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February 2004

CLEAN AIR ACT

Key Stakeholders' Views on Revisions to the New Source Review Program

GAO-04-274

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Highlights

Highlights of GAO-04-274, a report to congressional requesters

CLEAN AIR ACT

Key Stakeholders' Views on Revisions to the New Source Review Program

Why GAO Did This Study

Environmental Protection Agency (EPA) revisions to the New Source Review (NSR) program to control industrial emissions have drawn attention from state and local agencies that implement the program, as well as industry and environmental and health groups. Under the revisions, companies may not have to install pollution controls when making some facility changes. GAO was asked to obtain the opinions of state air quality officials and other stakeholders on the impact of both the final and proposed revisions EPA issued in December 2002. GAO obtained survey responses from NSR program managers in 44 states and certain localities and contacted six environmental and health groups, and eight industry groups active in the NSR debate.

What GAO Recommends

GAO recommends that EPA (1) help state air quality agencies implement the revisions, (2) monitor the effects of the rule that excludes routine equipment replacements from NSR, and (3) consider stakeholders' concerns before excluding other activities from NSR. In commenting on the report, EPA's Assistant Administrator for Air and Radiation said that the agency has concerns about our methodology and certain of our findings. GAO believes its approach and presentation are appropriate. Moreover, EPA said that our recommendations make sense, and that the agency already plans to take these actions.

www.gao.gov/cgi-bin/getrpt?GAO-04-274.

To view the full product, including the scope and methodology, click on the link above. For more information, contact John Stephenson at (202) 512-3841 or stephensonj@gao.gov.

What GAO Found

A majority (29 of 44) of the state officials responding to GAO's survey expected the rule EPA finalized in December 2002 to provide industry with greater flexibility to make some facility changes without having to obtain NSR permits or, in some cases, install pollution controls. However, in their opinion, 27 officials expected the rule to increase emissions of harmful air pollutants, thereby hindering areas' efforts to meet air quality standards and potentially creating or exacerbating public health risks. This concern contrasts with EPA's assessment that the rule will decrease emissions and maintain the current level of environmental protection. Furthermore, 30 of the officials expected their agency's workload would increase as they adopt and implement the rule into their own programs. Almost all of the 44 officials would like EPA assistance with implementation.

Similarly, 28 of the 42 officials responding expected the two NSR revisions as proposed in December 2002—intended to provide more certainty about when facility changes are considered routine maintenance, repair, and replacement activities and can be excluded from NSR requirements—to decrease the number of permits companies would have to obtain, thereby giving them the flexibility to make some changes without installing controls. However, 21 and 26 officials, respectively, thought that the two exclusions would increase emissions; only relatively few thought the exclusions would decrease emissions as EPA's analysis had predicted. About a third of the officials thought the exclusions would exacerbate air quality problems in areas that do not meet standards, but fewer officials thought the exclusions would cause problems in areas that currently meet standards. Finally, 27 thought that implementing the two exclusions would increase states' administrative burden.

The other stakeholder groups GAO contacted agreed that the final rule and two exclusions would decrease the regulatory burden on companies that modify their facilities, but disagreed about the impact on emissions and air quality agencies' workload. The six environmental and public health officials expected that because companies would not have to obtain as many NSR permits or install as many controls when modifying facilities, emissions would rise and state and local agencies' workloads increase as agencies sought alternative ways to meet standards. In contrast, the eight industry officials expected the revisions to encourage companies to invest in energy-efficient projects they had avoided under the prior program, which the officials believed would lower fuel use and emissions. The officials also expected that fewer permits would lead to decreases in agencies' workloads.

Determining the revisions' likely impacts is difficult because, as discussed in GAO's August 2003 report on EPA's analytical basis for the final rule (GAO-03-947), little data exist to confirm stakeholders' opinions. In that report, GAO recommended that EPA work with state and local agencies to obtain data to assess the rule's emissions impact and correct any adverse effects.

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Abbreviations

ALAPCO	Association of Local Air Pollution Control Officials
DOE	Department of Energy
EPA	Environmental Protection Agency
NSR	New Source Review
PSD	Prevention of Significant Deterioration
STAPPA	State and Territorial Air Pollution Program Administrators

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Accountability * Integrity * Reliability

United States General Accounting Office
Washington, DC 20548

February 2, 2004

The Honorable James M. Jeffords
Ranking Minority Member
Committee on Environment and Public Works
United States Senate

The Honorable Joseph I. Lieberman
United States Senate

The Environmental Protection Agency's (EPA) revisions to the Clean Air Act's New Source Review (NSR) Program—one of the act's mechanisms for maintaining air quality to protect public health—have provoked controversy. These revisions are contained in rules that the agency issued in December 2002 and October 2003, respectively. In general, these rules provide companies with regulatory flexibilities to modify their industrial facilities without triggering NSR requirements to install potentially costly pollution controls, if certain conditions are met. According to EPA, the December 2002 rule will provide incentives for facilities to reduce emissions, remove barriers to energy efficiency and pollution control projects, and offer facilities greater regulatory flexibility, while the October 2003 rule will allow companies to modernize facility operations in ways that will maintain and improve safety, reliability, and efficiency. EPA also anticipates that the rules will enhance the NSR program's environmental benefits.

Reactions to the rules have differed considerably. A number of industry groups agree with EPA's position, and some states have filed legal documents in court expressing support for the rules. Other states and some localities, including a coalition of states and various localities primarily located in the mid-Atlantic and northeast regions of the country,[1] as well as certain environmental groups, have filed lawsuits challenging the legality of the two rules in court.

[1]The District of Columbia is included in this coalition.

The NSR program—established in 1977—seeks to protect public health, maintain compliance with air quality standards, and enhance air quality in national parks and scenic areas. The NSR program applies to nearly 17,000 industrial facilities, including fossil-fueled power plants, petroleum refineries, and facilities that manufacture automobiles, chemicals, pharmaceuticals, and paper. The program requires companies, when they are constructing facilities, to obtain NSR permits that limit the amount of pollution that facilities may emit and to install pollution controls when necessary. The program imposes similar requirements when a company makes a physical or operational change to an existing facility—such as adding new production equipment—if the change would result in a significant net increase in emissions.[2] The Congress allowed existing facilities to defer installation of pollution controls until a major modification was made with the expectation that, over time, all facilities would install such equipment, and this would lead to lower overall emissions.

Responsibility for implementing NSR, as well as other air quality regulations, generally rests with state and local air quality agencies. However, the stringency of the air quality regulations they set varies. The Clean Air Act generally requires more stringent control measures for industries located in areas that fail to meet at least one of the air quality standards than for those located in areas that meet the standards.

Because of the NSR program's complexity and the administrative burden it imposes, EPA has long recognized a need to revise it. In 1992, EPA began a reform process that resulted in proposed changes to the program in 1996 and 1998. But the agency did not finalize the proposals as rules during the previous administration. The current administration acted on certain of the prior reform proposals by issuing a final rule in December 2002.[3] This rule contained five provisions—including a new method for determining whether a facility change will significantly increase net emissions—that reduced the likelihood that certain of these changes would require an NSR permit or, in some cases, the installation of pollution controls. In assessing

[2]Such changes are called "major modifications" and the level of emissions that will trigger the NSR requirements, known as the threshold, varies by pollutant and the air quality status of the area in which a facility is located.

[3]Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NSR): Baseline Emissions Determination, Actual-to-Future Actual Methodology, Plantwide Applicability Limitations, Clean Units, Pollution Control Projects, 67 Fed. Reg. 80186 (2002) (to be codified at 40 C.F.R. pts, 51 and 52).

the potential costs and benefits of the rule to determine whether to pursue it, EPA anticipated that this rule will provide incentives for facilities to reduce emissions, remove barriers to investments in energy efficiency and pollution control projects, and offer facilities greater regulatory flexibility. In addition, at the time the agency issued the rule, it released an analysis of the rule's anticipated environmental effects that concluded the rule would lead to an overall environmental benefit.[4] EPA estimated it will cost state and local agencies about $6.5 million annually to incorporate the rule into their air pollution control plans. However, the agency expects that the rule will ultimately decrease agencies' NSR costs after the first 3 years of implementation.

Also in December 2002, EPA issued a proposed rule, with two provisions, that would define certain activities as routine maintenance, repair, or replacement and, therefore, exempt from NSR requirements.[5] In its assessment of the rule, the agency asserted that the two provisions would provide greater certainty to industry about when facility changes can be exempt from NSR and encourage facilities to perform energy-efficiency projects that were being hindered by the existing program's requirements for permits and costly controls. The cost of installing controls varies but, in extreme cases, costs can reach hundreds of millions of dollars, according to EPA.

One of the provisions that EPA proposed would exclude activities from NSR requirements considered "routine equipment replacements"—replacements of worn-out or broken machinery with identical parts or those that perform the same function as the existing part. EPA proposed several thresholds below which expenditures for such equipment replacement could be considered routine and exempt from NSR requirements and solicited public comment on them.[6] After reviewing the comments it received, EPA issued this exclusion as a final rule in October 2003. EPA established 20 percent of the cost to replace the entire process

[4]See U.S. Environmental Protection Agency, *Supplemental Analysis of the Environmental Impact of the 2002 Final NSR Improvement Rules* (Washington, D.C.: Nov. 21, 2002).

[5]Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review: Routine Maintenance, Repair and Replacement, 67 Fed. Reg. 80290 (2002).

[6]The cost of the replacement equipment had to be below a certain percentage of the cost to replace the "process unit." A process unit for power plants is defined as the portion of a plant that directly contributes to electricity production (power plants can have more than one such unit). The replacement equipment also had to meet certain criteria, such as maintaining the basic design of the original unit.

unit—for example, a steam-generating unit in a power plant—as the cost threshold companies could use to replace parts within that unit without being subject to NSR, and concluded that the rule would have insignificant environmental effects.[7] EPA also estimated that the rule would impose one-time costs of $8.7 million on industry and $1.7 million on state and local agencies that adopt the rule, while saving the electric utility industry hundreds of millions of dollars.[8]

The other provision that EPA proposed would create an "annual maintenance allowance" exclusion that would enable companies to avoid NSR if the cost of all routine maintenance and repair activities did not exceed a certain percentage of the cost to replace the entire facility. The agency has not determined whether it will finalize this portion of the proposal or pursue other options to address routine maintenance and repair activities.

You asked us to address a number of questions about the basis of the revisions and their potential impacts. In two previous reports on the revisions, we reviewed (1) EPA's assessment of the economic and environmental impact resulting from the December 2002 final rule, and (2) the potential impact of the NSR revisions on the enforcement actions that EPA had filed against coal-fired power plants for allegedly violating NSR requirements and on public access to information on emissions. We presented our findings on these reviews in reports issued on August 22, 2003, and October 21, 2003, respectively.[9] In the August report, we determined that data limitations precluded EPA from performing a quantitative analysis of the effects of the December 2002 final rule. In the

[7]Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NSR): Equipment Replacement Provision of the Routine Maintenance, Repair and Replacement Exclusion, 68 Fed. Reg. 61248 (Oct. 27, 2003) (to be codified at 40 C.F.R. pts, 51 and 52).

[8]EPA based this statement on an analysis which concluded that revising the routine maintenance, repair, and replacement exemption would lead to the increased availability of existing power plants, thereby reducing the need for new plants. See U.S. Environmental Protection Agency, *Regulatory Impact Analysis for the Specification of Categories of Activities as Routine Maintenance, Repair, and Replacement for the New Source Review Program* (Washington, D.C.: August 2003).

[9]See U.S. General Accounting Office, *Clean Air Act: EPA Should Use Available Data to Monitor the Effects of Its Revisions to the New Source Review Program*, GAO-03-947 (Washington, D.C.: Aug. 22, 2003) and U.S. General Accounting Office, *Clean Air Act: New Source Review Revisions Could Affect Utility Enforcement Cases and Public Access to Emissions Data*, GAO-04-58 (Washington, D.C.: Oct. 21, 2003).

October report, we determined that the revisions could affect the ongoing cases and the public's access to emissions information, although EPA program managers did not agree that the rule would affect access to emissions information.

You also asked us to obtain the views of a number of key stakeholders about a broader range of the revisions' potential impacts. More specifically, you asked us to obtain (1) state air quality agency officials' views about the impacts of the December 2002 final NSR rule on industry, emissions, and agencies' workloads; (2) state air quality agency officials' views about the impacts of the two December 2002 proposed NSR exclusions on industry, emissions, and agencies workloads; and (3) environmental, health, and industry organizations' views on the impacts of all the NSR revisions. In addition, we determined selected local air quality agencies' views on the revisions' potential effects.

To address the first two objectives, we administered a detailed survey to the NSR program managers in 50 states and the District of Columbia using the Internet. We surveyed program managers to ensure that we obtained information from those most involved in the day-to-day administration of the NSR program. In addition, we sent this survey to 71 local agencies, primarily those with their own authority to issue NSR permits. To identify the NSR program manager for each state or local agency, we worked with the 10 EPA regional offices and obtained some information from the State and Territorial Air Pollution Program Administrators (STAPPA) and the Association of Local Air Pollution Control Officials (ALAPCO) Internet site. We pretested the survey with selected state and local program managers to ensure the questions were clear, understandable, accurate, and comprehensive. In addition, to ensure that the questions were neutral and objective, we pretested the survey with states that were supportive of the revisions, as well as states that were not. We received complete responses from 44 state program managers and 60 local agency officials (each state or local agency could only provide one response). The managers in four states said they declined to respond so as not to disclose information related to their state's ongoing NSR-related litigation. We have provided a copy of our survey and detailed tables showing the state and local officials' responses to the questions in a separate report, *Survey of State and Local Air Quality Officials Opinions on the Impacts of the Environmental Protection Agency's Revisions to the Clean Air Act's New Source Review Program* (GAO-04-337SP), available on the Internet at http://www.gao.gov/special.pubs/gao-04-337sp. We have also summarized the main results of our survey of select local air quality agencies in appendix I.

It is important to note that we asked the program mangers for their opinions about the potential impacts, both positive and negative, of the NSR revisions. Based on our prior work, we had established, and EPA program managers told us, that very little data existed—either on the impact of the NSR program before the revisions, or on the number of facilities that might use any or all of the revisions—to try to assess the revisions' impacts. In addition, at the time we asked the state and local officials for their opinions about the exclusion of certain activities as routine equipment replacement, EPA had not defined a specific cost threshold for this exclusion as it did in the October 2003 rule. As a result, we wanted to confirm that the opinions the officials stated about the exclusion in response to our survey were still accurate. Therefore, we provided a summary of our survey results regarding this provision to STAPPA/ALAPCO. Working with its members, the association confirmed that states and localities continue to have the same views about this exclusion as they did at the time of our survey. Furthermore, we confirmed with the EPA NSR program manager that he did not think the opinions of the state and local officials had changed as a result of EPA finalizing the exclusion in its October 2003 rule.

To address the third objective, we identified key stakeholders involved in NSR policy decisions at the national level—including representatives of industry, environmental, and public health interests—and sent them a more general list of questions via electronic mail that solicited their responses about the revisions' potential effects. For a more detailed discussion of our scope and methodology, see appendix II.

Results in Brief

A majority of the 44 state air quality officials responding to our survey believes that the December 2002 final rule will provide industry greater flexibility to modify facilities without having to install pollution controls in some cases; a majority of the officials also think, however, this flexibility will come at the cost of increases in emissions and agencies' workloads. Regarding the impact of the rule on industry, 29 of the 44 officials said that, in their professional opinion, the rule allows companies to make more modifications without having to obtain permits, which can trigger requirements for controls. The permitting process and its requirements to install controls, however, was one of the best features of the NSR program prior to the revisions, according to 40 of the officials. Regarding the rule's impact on emissions, 27 of the 44 officials believe the rule will increase emissions; only 5 believe it will decrease them (the remaining officials thought they would remain the same or were unsure). Many officials expect that these potential emissions increases will affect their state's

ability to meet the national health-based air quality standards: 13 officials said their state would have difficulty meeting standards, and 14 said they would look to other pollution control programs to try to offset the anticipated increases. Only 7 said their state would not have difficulty meeting standards. (Nine said they could not judge the rule's effects). Finally, 30 of the officials predicted that implementing the rule, such as educating industry and their own staff on its provisions, would increase their agency's workload at a time when many state agencies' resources are constrained. To implement the rule, almost all of the officials said they would like EPA's assistance and we are recommending that EPA provide states with this help.

Overall, the state officials had similar opinions about the impact of the two provisions excluding some facility activities from NSR requirements if they are considered routine maintenance, repair, or replacement. Regarding the exclusions' impact on industry, 28 of the 42 officials responding to this question said that both provisions would allow companies to make more facility changes without having to obtain permits. On the other hand, 21 of the 42 officials thought the exclusion for routine equipment replacement would increase emissions, and 26 thought the proposed annual maintenance allowance exclusion would have this impact. Relatively few officials thought the exclusions would decrease emissions. In general, the officials were less concerned about the impact of the exclusions on states' ability to address air quality problems or meet standards than they were about the final rule's impact. More specifically, about a third of the officials thought the increased emissions under the exclusions would worsen air quality problems in areas that already did not meet standards. Moreover, only 5 officials thought the exclusion for routine equipment replacement would cause problems in areas that currently meet standards, and only 7 thought the proposed annual maintenance allowance exclusion would do so. Regarding the impact on agency workloads, 27 of the 44 officials responding thought that implementing the exclusions would increase their administrative burden. Overall, 21 officials opposed the exclusion for routine replacement of equipment; 32 opposed the proposed annual maintenance allowance exclusion; and, relatively few supported either provision (the remaining officials said they neither supported nor opposed it, or they had no opinion).

The other stakeholders we contacted—representatives of key industry, environmental, and public health interests who have been most active in the NSR debate at the national level—also believed the revisions in the final rule and the two proposed exclusions would decrease the regulatory burden on industry. But the stakeholders differed in their opinions about

these revisions' impacts on emissions and agencies' workloads. Representatives from the six environmental and public health groups we contacted believed the revisions allow companies to make more modifications without having to obtain an NSR permit or install controls, and that emissions and public health risks would increase as a result. These representatives also believed the changes would create more work for state and local air quality agencies, such as their having to find other ways to reduce emissions to meet air quality standards. On the other hand, the eight industry representatives we contacted expected the revisions to decrease emissions and health risks because they believe, consistent with EPA's analysis, that companies will be more likely to pursue energy efficiency projects they had postponed because of the prior NSR requirements. With these projects, facilities could operate more efficiently, burning less fuel and creating fewer emissions, according to the representatives. As we noted in our August 2003 report, however, other industry and environmental officials believed that if facilities can operate more efficiently, they will increase their production and, therefore, emissions overall. Finally, the industry representatives we contacted believed that the revisions would lighten air quality agencies' workloads. The NSR program will be clearer and simpler to implement and enforce, and agencies will have fewer permits to issue, according to some of these representatives.

Determining the likely impact of the revisions, given the conflicting opinions of state officials and stakeholders, is difficult primarily because little data exist to substantiate opinions. For example, one of the stakeholders we contacted cited an EPA analysis of the equipment replacement rule as support for his position, and another cited a Department of Energy (DOE) analysis. However, neither analysis was a comprehensive assessment of the revisions' effects. Furthermore, as we noted in our August 2003 report, the overall economic and environmental effects of the December 2002 rule are uncertain because of data limitations and difficulty determining how companies will respond to the rule. Therefore, we recommended in that report that EPA work with state and local air quality agencies to obtain the data needed to monitor the rule's emissions impacts and address any adverse effects. In this light, we are making additional recommendations in this report: that EPA (1) identify available data, or ways to obtain it, to monitor the emissions impact of the NSR exclusion for routine equipment replacement (which EPA issued as a final rule in October 2003) and (2) consider the state officials' and stakeholders' concerns about emissions and workload impacts that we identified before issuing a final rule on the proposed annual maintenance allowance.

In commenting on the report, EPA's Assistant Administrator for Air and Radiation said that the agency has concerns about our methodology and certain of our findings. Nevertheless, EPA said that our recommendations, on their face, make sense and that the agency already has plans to take these actions. Specifically, EPA asserted that GAO (1) used the opinions expressed in the survey responses as fact, and to draw conclusions and make recommendations about the NSR program, (2) did not assure balance and objectivity, (3) used a skewed survey sample, and (4) should have evaluated whether the survey results were consistent with the facts cited in EPA's analyses of the revisions' effects. GAO disagrees with each of these assertions. First, GAO solicited opinions and carefully presented them as such because we found, and EPA acknowledged, the emissions data available to analyze the NSR revisions' impacts are so limited. We also found that the state program managers' informed opinions raised substantial concerns about the revisions' impacts. Our recommendations are intended to address these legitimate concerns. Second, in designing our survey, we took numerous steps to minimize bias, including asking respondents' about both the positive and negative effects of the revisions, conducting several pretests of the survey, and having a survey specialist independent of its design review the survey to ensure that the questions were not biased. Third, GAO surveyed the universe of state program managers. These officials are on the front lines of program implementation and are in the most informed position to weigh in on the implementation impact questions we asked. Because of the large number of other affected stakeholders, it was not feasible to survey the universe. Instead, we surveyed 30 representative organizations, chosen because they are involved in national NSR policy decisions and represent diverse environmental, health, and industry perspectives. Finally, we did not use the results of EPA's analyses as a benchmark to evaluate the survey responses because our previous and current work has identified numerous limitations with those analyses. EPA's written comments and our detailed response are included as appendix III.

Background

Under the Clean Air Act, EPA establishes health-based air quality standards that the states must meet and regulates air pollutant emissions from various sources. These include industrial facilities and mobile sources, such as automobiles and other transportation. EPA has issued air quality standards for six primary pollutants—carbon monoxide, lead,

nitrogen oxides, ozone,[10] particulate matter, and sulfur dioxide—that have been linked to a variety of health problems. For example, ozone can inflame lung tissue and increase susceptibility to bronchitis and pneumonia. In addition, nitrogen oxides and sulfur dioxide contribute to the formation of fine particles that have been linked to aggravated asthma, chronic bronchitis, and premature death. In 2002, the most recent year for which data were available, 146 million Americans lived in areas that failed to meet at least one air quality standard, according to EPA.[11]

Subject to EPA's oversight, state and local air quality agencies generally administer the NSR program and operate under one of two arrangements. First, some agencies located in areas that meet air quality standards have "delegation" agreements with EPA under which they implement the NSR program contained in EPA's regulations. Under the second arrangement, agencies design their own programs by incorporating all of their air quality regulations, including federal requirements, into overall air quality plans, known as state implementation plans. They update these plans periodically and submit them to EPA for approval.

In addition, the Clean Air Act requires those agencies that implement their own air quality programs to ensure their requirements are at least as stringent as EPA's regulations. State and local agencies may also supplement the federal NSR program with additional requirements. However, some jurisdictions have laws or policies that prevent agencies from implementing more stringent regulations.

Throughout its history, the NSR program has been characterized by complexity and controversy, involving disputes between EPA and industry about, among other things, whether certain facility changes qualified for the routine maintenance, repair, and replacement exclusion. In recent years, EPA has taken enforcement action against companies in several industries, including some electricity producers, forest product manufacturers, and petroleum refineries, alleging noncompliance with the program.

[10]Ozone forms when nitrogen oxides react with volatile organic compounds in the presence of heat and sunlight.

[11]This information, provided by EPA, is used for background purposes only. We did not, therefore, assess its reliability.

In addition to concerns about enforcement related issues, some industry representatives have also raised concerns that the time required to obtain a NSR permit and the cost of installing controls have prevented facilities from making changes that enhance energy efficiency and reduce air emissions, such as modifying a boiler so that it produces the same amount of energy with less fuel. In May 2001, the Vice President's National Energy Policy Development Group recommended, among other things, that the Administrator of the EPA, in consultation with the Secretary of Energy and other federal agencies, examine the impact of the NSR program on investments in new utility and refinery generation capacity, on energy efficiency, and on environmental protection. In its June 2002 NSR Report to the President, EPA concluded, among other things, that the program had not affected investments in new power plants and refineries but had discouraged some energy efficiency projects at existing facilities, including some that would have reduced air emissions. This report also contained recommendations for revising the program.

Subsequently, EPA issued a final rule on December 31, 2002, which contained five provisions, identified in table 1, which exempt certain facility changes from requirements to obtain NSR permits.[12]

Table 1: NSR Revisions Included in the December 2002 Final Rule

Provision	Final rule requirements
Revised method for calculating "baseline" emissions	Changes the method for computing a piece of equipment's baseline emissions from the most recent 24-month period—or any other period more representative of normal operations—to any 24-month period in the past 10 years adjusted for any new emissions limits added since the baseline period. No changes were made to the baseline period for electric utilities.
Revised test for calculating emissions changes	Allows a facility to calculate expected emissions after a facility change based on its projection of future operation, rather than at full capacity. This provision extended to all other industries the same type of methodology for calculating expected emissions that EPA had granted to the utility sector in the early 1990s.
Clean unit	Excludes production equipment with state-of-the-art pollution controls from NSR requirements for up to 10 years after installation provided the unit will still meet the physical or operational characteristics that formed the basis for the clean unit designation.

[12]The final rule's provisions were based on proposals considered by the previous administration but never finalized. EPA solicited public comment on those proposals in 1996 and again in 1998.

Provision	Final rule requirements
Pollution control projects	Exempts pollution prevention and control projects from NSR if they are on EPA's list of "environmentally beneficial" projects or on a case-specific basis if a nonlisted project is determined to be environmentally beneficial. It also must be shown that the project will not cause or contribute to a violation of federal air quality standards or adversely impact air quality-related values (such as visibility) for a national park.
Plantwide emissions limits	Allows facilities to set a single emissions limit (per pollutant) for an entire plant and then make changes within the facility without triggering NSR, provided they do not exceed the limit.

Source: EPA.

These revisions have been the subject of congressional debate. For example, in 2002, the Congress held hearings during which members of the Congress, EPA officials, and a number of stakeholders—including industry, states, and environmental groups—presented their positions on the revisions. Also, legislation has been introduced in the Congress that seeks to further regulate emissions from industrial facilities.[13]

In addition, a number of environmental and public health groups, as well as a group of states primarily from the Mid-Atlantic and Northeast, claimed that the December 2002 final rule violated the Clean Air Act and asked EPA to reconsider several aspects of the rule. In July 2003, EPA agreed to do so and then solicited public comment on the areas under reconsideration. Based on this input, EPA announced at the end of October 2003 that it would make several technical changes to the rule. State and local agencies that operate under delegation agreements were required to have implemented the December 2002 rule by March 2003 or return responsibility for implementing the rule to EPA, while those operating under state implementation plans have until January 2006 to revise their regulations accordingly.[14]

As for the December 2002 proposed provisions—that would further specify what facility changes are exempt from NSR requirements under the routine maintenance, repair, or replacement exclusions—a coalition of primarily Mid-Atlantic and Northeastern states and environmental and public health groups challenged the legality of the equipment replacement rule in court after it was finalized in October 2003. State and local agencies

[13]Clear Skies Act of 2003 (S. 485 and H.R. 999); Clean Power Act of 2003 (S. 366); Clean Air Planning Act of 2003 (S. 843); Omnibus Mercury Emission Reduction Act of 2003 (S. 484).

[14]Instead of meeting the March 2003 deadline, state and local agencies could elect to have EPA take over the administration of portions of their NSR programs affected by the revisions. Several agencies have chosen this option.

that operate under delegation agreements were required to implement this rule by December 26, 2003 or have EPA implement it for them, while those operating under state implementation plans have until October 2006 to revise their regulations accordingly. However, on December 24, 2003, the U.S. Court of Appeals for the District of Columbia Circuit stayed the equipment replacement rule pending further review, preventing the rule from going into effect while the court considers the legal challenges. EPA has not determined what additional action, if any, it will take regarding establishing an annual maintenance allowance below which facility changes would be considered exempt from NSR requirements.

A Majority of the State Officials Expect the December 2002 Rule Will Provide Industry with Greater Operating Flexibility but Also Increase Emissions and Agencies' Workload

A majority of the state officials expect that the December 2002 final rule will provide industry with greater flexibility to make facility changes without triggering NSR requirements for permits. However, a majority of the officials also expect that the rule will lead to an overall increase in emissions of harmful air pollutants and hinder efforts to meet air quality standards, potentially creating or exacerbating risk to public health. Most of the officials also expect that the rule will increase their agencies' workload.

More than Half of the State Officials Expect Most of the Rule's Provisions to Decrease the Number of NSR Permits Issued and Provide Flexibility for Companies to Modify Their Facilities

In pursuing the December 2002 final rule, EPA, among other things, sought to offer facilities greater flexibility to improve and modernize their operations. Similarly, the state air quality agency officials (29 of 44) said that in their professional opinion, obtaining fewer permits and more flexibility to modify facilities are the rule's two primary positive effects for industry. For example, more than half of the state officials believe that four of the five provisions of the rule[15]—including the revised test for determining whether a facility modification significantly increases net emissions and is, therefore, subject to NSR—will decrease the number of permits state air quality agencies issue.

[15]Less than half of the officials expect the provision exempting pollution control projects to lead to fewer permits.

For perspective, the state officials reported that their agencies had issued a total of 600 NSR permits during the 3 years prior to the final rule to companies that were modifying existing facilities.[16] The officials expect the number of such permits issued to decrease under the final rule because it expands the range of activities that companies may pursue without a permit and, in some cases, controls. Forty of the state officials identified the requirements to install pollution controls as one of the best features of the NSR program prior to the final rule. According to EPA, however, several provisions of the rule require companies to make certain commitments, such as accepting an overall limit on their emissions, in exchange for avoiding permitting. Therefore, EPA believes the rule will encourage investments that decrease emissions.

As we reported in our August 2003 report, EPA found that the December 2002 final rule would lead to overall benefits by encouraging energy efficiency projects, reducing emissions and related health risks, and providing economic benefits to companies affected by the program. For example, EPA's analysis found that the rule would encourage companies to implement energy efficiency projects that would reduce emissions, such as upgrades to boilers used to generate power.[17] However, only 9 of the 44 officials we surveyed anticipated that the rule would provide the impetus for companies to increase these projects.

[16]According to EPA, this number may include some permits for new units at existing facilities. The officials reported issuing 528 permits to companies that were constructing new facilities. EPA program managers said the December 2002 rule did not affect new facilities and new units at existing facilities.

[17]As we concluded in our August 2003 report, EPA relied primarily on anecdotal information from industry in concluding that the NSR program, prior to the final rule, discouraged some energy efficiency projects, including some projects that would have reduced air emissions. Twenty-three of the 44 state officials we surveyed said that the prior NSR program discouraged companies' willingness to pursue energy efficiency projects.

A Majority of the State Officials Expect the Rule to Increase Emissions and Hinder Efforts to Meet Health-based Air Quality Standards

A majority of the state officials expect emissions to increase as a result of the final rule—in contrast to EPA's conclusion, in the agency's analysis of the rule's environmental effects, that it will reduce emissions from industrial facilities.[18] More specifically, 27 of the 44 officials we surveyed expect that overall, the December 2002 rule will increase emissions; 8 officials believe emissions will decrease or remain the same (the remaining 9 officials could not judge the emissions impact). At least half of the officials thought the rule would increase emissions of carbon monoxide, nitrogen dioxide, ozone, particulate matter, or sulfur dioxide—all of which have been linked to health problems and are controlled by a variety of Clean Air Act programs.

When asked about the emissions impact of each specific provision in the final rule, a majority of the state officials identified two of the rule's provisions as most likely to cause emissions increases, as table 2 illustrates. These include the revised methods for determining (1) a facility's historical or "baseline" emissions and (2) whether a change will result in a significant net emissions increase.

Table 2: Anticipated Emissions Effects of the December 2002 Final Rule Provisions (number of state officials' responses)

Final rule provision	Increase emissions	Decrease emissions	No change in emissions	Unable to judge	Total
Clean unit	20	6	12	6	**44**
Plantwide emissions limit	24	10	4	6	**44**
Pollution control project	14	10	12	8	**44**
Revised method for calculating "baseline" emissions	29	2	5	8	**44**
Revised test for calculating emissions changes	29	1	5	9	**44**
Overall effects of rule	27	5	3	9	**44**

Source: GAO analysis of survey responses.

For example, a majority of the officials believe the "baseline" provision will increase emissions. This provision allows industrial facilities to use any consecutive 24-month period in the previous decade as a baseline.[19] EPA changed this emissions calculation method to, among other things, account for variations in business cycles. The agency concluded that this

[18]See U.S. Environmental Protection Agency, *Supplemental Analysis of the Environmental Impact of the 2002 Final NSR Improvement Rules* (Washington, D.C.: Nov. 21, 2002).

[19]EPA historically used the 2 years immediately preceding the proposed change to establish a facility's actual emissions. However, in some cases, the agency allowed use of an earlier period.

provision would have negligible emissions consequences because it would not alter the baseline for most facilities, including coal-fired power plants (the largest emitting group of facilities). In addition, companies must adjust their baselines downward to reflect any other emissions limitations that have become effective since the period of time they selected for establishing their baseline, according to EPA.[20] EPA program managers, therefore, maintain that emissions baselines will not significantly increase as a result of this provision.

Nevertheless, some officials provided written responses to our survey describing their concerns over this provision. Several such officials asserted that it allows companies to select the 24-month period within the previous 10 years in which their emissions were highest.

In addition, 24 officials thought that the provision for plantwide emissions limits, whereby facilities accept a cap on their overall emissions to avoid undergoing NSR, would nevertheless increase emissions. For example, several officials said that the rule enables facilities to establish their emissions cap based on their highest 2 years of emissions in the previous 10 years, thereby enabling them to create a cap that exceeds their current emissions. On the other hand, 10 officials said this provision would decrease emissions, and several asserted that it creates incentives for facilities to reduce or limit their emissions. EPA program managers maintain that this provision will decrease emissions.

In addition to these overall effects, 24 of the state officials anticipate that the rule will particularly allow facilities built prior to the establishment of the NSR program in 1977 to increase their emissions. At the time, the Congress decided to allow existing facilities to defer installation of pollution controls until a major modification was made with the expectation that, over time, all facilities would install such equipment, and this would lead to lower overall emissions. However, as we concluded in our June 2002 report on emissions from older power plants,[21] taken as a whole, such plants still emit more air pollution for each unit of electricity generated than newer plants. For example, we found that for each

[20]According to EPA, such requirements include those limiting emissions of toxic air pollutants, nitrogen oxides, as well as requirements in state implementation plans for attainment of the air quality standard for ozone.

[21]See U.S. General Accounting Office, *Air Pollution: Emissions from Older Electricity Generating Units*, GAO-02-709 (Washington, D.C.: June 2002).

megawatt of electricity produced, the older facilities emitted about 100 percent more sulfur dioxide and 25 percent more nitrogen oxides than newer facilities.

State officials that believe emissions increases will occur under the rule gave various opinions as to how they would manage such increases. For example, 7 officials said that the rule would not impede their ability to meet or maintain air quality standards. Another 14 expect they will offset the anticipated increases using other air quality regulations, such as those used to control emissions from mobile sources (automobiles and other transportation). However, 13 others expect the rule to impede their ability to meet or maintain standards—despite these other regulations. (Nine said they could not judge the rule's effects.) This could create challenges for agencies that expect the rule to interfere with efforts to meet air quality standards, but that said they were prohibited from adopting more stringent regulations, such as the District of Columbia, Kentucky, New Jersey, New Mexico, Oklahoma, Pennsylvania, and Wisconsin.[22] On the other hand, 28 state officials said that state law or policy does not prohibit them from adopting more stringent rules than federal requirements.

Most State Officials Believe the Rule Will Not Resolve Uncertainty About When NSR Applies to a Modification

A majority of the state officials' responses contrasted with EPA's statement that the final rule would provide greater certainty than in the past for companies and regulators when determining when NSR requirements apply. Officials identified this uncertainty as one of the program's main problems before the rule, and 30 officials identified continued uncertainty as the rule's greatest negative impact on state agencies and industry.

More specifically, one official explained that the rule is too vague to be implemented with certainty or enforced. Another state official said that the rule's new method for determining whether a facility modification would significantly increase its emissions is by far the most complicated process yet devised for making such determinations. Furthermore, the official stated that a company trying to do the right thing could easily be confused when attempting to determine its future levels of emissions. This confusion could increase both the burden that the rule imposes on state

[22]The following jurisdictions said that they are restricted from adopting more stringent regulations than federal requirements: the District of Columbia, Iowa, Mississippi, Missouri, Montana, New Jersey, New Mexico, Kentucky, Ohio, North Dakota, Oklahoma, Pennsylvania, South Dakota, Utah, Virginia, and Wisconsin.

agencies to implement and enforce it and the costs for companies that want to use its provisions.

In addition, 30 of the state officials said that the final rule did not resolve any of the other significant problems with the program, including difficulty in determining the stringency of pollution controls that facilities should install when required to do so.

A Majority of State Officials Expect the Rule Will Increase Agencies' Workloads and Would Like EPA's Assistance in Understanding and Implementing the Rule

The state officials' survey responses showed that many expect the final rule to impose demands on their agencies, including increased workloads. This comes at a time when many states face budget deficits. Nevertheless, many of the state officials said their agencies plan to adopt all or most of the rule's provisions as written (see table 3).

Table 3: Ways in Which Officials Expect Their States to Adopt the Final Rule

	For areas that meet standards	For areas that do not meet standards
Adopt all or most provisions as written	20	17
Seek review of rule in court	8	9
Adopt or maintain more stringent regulations	3	2
Other/do not know	13	8
Total	**44**	**36**

Source: GAO analysis of state survey responses.

Note: Some states have both areas that meet standards and areas that do not meet them.

In revising state programs to incorporate the rule, 31 of the officials said that it would take between one and four staff to adopt the rule's provisions and obtain EPA's approval of their proposed implementation plans. Seventeen of the 36 officials that were able to anticipate the staff needed said that their agency had a plan for obtaining the necessary staff time, but 15 others did not (4 said they did not know if their agency had a plan).

In addition, 30 state officials expect that having to administer the rule after it is adopted will increase their workload at least to some extent—despite the fact that most expect a decrease in the number of permits issued in the future. Another 6 expect a decrease in their workload, and 1 expected no change. As noted above, most officials expected continued uncertainty for state agencies as a negative impact of the rule. One official explained that

the state agency was spending considerable time learning the regulations and training agency staff and companies, while also developing record keeping, tracking, and other administrative processes. Another official expected a dramatic increase in the agency's administrative workload, including time spent reviewing information associated with the rule's provisions for plantwide limits, among other things. Similarly, another official expected a high demand among companies for plantwide limits and that developing them would be very resource intensive. However, another official said that the workload would increase initially because of the learning curve with the new program but then decrease over time. The remaining 7 officials did not know or had not assessed the rule's workload impact. EPA program managers maintain that, over time, the rule will decrease the workload for agencies.

To better understand and implement the rule, all but one of the agency officials said that they would benefit from some type of assistance from EPA, including updated guidance or workshops.

At Least Half of the State Officials Expected the Proposed Revisions Defining NSR Exclusions to Provide Industry Greater Flexibility but Also Increase Emissions and the Administrative Workload for State Agencies

Similar to their opinions on the final rule, a majority (28 of 42) of the state officials expected EPA's two NSR revisions—as proposed in December 2002—to provide companies the flexibility to perform maintenance and replacement activities without obtaining permits and installing pollution controls. However, at least half of the officials also expected that, as a result, emissions would increase, and a third expected the exclusions would exacerbate existing air quality problems and health risks in areas that already do not meet standards. A majority also expected a greater administrative burden and uncertainty for agencies in determining when a facility's activities can be excluded.

A Majority of State Officials Expected the Two Exclusions to Provide Industry the Flexibility to Undertake More Facility Modifications without a NSR Permit and Pollution Controls

Twenty-eight state officials expected the two exclusions would exempt facility changes from requirements for permits and controls, decreasing the number of permits they issue over the next 5 years. This would provide industry with greater flexibility to perform routine maintenance, repair, and replacement activities without incurring the costs and delays of the NSR program. EPA previously determined which activities were considered routine maintenance, repair, and replacement, and thus excluded from NSR, on a case-by-case basis. In December 2002, EPA proposed that, in addition to the case-by-case determination, exclusions could also be determined according to a cost threshold mechanism, below which activities could be exempted from NSR, rather than an emissions threshold. Although, at the time of our survey, the 20 percent cost threshold for replacing equipment had not been established, one official said that this exclusion would exempt most facility modifications from NSR.

The state officials identified fewer permits and increased flexibility as the exclusions' most positive benefits for companies. In addition, 19 of the officials expected that the exclusions would have a positive effect on companies' efforts to pursue energy efficiency projects. These officials' opinions are, therefore, consistent with EPA's finding that the exclusions would remove barriers to energy efficiency investments.

About Half of the State Officials Opposed the Equipment Replacement Exclusion and a Majority Opposed the Annual Maintenance Allowance

Overall, 21 of the 44 officials said they opposed the equipment replacement exclusion. Another 12 said they supported this provision, and the others said they neither supported nor opposed it, or had no opinion. One of the officials who expressed concerns about the proposal said that implementing the equipment replacement exclusion would reduce or eliminate incentives for companies to install well-controlled equipment. Another official expressed the concern that the exclusion did not include the necessary provisions to ensure that a company does not replace an entire emissions unit over a period of just a few years without installing controls.

In addition, 32 of the 44 officials said they opposed the annual maintenance allowance exclusion. Another 3 officials said they supported this provision, and the others said they neither supported nor opposed it, or had no opinion. Specifically, some states were concerned that the financial analysis to evaluate the cost data to determine exclusions is too complex. One official asserted that the annual maintenance allowance would enable companies to conduct projects that are not routine, thereby extending the life of equipment that should have been upgraded with more

efficient equipment. According to EPA, the agency received a mixture of positive and negative comments on the annual maintenance allowance approach from key stakeholders, including industry, state and local agencies, and environmental groups. The agency has not determined whether it will finalize this portion of the proposal or pursue other options to address routine maintenance activities.

At Least Half of the State Officials Expected the Proposals Would Increase Emissions, Potentially Worsening Air Quality

At least half of the state officials believed that the exclusions would result in increased emissions of harmful air pollutants. For example, half expected that the equipment replacement exclusion would increase emissions, and several believe the cost threshold mechanism will allow older facilities to avoid installing pollution controls. Only 2 officials thought that this exclusion would decrease emissions, while the others expected no change (7) or could not judge (12).

Similarly, 26 of 42 officials who responded said they expected the proposed annual maintenance allowance exclusion would increase emissions. For example, one official explained that because the exclusion is based solely on the amount of money spent without regard to emissions increases, facilities could make changes that increase emissions and be exempt from NSR. Only 1 official expected this exclusion would decrease emissions, while the others expected no change (1) or could not judge (14).

Overall, 21 of the 44 state officials believed the two exclusions would enable older facilities, built prior to 1977, to increase emissions. Another 8 expected emissions to decrease or remain the same, and 15 were unable to judge. As discussed earlier, older power plants emit more pounds of pollutants per unit of energy generated than newer plants. One official said that older facilities would continue to be modified without going through NSR and upgrading their pollution controls. Another official said that enabling older power plants to avoid installing pollution controls violated the intent of the Clean Air Act.

While at least half of the officials expected the exclusions to increase emissions, fewer expected them to exacerbate existing air quality problems or create new ones. For example, of the 30 officials located in states with areas that currently do not meet air quality standards, about a third expect the equipment replacement exclusion to interfere with areas' efforts to meet standards, while another third did not expect it to interfere, and the final third could not judge. In addition, 13 of these officials expected the annual maintenance allowance exclusion to interfere, while 5

did not, and 12 could not judge. In terms of creating new air quality problems in areas that currently meet standards, only 5 of 44 officials expected the equipment replacement exclusion to have this impact, while 20 did not, and 19 could not judge. Furthermore, only 7 of these officials expected the annual maintenance allowance exclusion to have this impact, while 16 did not, and 21 could not judge.

The opinions of officials that expect emissions increases and adverse air quality effects contrast with EPA's conclusion that the exclusions would enhance the environmental protection and benefit derived from the program. In addition, EPA's economic analysis of the exclusions found that they would lead to health benefits and did not account for any potential health-related costs.[23] However, to the extent that either exclusion would cause or exacerbate violations of health-based air quality standards, EPA's analysis would have underestimated the health effects and costs of the exclusions.

A Majority of the State Officials Expected the Exclusions Would Create a Greater Administrative Workload

A majority of the officials said that implementing the exclusions would increase their administrative burden (27 of 44) and create uncertainty for agencies in determining when a facility's activities can be excluded (28 of 44). These opinions contrast with EPA's conclusion in the analysis noted above that they would provide greater regulatory certainty. Several officials expressed concerns about the complex accounting procedures they would need to use to determine compliance with the cost threshold mechanisms and whether modifications could be excluded from NSR permitting. For example, one official said that the accounting procedures were well beyond the expertise of the state agency, and another official described how the agency would need to hire certified public accountants to determine compliance with the exclusions.

[23]See U.S. Environmental Protection Agency, *Regulatory Impact Analysis for the Specification of Categories of Activities as Routine Maintenance, Repair and Replacement for the New Source Review Program* (Washington, D.C.: August 2003).

Other Stakeholders Expected the Proposed and Final NSR Revisions to Benefit Industry but Disagreed on Their Effect on Emissions and Air Quality Agencies' Workload

According to key stakeholders we contacted, the proposed and final revisions to the NSR program would benefit industry by decreasing the regulatory burden on companies that modify their industrial facilities, but these stakeholders disagreed on the revisions' impact on emissions and other factors. Stakeholders representing environmental and public health groups anticipated that the revisions would mean fewer modifications will be subject to NSR's permit and control requirements, but more work for regulators as they look for alternative ways to control emissions. In contrast, stakeholders representing the industry groups asserted that the proposed and final changes clarified the NSR program, thereby making permitting easier, and encouraging investment in energy efficient projects that lower fuel consumption and emissions. As we concluded in our August 2003 report, the overall economic and environmental effects of the December 2002 rule are uncertain because of data limitations and difficulty determining how individual companies will respond to the rule.

Environmental and Public Health Group Stakeholders Expected the Proposed and Final Revisions to Decrease Industry's Regulatory Burden but Increase Emissions and Air Quality Agencies' Workload

According to the opinions of the six environmental and public health group stakeholders we contacted, as well as an association representing all of the state and local air quality agencies, the proposed and final revisions would lessen the regulatory burden on companies because, as discussed earlier, fewer modifications would trigger NSR. Under the prior rules, to obtain a permit, a company would have to submit an application and go through a public notice and comment period—a process that could take 3 months to more than 1 year. The company would also have to periodically report on their compliance with the permit. Furthermore, in cases where the modification would significantly increase emissions, the company would have to go through the time and expense of installing emission controls. As a result of the NSR revisions, however, environmental and public health stakeholders anticipate that companies would forgo the emissions reductions that would have been achieved by installing controls, thereby increasing emissions and public health risks.

As with a majority of the state air quality officials responding to our survey, nearly all of the environmental and public health group stakeholders asserted that the proposed and final revisions would create more work for state and local air quality agencies. Several of them believe that, because the revisions would result in fewer permits, they would also result in fewer recordkeeping and reporting requirements for industry. This, in turn, would make it harder for the agencies to track and monitor changes at facilities that could influence emissions. For example, according to the association representing these agencies, the revisions would make it difficult for them because they would now have to identify

other sources of emissions information instead of relying on companies to report this information, as companies were previously required to do under the NSR program. We concluded in our October 2003 report that, overall, as a result of the final rule, the public may have less assurance that they will have notice of, and information about, company plans to modify facilities in ways that affect emissions, as well as less opportunity to provide input on these changes and verify they will not increase emissions.

Some of the environmental and public health stakeholders also pointed out that the agencies will be forced to find programs other than the federal NSR program to control emissions so that local air quality meets the national standards. For example, areas not meeting at least one of the standards must develop a state plan showing how they will reduce emissions to comply with the standard.[24] But with fewer modifications and facilities subject to emission controls through NSR, air quality agencies will have to look for other ways to reduce or control emissions. However, according to some environmental and public health groups, these alternative regulations and programs can be more difficult to implement because, for example, they focus on smaller sources of emissions compared with the sources subject to the federal NSR program. Therefore, to achieve the same emissions savings as they would have under NSR, the agencies will have to track emissions and pursue reductions from a greater number of sources, requiring more staff time and resources for permitting and enforcement.

[24]Otherwise, the areas may be subject to sanctions, such as the loss of access to federal transportation funding.

Industry Stakeholders Asserted That the Proposed and Final Revisions Clarify When NSR Applies to a Modification, Thereby Encouraging Energy Efficiency Projects and Reducing Emissions and Air Quality Agencies' Workload

Most industry stakeholders we contacted felt the proposed and final revisions would lessen, or at least not increase, their regulatory burden, similar to the opinions of the environmental and public health stakeholders. Fewer modifications would be subject to the requirements to obtain a permit and install controls. Furthermore, several industry stakeholders said their regulatory burden would decrease because the revisions clarified when NSR actually applied. Several industry stakeholders explained that before the revisions, companies were uncertain as to whether some of their modifications triggered NSR. For example, one stakeholder said that the existing routine maintenance exclusion was arbitrary and unclear. As a result, to avoid enforcement actions and penalties, companies would opt not to make the modifications.

On the other hand, the industry stakeholders disagreed with the environmental and public health stakeholders on a number of other potential impacts. First, all of the industry stakeholders believed the changes will encourage companies to invest in energy efficiency projects they avoided in the past because of NSR requirements. For example, as we discussed in our October 2003 report, under the prior program, to determine if a modification would increase emissions enough to trigger NSR, companies generally had to assume that facilities would run at the maximum capacity or the highest capacity allowed by the existing NSR permit after making the modification. A company had to make this assumption even if the facility had not run at this level in the past or was not expected to in the future. Industry stakeholders argued that having to assume this potential increase in emissions biased the test and overstated the true emissions impact of a project. One industry representative gave the example of a proposed modification that had the potential to save the company an estimated $300,000 per year and reduce emissions, but that the company did not pursue because the emissions test predicted it would have triggered costly NSR controls.

In the December 2002 final rule, EPA revised the method of calculating the expected emissions so a company can project the actual activity level—as opposed to the maximum potential activity level—after the facility change and estimate the resulting emissions accordingly. Therefore, according to some of these stakeholders, such energy efficiency projects most likely will not trigger NSR requirements under the revised rule and will be less costly for companies to pursue. The industry stakeholders believed that, with the increased energy efficiency investments, facilities would use less fuel for the same levels of production.

However, as we discussed in our August 2003 report, industrial facilities' future production levels and air pollutant emissions may fluctuate in response to changing economic conditions and other factors. In that report, we also noted that the executive director of one industry trade association stated that it would make economic sense to increase production at more efficient facilities. The representative "could not imagine a utility spending money on extra capacity and then not utilizing it." As a result, some environmental groups that disagreed with industry were concerned that, if facilities become more efficient, they will actually cause a net increase in overall emissions and health risks. On the other hand, according to an EPA program manager, the agency expected that, if a company increased production at its more efficient facilities, it could decrease production at its less efficient facilities, more than offsetting any emissions impact. However, the manager said that the agency had not analyzed the air pollution impacts of shifts in production that facilities make after implementing energy efficiency projects to support the agency's viewpoint.

The industry stakeholders we contacted believed the increased projects and lower emissions they anticipate will result more from the revisions included in the December 2002 final rule rather than the October 2003 rule. This is because, according to some stakeholders, the latter rule simply reinforces how companies had already been interpreting NSR in the past to determine if a modification was a routine replacement of equipment and, therefore, exempt from NSR requirements. However, the October 2003 rule specifies a 20 percent cost threshold, below which a company could make certain changes as routine replacement and exempt from NSR.

Also, in contrast with the environmental and public health groups, some of the industry stakeholders argued that even with the NSR exemptions, companies will still have to monitor facility emissions and install emission control technologies because of other clean air regulations. For example, under the acid rain program, some utilities have had to control their facilities' sulfur dioxide and nitrogen oxide emissions. Under the air toxics program, some companies have had to install controls to reduce facility emissions of hazardous air pollutants. In addition, the stakeholders maintained that state and local air quality agencies will still have to monitor any project that could increase emissions to ensure compliance with these programs, and the agencies may have their own requirements governing facility modifications. While this is true, we noted in our October 2003 report that the scope of the state and local program requirements varies widely.

Finally, most of the industry stakeholders, unlike the environmental and health stakeholders, expected a decrease in the state and local air quality agencies' workload as a result of the proposed and final revisions. The stakeholders claim the revisions will streamline agencies' monitoring, minimize the time they spend determining if companies have properly complied with NSR, and ease the permitting process.

While the stakeholders based their views primarily on professional opinion, one cited a DOE analysis and another cited an EPA analysis as support for their views. The DOE analysis included an estimate of emissions if all coal-fired power plants installed pollution controls while the EPA analysis focused on the possible emissions consequences of the equipment replacement exclusion. Neither analysis comprehensively assessed the impacts of the NSR revisions.

One environmental representative compared the emissions levels in the DOE analysis with those in the EPA analysis to support the assertion that the exclusions would represent a rollback from the current program because the levels in the DOE analysis were lower than EPA's. However, the DOE analysis is not useful as a benchmark for assessing the effects of EPA's revisions because, under the NSR program, facilities only have to install the best available controls when making major modifications. In addition, this analysis was not specifically related to EPA's NSR revisions.

An industry stakeholder cited the above-mentioned EPA analysis of the equipment replacement rule to support the assertion that the exclusions would decrease emissions. However, the EPA analysis was limited in scope—it considered only power plants (the largest emitting category of facilities) and only two pollutants, nitrogen oxides and sulfur dioxide. Another related analysis performed by an EPA contractor included six additional industries and was based on case studies.

Finally, as we concluded in our August 2003 report, the overall economic and environmental effects of the December 2002 rule are uncertain because of data limitations and difficulty determining how industrial companies will respond to the rule.

Conclusions

EPA's assessments of the December 2002 and October 2003 NSR revisions concluded that the rules would provide industry with greater flexibility to modify their facilities without having to obtain NSR permits or, in some cases, install pollution controls, while enhancing the program's environmental benefits. The survey responses indicate that most state

program managers agreed with EPA's conclusion that the revisions would enhance flexibility for industry. However, a majority of state program managers did not agree with EPA's conclusion that the increased flexibility would lead to less pollution, raising questions about the final and proposed revisions' environmental effects. Specifically, most of the state officials believed that the December 2002 rule and the not-yet finalized annual maintenance allowance exclusion would increase emissions, and half believed the equipment replacement provision would have this effect. Furthermore, of those that believe emissions increases will occur, a number of the officials thought that these anticipated increases would cause violations of health-based air quality standards or delay the attainment of the standards in areas that already have poor air quality, potentially creating or exacerbating health risks. Environmental groups agreed with the state program managers who expressed concerns, but other state officials and industry stakeholders maintained the revisions would have positive environmental effects. Little data currently exist to resolve these competing viewpoints. We therefore recommended in our August 2003 report that EPA determine what data are available to monitor the December 2002 rule's effects and use the monitoring results to determine what effects the rule has created. For the same reason, if the equipment replacement rule eventually takes effect—pending the resolution of legal challenges—it will be necessary to monitor its implementation to determine its environmental and other effects. In addition, more EPA assistance for states would help them implement the new rules and lessen their administrative burden.

Recommendations for Executive Action

To ensure that state and local air quality agencies are adequately equipped to implement the new NSR rules, as required by EPA, and that the rules do not have unintended effects on emissions and public health, we recommend that the EPA Administrator (1) provide state and local air quality agencies with assistance in implementing the December 2002 rule, (2) pending the court's decision on the equipment replacement rule, work with state and local air quality agencies to identify the data that the agency would need to monitor the effects of this rule and use the monitoring results to identify necessary changes,[25] and (3) consider the state and stakeholder concerns about emissions and workload impacts that we

[25]EPA should coordinate this effort with its response to a similar recommendation in our August 2003 report (GAO-03-947).

identified before deciding whether to issue a final rule on the second proposed exclusion, the annual maintenance allowance exclusion.

Agency Comments and Our Evaluation

We provided EPA with a draft of this report for review. The Assistant Administrator for Air and Radiation said that the agency has concerns about our methodology and certain of our findings. Nevertheless, EPA said that our recommendations, on their face, make sense, and that the agency already has plans to take these actions.

Specifically, EPA asserted that GAO (1) in some instances, used the opinions expressed in the survey responses—which EPA believes may not have been grounded in a correct understanding of the revisions—as fact, and to draw conclusions and make recommendations about the NSR program, (2) did not carry out its work in a way that assured balance and objectivity, (3) used a skewed survey sample, and (4) should have evaluated whether the survey results were consistent with the facts cited in EPA's analyses of the revisions' effects.

GAO disagrees with each of EPA's assertions. First, as we previously reported and EPA acknowledged, there are limited data available to assess the effects of the NSR revisions. Therefore, consistent with the review's objectives, we solicited the opinions of key stakeholders on the revisions' effects and clearly presented them as opinions in both the title and body of the report. When, in this context of scarce data, many state program managers responsible for program implementation express concerns about the revisions' adverse effects, we believe it would be prudent to take these concerns seriously. As such, GAO makes a number of recommendations to (1) collect data on and monitor the revisions' actual impacts, (2) consider stakeholders' opinions before further revising the NSR program, and (3) provide state and local agencies assistance in implementing the revisions. Taking this latter action will help to address EPA's concerns that the respondents' may not have fully understood the revisions.

Second, we developed the survey using standard survey research principles and took steps to minimize question bias, including conducting several pretests, asking respondents about both the positive and negative effects of the revisions, and subjecting the survey to a thorough review by a GAO survey specialist not involved in its development. To ensure the independence of our efforts, we do not routinely seek the subject agency's review of our survey instruments. Nonetheless, we worked with NSR program managers within EPA to understand how the revisions would

work in practice as well as their potential effects and used this information to design the survey questions.

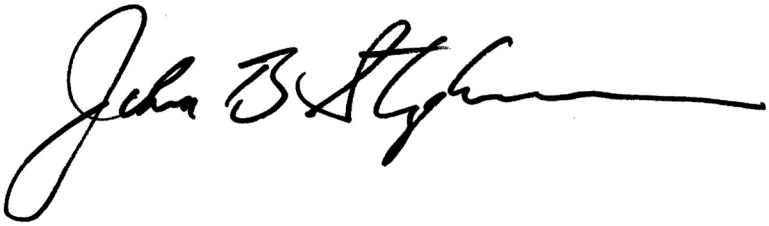
Third, GAO surveyed the universe of state program managers because we believe they are in the most informed position to determine the revisions' impacts on their programs and workloads. Furthermore, in the survey's instructions we asked the managers, when answering the questions, to coordinate with the officials within their agencies as they deemed necessary and appropriate. As such, we relied on each state agency's own procedures for completing and reviewing the survey responses. In addition, we surveyed select stakeholders representing environmental, health, and industry interests. Because of the large number of other affected stakeholders, it was not feasible to survey the universe. Instead, we surveyed 30 organizations representing diverse perspectives and chose them because they were involved in national NSR policy decisions. A number of these groups represent the views of large numbers of industrial companies or have a national membership base.

Finally, GAO believes EPA's assertion that we should have evaluated whether the opinions of state officials responsible for program implementation were consistent with "facts" cited in EPA's analyses is disingenuous. As we point out in our previous and current work, these "facts" are largely assertions based on EPA's limited analysis of the revisions' effects. We therefore did not use the agency's analysis as a benchmark to evaluate the survey responses. We further believe that the state program managers provided plausible explanations for why their views disagreed with those asserted by EPA.

Appendix III contains the text of EPA's letter along with our detailed responses to the issues raised. EPA also provided a number of technical comments, which we have incorporated as appropriate.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 10 days from the report date. At that time, we will send copies of the report to the EPA Administrator and other interested parties. We also will make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at http://www.gao.gov.

If you have any questions about this report, please contact me at (202) 512-3841 or stephensonJ@gao.gov. Key contributors to this report are listed in appendix IV.



John B. Stephenson
Director, Natural Resources and Environment

Appendix I: Summary of Local Agency Officials' Responses

This summary provides an overview of survey responses completed by 45 local air quality agencies—those with independent authority to adopt rules and write, review, or issue New Source Review (NSR) permits. Seventeen of the 45 local air quality agencies are in California. The remainder are scattered across the remaining 14 states that have local air quality agencies. (See appendix II, table 3.) Detailed local survey results are available at: http://www.gao.gov/special.pub/gao-04-337sp.

Similar to the state officials, more than half of the local officials expect that the December 2002 rule will provide industry with greater flexibility to make facility changes, but also believe that the rule will result in increased emissions. However, in contrast to the state officials, fewer than half of the local officials anticipate their workload to increase as a result of the rule.

For some questions, the number of officials that provided answers varied.

Impacts on Industry

In terms of positive effects, 28 of 45 local officials believe the rule will result in greater flexibility for industry to make facility changes, similar to state officials. Also, 24 of the local officials believe that the rule will benefit industry by enabling companies to avoid NSR permitting. In addition, 10 of the officials identified greater opportunities for industry to pursue energy efficiency projects as one of the positive effects of the rule. On the other hand, only 2 of the local officials believe the rule will positively affect industry by providing companies with greater certainty as to when NSR applies to a facility modification. Twenty of the officials believe that regulatory uncertainty is one of the rule's primary negative effects.

Emissions Impacts

As with the state officials, a majority (24 of 44) of local officials expect the rule to increase emissions, while 10 expect no change and 9 were unable to judge. More than half of the officials believe the revised methods for calculating a facility's historical "baseline" emissions (25 of 44) and estimating emission changes from a modification (23 of 44) will lead to increased emissions. Fewer than half expect the remaining provisions to increase emissions. Twenty-two of the officials anticipate that the rule will allow facilities built prior to 1977—which did not have to install controls until they made a modification that significantly increased emissions—to increase total emissions because they can continue to postpone installing controls, while 11 anticipate no change in emissions from such facilities. Only 6 officials do not believe the rule will affect their ability to meet or

continue to meet air quality standards. On the other hand, 16 expect that they can use other clean air regulations to meet standards, and 11 believe that taking into consideration the impacts of the final rule, these other regulations will not help them meet or continue to meet the standards.

Impacts on Local Agencies

Although a greater percentage of local officials (21-24 percent) than state officials (6-7 percent) anticipate adopting or maintaining more stringent regulations than EPA, fewer local officials (22 of 45) than state officials (30 of 44) expect the rule to increase their workload. In addition, 5 of 43 officials do not anticipate the need for additional staff to adopt the final rule and obtain EPA approval in contrast to state officials. All of the local officials said they would like some type of assistance from EPA, such as implementation workbooks and training courses.

Similar to state officials, at least half of the local officials expected the two exclusions for routine maintenance, repair, and replacement activities to provide industry greater flexibility to make changes, but unlike state officials, fewer than half expected the exclusions would increase emissions or their administrative burden. Overall, 22 of 45 officials said that they opposed the equipment replacement exclusion and 16 supported it, while 28 opposed the annual maintenance allowance exclusion and 5 supported it.

Impacts on Industry

More than half (24 of 45) of the local officials believed the exclusions would provide industry with greater flexibility to make facility changes, as did half of the state officials. Twenty-seven believed that not having to obtain a NSR permit would be one of the exclusions' most positive benefits for industry. Thirteen of 43 local officials expected the exclusions to positively affect a company's ability to pursue energy efficiency projects, while 16 expected no change.

Emissions Impacts

Eighteen of 45 officials expected the equipment replacement exclusion to increase emissions, while 14 expect no change, and 10 were unable to judge. Twenty-one of 45 officials expected the annual maintenance allowance exclusion to increase emissions, while 8 expected no change, and 15 were unable to judge. In addition, 21 of the 45 officials anticipated that facilities built prior to 1977 would increase emissions as a result of the exclusions, while 11 expected no change and 10 were unable to judge. These figures are similar to the state responses, however, compared with state officials, fewer local officials expected the exclusions to result in

significant enough emissions changes to exacerbate air quality problems in areas that do not meet standards or cause new problems in areas that currently meet the standards.

Impacts on Agencies

Unlike state officials, fewer than half (22 of 45) of the local officials believed the exclusions would increase their administrative burden.

Appendix II: Objectives, Scope, and Methodology

The Ranking Minority Member of the Senate Environment and Public Works Committee and Senator Lieberman asked us to obtain the views of a number of key stakeholders about the revisions' potential impacts. More specifically, they asked us to obtain (1) state air quality agency officials' views about the impacts of the December 2002 final NSR rule on industry, emissions, and agencies' workloads; (2) state air quality agency officials' views about the impacts of the two December 2002 proposed NSR exclusions on industry, emissions, and agencies' workloads; and (3) environmental, health, and industry organizations' views on the impacts of all the NSR revisions. In addition, we determined selected local air quality agencies' views on the revisions' potential effects.

To address the first two objectives and gather information from local agencies, we conducted an Internet-based survey of 50 state air quality agencies, the District of Columbia, and the 71 local air quality agencies that have responsibility for implementing the New Source Review (NSR) regulations and could potentially issue NSR permits. To ensure that we obtained information from those that were most involved in the day-to-day administration of the NSR program and therefore in the best position to judge the revisions' potential impacts, we worked with the 10 EPA regional offices and obtained information from the Internet Web site of the Association of State and Territorial Air Pollution Program Administrators (STAPPA) and the Association of Local Air Pollution Control Officials (ALAPCO) to identify the NSR program manager for each agency. The 15 states with local air quality agencies that issue NSR permits are listed in table 4 below.

Table 4: States with Local Air Agencies

State	Number of local agencies
California	35
Ohio	7
Missouri, Tennessee	4
Arizona, Indiana, North Carolina	3
Alabama, Nebraska, Nevada, Pennsylvania	2
Kansas, Kentucky, New Mexico, Oregon	1

Source: GAO.

California is the only state with local agencies covering the entire state. For the other states, the local agencies are typically located in larger metropolitan areas with air quality problems. In order to present a national perspective of the issues faced by air quality officials, we focused on the

responses from states and highlighted areas where local agencies had differing points of view.

The state and local air quality officials survey was developed between December 2002 and April 2003. It includes questions to determine respondents' views on the NSR program prior to the revisions, as well as the anticipated effects the proposed and final revisions would likely have on their programs.

Because we administered the survey to all of the state air quality agencies and local agencies that have responsibility for implementing the NSR regulations and could potentially issue NSR permits, our results are not subject to sampling error. However, the practical difficulties of conducting any survey may introduce other types of errors, commonly referred to as nonsampling errors. For example, differences in how a particular question is interpreted, the sources of information available to respondents in answering a question, or the types of people who do not respond can introduce unwanted variability into the survey results. We included steps in the development of the survey, the collection of data, and the editing and analysis of data for the purpose of minimizing such nonsampling errors.

To reduce nonsampling error, we had cognizant officials from STAPPA and ALAPCO review the survey to make sure that they could clearly comprehend the questions and estimate the burden it would place on them. We also pretested the survey with three states and one local agency to ensure that (1) the questions were clear and unambiguous, (2) terminology was used correctly, (3) the survey did not place an undue burden on agency officials, and (4) the survey was comprehensive and unbiased. In selecting the pretest sites, we sought to include agencies in states that supported the rules as well as those that did not. We also considered major subgroups such as states with and without local permitting authorities and locations across a wide geographical area. To determine what concerns, if any, those states involved in litigation against the Environmental Protection Agency (EPA) regarding the NSR reforms would have in completing the survey, we had an official from the New York State Attorney General's Office (who is involved in the litigation) review the survey. We asked the official to identify those questions that states might refuse to answer because of litigation concerns. In the end, four states involved in the litigation did not respond to the survey. We made changes to the content and format of the final questionnaire based on the pretests.

We conducted the survey using self-administered electronic questionnaires posted to GAO's Web site on the Internet. We sent e-mail notifications to alert the appropriate officials of the forthcoming questionnaire. These were followed by another e-mail containing unique passwords and usernames that enabled the officials to access and complete the survey and notifying officials that the survey was activated. The questionnaire was available on the Web until July 7, 2003. We received responses from 44 states and 60 local agencies (each agency could only provide one response). In summarizing the survey data, the District of Columbia was included in the state responses. However, 15 of the local agencies that responded told us that they do not have the authority to adopt their own NSR regulations, or they do not write or issue NSR permits. Therefore, they were not eligible respondents and did not provide responses to our more detailed questions. Thus, 45 local agencies provided complete responses. The overall response rate was 83 percent. We edited all completed surveys for consistency and, if necessary, contacted respondents to clarify responses. Table 5 below lists the states that responded, by EPA region, as well as those that did not respond (listed in parentheses). It is important to note that four states in EPA Region 1 declined to respond so as not to disclose information about their ongoing NSR-related litigation.

Table 5: Survey Respondents Listed by EPA Region

EPA Region 1	Maine, Rhode Island (Connecticut, Massachusetts, New Hampshire, Vermont)
EPA Region 2	New Jersey, New York
EPA Region 3	Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia
EPA Region 4	Alabama, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee (Florida)
EPA Region 5	Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin
EPA Region 6	Arkansas, Louisiana, New Mexico, Oklahoma, Texas
EPA Region 7	Iowa, Kansas, Missouri, Nebraska
EPA Region 8	Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming
EPA Region 9	California, Hawaii, Nevada (Arizona)
EPA Region 10	Alaska, Oregon, Washington (Idaho)

Source: GAO analysis of survey responses.

Note: States that did not respond are listed in parentheses.

At the time we conducted our survey, we asked state and local officials about the impacts of a proposed exclusion from NSR for equipment replacement activities. Because EPA finalized this exclusion as a rule after we completed our survey, we took steps to determine whether the officials' views on the proposal were also true for the final rule. For example, in December 2003, the national association representing state and local air pollution control officials told us that, based on their ongoing dialogue with state and local officials, the survey responses on the proposed exclusion were consistent with state and local officials' views on the final rule. In addition, an EPA manager for the NSR program said that he does not anticipate that the officials who responded to our survey would have changed their opinions on this exclusion in the time since they responded to the survey, even though it was not yet in final form at the time they commented.

To address the third objective, we identified key stakeholders involved in national level NSR policy decisions and sent them a survey via e-mail soliciting their responses to a number of questions about the proposed and final NSR revisions' potential impacts on emissions, industry investments, and air quality agencies' workloads. We distributed the survey to 30 organizations representing diverse industry and environmental interests. We used several criteria to select stakeholders for comment. For example, because of the large number of stakeholders involved in NSR issues at the national, state, and local level, we focused exclusively on groups that have a national perspective, including some law firms that represent several large industries. The stakeholders we selected included the following:

- groups identified by knowledgeable EPA officials as key stakeholders;
- members of EPA's Permits/NSR/Toxics Subcommittee within its Clean Air Act Advisory Council (CAAAC) that have a national scope (CAAAC is a senior level policy committee consisting of approximately 60 senior managers and experts representing state and local government, environmental and public interest groups, academic institutions, unions, trade associations, utilities, industry, and other experts);
- national level groups that have testified in Congress on NSR and Clean Air Act issues over the last several years;
- national level groups that commented on EPA's NSR proposals; and
- trade associations representing those industries identified by EPA as those most affected by NSR.

We again took steps in the design, data collection, and analysis phases of the survey to minimize nonsampling and data processing errors, including pretesting of the survey questions, follow-up with those that did not respond promptly, and independent verification of all survey responses entered into an analysis database. We conducted two pretests of the survey and made changes to the content and format of the final questionnaire based on the pretests.

The survey was sent to the key stakeholders on July 2, 2003, and was available until July 18, 2003. Of the 30 stakeholders contacted, the following 14 responded to this survey:

- American Forest & Paper Association;
- American Lung Association;
- American Petroleum Institute;
- Clean Air Task Force;
- Clean Air Trust;
- Council of Industrial Boiler Owners;
- Edison Electric Institute;
- Energy and Innovation Center, Environmental Law Institute;
- Hogan & Hartson LLP;
- Morgan, Lewis & Bockius LLP;
- National Environmental Development Association's Clean Air Regulatory Project;
- National Petrochemical & Refiners Association;
- National Resources Defense Council; and
- STAPPA/ALAPCO.

We edited all completed surveys for consistency and, if necessary, contacted respondents to clarify responses.

For all of these objectives, we worked with cognizant EPA officials, including the agency's NSR program manager.

Detailed survey results are available at: http://www.gao.gov/special.pubs/gao-04-337sp.

We conducted our review from September 2002 through January 2004 in accordance with generally accepted government auditing standards.

Appendix III: Comments from the Environmental Protection Agency

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

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

JAN 23 2004

OFFICE OF
AIR AND RADIATION

Mr. John B. Stephenson
Director, Natural Resources and Environment
U.S. General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Stephenson:

Thank you for the opportunity to review a draft of the forthcoming General Accounting Office (GAO) report entitled "Key Stakeholders' Views on Revisions to the New Source Review Program" which you are preparing at the request of Senators Jeffords and Lieberman. I have some serious concerns about this draft report, which I would like to describe.

The report is intended to be a summary of the views of State, environmental, and industry stakeholders on the impact of the Environmental Protection Agency's (EPA) final New Source Review (NSR) rules, including both the December 2002 final rule ("NSR Reform Rule") and the October 2003 final rule ("Equipment Replacement Provision Rule"), as well as a proposed approach – the "maintenance allowance" that EPA is still considering whether to finalize. The report uses surveys to solicit the opinions of these stakeholders on a range of complex issues related to the final and proposed rules, including the environmental, economic, and workload impacts resulting from the rules.

See comment 1.

While I do not object to the idea of surveying stakeholder opinion and reporting the results, I am very concerned about the manner in which GAO has carried out this task, as reflected in the draft report. I am most concerned about the fact that GAO has, in some instances, used the opinions expressed in the survey responses as if they were fact. Specifically, the report uses the opinion survey to draw conclusions and make recommendations about the NSR program without first attempting to make some judgment as to whether the opinions are substantiated by available information or even whether they are grounded in a correct understanding of the rules' provisions. There is good reason to question the basis for some of the opinions expressed; this undercuts the conclusions GAO reaches and uses as the basis for its recommendations.

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See comment 2.

See comment 3.

I also want to express a particular concern that, even within the narrow task of gathering and reporting opinion, GAO has carried this out in a way that does not assure balance and objectivity. The survey GAO used was not designed to elicit the most helpful information for assessing the rules. This is compounded by the fact that the two organizations GAO identified as having reviewed the survey are both outspoken critics of the EPA rules, while EPA itself was not given a chance to review the survey. In addition, the survey sample reflected a skewed distribution among stakeholder groups; professional staff from every State and local agency were surveyed, but only a handful of environmental groups and industry trade associations were surveyed, no other State officials (e.g., environmental commissioners) were surveyed, and no individual industrial facility or company environmental officials were included. Furthermore, the report gives much more attention to the State responses, and focuses disproportionately on discussing responses that express unfavorable opinions of the rule.

I have discussed these and other concerns in more detail in an attachment to this letter. However, I want to close by saying that I am very concerned that, unless these issues are addressed, the report will mistakenly be interpreted as presenting factual information that the rule will have adverse impacts, instead of simply presenting survey results in which some officials hold this opinion. Again, thank you for the opportunity to comment.

Sincerely,

Jeffrey R. Holmstead
Assistant Administrator

Attachment

Additional EPA Comments on GAO Draft NSR Report Titled "Key Stakeholders' Views on Revisions to the New Source Review Program"

See comment 1.

See comment 4.

• An opinion survey of the kind administered by GAO should not be used to draw any conclusions or make any recommendations about the NSR program. This is because an opinion survey is just that – opinion. The draft report makes no effort to assess whether the opinions expressed in the survey are based on data, analysis, or even on a reasonable understanding of the rules' provisions. EPA cannot determine from the report the basis for the stakeholders' survey responses, but based on the Agency's own detailed assessment of the NSR rules, many of the opinions expressed in the survey are unsupportable.[1] While it may be of interest to know that a particular stakeholder has a particular opinion, GAO should evaluate whether the survey results are consistent with the facts presented. There are good reasons to believe many of them are not. Two such examples are included below. GAO must acknowledge that such opinions are in conflict with available information, lest these opinions be given unwarranted weight in drawing conclusions or making recommendations about the NSR program.

> *Example 1:* Several respondents expressed an opinion that the December 2002 rule would delay attainment of health standards in nonattainment areas. This result is inconsistent with readily available facts. Even if one has the opinion that emissions could increase from modifications that would no longer require a permit under the revised rules – an opinion EPA does not share – the portion of the emissions affected by the December 2002 is small (whether in an attainment or a nonattainment area), and any changes are dwarfed by the decreases that are coming and will continue to come from rules designed to reduce emissions (e.g., acid rain program, NO_x SIP call, maximum achievable control technology (MACT) standards, mobile source rules). In addition, States are required to have rules in place for ozone nonattainment areas that reduce emissions inventories by 3 percent per year. In contrast, the overall impact of the NSR rule changes is limited to emissions from modifications to existing units (*i.e.*, not new sources or new units at existing sources). NSR benefits from these kinds of modifications are a very small subset of the total benefits of the NSR program. Furthermore, in nonattainment areas, these modified units are generally already well controlled for the nonattainment pollutant, or would have to be in order to qualify for many of the new rule's provisions. For example, PAL sources must cap total emissions, Clean Units must apply state-of-the-art controls to qualify, and pollution control projects must be environmentally beneficial to be eligible for the NSR exclusion. Any alleged marginal difference in controls at such sources will not have any significant effect in counteracting the large decreases we expect from State and federal air pollution control rules.

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[1]EPA's own analysis (*Supplemental Analysis of the Environmental Impact of the 2002 Final NSR Improvement Rules*, November 21, 2002) as well as the October 2003 response to comments received on it (*Technical Support Document for the Prevention of Significant Deterioration (PSD) and Nonattainment Area New Source Review (NSR): Reconsideration*, October 30, 2003) details the Agency's findings regarding the emissions impacts of the final rule, and explains in detail why we have reached conclusions that cast doubt on several opinions expressed in the survey.

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See comment 4.

Example 2: Some States also responded that they believe the December 2002 rules will impose increased resource burden beyond the initial period of rule adoption. This result cannot be reconciled with the rule's provisions, and is also in conflict with EPA information showing that the number of NSR permits (but not the environmental benefits of the program) will decrease. Although the pollution control project exclusion has associated State actions, these actions are a small subset of what issuance of an NSR permit would require, and are thus by definition less burdensome. A clean unit test is a one time action by States, but it results in administrative savings that are realized the first time a source uses it, and continues to result in savings throughout the 10-year duration of the test. The changes to the emissions test and baseline result in similarly obvious administrative savings. And, while some States express concerns about the up-front burden of establishing a PAL, permitting authorities with PAL experience have reported that PALs have resulted in net financial benefits or anticipate that this will be the case.[2] This result is virtually certain to hold for PALs under the NSR rule. Thus, because each individual provision clearly results in an administrative savings, it is not reasonable to conclude that an increase in burden will result from the December 2002 NSR final rule.

See comment 1.

• Unless validated, GAO should not use these opinions to draw conclusions about the NSR program. This contrasts with GAO's more reasoned approach in its August 2003 report, in which GAO independently assessed EPA's analysis of the effects of the December 2002 rule. In the most recent draft report, GAO does not evaluate the extent to which opinions are corroborated by the underlying data and rationale. Therefore, it should not assign equal weight to all opinions, and should not make any judgment about the rule's environmental impact.

See comment 1.

• GAO should not use the survey results as the basis for its recommendations. GAO uses these results as a justification for its recommendations that EPA: (1) help air quality agencies implement the revisions, (2) monitor the effects of the Equipment Replacement Provision, as we are doing with the NSR Reform Rule, and (3) consider stakeholders concerns before taking any final action on the maintenance allowance. The recommendations on their face make sense, and EPA already had plans to take these actions in any case. However, the survey results shed no light on whether these recommended actions are more or less important, because the results are unconfirmed opinions, some of which are based on incorrect information or assumptions. The most appropriate course would be to de-link the survey results from the recommendations, and present the results for what they are: a summary of opinions.

See comment 1.

See comment 2.

• The survey itself is not particularly helpful in eliciting meaningful information that could be used to corroborate the stakeholders' views and resolve apparently conflicting information. A number of simple factual questions could have been asked that would have assisted in evaluating the opinions expressed. This is compounded by what appears to be an uneven process for seeking input on the survey before it was deployed. The two stakeholders identified in the survey

[2]This finding was first noted in EPA's 2002 report entitled, *Evaluation of Implementation Experience with Innovative Air Permits.*

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development process are two outspoken critics of the NSR regulations who had publicly expressed vocal opposition to the final rules before they were published. While other unnamed States also pre-tested the survey, EPA was not offered a chance to, though the Agency's input could have improved the survey and reduced the appearance of bias. In addition, the survey sample reflected a skewed distribution among stakeholder groups; professional staff from every State and local agency were surveyed, but only a handful of environmental groups and industry trade associations were surveyed, no other State officials (e.g., environmental commissioners) were surveyed, and no individual facility environmental officials were included. The industry and environmental groups also got a less detailed survey.

See comment 3.

• It is unclear whether the views of the survey respondents reflect the organizations they represent. Although GAO correctly reports the survey results as individual – not organizational – views, readers are likely to conclude erroneously that the survey respondents' opinions on a particular issue actually represent their entire organizations. For example, it is entirely possible that an NSR program manager's view of potential NAAQS impacts or necessary mitigation actions would be different from the State's Air Director, or Environmental Commissioner. In order to accurately reflect a State agency position, the survey should have been sent to the State environmental commissioner.

See comment 3.

• The report does not present a balanced characterization of the survey results. It emphasizes the view that the NSR rules will have adverse impacts. The conclusions GAO drew were heavily weighted toward the opinions of State officials, and their results are discussed in much greater detail. Furthermore, when the State results are reported, the States who expect positive workload and environmental impacts get a cursory mention, while those who expect negative effects get pages of discussion itemizing each of the expected negative effects.

See comment 3.

The following are GAO's comments on the letter from the Environmental Protection Agency dated January 23, 2004.

GAO Comments

1. GAO does not agree with EPA's assertions that we, in some instances, used the opinions expressed in the survey results as facts. Consistent with the review's objectives, this report carefully characterizes the survey results as opinions. To this end, the report's title clearly points out that we are presenting stakeholders' views. In addition, based on our two earlier reports on the revisions, we determined that, at best, limited data exist on the effects of the prior NSR program or the potential effects of the revisions. In fact, as we found in our August 2003 report on the analytical basis for EPA's December 2002 rule,[1] EPA itself relied primarily on the professional judgment of agency staff and comments received on earlier NSR reform proposals, rather than a comprehensive quantitative analysis of the rule's possible effects, in initially justifying the rule. That report also described limitations with the agency's subsequent analysis of the rule's environmental effects. Because of our earlier findings about data limitations, we believe it useful and entirely appropriate to supplement the available information with the informed opinions of those most involved in the day-to-day administration of NSR programs.

   GAO also disagrees with EPA's characterization that we improperly used stakeholder opinions to draw conclusions and make recommendations about the NSR revisions. While recognizing that the results were based on opinion, it is important to point out that these were the opinions of those on the front lines of program implementation. In this case, these informed opinions raise important questions about the revisions' effects. Because of these questions and, in light of the limited hard analytical data on the revisions' effects, GAO recommends that EPA collect data on the revisions' actual impacts. We made this recommendation in our August 2003 report regarding the December 2002 rule and again in this report regarding the equipment replacement exclusion. We further recommend that EPA consider these informed opinions before further revising the NSR program. EPA also questioned whether the respondents' opinions were grounded in a correct understanding of the rules' provisions. We believe that our recommendation that EPA provide state and local air

[1]U.S. General Accounting Office, *Clean Air Act: EPA Should Use Available Data to Monitor the Effects of Its Revisions to the New Source Review Program*, GAO-03-947 (Washington, D.C.: Aug. 22, 2003).

quality agencies with assistance in implementing the revisions will help to address this concern. Despite its concerns, EPA said these three recommendations, on their face, makes sense and that the agency plans to take these actions.

2. GAO disagrees with EPA's assertion that the way we carried out our work did not assure balance and objectivity. We developed the survey using standard survey research principles. This included taking steps to minimize question bias, asking respondents about both the positive and negative effects of the revisions, providing respondents with a range of answers to each question (including "no change" or "no effect"), and assessing each question for bias and problematic wording during an extensive pretesting and review process. We also sought to eliminate bias and problematic wording by subjecting the survey to a thorough review by a GAO survey specialist who was not involved in its development. Regarding the external review of our survey, we point out in the objectives, scope, and methodology section that we asked the trade association that represents state and local air quality control agencies (i.e., the officials we surveyed) to help ensure that their members could clearly comprehend the questions and estimate the burden it would place on them. We also asked a representative of the New York Attorney General's Office to review the survey specifically to gauge whether they thought those states involved in lawsuits with EPA over the reforms would be concerned about completing the survey. Finally, to ensure the independence of our efforts, we do not routinely seek the subject agency's review of our survey instruments. Nonetheless, we held discussions with staff in EPA's Office of Air Quality Planning and Standards, Office of Enforcement, and regional offices to make sure we understood the technical nature of the revisions when developing the survey. In preparing our two prior NSR reports, we also worked closely with EPA's managers of the NSR program to understand the agency's assessment of how the revisions would work in practice, as well as the potential effects. We used all of this information to design the survey questions.

3. GAO disagrees with EPA's assertion that our survey sample was skewed. GAO surveyed various stakeholders including state and local officials, as well as industry and environmental groups, and this report presents a range of views on the possible effects of the NSR revisions. We describe our methodology for selecting these stakeholders in the report's objectives, scope, and methodology section. More specifically, with respect to our survey of state agency officials, we point out that we did not survey a sample, but the universe of state NSR program managers. We sent the survey to the manager of each state's NSR

program within the state environmental agency (instead of the agency head) because these program managers are responsible for day-to-day program implementation and hence are in the most informed position to determine the revisions' impacts on their programs and workloads. Furthermore, in the survey's instructions we asked the managers, when answering the questions, to coordinate with the officials within their agencies as they deemed necessary and appropriate. As such, we relied on each state agency's own procedures for completing and reviewing the survey responses. In several cases, in fact, the program managers told us the reason they needed additional time to submit their responses to us was because the responses were under review by others within their agencies.

EPA also questioned why we surveyed every state and local agency but only a handful of environmental groups and industry trade associations, and no individual industry officials. GAO gathered more detailed information from state and local agencies than from other stakeholders because these agencies generally implement the regulations and we were asked to obtain information on how this implementation would affect agencies' programs and workload. Because of the large number of other affected stakeholders, it was not feasible to survey the universe. Instead, we surveyed key stakeholders that had been involved in national NSR policy decisions, which included 30 organizations, in order to obtain diverse industry and environmental perspectives. Of the 30 organizations we surveyed, 14 responded, and 8 of the respondents represented industry. A number of the organizations that responded represent large numbers of industrial companies, including the American Forest & Paper Association and the American Petroleum Institute. Likewise several of the environmental and health groups represent a national membership base, including the American Lung Association and the Natural Resources Defense Council.

GAO also disagrees with EPA's assertion that we focused disproportionately on the state officials' unfavorable opinions of the rule. In presenting the state survey results, we generally listed the total number of officials responding to a question and information on the distribution of their responses. We then provided more detailed information about the majority's opinion for each question, consistent with standard survey principles. In most cases, it turned out that the majority of respondents to our questions held the view that the revisions would have an adverse impact on emissions and their workload, contrary to EPA's conclusions about the revisions' impacts.

We were very careful, however, to also discuss the number of respondents who held the minority view on a particular topic.

4. EPA's letter suggests that GAO should have evaluated whether the survey results were consistent with the "facts," asserts that many of the survey responses are not, and cites its own analysis of the revisions' emissions impacts as factual support for its position. EPA also cites two examples of cases in which the agency believes respondents' opinions conflict with fact. EPA's comment related to the "facts" however, largely only represents references to its own assertions.

   First, as discussed previously we have identified limitations with EPA's analysis of the revisions' impacts. As we stated in our August 2003 report, a senior EPA economist said that uncertainty about the extent to which companies might elect to use the NSR alternatives in the December 2002 rule limited the agency's ability to estimate the rule's impacts. For these reasons, we did not use EPA's analysis as a benchmark to evaluate the survey responses. Again, in this context, the opinions of key stakeholders, especially those responsible for implementing the regulations, provide an important perspective appropriately considered by congressional decisionmakers.

   Second, as to EPA's examples of opinions conflicting with facts, the agency suggests that the opinions of those who expect the December 2002 rule to delay attainment of air quality standards are incorrect. In its first example, EPA states that (1) even if emissions increased, the increase would be small and dwarfed by decreases coming from other air quality regulations, and (2) facilities affected by the revisions either already have emissions controls or would have to have them to qualify for many of the rule's exemptions, such as those for plantwide emissions limits, clean units, and pollution control projects. Regarding the first point, as we report, 7 officials agreed with EPA and said that the rule would not impede their ability to meet or maintain air quality standards. Another 14 expect they will offset the anticipated increases using other air quality regulations. A minority of the respondents (13) said that, despite these other regulations, they would still have difficulty meeting or maintaining air quality standards. Therefore, these 13 officials already took into account the other air quality regulations EPA cites. Regarding the second point, EPA did not mention the rule's key exemption—the revised method for determining facilities past emissions—that does not require that facilities have emissions controls, and was the provision cited most often by the state officials as likely to lead to emissions increases. While EPA maintains

that this provision will not have a significant environmental impact, agency managers for the NSR program acknowledged that EPA's analysis justifying its position was not based on a statistically valid sample of affected facilities. Ultimately, many stakeholders disagreed with EPA's assertions.

Regarding the second example, GAO agrees that these opinions conflict with EPA's information but also believes the state officials provided plausible explanations for why they expect their burden to increase even though they expect to issue fewer permits. As we point out in the report, some of the officials said that they find the December 2002 rule confusing, complicated, and leading to more uncertainty about the NSR program—all of which can contribute to agencies' workloads. While EPA asserts that the rule will lead to an overall reduction in workload for agencies based on its experience with six states that have used flexible permitting systems, our survey results found that four of these same states said the opposite—they expect the rule to increase their workload (one had not assessed such impacts, and the other did not know what the effect would be). Officials from the four states said they would spend more time drafting laws, regulations, and guidance, as well as processing permits, explaining the rule to industry, and training staff. Furthermore, officials from the four states said that they expected more work associated with the rule's revised method for determining facilities' past emissions. Therefore, GAO disagrees with EPA's assertion that the experience of these states shows that the rule will reduce agencies' workloads or that the survey results are contradictory.

Appendix IV: GAO Contacts and Staff Acknowledgments

GAO Contacts

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Staff Acknowledgments

In addition to the individuals named above, Ulana Bihun, Michael Hix, Jeffrey Larson, Lisa Turner, and Laura Yannayon made key contributions to this report. Nancy Crothers, Bob DeRoy, Tim Guinane, Karen Keegan, Judy Pagano, Minette Richardson, and Monica Wolford also made important contributions.

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