United States General Accounting Office

GAO

Report to the Chairman, Committee on Energy and Commerce, House of Representatives

June 1993

AIR POLLUTION

State Planning Requirements Will Continue to Challenge EPA and the States

GAO/RCED-93-113

GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-251088

June 11, 1993

The Honorable John D. Dingell
Chairman, Committee on Energy
and Commerce
House of Representatives

Dear Mr. Chairman:

This report responds to your request that we examine (1) the responsiveness of the states to requirements in the Clean Air Act Amendments of 1990 that they submit revisions to their state implementation plans (SIP) for improving air quality and (2) the Environmental Protection Agency's (EPA) timeliness in reviewing and approving these plans. In particular, the report discusses the effects that the 1990 amendments and EPA's initiatives have had on expediting the submission, review, and approval of the SIPs.

As agreed, unless you publicly release its contents earlier, we will make no further distribution of this report until 30 days from the date of this letter. At that time, we will send copies to the Administrator, EPA; the Director, Office of Management and Budget; and other interested parties. We will make copies available to others on request.

This work was performed under the direction of Richard L. Hembra, Director, Environmental Protection Issues, who can be reached at (202) 512-6111. Other major contributors to this report are listed in appendix III.

Sincerely yours,

J. Dexter Peach
Assistant Comptroller General

Executive Summary

Purpose

Although the United States has significantly improved its air quality since the late 1970s, air pollution problems such as ground-level ozone (urban smog), carbon monoxide, and particulate matter continue to threaten the health of millions of Americans and to adversely affect the environment. The Clean Air Act Amendments of 1990 (1) required the states to make significant revisions to their state implementation plans (SIP), the key documents setting forth their strategies and schedules for improving air quality, and (2) established deadlines for the states' submission and the Environmental Protection Agency's (EPA) approval of the revisions.

Concerned about EPA's ability to implement the extensive new requirements for SIPs, the Chairman, House Committee on Energy and Commerce, asked GAO to examine whether the states are submitting their SIPs on schedule and whether EPA is promptly reviewing and approving them. This report also examines whether processing of SIPs could be improved by the amendments' title V provisions on operating permits for pollution sources. Title V allows the states to move certain requirements pertaining to individual pollution sources from the SIPs to the permits.

Background

Under the 1970 amendments to the Clean Air Act, EPA established national standards for six widespread air pollutants. The amendments directed the states to submit SIPs demonstrating how they would achieve and maintain those standards. Among other things, the plans must describe the controls that the states will use to reduce pollution levels and demonstrate that the states have adequate resources to implement the plans.

From the start, significant problems have plagued the process of preparing SIPs and having EPA review and approve them. Concerned about the relatively small number of SIPs that EPA was approving and the excessive time it was taking to review them, the Congress attempted to improve SIP processing in its 1990 amendments to the Clean Air Act. In addition to establishing specific deadlines for the states to submit their SIPs, the amendments require EPA to decide within 60 days of receiving a SIP whether the plan contains all the information needed for review. In the past, many SIPs that lacked the information necessary for approval nevertheless went through a full review by EPA. The amendments also require EPA to take final action to approve or disapprove a SIP within 12 months of determining that the submission is complete.

The 1990 amendments also established a new program of operating permits (title V) to, among other things, supplement the SIP process. The

title V program requires major air pollution sources to obtain operating permits from their states; these permits specify allowable emission limits, control measures, and monitoring and reporting procedures.

Results in Brief

Despite efforts by EPA and the Congress to address long-standing problems, delays continue in the states' submission and EPA's review and approval of SIPs. Some states have submitted their SIPs after the deadlines established by the 1990 amendments, while other states have not yet submitted their SIPs. Also, EPA is taking longer to review and approve SIPs than the 1990 amendments allow. In some cases, SIPs have remained in the system for months without management intervention to identify and address the causes for the delays. Unless improvements are made, GAO believes that the delays will likely worsen over the next several years as the number of SIPs the states are required to submit increases, particularly for pollutants such as ozone, carbon monoxide, and particulate matter.

EPA has recognized that improved oversight of the SIP process is needed. It has begun examining the underlying causes for the processing delays and assessing the likelihood that past-due SIPs will be submitted and approved. However, the complex and labor-intensive requirements for preparing SIPs at the state level and the extensive requirements regarding subsequent review and approval at both the state and federal levels make additional delays likely. GAO believes that EPA's best opportunity for ensuring compliance with national air quality standards combines a short-term strategy to improve the timeliness of SIP processing with a long-term strategy to reduce the complexity of SIPs by moving emission limits and other detailed requirements from the SIPs to the operating permits for individual pollution sources.

Principal Findings

Delays in States' Submissions of SIPs Continue

Delays continue in the states' submissions of SIPs despite the specific requirements of the 1990 amendments. For example, the states are behind schedule in submitting both corrections to existing SIPs for reducing ozone and new SIPs for complying with particulate matter (PM-10) standards. The 1990 amendments required 35 states to submit SIP revisions for ozone by May 15, 1991, and 23 states to submit SIPs for PM-10 by November 15, 1991. However, 12 states had not submitted all of their revisions for ozone and 9

states had not submitted all of their SIPs for PM-10 as of December 31, 1992. EPA officials subsequently advised GAO that as of March 31, 1993, all but one state had submitted their revisions for ozone.

The 1990 amendments also required all the states, the District of Columbia, Puerto Rico, and the Virgin Islands to submit 17 major revisions to their SIPs by November 15, 1992. On January 15, 1993, EPA began sending letters to 35 states officially notifying them of their failure to comply. EPA managers are also concerned about whether the SIPs that the agency has already received and those that the states will be submitting will meet EPA's requirements. These managers expect that some of the SIPs, including those establishing emission inventories for areas that do not meet national standards for ozone and carbon monoxide, will not contain all of the information required for review and approval. These submissions may have to be returned to the states for additional information.

Delays Have Occurred in EPA's Processing of SIPs

As a result of several initiatives by EPA, many SIPs now require considerably less review than they did in the past. Nevertheless, there are still significant delays in EPA's processing and approval of SIPs. In many cases, the agency has exceeded the 60-day limit for determining that SIPs are complete and the 12 months allowed for final approval. For example, EPA exceeded the 60-day limit for determining the completeness of 35 percent of the SIP revisions for ozone. Furthermore, only 29 percent of the revisions for ozone that EPA received had been approved as of December 31, 1992. Approximately 50 percent of the approvals took longer than the 12 months allowed. Additionally, 730 SIP submissions being reviewed by EPA had been at the agency an average of 650 days as of December 31, 1992. EPA managers are not sure if any of the SIPs for PM-10 will be approved within the 12 months allowed.

EPA Oversight Is Not Adequately Addressing Delays

Along with delegating review and approval authority to its regional offices for many SIPs, EPA has initiated a number of actions to improve oversight of the SIP process. These initiatives include efforts to improve the agency's information system for tracking actions taken on SIPs and the introduction of regional program reviews of SIP processing. While improvements have been made, the effectiveness of the management information system has been hampered by inaccurate and incomplete data. Also, the effectiveness of the program reviews has been limited because few have been completed and their scope has been narrow.

Operating Permits Could Improve SIP Process

While not a panacea for all the problems with the SIPs, title V offers opportunities for improving their timeliness and enforceability. Incorporating requirements for emission limits, control measures, and monitoring and reporting into a single permit for an individual pollution source can help improve accountability. Revisions could also be made more quickly, because the sources' permits rather than the SIPs would be modified. EPA is currently examining the most efficient ways of meeting this objective.

Recommendations to the EPA Administrator

Because of the significant role that SIPs currently play in trying to bring about improvements in air quality, the problems that continue to plague the SIP process, and the opportunities for using title V permits to improve this process, GAO is making a number of recommendations to the EPA Administrator. These recommendations include

- expanding EPA's efforts to identify and resolve problems causing delays in the review and approval of SIPs and exploring other options—such as further delegation of authority to approve the SIPs to regional administrators—to expedite SIP processing and minimize delays in the large number of actions required in the next several years and
- working closely with the states to develop and implement permit programs that will facilitate moving from the current regulatory system that relies on SIPs as the primary means for ensuring compliance with Clean Air Act requirements to a system in which title V permits assume much of that responsibility.

Agency Comments

As requested, GAO did not obtain written agency comments on a draft of this report. However, GAO discussed the report's factual content with the Director of EPA's Office of Air Quality Planning and Standards and other EPA managers. These officials generally agreed with the information presented, and their comments have been incorporated where appropriate.

Contents

Abbreviations

CO	carbon monoxide
EPA	Environmental Protection Agency
GAO	General Accounting Office
NO_x	nitrogen oxide
PM-10	particulate matter
SIP	state implementation plan
STAPPA/ALAPCO	State and Territorial Air Pollution Program Administrators and the Association of Local Air Pollution Control Officials
VOC	volatile organic compound

Introduction

While the quality of the nation's air has improved, air pollution problems of considerable magnitude still remain. The Environmental Protection Agency (EPA) estimates that in 1991 at least 86 million people lived in areas with significant air pollution problems. Ozone remains the country's most pervasive air pollutant—in 1991, nearly 70 million people lived in counties that did not meet EPA's national ozone standard. Furthermore, approximately 21 million people lived in areas that did not meet the particulate matter (PM-10) standard. These pollutants have been linked to decreases in lung function in normal, healthy people during periods of moderate exercise; respiratory illnesses; alterations in the body's defense systems against foreign materials; aggravation of existing respiratory and cardiovascular disease; and premature death.

To address the nation's air pollution problems, the Congress enacted the Clean Air Act Amendments of 1990. While the amendments gave the states more time to meet national standards, they also required the states to make constant, substantial progress in reducing emissions. Title I of the amendments, in particular, required that the states make a significant number of revisions to state implementation plans (SIP) over the following 2 to 4 years. SIPs are documents specifying how the states will achieve and maintain compliance with national air quality standards for ambient air pollutants. Among the pollutants addressed by SIPs are ozone, carbon monoxide, and particulate matter. Many of the revisions required by title I pertain to areas of the country that have not attained national air quality standards, known as "nonattainment areas." (App. I outlines the new requirements and deadlines for major SIPs from 1991 through 1994.) Title I also made numerous changes in the general requirements for SIPs, including the provisions for EPA's processing of SIP revisions and the repercussions (i.e., sanctions) for the states that fail to meet the various SIP requirements.

Evolution of the Clean Air Act

For almost three decades, the Congress has sought more effective air quality legislation. In 1963, the Congress passed the Clean Air Act to improve and protect the quality of the nation's air. Under the 1970 amendments, EPA identified the highest levels at which six specific pollutants (ozone, carbon monoxide, particulate matter, sulfur dioxide, nitrogen oxide, and lead) will not endanger public health and established air quality standards at or below these levels.

The amendments also addressed the states' responsibilities for keeping the air clean. It required each state to submit a plan to EPA specifying how it

would achieve and maintain the national standard for each pollutant. The amendments extensively defined what a SIP must contain. For example, the SIP must describe control strategies the state will use to reduce pollution levels, contain legally enforceable regulations, identify pollution sources and their emission levels, outline a monitoring program, and demonstrate that the state has adequate resources for implementing the plan. A SIP may also respond to other requirements specific to the pollutant being considered.

In addition, the amendments set deadlines by which the states must meet the national standards. However, the states have commonly missed these deadlines. For example, as we reported in 1988, few areas met the first ozone deadline (1975).[1] In 1977, the Congress extended the deadline to December 31, 1982, with extension possible to December 31, 1987, under certain conditions. However, even this deadline proved optimistic for many small urban areas and out of reach for many large ones. By 1988-89, many areas throughout the nation had still not met the ozone standards.

In 1988, EPA began issuing notices of deficiencies in the SIPs to those states whose plans were inadequate for attaining ozone and/or carbon monoxide standards.[2] These notices required the states to (1) revise their SIPs to correct discrepancies between EPA's existing guidance and the states' regulations for controlling volatile organic compounds, (2) satisfy commitments to complete implementations included in the SIPs, and (3) begin updating the base-year emissions inventory that the states are required to establish. Emissions inventories enable EPA to monitor the states' progress in meeting certain air quality standards.

EPA's Reform Measures for SIP Processing

Prompted by significant processing delays and an anticipated increase in SIP submissions and revisions associated with standards for ozone, carbon monoxide, and PM-10, in 1987 EPA began assessing its processes to identify problems and propose solutions. It identified several issues that seemed to cause processing problems. Long delays in EPA's decisions on the SIPs and the agency's reliance on informal communications with the states in reviewing the SIPs both created uncertainty for the states about whether EPA would approve their SIPs. Another problem EPA identified was excessive levels of reviews of the SIPs, which it attributed to a failure to

[1]Air Pollution: Ozone Attainment Requires Long-Term Solutions to Solve Complex Problems (GAO/RCED-88-40, Jan. 26, 1988).

[2]EPA considered a SIP deficient if its requirements on reasonably available control technology were less stringent than those required by EPA guidance issued before passage of the 1990 amendments.

adjust the intensity of its reviews to the complexity and significance of the SIPs submitted. Instead, all the SIPs submitted, regardless of their complexity or implications, were receiving extensive review by both the regional offices and headquarters.

On the basis of these findings, EPA undertook several efforts to improve the processing of SIPs. First, it strove to improve the certainty of the review and decision-making process through more formal and visible processing procedures, greater management control, and clearer processing guidelines. Second, it attempted to eliminate some excessive reviews by matching the intensity of the review to the importance of each SIP. The less complex SIPs would no longer receive the same extensive review by regional offices and headquarters that the more significant SIPs received. Some of the actions initiated by EPA to improve the processing of SIP revisions were subsequently incorporated in the Clean Air Act Amendments of 1990.

Current SIP Process

The SIP process is a cooperative effort involving EPA, state governments, and local jurisdictions. The process is begun by the state, which develops and adopts a SIP composed of regulations that meet the basic provisions of the Clean Air Act. The state then issues a public notice on the proposed SIP, including notification of neighboring states; holds public hearings; and receives comments and incorporates them into the proposal. After being approved by the state, the plan is submitted to the regional EPA office for review and approval. For a relatively major effort, such as one establishing or revising emission limits, the SIPs can be thousands of pages long.

The regional EPA office first determines whether a state's SIP submission includes all necessary components, so that it can properly review and act on the substance of the plan. EPA informs the state whether the SIP is complete and lists any deficiencies; it will not proceed further until the state provides any missing information. The regional office then analyzes the submission and prepares a Federal Register notice recommending approval or disapproval. The regional office also prepares a technical support document evaluating the state's submission relative to the Clean Air Act's requirements and EPA's policy and guidance. After EPA determines that a SIP is complete, the agency has 12 months to take final action approving or disapproving the plan. If EPA fails to take final action within that time, legal action may be brought against the agency for failure to comply with its legislative requirements.

EPA headquarters ensures that SIPs are consistent with national policy and that they meet the legal requirements of the Clean Air Act. The level of headquarters review depends largely on the national significance of the SIP being examined. Any SIP that can significantly affect the implementation of national programs (e.g., basic strategies for demonstrating attainment of ambient air standards) undergoes a 30-day concurrence review by EPA headquarters staff. The SIP is then sent to EPA's assistant administrator for air and radiation for concurrence. If these parties decide that the SIP is acceptable, it is published in the Federal Register for public review. Any SIP that EPA disapproves or partially approves must undergo Office of Management and Budget review. Final actions go to EPA's administrator for signature.

Similarly, a SIP of some national importance is delegated to EPA's regional administrator for decision and signature but is allowed a 30-day opportunity for headquarters review before the regional administrator signs it. The regional office retains responsibility for the action and therefore has the authority to make the final decision. After the regional administrator has signed a SIP, it is sent to EPA's regulation management staff for processing and publication in the Federal Register.

The SIPs that do not affect implementation of the national air quality program generally require no headquarters action and are delegated to the region for decision and signature. A SIP of this type is sent to headquarters for a 2-day review only if it is disapproved. However, the regional office may at any time request that headquarters program offices review a proposed SIP. (See app. II for the processing sequence for each type of SIP.)

Objective, Scope, and Methodology

The Chairman, House Committee on Energy and Commerce, asked us to assess the efforts of the states to submit their SIPs on schedule and EPA's promptness in reviewing and approving SIP submissions. To accomplish that objective, we examined records and interviewed officials at

- EPA's Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina;
- four EPA regional offices—Region II, New York, New York; Region IV, Atlanta, Georgia; Region V, Chicago, Illinois; and Region VIII, Denver, Colorado (these regions were chosen to ensure coverage of areas experiencing a variety of problems with SIP submissions and processing); and

- the State and Territorial Air Pollution Program Administrators and the Association of Local Air Pollution Control Officials (STAPPA/ALAPCO), Washington, D.C.

To assess the timeliness of the states' submissions and EPA's processing of SIPs, we reviewed national and regional statistics from EPA's Office of Air Quality Planning and Standards. The data included

- completion statistics for the state's submission and EPA's processing of deficient or missing SIP revisions for ozone, SIPs for PM-10, and updated 1990 base-year ozone and carbon monoxide emission inventories required under the 1990 amendments;
- computerized data from EPA's management information system for tracking SIPs; and
- data maintained at all EPA regional offices.

To determine whether EPA's reform measures expedited the timely submission and processing of SIPs, we gathered information on the procedures the states used to develop SIPs and EPA used to review them and discussed with state and federal officials (1) the preparation and processing of SIPs, (2) the reasons progress has not been as rapid as anticipated, and (3) additional actions that could be taken to expedite SIP submissions and review.

We conducted our review between November 1991 and March 1993 in accordance with generally accepted government auditing standards. As requested, we did not obtain written agency comments on a draft of the report. However, we discussed the report's factual content with the Director of EPA's Office of Air Quality Planning and Standards and other EPA managers. These officials generally agreed with the facts presented in this report. Their comments have been incorporated where appropriate.

Delays in Meeting State Planning Requirements Continue

The Clean Air Act Amendments of 1990 contain extensive new requirements for addressing the nation's air pollution problems. The amendments set specific schedules for the large number of SIP submissions and approvals expected over the next several years. The amendments require EPA to (1) determine whether the SIP submissions contain all the information needed before investing significant review time and (2) approve or disapprove the SIPs within a reasonable time after determining that they are complete. The amendments also require EPA to impose mandatory sanctions against the states that fail to submit approvable SIPs by the specified deadlines. Despite these requirements and EPA's initiatives to expedite SIP processing, EPA and the states have experienced delays in complying with many of the requirements of the 1990 amendments.

EPA acknowledges that there have been problems with the timeliness of SIP reviews and approvals and that the causes for delays have not always been promptly identified and addressed. In an effort to improve oversight of the SIP process, EPA has taken several initiatives designed to provide more accurate and complete information on the progress of SIP reviews and approvals and to identify problems delaying the process. While some improvements have been made, progress has been slow.

Delays Have Occurred in Meeting Some Initial SIP Requirements

The 1990 amendments required areas of the country that did not meet national air quality standards for ozone and PM-10 to submit revisions to their SIPs for these pollutants by May 15, 1991, and November 15, 1991, respectively. For each SIP submission, the amendments give EPA 60 days to determine whether the plan contains all the information needed for review and 12 months to take final action approving or disapproving the plan once it is determined to be complete.[1] Despite these requirements, the states have missed the deadlines for many initial SIP submissions, and EPA has experienced delays in its review and approval of the SIPs that have been submitted.

Delays Encountered on SIP Revisions for Ozone

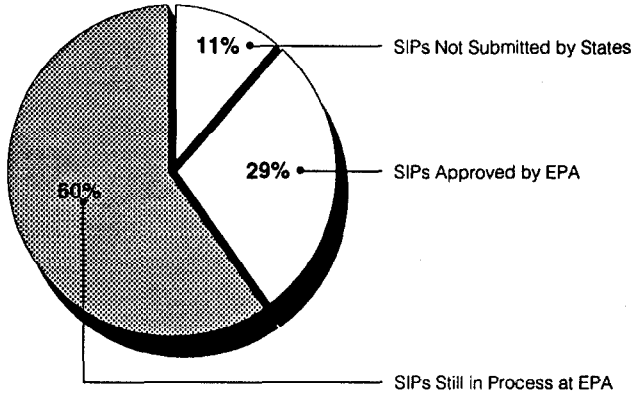
The 1990 amendments required 35 states to revise their SIPs for ozone.[2] This requirement involved changes to approximately 1,663 regulations and

[1]The Clean Air Act Amendments of 1990 provide that a SIP will be considered complete by law 6 months after the date the state submitted it if EPA has not determined whether it is complete by that time. However, EPA intends to determine whether all SIPs are complete within 60 days of their receipt.

[2]Areas that have not met the standards for ozone (designated nonattainment areas) are required to submit revisions to their SIPs to update their plans for the use of reasonably available control technologies for volatile organic compounds.

set a deadline of May 15, 1991, for the states to submit their revisions to EPA. On October 22, 1991, EPA made formal findings against 9 states and the District of Columbia for failure to submit all of their required revisions for ozone. If these states do not submit their outstanding revisions within 18 months of this formal finding, the amendments require EPA to impose sanctions against them. Furthermore, after 24 months EPA is required to substitute a federal implementation plan for the outstanding SIP. As of December 31, 1992, 12 states still had not submitted 11 percent of the required revisions for ozone.[3] (See fig. 2.1.)

Figure 2.1: Status of SIP Revisions for Ozone, as of December 31, 1992



As figure 2.1 further shows, EPA has not completed processing for the majority of the SIP revisions for ozone that it has received. The first step in EPA's processing of SIPs is to determine whether they are complete. As of December 31, 1992, EPA had exceeded 60 days for determining whether 35 percent of the revisions for ozone were complete. (See table 2.1.) Furthermore, we could not determine whether EPA had exceeded 60 days for an additional 24 percent of the revisions for ozone because EPA does not have complete data on the processing status of these SIPs.

[3]EPA officials subsequently notified GAO that all but one state had submitted their SIP revisions for ozone as of March 31, 1993.

Table 2.1: Time Taken to Determine That SIP Revisions for Ozone Were Complete

Period	Number	Percent
60 days or less	610	41
More than 60 days	512	35
Data not available	349	24
Total SIP revisions submitted	**1,471**	**100**

EPA has also delayed taking final action to approve or disapprove the SIPs once it determines their completeness. As of December 31, 1992, only 479 revisions for ozone had been approved. Of these, 50 percent required more than the 12 months allowed for approval by the 1990 amendments. (See table 2.2.) EPA does not have complete data on the processing status of an additional 11 percent of these SIPs. Furthermore, according to EPA officials, 730 of the remaining unapproved revisions for ozone have been under review at EPA for 650 days, on average, or almost double the 12 months allowed under the amendments for taking final action on SIPs. According to EPA officials, the agency is processing the revisions for ozone at a "less than desirable" rate. This delay exposes the agency to potential lawsuits for failure to approve or disapprove the SIPs within 1 year after determining that the submissions were complete.

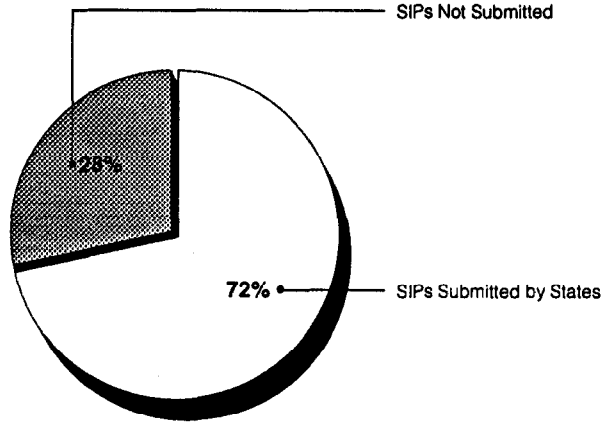
Table 2.2: Time Taken to Approve SIP Revisions for Ozone

Period	Number	Percent
12 months or less	187	39
More than 12 months	239	50
Data not available	53	11
Total revisions approved	**479**	**100**

SIPs for Particulate Matter Are Not Being Submitted or Processed on Schedule

The 1990 amendments required 23 states to submit comprehensive SIPs by November 15, 1991, for 67 areas that do not meet the national ambient air quality standard for particulate matter (PM-10). The requirements for the SIPs for PM-10 are extensive, and each SIP must include a demonstration of how the plan will allow the area to attain the standards by the statutory deadline. Despite these requirements, 11 states did not meet the initial deadline. EPA sent letters to these states to inform them that sanctions would be imposed if they did not submit their plans within 18 months. As of December 31, 1992, nine states still had not submitted 28 percent of the required SIPs to EPA. (See fig. 2.2.)

Figure 2.2: Status of SIPs for Pm-10, as of December 31, 1992



As with the SIP revisions for ozone, EPA is experiencing delays in processing the SIPs for PM-10. EPA has exceeded the 60-day requirement for determining that the SIPs are complete for more than half of those submitted. (See table 2.3.) Furthermore, as of December 31, 1992, EPA had not approved any SIPs for PM-10. A number of the SIPs currently in EPA's review process have only a few months remaining in their 12-month approval period, yet EPA has recommended only one of these SIPs for approval. EPA does not know how many, if any, of these SIPs will be approved before the deadline.

Table 2.3: Time Taken to Determine That SIPs for Pm-10 Were Complete

Period	Number	Percent
60 days or less	10	21
More than 60 days	27	56
Data not available	11	23
Total SIPs submitted	**48**	**100**

Major SIP Milestones Continue to Be Missed

Two years after the 1990 amendments were enacted, the states are still slow to submit their required SIPs. The 1990 amendments required a significant number of SIP submissions in the first 2 years following implementation. SIPs to address 17 separate requirements affecting all 50 states as well as the District of Columbia, Puerto Rico, and the Virgin Islands were due on November 15, 1992. (See table 2.4.) According to EPA's analysis, some areas failed to meet the November 15 deadline. On

January 15, 1993, EPA began sending letters to 35 states citing their failure to submit all required aspects of their SIPs.

Table 2.4: SIPs Due November 15, 1992

Submissions due by 11/15/92	Number due	Percent received
Ozone emission inventory	115	92
Carbon monoxide emission inventory	50	86
Carbon monoxide plan	14	43
Carbon monoxide contingency plan	13	31
Vehicle miles traveled forecast	14	71
Emission statement	120	58
Reasonably available control technology for volatile organic compounds	90	31
Reasonably available control technology for nitrogen oxide	93	52
New source review	203	48
Basic inspection and maintenance	55	69
Stage II vapor recovery	61	59
Enhanced inspection and maintenance	61	62
Clean fuels fleet	32	94
Transportation control measures	18	72
Revision requiring employer trip reduction program (25-percent vehicle occupancy rate reductions)	17	35
Oxygenated fuel program	52	96
Small business assistance programs	53	66
Total	**1,061**	**62**

Source: Regional Operations Branch, Office of Air Quality Planning and Standards, EPA.

In addition to being concerned about the delays in the SIP submissions, EPA is concerned about whether the SIPs it has received contain all of the information necessary to meet the criteria for approval. EPA officials expect that some submissions will not contain all of the required information and, consequently, will be returned to the state or local agency.

In the case of 2 of the 17 required SIPs—emission inventories for carbon monoxide and ozone—EPA is concerned that many of the submissions will not meet the criteria for approval. The amendments required that 40 states with a total of 165 areas that do not meet national standards for ozone and carbon monoxide submit comprehensive, accurate, and current

inventories of actual emissions of volatile organic compounds (VOC), nitrogen oxides (NO_x), and carbon monoxide (CO) from all sources.[4] These inventories serve as the basis for other statutory requirements, such as the 15-percent reduction plans for ozone that are due by November 15, 1993. According to EPA officials, delays in approval of these SIPs will likely slow the fulfillment of other requirements that build on these inventories and could ultimately affect attainment of the national ambient air quality standards.

Although some of the emission inventories were submitted late, as of January 15, 1993, 92 percent of the areas that have not attained the national standard for ozone and 86 percent of the areas that have not attained the standard for carbon monoxide had submitted the required inventories to EPA's regional offices. Six states were sent letters citing their failure to submit their required emission inventories. To be considered a complete submittal, an inventory must contain five components.[5] EPA has determined that all the areas that submitted their SIPs included these components. EPA is concerned, however, that even though the emission inventories met the initial submission requirement, none may meet the criteria of the more extensive technical reviews and therefore will not be approved.

In addition to being concerned about potential inadequacies in the SIPs themselves, EPA is concerned about potential problems in dealing with the review requirements for the 17 required SIPs. Delays may be encountered as the submissions go through EPA's lengthy SIP review and approval process. These 17 SIP requirements are introducing an additional 1,061 elements into EPA's already slow and overburdened review process.

Management Oversight of SIP Processing Could Be Improved

Concern over long-standing problems with delays in processing SIPs has prompted EPA to take a number of actions designed to expedite SIP reviews and approvals and to improve EPA's oversight of the SIP process. As discussed in chapter 1, EPA has attempted to eliminate excessive reviews by matching the intensity of reviews to the importance of the submissions. As a result, many SIPs may now be approved by the regional offices with little or no headquarters involvement.

[4]Emissions of VOCs and nitrogen oxides are the primary components of ground-level ozone.

[5]The required components are point, area, mobile, and biogenic (ozone) emission estimates as well as the appropriate documentation.

With the decentralization of the SIP review and approval process, effective oversight by top EPA managers is important to ensure that the states' plans are submitted on time and that they are processed expeditiously. EPA acknowledges that in the past, SIPs have been given a relatively low priority and the agency has not had assurance that problems in processing the SIPs were promptly identified and resolved.

In an effort to improve oversight of the SIP process, EPA has (1) attempted to improve the information system that it uses to track actions involving SIPs and emphasize prompt identification and resolution of processing problems and (2) initiated regional program reviews designed to identify processing deficiencies causing delays.[6] Thus far, however, the information system has not provided managers with all the information needed to accurately monitor the SIP submissions to ensure that they are reviewed and approved by the statutory deadlines. Furthermore, EPA's program reviews have not identified deficiencies significantly delaying SIP processing.

Management Information System Does Not Provide Needed Oversight

Accurate and up-to-date information is essential if EPA managers are to have a true picture of the status of SIPs. In an effort to more effectively manage the SIP submission and review process and to ensure timely decisions on the SIPs, EPA expanded its management information system. In the expanded system, specific information on when submissions are received in the regional offices and the dates and results of completeness reviews and final approvals is supposed to be provided to EPA managers. This information should enable managers to accurately monitor the status of SIP reviews and the time allocated to the reviews.

While EPA's management information system has provided some helpful information for managing SIP processing, incomplete and inaccurate data have limited its effectiveness. We reviewed data entered into the management information system for 126 SIPs—a total of 1,367 separate revisions. About 65 percent of the revisions contained incomplete data, with various key dates missing. According to EPA headquarters officials, incorrect information is being entered by the regional offices and some correct information is not being updated in a timely manner. For example, some regions have incorrectly entered inspection and maintenance data and data on SIP revisions for carbon monoxide in the management information system as revisions for ozone. A year after the deadline for

[6]SIPTRAX is the technical name for EPA's information system for tracking the submission, review, and approval of SIPs.

submission of revisions for ozone, EPA officials are still trying to identify the incorrect information and remove it from the data base.

EPA officials acknowledge that while improvements have been made, information on the status of SIP submissions and reviews is not as accurate and complete as it should be. According to EPA officials, while this information may be available in the regional offices, it often is not forwarded to headquarters. In an August 1992 memorandum, the Office of Air Quality Planning and Standards Regional Operations Branch Chief informed regional officials that he had identified "holes" in the SIP data being entered into the management information system by the regional offices and urged them to correct their entries. According to the Branch Chief, some entries contained little information, although the SIP submissions had been in the regions for many months. He stated that complete information is essential to provide EPA managers with an accurate account of the amount of time being spent on reviews and approvals of the SIPs.

Regional Program Reviews Are Not Identifying Causes for Processing Delays

Periodic reviews of regional SIP processing were initiated to help improve management oversight of the decentralized SIP review and approval processes. The reviews are designed to examine all areas of SIP processing by the regional offices, including the methods used to minimize processing backlogs. Through the reviews, problems causing delays in SIP processing are to be promptly identified and brought to the attention of EPA managers. Regions handling large numbers or especially complex SIPs are to receive greater attention and more frequent reviews.

According to EPA officials, however, constraints on travel funds have limited the frequency and scope of the reviews. For example, while EPA officials have stated that each regional office should be reviewed annually, the regions have only been examined once since 1989. Furthermore, four regions were reviewed for the first time in 1992. And, while EPA officials are aware of substantial delays in the processing of SIPs for ozone and particulate matter, the agency has not targeted these SIPs for more frequent reviews. Also, because program reviews deal with the SIPs that have already completed EPA's review process, EPA misses the opportunity to examine the great majority of SIPs that are still in the review process but are experiencing significant delays.

EPA Is Making Additional Efforts to Improve Oversight of SIP Processing

Recognizing that its initiatives to speed up the review and approval of SIPs and to improve oversight of the SIP process have had marginal success, EPA has recently taken a more proactive approach to managing SIPs. In addition to its information system for tracking SIPs and its regional program reviews, EPA has initiated other efforts to address continuing delays in processing. According to EPA officials, the task of reviewing and approving SIPs competes for resources with other legislative requirements, such as the operating permits program under title V. To maximize its use of limited resources, EPA is considering the delegation of additional authority to approve SIPs to the regional administrators to further eliminate duplicate levels of review. Furthermore, in August 1992 EPA headquarters officials requested that each regional office examine and document the extent of processing delays for SIP revisions for ozone and SIPs for particulate matter and to explain the reasons for the delays. These efforts, however, have not been expanded to encompass other SIP processing delays. The agency has begun to produce quarterly management reports summarizing the status of SIP submissions and EPA's progress in reviewing and approving them. EPA has also started to assess and report on the likelihood that some past-due SIPs will be submitted and approved.

Conclusions

Success in achieving the goals of the Clean Air Act depends, to a large extent, on EPA's ability to get started quickly in meeting the many initial tasks required by the 1990 amendments. While the amendments include requirements to help facilitate SIP submissions and processing, and EPA has taken initiatives that attempt to promptly identify and correct problems contributing to delays, significant delays in the submission and approval of SIPs persist. The states' failure to submit the required SIPs on time and, in some cases, to submit them at all and EPA's failure to promptly review and approve or disapprove SIP submissions appear to be undermining the success of the SIP program.

While decentralization of the SIP review and approval process can potentially shorten the time taken to complete these actions, it must be accompanied by effective management oversight to ensure that problems delaying SIP submissions and approvals are quickly identified and corrected. Although EPA's management information system has the potential for providing EPA managers with an effective system for monitoring actions pertaining to SIPs and identifying processing problems, its effectiveness has been hampered by inaccurate and incomplete data. Furthermore, while EPA's regional program reviews of SIP processing can be an effective way of identifying and alerting EPA managers of deficiencies

causing delays, the effectiveness of the reviews has been reduced by the limited number completed and their narrow scope.

Although EPA has taken a more proactive approach to expediting SIP reviews and approvals and improving oversight of the process, additional efforts may be needed. For example, further delegation of authority to approve SIPs to the regional offices appears to be a logical step toward minimizing delays in SIP processing. Unless further improvements are made, delays will likely worsen over the next several years as additional SIP submissions are due. EPA's delays in reaching agreement with the states on their SIPs may in some cases postpone the implementation of effective pollution control strategies. In turn, the improvements in air quality needed for some areas to meet national air quality standards by the congressionally imposed deadlines may be delayed.

Recommendations to the Administrator, EPA

Given the importance of SIPs to the improvement of air quality, the history of problems in the timely submission and processing of the SIPs, and the likelihood of future delays, it is imperative that EPA assign a high priority to efficiently and effectively meeting legislative requirements for SIPs. Consequently, we recommend that the EPA Administrator

- expand EPA's recent efforts to identify the causes for delays in the submission, review and approval of the SIPs for ozone and PM-10 by undertaking similar efforts regarding delays in processing other SIPs;
- explore other options, such as further delegation of SIP approval authority to regional administrators, to expedite SIP processing and minimize delays in the large number of actions required on SIPs in the next several years;
- direct EPA's regional administrators to comply with the requirements for promptly and accurately entering, updating, and reporting in the agency's management information system all information on actions taken to process SIPs; and
- revise EPA's criteria to require annual program reviews of SIP processing at each regional office and to include SIPs that are still in EPA's review process and experiencing significant delays, and also ensure that managers follow existing criteria requiring SIP reviews to target areas that are experiencing or have experienced significant processing delays.

SIP Process Could Be Improved Through Use of Operating Permits

As discussed in chapter 1, problems have plagued the SIP process from the start. The process has become increasingly complex and labor intensive, and a large percentage of SIPs have been significantly delayed or have not been approved. To modify a SIP, even for a single source of pollution, a state may spend 2 years or more going through the state rulemaking process, and then go through a similar process at the federal level. This exercise creates frustration and uncertainty for all involved and diminishes the effectiveness of the SIPs in facilitating improvements in air quality.

Efforts by EPA to improve the overall quality of SIPs and to speed up their review and approval have had only marginal success. Increased management attention to identifying and correcting problems that delay SIP processing should help improve the effectiveness of the process. However, complexities and resource requirements inherent in the concept of using SIPs will continue to make the process extremely difficult to administer, and further delays are likely. According to EPA officials, moving details such as emission limits, monitoring and reporting procedures, and other requirements from the SIPs to the operating permits for individual sources should increase the flexibility of the SIPs and allow revisions to be made more expeditiously.

Permits Could Provide Flexibility in Meeting SIP Requirements

The Clean Air Act Amendments of 1990 reaffirmed that SIPs are the primary means for demonstrating how and when the states and local areas will comply with national air quality standards. However, in addition to attempting to improve the SIP process, the Congress established a new program of operating permits (title V) designed to, among other things, supplement the SIP process. The title V program requires an estimated 35,000 major and 350,000 minor sources of air pollution to obtain operating permits that must be approved by both state pollution control agencies and EPA. The permits will specify the emission limits, control measures to be used, and monitoring and reporting requirements for each pollution source. While the SIPs generally provide this information, it is envisioned that the permits will supply more specific information and will make SIP requirements more enforceable.

Permits Can Serve to Enforce SIP Requirements

While not replacing the SIPs, title V permits potentially offer significant opportunities for improving the efficiency and effectiveness of the SIP process. The permits will serve as a means of implementing and enforcing SIP requirements by ensuring that all requirements applicable to an

individual air pollution source are identified and incorporated into a single document. Currently, these requirements are scattered among numerous SIP provisions and are often written to cover broad categories of pollution sources. Therefore, it is often unclear how these requirements apply to the thousands of individual air pollution sources. As a result, EPA has difficulty knowing whether a source is in compliance with Clean Air Act regulations. Title V permits should help clarify accountability for emission reductions and improve enforcement of SIP requirements.

Detailed Permits Could Lead to More Flexible SIPs

According to EPA officials, one of the benefits of an effective permit program is that it will allow SIPs to be more general and flexible because detailed requirements—such as those for inspections, monitoring, compliance certification, and reporting—can be moved from the SIPs into the operating permits for major pollution sources. To take advantage of the flexibility provided by the title V program, the states are allowed to develop alternative emission limits through their permit programs. Under this provision, the states may adopt SIP provisions that would authorize pollution sources to meet either emission limits specified in the SIPs or equivalent limits contained in the individual permits. Like emission limits specified in the SIPs, those contained in the permits must be quantifiable, accountable, enforceable, and based on procedures that can be replicated. The states may adopt equivalent emission limits for all SIP requirements or only for selected requirements that the states consider appropriate.

Also, the title V permit program could potentially reduce the time it takes to make numerous revisions to SIP requirements for individual pollution sources. Revisions could be made more efficiently by modifying the source's permit instead of requiring revisions to the SIPs that must go through both the traditional state and federal review and approval processes. In some cases, permit programs may allow changes to be made without even revising the permits. For example, SIPs that contain rules and implementing procedures for generic emissions trading may allow trading to occur without revisions of the individual permits.

EPA and States Face Challenges in Implementing Permit Programs

While recognizing the potential of operating permits for relieving some of the difficulties experienced with SIPs, EPA officials acknowledge that it will take time to complete the transition from a traditional regulatory system in which the SIPs are the primary tool for implementing and enforcing Clean Air Act requirements to one in which the permits ultimately assume much of that responsibility.

One of the challenges faced by EPA officials in identifying opportunities for more flexible SIPs is providing assurance that permits will help improve the timeliness and effectiveness of SIPs, rather than adding to the existing burdens that SIPs place on EPA, state and local pollution control agencies, and pollution sources. To address this challenge, EPA is considering the best way to ensure a smooth transition from the traditional, detailed SIPs to more general SIPs, with the permits specifying how overall SIP objectives—particularly emission limitations—apply to individual pollution sources. In the preamble to its permit rule, EPA states that it will issue guidance to the states on how best to revise their SIPs to take advantage of the flexibility provided by title V.[1] The guidance is to be proposed within one year after the permit rules are issued and to be finalized a year later.

Questions have also been raised about the states' and EPA's ability to effectively implement the title V permit program within the time required by the 1990 amendments. A delay of approximately 8 months in issuing the final permit rules and delays by EPA in providing guidance and assistance to the states may have already affected implementation of the program. For example, some states have not completed the legislative actions necessary to implement the program and collect fees from pollution sources to cover the cost of operating the permit program. Some states are not expected to meet the November 1993 deadline for submitting their permit programs for EPA's review.

Indications are that EPA's proposed staffing levels may not be sufficient to provide the needed oversight of the program and that some states are establishing permit fees below the estimated cost of operating the program to give their states an advantage in attracting industry. Furthermore, the Natural Resources Defense Council and others have sued EPA over a controversial provision of the permit rule that allows pollution sources to increase emissions above permitted levels without approval or public review. The suit alleges that the provision is not consistent with requirements of the 1990 amendments. While the impact that the legal and other challenges will have on the timely implementation of the permit program is uncertain, EPA managers are encouraging the states to move forward with the development of their permitting programs. These and other issues potentially delaying the implementation of the permit program are discussed in detail in our report Air Pollution: Difficulties in Implementing a National Air Permit Program (GAO/RCED-93-59, Feb. 23, 1993). The report recommends that the EPA Administrator expedite efforts

[1] 57 Fed. Reg. 32250 (July 21, 1992).

to provide guidance and assistance to the states to overcome legislative, financial, and other obstacles to promptly implement the title V permitting program.

Conclusions

Continuing delays in the states' submissions of SIPs and EPA's review and approval of them as well as the marginal success of EPA's efforts to improve the SIP process suggest that it may be time to take a fresh look at SIPs. While improved management oversight directed at identifying and addressing the underlying causes for the delays should help, complexities inherent in the SIP processes at both the state and federal levels will continue to make the development and approval of SIPs cumbersome and will likely contribute to additional delays. In view of the significance and long-standing nature of the problems with SIP submissions, reviews, and approvals, combining a short-term strategy of improved management oversight with a long-term strategy of using the operating permits to supplement the SIPs could provide EPA with a better strategy for ensuring compliance with national air quality standards.

While not a total solution, title V permits offer significant opportunities for improving the timeliness and enforcement of SIP requirements. Transferring detailed requirements from the SIPs to the permits for individual pollution sources should allow revisions to be made more quickly. However, making the transition from relying on the SIPs to demonstrate compliance with Clean Air Act requirements to relying more on the permits to meet those requirements is complicated and will take time. EPA must ensure that title V permits contribute to a more efficient SIP process, rather than adding another level of requirements on top of the existing ones. Also, questions about the states' and EPA's ability to implement the title V program on schedule and the states' ability to collect sufficient fees from pollution sources to cover the cost of the program must be addressed promptly.

Recommendations to the Administrator, EPA

In view of the potential for the operating permits to strengthen and expedite the SIP process, we recommend that the EPA Administrator

- continue the agency's efforts to propose and finalize guidance to the states on how best to revise their SIPs to take advantage of the flexibility offered by title V permits and
- ensure that EPA managers work closely with the states to develop and implement permit programs that will facilitate moving from the current

regulatory system that relies on SIPs as the primary means for ensuring compliance with Clean Air Act requirements to one in which title V permits assume much of that responsibility.

Requirements and Deadlines for Major State Implementation Plan Submissions, 1991-94

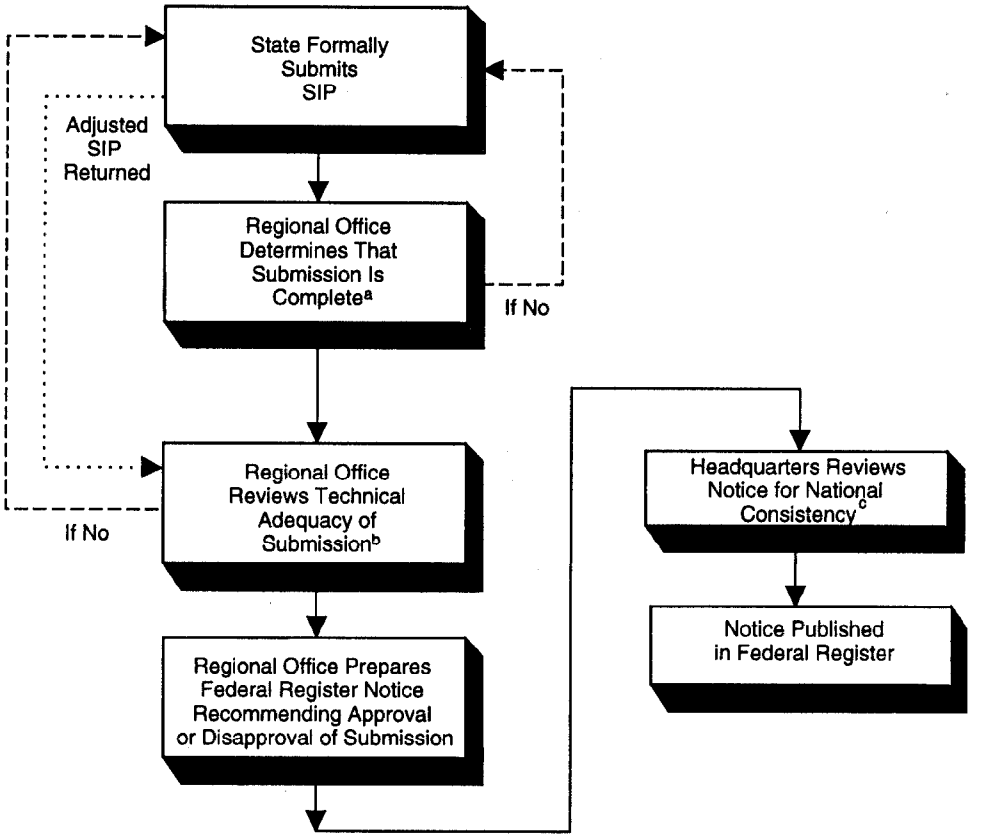
State action/submission	Date
Reasonably available control technology (RACT)	
Submit corrections to RACT rules for ozone areas designated and classified at amendments' enactment.	May 15, 1991
Submit rules for volatile organic compound (VOC) and nitrogen oxide (NO_x) sources in ozone areas classified as "moderate" and above, including (1) rules for VOC sources covered by an existing control technique guideline (CTG), (2) RACT rules for other major VOC sources, (3) RACT rules for major NO_x sources unless state can show that NO_x control would not contribute to attainment of standard, and (4) Stage II vapor recovery program for gasoline stations.	November 15, 1992
Submit measures for transport regions, including (1) RACT and new source review (NSR) rules for VOC and NO_x sources, including CTGs for VOC sources and RACT for major VOC and NO_x sources (except no RACT or NSR rules are required for NO_x sources if state shows that NO_x control would not contribute to attainment of standard), and (2) enhanced inspection and maintenance program in metropolitan statistical areas with populations larger than 100,000.	November 15, 1992
Particulate matter	
Submit SIP for initial PM-10 nonattainment areas, including (1) demonstration of attainment by 12/31/94 (or demonstrate that attainment by 12/31/94 is impracticable) and (2) provision to ensure that reasonably available control measures (RACM) will be implemented by 12/10/93.	November 15, 1991
Submit NSR permit program for initial PM-10 nonattainment areas.	June 30, 1992
Submit revised SIPs for initial PM-10 nonattainment areas reclassified as "serious" containing (1) provisions ensuring that best available control measures will be implemented within 4 years and (2) quantitative milestones demonstrating reasonable further progress.	June 30, 1993
Emission inventories	
Submit emission inventory for ozone and carbon monoxide (CO) areas.	November 15, 1992
Other	
Submit revised SIPs for sulfur dioxide and lead nonattainment areas lacking approved SIPs.	May 15, 1992
Submit enhanced inspection and maintenance program for "serious," "severe," and "extreme" ozone areas and "moderate" CO areas with levels greater than 12.7 parts per million.	November 15, 1992
Submit SIP revision for ozone areas, showing that VOC sources must submit annual emission statements (i.e., a report of their emissions each year).	November 15, 1992

(continued)

State action/submission	Date
Submit NSR program for ozone areas; include NSR requirements for VOC and NO_x sources unless state can demonstrate that NO_x control would not contribute to attainment of standard.	November 15, 1992
Submit attainment demonstration for CO areas with levels greater than 12.7 parts per million, including vehicle miles traveled (VMT) forecasts and contingency measures to be implemented if VMT forecasts are exceeded.	November 15, 1992
Submit oxygenated fuel program for CO areas with levels greater than 9.5 parts per million (1988-89 data).	November 15 1992
Submit transportation control measures (TCM) as necessary to offset growth in VMT and submit employer trip reduction provisions in "severe" and "extreme" ozone areas and "serious" CO areas.	November 15, 1992
Submit revision defining major source as 50 tons per year for "serious" CO areas in which stationary sources contribute significantly to nonattainment.	November 15, 1992
Submit required provisions of small business technical assistance program.	November 15, 1992
Submit procedures to ensure conformity between federal projects (especially highway projects) and the SIP.	November 15, 1992
Submit analysis and measures to achieve 15 percent reduction in VOC emissions in "moderate," "serious," "severe," and "extreme" ozone areas within 6 years after amendments' enactment.	November 15, 1993
Submit requirements for large boilers (new or modified) in "extreme" ozone areas to burn clean fuels or use advanced technology to reduce NO_x emissions.	November 15, 1993
Submit state operating permit program.	November 15, 1993
Submit contingency measures for "serious," "severe," and "extreme" ozone areas to be implemented if milestones (emission reduction targets) are not achieved.	November 15, 1994
Submit demonstration of attainment of standard and reasonable further progress (3 percent per year) for "serious," "severe," and "extreme" ozone areas; documentation is to show that the plan will achieve 3-percent annual VOC reductions beginning in 6th year until attainment of standard.	November 15, 1994

Source: Memo from Assistant Administrator for Air and Radiation, EPA, to state governors, dated December 13, 1990.

Processing Sequence for SIP Submissions



[a]EPA's regional offices have 60 days to determine if a SIP submission contains all of the required information. If the regional office determines that the submission is incomplete, the state must add the specified information and submit the SIP again.

[b]Once the responsible EPA regional office determines that a SIP is complete, an adequacy review is performed. In this review, the office examines the technical adequacy of the SIP to bring the state into compliance with national ambient air quality standards. If the regional office does not consider the submission to be adequate, it may be returned to the state for adjustment.

[c]The level of review at headquarters depends largely on the significance of the SIP being examined. SIPs that EPA deems to have a significant impact on the implementation of national programs (Table I SIPs) undergo full headquarters review. SIPs that EPA deems to have moderate national significance (Table II SIPs) undergo a headquarters review limited to 30 days. SIPs having the least national significance (Table III SIPs) are delegated to the appropriate regional administrator for decision and sign-off. EPA has 12 months from the time the SIP is found to be complete to take final action approving or disapproving the SIP.

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