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Report to the Ranking Minority Member, Committee on Government Reform, House of Representatives

April 2001

AIR POLLUTION

EPA Should Improve Oversight of Emissions Reporting by Large Facilities

GAO-01-46

Contents

Abbreviations

EPA Environmental Protection Agency
GAO General Accounting Office

GAO
Accountability * Integrity * Reliability

United States General Accounting Office
Washington, DC 20548

April 6, 2001

The Honorable Henry A. Waxman
Ranking Minority Member
Committee on Government Reform
House of Representatives

Dear Mr. Waxman:

In 1999, 62 million Americans lived in areas that did not meet federal air quality standards. Under the Clean Air Act, the U.S. Environmental Protection Agency (EPA) is responsible for overseeing the states' air quality programs and for ensuring that the states appropriately implement the act's requirements. Title V of the Clean Air Act Amendments of 1990 requires nearly 20,000 major stationary sources (such as factories that emit more than specified levels of pollutants) to obtain and comply with the conditions of a permit that consolidates all applicable air pollution control requirements.[1] Generally, the permits contain provisions that limit emissions of pollutants as well as requirements for record keeping and monitoring. In addition, most major sources must report their aggregate annual emissions to their state air quality agency and pay fees based partly or entirely on their level of emissions.[2] While these reports are not intended to demonstrate compliance with Clean Air Act requirements, their accuracy is important for determining the amount of permit fees that major sources must pay and for developing state and national emission inventories, which are used to develop air pollution control strategies.

[1]Under title V of the Clean Air Act, sources emitting pollutants above certain thresholds are classified as "major sources" and must obtain title V operating permits. According to an EPA air quality official, as of January 2001, about 19,880 major sources had already received or could expect to receive a title V permit. The official told us that almost all facilities that had not yet received their title V permit already had some form of state-issued air quality permit. Sources that emit pollutants below major source thresholds are called "minor sources" and do not have to obtain a title V permit. Some minor sources, called "synthetic minors," have the potential to emit pollutants at major source levels but choose to limit their operations and emit below these thresholds. For simplicity, we refer to major sources and synthetic minors as "large sources," and distinguish between the two where necessary.

[2]EPA has authorized all 50 states and 63 local governmental units to act as clean air regulatory agencies and issue title V permits. For simplicity, in this report, we refer to all of them as states.

Concerned about the air quality consequences of emissions that exceed allowable levels, you asked us to provide information on (1) the steps that EPA and state regulators take to verify that large sources comply with their title V or state permit and the extent of compliance found; (2) the steps that regulators take to verify the accuracy of emissions reports submitted by large industrial sources and the extent of errors found; and (3) the steps that EPA is taking, if any, to improve its oversight of these processes. To address these questions, we performed audit work at EPA's headquarters, 2 of EPA's 10 regional offices, and the air quality offices of four states (two states within each of two of EPA's regions).[3] We selected these regions and states because of their large numbers of stationary sources and their levels of recent regulatory activity. Within each region, we accompanied state air quality program officials on inspections of large facilities. For information on the extent of compliance and the extent of errors in emissions reports, we used data for fiscal years 1998 and 1999, the most recent years for which data were available at the time of our review.

Results in Brief

EPA requires major sources to certify at least annually that they comply with all applicable clean air regulations and to provide information on deviations from permit conditions. Furthermore, EPA and states routinely inspect large sources to monitor their compliance with their title V or state permit. Federal and state regulators performed about 17,800 routine inspections each year in fiscal years 1998 and 1999 and found that about 88 to 89 percent of the facilities complied with their permit. However, according to an EPA air enforcement official, routine inspections do not necessarily identify instances in which the facilities have made physical or operating changes that could increase emissions and require revising their permits. Recognizing this shortcoming, EPA has undertaken intensive investigations, targeted at selected facilities in four industries: electric utilities, petroleum refining, pulp and paper mills, and wood products. These investigations have found widespread noncompliance with certain air pollution control requirements. For example, EPA found that 76 percent of wood products facilities that it investigated had made operational changes without revising their permits. Moreover, EPA's investigations in the refinery industry found widespread underreporting of emissions from leaking valves and other equipment.

[3]The states were Pennsylvania and Virginia (EPA Region III) and Kentucky and North Carolina (EPA Region IV).

All four of the states included in our review generally check the calculations in emissions reports submitted by major sources, but the states vary in the extent to which they seek to verify the accuracy of the supporting information. In preparing emissions reports, which are not intended to demonstrate compliance with Clean Air Act requirements, large facilities rely primarily on estimates and extrapolation instead of directly measuring their pollutant emissions. To estimate their annual emissions of each pollutant, most facilities use industry- and pollutant-specific emissions factors—average emissions rates that have been calculated for various combinations of industrial processes, raw materials, and types of pollution control devices. EPA's data show that, nationally, emissions factors are used for about 80 percent of emissions determinations. Although these states do not maintain data on the number and severity of the problems identified with the emissions reports, officials in three of the four states told us they often found reports questionable enough to require contacting the facility. For example, officials in one state estimated that one-third or more of the reports had to be resubmitted.

EPA has taken three steps to improve its oversight of facilities' compliance with the Clean Air Act but does not plan to enhance its oversight of the states' processes for reviewing large facilities' emissions reports. First, EPA is training and encouraging personnel in its regional offices and the states to conduct intensive investigations. Second, EPA is revising its strategy for monitoring facilities' compliance with the Clean Air Act's requirements. While not yet completed, the preliminary strategy calls for an increase in direct measurements of pollutant emissions. EPA is currently negotiating its proposed strategy with state agency officials and plans to issue the document in April 2001. Third, in September 1998, EPA issued guidance encouraging large facilities to use more reliable methods, such as continuous emissions monitors and source tests, to support certifications of compliance with operating permits. This guidance, however, was set aside by an April 2000 court decision, which found that EPA did not comply with necessary rule-making procedures. EPA did not appeal the decision and is currently evaluating other regulatory options that would achieve the same objective. EPA performs limited oversight of states' efforts to verify large facilities' emissions reports. Although it has encouraged its regional offices to evaluate states' emissions fee programs for major sources, EPA has not asked them to evaluate the processes used to verify emissions reports. We are making a recommendation to the EPA Administrator designed to improve EPA's oversight of the states' review of emissions reports by evaluating the adequacy of these reviews and, if necessary, strengthening them.

Background

Under the Clean Air Act, EPA has set air quality standards for six principal pollutants—the so-called "criteria pollutants"—to protect public health. These are carbon monoxide, lead, nitrogen dioxide, particulate matter, and sulfur dioxide, as well as ground-level ozone. The latter is not directly emitted by stationary sources but is formed by the airborne reaction of heat and sunlight with nitrogen oxides and volatile organic compounds, which are emitted by the sources. For the criteria pollutants, EPA sets limits—called "national ambient air quality standards"—on the acceptable levels in the ambient air anywhere in the United States. These limits are intended to ensure that all Americans have the same basic health and environmental protections.

In addition to the six principal pollutants, EPA regulates 188 hazardous pollutants known as "air toxics." People exposed to toxic air pollution—which can be highly localized near industrial sources—have an increased chance of getting cancer and experiencing other serious health effects. Under the Clean Air Act, EPA specifies a limit on emissions of air toxics that is based on the achievable control technology. EPA is also to evaluate the residual risk to human health after the adoption of the technology standards and, if necessary, establish more stringent health-based standards.[4]

Large Stationary Sources Emit Significant Amounts of Regulated Pollutants

Industrial facilities emit over 100 million tons of pollutants into the air of the United States each year. Many of these sources are large stationary sources, such as chemical manufacturers and electric utilities. For the purpose of the Clean Air Act, these facilities fall into two categories: major sources and minor sources. Generally, under the Clean Air Act, major sources are facilities that annually emit or have the potential to annually emit (1) 10 or more tons of any one toxic air pollutant, (2) 25 tons of any combination of toxic air pollutants, or (3) 100 or more tons of any of the six principal pollutants.[5] Minor sources are those facilities that emit below these thresholds. Some minor sources are referred to as "synthetic minors." While not defined in the act, synthetic minors are facilities that,

[4]As we reported in April 2000, EPA had met 117 of 221 Clean Air Act requirements relating to air toxics, although 102 of these requirements were met late. (See *Air Pollution: Status of Implementation and Issues of the Clean Air Act Amendments of 1990* [GAO/RCED-00-72; Apr. 17, 2000]).

[5]The definition of a major source also depends on the air quality in its geographic area. For example, sources emitting as little as 10 tons of volatile organic compounds a year may be classified as major sources in areas with the poorest air quality.

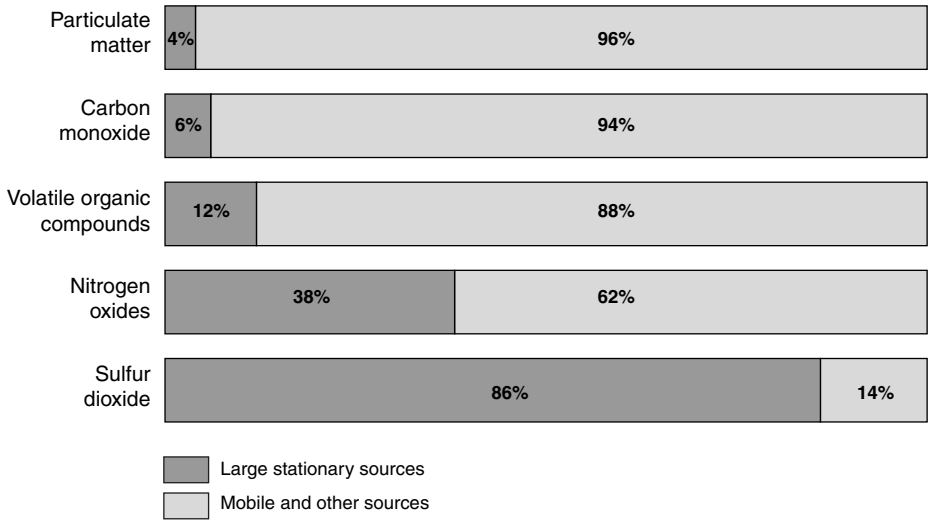
according to EPA, have the potential to emit pollutants at the same levels as major sources but choose to limit their operations, thus reducing their emissions to levels below those of major sources. According to an EPA air quality official, as of January 2001, about 19,880 major sources had already received or expected to receive title V permits. According to EPA officials, the agency does not maintain information on the total number of minor sources.

As shown in figure 1, large stationary sources accounted for varying portions of the nation's emissions of certain regulated air pollutants in 1998. They accounted for 86 percent of the sulfur dioxide emissions and 38 percent of nitrogen oxide emissions in 1998. On the other hand, large stationary sources emitted only 4 percent of particulate matter, 6 percent of carbon monoxide, and 12 percent of volatile organic compound emissions in 1998.[6] In addition, major sources accounted for nearly 24 percent of the emissions of toxic air pollutants in 1996 (the most recent year for which EPA has data).[7]

[6]These data were obtained from EPA's National Emission Trends database. According to an EPA official, for purposes of the database, large stationary sources include most major sources as well as some smaller ones. This database does not contain information on lead emissions. Data on particulate matter emissions are for particles equal to or less than 10 microns in size.

[7]These data were obtained from EPA's 1996 National Toxics Inventory.

Figure 1: Large Stationary Sources as a Source of Selected Air Pollutants, 1998



Source: EPA.

In monitoring air quality, regulators look at the levels of pollutant emissions—the amounts being emitted into the air—as well as measured concentrations—the levels detected in ambient air. According to EPA's data, national emissions of carbon monoxide, lead, sulfur dioxide, and volatile organic compounds decreased from 1990 through 1998, while emissions of nitrogen oxides and particulate matter increased. According to data from EPA's national network of air quality monitors, the concentrations of all six pollutants, on an aggregate national basis, decreased from 1990 through 1999. These improvements ranged from a 4-percent decrease in ground-level ozone to a 60-percent decrease in lead concentrations. Despite these improvements, in 1999, approximately 23 percent of Americans (62 million) lived in areas that did not meet federal ambient air quality standards for at least one of the six principal pollutants.

EPA and States Share Responsibility for Administering Clean Air Program

Subject to EPA's oversight, state agencies are responsible for administering air quality programs. The Clean Air Act Amendments of 1990 provide for these agencies to issue title V permits to major stationary sources within their jurisdictions. According to an EPA official who manages the title V permit program, all 113 state and local agencies have federally approved title V permit programs.

Title V permits contain emissions-related, record-keeping, and monitoring requirements. Emissions-related requirements can include limitations on emissions per year or per hour, or on total production levels. In addition, some facilities have no limits on the amount of total pollution they emit but, instead, have efficiency standards that require them to remove a certain proportion of the pollution they generate by using specific pollution control equipment. For example, a facility might be required to operate control equipment that removes 90 percent of the pollution generated by a particular process or production line.

Record-keeping and monitoring requirements specify activities that facilities must perform to demonstrate compliance with their title V or state permit. For example, a permit may require a facility to maintain information on its operating conditions, such as the amount of raw materials used or outputs produced.

According to EPA officials responsible for overseeing states' permit programs, these agencies finance their title V permit programs (including permits for and inspections of major sources) with fees paid by regulated facilities. An EPA official responsible for overseeing states' title V permit programs stated that, as of December 2000, the national average fee paid by major sources was $28 per ton of pollution emitted. According to EPA officials responsible for developing emissions inventories and air quality policies, in addition to serving as the basis for fees, the emissions reports are used in developing emissions inventories. These officials also explained that the inventories inform regulatory decision-making at the local, state, and federal levels. For example, regulators use them to develop control strategies and to establish permit requirements.

Routine Inspections Generally Found Compliance, but Intensive Investigations Found Widespread Noncompliance

Each year, EPA and states perform thousands of inspections at large facilities to monitor their compliance with requirements contained in title V and state permits. However, because of the limitations of routine inspections and suspected noncompliance, EPA initiated intensive investigations within four industries. These intensive investigations found indications of significant noncompliance with provisions of the Clean Air Act that routine inspections do not generally address.

While inspections and intensive investigations are used to monitor compliance, title V permits hold company officials at major sources accountable for compliance by requiring those officials to submit at least once a year a statement certifying as to their compliance status with all applicable clean air requirements. Major sources must also report every 6

months on all deviations from the permit's requirements. A company official must attest to the truth, accuracy, and completeness of the statements.[8]

Routine Inspections May Not Detect Emissions Violations

Routine inspections, which focus on compliance with the permits, address emissions-related, record-keeping, and monitoring requirements. According to EPA's guidance, a routine inspection must include the following three components:

- *Observing visible emissions*. This inspection technique can indicate whether the measures to control certain pollutants emitted from a facility are being properly operated and maintained.
- *Observing and recording data on control devices and operating conditions*. This enables inspectors to compare observed operating conditions (such as temperature or production levels) with those specified in a facility's permit.
- *Reviewing records and log books on the facility's operations*. These records provide information on a facility's operating conditions during times when inspectors are not present at the facility.

Nationally, EPA and state officials conducted routine and other inspections at 17,812 large sources in 1999, according to EPA's data. Of these, 88 percent (15,618 facilities) were found to be in compliance with their permit, while 12 percent (2,194 facilities) did not fully comply. EPA's data for 1998 show similar national results: 89 percent (15,805 facilities) were in compliance, and 11 percent (1,997 facilities) were not. EPA does not maintain data on the extent to which facilities found in noncompliance directly violated emissions-related requirements rather than record-keeping or monitoring requirements. An EPA Air Enforcement Division official told us that administrative and record-keeping violations sometimes conceal emissions-related violations. For example, the official said that if a facility has a limit on its emissions per unit of production but fails to maintain production records, an inspector might not be able to determine if excess emissions had occurred. In such a case, the inspector might cite the facility for noncompliance with a record-keeping provision.

[8]EPA's compliance data administrator told us that the agency could not provide information on the number of cases where major sources self-report noncompliance or deviations from permit requirements because state agencies are not required to provide EPA with this information.

The six inspections we observed (at a chemical manufacturer, a diesel engine manufacturer, a fiberboard manufacturer, a municipal waste incinerator, an absorbent material manufacturer, and a steel mini mill) illustrate the limitations of routine inspections. The permits for the six facilities contained various limits on emissions and production levels. All six facilities had production-based and hourly emissions limits for at least some of their production lines. The permits for five of the six facilities imposed aggregate annual limits for some or all of the pollutants that the facilities emit. For example, the permit for the diesel engine manufacturer specified an annual limit on benzene (a toxic air pollutant) emissions from on-site generators and diesel engine test booths, while the permit for the absorbent material manufacturer had limits on hourly emissions, total annual emissions, and annual production levels. In contrast, the fiberboard manufacturer had no annual emissions limits.

The inspectors whom we accompanied checked for visible emissions, reviewed facility records, and checked equipment at all six facilities. At the waste incinerator, the inspector observed a source test conducted in accordance with a state-approved sampling plan.[9] The inspectors determined that while four facilities were in compliance, the other two facilities were out of compliance.

- At the steel mini mill, the inspector noted that the facility

  - lacked records on the readings of visible pollutants;
  - lacked records on the functioning of various control devices for a 22-month period;
  - lacked information on the sulfur content in certain raw materials used; and
  - did not maintain a certain emissions capture system, which caused visible emissions to leak from gaps and holes in the building.

  The inspector also noted an apparent disparity between the amount of nitrous oxides emitted annually from one furnace. For permit purposes in 1998, the facility estimated the amount was 31 tons. But on the basis of a 1999 source test, the amount was 94 tons.

[9]Source tests (also called "stack tests") involve the use of procedures to measure emissions for a short period of time (usually a few hours or more). Data derived from these tests are used to determine compliance with applicable emissions limits.

- At the fiberboard manufacturing facility, the inspector noted a number of problems indicating the improper operation and maintenance of control equipment, including

  - one improperly sealed vent and
  - excess emissions from 7 of the facility's 20 emissions control filters.

  In addition to observing six inspections, we reviewed state regulatory records for 23 large facilities to identify other methods used by regulators to identify excess emissions. For example, we noted that, at a metal-can-manufacturing facility, a state inspector was concerned about the amount of volatile organic compounds in the coating used to seal the cans. He arranged for samples of the coating to be analyzed at a state laboratory and allowed the facility to contract for its own analysis. Both the state lab and the company's lab found that the facility was exceeding its permit limit for the volatile organic compound content of the coating by about 10 percent.

Intensive Investigations Found Widespread Noncompliance

In recent years, EPA has performed intensive investigations in four industries and identified widespread noncompliance. In three industries—electric utilities, pulp and paper mills, and wood products—these investigations focused primarily on compliance with New Source Review requirements. Under the Clean Air Act, facilities must obtain a New Source Review permit for new construction or major modifications that increase a facility's emissions of certain regulated air pollutants. According to an EPA air enforcement official, routine inspections do not necessarily identify instances in which facilities have made physical or operating changes that could increase emissions and require them to revise their existing permits or obtain New Source Review permits. In the fourth industry—petroleum refining—EPA investigated compliance with both New Source Review requirements and regulations that require the monitoring of "fugitive emissions" leaking from valves, pumps, and other equipment. In the pulp and paper and wood products industries, EPA found widespread noncompliance. In the electric utility and petroleum refining industries, many of the companies investigated agreed to take remedial actions on the basis of EPA's preliminary findings rather than actual findings of noncompliance. However, because EPA targeted facilities that were determined to be most likely to have violated their permits, the results of these intensive investigations may not represent conditions at other facilities.

To identify industries on which EPA should focus its intensive investigations, agency staff analyzed industry-by-industry information on production levels, profits, and other factors that could help them identify industries with facilities that had increased production but may not have applied for new construction permits. Next, the EPA staff considered which facilities within those industries to focus on. They gathered and analyzed industry journals and other publicly available information about companies, as well as information in state agency files.

The intensive investigations generally consisted of visiting the facility for 3 days to identify equipment, determine when it was installed, and evaluate the history of physical or other changes in the use of that equipment. EPA staff also obtained financial data for the facility to identify expenditures that may indicate an increase in production capacity. Afterwards, they spent from several months to a year analyzing this information to determine whether the facility violated Clean Air Act requirements.

In the petroleum refinery industry, EPA also performed investigations to determine if facilities accurately reported the number of emissions leaks from valves, pumps, compressors, and other equipment. Federal regulations require refineries to monitor equipment for leaks on a routine basis and to fix leaking equipment. The failure to identify and fix these leaks can result in excess fugitive emissions of volatile organic compounds and other hazardous air pollutants.

In the pulp and paper and wood products industries, EPA found widespread noncompliance. As shown in table 1, of the 96 facilities where EPA has completed investigations, 75 (about 78 percent) were not in compliance.

Table 1: Violations Found Through EPA's Intensive Investigations in Two Industries

Industry	Number of facilities investigated	Number of facilities not in compliance	Proportion not in compliance
Pulp and paper	12	11	92 percent
Wood products	84	64	76 percent
Total	**96**	**75**	78 percent

Source: EPA.

Common types of violations included the failure to

- install pollution control devices (both industries),
- obtain New Source Review permits required by the Clean Air Act (both industries),
- meet emissions limits (pulp and paper), and
- perform required testing (pulp and paper).

According to an EPA Air Enforcement Division official, EPA took a different approach in the electric utility and refining industries. The official told us that EPA initiated investigations of specific facilities and then met with company officials to present its preliminary findings. This official also told us that, in many cases, the companies agreed to take such actions as installing pollution control equipment at one or more of their facilities on the basis of EPA's preliminary findings rather than risk an actual finding of noncompliance.

As of February 2001, EPA had reached three agreements covering 20 facilities in the electric utility industry and three agreements covering 19 facilities in the petroleum refining industry. According to an EPA air enforcement official, all of these facilities agreed to pay fines and install the pollution control equipment they would have been required to install had EPA formally found them in noncompliance. In return, according to the official, EPA agreed to resolve possible past violations at the facilities. EPA estimates that a recent settlement with one electric utility company will require the company to install control equipment and take other steps to reduce its emissions of sulfur dioxide and nitrogen oxides by 400,000 and 100,000 tons per year, respectively.

At 17 refineries investigated for leaks of volatile organic compounds, EPA found a larger proportion of leaking emissions points and a larger volume of leaks than the companies reported. Specifically, whereas the companies reported finding leaks in 1.3 percent of the potential emissions points, EPA's investigators found leaks in 5 percent. EPA estimated that annual fugitive emissions from the 17 refineries investigated could be more than 6,000 tons per year greater than previously believed. By extrapolating these findings, EPA estimated that refineries may be emitting an additional 40,000 tons of volatile organic compounds each year because leaks are not properly identified and repaired promptly.

Four States' Reviews of Emissions Reports Varied

According to EPA officials who oversee state permit programs, because most title V permit programs assess emissions fees, at least in part, on the basis of the total tonnage of pollutants emitted by major sources, most major sources are required to submit annual reports listing their total emissions. In the four states included in our review, all major sources are required to report annually on their total emissions in the previous calendar year; in addition, the states require synthetic minors to report periodically on their total emissions. While many of the largest emitters, such as coal-powered electric utilities, must continuously measure their emissions of certain pollutants, most facilities rely primarily on estimates or extrapolations from source tests to determine their emissions.[10] All four states in our study generally reviewed the facilities' emissions reports for arithmetic errors but varied in the extent to which they verified the accuracy of data on which the facilities based their calculations. While the states did not track the extent to which they discovered errors, officials in one state that performed detailed reviews estimated that between one-third and one-half of all reports had to be resubmitted.

Large Facilities Rely Primarily on Indirect Methods to Determine Their Level of Emissions

According to EPA officials, the method used by a facility in determining its emissions depends on a number of factors, including the type of facility and the raw materials used.[11] Methods range from direct measures of emissions to estimates based on emissions factors, as outlined below:

- Under the 1990 Clean Air Act Amendments, certain types of facilities must directly measure their emissions using continuous-emissions-monitoring systems (hereafter called "monitors"). Monitors constantly measure pollutants released by a single point, such as a smokestack within a facility. For example, EPA requires most coal-burning electric utilities and certain other types of facilities to use monitors to measure their emissions of certain pollutants. State regulators also have discretion to require other air pollution sources to use monitors. For example, a Pennsylvania state agency official told us that Pennsylvania has required the use of 445

[10]According to an EPA Air Enforcement Division official, emissions factors cannot be used to demonstrate compliance with emissions limits but can be used in developing emissions reports or determining whether a facility emits above or below major source thresholds. The official also said that facilities cannot avoid major source requirements if it is subsequently proved that they emit pollutants in excess of these thresholds.

[11]For simplicity, we use the term "determination" to describe all methods that facilities use in preparing their emissions reports, including direct measurement, emissions factors, and extrapolations.

monitors in addition to 327 monitors required by federal regulations. EPA officials consider monitors to be the most reliable method for determining annual emissions.

- According to an EPA official, extrapolations from the short-term data derived from source tests can, in some cases, be used to estimate long-term emissions from the tested facility or from similar facilities. EPA officials told us that short-term source tests are considered less reliable than monitors for determining long-term emissions. The limitations of source tests include their short duration and facilities' common practice of performing the tests under optimal conditions, such as shortly after purchasing or servicing control equipment.

- Emissions factors are broad averages of the emissions of pollutants that can be expected, given the processes and/or pollution control equipment generally used in an industry. Facilities using emissions factors estimate their volume of emissions by multiplying their activity rate by the appropriate factor. For example, a facility that wants to estimate its carbon monoxide emissions from burning distillate oil in an industrial boiler would multiply the emission factor for that process (5 pounds of carbon monoxide for each thousand gallons of oil burned) by the quantity of fuel consumed. If the facility burned 3,000 gallons a day, its estimated carbon monoxide emissions would total 15 pounds a day. Because emissions factors represent average emissions, the level of emissions from some sources using them may be higher than the factor, while others may be lower. (App. I provides additional information on the development and reliability of emissions factors.)

  According to EPA and state agency officials, facilities use emissions factors to make most emissions determinations for the purpose of emissions reports. EPA's nationwide data on emissions determinations made by both large and small facilities show that indirect methods that do not involve site-specific direct measurement were used in about 96 percent of all determinations, while direct measures, such as monitors and source tests, were used for about 4 percent of all determinations. Of the 96 percent involving indirect methods, emissions factors accounted for about 80 percent and other methods accounted for 16 percent.

  Similarly, most facilities in the states we visited relied on indirect methods. For example, about 63 percent of the emissions determinations from large industrial facilities located in North Carolina relied on EPA's rated emissions factors. In Virginia, about 71 percent of the large facilities used emissions factors to determine emissions from at least one of their

emission sources, while about 10 percent relied on monitors for at least one emission source.

The percentage of emissions determinations made by a certain method may not equal the percentage of the total emissions that were quantified by that method. EPA does not track the quantities of emissions determined by each quantification method, but emissions data for electric utilities that must use monitors show that such facilities account for a large percentage of the emissions of certain pollutants. For example, while monitors are used for less than 5 percent of all emissions determinations nationwide, EPA's data show that in 1998, electric utilities required to use monitors to measure their emissions of nitrogen oxides and sulfur dioxide accounted for about 24 percent of total national nitrogen oxide emissions and about 65 percent of total national sulfur dioxide emissions.

States' Methods of Verifying Emissions Reports Varied

Each of the four states included in our study assesses major sources' fees, at least in part, on the basis of the number of tons of pollution they emit. Each of the states requires similar information from facilities. The facilities typically provide detailed information on emissions from production lines or processes that are regulated in their permits. For example, one state requires facilities to provide, among other things, information on the raw materials they use, their operating schedule, the sulfur and energy content of fuels, the efficiency of pollution control devices, the method used to calculate emissions, and the tons of pollution emitted. In addition to providing the information described above, each state requires a company official to certify, under penalty of law, the report's truth, accuracy, and completeness.

Each of the four states uses the information contained in the reports to independently calculate each facility's emissions and, in the three states where facilities provided estimates of total emissions, to compare the agency's calculations of total emissions with those provided by the facility. (One state does not require facilities to estimate total emissions; instead, according to a state official, agency personnel use the information provided by the facilities to perform the calculations themselves.) All four states routinely compared the reports with those submitted in previous years to identify noteworthy changes that might indicate inaccurate reporting.

While we found similarities in the states' procedures for verifying the emissions reports in the four states, we also found variations, as shown below.

- In two states, the field inspector who performs the compliance inspection of a facility typically also reviews that facility's emissions report. An official in one of these states explained that having the inspector with the greatest understanding of each facility review the report maximizes the agency's ability to identify questionable data. In contrast, a third state assigns all reports for a certain facility type to one inspector; thus, the inspector reviewing the emissions report for a facility may not be the person who performed compliance inspections at that facility. In the fourth state, the personnel responsible for developing the state's emissions inventory, rather than those who inspect facilities, review the reports.

- The state agencies also vary in the extent to which they seek to verify the data that facilities submit on the material they used or the removal efficiency of their control equipment. For example, officials in one state told us that they typically check for the use of appropriate emissions factors and pollution control efficiencies and review previous inspection reports and other relevant documents to ensure that facilities account for all emissions points. Alternatively, regulators in another state told us that they simply rely on facilities to provide accurate data.

  None of the four states maintain data on the type or number of inaccuracies found during their efforts to verify emissions reports. Regulators in all four states told us that those responsible for reviewing the reports contact the facility directly to resolve any problems or inaccuracies identified through the verification process. After resolving any questions about the report, the facility revises its statement as necessary. For example, officials in one state told us that they consider problems with the reports to be inadvertent, and that the inspector performing the review works with the facility to resolve the differences.

  Because state agency officials were unable to provide comprehensive data on the type or number of inaccuracies found, we asked them to estimate the proportion of all the reports submitted that had significant problems. One state provided a statewide estimate. Officials in this state, which performed detailed reviews of the reports, said that one-third to one-half of all its reports required corrections and resubmittal of the report by the facility. Officials in another state said that the agency's regional offices verified the reports and that the thoroughness of the reviews varied across the regional offices. The regional office performing the most detailed reviews estimated that 80 percent or more of the reports had problems that required additional consultation with the facility, while the regional office performing the least thorough reviews found such problems with 10 percent of the reports. An official in the third state told us that there are

few problems or missing data in reports from facilities that had reported previously, but that almost all reports from facilities reporting for the first or second time required follow-up because of incomplete data. Officials in the fourth state said that they relied on facilities to provide accurate data.

EPA Plans to Improve Oversight of Compliance but Not Verification of Emissions Reports

EPA has undertaken or is planning three initiatives to improve its oversight of compliance with the Clean Air Act but does not plan to enhance its oversight of state processes for verifying the accuracy of emissions reports. With respect to compliance, first, EPA developed and issued guidance to state regulators on the types of information that major sources must maintain to demonstrate their compliance with permits. Second, EPA is revising its compliance-monitoring strategy, which will grant states greater flexibility in their approaches to inspections and will encourage regulators to obtain more site-specific emissions data through the increased use of direct measurements via source tests. Third, EPA is training regional office staff and states to conduct intensive investigations. With respect to the emissions reports, EPA officials in headquarters and the two regions we visited all told us that EPA relies on the states to review these reports. At the same time, EPA has encouraged its regions to audit state programs for calculating emissions fees, which often depend in part on the amounts of emissions, but has not asked its regions specifically to evaluate states' processes for verifying emissions reports. The two EPA regional offices we visited perform little oversight of their states' verification processes.

EPA Is Working to Improve Data Quality and Facility Monitoring

EPA's first initiative, in September 1998, was issuing guidance on the type of information that major sources must periodically gather and maintain to demonstrate their compliance with applicable air regulations. EPA sought to clarify its policies on self-monitoring by facilities and to encourage state agencies to consistently interpret these policies. According to EPA, the definition of "adequate monitoring" had been subject to interpretation, and the level and type of monitoring that state authorities required were not consistent.

EPA's guidance document states that facilities must maintain reliable, timely, and representative data on the status of their compliance. The document further states that the use of an emissions factor does not constitute adequate monitoring unless the factor was developed directly from the unit in question. In addition, the guidance encourages state authorities to require the use of monitors and indirect monitoring derived from periodic source tests.

The implementation of EPA's guidance has been suspended because of an April 14, 2000, ruling by the U.S. Court of Appeals.[12] The court held that, in issuing the guidance, EPA, in effect, amended its monitoring regulation without complying with the necessary rule-making procedures. EPA did not appeal the decision and is currently evaluating other regulatory options to meet the same objectives.

EPA's second initiative, in March 2000, was issuing a draft national policy for state regulators to use in ensuring compliance with the act. This policy was developed in response to two reports that found problems with EPA's air enforcement program. EPA's Inspector General reported in 1998 that no one within the enforcement program was responsible for the oversight and implementation of the agency's Clean Air Act compliance-monitoring program.[13] The report described inconsistent implementation and disregard for agency directives as diminishing the effectiveness of the air enforcement program. The report also described cases where inspections conducted by state regulators did not meet EPA's definition of a "routine inspection" or were documented poorly. In addition, a 1999 study commissioned by EPA found that most EPA regional offices did not adhere to the agency's compliance-monitoring strategy.[14]

EPA's draft policy states that it would, among other things, provide regulators with increased flexibility in the types of inspections they conduct and require sources with no better means of determining their emissions rates to conduct source tests. EPA's compliance data administrator told us that the draft policy would also require states to provide EPA with information on annual compliance certifications and semiannual compliance-monitoring reports that are submitted by major sources. EPA's Air Enforcement Division officials said that they were working with representatives of state agencies to revise the draft and that the agencies have expressed concerns over the document's provisions for the increased use of source tests.[15] EPA has revised the document to

[12] *Appalachian Power Co. v. EPA*, 208 F.3d 1015 (D.C. Cir. 2000).

[13] See *Consolidated Report on OECA's Oversight of Regional and State Air Enforcement Programs*, Office of Inspector General, EPA (EIGAE7-03-0045-8100244, Sept. 25, 1998).

[14] See *A Review of the Compliance Monitoring Strategy*, Perrin-Quarles Associates, prepared for EPA's Office of Enforcement and Compliance Assurance (July 26, 1999).

[15] EPA's Office of Inspector General recently evaluated EPA's oversight of state source testing programs. (See *Report of EPA's Oversight of State Stack Testing Programs*, Office of Inspector General, EPA [2000-P-00019, Sept. 11, 2000]).

address these concerns, but the issue remains unresolved. In addition, EPA's Air Enforcement Division officials said that they have not determined whether the final strategy will take the form of guidance (as originally proposed) or an administrative rule. They told us they plan to issue the document in April 2001.

Finally, EPA's Air Enforcement Division officials noted that EPA is encouraging personnel in its regional offices and the states to conduct intensive investigations to ensure compliance with New Source Review requirements.

EPA Does Not Plan to Evaluate States' Processes for Verifying Emissions Reports

An EPA official who oversees state permit programs stated that the agency has not taken or proposed actions specifically intended to improve the accuracy of emissions reports from major sources, although one initiative has the potential to provide information on states' review processes. In 1998, EPA encouraged its regional offices to review state permit authorities to determine whether, among other things, they were correctly implementing their fee programs and collecting sufficient fees to cover the costs of administering their title V permit programs. EPA developed and distributed to the regions an audit protocol for evaluating state programs. Although the audit protocol does not ask regions to determine whether permit programs have adequate controls in place to verify emissions reports, it does ask them to examine the documentation of how the annual fees are determined and to audit pollution sources' bills, which most permit authorities—including those in all four of the states where we worked—based, at least in part, on each facility's reported level of total emissions. An EPA official who oversees state permit programs told us that regions have full discretion in determining whether they use the audit protocol in evaluating the permit programs.

An official in the Air Protection Division of EPA's Philadelphia office stated that the regional office has used the audit protocol to review three permit programs in that region. One of these reviews found that the state audited did not verify emissions reports. Officials in the Environmental Accountability Division of EPA's Atlanta office told us that they were not using the audit protocol in reviewing programs in their region or seeking to evaluate the processes in place for verifying emissions reports.

While EPA does not plan to evaluate states' processes for verifying emissions reports, it does check the quality of emissions data submitted by states for developing emissions inventories. This includes checking for data errors that could have affected emissions values, as well as, in some

cases, comparing estimates with those submitted in previous years and with those from other facilities in the same industry. In addition, EPA posts facility-specific emissions data on the Internet for review by outside parties.

Conclusion

EPA performs limited oversight of states' processes for verifying the accuracy of emissions reports submitted by major sources. EPA's data show that most emissions determinations are based on generic emissions factors. While EPA allows facilities to estimate their emissions in this manner, EPA officials generally consider direct methods to be more reliable. The accuracy of these reports is important because they influence (1) the financing of states' regulatory programs through fees and (2) the development of emissions inventories, which, in turn, assist regulators in developing control strategies and establishing permit limits.

Furthermore, steps taken to assess the accuracy of these reports—such as more thoroughly reviewing the supporting information—could provide benefits in terms of compliance with Clean Air Act requirements. For example, a more thorough review of the information underlying a facility's emissions reports or a more systematic comparison of these reports over a period of time could identify indications of increased emissions. Such indications could, in turn, trigger a review of compliance with New Source Review requirements, an area where EPA found widespread noncompliance in four industries.

In the four states included in our review, the approaches taken to verify the accuracy of the reports varied significantly. The state that performed the most detailed reviews found widespread inaccuracies. However, EPA's oversight of these processes is limited; the agency had audited only three permit authorities in the two EPA regions we visited and found that one of the three authorities had no process in place for verifying the accuracy of the emissions reports. While taking steps to improve its overall compliance-monitoring strategy, EPA does not plan to evaluate state processes for verifying emissions reports from large facilities.

Recommendation for Executive Action

To help ensure the accuracy of large facilities' emissions reports, we recommend that the Administrator of EPA evaluate states' programs to determine whether they have adequate mechanisms in place for verifying the accuracy of emissions reports. If the results of these reviews identify inadequacies, the Administrator should work with the states to improve

their processes in order to provide reasonable assurance that facility reports are subject to thorough review.

Agency Comments

We provided EPA with a draft of this report for review and comment and received a letter from the Acting Assistant Administrator for Air and Radiation. (App. II contains the text of his letter, along with our detailed responses; in addition, EPA provided us with several clarifications, which we incorporated where appropriate.)

The Acting Assistant Administrator questioned the intent of our recommendation, stating that

> if the intent is to improve the accuracy of emissions reports to ensure the sufficiency of fees that states collect to support their title V permit programs, EPA disagrees and believes the recommendation is unnecessary because the states can simply raise the fee rate (the fee per ton of emissions) if fee revenues prove insufficient;
>
> if the intent is to improve the emissions inventories used in state planning and in developing national inventories, EPA concurs; and
>
> if the intent is to improve compliance with applicable permit requirements, EPA disagrees because emissions reports are not intended to determine compliance with permit requirements.

The intent of our recommendation, as stated in the draft report, is to help ensure the accuracy of emissions reports because of the role that the reports actually play or can play in all three areas: (1) setting fees to cover the costs of state programs; (2) developing state and national inventories and, concomitantly, strategies for further controlling emissions; and (3) potentially alerting state regulators to emissions levels that suggest noncompliance with operating permits or other air quality requirements.

We agree that states facing a shortfall in fee revenues could simply increase the rate applied to all sources to raise aggregate fee revenue, but we do not agree that the accuracy of emissions reports used for fees is a secondary concern. Increasing the fees levied on facilities that accurately report their emissions as well as on those that underreport (who would continue to pay proportionately less than warranted on the basis of their relative contribution to total emissions) could lead to inequitable results. While states have latitude in their approach to collecting fees, most of them rely, at least in part, on each facility's level of reported emissions in

calculating fees. Thus, a facility that reports more emissions will generally pay more in fees. Especially in the absence of state oversight, some facilities could view this system as an incentive to underreport their emissions and thus pay lower fees. Inconsistent or limited review of emissions reports reduces regulators' ability to identify underreporting and sends the signal that facilities face little chance of detection if they choose to underreport. To the extent that any facility underreports its emissions and thus pays less than its fair share of title V fees, other facilities will pay more than their fair share. In the short run, this raises questions about the equity of the fees being charged. In the long run, this possibility—unless counteracted—could lead to more widespread underreporting and undermine the system of emissions reporting.

In addition to helping ensure that emissions fees are collected equitably, more thorough state reviews could also help improve emissions inventories at the state and national levels.

Finally, more thorough reviews could help EPA and state compliance efforts. Specifically, through its lengthy and resource-intensive investigations, EPA identified widespread potential violations of New Source Review requirements in all four of the industries it reviewed. We believe that more thorough reviews of facilities' emissions reports might have provided indications of such problems much earlier and at much less cost. Furthermore, emissions reports often contain information not only on total emissions but also on levels of production and raw material use. Many of the title V permits we reviewed had provisions that limit production levels as a surrogate for total emissions. EPA and state enforcement officials told us that reviewing this information would help inspectors evaluate a facility's overall compliance status. For example, as noted in our report, two of the states assign the same field inspector responsible for inspecting the facility for compliance to review the facility's emissions report. This practice enhances the potential that any discrepancies between emissions reports and the results of compliance inspections will be detected.

Scope and Methodology

To fulfill our objectives, we interviewed officials from, and reviewed studies and other documents prepared by, EPA's headquarters and regional offices and four states. The EPA headquarters offices were the Office of Air Quality Planning and Standards and the Office of Enforcement and Compliance Assurance. The two EPA regional offices were Region III (headquartered in Philadelphia), which generally covers the mid-Atlantic region, and Region IV (headquartered in Atlanta), which generally covers the Southeast. The states were Pennsylvania and Virginia

in EPA's Region III and Kentucky and North Carolina in EPA's Region IV. The conditions in these two regional offices and four states may not represent the conditions in other regional offices and states.

In addition, we accompanied EPA or state officials on their routine inspections of six facilities representing different industries—a chemical manufacturer, a diesel engine manufacturer, a fiberboard-manufacturing plant, a municipal waste incinerator, an absorbent material maker, and a steel mini mill. The conditions at these six facilities may not represent the conditions at other regulated facilities. In addition, as agreed with your office, we do not name the facilities in our report. We did not independently validate the data provided by EPA or the states. We conducted our review from November 1999 through March 2001 in accordance with generally accepted government auditing standards.

As arranged with your office, we plan no further distribution of this report for 30 days from the date of the report unless you publicly announce its contents earlier. At that time, we will send copies to Senator Robert C. Smith and Senator Harry Reid in their respective capacities as Chairman and Ranking Member, Senate Committee on Environment and Public Works; Representative W.J. Tauzin and Representative John D. Dingell in their respective capacities as Chairman and Ranking Minority Member, House Committee on Energy and Commerce; Representative Dan Burton, Chairman of the House Committee on Government Reform; other interested Members of Congress; the Honorable Christine Todd Whitman, Administrator of EPA; the Honorable Mitchell E. Daniels, Jr., Director of the Office of Management and Budget; the governors of the four states we visited; and other interested parties. We will make copies available to others upon request.

If you have any questions about this report, please contact me or David Marwick at (202) 512-3841. Key contributors to this report were Philip L. Bartholomew, James R. Beusse, Michael Hix, Karen Keegan, and William F. McGee.

Sincerely yours,

David G. Wood

David G. Wood
Director, Natural Resources
and Environment

Appendix I: Development and Reliability of Air Emissions Factors

Regulators and regulated facilities use air emissions factors to estimate emissions from a variety of sources. Emissions factors are averages of the amount of emissions produced from a given process with given inputs, for example, the quantity of carbon monoxide generated per unit of oil burned in an industrial boiler.

The Environmental Protection Agency (EPA) publishes information on air emissions factors. Regulators and industry use air emissions factors to assist in developing emissions inventories and control strategies, and for other purposes. For example, an EPA official told us that facilities use emissions factors to determine whether their estimated annual emissions place them in the major source category.

The reliability of the emissions factors varies widely. EPA rates the reliability of emissions factors on a scale of A (excellent) to E (poor). These ratings, in turn, reflect four underlying criteria:

- the estimated reliability of the test data used,
- the randomness of the facilities from which the data were derived,
- the variability of emissions levels across the sources tested, and
- the number of facilities for which test data are available.

Thus, the highest (A-rated) factors are those derived from high-quality data taken from many randomly chosen facilities with low variability among the sources. Conversely, the lowest (E-rated) factors are those derived from low-quality test data, when doubts exist regarding the randomness of the test facilities used, and when there is wide variability among the sources tested.

As of October 1999, EPA had rated 12,390 factors in its compilation of emissions factors. As shown in table 2, 20 percent of the factors were rated “above average” or “excellent,” while 46 percent were rated “below average” or “poor.” Along with the rated factors, EPA maintains information on approximately 4,200 unrated factors (25 percent).

Table 2: Emissions Factor Ratings

		Emissions factors as of Oct. 1999	
Letter grade	**Description**	**Number**	**Percentage**
A	Excellent	1,613	10
B	Above average	1,626	10
C	Average	1,563	9
D	Below average	3,347	20
E	Poor	4,241	26
Unrated		4,209	25
Total		**16,599**	**100**

Source: EPA.

In its compilation of emissions factors, EPA describes problems with the use of such factors to estimate emissions for individual facilities. Each factor is generally assumed to represent the long-term average for all facilities in a source category but may not reflect the variations within a category because of different processes and control systems used. The underlying data from which emissions factors are derived can vary by an order of magnitude or more. For example, the emission factor for petroleum conversion at oil refineries—45 pounds of particulate matter per thousand barrels of feedstock—is based on test results ranging from 7 to 150 pounds. EPA assigned this factor a B (above average) rating. Thus, facilities' actual emissions can, and do, vary substantially from the published factors.

Appendix II: Comments From the Environmental Protection Agency

Note: GAO's comments supplementing those in the report's text appear at the end of this

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 09 2001

OFFICE OF
AIR AND RADIATION

Mr. David G. Wood, Director
Natural Resources and Environment
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Wood:

Thank you for the opportunity to review your draft report entitled *Air Pollution: EPA Should Improve Its Oversight of Emissions Reporting by Large Facilities* (GAO-01-46, code 160504). Overall, we believe your report provides useful information. However, we are unclear about certain aspects of the report, including the intent of the report's recommendation. The report recommendation reads as follows: "To help ensure the accuracy of facilities' emissions reports, we recommend that the Administrator of EPA evaluate States' programs to determine whether they have adequate mechanisms in place for verifying the accuracy of reports. If the results of these reviews identify inadequacies, the Administrator should work with the States to improve their processes in order to provide reasonable assurance that facility reports are subject to thorough review."

See comment 1.

If the GAO recommendation is aimed at EPA oversight of how emissions reports are used by State and local permitting authorities to establish fees necessary to support their operating permit programs, we believe that there is no need to intervene in that process, as the recommendation might suggest. Provided that State, local, and tribal programs meet the overall requirements set out in Title V of the Clean Air Act that allow them to fully fund their operating permit programs from fees, we believe these agencies should have discretion in how they assess the emissions data used to establish those fees. The important point is that State and local permitting authorities are required to charge sufficient fees to cover the cost of the regulatory program – not that any individual facility's emissions may be under- or over-reported. Any shortfall in fees that might result from under-reporting of emissions would have to be corrected by raising the fee rate (i.e., fee/ton of emissions) by an amount sufficient to fund the program. For these reasons, we believe that for Title V purposes, the accuracy of emissions reports used for fees, is a secondary concern.

See comment 2.

If, on the other hand, the GAO recommendation is aimed at improving emission inventories that are used in State implementation planning and in estimating nationwide emissions, we would support any recommendation to continue our on-going efforts to improve emission factors and resulting emission inventories. Your report discusses some of the steps that EPA and state and local agencies already take to verify the accuracy of emissions inventory reports, but this language could be strengthened.

Typically, reports or statements of air emission releases received by State and local air agencies from large facilities are incorporated into the overall air emission inventory maintained by the State or local agency and used for local emissions analyses and for preparing SIP revisions when required. In addition, State and local agencies typically forward data on facility emissions to EPA. For some areas, facility types, and pollutants, this submission by the State or local agency is required by EPA regulation, while for others, submittal is a voluntary action on the part of the State or local agency. The EPA uses these data to assemble a National Emission Inventory (NEI) which is used by EPA for a number of policy and program purposes and is also made available to States and others. (In the case of power plants in particular, it is EPA's practice to use data from continuous emissions monitoring systems (CEMS) in preference to data derived from other indirect measurements for the pollutants measured by these CEMS (SOx and NOx).)

To ensure that the NEI is accurate, EPA does conduct a substantial quality assurance review of the facility estimates submitted by the States. For example, checks are made for missing, unreasonable, or inconsistent data for various fields that describe the facility; errors in these fields can indicate data handling problems or misunderstandings that may also have affected emissions values. Because emission values are usually conveyed to us in final form and depend on activity level and other parameters that can vary from year to year, we are not able to verify the calculation of emissions step-by-step. However, we do ask the State to review and confirm emission values that are especially high and all emission values from the ten highest reported facilities in each State. On a case-by-case basis, we may compare estimates for one year to previously submitted estimates for the same facility, or other facilities in the same industry. For emissions of hazardous air pollutants, we can compare questionable emission estimates to reports by the facilities in the Toxics Release Inventory. Where questionable or missing data is found, EPA brings this to the attention of the submitting State for resolution. The entire NEI is also made available for at least two rounds of public and industry review, with revisions possible in each round. Moreover, the facility estimates are viewable on a public website, providing further opportunity for the facility owners and the State to bring errors to our attention. Because of this quality assurance review, EPA believes that with respect to criteria pollutant emissions the facility reports which are indirectly incorporated into the NEI are accurate enough to support applications which depend on estimates of aggregated emissions, particularly for implementation planning purposes and quantifying national emissions. In FY 2001, we plan to further refine the quality assurance steps for the NEI.

See comment 3.

See comment 4.

See comment 5.

Finally, if your recommendation is aimed at improving compliance by facilities with their applicable permit requirements by improving the accuracy of emission reports, we regret that our conversations during the audit have not clearly explained the relationship between emission reports and compliance. One of the primary goals for the report given on page 2 is to "provide information on the steps that EPA and State regulators take to verify that large industrial facilities comply with their Title V or State permit and the extent of compliance found." Your conclusions and recommendations outlined on pages 20 and 21 focus almost entirely on improving the accuracy of emissions reports, and the conclusion states that improving the accuracy of emissions reports will improve compliance with Clean Air Act requirements. While this conclusion is accurate with respect to emission increases for New Source Review as described in the GAO report, we question this conclusion for Title V because emissions reports (i.e., emissions factor-based estimates for determining fees or developing emissions inventories) are seldom, if ever, used in determining compliance. Emissions reports are largely estimates and are sometimes based on broadly applicable emissions factors. On the other hand, compliance is determined by a variety of direct and indirect measurement methods and almost never relies on emission factors.

For a few sectors, such as utilities and large boilers, compliance for some emission limits can be determined by direct measurements with CEMS. More typically, compliance is determined by a wide variety of indirect methods, such as monitoring of site-specific operational parameters (e.g., control device operating temperature, pressure, flow etc.), verification through other monitoring (e.g., to show that complying coatings were used, work practices were performed, or leak checks were done, sulfur in fuel remains below limits), or periodic testing. Improvements in the accuracy of emission reports using better emission factors would make no difference in compliance assessed through these kinds of methods. We would ask that the statement in the conclusions be qualified to explain that improving the accuracy of emission reports would help improve compliance only where compliance is based on data from such reports and that this almost never includes Title V permit limits.

If you have additional time before finalizing this report, we would be happy to meet and discuss our concerns in more detail. If you are unable to meet, I would appreciate it if you would incorporate our comments in this letter into your final report. We have also included as a separate enclosure to this letter a few minor comments which we hope you find helpful. Again, I thank you for this opportunity to review your draft report. Please contact Debbie Stackhouse of our Office of Air Quality Planning and Standards at (919) 541-5354 for follow-up discussions.

Sincerely,

Robert D. Brenner

Robert D. Brenner
Acting Assistant Administrator

Enclosure

The following are GAO's comments on the Environmental Protection Agency's letter dated March 9, 2001.

GAO's Comments

1. EPA notes that permit authorities are required to charge fees that cover the costs of their regulatory programs and describes the accuracy of emissions reports used in that process as a secondary concern because state agencies could correct a shortfall in fees that results from the underreporting of emissions by raising the fee per ton of emissions. We believe that the accuracy of the emissions reports is integral, initially, to establishing an equitable fee structure and, later, to ensuring that each regulated entity is charged only its fair share of the overall fees. Emissions reports support both processes, and the steps we recommend are intended to help ensure the accuracy of these emissions reports.

   While EPA asserts that states should have discretion in how they assess emissions data to establish fees, it has already initiated oversight of these state efforts. In 1998, EPA distributed to its regional offices an "audit protocol" that they could use to monitor whether the permit agencies in their region had, among other things, established a proper fee structure and were submitting appropriate bills to regulated entities. As of fall 2000, only one of the two regions we visited had chosen to use the protocol. When EPA regional offices use the protocol to evaluate state programs, they could implement our recommendation by amending the protocol to include evaluating the states' processes for verifying emissions reports.

2. We recognize that EPA performs quality assurance on data provided by states and have revised the report to acknowledge this. However, we continue to believe that a more thorough review of these reports at the state level could lead to more reliable local, state, and national emissions inventories.

3. We believe that thorough reviews of the reports could improve EPA's and the states' ability to identify noncompliance with New Source Review requirements and the terms of title V permits. While EPA states that these reports are seldom, if ever, used for determining compliance with title V permits, we believe that they contain information that could assist in doing so. Each state we visited said that the reports contain information on production levels and, in most cases, total emissions. Many of the title V permits we reviewed have provisions that limit production levels. Furthermore, the EPA and state

enforcement officials we spoke with said that reviewing the emissions reports could help in evaluating a facility's compliance status. Also, as our report notes, two of the states provide for a review of a facility's emission report by the field inspector responsible for that facility. In that way, the review can be performed by the individual most knowledgeable of the facility and therefore best positioned to identify any irregularity in the report.

4. EPA misstates our conclusion. We concluded that more thorough reviews of the supporting information contained in emissions reports "*could* provide benefits in terms of compliance with Clean Air Act requirements," not that "improving the accuracy of emissions reports *will* improve compliance with Clean Air Act requirements" (emphasis added). We view this as an important distinction.

5. As stated in comment 3, we believe that reviewing the information contained in the emissions reports could assist in identifying noncompliance with New Source Review and title V permits.

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