are not limited to:

- An accelerated vehicle retirement program,
- A program to convert cars or fleets to cleaner fuels, and
- A program to expand the geographic coverage of inspection and maintenance programs.

States can allow stationary sources to use these reductions on an individual basis to meet certain emission reduction requirements or to generate tradeable offsets to help meet new source review requirements where not prohibited by the statute.

5. Section 172(c)(1) Requirement for All Reasonably Available Control Measures (RACM)

Section 172(c)(1) requires the plans for all nonattainment areas to provide for the implementation of all RACM as expeditiously as practicable. The EPA interprets this requirement to impose a duty on all nonattainment areas to consider all available control measures and to adopt and implement such measures as are reasonably available for implementation in the area as components of the area's attainment demonstration.

The EPA has previously interpreted the RACM provisions of the pre-amended Act. The EPA is today changing its prior interpretation and adding specific interpretations with respect to PM–10. The following discussion explains the origins of EPA's past interpretation and the rationale for the current changes to that interpretation.

The EPA previously interpreted this provision under the pre-amended Act in its guidance at 44 FR 20372, 20375 (April 4, 1979). The EPA there indicated that where measures that might in fact be available for implementaton in the nonattainment area could not be implemented on a schedule that would advance the date for attainment in the area, EPA would not consider it reasonable to require implementation of such measures. The EPA continues to take this interpretation of the RACM requirement.

Also in the 1979 guidance, EPA created a presumption that all of the TCM's listed in section 108(f) were RACM for all areas, and required areas to specifically justify a determination that any measure was not reasonably available based on local circumstances. The EPA reiterated that guidance at 46 FR 7182, 7187 (January 22, 1981).

However, based on experience with implementing TCM's over the years, EPA now believes that local circumstances vary to such a degree from city-to-city that it is inappropriate to presume that all section 108(f) measures are reasonably available in all areas. It is more appropriate for States to consider TCM's on an area-specific, not national, basis and to consider groups of interacting measures, rather than individual measures.

The section 108(f) measures should be considered by States as potential air quality control options. Further, the list should not be viewed as exhaustive, but rather indicative of the types of TCM's States should consider in developing the TCM portion of their control strategy. A recent study for EPA identified more than 70 individual measures within broad TCM categories that could be considered as potential controls (SAI, IT, PES 9–90). In addition, any measure that a commenter indicates during the public comment period is reasonably available for a given area should be closely reviewed by the planning agency to determine if it is in fact reasonably available for implementation in the area in light of local circumstances.

Local circumstances relevant to the reasonableness of any potential control measure involve practical considerations that cannot be made through a national presumption. Various TCM's must be locally coordinated to minimize contradictory results and maximize mutually supportive outcomes. Feasibility of TCM implementation can thus be particularly complicated, and EPA recognizes the importance of assessing candidate TCM's in the context of each particular area's situation.

Finally, with respect to TCM's or any other control measures, EPA does not believe that Congress intended the RACM requirement to compel the adoption of measures that are absurd, unenforceable, or impracticable (see 55 FR 38328, September 18, 1990).

The EPA, therefore, concludes that it is inappropriate to create a presumption that all of the measures listed in section 108(f) are per se reasonably available for all nonattainment areas. All States must, at a minimum, address the section 108(f) measures. The EPA believes that at least some of the measures will be reasonably available for implementation in many nonattainment areas. Where a section 108(f) measure is reasonably available, section 172(c)(1) requires its implementation.

The Senate managers' explanation of the new transportation control provisions includes a statement endorsing EPA's 1979 guidance on RACM as recently construed by the Court of Appeals for the Ninth Circuit in *Delaney* v. *EPA*, 898 F. 2d 687 (1990). 136 Cong. Rec. S16971 (daily ed. Oct. 27, 1990). In that case, the court held that

EPA was bound to apply its then-applicable 1979 RACM guidance by its own terms, which created the presumption that all section 108(f) measures were reasonably available. However, the court did not hold that the statute required such an interpretation of the RACM requirement, nor that EPA could not in the future revise its RACM guidance. The EPA remains free to alter its past guidance consistent with a reasonable interpretation of statutory requirements in light of historical experience implementing TCM's.

The legislators who cited the *Delaney* v. *EPA* decision had lobbied in the Senate Committee bill for a requirement that all section 108(f) measures be implemented in severe ozone nonattainment areas. This position was however abandoned in the final Senate bill. Any statements in the subsequent Senate debates concerning implementation of all section 108(f) measures therefore do not necessarily reflect the views of the Senate as a whole, let alone the entire Congress.

Finally, EPA also notes that it believes the court in *Delaney* v. *EPA* mischaracterized EPA's guidance in one respect. The court stated that in light of the previous presumption that section 108(f) measures were reasonably available, "a state can reject one of these measures only by showing that the measure either would not advance attainment, would cause substantial widespread and long-term adverse impact, or would take too long to implement." *Delaney*, at *692*. In the case before the court, EPA had argued that certain measures would have substantial widespread and long-term adverse impact. However, EPA believes that its revised RACM interpretation would provide for the rejection of control measures as not reasonably available for various reasons related to local conditions even where such costs fell short of substantial widespread impact. This is especially true in the absence of a presumption that any given measure is per se reasonably available.

Section 177 permits a State to adopt and enforce new motor vehicle emission standards that are identical to those adopted by California and for which a waiver under section 209(a) has been granted. The EPA is not able at this time to specify the emissions reduction credits that may be available to a State that adopts emissions standards identical to California's so-called "Low Emission Vehicle (LEV) program." The EPA is presently developing the updated version of its mobile emissions model—MOBILE5—which will include EPA's estimates of the SIP credits available to States adopting the LEV standards. The EPA plans to complete work on the model in June 1992, at which time it will be made available to States and the public.

The EPA has recently been asked whether a State, which requires under section 177, that new vehicles sold in the State comply with the California standards, must also require that those vehicles use the fuel or fuels upon which they were certified as meeting the California standards. The EPA is undertaking a legal and policy review of this question.

PM–10 is different from O_3 and CO in that here may be many PM–10 areas where mobile sources do not significantly contribute to the nonattainment problem in the area. Section 190 of the Act, which applies specifically to PM–10, recognizes this distinction. Section 190 specifies those source categories for which EPA is required to issue guidance on RACM. Section 190 also provides that EPA shall examine other categories of sources contributing to nonattainment of the PM–10 standard and determine whether additional guidance on RACM is needed. Section 190 represents a statutory expression of those sources generally deemed to contribute to the PM–10 nonattainment problem and requires that EPA determine whether other sources contribute to the PM–10 nonattainment problem and, as necessary, issue RACM guidance for such sources. Thus, in the discussion addressing PM–10 RACM, EPA takes the position that the available control measures EPA has identified in its guidance issued under section 190 are the suggested starting point for determining RACM. Accordingly, the affected State should evaluate these measures and other measures that a commenter demonstrates may well be reasonably available in an area considering their technological and economic feasibility in the area to which the SIP applies.

The EPA received comments requesting that additional control measures, including the TCM's identified in section 108(f) of the amended Act, be added to EPA's guidance on control measures issued under section 190. At this time, EPA has insufficient information to conclude that the sources addressed by these measures contribute to the PM–10 problem in a sufficient number of areas in the nation such that section 190 guidance is necessary. Thus, EPA does not presently believe that each of these measures should be added to the list of measures which is the suggested starting point for the RACM analysis for each of the PM–10 nonattainment areas in the nation. This is not to suggest that States should ignore such measures. In those PM–10 nonattainment areas where mobile sources do significantly contribute to the PM–10 air quality problem, consistent with the statement above regarding section 108(f) measures, the State must, at a minimum, address the section 108(f) measures. Similarly, it follows that where a section 108(f) measure is reasonably available, sections 189(a)(1)(c) and 172(c)(1) require its implementation.

6. Redesignations

Section 107(d)(3) of the Act specifies the procedures and reqirements for changing an area's designation. Subparagraphs (A), (B), and (C) describe the requirements and schedules for such changes when initiated by the Administrator. An additional discussion of the reqirements and schedules is provided in 56 FR 16274 (April 22, 1991) describing the notification of States that certain PM–10, SO_2, and lead areas should be redesignated.

Section 107(d)(3)(E) specifies the conditions under which the Administrator may approve a Governor's request [submitted in accordance with section 107(d)(3)(D)] for redesignating an area from nonattainment to attainment. These conditions are as follows:

(1) The Administrator has determined that the NAAQS has been attained.

(2) The Administrator has fully approved the applicable implementation plan under section 110(k).

(3) The Administrator has determined that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementing the applicable implementation plan and applicable Federal air pollutant control regulations and other permanent and enforceable reductions.

(4) The Administrator has fully approved the maintenance plan for the area as specified in section 175A.

(5) The State has met all applicable requirements for the area under section 110 and part D.

The remainder of this discussion describes how EPA will review a State request to redesignate an area from nonattainment to attainment, and what criteria EPA will use in determining whether the above conditions have been met.

(a) *Requests submitted before enactment.* Some States had submitted requests for redesignation prior to enactment of the 1990 CAAA that EPA

was unable to process before enactment. The EPA plans to review these requests carefully to determine whether the above conditions (as described further under "Requests Submitted After Enactment"), including the maintenance plan requirement, have been essentially satisfied by the State's actions under the provisions of the Act prior to enactment of the 1990 CAAA. The EPA will determine on a case-by-case basis what additional information is needed in order for the requests to be approvable. At a minimum, an appropriate maintenance plan showing maintenance of the standard at least 10 years from the time of EPA approval will still be needed before the request for redesignation is considered complete.

The maintenance plan requirement is not applicable in the very narrow circumstance where the amended Act does not apply to the redesignation. At the time of enactment, November 15, 1990, two redesignation actions were substantially completed—the Atlanta CO redesignation and the Green Bay SO_2 redesignation. Because the States had completed all necessary action, the Agency had done everything but prepare a final approval notice, and no adverse comments were received, EPA determined that the new redesignation requirements were not applicable (see 56 FR 37285 (August 6, 1991); 57 FR 3013 (January 27, 1992)).

States should consult with their EPA Regional Offices to determine what additional information is needed to supplement their requests for redesignation, including information to satisfy any new requirements under section 110 or subpart 1 of part D of the 1990 CAAA. For example, EPA plans to assume that the operating permits program requirements of title V (including the requirement for permit fees) that will be implemented in States over the next few years will effectively satisfy the section 110(a)(2)(L) requirement for permit fees in the subject areas (i.e., in areas for which requests for redesignation were submitted prior to enactment of the Act). States should consult with the Regional Offices about other new requirements under section 110 or subpart 1 of part D in the Act, and whether any additional State actions will be needed to satisfy those requirements.

The EPA believes that the language of section 107(d)(3)(E)(iii) clearly requires that the emission reductions that were achieved and enabled the area to attain the standard must be linked to enforceable regulations. Many of these regulations are rules representing RACT as required for an area before and/or after enactment of the 1990 CAAA (depending on the particular area). Even though EPA has found a range of deficiencies in State RACT rules and has notified many States that corrective action is needed,[36] EPA believes that the current emphasis for areas that had submitted a request for redesignation prior to enactment should be on the enforceability of the rules in place at the time of enactment. Therefore, for these types of areas, the States must make whatever corrections are necessary to ensure that the rules are and continue to be fully enforceable.[37]

As a matter of course, EPA will not require the full set of RACT corrections (e.g., lower source size applicability thresholds) in areas that had submitted a redesignation request prior to enactment and that were not violating the standard at the time of enactment. Imposing more stringent rules (unless needed for maintenance) appears to be unnecessary since applying the current State rules has resulted in attainment of the standard. In other words, the uncertainty of mathematical models or other techniques for projecting attainment when planning first occurred for these areas strongly supported the need for any possible "margin of safety" that might be provided by RACT measures or any other measures. But now that attainment has occurred, the justification or need for the margin of safety that might have been produced by the RACT measures (adopted and implemented in a manner consistent with EPA guidance and policies) is lessened. However, to satisfy the goals of section 107(d)(3)(E)(iii) and to ensure the soundness of the maintenance plan (discussed below), these areas still must ensure that their RACT rules are consistent with any guidance or policies concerning the enforceability of rules (e.g., adopting the most recent EPA test methods and procedures available at the time of the redesignation request). In addition to ensuring that appropriate RACT corrections have been made to ensure that the rules are enforceable, the State must show that the emission inventory that occurred during the time of no violations of the standard is based on the implementation of permanent and enforceable regulations rather than a "temporary" reduction in emissions, which may have resulted from a suspension of industrial production or other temporary change in the industrial or economic activity in the area. Reductions in emissions from shutdowns are considered permanent and enforceable to the extent those shutdowns have been reflected in the SIP, and all applicable permits have been modified accordingly.

During the pendency of these redesignation requests, EPA will not require these areas to adopt amended NSR program elements. However, these areas must continue to apply their existing NSR program or comply with the NSR permitting requirements of 40 CFR part 51, appendix S. Prior to redesignation, these areas also must adopt and be prepared to implement a permitting program that satisfies the requirements of part C and EPA's regulations implementing the PSD program. Areas should consider the need for offsets under the part C program to ensure that new sources do not "cause or contribute" to an increase in pollutant levels that would take the area out of compliance. If the area's redesignation request is rejected and the statutory deadlines for adopting amended part D permitting rules for the pollutant in question have passed, EPA may impose a construction ban pursuant to section 113(a)(5) until such time as the area adopts a part D program satisfying the NSR requirements of the CAAA.

The requirements of the applicable SIP will continue in force and effect even after the request has been approved and the area has been redesignated to attainment except to the extent the maintenance plan shows that such measures are not necessary to maintain the standard. The requirement for new or modified control measures or regulations for these areas is discussed below under "Improvement in Air Quality Results From Implementation of the SIP."

(b) *Requests submitted after enactment.* Any requests for redesignation from nonattainment to attainment that are submitted to EPA after enactment of the 1990 CAAA must satisfy the conditions in section 107(d)(3)(E) that were listed at the beginning of this section (III.H.6). Certain of these conditions (listed above) are further described below.

(1) *Determining whether the area has attained the ambient standard.* The NAAQS for ozone and CO are specified in 40 CFR 50.9 and 50.8, respectively.

[36] The EPA issued SIP calls to a number of States in 1988 and 1989 requiring that they correct their RACT rules as necessary to be consistent with EPA guidance and policies. In addition, new section 182(a)(2) specifically requires all ozone nonattainment areas with a marginal or above classification to correct or add RACT requirements for complying with the provision of pre-enactment section 172(b).

[37] See "Issues Relating to VOC Regulations, Cutpoints, Deficiencies, and Deviations," U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Air Quality Management Division, May 25, 1988.

Appendix H of 40 CFR 50.9 (Interpretation of the National Ambient Air Quality Standards for Ozone) explains the procedures for determining whether violations of the ozone standard have occurred. A recent EPA memorandum [38] provides additional guidance on calculating "design values" and attainment for ozone and CO.

Any request for redesignation should be based on the most recently available and quality-assured air quality monitoring data, collected in accordance with the requirements of 40 CFR part 58.

(2) *Full approval of the applicable implemention plan.* Section 110(k)(3) allows the Administrator to approve or disapprove a plan revision in full or in part. Although section 110(k)(4) provides for conditional approval of a SIP revision in certain circumstances, a conditionally-approved plan revision is not to be treated as satisfying the requirements of the Act until the entire revision has been approved as satisfying the Act requirements. Therefore, in order for the request for redesignation of an area from nonattainment to attainment to be approved, the State must have satisfied all requirements of the Act that apply to the area. The requirements have not been met if a revision has been only partially approved (or has been partially disapproved).

(3) *Improvement in air quality results from implementing the SIP.* Section 107(d)(3)(E)(iii) requires that prior to approving a request for redesignation of an area from nonattainment to attainment, the Administrator must determine that the improvement in air quality has resulted from permanent and enforceable emission reductions resulting from implementing the SIP and applicable Federal measures and/or from other permanent and enforceable measures. Before it makes such a determination, EPA will require that these measures satisfy EPA guidance or requirements regarding enforceability, and that the emission inventory for the area during the time in which attainment has been demonstrated is based on permanent and enforceable regulations or measures.

The EPA believes that the language of section 107(d)(3)(E)(iii) clearly requires that the emission reductions that were achieved and enabled the area to attain the standard must be linked to enforceable regulations in the SIP. The EPA will assume that all control measures and regulations in the SIP for an area contribute to attainment of the standard. Therefore, any request for redesignation to attainment must show that permanent and enforceable rules are in place to implement these requirements. This showing will also support the State's demonstration that it has met all requirements that apply to the areas under section 110 and part D (discussed below under "Meeting section 110 and part D Requirements").

In addition to showing that it has developed enforceable rules and measures implementing the requirements that apply to the area, the State must show that the emission inventory that occured during the time of no violations of the standard is based on the implementation of permanent and enforceable regulations rather than a temporary reduction in emissions, which may have resulted from a suspension of industrial production or other temporary change in the industrial or economic activity in the area. Reductions in emissions from shutdowns are considered permanent and enforceable to the extent those shutdowns have been reflected in the SIP and all applicable permits have been modified accordingly.

(4) *A fully approved maintenance plan.* The State must submit a maintenance plan in accordance with section 175A for any area the State requests be redesignated from nonattainment to attainment. This plan must provide for maintenance of the standard for at least 10 years from the anticipated date of redesignation. Eight years after the redesignation date, the State will be required to revise its SIP to provide for maintenance in the area for an additional 10 years (beyond the first 10-year period).

The maintenance plan consists of three basic components: An emission inventory, a maintenance demonstration, and contingency measures. The inventory must include the emissions that occurred during the same period associated with attaining the national standard. The EPA plans to issue additional guidance on preparing these inventories and other components (discussed below) of the maintenance plan.

For the maintenance demonstration, the State must either demonstrate that the future emission inventory will not exceed the inventory that existed at the time of the request for redesignation, or conduct an appropriate modeling analysis consistent with EPA's "Guidelines on Air Quality Models" that shows that the future mix of sources and emission rates when combined with control strategy for the area, will not cause any violations of the ambient standard. Under either alternative, the State must identify the mechanism that will be used to track the progress of the maintenance plan. Where the maintenance demonstration is based on the inventory, the State may choose to periodically update the emission inventory or periodically review the factors used to develop the inventory to determine whether any significant changes have occurred. Where the demonstration is based on modeling, the State may periodically review the assumptions and input data for the modeling analysis. Such reviews and/or updates may typically be done every 3 years. The maintenance plan must contain any additional measures as necessary to ensure that the standard will not be violated. Any future measures must be implemented before any violations might be anticipated, based on tracking of the emission inventory (under the first alternative, above) or the modeling assumptions and input data (under the second alternative).The maintenance plan must also include contingency measures to ensure that any violations can be quickly addressed should such violations occur after the area is designated to attainment. The EPA will review each request for redesignation on a case-by-case basis to determine what contingency measures are needed for possible violations. Section 175(d) requires the maintenance plan to contain, at a minimum, a commitment for the implementation of all measures that were part of the control strategy (i.e., the SIP) for the area prior to redesignation should violations occur in the future.[39] The plan should provide for prompt implementation of these measures with minimal administrative action on the part of the State or other government agency responsible for its implementation.

(5) *Meeting section 110 and subpart 1 (of part D) requirements.* In order to be redesignated from nonattainment to attainment, an area must have met all of

[38] "Ozone and Carbon Monoxide Design Value Calculations," William G. Laxton, Director, Technical Support Division, Office of Air Quality Planning and Standards, June 18, 1990.

[39] This provision implies that the State would have removed or reduced the stringency of certain measures in the SIP after the area was redesignated to attainment. The EPA is soliciting comment on the circumstances in which the State may remove or modify measures that are specifically required (e.g., enhanced I/M) or are required as part of the demonstration of attainment. Any approach would have to ensure that the maintenance plan would prevent future violations either through a limit on overall emissions or a rigorous modeling analysis, or some combination. EPA also solicits comment on the emission limit and modeling analysis should be applied. For example, should a limit on overall emissions be required at least for some period beyond the time the area is designated to attainment?

the applicable requirements in section 110 (regarding general provisions needed in a SIP) and in part D (regarding the requirements for nonattainment plans). Part D contains general provisions that apply to all nonattainment plans and certain sections that apply to specific pollutants (e.g., section 182 applies for ozone nonattainment areas).

Subpart 1 of part D contains the general requirements for nonattainment plans. Section 172(c) describes the provisions required in nonattainment plans. The requirements of subparagraphs (1) through (9) of section 172(c) must be satisfied before a request for redesignation can be approved. In addition, the conformity requirements of section 176 must be met. The discussion below describes further how EPA will assess compliance with these provisions.

(i) RFP. The requirements for RFP will not apply in evaluating a request for redesignation to attainment since, at a minimum, the air quality data for the area must show that the area has already attained. Showing that the State will make RFP towards attainment will, therefore, have no meaning at that point.

(ii) Emission inventory. The emission inventory requirements of section 172(a)(3) will be satisfied by the inventory requirements of the maintenance plan, as discussed above.

(iii) Identification of certain emission increases. Section 172(c)(4) requires an area, in developing its plan for attainment, to identify expected emissions increases that will result from new or modified major sources in a "zone to which economic development should be targeted" according to section 173(a)(1)(B). These provisions effectively allow the State to provide a "growth allowance" for sources in such an area in lieu of the offset requirements under section 173(a)(1)(A). Since this is an optional alternative to requiring the acquisition of offsets under section 173(a)(1)(A), it is not a prerequisite to redesignation. Moreover, once the area is redesignated attainment, these provisions will not apply since the PSD requirements of part C will become effective (see discussion in next section).

(iv) NSR Permit program. Generally, the requirements of the part D NSR permitting nonattainment program will be replaced by the PSD program once an area is redesignated to attainment.[40] (The exception is in ozone transport regions where the part D NSR requirements applicable to moderate areas would continue to apply along with PSD (part C) requirements.) However, to ensure that the PSD program can become fully effective immediately upon redesignation, EPA will require an area to make any needed NSR corrections to their part C NSR programs prior to redesignation.

(v) Other measures to provide attainment. Since attainment will have been reached, no additional measures are needed to provide for attainment. The need for additional measures to ensure that maintenance continues is addressed under the requirements for maintenance plans. Areas should consider the need for offsets under the part C program to ensure that new sources do not "cause or contribute" to an increase in pollutant levels that would take the area out of compliance.

(vi) Compliance with section 110(a)(2). In the requests for SIP redesignation, States must show that their plans satisfy the requirements under section 110. These requirements specify that the plans must contain enforceable emission limits, monitoring requirements, procedures to prevent interstate pollution problems, adequate resources to carry out the control programs, and other provisions related to the development and administration of effective air pollution control programs; a more detailed discussion of these provisions is located in section H. States should consult with their EPA Regional Offices if additional guidance is needed with respect to section 110 requirements.

(vii) Equivalent techniques. The provisions of section 172(c)(8) allow the State to use equivalent techniques for modeling, inventorying, or other planning activities unless EPA determines that the techniques are less effective. This allowance will continue to apply with respect to the requirements of the maintenance plan.

(viii) Contingency measures. The section 172(c)(9) requirements for contingency measures are directed at ensuring RFP and attainment by the applicable date. These requirements no longer apply when an area has attained the standard and is eligible for redesignation. Furthermore, section 175(A) for maintenance plans (discussed above) provides specific requirements for contingency measures that effectively supersede the requirements of section 172(c)(9) for these areas.

(ix) Conformity. The State must show that the section 176 requirements of conformity have been met. The SIP conformity provisions must be consistent with EPA guidance issued pursuant to section 176(c)(4).

(6) *Meeting other part D requirements.* For classified ozone areas, the applicable requirements of sections 182, 184, and 185 must be met. For CO areas, the applicable requirements of section 187 must be satisfied. Satisfying these requirements for redesignation purposes is particularly important since the contingency measures of the maintenance plan will require, at a minimum, that the measures in place just before redesignation be implemented if future violations occur.

7. Transition Issues

(a) *Phase II of SIP calls.* Prior to enactment of the 1990 CAAA, the EPA issued SIP calls under section 110(a)(2)(H) of the Act to many areas based on a finding that their SIP's were substantially inadequate to provide for timely attainment of the ozone and/or CO NAAQS. In these SIP calls, EPA stated that States should respond in two phases to produce SIP's that would be adequate to attain and maintain the standards. The EPA first required States, in Phase I of their responses, to update their emissions inventories and make corrections in previously required regulations imposing RACT on existing stationary sources. Phase I responses were due generally by September 30, 1989.

The EPA advised States that they could delay submitting Phase II responses which included a full attainment demonstration and all additional regulations necessary to support such demonstrations, until EPA completed its policy on post-1987 nonattainment planning. Since EPA did not complete its post-1987 ozone/CO policy in anticipation of passage of the 1990 CAAA, EPA has never set a generally applicable date for Phase II SIP call responses. However, the basis underlying the SIP call remains valid even under the amended Act. The SIP's for the affected areas are still substantially inadequate to attain the relevant NAAQS. Since the date for submitting Phase I SIP call responses has already passed, and the amended Act requires all marginal and above ozone nonattainment areas subject to the RACT-correction aspects of the SIP calls to submit those corrections within 6 months of enactment, the requirement for Phase I responses to the SIP calls remains in effect for these areas. Thus, these areas should have submitted RACT corrections by May 15, 1991, pursuant to section 182(a)(2)(A) (see Section III.A.2.(b)).

[40] See footnotes 8 and 16.

However, as to Phase II SIP call responses, the amended Act alters both the substantive requirements and submission deadlines for full attainment demonstrations and their component control measures. Thus, although the obligation to submit a SIP adequate to attain and maintain the NAAQS remains in all SIP call areas, both the necessary elements of such plans and the timing of the plan submissions is now governed by the requirements of sections 182 and 187 of the amended Act. The EPA therefore will not require Phase II SIP call response submissions on schedule different from the schedules established by those sections. States should respond to Phase II of the SIP calls by making the submissions otherwise required by sections 182, 184, and 187. This new Phase II schedule supersedes any schedule EPA may have established for any area prior to enactment of the 1990 CAAA.

It should be noted that section 173(b) of the Act restricts the use of growth allowances by all areas that received SIP calls under the 1977 Act. Since EPA is keeping the pre-1990 CAAA SIP calls in effect, use of a growth allowance is restricted in any area that received a SIP call under the 1977 Act.

(b) *Construction ban.* The amended Act repeals the provisions found in section 110(a)(2)(I) of the 1977 Act requiring EPA to impose a construction ban in nonattainment areas that failed to submit plans meeting all of the requirements of part D of the Act. The amended Act also contains a savings clause in section 110(n)(3) that preserves certain existing construction bans. Construction bans remain in place only where imposed by virtue of a finding that the plan for the area did not contain an adequate NSR permitting program as required by section 172(b)(6) of the 1977 Act, or the plan failed to provide for timely attainment of the SO_2 NAAQS.

Thus, EPA cannot impose or maintain any previously imposed construction ban that was based on a finding that the plan for the area did not demonstrate timely attainment and maintenance of the ozone or CO NAAQS. The EPA is developing a rule amending its regulations at 40 CFR 52.24 to clarify the limited applicability of the construction ban and appealing the individual sections of 40 CFR part 52 that imposed the construction ban in each ozone or CO nonattainment area where the ban was imposed solely for failure to provide for timely attainment. Since the amended Act no longer authorizes EPA to impose bans on the above basis, EPA interprets the enactment of the Act's amendments as repealing these bans by operation of law as of the date of enactment and treat those amendments to part 52 as mere administrative housekeeping responsibilities. The EPA will treat those areas previously subject to the construction ban under these circumstances as no longer being subject to the ban after the date of enactment.

It should be noted that where construction bans were imposed for failure to demonstrate timely attainment of a standard (other than for SO_2) and also for failure to contain an adequate NSR program, the ban will remain in effect under the savings clause unless and until the State has submitted and EPA has approved such a permitting program. However, where the ban was originally imposed based only upon a finding that the plan did not provide for timely attainment and maintenance, event if the area in fact did not have an approved new source permitting program, the savings clause by its own terms will not preserve the construction ban. Such areas should of course promptly submit adequate permitting programs, but they will not be subject to the section 110(a)(2)(I) ban in the interim.

(c) *NSR.* The 1990 CAAA make numerous changes to the part D NSR permitting requirements for nonattainment areas. The EPA intends to propose rules by April 1992 to implement the NSR related changes mandated by the 1990 CAAA. In the interim period between passage of the 1990 CAAA and adoption of the Agency's regulations, EPA expects that numerous issues regarding the 1990 CAAA will arise. A March 11, 1991 EPA memorandum signed by John S. Seitz, Director of the Office of Air Quality Planning and Standards, sets forth EPA's position on the most important of these transitional issues involving the part D NSR program. Additional transitional guidance will be provided as needed.

8. General Savings Clause.

New Act section 193 sets forth a "General Savings Clause" governing retention of certain types of previously enacted or mandated requirements. Under section 193, any regulation, standard, rule, notice, order and guidance issued prior to November 15, 1990, shall remain in effect unless it is inconsistent with any provision of the 1990 CAAA or is revised by the Administrator. No control requirement in effect, or required to be adopted by an order, settlement agreement, or plan in effect prior to November 15, 1990, in any nonattainment area for any air pollutant, may be modified after enactment in any way unless the modification will result in equivalent or greater emissions reductions of that pollutant.

IV. EPA Requirements

A. SIP Processing Requirements

1. Completeness

Section 110(k)(1) required EPA to promulgate by August 15, 1991 (within 9 months of enactment), minimum criteria that any SIP submittal must meet. The EPA proposed an initial set of completeness criteria at 56 FR 23826 (May 24, 1991) and finalized them at 56 FR 42216 (August 26, 1991). Those notices describe the procedures for assessing whether a SIP submittal is complete and, therefore, adequate to trigger the Act requirement that EPA review and take action on the submittal. The completeness criteria provide a procedure and criteria that enable States to prepare adequate SIP submittals and enable EPA reviewers to promptly screen SIP submittals, identify those that are incomplete, and return them to the State for corrective action without having to go through rulemaking.

The criteria for determining whether a submittal by the State is complete have been separated into two categories: administrative information and technical support information. Administrative information includes the documentation necessary to demonstrate that the State has adhered to basic administrative procedures during the rule adoption process. Technical support information includes the documentation that adequately identifies all of the required technical components of the plan submissions.

When a submittal is determined to be complete, EPA will inform the State by letter of its determination. The EPA will then begin the formal review for approvability. If a submittal is determined to be incomplete, it will be returned to the State with a letter listing the deficiencies. Consistent with section 110(k)(1)(B), EPA will attempt to make completeness determinations within 60 days of receiving a submittal. However, a submittal will be deemed complete if a completeness determination is not made by EPA within 6 months of EPA's receipt of the submittal.

2. Partial Approvals

(a) *Full, partial, and limited approval and disapproval.* The EPA has authority to fully approve or disapprove a State SIP submittal under section 110(k)(3). However, in some instances a State's submission of a SIP or SIP revision will

include a provision that does not comply with one or more applicable requirements of the Act. The Agency must disapprove those portions of a SIP submittal that do not meet the applicable requirements of the Act (section 110(k)(3)). Where the disapproved portions of a SIP submittal are separable (i.e., disapproval of a provision will not affect the stringency of other portions of the SIP), EPA will partially approve the SIP and disapprove those separate parts. However, there may be instances where inseparable portions of the SIP submittal are disapproved. The EPA has interpreted the Act to provide flexibility in the instance where a submittal as a whole serves to improve air quality by providing progress toward attainment, RFP, and/or RACT, yet fails to comply with all of the Act's requirements. Such an action, called a limited approval, is not considered a complete action on the SIP submittal. To complete the action, EPA must also issue a limited disapproval whereby the Agency disapproves the SIP revision request as a whole for failing to meet one or more requirements of the Act.

(b) *Conditional approval.* Under section 110(k)(4), the Administrator may approve a plan revision based on a commitment of the State to adopt specific enforceable measures by a specified date but not later than 1 year after the date of EPA approval of the plan revision that incorporated that commitment. If EPA finds that the State fails to meet the commitment within that year, the conditional approval would automatically convert into a disapproval. The time periods culminating in imposition of sanctions and/or FIP's do not begin to run until the conditional approval is converted to a disapproval.

B. Sanctions and Other Safeguards

1. Background Under 1977 CAAA

The 1977 CAAA provided for two types of sanctions: Construction bans (i.e., a ban on construction or modification of major sources under section 110(a)(2)(I), of a ban on permitting such sources under section 173(4)) and various forms of funding restrictions. The construction bans automatically applied when EPA disapproved a SIP for failure to meet Act requirements as specified under section 110(a)(2)(I); the permitting ban applies when EPA found that a State failed to implement a SIP provision as specified under section 173(4). In addition, EPA had discretionary authority under section 113(a)(5) to impose a construction ban upon finding that a State was not acting in compliance with NSR permitting requirements in nonattainment areas. The EPA also had authority to apply the restrictions on air grants or highway funding under section 176 (a) and (b), or sewage treatment works funding under section 316(b).

2. Available Measures Under 1990 CAAA

The 1990 CAAA revised the law concerning sanctions and related measures. It sets forth specific criteria in section 179(a) to determine when EPA may apply two types of sanctions specified under section 179(b): Highway funding restrictions, and increased emissions offset ratios for new and modified sources. A third type of sanction, restrictions on air grant funding, is provided for under section 179(a). The construction ban provisions of section 110(a)(2)(I) were largely repealed (see section III.G.1.). However, several other provisions of the Act provide for construction bans and other sanctions to safeguard against increases in air pollution due to SIP planning or implementation failures.

Section 179(a) sets forth the four types of findings, disapprovals, or determinations (hereafter referred to as "findings") which may lead to the imposition of a sanction: That a State has failed to submit a SIP or an element of a SIP, or that the SIP or SIP element submitted fails to meet the completeness criteria for section 110(k); that EPA disapproves a SIP submission for a nonattainment area based on its failure to meet one or more plan elements required by the Act; that the State has not made any other submission required by the Act that meets the completeness criteria or had made a required submission that is disapproved by EPA for not meeting the Act's requirements; or that a requirement of an approved plan is not being implemented.

(a) *Highway funding sanction.* Consistent with the procedures and findings described below, the EPA may (and in some cases must) prohibit approval by the Secretary of Transportation of projects or grants (pursuant to title 23 of the U.S.C.) in the affected nonattainment area except where the Secretary has determined that the purpose of the project or grant is to improve a demonstrated safety problem. In addition, the Act provides exemptions for certain projects and grants that are intended to minimize air pollution problems (section 179(b)(1)).

(b) *Emission offset sanction.* The emission offset sanction provision (section 179(b)(2)) refers to the application of the emission offset requirements of section 173. This sanction applies to new or modified sources or emission units for which a permit is required under part D of the amended Act. Under this sanction, the ratio of emissions reductions that must be obtained to offset increased emissions (caused by the new or modified source) in the sanctioned area must be at least 2 to 1. The ozone pre-sanction ratio ranges between 1 to 1.5, depending upon the classification of the area. The EPA plans to promulgate Federal nonattainment rules at 40 CFR 52.10, which could be used to apply this sanction.

(c) *Grant funding sanction.* According to section 179(a), the Administrator may withhold all or part of the grants that support air pollution planning and control programs that the Administrator may award under section 105.

(d) *Section 173(a)(4) permitting ban.* Section 173 of the amended Act contains the requirements that must be met to issue a NSR construction permit for a new or modified major source in a nonattainment area. A prerequisite contained in section 173(a)(4) for issuing such permits is that the permit authority must find that the Administrator has not determined that the applicable implementation plan is not being adequately implemented as required by part D. This means that issuing construction permits for major stationary sources under section 173 is prohibited if the Administrator determines that the approved SIP for complying with the part D nonattainment requirements is not being adequately implemented for the nonattainment area in which the new source wants to locate or in which the source wishing to modify its facility is located.

(e) *Section 113(a)(5) construction prohibition.* Section 113(a)(5) authorizes EPA to prohibit the construction or modification of specific major stationary sources in all areas, including attainment areas, and to take other enforcement actions against individual sources whenever the Administrator finds that a State is not acting in compliance with any requirement or prohibition of the Act related to constructing new sources or modifying existing sources. The authority in section 113(a)(5) may also be used to issue general construction bans. After making a finding under section 113(a)(5), the Administrator may issue an order prohibiting the construction or modification of any major stationary source in any area to which such requirement applies, issue an administrative penalty order in

accordance with the requirements of section 113(d), or bring a civil action under section 113(b). Nothing in section 113(a)(5) shall preclude the United States from commencing, at any time, a criminal action under section 113(c) for any such violation.

(f) *Other sanction provisions.* Section 110(m) includes provisions on sanctions. The EPA will be discussing those provisions in a subsequent **Federal Register** notice.

3. Application and Timing of the Section 179 Sanctions

Eighteen months after the Administrator makes a finding concerning a State failure (as described below) with respect to a specific plan required by part D or in response to a SIP call, under section 179(a), the Administrator must apply either the highway or offset sanctions of section 179(b) unless the inadequacy has been corrected to EPA's satisfaction. The sanction applied will be chosen on a case-by-case basis depending on the circumstances involved. The EPA must apply both sanctions after 18 months if the Administrator finds a lack of good faith on the part of the State, or after 24 months if the deficiency is not corrected (within 6 months after the first sanction is imposed).

C. Federal Implementation Plans (FIP's)

The Administrator is required to promulgate a FIP within 2 years of finding that a State has failed to make a required submittal or that a received submittal does not satisfy the minimum completeness criteria established under section 110(k)(1)(A) (see 56 FR 42216, August 26, 1991), or disapproving a SIP submittal in whole or in part. Section 110(c)(1) mandates EPA promulgation of a FIP if the Administrator has not yet approved a correction proposed by the State before the time a final FIP is required to be promulgated. Within the Act's general provisions, a FIP is defined explicitly to allow for the inclusion of "economic incentives, such as marketable permits or auctions of emissions allowances" (section 302(y)). The EPA views the use of economic incentives in the context of a FIP as potentially appropriate, especially in cases of failure of ozone nonattainment areas to meet the RFP requirements. Such incentives may focus particularly on permitted sources. In developing FIP strategies that include economic incentives, EPA will look to its economic incentive program rules (section 182(g)(4)) due to be published November 15, 1992, as guidance in developing those elements of the FIP. Economic incentive programs are discussed in more detail in section III.G.3.

There may be areas where EPA has to promulgate Federal NSR regulations. The EPA intends to adopt at 40 CFR 52.10 Federal nonattainment area permitting rules that EPA can impose in States with deficient nonattainment NSR permit programs.

V. Miscellaneous

A. Relationship of Title I to Title V

1. Introduction

The purpose of this section is to discuss the issues originally described in the title V rulemaking preamble (56 FR 21712—May 10, 1991). The three main issues discussed here are how a combination of SIP's and permits can do the job that SIP's now do by themselves, the extent to which EPA will develop RACT protocols or procedures, and how EPA will approach marketable permits and trading of allowances in ozone nonattainment areas.

The approach taken here begins with the purposes of a SIP, which are to make demonstrations (of how attainment, maintenance, and progress will be achieved), and to provide a control strategy that will achieve the necessary reductions and otherwise meet the requirements of the Act.

The key questions are what fundamental principles apply to SIP's, and what features must SIP's and permits have to implement SIP control strategies and to satisfy these principles? The fundamental SIP principles will be used as guiding criteria for judging success in resolving the issues described above.

For a number of reasons explained below, certain elements must be contained in a SIP so that it will satisfy the identified principles and meet the Act's requirements. Other elements could be contained in permits, and still other elements may be shared and/or implemented in part by SIP's and in part by permits.

Following the discussion of fundamental SIP principles and associated SIP and permit features, this section proposes ways to answer the questions raised in the title V proposal.

2. Purposes of a SIP

One purpose of a SIP is to perform demonstrations of how various goals will be achieved. These goals are of three types: Attainment of the NAAQS, maintenance of the NAAQS once attainment occurs, and prescribed rates of progress. To satisfy these purposes, a number of assumptions must be made in the SIP regarding baseline emissions and future growth in various sectors of the economy. For these assumptions, SIP planners often rely on projections of population, motor vehicle travel or economic indicators made by other government agencies, and projections made by the air pollution control agency regarding the future effect of planned pollution control measures.

These assumptions, control strategies, and measures are developed as necessary to meet the attainment objectives for the area and the Act's requirements (e.g., RACT). These assumptions and measures are key components of the SIP. It is important to note that projections of the effect of planned air pollution control measures contained in the SIP's are not merely assumed but are enforced by regulations adopted as part of the SIP. Therefore, if the control measures are not implemented sufficiently to result in required reductions, the State or local agency, or EPA, can take action to enforce implementation of the regulations. This provides a means of achieving, at least in part, the goals of attainment and further progress required in the Act.

For purposes of illustrating the principles and elements of SIP's that apply to sources, the discussion below concentrates more on elements relevant to implementing the control strategies part of a SIP, rather than on those relevant to the demonstration. This simplifies the discussion and reflects the fact that the purpose of the permit is to implement measures, not perform demonstrations, which is unquestionably a purpose of the SIP.

3. Fundamental Principles for SIP's/ Control Strategy

To develop an effective SIP control strategy and to achieve the desired result, the SIP and any implementing instruments, including permits, should adhere to certain principles. These principles help provide assurance that the planned emissions reductions will be achieved. These principles are discussed in EPA's policy on emissions trading contained in 51 FR 43814 (December 4, 1986).

(a) *First principle.* The first principle is that the baseline emissions from the source and the control measures be quantifiable (i.e., a specific amount of emissions reductions can be ascribed to the measures). Baseline emissions must be represented accurately in the SIP in order for the benefits of the measure to be properly quantified. Furthermore, the emissions must be representative of the time period of the inventory. Likewise, the effect of the measure must be identified in order to assess the

contribution to the necessary emissions reductions. The value for a measure's effect can be used as a limit in a regulation, or it may be used alone or in combination with assumptions regarding operating hours or production, or as part of the projections in the demonstrations.

(b) *Second principle.* The second principle is that the measures be enforceable. Measures are enforceable when they are duly adopted, and specify clear, unambiguous, and measurable requirements. A legal means for ensuring that sources are in compliance with the control measure must also exist in order for a measure to be enforceable. This principle is well grounded in the Act. New section 110(a)(2) of the Act requires that SIP's include "enforceable emission limitations and other control measures" and "a program to provide for the enforcement of the measures" in the plan. Court decisions made clear that regulations must be enforceable in practice. A regulatory limit is not enforceable if, for example, it is impractical to determine compliance with the published limit.

(c) *Third principle.* The third principle is that the measures be replicable. This means that where a rule contains procedures for changing the rule, interpreting the rule, or determining compliance with the rule, the procedures are sufficiently specific and nonsubjective so that two independent entities applying the procedures would obtain the same result.

(d) *Fourth principle.* The fourth principle is that the control strategy be accountable. This means, for example, that source-specific limits should be permanent and must reflect the assumptions used in the SIP demonstrations. It also means that the SIP must contain means (such as operating permits issued under title V) to track emission changes at sources and provide for corrective action if emissions reductions are not achieved according to the plan. The Act provides for this tracking and remedial action in its requirements for meeting milestones and for contingency measures in SIP's. The EPA will use this principle to explore options for tracking emissions resulting from issuing permits or permit amendments.

The principles of quantification, enforceability, replicability, and accountability apply to all SIP's and control strategies, including those involving emissions trading, marketable permits and allowances. The EPA's emissions trading policy provides that only trades producing reductions that are surplus, enforceable, permanent, and quantifiable can get credit and be banked or used in an emissions trade.

4. Approaches To Ensure That Permits Properly Support SIP's.

The EPA has considered various ways that permits and SIP's can be configured to complement each other and still meet the principles discussed above. The following discussion covers some approaches.

The SIP remains the basis for demonstrating and ensuring attainment and maintenance of the national ambient air quality standards (NAAQS). The permit program collects and implements the requirements contained in the SIP as applicable to the particular permittee. Since permit must incorporate emission limitations and other requirements of the SIP, all SIP provisions applicable to a particular source will be defined and collected into a single document. The applicable requirements in the permit would include any recent SIP changes, whether as a result of a State or local SIP revision or of a FIP action by EPA. The EPA intends to assist in the implementation of the permit program through the use of model permits for numerous source categories.

As previously discussed, title V affords significant operational flexibility. The relationship between title V permits and SIP's is a key factor in determining the extent to which operational flexibility is available to sources, since each permit, in part, must assure compliance with the applicable implementation plan. The EPA recognizes that it will take time to complete the transition from a regulatory system where SIP's are the primary tool for implementing and enforcing the Act, to one where operating permits ultimately assume primary responsibility for implementation and enforcement.

The EPA is considering what means will aid in ensuring a smooth transition to increasingly general, and thus more flexible, SIP's, which may allow permits rather than the SIP's to specify the details of how SIP limits and objectives apply to subject sources. In particular, EPA will be seeking to develop information in the following areas:

(1) The most efficient ways of implementing requirements of SIP's through permits, such as moving detail from SIP's to permits;

(2) Flexible ways for sources to demonstrate compliance with reasonably available control technology (RACT) limits, such as through the use of protocols for defining equivalency or through the development of equivalency determinations in the permitting process (as discussed below); and

(3) Expanded use of emissions trading and marketable permits to achieve SIP objectives as well as providing a stable accountable mechanism for tracking and enforcing emissions reductions at a source.

EPA will be adopting provisions to facilitate the movement toward more flexible SIP's in its final rules to implement title V. EPA plans to include provisions which specify that no permit revision is required for emission trades through economic incentives or marketable permit programs, provided that the permit contains a means or process for implementing the program. Thus, a SIP containing a generic trading rule and a replicable procedure for implementing the rule through a permit may allow trading to occur without a permit revision, provided the permit contains the replicable procedure. This is similar to the way in which permits allow sources to shift among alternate scenarios that were initially provided for in the permit. It States choose to implement trading in this matter, the provisions of the permit allowing the trades must incorporate all of the procedural protections contained in the underlying SIP.

States may also elect to develop SIP's that set forth trading and compliance provisions that sources could use to comply with SIP limits. The SIP would have to include compliance requirements and procedures for the trade which are sufficiently specific to demonstrate compliance. Such provisions can prove useful to sources in cases where permits do not already provide for emission trades.

(a) *Increasing flexibility in SIP's through permits.* In addition, a State may choose to adopt a SIP provision that would authorize sources to meet either the SIP limit or an equivalent limit to be formulated in the permit system. The permit must contain the equivalency determination, as well as provisions that assure that the resulting emission limit is quantifiable, accountable, enforceable, and, based upon replicable procedures, is equivalent to the SIP limit. Consistent with these requirements, States may do so for all appropriate SIP requirements or only for specific requirements for which the State determines equivalency determinations are appropriate. The determination of what constitutes an equivalent limit could take place either during the permit issuance, or renewal process, or as a result of the significant permit modification procedures. The State retains discretion, subject to EPA veto, to decide if an alternative emission limit is justified in any particular case.

(b) *Developing more RACT protocols.* In the title V preamble, the EPA said that it would develop more flexible ways for sources to demonstrate compliance with RACT limits. One way is to use protocols defining equivalent means of compliance. For example, in 1980 EPA released the "Can Coating Policy," which allows cross-line averaging for can coating facilities and provides the calculation technique for doing so.

The EPA is undertaking a study to determine the extent to which multi-day and cross-line averaging can be used to provide specific industries more flexibility in meeting their VOC RACT requirements. This project is focusing on the graphic arts and aerospace industries. For this study, EPA is taking the following steps:

(i) Survey the can coating industry to determine how the protocol has been functioning and to collect data on daily and monthly emissions, coating usage and VOC content. These data will be used to determine whether there is a good and stable correlation between daily and monthly emissions rates and between cross-line and line-by-line emissions.

(ii) Survey aerospace and graphic arts sources to collect emissions data, coating usage and VOC content on a daily basis. These data also will be analyzed to determine the variability of emissions from day to day and line to line.

(iii) Based on the above information, EPA will determine the appropriateness of developing procedures for time-averaging and line-by-line compliance for the graphic arts and aerospace industries and issue these procedures as appropriate.

When EPA completes this process, it will then assess whether it is feasible and desirable to develop procedures for other source categories for which such procedures may be appropriate.

(c) *Exploring marketable permits/allowance trading.* The EPA fully expects that the use of emissions trading and economic incentives such as marketable permits or allowance trading will increase as the Act is implemented. In addition, EPA is committed to exploring ways to reduce the cost or burden to industry through the use of innovative measures that use the marketplace to reduce costs. And, as mentioned in its title V preamble, the EPA wants to find ways to achieve the goals of the Act without requiring time-consuming SIP revisions for every change at a source.

One way to minimize SIP revisions is through the use of replicable SIP procedures that are implemented by the permit. As long as the terms of the permit complied with the SIP rule, changes to the permit could be made without a SIP revision. The proposed title V regulation, for example, would not require a permit change for emission trades authorized under the Act if such changes were implemented consistently with the replicable procedure specified in the SIP.

The EPA believes that the same principles discussed previously also should apply to measures such as marketable permits, emission trades and allowances. In addition, the principles of surplus and consistency with the SIP should also apply to any trading program. For example, replicability must always be honored to assure that consistent and predictable benefits are derived from a marketable permits program. Also, the principle that baseline emissions and measures should be quantifiable is particularly important when applied to the level of emission trading that might occur in a large ozone nonattainment area.

The EPA does not believe that it has enough information at this time to fully resolve all of the practical questions mentioned above or in the title V preamble regarding marketable permits, trading, and allowances. The EPA believes that, in resolving such questions, it should apply the same principles mentioned above, namely, that such measures should be quantifiable, accountable, enforceable and implemented according to replicable procedures.

B. Tribal Implementation Plans

Section 107 of the 1990 CAAA adds several provisions to the statute that create the first express authority for EPA to treat Indian tribes as States for certain Act purposes. Section 107 also allows a tribe that qualifies for treatment as a State to develop and submit to EPA a tribal implementation plan (TIP) for implementation of the NAAQS on tribal lands (see Act sections 110(o) and 301(d)). Under section 301(d)(2), EPA is required to promulgate regulations by May 15, 1992 for treating of tribes as States. Section 301(d)(3) states that EPA may promulgate regulations setting forth the elements of TIP's and procedures for EPA action on them. In addition, section 301(d)(4) states that where EPA determines that treatment of Indian tribes as identical to States is not appropriate, the Agency may by regulation provide other means by which EPA will directly administer these provisions. In the preambles to the proposed and final rules, EPA will discuss other issues relating to implementation of the Act on tribal lands.

C. Section 179B Requirements

A new section 179B, International Border Areas, was added to the statute. This section applies to nonattainment areas that are affected by emissions emanating from outside the United States. This section requires EPA to approve a SIP if: The SIP or SIP revision meets all of the requirements applicable to it under the Act, other than a requirement that it demonstrate attainment and maintenance of the relevant NAAQS by the applicable attainment date; and the affected State establishes to EPA's satisfaction, that the SIP or revision would be adequate to attain and maintain the relevant NAAQS by the applicable attainment date but for emissions emanating from outside the United States. Further, any State that establishes to the satisfaction of EPA—with respect to an ozone, CO, or PM–10 nonattainment area in such a State—that the State would have attained the relevant NAAQS but for emissions emanating from outside the United States, shall not be subject to the following provisions: extension of the ozone attainment dates pursuant to section 181(a)(5), the fee provisions of section 185, and the bump-up provisions for failure to attain for ozone (section 181(b)(2),[41] CO (section 186(b)(2), and/or PM–10 (section 188(b)(2) NAAQS.[42]

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[41] Note that the statute contained an erroneous reference to section 181(a)(2) instead of 181(b)(2).

[42] As noted, section 179B(d) states that PM–10 areas demonstrating attainment of the standards but for emissions emanating from outside the United States shall not be subject to section 188(b)(2) (reclassification for failure to attain). By analogy to this provision and applying canons of statutory construction, EPA will not reclassify before the applicable attainment date areas which can demonstrate attainment of the PM–10 standards but for emissions emanating from outside the United States. See section 188(b)(1). First, EPA believes section 179(B)(d) evinces a general congressional intent not to penalize areas where emissions emanating from outside the country are the but for cause of the PM–10 attainment problems. Further, if EPA were to reclassify such areas before the applicable attainment date, EPA, in effect, would be reading section 179(B)(d) out of the statute. Specifically, if EPA proceeded to reclassify before the applicable attainment date those areas qualifying for treatment under section 179(B), an area would never be subject to the provision in section 179(B)(d) which prohibits EPA from reclassifying such areas after the applicable attainment date. Canons of statutory construction counsel against interpreting the law such that language is rendered mere surplusage. Finally, note that section 179(B)(d) contains a clearly erroneous reference to carbon monoxide instead of PM–10 and that this section contains other errors. See, e.g., section 179(B)(c) reference to section 186(b)(9), which does not exist.

In demonstrating that an area could attain the relevant NAAQS but for emissions emanating from outside the United States, approved EPA modeling techniques should be used whenever possible. An emission inventory incorporating vehicle emissions occurring in the United States generated from vehicles registered in the adjacent foreign country must be completed by the State before modeling in the United States' side only and attempting to demonstrate attainment. The EPA recognizes that adequate data may not be available in areas outside the United States. Therefore, modeling (consistent with EPA's "Guidance on Air Quality Models, Revised") may not be possible in all cases. Because very few areas are likely to be affected by this provision, EPA will determine on a case-by-case basis whether the State has satisfactorily made the required demonstration. The State is encouraged to consult with the EPA Regional Office in developing any alternate demonstration methods. Methods that the State may want to consider include: using ozone episodes that do not involve international transport of emissions for modeling (see guidance document entitled "Criteria for Assessing Role of Transported Ozone/Precursors in Ozone Nonattainment Areas"), running the model with boundary conditions that reflect general background concentrations on the U.S. side, analyzing monitoring data if a dense network has been established, and using receptor modeling for PM–10. States should confer with the appropriate EPA Regional Office to establish appropriate technical requirements for these analyses.

VI. Other Requirements

A. Executive Order 12291

Under Executive Order 12291, EPA is required to judge whether an action is "major" and, therefore, subject to the requirement of a regulatory impact analysis. The Agency has determined that this action is exempt from classification as "major" because it is a compilation of interpretive rule and general statements of policy as defined in the Adminstrative Procedures Act (APA). Nevertheless, this notice was submitted to the Office of Management and Budget (OMB) for review.

A copy of the draft notice as submitted to OMB, any documents accompanying the draft, any written comments received from other agencies (including OMB), and any written responses to these comments have been included in the Docket.

B. Regulatory Flexibility Act

Whenever the Agency is required by section 553 of the APA or any other law to publish general notice and proposed rulemaking for any proposed rule, the Agency shall propose and make available for public comment an intial regulatory flexibility analysis.

The regulatory flexibility requirements do not apply for the General Preamble because it is not a regulatory action in the context of the APA or the Regulatory Flexibility Act.

Note: Appendices A through E will be published in a subsequent **Federal Register**.

Dated: March 27, 1992.

William K. Reilly,

Administrator.

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