United States General Accounting Office

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Briefing Report to the Chairman, Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, House of Representatives

y 1986

VEHICLE EMISSIONS

EPA Response to Questions on Its Inspection and Maintenance Program

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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D C 20548

RESOURCES COMMUNITY,
AND ECONOMIC DEVELOPMENT
DIVISION

May 2, 1986

B-222829

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

Dear Mr. Chairman:

On February 7, 1985, you asked the Environmental Protection Agency (EPA) to respond to questions prepared by your staff based on our report entitled Vehicle Emissions Inspection and Maintenance Program Is Behind Schedule, (GAO/RCED-85-22, Jan. 16, 1985). As requested, EPA submitted a copy of its response to us for evaluation and comment. On February 7, 1986, we briefed your office on the results of our work and, as requested, this report summarizes the information discussed during that briefing.

The objectives of our evaluation were to (1) determine whether EPA's responses adequately addressed the 58 specific questions raised and (2) test, to the extent possible, the adequacy and reasonableness of the responses. To facilitate preparing and presenting this report, we consolidated the 58 items into 34 related areas.

In determining initially whether EPA's responses adequately addressed the 58 specific questions raised, we identified 14 questions that required additional information to understand EPA's response, 6 questions for which EPA did not provide a response, and 2 questions that needed to be updated. We obtained the additional information from EPA and discussed all 58 questions and responses with EPA's vehicle emissions inspection and maintenance (I/M) project manager. Where needed, we also obtained additional information by telephone from state and/or local I/M officials. To test the adequacy and reasonableness of the responses, we reviewed data obtained in our prior work, data EPA sent to support its responses to specific questions, and various documents EPA sent in response to specific information the Subcommittee requested. Section 3 of this briefing report contains further details explaining our objectives, scope, and methodology.

In evaluating EPA's responses, we found that some of the conditions identified in our January 1985 report continue to exist and, in addition, some new concerns have been identified. In section 1 we briefly summarize the findings contained in our earlier report as well as observations resulting from our analysis of EPA's responses.

With the additional information obtained from EPA together with our analysis, we conclude that each of the Subcommittee's 58 items has been satisfactorily addressed. The Subcommittee's questions, EPA's response, the additional information obtained from EPA or the states, and our comments and overall assessments are presented in section 2.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this briefing report until 30 days from the date of this letter. At that time we will send copies to the EPA Administrator and other interested parties. We will also make copies available to others upon request. If you have additional questions or if we can be of further assistance, please contact me on (202)275-5489.

Sincerely yours,

Hugh J. Wessinger

Hugh J. Wessinger
Senior Associate Director

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ABBREVIATIONS

EPA	Environmental Protection Agency
GAO	General Accounting Office
I/M	inspection and maintenance

SECTION 1

SUMMARY

This section briefly summarizes (1) the findings of our earlier report on the Environmental Protection Agency's (EPA's) vehicle emissions inspection and maintenance (I/M) program and (2) the more significant observations resulting from our analysis of EPA's responses to the Subcommittee's questions.

JANUARY 1985 REPORT ON I/M

In January 1985 we issued a report entitled Vehicle Emissions Inspection and Maintenance Program Is Behind Schedule (GAO/RCED-85-22). In that report we said that 30 states and the District of Columbia were required under the Clean Air Act to implement an I/M program to ensure that carbon monoxide and/or ozone air quality standards will be attained by the end of 1987--the deadline mandated by law. We reported that 16 states were late in implementing their programs. According to EPA, late implementation could make it difficult for states to meet the 1987 deadline.

We also reported that (1) I/M programs were controversial because program benefits were not always clear and implementation costs were considerable, (2) the future need for I/M programs was uncertain because air quality generally was improving nationwide without I/M programs and the impact of recent advances in vehicle technology for controlling emissions was unknown, and (3) the effectiveness of ongoing I/M programs had generally not been evaluated, and many programs had experienced operational problems.

GAO OBSERVATIONS BASED ON FOLLOW-UP WORK WITH EPA

In evaluating EPA's responses, we found that some of the conditions identified in our January 1985 report continue to exist and, in addition, some new concerns have been identified. In summary, we identified the following based on EPA's responses:

--Forty-four areas of the country were required to implement I/M by December 31, 1982, in order to meet the applicable air quality standards by December 31, 1987. As of January 1986, 12 of these areas did not have EPA-approved state implementation plans showing how the air quality standards will be attained by 1987. All 44 areas except for Albuquerque, New Mexico, and Cincinnati and Cleveland, Ohio, have either started or planned to start an I/M program before 1987. (See pp. 11 to 13.)

--Twenty-six areas of the country not initially required to implement an I/M program have inadequate state implementation plans, and EPA could require many of these

areas to implement an I/M program in order to attain the standards by the end of 1987. (See pp. 17 to 19.)

--EPA has made no formal projections of which areas of the country will not be in attainment of the air quality standards after 1987. The Agency is developing a policy for dealing with such areas. However, it might not know until 1988 or later if some areas actually met the 1987 attainment deadline. (See pp. 12 and 13 and 14 to 16.)

--EPA's air quality data for the period 1975 to 1983 show that measurable levels of carbon monoxide have continued to decline, but that ozone levels have increased for the period and continue to be a pervasive pollution problem. The ozone data, in our opinion, indicates that some type of corrective measure, such as an I/M program, is needed to deal with areas having severe ozone pollution problems. (See pp. 69 and 70.)

--According to EPA, anywhere from just under 21 percent to nearly 56 percent of 1981 and later model-year vehicles could be expected to have serious malfunctions in the emission control systems. This also indicates a need for some type of vehicle emissions program, like an I/M program, to control emissions from these vehicles. (See pp. 77 to 80.)

--EPA agrees that it will cost hundreds of millions of dollars nationally to implement I/M programs. However, EPA does not know if the benefits from I/M programs outweigh the costs. A cost benefit study of I/M programs versus other alternative control programs could show which control program alternative is clearly the best choice. EPA has not done a formal cost benefit study because I/M is mandated by law. (See pp. 82 and 83.)

--EPA has allowed some states to use certain practices in their I/M programs which make the programs less effective than they otherwise could be. For example, EPA's approval of some I/M programs, which enforce program requirements using window stickers rather than annual vehicle re-registrations, has led to the establishment of programs with weaknesses in compliance. Law enforcement officers have had problems enforcing a system using window stickers for various reasons, including difficulties in distinguishing expired stickers from valid stickers. (See pp. 35 and 36.)

--Many I/M programs continue to experience serious problems, including poor quality of repairs, ineffective management of program data, lack of quality assurance in testing equipment, inspection and data reporting errors,

poor enforcement of vehicle testing, and high waiver rates which could exclude the vehicles from being repaired. (See pp. 34 to 36 and 62 to 64.)

--Some states are not cooperating with EPA to implement changes in their I/M programs to make them more effective. (See pp. 34 to 36.)

--A major option available to EPA is the use of sanctions, such as limitations on the use of air pollution control grant funding, against any state failing to implement an approved I/M program. Thus far, EPA has used sanctions only sparingly. (See pp. 12 to 16 and 41 to 43.)

--EPA's efforts to audit state I/M programs have proved successful. However, I/M program problems, once identified through an audit, were not always being monitored and regularly followed-up. Also, some audits were not done until years after the I/M program had started. For example, the I/M program for the state of Washington officially began January 1982 but was not audited until February 1986. (See pp. 48 and 53 to 55.)

--The I/M program in Albuquerque, New Mexico, discontinued in March 1984, was still not operating as of March 1986. In addition, it is uncertain what impact the sanctions put in place by EPA will have on the area. (See pp. 56 to 61.)

--Indications are that the cost to repair new technology vehicles not passing an I/M test may be substantially greater than the existing repair cost limits in many I/M programs. Such limits dictate when a vehicle could be eligible for a program waiver which could exclude the vehicle from having further tests or having all necessary repairs made. (See pp. 75 and 76.)

SECTION 2

QUESTIONS ON EPA's VEHICLE EMISSIONS INSPECTION AND MAINTENANCE PROGRAM

This section contains EPA's responses and our assessments for each of the 58 specific questions or information requests included in the Subcommittee's February 7, 1985, letter to EPA. To facilitate preparing and presenting this information, we consolidated the 58 items into 34 related areas.

Each of the 34 areas is organized into either three or five parts. The first part contains the Subcommittee's specific question or request to EPA. The second part, included for all areas, summarizes the response contained in EPA's March 27, 1985, letter to the Subcommittee. The third part contains our comments on EPA's initial response. This part was used only when we determined that additional information and/or clarification was needed from either EPA or the states to complete our evaluation. The fourth part contains any subsequent information obtained from EPA or the states. The fifth and last part is our assessment as to whether the Subcommittee's question had been satisfactorily addressed. The assessment was included for all areas and contains the results of any GAO analysis as well as any conclusions warranted.

SUBCOMMITTEE REQUEST

1. Provide a table for each state where I/M was required as of December 31, 1982, showing the pollutant(s) causing the state to miss the deadline without I/M, and whether or not such states are now, or will be, in attainment for that pollutant(s) by December 31, 1987. (EPA policy required urbanized areas, with a population of 200,000 or more, that did not meet the national ambient air quality standards for carbon monoxide and ozone, to implement an I/M program by December 31, 1982, as a condition for obtaining an extension of the attainment deadline to December 31, 1987.)

EPA response

EPA provided two tables showing the specific metropolitan areas in 28 states and the District of Columbia receiving a deadline extension and which, because of the extension, were required to implement an I/M program by the end of 1982 to control ozone and/or carbon monoxide pollution. The tables showed that 44 areas in 28 states and the District of Columbia were required to implement I/M by 1982 to control ozone and/or carbon monoxide. EPA also furnished a table listing five urban areas in four states that were not required to implement an I/M program under EPA policy because of the small population (i.e., under 200,000). Subsequently, EPA also required the five smaller areas to have an I/M program because EPA determined that these areas could not attain the carbon monoxide standard by 1987 without I/M. According to EPA, all of the urban areas shown in both tables were still in nonattainment, except for Providence, Rhode Island, which had been designated in 1983 as being in attainment based on actual monitored air quality data.

Nearly all areas had submitted plan revisions which purported to show 1987 attainment. EPA said that it issued final approval of the plan revisions, including the attainment demonstrations, for 13 areas. (Attainment demonstration refers to that part of the state implementation plan which details when an area projects that it will attain applicable air quality standards based on the use of EPA-approved models.) EPA has proposed approval of the demonstrations for a number of the other areas, but not for all. The California submission acknowledges post-1987 attainment for some of its urban areas. EPA said that it has not yet determined whether any area granted an extension until 1987 will actually be in attainment by December 31, 1987.

GAO comment

EPA's response needed to be clarified in three areas. We asked EPA to (1) explain why it had not made a reliable projection of which states would meet the 1987 attainment standards, (2) comment on when it would determine which urban areas would meet

the December 31, 1987, deadline for attaining air quality standards, and (3) identify the specific urban areas for which EPA considered approving the schedules for attaining applicable standards by the 1987 deadline (in addition to the 13 already approved).

Subsequent information obtained from EPA

EPA said that it would process requests for redesignation of an area from nonattainment to attainment at any time that the actual data could be provided. According to the EPA I/M project manager, EPA would make a determination of continued nonattainment beyond 1987 as soon as possible after December 31, 1987, for areas with the most serious air quality problems. For other areas, a final determination as to whether they met the required standards by the 1987 deadline may not be made until 1988 or later when actual monitored air quality data are available.

EPA said that the states were required to include attainment demonstrations in their 1982 state implementation plans. The plans showed when each nonattainment area would attain the national ambient air quality standards. To demonstrate actual attainment with the standards, EPA requires an area to (1) provide 3 years of monitored air quality data showing no violations of the applicable standards and (2) demonstrate that the approved state implementation plan had been fully implemented.

According to EPA, it had approved plan revisions for 32 of the 44 areas granted an extension of the 1982 deadline and required by EPA policy to implement I/M by December 31, 1982. EPA identified 12 areas in eight states that did not have approved attainment demonstrations for ozone and/or carbon monoxide as shown in table 1.1.

Table 1.1: Extension Areas Which Do Not Have Approved 1987 Attainment Demonstrations as of January 21, 1986

Area	Pollutant(s)
Albuquerque, NM	carbon monoxide
Chicago, IL	ozone, carbon monoxide
Chicago suburbs, IN	carbon monoxide
Cincinnati, OH	ozone
Cleveland, OH	ozone, carbon monoxide
Denver, CO	carbon monoxide
Detroit, MI	ozone, carbon monoxide
Fresno, CA	ozone, carbon monoxide
Sacramento, CA	ozone
St. Louis, MO	ozone
South Coast Basin, CA	ozone, carbon monoxide
Ventura, CA	ozone

EPA's I/M project manager said that on January 28, 1986, EPA proposed in the Federal Register (Vol.51, No.18) to approve the attainment demonstration for St. Louis. The project manager said that, rather than use sanctions, EPA has encouraged the submission of state implementation plans by the affected areas. The project manager believed this has been a valid approach since I/M has been or will be implemented before 1987 in all but two states required to implement I/M programs--New Mexico and Ohio. The project manager said that, as of February 1986, EPA had imposed sanctions such as construction moratoriums and/or funding restrictions in 2 of the 12 areas--Albuquerque, New Mexico, and Campbell and Kenton counties in northern Kentucky. According to the project manager, the latter are part of the greater Cincinnati metropolitan area and have been under federal sanction since December 1980. The manager said that Albuquerque is already under federal sanctions and that EPA has started the formal process that will lead to sanctions in Ohio.

GAO assessment

With the additional information EPA supplied, we believe that the Subcommittee now has a reasonable response to its request.

Since 1987 is fast approaching, EPA, in our opinion, needs to complete whatever actions it is going to pursue for the 12 areas still without approved plans. As we reported in January 1985, these plans were supposed to have been submitted by July 1, 1982, and the potential consequences of not submitting a state implementation plan revision by the due date and in a form approvable by EPA were the application of the sanctions provided for under the 1977 amendments to the Clean Air Act.

SUBCOMMITTEE QUESTION

2. If any area where I/M was required as of December 31, 1982, is in nonattainment by the end of 1987, what are EPA's options?

EPA response

EPA said that it will review 1982 state implementation plan revision submissions that acknowledge or imply post-1987 attainment dates. EPA said that those areas in states which do not actually attain applicable standards by 1987 could face state implementation plan disapproval, a construction moratorium, or air planning, highway, and sewage treatment funding restrictions.

EPA indicated that an important consideration relative to funding restrictions in a nonattainment area after 1987 will be the area's demonstration that it is, in fact, implementing all reasonably available control measures in each of the several emission source categories (stationary, area, mobile, and transportation). EPA's evaluation of such demonstrations will be guided by an assessment of the technical and resource capabilities of the nonattainment area and by evidence of control measure feasibility based on experiences in other parts of the nation. Nonattainment areas will need to provide extensive evidence to EPA that any rejected control measures are technically or economically infeasible.

EPA indicated the concern that fully approved 1982 state implementation plans that demonstrate 1987 attainment may, in fact, not prove adequate to actually achieve attainment by the projected date. In addition, states may fail to implement all measures they committed to in state implementation plans, thereby creating a post-1987 nonattainment problem.

EPA said that it was developing a policy to deal with post-1987 attainment problems. Preliminary screening projections made by EPA suggest that there might be about 17 areas that would be classified as nonattainment for carbon monoxide beyond December 31, 1987, and 10 to 22 areas for ozone. EPA believed that more finite projections of 1987 attainment in specific cities required more detailed effort than had yet been expended using the latest information on air quality levels and state implementation efforts. EPA recognized the urgency that the preliminary estimates placed on developing a policy for post-1987 attainment problems.

GAO comment

Although EPA said that it could apply certain sanctions against extension areas missing the 1987 deadline for attainment of the air quality standards, EPA said that it also was developing

a policy to deal with post-1987 attainment problems and that it recognized the urgency for developing such a policy. We asked EPA to provide an update on the current status of any policies and/or directives for handling post-1987 nonattainment areas and to provide the specific details.

Subsequent information obtained from EPA

EPA said that its "Guidance Document for Correction of Part D State Implementation Plans" contained current guidance for areas unable to project attainment by 1987. For areas with previously approved ozone plans, EPA said that it is assessing prospects for actual attainment given (1) the content of the state implementation plans, (2) the state's progress in implementing adopted measures, and (3) recent emissions and air quality data. EPA also said that it is deliberating on how to proceed with respect to areas which, in advance, appeared that they would not attain by December 31, 1987. EPA has set up an internal work group called the ozone task force to develop options for the EPA Administrator to consider on a national post-1987 nonattainment area policy.

We contacted an environmental engineer in EPA's Office of Air Quality Planning and Standards who serves as an advisor and technical specialist to the ozone task force. This individual told us that his office is responsible for providing overall direction and coordination to the ozone task force which was established in March 1985. The task force, comprised of representatives from five headquarters offices and four regional offices, has three objectives: (1) formulate agency policy to deal with 1987 nonattainment areas for ozone, (2) ensure the development of nationally consistent ozone state implementation plans, and (3) review the schedule of current and projected EPA ozone control activities to ensure that products are delivered consistent with program needs. In addition, the task force is exploring how I/M programs need to be enhanced to facilitate ozone attainment.

According to EPA, a similar task force does not exist for carbon monoxide because ozone pollution is more of a concern at the present time. In addition, EPA believes that present controls for carbon monoxide are working. (As discussed on pp. 69 and 70, EPA's latest air quality and emissions trends report shows that carbon monoxide levels have continued to decline since 1975.) These controls include I/M programs, transportation control measures, and anti-tampering programs.

EPA's initial response projected that a number of areas would be classified as nonattainment for carbon monoxide and/or ozone after the 1987 deadline had passed. We obtained an updated projection from EPA as of February 1986. As of that date, EPA was projecting that 35 areas could be nonattainment for carbon monoxide and possibly as many as 47 areas nonattainment for ozone. The Director of EPA's Emission Control Technology

Division, in March 1986, told us that EPA's projections were rough estimates and were made primarily to indicate whether a major nonattainment problem could exist by the end of 1987. The Director said that the projections indicated that there will be a problem for EPA to deal with. He further said that the relatively large number of estimated nonattainment areas indicates that existing control programs like I/M were not producing benefits at the rate initially expected.

GAO assessment

With the additional information, we believe that the Subcommittee's question concerning options available to EPA has been satisfactorily addressed. One option available to EPA is the use of sanctions against extension states not in attainment by the end of 1987. However, by establishing the ozone task force, EPA is also exploring other options related to ozone nonattainment after 1987. As of February 1986, EPA was still studying the alternatives which could be taken against extension areas not in attainment by the end of 1987.

SUBCOMMITTEE QUESTION

3. The Subcommittee asked the following questions or requested information concerning EPA's handling of nonextension areas which may not achieve the ambient air quality standards for carbon monoxide and/or ozone by December 31, 1987:

   (a) The GAO report stated that as EPA identifies nonattainment areas of the nation that did not request a deadline extension (such as Indianapolis, Indiana), EPA could require them to implement an I/M program." Do you agree?

   (b) Provide a current list of such areas.

   (c) What is EPA planning (and when) regarding I/M for these areas.

   (d) What are the available alternatives?

EPA response

(a) EPA agreed that Section 110 of the Clean Air Act required states not receiving a deadline extension to adopt an I/M program for nonattainment areas if timely attainment (i.e., as expeditiously as practicable) was not possible without it. EPA indicated that it regarded I/M programs as reasonably available and practicable, and that the key question for an area was whether a package of measures (contained in the state implementation plan) which assured attainment, but did not include I/M, would bring about attainment as quickly as a package that included I/M. EPA said that it planned to review each applicable state implementation plan on this basis to determine whether an I/M program was necessary.

(b) EPA provided a table that identified 26 areas in 16 states that had been notified that their state implementation plans were inadequate. The table showed for each area the deadline for submitting a revised state implementation plan to EPA and the specific pollutant(s) impacted.

(c) and (d) EPA said that requirements for areas that did not request an I/M deadline extension were contained in its December 30, 1983 "Guidance Document for Correction of Part D State Implementation Plans for Nonattainment Areas." This guidance points out that the requirement to implement an I/M program will be based on a determination of the area's ability to attain and maintain the national ambient air quality standards as expeditiously as practicable and to ensure that reasonable further progress is maintained. EPA expects that, at a minimum, some type of mobile source emission control program, such as a change of ownership I/M program, anti-tampering, or an anti-misfueling program, will be

needed in ozone and carbon monoxide nonattainment areas to attain the standards and to maintain reasonable further progress. This is particularly true due to the persistent problems of motor vehicle tampering and misfueling.

GAO comment

EPA has made it clear that I/M could be required for areas of the country that did not request a deadline extension and that will need I/M to attain applicable air quality standards by December 31, 1987. Since EPA agreed with the statement made in our report, we did not pursue this matter any further.

EPA's response for question (b) identified those areas whose I/M programs had not met the December 1982 attainment standards as of March 27, 1985. We reviewed the documentation in our data base and confirmed that EPA had informed several of the states that their implementation plans were inadequate and that plan revisions were needed by a specified date.

EPA's citation of its 1983 guidance as the response to questions (c) and (d) needed an elaboration. We asked EPA to comment on the specific actions the agency will use against those areas which did not request an attainment deadline extension. We also wanted to know whether EPA had established any milestones for initiating these specific actions.

Subsequent information obtained from EPA

In its subsequent response to us, EPA again referred to the agency's December 1983 guidance containing its policy for areas not in attainment by 1982 and where no extension was granted. However, EPA did provide more specific information about the actions and milestones it would pursue for these areas.

EPA said that, as a first step, it would notify officials that their state implementation plans were inadequate and would establish deadlines by when new plans would have to be submitted to EPA. EPA advised us of 26 areas in 16 states that had already been notified that their state implementation plans were inadequate and that new plans for all these areas were due at various times between February and October 1985. According to the EPA I/M project manager, EPA had not taken final actions on any of the newly submitted plans as of February 1986.

EPA said that it presumes that I/M is necessary in many nonextension areas in order to show attainment by 1987, but that such areas could avoid I/M by demonstrating equally expeditious attainment through other measures. EPA says that it would set milestones for nonextension areas on a case-by-case basis; however, as a general rule the time periods for implementing I/M for extension areas are assumed to also apply to nonextension areas.

EPA mentioned the following areas that either have or will be implementing I/M programs as part of their expanded state implementation plans. According to EPA's I/M project manager, the areas made the determination that an I/M program was needed. EPA has yet to make its final decision that these areas need an I/M program.

Table 1.2: Areas That Have Or Will Be Implementing I/M Programs

Baton Rouge, LA	September 1985
Bakersfield, CA	January 1986
Dallas, TX	January 1986
Ft. Worth, TX	January 1986
Tulsa, OK	January 1986
Provo, UT	July 1986
Raleigh, NC	November 1986
El Paso, TX	January 1987
Oklahoma City, OK	January 1987
Nashua, NH	September 1987

GAO assessment

We believe that the above information, supplemented by EPA's more specific follow-up response, explains what actions the agency is planning to take for those areas of the country that did not request an attainment deadline extension and thus by law were not automatically required to adopt I/M. Only after EPA completes its evaluation of state implementation plans for nonextension areas will it become clear as to how many total areas (extension and nonextension) will have to implement an I/M program to satisfy the requirements of the Clean Air Act.

SUBCOMMITTEE REQUEST

4. Provide the details of EPA's Radian Corporation contract, including the term of the contract, the amount, the type, whether it was a subcontract (and if so, the identity of the prime contractor and the appropriate program office), and its purpose.

EPA response

EPA said that Work Assignment No. 25 under EPA's level-of-effort Contract No. 68-02-3515 with Radian Corporation was signed on April 5, 1984, with a term of 6 months. The Office of Mobile Sources was responsible for this work assignment. The Office of Air Quality Planning and Standards was responsible for the overall Radian contract and a number of similar level-of-effort contracts with other companies.

EPA said that Work Assignment No. 25 included tasks for audit support, compilation of high altitude performance adjustments, and investigations related to methanol photochemistry. The high altitude and methanol tasks were ultimately carried over to Work Assignment No. 11 of level-of-effort Contract No. 68-02-3889, because these tasks had been only partially completed during the term of the previous contract. Work Assignment No. 11 went into effect on October 1, 1984.

GAO comment

While EPA's response addressed Work Assignment No. 25 under the Radian contract, we asked for more detailed information on the terms and amount of the agreement with Radian Corporation. We asked EPA to elaborate on its response and to provide us a copy of any supporting documents.

Subsequent information obtained from EPA

EPA said that the fiscal year 1984 level-of-effort contract with Radian was negotiated and managed by the agency's Office of Air Quality Planning and Standards. EPA provided the statement of work, the work plan, and the products for Work Assignment No. 25 with Radian Corporation. EPA also provided a copy of the basic contract. We reviewed the documents provided by EPA and our analysis disclosed the following.

Contract No. 68-02-3515 is a cost-plus-fixed fee contract effective July 18, 1980. The total contract amount is $1,079,000 --$1,011,285 in estimated contract costs plus $67,715 in fixed fee. The contract was initially awarded to TRW Incorporated, but on November 4, 1983, Radian Corporation took over the contract.

Under the terms of the contract, Radian is to supply all necessary labor, material, services, equipment, and facilities required for performance of each individual work assignment in eight different areas. One of the areas involved assisting in the development and analysis of I/M programs. Regarding I/M, efforts under the contract include developing (1) guidance materials in the areas of program scheduling, organization, costs, public relations, data collection and handling, regulation, test procedures, quality control, enforcement, and program reporting, (2) automated programs, data collection systems, and data bases that facilitate analysis of the effectiveness of I/M programs, and (3) specific analyses of data collected in the various implementation and operational stages of I/M, including development of state emission cutpoints.

Work Assignment No. 25 under the basic contract called for Radian to perform three specific tasks: (1) provide audit support to the agency, (2) develop a high altitude adjustment manual, and (3) evaluate several methanol fuel photochemistry tests. EPA budgeted $92,000 for the work assignment--approximately $48,100 for task 1, $12,400 for task 2, and $31,500 for task 3. The work assignment set out the general requirements for the contractor to meet (i.e., prepare work plans and cost schedules for completing each task; issue monthly progress reports on task segments and accomplishments; and submit draft final reports on task results), and also identified specific products to complete the task.

The work plan for task 1 called for Radian to review EPA's draft I/M audit procedures; prepare a pre-audit questionnaire; develop plans to test the draft audit procedures at eight I/M programs; provide onsite support to EPA in conducting the audits; and assist in preparing final audit procedures. Final products required at the completion of the task included: (1) a summary of recommendations on the draft audit procedures, (2) a task report containing the pre-audit questionnaire, (3) eight recommended audit plans for the I/M programs selected for the test audits, and (4) a final report on the I/M audit procedures and guidelines for incorporation into EPA's national air audit system.

Documents we reviewed showed that Radian was scheduled to start work on task 1 in April 1984 and complete its effort in August 1984. The EPA I/M project manager told us that Radian developed some of the required products for task 1 of the work assignment as agreed. The documents were developed prior to EPA's decision to re-direct the contractor's efforts from audit support into other assistance as discussed on pages 23 and 24.

In October 1985, Radian submitted a cost schedule to EPA that showed that $43,000 was charged for providing audit support under task 1. The schedule showed that the contractor charged $25,000 for auditing assistance and preparing detailed trip reports on the audits of four I/M programs visited and $18,000 for analyzing the results of I/M vehicle emissions testing programs in two states. The schedule also showed that Radian charged the agency $5,000 for

analyzing data handling in another state's I/M program. EPA did not consider this latter effort as contractor audit support.

The work plan for task 2 called for Radian to collect information and produce a high altitude performance adjustment manual for use by I/M program personnel and mechanics in high altitude areas such as Colorado and Idaho. Radian published the final high altitude manual in September 1984. The contractor charged the agency $12,000 for developing the final product.

The work plan for task 3 required that Radian review and determine the suitability of different chemical reaction mechanisms for photochemical modeling for methanol fuel. The work plan called for the contractor to provide EPA with a report on the recommended model. EPA said in its initial response that the methanol task was carried over to Work Assignment No. 11 of level-of-effort Contract No. 68-02-3889 for completion. The work assignment started on October 1, 1984, and was completed with the issuance of the methanol photochemistry study in September 1985. The EPA I/M project manager confirmed this and provided the 1985 methanol study Radian developed for task 3.

GAO assessment

We believe that the additional information EPA provided responds to the Subcommittee's request for details of EPA's contractual agreement with Radian Corporation.

SUBCOMMITTEE QUESTION

5. The Subcommittee asked the following questions concerning Radian Corporation's role in developing EPA's guidelines for auditing I/M programs:

   (a) To what extent did Radian Corporation develop guidelines for EPA to use when auditing state I/M programs?

   (b) Why was a contractor (Radian Corporation) rather than federal personnel used to develop EPA's guidelines for auditing I/M programs?

EPA response

EPA said that the guidelines were developed and completed by EPA personnel. Radian's role in the audit guideline development was to (1) review and recommend additions or changes to EPA's proposed I/M audit procedure, (2) develop a pre-audit questionnaire, (3) accompany EPA on pilot audits and to later analyze the results to determine how well EPA's procedures worked, and (4) provide onsite assistance in conducting pilot sticker surveys and emission testing.

Radian accompanied EPA personnel on the first few pilot audits and provided comments on the procedures used. After that, EPA decided to restrict Radian's contribution to providing support for emission testing and redirected the remaining funds to other tasks under the work assignment.

GAO comment

EPA's response showed that Radian Corporation performed several tasks for EPA related to designing the I/M program audit guidelines. We asked EPA to further explain Radian Corporation's role in developing the I/M audit guidelines.

Subsequent information obtained from EPA

EPA said that the I/M audit guidelines were developed by personnel in its Office of Mobile Sources. EPA said that Radian Corporation's role in developing the guidelines was strictly advisory and supportive to EPA's effort.

As discussed under question no. 4 on pages 20 to 22, EPA issued Work Assignment No. 25 to Radian Corporation under an existing level-of-effort contract during fiscal year 1984 to provide support in developing national I/M audit guidelines. EPA said that Radian was chosen because the company had experience with various EPA and state/local I/M projects. In particular, Radian had been involved in a recent data-gathering survey on the quality

assurance efforts of 13 operating I/M programs. Therefore, even though EPA had its own in-house expertise, the agency believed that Radian's assistance would allow the best possible guidance to be developed in the shortest time.

EPA said that the process for developing the guidelines started with agency officials conducting eight pilot I/M audits during fiscal year 1984 and drawing on this experience as the basis for drafting the audit guidelines. EPA said that Radian's role in this process was to (1) review and recommend additions or changes to EPA's proposed I/M audit procedures, (2) help develop a pre-audit questionnaire, (3) accompany agency personnel on the eight pilot audits as an observer, and (4) provide onsite audit assistance in conducting pilot sticker surveys and emission testing. EPA said that Radian officials accompanied agency staff on the first four pilot audits and provided comments on the procedures used. However, after the initial four audits were conducted, EPA determined that its in-house expertise was adequate to develop the guidelines. Consequently, EPA redirected Radian's efforts to other tasks in the work assignment. As part of this redirected effort, Radian made suggestions for the pre-audit questionnaire and conducted voluntary emission testing activities in New Jersey and Virginia to collect audit data.

EPA said that the draft audit guidelines were submitted to two groups--the State and Territorial Air Pollution Program Administrators and the Association of Local Air Pollution Control Officials--for review and comment. The revised guidelines were then distributed for review and comment to the full membership of both groups, state and local I/M agencies, and EPA regional offices. The guidelines were then finalized and issued in December 1984.

We identified several documents in our data base which confirmed that Radian Corporation provided supportive assistance to the agency in developing the I/M audit guidelines. Trip reports and related memorandums showed that Radian participated in the four pilot audits and submitted narrative comments and statistical information to EPA concerning the audit results. We also found memorandums prepared by EPA transmitting copies of the draft audit guidelines for review and comment. The transmittals stated that the guidelines had been developed by agency personnel.

GAO assessment

With the additional information, we believe that the Subcommittee's question on Radian Corporation's role in developing the I/M audit guidelines has been satisfactorily addressed and that EPA has sufficiencly demonstrated that EPA personnel developed the guidelines to be followed when auditing I/M programs.

SUBCOMMITTEE QUESTION

6. What is the status of EPA's guidelines to be followed during audits of state I/M programs?

EPA response

EPA said that the guidelines were published as chapter 6 of The National Air Audit System Guidance Manual for FY 1985 (EPA-450/2-84-008) in December 1984.

GAO assessment

We reviewed chapter 6 of the guidance manual and confirmed that the I/M audit guidelines had been published in December 1984. The manual provides standardized criteria for EPA personnel to use when auditing various state air quality program activities, including the vehicle inspection and maintenance programs.

We found that the guidelines provided EPA with a structure for evaluating I/M programs and addressed the I/M program activities which EPA believed should be reviewed as part of every audit. These activities included, at a minimum, all design and operational aspects of the I/M program which affect the program's ability to meet legal requirements of the state implementation plan and the Clean Air Act. The guidelines provide that evaluation of actual program operations should include: determining whether vehicles subject to I/M inspections were being inspected, whether the inspections were complete and proper, and whether the inspection standards were adequate to identify vehicles not in compliance with the program requirements. The guidelines also addressed recognizable program economy and efficiency benefits as part of I/M audits.

The guidelines discussed components in the audit process for evaluating I/M programs. Basic elements of the audit process included adequate preparation for visiting I/M programs selected for audit; conducting the audit visit; preparing the audit report and discussing audit results with state/local program officials; and initiating follow-up actions to correct deficiencies or suggest program improvements. The guidelines showed that I/M program evaluations should review inspection testing procedures and equipment specifications; emission cutpoints, waiver procedures, and vehicle coverage considerations; quality control procedures; and consumer assistance and protection items.

During October 1985 we accompanied EPA auditors on their audit of the Salt Lake County I/M program to determine whether the auditors used the guidelines as part of the audit. We found that the auditors followed the guidelines in conducting the audit, determining audit findings, and presenting evaluation results to local I/M officials. The auditors reviewed the emission testing

activities at several stations pre-selected using the guidelines' criteria for evaluating decentralized I/M programs. The audit teams keyed their evaluation of the Salt Lake program operations on the major issues set out in the guidelines (i.e., vehicle waiver rates, station records, mechanic training and annual certification, etc.). The guidelines call for exit briefings by the auditors to discuss the inspection results and corrective actions necessary to improve program performance. The auditors met with the Salt Lake program officials at the end of the audit and summarized the audit results.

With the information EPA provided together with our analysis, we believe that the Subcommittee's question concerning the status of EPA's audit guidelines has been satisfactorily addressed.

SUBCOMMITTEE QUESTION

7. Citing our report, the Subcommittee referred to a June 1984 EPA paper entitled "Implementation Support for State and Local Inspection and Maintenance and Tampering/Fuel Switching Programs" which called for 15 full-time equivalents and $410,000 for contracts in fiscal year 1986. The Subcommittee asked the following questions concerning contract awards and auditing positions for I/M program audits:

   (a) What are the full-time equivalents and contract funds for I/M program audits for fiscal years 1984 and 1985?

   (b) What is the purpose of any contract money spent by EPA in fiscal years 1984, 1985, and 1986 for I/M program audits?

   (c) Provide the details of all contracts awarded in fiscal years 1984, 1985, and 1986 for the I/M program.

EPA response

EPA said that three full-time equivalent positions were directly allocated for audits for both fiscal years 1984 and 1985.

EPA said that fiscal year 1984 contract funds amounting to $48,100 under a contract with Radian Corporation were budgeted for fiscal year 1984 audits. As indicated on pages 23 and 24, the contract covered four tasks on I/M program audit support: (1) reviewing and recommending additions or changes to EPA's proposed I/M audit procedure, (2) developing a pre-audit questionnaire, (3) accompanying EPA on pilot audits and later analyzing the results to determine how well EPA's procedures worked, and (4) providing onsite assistance in conducting pilot sticker surveys and emission testing.

According to EPA, the agency budgeted $105,000 in contract funds to support I/M program audit work in fiscal year 1985, but no awards had been made as of March 1985. (Subsequently, as shown below, EPA has spent a portion of the $105,000.) EPA's response did not address contract awards for I/M program audits for fiscal year 1986.

GAO comment

We found that EPA's response on I/M program audit contractor awards was incomplete. Although EPA provided some details on the contract award for fiscal year 1984, it did not provide any information on scheduled or planned contract awards for I/M program audits for fiscal years 1985 and 1986. Therefore, we asked EPA to provide this information.

Subsequent information obtained from EPA

The EPA I/M project manager provided information on 15 work assignments approved during fiscal years 1984 and 1985 to support the I/M program. The work assignments were part of ongoing contracts previously awarded by EPA. According to EPA no new contracts were awarded in fiscal years 1984 and 1985.

The project manager told us that the Radian Corporation work assignment approved in fiscal year 1984 was the only work assignment which helped EPA in doing I/M program audits. The project manager said that two work assignments, approved in fiscal year 1985, with Colorado State University and with Engineering Science, were funded to support, but not actually perform, I/M audit work done by EPA. These two assignments accounted for approximately $63,500 of the $105,000 budgeted in fiscal year 1985 for I/M audit support.

The project manager said that 12 other work assignments approved during fiscal years 1984 and 1985 were related to other aspects of the I/M program and addressed the problems identified through the audit process. The 12 work assignments had a combined value of $772,324.

The I/M project manager also provided information on EPA's I/M contract funding for fiscal years 1985 and 1986. A February 28, 1985, memorandum by the director of the Office of Mobile Sources, the headquarters office responsible for managing a number of regulatory programs such as I/M, discussed the revised fiscal year 1985 contract allocations, including funds for the I/M program. The memorandum showed that Mobile Sources had allocated a total of $132,500--$120,000 for I/M audit support and $12,500 for developing an I/M methodology. The project manager told us that the I/M audit support allocation was reduced from $120,000 to $105,000.

The October 28, 1985, memorandum by the Mobile Sources director on fiscal year 1986 interim budget allocations included a list of approved contract items for the new fiscal year. The list included $473,300 in contract funding for the I/M program--$60,000 for I/M audit support, $131,600 for I/M data analysis, and $281,700 for I/M testing activities. The memorandum noted that, because the fiscal year 1986 federal budget had not yet been determined and the agency was operating under a continuing resolution, agency expenditures through November 14, 1985, should be limited to those costs essential for operations.

Regarding fiscal year 1986 contract awards for the I/M program, we found that $805.69 of the $60,000 I/M audit support allocation had been authorized for use as of February 1986. The funds were used for an I/M workshop sponsored by EPA and held in Kansas City, Missouri, during November 1985. The balance of fiscal year 1986 I/M contract funding has not yet been authorized.

The following sections provide details on the 15 work assignments for fiscal years 1984 and 1985. The narrative provides a summary on each work assignment, its value, purpose of the work assignment, and expected outcomes from the contractors to complete the assignments. Contract awards for fiscal year 1986 is not discussed. As we previously stated, the EPA-sponsored workshop in Kansas City has been the only commitment of funds from the I/M contract funding allocation for fiscal year 1986.

Radian Corporation work assignment

Work Assignment No. 25 under Radian Corporation Contract No. 68-02-3515 called for Radian to provide audit support to EPA. The audit support included reviewing EPA's draft I/M audit procedures; preparing a pre-audit questionnaire; developing plans to test the draft audit procedures at eight I/M programs; providing onsite support to EPA in conducting the audits; and assisting in preparing final audit procedures. Radian provided the audit support and developed the required products under the work assignment as agreed before EPA redirected the contractor's assistance into another activity. Radian submitted a cost schedule to EPA which charged $43,000 as the cost for I/M audit support and related data analysis of I/M activities in two states.

Colorado State University and Engineering Science work assignments

EPA approved two assignments during fiscal year 1985 for contractor assistance for the I/M program. The two assignments accounted for $63,508 of the revised fiscal year 1985 I/M contract funding allocation of $105,000.

On March 13, 1985, EPA authorized a $33,508 grant funding order under training grant T-901-500-1-3 with Colorado State University. The grant funding order provided funds for the university to gather test data in assessing the degree of pretest repairs in decentralized I/M programs. The training grant with Colorado State University supports states that are implementing I/M programs by developing and presenting training courses and technical materials.

During April 1985, EPA authorized a 5-month, $30,000 project under Work Assignment No. 24 of Contract No. 68-02-3888 with Engineering Science. The work assignment addressed developing guidance for state and local agencies on how to effectively use covert surveillance in managing their decentralized I/M programs. EPA's I/M project manager said that the work assignment should be completed by April 1986 at the budgeted amount.

I/M-related work assignments for fiscal year 1984

We found that, for fiscal year 1984, EPA approved three work assignments related to I/M program activities. Each of the work

assignments has been completed. Information on the assignments is shown below.

--EPA approved Work Assignment No. 17 under Contract No. 68-03-3162 with Southwest Research Institute during December 1983. The work assignment was completed in September 1984 at a cost of $26,433. The work assignment provided for an assessment, through various testing procedures, of the condition of automotive catalysts poisoned with known amounts of leaded fuel to determine evidence of poison accumulation, overheating, plugging, thermal deterioration, and noble metal loss.

--Two work assignments under Contract No. 68-03-1865 with Energy and Environmental Analysis, Incorporated, were approved in April 1984. The assignments required 4 months for completion at a combined cost of $94,000.

Work Assignment No. 4 involved the determination of patterns of in-use emission malperformance in model year 1981 and later vehicles. Tasks involved (1) characterizing the patterns of in-use emission failures in the vehicles, (2) using this knowledge to analyze omission error rates (improperly passing late-model vehicles that fail to meet the vehicles' certification standards in I/M tests), and (3) assessing the implications of the emission failure patterns for vehicle I/M programs. According to the EPA I/M project manager, as of February 1986 a draft report had been completed. However, he said that a final report may not be issued because all monies for the work assignment have been expended.

Work Assignment No. 5 authorized continued analysis of data from several I/M programs concerning in-use emissions of model year 1980 and later vehicles. The assignment was completed and a final report issued in October 1984. The report contained statistical information for EPA's emission factor estimates, identified vehicles for recall investigations, and indicated potential problems for I/M programs.

I/M-related work assignments for fiscal year 1985

We found that, for fiscal year 1985, EPA approved nine work assignments related to I/M program activities. As of February 1986, three work assignments were completed and the others are in various stages of completion. Following are the details on the work assignments.

--EPA approved Work Assignment Nos. 1 and 2 under Contract No. 68-03-3222 with EG&G Automotive Research, Incorporated, in September 1985. The combined cost of the two work

assignments was estimated at $386,891. As of February 20, 1986, the assignments were completed and EPA was in the process of evaluating the test data compiled by the contractor. According to the EPA I/M project manager, a draft report of the test results is expected to be issued in late March or early April 1986. The project manager said that the cost under the contract was $322,724 as of February 20, 1986. The assignments provided information regarding the effects of I/M programs on the emissions of 1982 and newer passenger cars and the costs of repairs.

--Work Assignment No. 11, which EPA approved in May 1985, was under Contract No. 68-03-3192 with Southwest Research Institute. The work assignment involved obtaining and analyzing catalysts damaged by lead poisoning from in-use passenger vehicles and light trucks in the Houston, Texas, area. Houston was selected because of the required annual vehicle inspection for evidence of misfueling. The work assignment was estimated to take approximately 3 months to complete at a cost of $35,000. EPA's I/M project manager said that the work assignment was extended to September 1986, and that $27,033 had been expended as of February 1986.

--A Work Assignment (Technical Directive #3) under Contract No. 68-03-3230 with Automotive Testing Laboratories provided for a study of the effects of continuous misfueling of catalyst equipped, fuel injected vehicles and an investigation of the improvements in catalyst efficiency when misfueled vehicles are consistently fueled with unleaded gasoline. This information will be used to evaluate potential emission reduction benefits of program strategies which discourage or prevent misfueling. EPA approved this assignment in February 1985, and the assignment was budgeted at $70,000. The I/M project manager said that as of February 20, 1986, the work assignment was progressing as intended and should be completed by April 1986.

--Work Assignment No. 7 of Contract No. 68-03-3244 with Jack Faucett Associates focused on the economic analysis of the emissions performance warranty for heavy-duty gasoline vehicles. Information from the work assignment will be used in developing proposed rules to implement the performance warranty for 1987 and later-year vehicles. The assignment was approved by EPA in June 1985 at an estimated cost of $25,000. The I/M project manager said that as of February 1986, the work assignment was progressing as intended and was within the budgeted cost. He said that a draft report on the assignment should be finalized by the end of April 1986.

--Four Work Assignments (Nos. 11 through 14) were approved under Contract No. 68-03-1865 with Energy and Environmental

Analysis, Incorporated. The four assignments required 2 to 9 months for completion at a combined cost of $135,000. The I/M project manager said that Assignment No. 12, which EPA had approved in December 1984, was finished and a final report was issued on September 27, 1985. The other three assignments were progressing as intended and should be completed by the end of September 1986.

Work Assignment No. 11, approved by EPA in May 1985, was designed to develop detailed data on the failure rates by model year of vehicles in decentralized and centralized I/M programs. EPA believes that the data will be useful in establishing emission standards for achieving a particular failure rate and assessing the effectiveness of decentralized I/M programs.

Work Assignment No. 12 provided for analyses of mileage accumulation rates for light-duty vehicles and trucks from several different operating I/M programs and the failure rates of different cutpoint scenarios. The results of the analyses will be used to check the mileage accumulation rates in EPA's fuel consumption model and to verify EPA's analyses of failure rates in the Seattle and Arizona I/M programs.

Work Assignment No. 13, which EPA approved in January 1985, involved evaluating in-use emissions of 1980 and later vehicles using data from selected state I/M programs.

Work Assignment No. 14, which EPA approved in May 1985, involved developing a data analysis system for determining reasons for lower vehicle failure rates in decentralized I/M programs.

GAO assessment

We believe that the additional information EPA provided on work assignments adequately addresses the Subcommittee's request for detailed information on EPA's contracts for I/M program audits for fiscal years 1984, 1985, and 1986.

SUBCOMMITTEE REQUEST

8. Provide a table showing for each state, the type and characteristics of each implemented and planned I/M program, and indicate whether or not EPA approved them in approving the program.

EPA response

EPA provided an I/M program implementation summary showing the types and the design characteristics of implemented and planned I/M programs. The summary contained information on the program start date, the type of program and whether a waiver or tampering check was used, the fee charged to test vehicles, the vehicles exempted from testing, and the cutpoints used to test different vehicles included in the program.

EPA also provided a table showing those states with fully approved I/M state implementation plans. EPA said that before granting plan approval, the agency requires the submittal of rules and regulations and all other I/M design elements which could affect the ability of the I/M program to achieve the minimum emission reduction requirements. EPA is confident that every approved plan contains an I/M program design which, if implemented and properly operated, will achieve these reductions.

GAO assessment

EPA's response was complete. As a result, we believe that the detailed information provided by EPA satisfies the Subcommittee's request for information on the design and characteristics of implemented and planned I/M programs.

SUBCOMMITTEE REQUEST

9. In a table show the problems EPA has identified to date with each implemented and planned I/M program and the program characteristics EPA believes need to be changed.

EPA response

EPA provided a table showing 11 operating I/M programs that the agency believed had serious problems based on the results of audit reports or correspondence. The problems included four areas--waivers, quality assurance, enforcement, and failure rates.

EPA said that identifying the 11 programs was not a final agency determination and that, in some cases, EPA had yet to receive a response or rebuttal from the state and local officials involved with these programs. EPA said that the list is serving as a guide for further investigation and efforts by EPA staff, and that many of the states had already taken steps to resolve these problems so that a follow-up audit may confirm that the problem no longer exists. In addition, EPA said that there were minor problems associated with consumer information and assistance in most programs; however, the agency believed that it only has an advisory role on such problems.

GAO comment

EPA's response provided a snapshot of 11 I/M programs that had serious problems as of March 1985. In an attempt to update and expand on this information, we interviewed EPA's I/M project manager and obtained EPA's National Air Audit System report for fiscal year 1985. This report contained the results of EPA's audits of 16 I/M programs through fiscal year 1985.

Subsequent information obtained from EPA

EPA's National Air Audit System report showed that:

--All 16 programs had experienced problems with the quality of repairs necessitated because vehicles had not passed the I/M test. According to EPA, state and local agencies were providing minimal attention to this problem, and it appeared that vehicles were being adjusted to meet I/M cutpoints with a small margin of safety rather than being adjusted near manufacturer specifications. The result is much lower emissions reductions being achieved than what would otherwise occur.

--Thirteen programs needed to improve their management of program data. EPA found that I/M programs were not effectively using program data to monitor and take steps to improve program performance and performance of individual inspection stations.

--Ten programs needed to improve quality assurance over the equipment which analyzed vehicle exhaust emissions. This problem was found in decentralized programs with manual analyzers and in some centralized government-run programs.

--Nine programs had experienced lower than expected failure rates. Very low reported failure rates indicate inspection error or at least data-reporting errors. These problems were prevalent in most decentralized programs and in some centralized government-run programs.

--Five programs had enforcement problems. The rate of compliance among vehicle owners was less than 50 percent in some states, and this problem was usually characteristic of sticker-based enforcement programs.

--Four programs had excessive waiver rates for at least some vehicle categories.

According to EPA, the results of audits completed in fiscal year 1986 are showing similar results.

EPA's I/M project manager told us that, because I/M programs are controversial and have encountered stiff resistance at the state/local level, EPA has been inclined to approve most program designs just for the sake of getting I/M programs started. As pointed out in our January 1985 report, EPA's philosophy on I/M program design has been to give states wide latitude to set their own parameters for an I/M program as long as on paper the program would achieve the agency's performance standard of a 25-percent emissions reduction by the end of 1987. We stated in that report our concern that this approach was resulting in states being allowed to use certain practices approved by EPA in the program design, but which were making I/M programs less effective than they otherwise would be.

As part of its efforts to audit state I/M programs, EPA is encouraging states to modify their program designs, as necessary, to make the program as effective as possible. Also, EPA is starting to work with states to correct any major problems which would compromise EPA-approved state implementation plans. However, it is uncertain to what extent and how quickly states will make any necessary changes. The EPA project manager responsible for auditing state I/M programs told us in February 1986 that he was not pleased with the overall progress states had made in changing their programs to make them effective. The manager said that states were not always willing to cooperate with EPA on improving their programs.

The project manager said that program enforcement was a major concern to EPA because of the high rate of noncompliance, particularly in programs using window stickers. In its audit of such programs, EPA found that the problems in sticker-based

enforcement programs tend to be caused by (1) the indifference of police officers to sticker violations, (2) the failure of police departments to devote the necessary resources or to accept the risk to public goodwill, (3) the inability of police officers to distinguish subject vehicles from exempt vehicles and to distinguish expired stickers from valid ones, and (4) the lack of authority for police to ticket parked vehicles. In our discussion of question no. 23 on pages 62 to 64, we noted that one way programs have minimized enforcement problems is by tying I/M emissions testing to an annual vehicle registration process.

EPA's I/M project manager agreed that some states using stickers have had serious enforcement problems and have had to change to a vehicle registration system. This official pointed out, however, that the states of Connecticut, Massachusetts, and New York, which use stickers, have been able to make such programs work. The official said that Connecticut did have an enforcement problem in early 1984 where an estimated 20 to 25 percent of the vehicles were not complying with I/M program requirements. During EPA's audit of Connecticut's I/M program in 1984, EPA found that the state had instituted new enforcement procedures. The new procedures retained the stickers, but involved the use of roadside pullover teams made up of police officers and inspectors from the state Department of Motor Vehicles to identify and cite noncomplying vehicles. According to EPA's I/M project manager, some states like Connecticut would have a difficult time changing to a vehicle registration system because vehicles currently have to be registered once every 2 years, not annually.

GAO assessment

With the additional information, we believe that the Subcommittee's request concerning the problems EPA has identified to date with I/M programs, and the program characteristics EPA believes need to be changed, has been satisfactorily addressed.

As indicated in the response, however, a number of improvements are still needed to bring all I/M programs up to an acceptable level of effectiveness. Regarding enforcement problems, EPA's approval of I/M programs using window stickers rather than link programs to annual vehicle re-registrations has led to the establishment of programs with weaknesses in compliance. We believe that when a state chooses a sticker-based system, EPA needs to determine if the state could reasonably be expected to implement such a system effectively.

SUBCOMMITTEE QUESTION

10. What was the percent emission reduction approved by EPA for each implemented and planned I/M program for the end of 1987 and for each year of the program?

EPA response

EPA said that each approved program was required to achieve minimum reductions of 25 percent for hydrocarbons (a main component of ozone) and/or 35 percent for carbon monoxide in light-duty vehicle exhaust emissions. Some I/M programs were designed to achieve higher reductions as a part of the state's overall attainment strategy.

GAO assessment

An EPA policy issued in July 1978 established the emissions reduction standard required of all I/M programs. The policy set as the standard a 25-percent reduction in vehicle exhaust emissions of hydrocarbons and a 25-percent reduction in emissions of carbon monoxide by December 31, 1987, compared to the projected emission levels without an I/M program.

EPA determined that a 25-percent reduction in emissions represented reasonably available control technology as required under the Clean Air Act. EPA made this determination based on (1) the performance of the New Jersey I/M program, which was operating when the amendments to the act were enacted and (2) an expected I/M program implementation date by the states of December 31, 1982. EPA used the New Jersey program because the program had not experienced any apparent technical or public acceptance problems. EPA determined that a basic program designed along the lines of the operating program in New Jersey would produce a 25-percent reduction in light-duty vehicle exhaust emissions by 1987. The emission reduction requirement of 25 percent for carbon monoxide was later changed to 35 percent because EPA's revised mobile source models showed that such a reduction could be reasonably achieved by an I/M program.

In January 1985, we reported that, according to EPA I/M officials, the December 31, 1982, deadline was important. Implementing an I/M program on or before that date would have provided nonattainment areas the time necessary to gradually introduce a program to the public and to get state officials and/or private garages acquainted with the operations of the program. The officials said that implementation by December 31, 1982, provided areas with sufficient time to reach the required emissions reduction levels needed by December 31, 1987. EPA I/M officials said that the longer an area delayed implementing an I/M program after

December 31, 1982, the more stringent the program would have to be to achieve the necessary emissions reduction levels by the 1987 deadline.

With the additional information provided by our analysis, we believe that the Subcommittee's question on the percent emission reduction approved by EPA for I/M programs has been satisfactorily addressed.

SUBCOMMITTEE QUESTION

11. What is the actual percent of emission reductions and the estimated shortfall in the percent of emission reductions for each implemented and planned I/M program for the end of 1987 and for each year of the program?

EPA response

EPA said that it did not require, nor does it calculate, year-by-year reduction targets for the I/M program and has not estimated actual reductions or shortfalls.

GAO comment

We asked EPA to elaborate on its response to the Subcommittee. We wanted EPA to comment on how it evaluated individual I/M program success rates without periodically determining the actual reductions in emission levels. We also asked EPA to discuss how it is able to evaluate individual I/M program success rates without measuring shortfalls between planned and actual emission reduction levels.

Subsequent information obtained from EPA

EPA said that it was confident that the emission reductions predicted by EPA's mobile source models could be achieved as long as an I/M program was implemented and operated according to its design characteristics in the state implementation plan. Therefore, in evaluating an I/M program, the primary task facing EPA was to determine whether the program had been implemented and was being operated in accordance with its state implemention plan design.

EPA believed that the main factors which may impact the emission reductions from the program were (1) noncompliance (which would reduce inspection volumes), (2) failure rates (which, if too low, would indicate not enough vehicles would be obtaining repairs and benefiting from reduced emissions), (3) waiver rates (which, if high, would again reduce the number of vehicles being repaired), and (4) repair quality (which, if poor, would reduce the average emissions reduction per vehicle repaired). Other contributing factors to the quality of the program were analyzer quality control, compliance with procedural requirements for testing and record keeping, and data analyses. EPA said that, in evaluating I/M programs, it considered each of these factors and others to assess overall effectiveness.

EPA said that it was currently refining a methodology for estimating the emissions reduction shortfalls which were attributed to noncompliance, low failure rates, waivers, and other I/M problems. Once fully developed, EPA planned to use this

methodology to assess the relative impact of identified problems and the associated priorities for resolving them. EPA intends to have this methodology in use by the end of fiscal year 1986.

GAO assessment

We agree with EPA that implementing a well designed I/M program should reduce emission levels. This assumes, however, that I/M programs are implemented according to their design and operate free of any defects such as excessive noncompliance or waiver usage. As discussed elsewhere in this briefing report, EPA has found serious operating problems with many I/M programs which compromise the effectiveness of the initial program design. In our opinion, EPA's effort to develop a methodology for estimating the emissions reduction shortfalls caused by such serious problems is a step in the right direction.

Given the lack of available data on the actual percent of emission reductions and the estimated shortfall for I/M programs, we believe that the Subcommittee's question has been addressed as well as can be at this time.

SUBCOMMITTEE QUESTION

12. Citing our report, the Subcommittee referred to a January 17, 1984, EPA memorandum entitled "Strategy for Achieving Fraud and Error-Free I/M Programs." In that memorandum, EPA said that, once audits of I/M programs were completed and problems were identified, it would encourage states to take voluntary corrective action. If negotiations with the states did not result in needed changes being made to the programs, EPA said that it would reach into its "bag of tricks" to persuade, coerce, or force states to correct any problems of a serious nature. The Subcommittee asked this question: How will EPA "coerce or force" each state to "correct its problems" if negotiations fail?

EPA response

EPA said that its authority and mechanisms for effecting improvements when problems with I/M programs have been identified is included in sections of the Clean Air Act. These sections provide for various means of effecting corrective actions, including revising state implementation plans, issuing new implementation regulations, and initiating sanctions (i.e., construction moratoriums, air pollution control grant funding limitations, sewage treatment grants restrictions, etc.) against I/M programs.

GAO comment

EPA's response provided the Subcommittee with a list of the authorities and mechanisms (such as the application of sanctions) available to the agency under the Clean Air Act to get states to effect needed changes to existing I/M programs. We reviewed the sections of the act EPA cited and verified that the citations were correct. However, EPA did not explain what its policy was for using these authorities and mechanisms in dealing with states whose I/M programs were not in compliance and did not explain whether the agency was in fact exercising that policy. Therefore, we asked EPA what specific policies and/or directives it had established to direct states to make changes or correct problems in I/M programs.

Subsequent information obtained from EPA

EPA said that there was no specific agency policy which dealt with the correction of operating I/M problems. EPA's general approach in dealing with those problems has been to first document the problem. Most often, problems were documented through I/M program audits. The audit reports always include a discussion of any operating problems identified in an audit. EPA said that whenever operating I/M problems that represented state

implementation plan deficiencies were identified, EPA works cooperatively with state/local officials to ensure that these problems are addressed. When these problems are identified, they are added to EPA's internal management accountability system, and EPA's regional offices are required to report quarterly on the progress made in resolving them.

EPA said that ultimately, if serious problems cannot be resolved through negotiation, EPA can seek penalties under sections 176(b) and 173(4) of the act for the states' failure to implement an approved state implementation plan. According to the EPA I/M project manager, EPA had used this specific penalty only once. The official said that by Federal Register notice dated January 21, 1986, EPA had proposed sanctions against the state of Indiana because the state was not doing what was necessary to bring the I/M program's compliance rate up to acceptable levels.

In January 1985 we reported that many states were having problems with I/M program quality control and enforcement, and that some states have opposed I/M programs at all stages of development and some have continued their opposition even after program implementation. On pages 11 to 13, we further point out that a number of states contain areas without approved state implementation plan revisions that were due in 1982, and that the potential consequences of not submitting a plan in a form approvable by EPA were sanctions. Thus far, EPA has used sanctions only sparingly.

GAO assessment

We are concerned that states continue to experience serious and even "critical" I/M program problems and that such problems continue to reappear. Information about state I/M program problems is included in our discussion on pages 48 and 62 to 64 in this briefing report.

We believe that EPA's approach to cooperatively work with states to resolve serious deficiencies in I/M programs is a positive step in getting states to negotiate program changes. The January 1984 EPA memorandum identified actions available to the agency to persuade states to change their I/M programs. These actions included (1) providing additional technical guidance to state program officials, (2) conducting periodic workshops on the guidance material, and (3) setting aside or prioritizing section 105 funds for improving ongoing I/M programs.

As pointed out by EPA, a major option available to the agency is the use of sanctions against any state failing to implement an approved I/M program. We understand EPA's reluctance to use this authority except as a last resort. Rather than using sanctions, EPA has given states additional time to correct state implementation plan deficiencies and demonstrate that the states were making reasonable progress towards implementing the required program.

The result has been that I/M implementation was stretched out well past EPA's established deadline for full program implementation.

With the additional information obtained from EPA, we believe that the Subcommittee's question on EPA actions to coerce or force states to correct I/M problems has been satisfactorily addressed.

SUBCOMMITTEE REQUEST

13. Provide a copy of all letters, memorandums, and other documents in EPA files concerning I/M for the period January 1, 1984, to the present.

EPA response

EPA provided the requested documents as part of a separate transmittal to the Subcommittee.

GAO comment

On September 9, 1985, the Subcommittee staff provided us with three boxes of data EPA submitted to supplement its formal written response. We categorized the documents (e.g., by specific state and subject area), entered information from the documents into micro-computer records, and sorted the documents into files for use in confirming the completeness and accuracy of EPA's responses to the Subcommittee's questions.

In evaluating EPA's responses and the Subcommittee's questions, we found that our data base was incomplete. On November 19, 1985, we asked EPA to provide additional narrative comments and supporting documentation.

Subsequent information obtained from EPA

After EPA responded on January 24, 1986, we reviewed the additional information and found it to be satisfactory in evaluating EPA's responses. Overall, our data base provides information on the status of the I/M program from January 1984 to February 1986.

GAO assessment

We can not attest to the validity or completeness of the documentation provided by EPA on the I/M program without an in-depth review of the agency's files. We believe, however, that the documentation submitted by EPA represents data sufficient to evaluate the current status of the I/M program and EPA's efforts to implement it.

SUBCOMMITTEE QUESTION

14. The Subcommittee asked the following questions concerning EPA's audit of state I/M programs:

    (a) Explain why EPA deferred its audit of state I/M programs until fiscal years 1985 and 1986.

    (b) What I/M program audits has EPA made to date?

    (c) What audits of I/M programs does EPA have underway?

    (d) What is EPA's schedule for completing the remaining audits of state I/M programs?

EPA response

(a) EPA said that I/M program audits actually began in fiscal year 1984 when EPA audited eight I/M programs.

EPA cited two reasons why it does not audit all I/M operating programs at once but instead waits until they have been operating more than 1 year. First, sufficient time must be given to the state or local administering agency to deal with the inevitable start-up problems and to form an established mode of operation. Second, an effective audit cannot be conducted until sufficient operating data (e.g., failure rates, waiver rates, and compliance rates) are available to enable the audit team to identify trends and pinpoint potential problem areas.

(b) EPA said that eight I/M programs were audited in fiscal year 1984--Arizona; Colorado; Connecticut; the District of Columbia; Massachusetts; New Jersey; Memphis, Tennessee; and Virginia.

(c) EPA's audit schedule lists eight I/M programs to be audited in fiscal year 1985--Delaware, Georgia, Missouri, Nevada, New York, North Carolina, Oregon, and Texas. EPA said that audits of the Georgia, Nevada, and New York I/M programs had been performed and that the remaining five audits would be completed by May 1985.

(d) EPA said that nine I/M programs were scheduled for audit during fiscal year 1986--California; Idaho; Indiana; Louisville, Kentucky; Maryland; Pennsylvania; Utah; Washington; and Wisconsin.

GAO comment

We found that EPA's responses for questions (a), (b), and (c) were satisfactory. EPA explained that its audits of state I/M programs had not been deferred until fiscal years 1985 and 1986. We were able to verify that EPA did complete its audits of the eight I/M programs in fiscal year 1984. Also, the EPA I/M project

manager advised us that all of the audits scheduled for fiscal year 1985 were completed by EPA, and that EPA was preparing final write-ups of the audit results and would forward them to us when finished.

EPA's response for question (d) did not provide any specific dates by when the audits scheduled for fiscal year 1986 were expected to be completed. EPA also did not indicate which of these audits had actually been done. We asked EPA to provide this information so that the Subcommittee would have a complete response to its question.

Subsequent information obtained from EPA

On January 26, 1986, EPA provided a list of the I/M programs which were audited or scheduled for audit during the July 1985-March 1986 period. We reviewed the information EPA provided. Table 1.3 shows the status of I/M program audits as of March 28, 1986.

Table 1.3: Status of I/M Program Audits

Area[a]	Fiscal year 1986 audit schedule	
	Scheduled date	Status
Wisconsin	July 1985	Completed
Indiana	August 1985	Completed
Davis County, Utah	October 1985	Completed
Salt Lake County, Utah	October 1985	Completed
Maryland	November 1985	Completed
Nashville, Tennessee	November 1985	Completed
California	January 1986	Completed
Louisville, Kentucky	February 1986	Completed
Seattle, Washington	February 1986	Completed
Boise, Idaho	March 1986	Completed
Pennsylvania	March 1986	Completed

[a]Audits in the states listed without any reference to localities include multiple urban areas.

We were aware that several of the scheduled audits had been completed or were underway. In October 1985 we accompanied the EPA audit team on its audit of the Salt Lake County, Utah, I/M program.

We asked whether EPA has determined an I/M audit schedule for fiscal year 1987. The I/M project manager said that this had not been done. However, he believes that one option is to audit every I/M program which has not been audited by September 1986 and which had been operating for 1 year. A likely candidate under this approach would be the state of Michigan, which implemented its I/M program in January 1986 and would have had a year's operating

experience. The I/M project manager said that a second option for 1987 is to schedule follow-up audits to previously audited programs.

GAO assessment

We believe the additional information obtained by EPA provides the Subcommittee with a complete response to its questions on EPA's audits of state I/M programs.

SUBCOMMITTEE QUESTION

15. What are the results of the I/M program audits made by EPA to date?

EPA response

EPA said that none of the reports had been finalized for the eight audits completed in fiscal year 1984 or the three audits completed through March 1985 in fiscal year 1985. However, EPA said that the draft audit reports that have been completed were included with other I/M documents the Subcommittee requested.

GAO comment

We asked EPA to update its response to the Subcommittee and to provide us copies of all final audit reports. We were particularly interested in whether EPA was going to prepare and issue final reports for the initial audits of I/M programs completed during fiscal year 1984.

Subsequent information obtained from EPA

EPA furnished a copy of the I/M portions of the fiscal year 1985 National Air Audit System report which summarized the findings of 16 audits completed during fiscal years 1984 and 1985. EPA said that in fiscal year 1986 through January 24, 1986, six additional I/M audits had been completed with similar findings.

EPA said that the results of individual audits were discussed in the audit reports for each program. EPA provided copies of the final audit reports for Colorado, Delaware, Missouri, Nevada, New Jersey, New York, Oregon, Texas, and Virginia and the draft audit report for Arizona. According to EPA, the remaining fiscal year 1984 and 1985 audit reports would be forwarded to us as soon as possible.

We reviewed the documents submitted and found that as a result of the audit process, EPA had identified a number of serious problems inherent in state I/M programs. The problems included (1) minimal quality of repairs, (2) ineffective management of program data, (3) lack of quality assurance in testing equipment, (4) low failure rates, (5) poor enforcement of vehicle testing, and (6) excessive waiver rates. A detailed discussion of the results of 16 audits completed by EPA through fiscal year 1985 is provided on pages 34 to 36.

GAO assessment

With the additional information obtained from EPA and our analysis, we believe that the Subcommittee's question on the results of I/M program audits has now been satisfactorily addressed.

SUBCOMMITTEE QUESTION

16. The Subcommittee asked the following questions concerning the use of contractors in I/M program audits:

    (a) Does EPA or a contractor perform the audits of state I/M programs for EPA?

    (b) If a contractor performs the audits of I/M programs for EPA, who is the contractor and why is that a proper contract function?

EPA response

EPA said that all of the audits were performed by EPA personnel from headquarters and the regions and that this was a function performed solely by agency officials. The only contractor support was being supplied by Colorado State University. EPA said that university personnel performed roadside tampering and idle test surveys which supplemented the agency's review of actual program operation. EPA believed that this was a proper contract function because of the specialized nature of the effort and EPA's intermittent need for support. EPA also said that university personnel were always accompanied by EPA staff and cognizant state or local law enforcement personnel.

GAO assessment

Our review of various EPA documents, particularly EPA's reports of completed audits, showed that agency personnel were doing the actual audit work, except for some initial assistance from the Radian Corporation. We also accompanied an EPA audit team in one instance and found that the team was comprised of representatives from various EPA headquarters offices (e.g., I/M and tampering groups) and from the specific regional office responsible for the state being audited.

With the additional information, we believe that the Subcommittee's questions concerning who performs the audits of state I/M programs have been satisfactorily addressed.

SUBCOMMITTEE REQUEST

17. The Subcommittee requested the following information concerning the fiscal year 1986 EPA budget and EPA's request for audit positions to support its I/M program audit activity:

    (a) Provide a copy of all EPA letters, memoranda, passbacks, and other documents regarding the fiscal year 1986 EPA budget, including all those from the Office of Management and Budget.

    (b) Explain in greater detail why EPA did not request additional audit positions to support the audits of state I/M programs.

EPA response

EPA provided the requested documents as part of a separate transmittal to the Subcommittee. EPA said that the current audit schedule combined with the less formal monitoring which takes place on an ongoing basis was expected to identify where I/M programs had serious operating problems and to effect correction of those problems in a timely manner.

GAO assessment

We reviewed the eight documents EPA provided to the Subcommittee which addressed EPA's fiscal year 1986 budget. The documents included the agency's overall budget request submitted to the Office of Management and Budget; the budget briefing document and the fiscal year 1986 passback schedule for the agency's Office of Air and Radiation; and the budget proposals, initiatives, and program priorities for EPA's Office of Mobile Sources. These documents provided information on program goals and objectives, indicated regulatory requirements for specific agency activities, and compared current program operations during fiscal year 1985 against projected accomplishments for fiscal year 1986.

An April 17, 1984, EPA memorandum, from an Office of Air and Radiation division director to the Office of Mobile Sources Director on fiscal year 1986 budget initiatives, showed that Mobile Sources would require 24 full-time equivalent positions and $930,000 in funding above the fiscal year 1985 resource levels to accomplish the office's proposed fiscal year 1986 activities. The activities included the continuation of Mobile Sources' I/M program audit schedule, follow-up visits to correct problems identified in previous audits, and research on technical improvements for inspection and repair procedures.

Subsequent correspondence indicated, however, that the additional resources requested by the Office of Mobile Sources were reduced through higher level agency review and budget priority decisions. A June 18, 1984, memorandum on fiscal year 1986 budget requirements presented to the EPA Assistant Administrator for the Office of Air and Radiation included a revised Mobile Sources proposal of 13 additional full-time positions and $728,000 in funding to conduct initial and follow-up audits of the estimated 31 I/M and 24 tampering/fuel switching programs nationwide. The Mobile Sources director stated in a June 29, 1984, memorandum to the EPA Assistant Administrator for Air and Radiation that the reduced staffing level would prevent his office from accomplishing the extent of I/M audit activities proposed in the initial budget request. The June 1984 Mobile Sources fiscal year 1986 budget document concluded that current resources could accomplish the eight audits scheduled for fiscal year 1986, but were insufficient for an extensive audit and problem resolution follow-up program.

EPA's fiscal year 1986 budget request submitted to the Office of Management and Budget on September 14, 1984, identified the resources requested by the Office of Air and Radiation for all of its operating offices, including the Office of Mobile Sources. This budget document included a request for 12.4 full-time equivalent positions and $670,000 in funding for state implementation plan development and review and for I/M program assessment audits. The request represented a $90,000 funding decrease (but no change in audit positions) compared against the previous fiscal year 1985 program budget. As discussed in our January 1985 report, it appears that EPA reduced its request for I/M program resources based on the agency's internal review of budgeting needs and determinations of program priorities.

We believe that this additional information should satisfy the Subcommittee's requests for information on EPA's fiscal year 1986 budget and on the agency's resources for auditing state I/M programs.

SUBCOMMITTEE REQUEST

18. Identify all Mobile Sources programs with a higher priority, explain that priority, and state the full-time equivalent positions and contract funds requested and approved for those programs in fiscal years 1984, 1985, and 1986.

EPA response

EPA did not answer this question in its March 27 letter to the Subcommittee.

GAO comment

We reviewed EPA's March 27, 1985, response to the Subcommittee in its entirety and could not find any references to the priority given by EPA to the I/M program. Consequently, we asked EPA to respond to the Subcommittee's original request and to provide narrative comments and/or supporting documents as appropriate.

Subsequent information obtained from EPA

EPA said that its Office of Mobile Sources does not set priorities among its programs and that resources are allocated among programs on the basis of relative need. I/M is one of a number of mandatory regulatory programs which are managed by Mobile Sources. These other programs include new vehicle/engine standards setting and certification, assembly line auditing of production vehicles, the recall program, the imports program, regulation of fuels and fuel additives, enforcement of section 203(a) prohibitions, and the emission warranties program.

Because all of these programs as well as I/M are mandatory programs, they all receive levels of baseline funding in the Mobile Sources budget. The nature of each of these Mobile Sources programs is different; consequently, the level of resources necessary for each is different. However, that is not to say that one or another has a higher priority because it receives a larger fraction of resources in the Office of Mobile Sources. EPA said that all of these programs have a high priority.

GAO assessment

With the additional information, we believe that the portion of the Subcommittee's question on programs within EPA having a higher priority than the I/M program has been addressed. Because EPA's response indicated that no mobile sources program has a higher priority than the I/M program, the rest of the Subcommittee's question, concerning full-time equivalent positions and contract funds from 1984 through 1986 for programs with higher priority, is not applicable.

SUBCOMMITTEE QUESTION

19. If the full-time equivalent positions requested by EPA to support I/M program audits are not funded, what will be the impact on EPA's oversight of I/M programs?

EPA response

EPA did not answer this question in its March 27 letter to the Subcommittee.

GAO comment

In our January 1985 report on I/M, we pointed out that doing the audits of operating I/M programs by the end of fiscal year 1986 was necessary for EPA to determine (1) the extent of state compliance with state implementation plan provisions for I/M and (2) whether existing programs need to change in any way to more effectively meet the 1987 goal for attainment. We were concerned that EPA may not be directing sufficient resources toward completing the audits in a timely manner and recommended that the EPA Administrator reassess the priority given to completing scheduled audits of state I/M programs. Further, we recommended that, if EPA was unable to complete the audits on schedule, the Administrator should immediately inform the Congress of the delay, the reason, and suggested solutions.

In November 1984 the Acting Director of the Program Management Office, Office of Mobile Sources, advised us that the I/M staff's request for an increase in staff positions to support audit work had been excluded from EPA's final fiscal year 1986 budget request forwarded to the Office of Management and Budget. According to EPA's I/M project manager, the additional resources were needed to complete follow-up audits and to complete initial audits of certain programs. Because of the importance of doing the audits in a timely manner, we asked EPA to update this situation for us and to provide a response to the Subcommittee's question.

Subsequent information obtained from EPA

EPA said that the request for additional full-time equivalents for I/M audits in fiscal year 1986 would have supported an accelerated audit program in which I/M programs would have been reviewed in a shorter cycle. EPA said that the full-time equivalent positions for fiscal years 1984 and 1985 for I/M audits were three for each year. As of January 26, 1986, the full-time equivalent level for I/M audits remained at three. Consequently, I/M audit activities were continuing at generally the same level as in the past two fiscal years, and the plans for the accelerated audit program had not been implemented.

In the accelerated audit program, EPA had not only planned to conduct more new audits, but also to re-audit areas audited in fiscal year 1984 to determine what progress had been made on problems identified in the original audits and to investigate program aspects which could not be addressed in the pilot audits due to time and resource constraints. Under the accelerated audit program, EPA also planned to direct substantial effort to following up on problems identified in the audits to ensure timely resolution and thus allow the I/M programs to make the greatest possible contribution to the goal of 1987 attainment.

In addition to headquarters resources, personnel in each of EPA's 10 regional offices were assigned to monitor state/local I/M programs. This included providing technical assistance as necessary as well as collecting data on program operations. EPA's regional offices also provide additional resources for I/M audits as audits are conducted in each region.

EPA said that the I/M oversight remains a high priority in EPA, and the Office of Mobile Sources is committed to providing the needed support to the regions for the scheduled fiscal year 1986 I/M audits. EPA originally scheduled I/M audits in nine states (10 programs) in fiscal year 1986. Another audit (Tennessee-Nashville) was added to the audit schedule, bringing the final fiscal year 1986 audit schedule to 11 programs in 10 states. As of March 28, 1986, the 11 program audits had been completed.

The EPA I/M program manager said that he does not schedule follow-ups, but tries to work in as many as possible as time and resources allow. He said that follow-ups had been done for the District of Columbia (April 1985), Texas (August 1985), Connecticut and Colorado (September 1985), and Georgia (January 1986). Other I/M programs to be re-audited during fiscal year 1986 if time allows were Delaware, the District of Columbia (again), Massachusetts, and New York.

An example of why a follow-up audit is needed is demonstrated by the I/M program in the District of Columbia. EPA audited this program in fiscal year 1984 and reported "critical" problems such as widespread noncompliance, gross disregard for procedural requirements, and gross failure to monitor program operation. EPA made specific recommendations to District officials and anticipated that the corrective actions required would be made reasonably quick. EPA, however, did not know what specific changes the District actually made for its program. The EPA I/M project manager said that he did a brief follow-up of the District's program in April 1985 and found nothing had changed. The official said that he would like to re-audit the program sometime in the latter part of 1986 if the resources and time are available. The official said, however, that this may not be possible.

GAO assessment

In our opinion, EPA's response does not sufficiently guarantee that all needed audits of I/M programs will be completed by the end of fiscal year 1986. We are concerned that EPA has not followed-up on its audit results for all programs in view of the fact that the initial audits of some I/M programs had identified serious problems that need to be monitored and corrected if the EPA objectives for the I/M program are to be achieved.

EPA pointed out that 11 state I/M programs will be audited in fiscal year 1986 and that these audits would be completed by the end of the year. In our opinion, however, some of these programs could and should have been audited much earlier to give states sufficient time to correct the problems identified and help facilitate attainment of the applicable air quality standards by the end of 1987. For example, the I/M program for the state of Washington officially began in January 1982 but was not scheduled for audit until fiscal year 1986. Other programs scheduled for audit in fiscal year 1986 include Louisville, Kentucky (started in January 1984) and Maryland (started in February 1984). Only time will tell whether these and other I/M program areas will be in attainment by December 31, 1987.

The need for a continuing I/M audit program beyond fiscal year 1986 is important for several reasons. First, EPA is continuing to require more areas of the country to implement I/M because EPA has determined that some areas which did not attain the standards by December 31, 1982, need an I/M program to help reach attainment by December 31, 1987. Sooner or later these programs will need to be audited. Second, the Clean Air Act requires areas of the country not only to be in attainment by the end of 1987 but also to maintain the standards after that date. EPA, consequently, could determine that all or most I/M programs will need to be continued after 1987. I/M program audits are an important aspect of EPA's continuing oversight of these programs. Third, once an initial I/M program audit has identified serious problems, it would seem that EPA should do some follow-up audit to ensure that needed changes have been made and that the program is operating effectively.

With the additional information obtained from EPA coupled with our analyses and observations, we believe that the Subcommittee's question concerning the level of resources needed by EPA to adequately oversee the I/M program has been satisfactorily addressed.

SUBCOMMITTEE QUESTION

20. Is Albuquerque still required to implement an I/M program in the face of the New Mexico Supreme Court ruling that the city has no authority to charge inspection fees?

EPA response

EPA's response showed that Albuquerque is still required to implement an I/M program. On March 29, 1984, Albuquerque's I/M program stopped because the New Mexico Supreme Court prohibited the city from collecting vehicle inspection fees, and the city decided not to continue its program without this revenue source. EPA said that on March 29, 1984, it informed the New Mexico Governor that it would begin the process of withholding air quality and highway grant funds.

GAO assessment

We found two Federal Register notices in our data base of EPA documents concerning Albuquerque's I/M program. A Federal Register notice dated September 4, 1984, provided a chronology of events concerning the closing down of the I/M program, actions by local officials to restart the program, and EPA's decision to impose a construction ban and funding limitations against the city and state agencies responsible for operating Albuquerque's I/M program.

A Federal Register notice dated March 4, 1985, provided more current information concerning the status of Albuquerque's I/M program. The notice indicated that EPA held a public hearing on December 4, 1984, to receive comments on EPA's proposal of sanctions against Albuquerque for failure to implement the agreed upon I/M program. The notice also indicated that officials from the city of Albuquerque and the state of New Mexico were of the opinion that they had devoted considerable effort to the re-establishment of an I/M program which would meet EPA's requirements. Other comments received did not support this view. Several commenters also indicated that the affected agencies and the state legislature probably would not take positive action until EPA imposed sanctions.

The March 4, 1985 Federal Register notice summarized EPA's judgment that program officials had not made reasonable efforts to implement an I/M program and submit an approvable state implementation plan. The notice indicated that, after reviewing recent activities related to re-establishment of the I/M program and analyzing the comments and evidence received during the December 4 hearing, EPA believed that formal actions clearly demonstrating an intent to reestablish the I/M program had not been taken. EPA believed that sufficient time had elapsed since the closure of the

I/M program for responsible local agencies to complete formal stages related to developing the I/M program. Accordingly, EPA initiated the following sanctions:

--An immediate moratorium on the construction and modification of major stationary sources of carbon monoxide in Bernalillo County.

--Withholding of Clean Air Act funds from the city of Albuquerque/Bernalillo County Air Quality Control Board and the New Mexico Health and Environmental Department.

--Limitation of federal highway funds for Bernalillo County.

The Federal Register notice indicated that under the Clean Air Act, the imposition of the construction moratorium and the withholding of air grant funds and highway grant funds is automatic and mandatory whenever EPA makes the necessary determinations.

We believe that the information EPA provided satisfactorily answers the Subcommittee's question regarding EPA's requirement that Albuquerque establish an I/M program. The Albuquerque situation is also discussed in our assessments for questions 21, 22, and 23 on pages 58 to 64.

SUBCOMMITTEE QUESTION

21. The Subcommittee asked the following questions concerning state or city actions regarding the Albuquerque I/M program:

    (a) What is required by the state or city to overcome the New Mexico Supreme Court's decision that Albuquerque has no authority to charge inspection fees?

    (b) What are the state and city doing to restart the Albuquerque I/M program if it is still required?

EPA response

EPA said that two bills--House Bill 128 and House Bill 129--have been introduced in the New Mexico legislature. The first would authorize the program and provide for registration enforcement. The second would permit the city and county to use increased local gas tax revenues for program funding.

On February 6, 1985, the House Transportation Committee held the first hearing on these bills. The Committee unanimously passed the bills on to the next committees. House Bill 128 went to the House Energy and Natural Resources Committee, while House Bill 129 went to the House Taxation and Revenue Committee.

GAO comment

EPA's response provided only the status of the New Mexico legislature's efforts to restart the I/M program as of February 1985. EPA's response did not address any actions the city of Albuquerque was planning to take independent of any state action.

Because the Subcommittee's question concerning this specific program warranted more current and complete information, we contacted the Chief of the Albuquerque Air Quality Bureau and the Chief Engineer for Air Pollution of the Albuquerque Air Quality Bureau during December 1985 and February 1986. We obtained additional information about (1) the status of both house bills mentioned in EPA's response, (2) actions the state of New Mexico and city of Albuquerque took to overcome the New Mexico Supreme Court's decision that Albuquerque had no authority to collect inspection fees, and (3) the status of the sanctions imposed on the state and city by EPA.

Subsequent information obtained from Albuquerque officials

The Albuquerque Air Quality Bureau officials said that the house committees passed the two bills in March 1985 with a referendum that will require a citizen vote before any I/M program can be implemented. The officials said that the major problem with

Albuquerque's I/M program was that the public and the state legislators did not want it. The officials said that the public has construed the bills as a tax issue and would probably refuse to vote for any I/M program. The referendum will be up for vote in January 1987. The officials said that, if the I/M program is voted down, it will be a year before the issue can be re-introduced on the ballot.

The Albuquerque officials said that considerable efforts have been taken to develop an acceptable I/M program on the basis that such a program may still be required. The officials said that, while the I/M issue was being debated in the state legislature, the Albuquerque Air Quality Bureau had developed two alternatives for the program. One plan called for a centralized program run by the government, and the other plan called for a decentralized program with repair industry inspection stations monitored by state I/M officials. The officials said that an important question which remained unanswered was how the state and city could work together to administer the decentralized program if implemented. The officials also said that the plans being developed could be a wasted effort if the January 1987 referendum does not pass.

The Albuquerque officials said that, independent of the previously stated actions, the city of Albuquerque held a hearing on December 18, 1985, to discuss a proposed city council bill sponsored by the mayor. The bill would require that, within 60 days of obtaining the annual vehicle re-registration, all spark ignition vehicles (except vintage vehicles) would by ordinance be required to be adjusted to manufacturer's specifications. The adjustments made would affect vehicle timing, dwell, air fuel ratio, idle speed, and choke. The officials also said that, as of February 1986, EPA had reviewed the bill and had proposed to disapprove it because it made no provisions for waivers or quality of repair work on failed vehicles. Also, according to the officials, EPA offered the city suggestions to make the bill acceptable, but they were not aware of the actions the mayor would pursue.

Finally, the officials said that EPA would limit air quality grant funds to the state and city beginning in fiscal year 1986. The state would be sanctioned $170,000 and the city $150,000. The officials said that the city perceived the sanctions as modest and not a major threat for implementing an I/M program. The officials said that the state sanction, on the other hand, was harmful because the amount sanctioned was one-third of the state's air quality budget.

GAO assessment

We believe that the additional information provided by the Albuquerque officials satisfies the Subcommittee's questions concerning this particular I/M program. Because prospects for

quickly restarting an I/M program for the city are remote, in spite of sanctions already applied, we are concerned that other states may be influenced either to not implement or not continue their I/M programs.

SUBCOMMITTEE QUESTION
22. What is EPA doing in regard to the Albuquerque I/M program?

EPA response

On March 29, 1984, EPA informed the Governor of New Mexico that EPA was initiating the process to withhold air quality and highway grant funds. A Federal Register notice was published on September 4, 1984, proposing to disapprove New Mexico's state implementation plan and proposing funding limitations under Section 176(a) of the Clean Air Act. A public hearing was held on December 4, 1984. A final rule was signed on February 25, 1985.

GAO comment

In our opinion, EPA did not adequately explain its position on sanctions for the Albuquerque I/M program. Consequently, we asked EPA to clarify its response regarding this matter.

Subsequent information obtained from EPA

EPA said that it published a final rulemaking decision in a Federal Register notice on March 4, 1985, regarding the Albuquerque program. The final rulemaking imposed the federal funding assistance limitations authorized by section 176(a) of the act and the construction moratorium authorized under section 110(a)(2)(I) of the act. These penalties took effect on April 3, 1985, and remained in effect as of March 1986.

GAO assessment

We believe EPA acted quickly and properly in responding to New Mexico's termination of its I/M program. We continue to believe that EPA's aggressive use of sanctions is a proper agency action as provided for under the 1977 Clean Air Act amendments. With the additional information obtained from EPA, we believe that the Subcommittee's question regarding EPA's actions on the Albuquerque I/M program has been satisfactorily addressed.

SUBCOMMITTEE REQUEST

23. Provide the current status of the Arizona, Colorado, Georgia, New York, and Virginia program problems, particularly the enforcement problems.

EPA response

EPA provided the following status as of March 1985 for the five I/M programs:

--EPA's audit of the Arizona I/M program in fiscal year 1984 revealed that the quality assurance program was excellent and the waiver rate was within acceptable levels. The audit found that the inclusion of a physical tampering inspection in the program would greatly enhance its effectiveness.

--EPA said that Colorado corrected its enforcement problem in 1984 when the state revised its statute governing I/M to include authority to cite parked vehicles that did not display emissions compliance stickers and to return revenue generated by fines to the local jurisdiction. State surveys in April 1984 indicated a 90-percent compliance rate. However, the EPA audit done in fiscal year 1984 found other problems with quality assurance and waiver rates.

--EPA informed the Georgia Department of Natural Resources that failure to remedy the noncompliance problem in Atlanta would result in the imposition of sanctions under the Clean Air Act. In February 1985 a bill providing for registration enforcement and broader coverage of the program was introduced in the Georgia legislature. EPA said that the bill has passed the Georgia legislature.

--New York tightened its emission standards in 1984, and had committed to do so again in 1986, to achieve a 20-percent design stringency. However, the state's reported failure rate continues to be lower than the program design stringency. New York officials conducted an investigation which showed unreported repairs as the cause for the shortfall.

--Virginia's reported failure rate continued to be lower than expected, although the state tightened its cutpoints for certain model years in 1984. EPA requested additional records from the state to determine the cause of the problem.

GAO comment

We contacted EPA's I/M project manager in February 1986 to obtain the updated status for the five I/M programs.

Subsequent information obtained from EPA

EPA provided the following updated status.

--Arizona negotiated a new 5-year contract with Hamilton Test Systems, Incorporated, effective January 1, 1986. A provision in the new contract was that Hamilton would check for vehicle tampering on a limited basis and that any motorist found to have a tampered vehicle would need to repair the tampering before the vehicle could qualify for a waiver under the I/M program.

--Colorado was identified as having quality assurance problems and waiving too many vehicles from receiving emissions tests. EPA's I/M project manager said that a bill is pending before the state legislature to require testing stations to use computer-controlled vehicle emissions exhaust analyzers which should eliminate the concern EPA had with quality control. The official said that the state was addressing the waiver problem by requiring motorists with pre-1981 vehicles to pay up to $100 in repairs and motorists with 1981 and later model-year vehicles up to $300 before being eligible for a testing waiver.

--On April 1, 1986, Georgia is scheduled to begin providing for registration enforcement as a means for remedying the noncompliance problem in Atlanta.

--Effective January 1, 1986, New York tightened its emission standards to achieve a 30-percent design stringency for pre-1980 vehicles. The stringency applicable to 1981 and newer vehicles is 5 to 10 percent.

--EPA's I/M project manager said that the additional data submitted by Virginia to EPA showed that low reported failure rates continue to be a problem. The EPA official said that, as of February 1986, EPA was deliberating on how to proceed in trying to pinpoint the causes for the low failure rates.

In addition to the five programs above, EPA's I/M project manager identified three other I/M programs as experiencing enforcement problems--Connecticut, the District of Columbia, and Memphis, Tennessee. The EPA official said that each program implemented a sticker-based enforcement system. The official said

that Connecticut was taking steps to make enforcement more effective by using roadside pullover teams to identify noncomplying vehicles. The official also said that both the District of Columbia and Memphis were changing from a sticker-based system to annual vehicle registration enforcement to remedy noncompliance problems.

GAO assessment

With the additional information, we believe that the Subcommittee's question concerning the status of program problems in the five states, particularly the enforcement problems, has been satisfactorily addressed. As EPA's data show, the five states either are taking or plan to take some action to mitigate the problems. However, enforcement problems are still surfacing in other I/M programs being audited, particularly in programs adopting sticker-based enforcement.

SUBCOMMITTEE REQUEST

24. Explain the basis for the 25-percent failure rate criterion, why EPA believes it is a proper rate, and why EPA approved any program, like New York, with a lesser rate.

EPA response

EPA said that there is no 25-percent failure rate criterion for I/M programs. The criterion is that each program be designed such that a minimum reduction in light-duty vehicle exhaust emissions in the urban area is achieved by the end of 1987. This minimum reduction is often referred to as 25 percent for hydrocarbons and 35 percent for carbon monoxide.

EPA developed its minimum emissions reduction requirements in 1978 by using the design parameters of the New Jersey program that was operating with no apparent technical or public acceptance problems. EPA policy allows areas to vary the design parameters of the program as long as the reductions of 25 percent for hydrocarbons and 35 percent for carbon monoxide are achieved. The New Jersey program was operating at a failure rate of about 20 percent in order to achieve these reductions. EPA said that it is possible in many cases for states to design programs with a lower failure rate by starting earlier than December 1982, or by expanding vehicle age, weight class, or geographic coverage. It should also be noted that 1981 and newer vehicles inherently fail I/M at rates below 20 percent, and currently quoted failure rates for all model years combined are depressed somewhat by this phenomenon.

GAO assessment

In January 1985 we reported that New York's I/M program was initially designed to achieve a 10-percent failure rate, or 370,000 vehicles for 1982, its first year of operation. The overall failure rate reported by the program for 1982 was 5.5 percent, which equated to 203,500 failures of the estimated annual inspection at that time of 3.7 million vehicles. Beginning in January 1986, New York tightened its program requirements to achieve a 30-percent stringency for pre-1980 vehicles and 5 to 10 percent for newer vehicles. According to EPA's I/M project manager, the net effect of the change in New York would be an increase in the failure rate to about 25 percent. The official said that as fewer vehicles pass the I/M test and more get repaired, the emissions reductions needed to show attainment by 1987 would be realized.

We believe that EPA's response addresses the Subcommittee's request concerning the basis for the failure rate criterion, why EPA believes it is a proper rate, and why EPA approves programs with initially low failure rates.

SUBCOMMITTEE QUESTION

25. The Subcommittee asked the following questions regarding Denver's I/M program:

(a) According to a November 13, 1984 Washington Post article, Denver recently instituted a "No Drive Day" program in response to "orders" from EPA that Denver "take strong action to curb carbon monoxide." Provide a copy of EPA's "orders" that Denver take strong action to curb carbon monoxide, as well as all letters, memoranda, notes, and other documents in EPA files concerning such orders and Denver's "No Drive Day" program.

(b) What is the status of the program?

(c) What is the effectiveness of this program?

(d) What is the relationship of Denver's "No Drive Day" program to the I/M requirements for this area?

EPA response

EPA provided the documents requested on Denver's "No Drive Day" program as part of a separate transmittal to the Subcommittee. This program was established to reduce carbon monoxide pollution in Denver on certain days when stagnant weather conditions cause an unhealthful buildup of carbon monoxide levels. EPA said that (1) the program was started on November 15, 1984, and the first phase was completed on January 15, 1985, (2) the agency's understanding was that Colorado was evaluating the program's impact and has not yet decided whether to repeat the program, and (3) the program had no relationship to the I/M requirement for Denver.

GAO comment

We reviewed the I/M file documents EPA submitted to the Subcommittee and identified 11 documents concerning Colorado's I/M program. The documents included EPA memorandums and state correspondence on the carbon monoxide levels in Denver's air quality measurements, a publication on Denver's ridesharing project, and agency rulings on approving the implementation plans for Colorado's I/M program. None of the documents specifically addressed Denver's "No Drive Day" program. Therefore, we contacted the official responsible for Colorado's I/M program to determine the impetus for initiating the Denver "No Drive Day" program and the current status of the program.

Subsequent information obtained from Colorado I/M official

The Colorado Department of Health's Air Pollution Specialist told us that the Denver "No Drive Day" program was a voluntary activity implemented by Denver as part of the state implementation plan for the I/M program. The program was required by EPA as a measure to improve air quality within the metropolitan area.

The Air Pollution Specialist said that as of December 16, 1985, the state was still evaluating the effectiveness of the "No Drive Day" program. He said that state officials should determine the program's effectiveness by spring of 1986.

He gave us a copy of "Colorado's Air Quality Report to the Public - 1985" issued by the Colorado Air Quality Control Commission in October 1985 which provides information on the Denver "No Drive Day" program. The report highlights different strategies used to improve air quality in the state, one of which involved the Better Air Campaign, referred to in the Washington Post as Denver's "No Drive Day" program.

The report stated that the Better Air Campaign was the nation's first voluntary program of its size and scope to reduce carbon monoxide air pollution caused by gasoline powered vehicles. The goal of the Better Air Campaign was to reduce vehicle traffic on high pollution days--the 12 to 15 days between November 15 and January 15 when stagnant weather conditions cause an unhealthful build-up of carbon monoxide levels in the metropolitan Denver area--by 5 percent during its first year, 8 percent its second year, 11 percent its third, and 15 percent by the end of 1987.

The initial season of the Better Air Campaign took place in the Denver metropolitan area between November 15, 1984, and January 15, 1985. The above report noted that the campaign's initial season provided encouraging results. For example, the campaign achieved its major goal of a 5-percent reduction in daily traffic, or a daily savings of 1.4 million vehicle miles travelled. Other achievements for the initial campaign were that (1) 96 percent of motorists knew about the program, and 85 percent approved of its implementation, (2) metropolitan area traffic decreased 3 to 5 percent during the 2-month program period, (3) traffic in downtown Denver decreased from 5 to 8 percent during the same period, and (4) 27 percent of commuters and 50 percent of noncommuters reported that they participated in the campaign.

The report noted that for the second year of the campaign, Denver program officials will emphasize reducing vehicular traffic in the metropolitan area by 8 percent from the current level. This action is consistent with the Better Air Campaign's ongoing effort to reduce carbon monoxide levels in the metropolitan area and achieve federal air quality standards by December 31, 1987.

GAO assessment

We believe that the additional information obtained from Colorado together with our analysis answers the Subcommittee's questions regarding the Denver "No Drive Day" program.

SUBCOMMITTEE QUESTION

26. Does EPA have a more recent update of its 1983 report which showed that overall carbon monoxide levels were reduced by 26 percent and ozone levels by 14 percent nationally from 1975 through 1981?

EPA response

EPA said that the air quality trends report was being updated, and the updated reduction figures would be available in May 1985.

GAO comment

We asked EPA to provide us a copy of its most recent air quality trends report. We were particularly interested in whether carbon monoxide and ozone levels nationwide had steadily improved and at what rates.

Subsequent information obtained from EPA

EPA provided us with excerpts from the National Air Quality and Emissions Trends Report, 1983 which was released in April 1985.

We reviewed the excerpts provided by EPA to determine changes in the measurable levels of carbon monoxide and ozone for the 1975-1983 period. The report focuses on long-term trends in six major pollutants and the impact on the ambient air quality. The analyses presented in the report were based on monitoring sites which recorded at least 7 of the 9 years of data for the period 1975 to 1983. The report concluded that while the measurable levels of carbon monoxide had continued to decline, ozone levels had increased over the 1975-1983 period and continued to be a pervasive pollution problem.

The report stated that the national 1975-83 composite average trend for carbon monoxide decreased by 33 percent between 1975 and 1983. The median rate of improvement was approximately 5 percent per year. The estimated number of exceedances of the 8-hour national ambient air quality standard for carbon monoxide was reduced by 87 percent between 1975 and 1983. Carbon monoxide emissions from transportation sources dropped 23 percent and showed a 1-percent decrease between 1982 and 1983 even though vehicle miles of travel increased 4 percent during the same period.

The report also discussed the long-term trends for ozone during the 1975-1983 period. The report stated that measurable levels of ozone fluctuated during the 1975-1979 period, increased by 1 percent between 1979 and 1983, and then sharply increased by

12 percent between 1982 and 1983. The trend in estimated exceedances for ozone--basically the average number of days during the ozone season that the level of the ozone standard was exceeded--increased 46 percent between 1982 and 1983. The shifting levels were impacted by changes within the atmospheric chemical and physical processes involved in the formation of ozone.

GAO assessment

With the additional information, we believe that the Subcommittee's question concerning a more recent update of the 1983 EPA report on air quality levels has been satisfactorily addressed.

The air quality levels reported by EPA through 1983 have not benefited much from I/M programs because 16 I/M programs did not get started until the 1983-1984 time frame. For example, with respect to ozone, nine I/M programs established to control ozone were not started until 1984. These programs involved such major states as California, Pennsylvania, and Texas.

In our opinion, a key question is whether the level of ozone pollution will decrease as I/M programs become more established. Likewise, it will be important to note whether carbon monoxide levels continue to decline sharply since the emissions reduction benefits from most I/M programs started in the 1983-1984 time frame should begin showing up in EPA's next national air quality trends report. The levels of ozone pollution, in our opinion, seem to indicate that some type of corrective measure, such as an I/M program, is needed as part of the overall strategy for dealing with areas having severe ozone pollution problems.

SUBCOMMITTEE QUESTION

27. What is the projected benefit of I/M?

EPA response

EPA said that the projected benefit of I/M is generally expressed as a percent reduction in passenger car exhaust emissions or in the mobile source inventory or in tons. The effect of I/M programs on ambient air quality levels will necessarily vary from site to site due to the relative contributions of mobile and stationary sources and other variables.

GAO comment

We reported in January 1985 that data gathered from certain areas of the county showed I/M programs had reduced tailpipe emissions. At the same time we reported some studies had showed that the benefits of an I/M program may not be worth the costs some areas would incur for such a program. Because the issue of benefits is an important one to the program, we asked EPA to elaborate on its response to the Subcommittee and comment specifically on how EPA would determine measurable benefits from required I/M programs (i.e., calculation of reduced vehicle exhaust emissions).

Subsequent information obtained from EPA

EPA said that it had conducted a limited number of testing projects to determine the benefits of I/M programs. The Portland study, referred to on pages 79 and 80 of this report, was the first such study of an operating program and documented I/M benefits for pre-computer emission control technology. The Washington, D.C., and Maryland testing projects were conducted to document I/M benefits for later technology vehicles. In addition, the state of California is currently conducting a study covering both old and new vehicles. According to EPA, neither the other states nor EPA have undertaken any other studies directed at evaluating the effectiveness of individual I/M programs because of the cost of doing such studies.

EPA said that it also used other sources of data to evaluate the effectiveness of I/M programs. One source of data was EPA's emission factor program in which EPA solicits privately owned vehicles for testing. A battery of emissions tests, including federal test procedures and various I/M tests, were run on these vehicles to collect data on in-use performance.

EPA also collects data through its annual tampering survey which were useful in evaluating I/M programs. All vehicles

participating in the tampering survey undergo an I/M test. In some cases, tampering surveys have been expanded to collect extra idle emissions test data in I/M areas. Three expanded sites in fiscal year 1985 were Charlotte, North Carolina; Northern Virginia; and Long Island, New York.

EPA said that each of these data-gathering activities provides some evidence on which to base estimates of I/M effectiveness. The Portland, D.C., and Maryland studies provided data on the actual emission reduction benefits of ongoing I/M programs. The emission factor program data provided a continuing way to determine whether current I/M procedures remained applicable to the new technology vehicles which were introduced. The tampering survey data allowed EPA to compare tampering rates and idle emissions levels of vehicles among I/M and non-I/M areas. In I/M areas, this data can also be compared to data collected in the I/M program.

Based on the latest data from these various sources, EPA continues to believe that the projected benefits of I/M programs (35-percent reduction in light-duty vehicle emissions of carbon monoxide and 25-percent reduction in light-duty vehicle emissions of hydrocarbons) were attainable objectives for an I/M program that is properly managed and operated. Even higher reductions were available for programs with early implementation and/or strict design criteria.

EPA's subsequent response outlined three testing projects undertaken by the agency to determine the benefits of I/M programs. We obtained documentation on these projects and found the following.

EPA's Portland study was the agency's sole effort to determine the benefits of I/M on older technology (i.e., pre-1981 emission control technology) vehicles. We discuss the methodology used in this study on pages 79 and 80. The results from this study showed that vehicles failing the Portland I/M test experienced a 47-percent reduction in carbon monoxide emissions following maintenance and a corresponding 42-percent reduction in hydrocarbon emissions. Over the course of a year, hydrocarbon emissions deteriorated almost back to original levels, but about 40 percent of the initial reduction in carbon monoxide emissions was still present at the end of the year. Thus, EPA concluded that benefits were derived from I/M over a full year.

The effectiveness part of the Portland study involved 5,874 tests given to vehicles during the period February 1977 through July 1979 under contract number 68-03-2513 with Hamilton Test Systems, Incorporated. The cost of the contract was $3,135,983.

In an attempt to document benefits for newer technology vehicles, EPA entered into contracts to test vehicles included in the I/M program for the District of Columbia and the state of Maryland. The contractor used in both programs was the testing firm of EG&G Automotive Research.

The testing under the District of Columbia I/M program was done under contract number 68-03-3202 during the spring and summer of 1984. This contract was entered into on September 29, 1983. The contractor completed testing on 61 light-duty vehicles--21 were 1980 model-year vehicles and 40 were 1981 model-year vehicles. A comparison of the emission values during the initial I/M test against the values after the vehicles were commercially repaired showed large reductions. For the 1981 model-year vehicles, hydrocarbon emissions were reduced 41 percent and carbon monoxide emissions 45 percent. For the 1980 model-year vehicles, hydrocarbons were reduced 25 percent and carbon monoxide 32 percent.

As of February 1986 the Maryland testing project was completed, and EPA was in the process of evaluating the test data compiled by the contractor. According to the EPA I/M project manager, a draft report of the test results was expected to be issued in late March or early April 1986. The official said that the cost under the contract was $322,724 through the end of February 1986. We reviewed the work assignments under this contract and found that the objective was to investigate the effects of I/M programs on the emissions of 1981 and newer passenger cars and the costs of repairs.

GAO assessment

With the additional information, we believe that the Subcommittee's question concerning the projected benefit of I/M programs has been satisfactorily addressed.

SUBCOMMITTEE QUESTION

28. What areas do you now project cannot gain attainment by 1987 without implementing an I/M program?

EPA response

EPA said that those areas granted an extension were required to establish I/M programs. Consequently, reliable analyses of 1987 attainment for these areas without I/M were generally not made. For those areas which continued to be in nonattainment beyond 1982, but which had not requested an extension in 1979, the question was whether a package of measures contained in the state implementation plan, but not including I/M, would bring about attainment as quickly as a package which included I/M. This determination will be made upon submittal of state implementation plan revisions due in 1985.

GAO assessment

EPA's response did not adequately answer the question about which areas of the country will need to implement an I/M program to be in attainment by 1987. However, EPA provided data in response to other Subcommittee questions which addressed this issue. For question 1 on pages 11 to 13, EPA identified 44 areas in 28 states and the District of Columbia which obtained a deadline extension and needed to implement I/M to reach attainment. As of January 1986, EPA had approved demonstrations of attainment by 1987 for all but 12 areas.

As discussed in question 3 on pages 17 to 19, EPA is in the process of determining which nonextension areas will need to implement an I/M program to gain attainment by 1987. As of March 1985, EPA had identified 26 areas in 16 states with inadequate state implementation plans to show attainment of clean air standards by 1987. Conceivably, all these areas, plus others as they are identified, may need to implement I/M.

Based on the above, we believe that the Subcommittee's question concerning which areas of the country will need to implement I/M to be in attainment by 1987 has been addressed as the best it can be, given the information available.

SUBCOMMITTEE QUESTION

29. Without imposing greater costs on consumers, how do EPA and the states resolve the problem of increasing the vehicle failure rates in I/M programs when EPA simultaneously allows programs to set repair cost limits or waive certain vehicles from being tested?

EPA response

EPA said that it was only concerned with vehicle failure rates when a state program was reporting a rate much lower than would be expected given the data available on the performance of typical in-use vehicles. EPA expressed concern that some vehicles were avoiding inspection entirely, or that certificates of compliance were being issued to failed vehicles without the necessary repairs being performed.

Given that the average repair cost reported from operating programs with no waivers for pre-1981 model year vehicles was $17 to $30, EPA believes that older vehicles could be repaired within a $50 or $75 cost-waiver limit if repairs were efficient and limited to parts truly in need of replacement or adjustment. The waiver was designed to avoid imposing high repair costs on the owners of vehicles that needed major engine maintenance to pass the short test cutpoints. Since these vehicles would fail the most lenient of cutpoints, EPA concluded that increasing the stringency of the test should not correspondingly increase the number of legitimate waiver candidates.

GAO assessment

EPA's response adequately addresses pre-1981 model-year vehicles, but does not address newer technology vehicles. In the upcoming years, 1981 and later model-year vehicles will become an increasingly major component of the vehicles subjected to I/M testing. In January 1985 we reported that EPA tests showed that most newer vehicles would pass an I/M test; however, such vehicles when they do malfunction produce carbon monoxide emissions 20 or more times greater than the standards allow and hydrocarbon emissions 10 times greater.

Since newer cars are more sophisticated, they will generally cost more to repair than older vehicles. A contracted study done for EPA on 1980 and 1981 model-year vehicles found that the average repair bill was about $95 for both model years. The study found that major carburetor repairs were among the most expensive repairs, often costing over $200. The study further found that the cost of tune-ups were between $50 to $100, and that the tune-ups were often done after carburetor repair work, further boosting repair costs.

EPA said that it believes older vehicles could be repaired within a $50 or $75 cost-waiver limit--the limits many I/M programs use before a vehicle can qualify for a waiver excluding it from further testing, or at least from having all necessary repairs made. If the current limits remain in effect, there could be a significant number of new vehicles waived out of I/M programs.

With the additional information, we believe that the Subcommittee's question on how EPA and the states resolve the problem of increasing the vehicle failure rates in I/M programs--when EPA simultaneously allows programs to set repair cost limits or waive certain vehicles from being tested--has been satisfactorily addressed.

SUBCOMMITTEE QUESTION

30. The Subcommittee referred to our report, which stated that a 1982 report of a study of 22 vehicles showed that 1981 and later model-year vehicles, "when they do malfunction" produce carbon monoxide emissions 20 or more times greater than the standards allow and hydrocarbon emissions 10 times greater. The report states that a "small percentage" of such malfunctions "could greatly increase fleet average emission levels." The Subcommittee asked the following concerning vehicle malfunction and the results of the 22-vehicle study:

(a) Does the term "malfunction" cover misfueling or tampering?

(b) Is a 22-car test sound statistically?

(c) What is the effect on emissions of older vehicles that "malfunction"?

(d) What percentage of the vehicles of the 1980's can be expected to malfunction?

(e) Do such malfunctions in later models affect performance?

(f) Does EPA assume that such malfunctions will not be corrected quickly?

EPA response

(a) EPA said that the malfunctions introduced in the 22 vehicles studied did not include misfueling or catalyst removal, but did include some other forms of tampering (e.g., disconnection of the oxygen sensor).

(b) EPA said that a 22-car sample would not have been statistically valid for estimating the percentage of 1981 and later vehicles that would exhibit malfunctions. However, it was sufficient for estimating the range of emission increases due to various malfunctions, since it included most of the emission control configurations found in cars today. EPA said that the sample also provided useful information on the ability of I/M tests to identify vehicles with these particular malfunctions.

(c) EPA did not answer this question in its March 27 letter to the Subcommittee.

(d) and (f) EPA said that it uses a data base containing 1,565 vehicles drawn from four model years, four different certification standards, 16 different manufacturers, and six different (major) types of emission control technology for estimating the occurrence of malfunction. EPA further said that, in this sample of 1,565 vehicles, 15 percent of the vehicles were emitting at 2 to 5 times the standard for at least one pollutant, 4 percent were emitting at 5 to 10 times the standard, and 2 percent were emitting at 10 or more times the standard.

EPA said that since the vehicles in the 1,565-car data base were obtained from owners who were satisfied with their performance enough to continue driving them, EPA assumed that a similar percentage of "malfunctioning" vehicles was operating uncorrected on the road.

(e) EPA said that some types of malfunction would negatively affect vehicle performance while some others would not.

GAO comment

We believe that EPA's responses for questions (a), (b), (e), and (f) were complete and satisfactory. However, we found that additional information was needed to fully discuss the effect of emissions on older vehicles that "malfunction," and to identify the percentage of vehicles of the 1980's that can be expected to malfunction. We agree with the Subcommittee that an important aspect of the I/M issue is to have some idea of the level of emissions produced by older vehicles that malfunction while on the road. We asked EPA to respond to question (c) and to provide copies of any data supporting its response.

We believe that it is equally important to know EPA's estimate of the total percentage of 1981 and later model-year vehicles that are likely to malfunction and exceed air quality standards. In its initial response to the Subcommittee, EPA said that 21 percent of the vehicles in its 1,565-vehicle sample emitted at two or more times federal standards. We asked EPA to include in its clarification of its response to question (d), a discussion of whether its data base of 1,565 vehicles could be used to indicate the percentage of 1981 and later model-year vehicles that might malfunction.

Subsequent information obtained from EPA

According to EPA, "malfunction" is a general term covering, for a single vehicle, a wide range of possibilities, each with its own effect on emissions. When the variety of vehicle and emission control system types is considered, the range of possible emission effects is very broad. Hence, the effects of malfunctions can only be described in terms of averages.

EPA said that one possible definition of "malfunction" was to define all vehicles emitting above federal standards as "malfunctioning." EPA considers those vehicles emitting at twice or more their standards to have serious malfunctions and those emitting at one to two times the standards to have minor malfunctions. The former is the group of vehicles that are the primary target of an I/M program.

In the late 1970's, EPA conducted a series of testing projects generally known as "the Portland study." The data from the Portland study showed that older (i.e., pre-1981 emission control technology) vehicles which failed I/M tests had average emissions two or three times their respective federal standards for hydrocarbons and carbon monoxide. After undergoing I/M repairs, the emissions from failing vehicles decreased by 43 percent and 49 percent for hydrocarbons and carbon monoxide, respectively.

Based on the definitions stated above, EPA's sample of 1,565 vehicles indicates that 21 percent of the 1981 and newer vehicles have serious malfunctions. Another 35 percent of these vehicles could be described as having minor malfunctions.

A June 1982 report provided by EPA explained the methodology used in the Portland study. The report showed that one of the study's objectives was to study the emission reduction effectiveness of Portland's operating vehicle I/M program and the deterioration of emissions over a 1-year period on vehicles subjected to an I/M test. The results of this phase of the Portland study under the original contract were based on a total of 3,924 emission test sequences conducted from September 1977 through April 1982.

The effectiveness portion of the Portland study was designed to test the effectiveness of repairs due to I/M over a year's time. Two groups of vehicles were used. One, composed of Portland vehicles, underwent maintenance if they failed the initial I/M test. The second, composed of cars from Eugene, Oregon (which did not have I/M) acted as a control and did not undergo maintenance. The vehicles were then tested at quarterly intervals for the remainder of the year. The two groups were further divided by technology level: pre-catalyst (1972-74 model years) and catalyst (1975-77).

Results from this part of the study showed that emission reductions immediately following maintenance were substantial, and that benefits accrued over a year's time were also large, even after deterioration. The 1975-77 failed (Portland) vehicles experienced a 47-percent reduction in carbon monoxide emissions following maintenance and a corresponding 42-percent reduction in hydrocarbon emissions. Over the course of a year, hydrocarbon emissions deteriorated almost back to original levels, but about 40 percent of the initial reduction in carbon monoxide emissions

was still present at the end of the year. Thus, benefits were derived from I/M over a full year. Total carbon monoxide emissions over the year were 36 percent lower for 1975-77 Portland cars than they were in Eugene (the non-I/M case). Hydrocarbon emissions were 20 percent lower.

GAO assessment

With the additional information, we believe that the Subcommittee's questions on the effects on emissions of older vehicles that malfunction and the percentage of 1980's vehicles expected to malfunction have been satisfactorily addressed. Based on EPA's data and using its definition that any vehicle emitting above federal standards constitutes a vehicle malfunction, anywhere from just under 21 percent to nearly 56 percent of vehicles of the 1980's might malfunction. Of more importance perhaps is that, using EPA's definition of serious malfunction, about 21 percent of late model-year vehicles could be expected to exceed federal standards by two or more times the standard. This data, in our opinion, supports the need for some type of vehicle emissions program, like an I/M program, to control emissions from 1981 and later model-year vehicles.

SUBCOMMITTEE QUESTION

31. The Subcommittee referred to our report, which stated that although indications that the air in many portions of the country may be getting cleaner without I/M programs are encouraging, additional data, particularly on the impact of new vehicle technology, are needed to determine if the trends can continue in the I/M's absence. Only after more data on air quality trends and the impact of new vehicle technology are gathered by EPA can the future direction of I/M programs be known. The Subcommittee asked this question: What is EPA doing to gather and evaluate such data?

EPA response

EPA said that the agency and the states maintain a network of air quality monitors, collecting data that can be used to evaluate air quality trends. EPA conducts emission factor testing programs to assess the in-use performance of current vehicle technology, and also uses data from operating I/M programs to follow the patterns of I/M failure rates among various manufacturers and emission control technology types and to investigate how failure rates are affected by vehicle age or mileage. EPA said that it is testing vehicles that fail the I/M test in Maryland and the District of Columbia before and after repair to evaluate the I/M benefit for current technology vehicles. EPA also said that it observes the results of similar testing by state air agencies, particularly the California Air Resources Board and the Colorado Department of Health.

GAO assessment

We believe that EPA's response satisfactorily addresses the Subcommittee's question concerning what EPA is doing to gather and evaluate data on air quality trends and the impact of new technology vehicles. In addition, EPA, in response to question 26 on pages 69 and 70, provided updated information on air quality trends which showed that ozone pollution has gotten worse in the 1982-1983 time period and that carbon monoxide had gotten better in the same period. Further, in response to question 27 on pages 71 to 73, EPA provided details of its testing projects in the District of Columbia and the state of Maryland. Briefly, both projects are evaluating the benefits of I/M programs for newer technology vehicles. The results of testing done in the District showed substantial benefits in terms of reduced emissions for new technology vehicles that failed the I/M test and were repaired. EPA plans to issue the draft results of the Maryland tests in the spring of 1986.

SUBCOMMITTEE QUESTION

32. The Subcommittee referred to our report which stated that the total cost of all state programs could be "millions of dollars," with the South Coast Air Basin program of California estimated to cost "almost $211 million annually," and that motorists "bear the brunt" of I/M costs. The Subcommittee asked the following questions on the costs associated with the I/M program:

    (a) Does EPA agree with the cost estimates to implement I/M programs?

    (b) Does EPA agree that I/M benefits may not be worth the costs?

EPA response

EPA agreed that the inspection and repair costs are borne by the motorist and that these costs would amount to hundreds of millions of dollars nationally, since I/M programs currently included some 46 million vehicles. EPA said that because I/M was mandated by statute, the agency has not done a formal cost benefit analysis.

EPA said that it believes that I/M is an effective strategy for reducing in-use vehicle emissions and that it is as cost-effective a strategy as any of the available alternatives.

GAO comment

EPA's response concurred with the position stated in our 1985 report concerning I/M program costs and effectiveness. In the absence of a formal cost benefit analysis, however, it is unclear whether I/M program benefits outweigh the costs incurred to implement such a program. We asked EPA if it had determined the possibility that significant improvements in national air quality could occur without mandatory I/M programs.

Subsequent information obtained from EPA

EPA said that mandatory I/M is only one of many programs that have had the combined effect of producing very significant improvements in carbon monoxide air quality. While ozone air quality appears to have gotten worse, I/M and other strategies have kept ozone levels from increasing in the face of population and economic growth. A number of control programs, particularly the federal new car program, can be counted on to provide further improvements in the next 10 years. EPA is also considering the control of emissions from gasoline marketing and the control of gasoline volatility. EPA said that significant improvements in

air quality could, and probably would, occur without mandatory I/M. However, without I/M these improvements would be smaller and, in some or many cases, inadequate to show attainment by 1987. Even with I/M, some areas will not attain standards by 1987, although the existence of I/M will improve the air quality in those areas.

GAO assessment

With the additional information, we believe that the Subcommittee's questions concerning the cost estimates to implement I/M programs and the cost benefits of such programs have been addressed as best as they can be, given the lack of cost-benefit data.

As indicated on pages 77 to 80, some type of vehicle emissions control program apparently will be needed to control emissions from those vehicles that are expected to malfunction. A cost-benefit study of I/M programs versus other alternative control programs could show which control program alternative is clearly the best choice. In making such a decision, we believe that EPA should reconsider the need for a formal cost-benefit study. Most I/M programs are fairly well established and should be able to produce some concrete data on program costs and benefits--the latter in terms of reduced vehicle emissions. We believe such a study would show the type and extent of costs being incurred for such programs, which type of programs are least expensive and yet are still effective, and the degree programs are reducing actual vehicle emissions. We believe the states could benefit from such information by identifying alternatives to make their programs less costly and at the same time more effective.

SUBCOMMITTEE QUESTION

33. The Subcommittee referred to our report which discussed the role and performance of private contractors in state I/M programs. The Subcommittee asked the following questions on contractor involvement in I/M programs:

(a) Explain to what extent EPA has examined and monitored the quality and performance of contractor I/M programs and the adequacy of the contracts to ensure an effective program.

(b) Is the Arizona experience (where several problems have been identified with its I/M contractor) unique?

(c) What are the problems with such exclusive contracts (where contractors play "a major role" in state programs)?

EPA response

(a) EPA said that while it does not advise states on the legal aspects of their contractual arrangements, it does evaluate the contractor's performance when it audits contractor I/M programs. EPA also said that audits had been performed in Arizona, Connecticut, and New York and that it had found the quality control in these programs to be impeccable.

(b) EPA said that, as our report points out, the Arizona Auditor General's study did not find a failure to meet contractual requirements. EPA had no reason to believe that any of the exclusive contractors had ever failed to meet contracted quality assurance requirements or the requirements of good engineering practice. EPA said that it was not aware of any state that has had difficulty in obtaining high-quality service from any of the five different firms currently operating I/M programs.

(c) EPA said that it had no reason to believe that any of the exclusive contractors had ever failed to meet contracted quality assurance requirements or the requirements of good engineering practice. EPA said that the major difficulty for areas which had selected the contractor approach was the inherent inflexibility in procedural changes to accommodate new testing or data handling needs because of the contractual situation.

GAO comment

We asked EPA to clarify and expand its initial response for question (a) to the Subcommittee. We wanted to know which contractor I/M programs EPA had audited and the results of the

audits. In our 1985 report on EPA's vehicle I/M program, we also reported that the contractor operating the I/M program in Arizona had failed to perform important internal quality control checks. We asked EPA to comment on whether the failure to perform such quality control checks would affect the effectiveness of contractor I/M programs.

Question (b) showed the Subcommittee's interest in the Arizona Auditor General's decision regarding the use of a contractor in the state's I/M program. We reviewed EPA's report of its subsequent audit of the Arizona I/M program and discuss it in the following section.

EPA's response for question (c) provided additional information concerning problems with private contractors in I/M programs, an issue previously discussed in our 1985 report. Because the information provided by EPA agreed with our report, we did not do any further work concerning this response.

Subsequent information obtained from EPA

EPA said that the allegation about Arizona's I/M program contractor was later proven false when the contractor provided evidence that all required (and some additional) quality control checks had been performed, even though some originally planned voluntary checks were not done. Also, EPA's audit of the Arizona I/M program in May 1984 found no serious problems with the program. EPA concluded that the contractor was doing a thorough job of quality control at the inspection lanes and that state officials were doing an effective job of monitoring contractor performance. EPA's audit specifically focused on the contractor's quality assurance of the analyzers used to record I/M test results and the crosschecks made by the state to ensure the test equipment was being properly calibrated.

Other contractor I/M programs have been audited in Connecticut, Indiana, Maryland, New York, Tennessee (Nashville), and Wisconsin. None of these audits have identified cases where contractors have failed to meet their contractual obligations. In all cases, the programs were found to have excellent quality control procedures. Maintaining quality is not technically difficult for experienced contractors using state-of-the-art equipment, and the normal level of state or local oversight provides sufficient encouragement for them to do so.

GAO assessment

We believe that the additional information satisfies the Subcommittee's request for information concerning the role of private contractors in state I/M programs. In January 1985 we reported that we had indications that I/M programs run by contractors might be experiencing problems. However, EPA's subsequent audits of I/M programs have not disclosed any major problems with contractor-run

I/M programs. Consequently, the controls placed on contractors and the increased oversight given programs by EPA may have mitigated major problems experienced with contractors.

Although EPA audit reports indicated that there were no major problems in contractor-operated I/M programs, we found that EPA had reported problems relative to a state-operated program which involved using a service contract to maintain exhaust gas analyzers. In a report dated August 1985 on the audit of Delaware's I/M program, EPA found that I/M test analyzer maintenance and calibrations were inadequate. EPA found that the contractor did its maintenance checks infrequently and often incompletely or improperly. EPA concluded that poor analyzer quality control procedures allowed vehicles to improperly pass the state's I/M test which could partially account for the lower than expected failure rate which Delaware's program was experiencing. Since the audit, the state entered into a new maintenance contract which provides for additional calibrations and analyzer checks by the contractor. In addition, the state agreed to use its personnel to perform weekly audits of test analyzers. Besides Delaware, EPA found a similar problem with the state-operated Massachusetts I/M program.

SUBCOMMITTEE QUESTION

34. Public Law 98-45 of July 12, 1983, states that none of the funds provided in this act may be obligated or expended to impose sanctions under the Clean Air Act with respect to any area which fails to attain any national ambient air quality standard established under Section 109 of the Clean Air Act by the applicable dates set forth in section 172 (a) of the act. Public Law 98-45 applied to fiscal year 1984. Public Law 98-371 of July 18, 1984, does not include such a limitation. What actions have EPA taken or planned to take (consistent with the applicable opinions of the GAO) to enforce the applicable standards where there is such a failure, now that this limitation no longer applies?

EPA response

EPA said that where a fully approved Part D state implementation plan failed to bring about attainment by the end of 1982, EPA will treat the plan as "substantially inadequate" to assure attainment under Section 110(a)(2)(H) of the Clean Air Act and call for a plan revision. EPA will provide 1 year for the submittal of the new revision under section 110(c)(1)(C) of the act. The revision will have to provide for attainment as expeditiously as practicable.

EPA said that if an area fails to meet the deadline for submitting a plan revision, it will propose construction and air planning funding restrictions, and, in some cases, may also propose sewage treatment funding restrictions under sections 173(4), 176(b), and 316(b). Because it was essential to induce states to produce plans providing for attainment as quickly as possible, EPA will take final action as quickly as possible while providing an adequate opportunity for comment, including an opportunity to request a hearing.

EPA said that if an area submitted a revision before EPA took final action on nonimplementation sanctions, it may defer action until it evaluated and acted on the submittal. EPA may, if appropriate, propose approval of a plan continuing draft regulations and defer final action until the regulations were formally adopted. If EPA approves a revision, it will withdraw the proposals. If EPA disapproves the plan, it will take final action immediately to impose the proposed restrictions. The disapproval notice would explain why EPA rejected the new submittal. Imposed restrictions would only be lifted upon approval of a revised state implementation plan.

GAO assessment

We believe that the EPA response sufficiently details what actions EPA plans to take to enforce the applicable standards for any area that fails to attain the carbon monoxide and ozone standards by the established deadline. EPA should be following the steps outlined in its response in dealing with the 26 areas in 16 states which, according to EPA, have inadequate state implementation plans. (See the discussion for question 3 on pages 17 to 19.)

SECTION 3

OBJECTIVES, SCOPE, AND METHODOLOGY

In a February 7, 1985, letter, the Chairman, Subcommittee on Oversight and Investigations, House Committee on Energy and Commerce, asked the Environmental Protection Agency to respond to questions based on our report entitled Vehicle Emissions Inspection and Maintenance Program Is Behind Schedule (GAO/RCED-85-22, Jan. 16, 1985). As requested, EPA provided us a copy of its response to evaluate. On February 7, 1986, we briefed the Chairman's office on the results of our work and agreed to prepare a briefing report to the Chairman summarizing the information discussed during that briefing.

The objectives of our evaluation were to (1) determine whether EPA's responses adequately addressed the specific questions raised and (2) test, to the extent possible, the adequacy and reasonableness of the responses.

To determine whether EPA's responses adequately addressed the 58 specific questions raised, we first compared the February 7, 1985, letter with EPA's March 27, 1985, reply to ensure that all 58 items were accounted for. As a result, we identified 14 questions that required additional information to understand EPA's response, 6 questions for which EPA did not provide a response, and 2 questions that needed to be updated.

On November 19, 1985, we sent a letter to EPA requesting the above information. After EPA responded on January 24, 1986, we evaluated the new information and discussed all 58 questions and responses with EPA's I/M project manager located at the Mobile Source Air Pollution Control Laboratory, Ann Arbor, Michigan. Where needed, we also obtained additional information by telephone from state and/or local I/M officials.

To test the adequacy and reasonableness of the responses, we reviewed data obtained in our prior work, data sent by EPA to support its responses to specific questions, and various documents EPA sent in response to specific information the Subcommittee requested. We organized the information into a computer data base to facilitate locating key support documents used to verify the reasonableness, completeness, and accuracy of the EPA responses.

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