S. HRG. 104–507

CLEAN AIR ACT: MOTOR VEHICLE INSPECTION AND MAINTENANCE PROGRAM

HEARING

BEFORE THE

SUBCOMMITTEE ON
CLEAN AIR, WETLANDS, PRIVATE PROPERTY AND
NUCLEAR SAFETY

OF THE

COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

ONE HUNDRED FOURTH CONGRESS

FIRST SESSION

JUNE 29, 1995

Printed for the use of the Committee on Environment and Public Works

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CLEAN AIR ACT: MOTOR VEHICLE INSPECTION AND MAINTENANCE PROGRAM

THURSDAY, JUNE 29, 1995

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON CLEAN AIR WETLANDS, PRIVATE PROPERTY AND NUCLEAR SAFETY,
Washington, DC.

The subcommittee met, pursuant to notice, at 1:04 p.m. in room 406, Senate Dirksen Building, Hon. Lauch Faircloth (chairman of the subcommittee) presiding.

Present: Senators Faircloth, Graham, and Chafee [ex officio]. Also present: Senator Warner.

OPENING STATEMENT OF HON. LAUCH FAIRCLOTH, U.S. SENATOR FROM THE STATE OF NORTH CAROLINA

Senator FAIRCLOTH. I want to thank you all for coming today.

The chairman just arrived, Senator Chafee. I have a brief opening statement, and then we will hear from our chairman.

The subcommittee will begin on what the chair anticipates will be a series of oversight hearings on the effectiveness and implementation of the Clean Air Act. Specifically, today the subcommittee will be hearing testimony on the Act's Enhanced Inspection and Maintenance Program, the so-called I/M Program.

During the time period of these hearings, it is the chair's intention to continue to work with EPA within the existing parameters of the Clean Air Act to ensure that the discretion given to the administration to implement the Act effectively is appropriately exercised.

The Chair strongly believes that this regulatory discretion has not always been appropriately used. Thus, if the testimony in our upcoming hearings indicates that EPA cannot or will not reform its implementation of the Clean Air Act, it is the chair's intention to recommend appropriate changes to the Act.

EPA's I/M programs have caused a near revolt when imposed on citizens of Federal ozone nonattainment areas. Citizens in States from California to Texas and Virginia to Maine are in an uproar over this program. Under EPA's proposed program, car owners are forced to get their cars inspected at inconvenient, centralized sites at which they may spend several hours. In addition, any repairs found necessary must be performed by a different facility before the owner returns to the initial centralized site to have the car tested again. In other words, in this era of privatization and decentraliza-

tion, the EPA wants to bureaucratize and centralize yet another function of emissions testing.

Are there remedies for the problems of EPA's I/M program? I think so. First, and more importantly, I believe we should examine very carefully the generic 50-percent discount for test-and-repair programs. If EPA believes that a specific program is deficient, they should be compelled to prove that it is and to demonstrate the extent to which it is deficient. We should remain cautious of the overall attitude of EPA that the burden is on the States to prove their worthiness. That should be reversed. It should be assumed that the States and their citizens will do the right thing. The burden of proof ought to be placed squarely on EPA to demonstrate that a program is defective, its participants negligent, and the citizens accomplices in this.

Second, the advance in quality assurance and control technology, perhaps EPA should give States wishing to keep or start a test-and-repair program sufficient incentives to add enhanced program design elements—like remote sensing and videotaping of test cars. States should be able to claim additional credit for new program improvements, specifically designed to eliminate problem areas. The marketplace has developed a number of vehicle verification and fraud detection tools which would preclude any facility from performing a compromised test. We should be encouraging the use of these tools to provide maximum citizen convenience, while at the same time ensuring that vehicles that need to be repaired are being repaired.

Third, perhaps we should consider a new approach to the conflict resolution surrounding clean air issues. Often, the most important factors in decisionmaking are the computer models. Given the importance of these models, some thought should be given to creating a group consisting of State representatives and EPA senior officials which will have the ability to make binding decisions on the components of the model.

Finally, we need to address seriously the question of who is in the best position to change the legal regime surrounding I/M. Can EPA, which has created much of this problem through regulation, be counted on to fix it through more regulation? Or does Congress have a role in changing how we achieve the important air quality goals of this Nation?

I hope this hearing will help answer some of the questions.

The Chair recognizes the distinguished gentleman from Rhode Island and our chairman. Senator Chafee, we will be glad to hear from you.

OPENING STATEMENT OF HON. JOHN H. CHAFEE, U.S. SENATOR FROM THE STATE OF RHODE ISLAND

Senator CHAFEE. Thank you very much, Mr. Chairman.

I am delighted you are holding this oversight hearing. I think it is valuable. In my State, as in many of the other States, there has been what you termed a "revolt" against the centralized inspection, and right now the situation is more or less in limbo.

So I look forward to the witnesses that you have here, and I hope that from this and other hearings that you will be having we can

arrive at a solution to some of these problems that are really out there, just as you pointed out.

Thank you very much, Mr. Chairman. I am looking forward to hearing the witnesses.

Senator FAIRCLOTH. I will place in the record the statement of Senator Inhofe, a member of this subcommittee.

[The statement of Senator Inhofe follows:]

OPENING STATEMENT OF HON. JIM INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Thank you Mr. Chairman, I would like to congratulate you on chairing this, the first of several Clean Air Act oversight hearings. There are many problems with the Clean Air Act, both within the statute and with how the law has been interpreted, and I hope these hearings will provide the necessary information to guide us in amending the law.

I would like to throw out two statistics. First, half of all regulations issued are from the EPA, and second, half of all EPA regulations are Clean Air regulations. The Clean Air Act of 1990 has been the most "command and control" environmental statute ever passed. It runs counter to everything we have learned about environmental protection in the past 25 years. Just as Congress, the EPA, businesses and environmentalists all over the country began turning to pollution prevention and innovative approaches to environmental protection, Congress passed the most stringent, dictatorial statute possible, the 1990 Clean Air Act.

The Clean Air Act set the benchmark for smog standards to 1988, the hottest summer in the past century. The NESHAP standards were set equal to the best 20-percent facilities in the country, without regard to where the facilities were located. The Act has had the unintentional effect of encouraging companies to maintain old, out-of-date facilities instead of incurring the added air control costs involved in building new facilities, thus keeping old polluting plants in operation. And the mandates imposed upon the States have proven to be enormous, and the subject of today's hearing on the Inspection and Maintenance Program is just one example.

I would like to thank today's witnesses in advance, particularly from the States. I am sure we will hear today of the problems encountered with the mandated EPA program on the States in Virginia and California, the fact that Colorado is here to support the program tells me that the States are divided and adds to my belief that the Federal Government cannot dictate to the States the specifics of a State-run program such as automobile inspection and maintenance. If every State had the same problems and concerns then we could conclude that the EPA program is wrong and needs adjusting. But since the State response is mixed, I must conclude that we shouldn't be mandating a specific approach at all. We need to loosen our regulatory grip on the States and provide them the flexibility to craft a program which meets their needs. This was the principle behind the Unfunded Mandates debate that occurred earlier this year, and is at the heart of the Regulatory Reform Debate occurring on the Senate floor even as I speak.

I look forward to this hearing and additional hearings on the Clean Air Act.

Senator FAIRCLOTH. I will now ask the first panel of witnesses to be seated, if you will come up.

We are going to have six witnesses who will be testifying today. Although we do not have the members of the subcommittee with us, we expect Senator Graham to be coming momentarily.

We will be delighted to hear the testimony you have to give today, Ms. Dunlop.

STATEMENT OF HON. BECKY NORTON DUNLOP, SECRETARY OF NATURAL RESOURCES, COMMONWEALTH OF VIRGINIA; ACCOMPANIED BY JOHN D. BOWDEN, REGIONAL COMPLIANCE AND MOBILE SOURCE MANAGER FOR NORTHERN VIRGINIA, DEPARTMENT OF ENVIRONMENTAL QUALITY

Ms. DUNLOP. Well, thank you so much, Mr. Chairman and members of your subcommittee, for inviting me here today to present testimony on automobile emissions inspection and maintenance. I

am honored to be here today representing Virginia and our Governor, George Allen, as well as our many citizens.

Virginia and a growing number of States across the country—I will now have to add Rhode Island, I guess, to my list, just hearing from Senator Chafee about the problems that you're having—believe that the Clean Air Act has veered off course. The Federal bureaucrats administering the Act, mainly the EPA, are wrong-headed in their mandates of a "one-size-fits-all" prescription for clean air, to the detriment of our citizens, jobs, and, frankly, to the goal of clean air.

Let me state once again in very clear language that like most Americans, I am for clean air. Governor Allen is for clean air. In fact, most Virginians are for clean air. The question that is ripe for debate is how best to achieve improvements in air quality and the need for practical, reasonable, cost-effective, science-based approaches. I would argue that too much brain-power at the State and Federal level which could be focused on improving air quality is being diverted to paperwork exercises that do nothing to improve our air quality.

The regulatory structure of the Clean Air Act serves neatly as a microcosm of many environmental regulatory structures: Congress passes a well-meaning but nebulously drafted law; EPA begins to promulgate regulations which at first are only complicated, but which over time become progressively more detached from the intent and language of the original statute—as well, I might add, as any common sense approach—and finally, States, businesses, and citizens are left trying to decipher and implement the maze of law and regulations.

Ultimately, the only remedy left is to attempt to relegislate the issue. The Hydra-like regulations are impossible to untangle, and it becomes apparent that the law is not working toward its stated goal in a consumer-friendly, cost-effective manner.

This is the stage at which we presently find ourselves with respect to the Clean Air Act Amendments of 1990, especially as they pertain to automobile emissions inspection and maintenance programs.

I will be succinct in discussing this, but I would ask that my full testimony be inserted in the record.

Senator FAIRCLOTH. It will be.

Ms. DUNLOP. Thank you. Thank you very much.

We believe there are several defects with EPA's approach to I/M which have rendered the program unworkable in its current form.

First, is the program's lack of emphasis on the most important element of any program involving the public: public acceptance. It is unfortunate that EPA did not attempt to build a program around this premise, which hinges on consumer convenience. As States have moved from planning to implementation, the ping-pong effect—problems associated with testing; the extreme cost of the prescribed equipment; and other practical difficulties—have begun to shift public focus away from cleaning up the air, and to the defects of the EPA-created, centralized, "test-only" approach.

Many States have long shared EPA's initial understanding that public support is the only method for achieving compliance with

programs, such as I/M, that affect large segments of the public. Conversely, loud threats of punitive measures and sanctions breed resentment and tend to confirm a general and growing belief among the public that the program must, indeed, be significantly flawed. Very few people have to be bullied into doing what they believe to be right.

Despite public concern over yet another function being absorbed by Government bureaucracy, EPA decided to move ahead with mandated. In the rulemaking they stated emphatically that "it is not possible for a decentralized test-and-repair program to meet the performance standard for enhanced I/M, regardless of the test type or vehicle class coverage."

In the Clean Air Act Amendments, Congress directed EPA "to provide the States with continued reasonable flexibility to fashion effective, reasonable, and fair programs for the affected consumer." Congress, in our opinion, clearly envisioned that some States would adopt decentralized test-and-repair systems, or continue and improve already existent test-and-repair systems. EPA ridiculed and undercut this congressional intent.

After announcing that it could not accept any of the currently operating decentralized programs as "equally effective to centralized," EPA closed the noose by making "past performance" the only method by which equivalency could be judged. In other words, even before anyone got to demonstrate anything, EPA had already determined that they would fail based on past performance.

Frankly, we think that Virginia's existing program is now the best in the country. Virginia's program is characterized by well-trained emission inspectors and compliance officers, a reliance on technically advanced information systems, and rigorous auditing and enforcement. Our data suggest that Virginia's program effectiveness is substantial. Furthermore, based on our improving air quality in Northern Virginia, I believe that some credit should be given to Virginia's Department of Environmental Quality employees responsible for improvements in this program.

Mr. Chairman, I have with me today Mr. John Bowden, who is the head of our enforcement program in Northern Virginia, and he advises that he would be happy to take any of you or your colleagues along with him for a day to demonstrate how effectively our team works.

EPA's discount seems based on a simple predicate: Government workers or contract employees are somehow more likely to be honest than private sector garage mechanics or owners. I reject this assumption, and most of us in Northern Virginia do also.

You have no doubt heard much recently about EPA's recent conversion to flexibility in policy—a new willingness, if you will, to grant the States flexibility in implementing I/M programs. Well, let me say that EPA's new views are indeed welcome but, in our view, a day late and a dollar short. EPA remains steadfast in denying one of the most important elements the States want, full credit for an effective test-and-repair option. By adhering to its arbitrary 50-percent discount for test-and-repair programs, EPA continues to effectively foreclose this as an option for States. By keeping it, EPA intentionally thwarts the will of the people in many States and ig-

nores the will of the Congress as expressed through the Clean Air Act Amendments of 1990.

The statutory and regulatory framework of the Clean Air Act Amendments could be changed to accommodate States' needs and the imperative to design an emissions reduction program which our citizens will find acceptable, and which State governments will be able to administer. Let me just mention a few ways in which we believe this could be put into place.

Most importantly, the arbitrary discounts should be eliminated. As it currently stands, the States must approach EPA as supplicants, hoping that their programs will be granted equivalency. We in Virginia reject this as imbalanced and unfair government. We know that our citizens in Virginia support Virginia's standing up for them in this regard. Given the advances in technology, we believe that EPA should amend the inspection and maintenance regulations to encourage States to develop programs employing a test-and-repair network which meets the goals outlined in the Clean Air Act Amendments.

Perhaps the most salient new technology affecting this issue is remote sensing. Again, EPA has been dragged to this new technology. They have not embraced it willingly. Even now, they have yet to tell the States how much credit can be received for various levels of commitment to remote sensing programs.

Ideally, an in-use emissions control program would be based on identifying and correcting gross polluters in our areas. The technology which could perform this identification, remote sensing, is clearly the most effective and consumer-friendly.

In the long term, we want to move away from strict reliance on command and control regulatory policies and devise ways to incorporate incentives to encourage beneficial behavior that enhances our air quality. Some ideas in this regard are that we could give tax breaks for those businesses which purchase enhanced testing or diagnostic equipment, either before it is required, or testing equipment that is better than the required equipment.

Second, we can offer financial incentives for those testing station owners who run exemplary programs.

Third, by utilizing remote sensors as screening devices, we can waive tests for those drivers who keep their cars running clean and in proper maintenance.

And fourth, we need to look for incentives to improve mechanic expertise so that cars will be better maintained, and therefore run cleaner.

Finally, it appears to be exceedingly unlikely that EPA, which has clung tenaciously to the concept of "one-size-fits-all" regulatory policy, will be willing to abandon it. Therefore we believe that Congress should reopen the Clean Air Act and make changes to the statutory foundation of this program.

Mr. Chairman, we in Virginia are committed to improving air quality, and we have demonstrated this, but we need legislative relief from regulatory obstacles that prevent us from pursuing this goal.

As even one of EPA's principal staffers on this issue acknowledged, "If we could turn back the clock, it is obvious that EPA would redesign its program."

Well, you can turn back the clock and redesign this program, and I encourage you to do just that.

Thank you for this opportunity to appear before you today, and we look forward to working very closely with you in searching for ways that the Clean Air Act may be improved.

Senator FAIRCLOTH. Thank you, Ms. Dunlop.

Now we will hear from Mr. Tom Getz, director of the Division of Air Quality, Colorado Department of Public Health and Environment.

Mr. Getz.

STATEMENT OF TOM GETZ, DIRECTOR, DIVISION OF AIR QUALITY, COLORADO DEPARTMENT OF PUBLIC HEALTH AND THE ENVIRONMENT

Mr. GETZ. Thank you very much. I would like to thank you for the invitation to appear before this subcommittee this afternoon. In particular, I appreciate being able to present the perspective of the Colorado Department of Public Health and the Environment on the issue of centralized versus decentralized emission testing, and EPA's policy of granting only 50-percent credit for State programs which do not rely exclusively on centralized inspection testing.

Our enhanced inspection and maintenance program has been designed to meet the air quality needs of Colorado. It was designed with the basic tenet of protecting public health and welfare in mind. The program conforms with the basic emission reduction goals which are set out in the Clean Air Act, but foremost, it represents a program which represents the needs of Colorado.

The State remains committed to maintaining the goals of the Act. While we believe States should have the flexibility needed to design approaches which work best in their States, we have not wavered from the goals of the Clean Air Act and the need to achieve and maintain our air quality standards.

In the metropolitan Denver carbon monoxide nonattainment area, an enhanced I/M program utilizing the IM240 test began January 2, 1995. This program is a hybrid program. It is a centralized biennial inspection, with exemption for the first four model years. Pre–1982 vehicles are inspected in private inspection stations, using the Colorado idle test. A basic decentralized program is used for vehicles in less serious nonattainment areas in the Fort Collins-Colorado Springs area.

One of things that I really would have to say regarding our program is that it's a carbon monoxide program, which is different than ozone. In our area, over 80 percent of the inventory of emissions is from mobile sources. We really don't have the flexibility of trading reductions for mobile source emissions with stationary source emissions. This is an important distinction that should be considered that carbon monoxide problems are different than problems associated with ozone control.

As far as our program is concerned, we did have startup problems. The Colorado Enhanced Program, however, is beginning to achieve some of the air quality goals which were initially set out for it. The program is detecting vehicles with excessive emissions and is causing these vehicles to be repaired.

At the present time we are getting a 58-percent reduction in carbon monoxide and a 48-percent reduction of emissions for hydrocarbons from vehicles that are repaired. We feel that this is critical. As the program gets fine tuned and as time goes on, the program will become even more cost-effective and more effective in reducing these emissions.

The major problems, with the introduction of the program, occurred due to the limited number of inspection stations completed at the program onset. There were also some problems with equipment durability, which have been worked on, and one of the key problems was staff inexperience of the contractor.

Excessive wait times for some motorists may have occurred, with some vehicles being incorrectly inspected. As the system has been built out of the initial design and equipment and personnel problems have been mitigated, the problems encountered during start-up of the program have been dramatically decreased. Average customer wait time has been reduced, and there has been a declining number of violations of our 15-minute average wait time standard. Compared to Colorado's old decentralized program, the new program is much more effective in identifying old problem vehicles. Vehicles such as the mid–1985 Ford Escorts which are having high failure rates in our current program were largely missed by the old program. We also found that other vehicles which were being identified as having high emissions in the old program are passing the I/M 240 test. We think that this test is a better test for identifying vehicles which have high emission characteristics.

Additionally, the use of this test is allowing the State to develop repair procedures for these problems which have not been identified in the past.

As I have mentioned before, we are operating both a centralized and a decentralized I/M program. Colorado has long experience with decentralized programs and the problems connected with them, such as incorrectly conducted inspections and the conflict of interest which results from test-and-repair inspection stations. Based upon this experience, our department encourages that air quality credits be based on true air quality benefits received. We favor an approach which provides credit for real world air quality reductions. Centralized test-only programs which provide greater air quality benefits than others, such as decentralized test-and-repair programs, should receive more credit.

It is our opinion that EPA's 50-percent discount is reasonable based on currently available scientific information. The State believes it is important to promote the public health and welfare goals that are incorporated in the Clean Air Act. The air quality standards must be met, and they must be based on good science; they are designed to protect the public's health, and we need to maintain these.

We also recognize the need for flexibility in technology and the need for flexibility of the States to take approaches which fit their specific needs. For Colorado, the IM240-based program is best suited for our needs, which are based primarily on carbon monoxide exceedances. For other States with ozone problems, this may not be the case. Each State, however, should be given the opportunity to develop their own approaches which meet the standards

set forth in the Act. The credits in these programs should be based on air quality benefits received, with science-based alternative credits available for innovative strategies.

In summary, Colorado has developed an enhanced I/M program based on the most technically correct information that is available, and is very hesitant to compromise the criteria used in that development. As such, the State recommends the following:

EPA should continue to develop appropriate procedures to evaluate the effectiveness of centralized versus decentralized programs, and based on this, appropriate discounts should be developed;

Standards set by the Clean Air Act should be maintained;

States should have maximum flexibility in adopting approaches, and flexibility in technology which meets these standards;

Air quality credits must be based on true air quality benefits received, with science-based alternative credits for innovative strategies;

The conflict of interest of test-and-repair is eliminated in centralized inspection-only stations, and credit should be given for this; and

EPA's 50-percent discount for test-and-repair programs is justified at this time, pending further study in this area.

As I mentioned before, our problems are carbon monoxide-based. We have developed a hybrid program which was submitted to EPA for approval in early 1995. Our program has been working. We have a lot of flexibilities in our program which have been developed which meet our needs, yet also meet the air quality goals of our program, and we would appreciate it if this flexibility would be allowed; however, it is very critical that we maintain the air quality reductions needed.

Thank you.

Senator FAIRCLOTH. Thank you, Mr. Getz.

We have been joined by the very distinguished Senator Warner from Virginia, who is head of our Transportation Subcommittee.

Senator Warner.

Senator WARNER. Thank you, Mr. Chairman, and Chairman Chafee and others here.

I certainly want to join in welcoming Secretary Dunlop, but equally important is the fact that Secretary Dunlop's husband is in the hearing room, George Dunlop. Some years before you came here he was the chief of the Agriculture Committee, a subject about which you have some knowledge.

Senator FAIRCLOTH. Yes. I am aware that he was a good friend of our liberal Senator from North Carolina.

[Laughter.]

Senator WARNER. No, no, easy does it. Easy does it here.

Anyway, we welcome you, Madam Secretary. You know how supportive I have been and will continue to be of Governor Allen's initiative in this area, backed up by your own expert advice as his principal adviser on this issue. I can only say to our distinguished visitor from the EPA that this committee will be relentless in trying to achieve the ultimate goals of the Clean Air Act. Speaking for myself and, I think, a number of the members of this committee in the last few months of change here, we want to give more recognition to the right of the States to make the determination as to

how to get from A to B. I hope that message is sinking in where you draw your paycheck, because we feel very strongly about it.

We want to get to clean air standards which are envisioned by the Clean Air Act as much as any other people in any other State. We also pride ourselves in the ability of the administration of our State, be it Democrat or Republican, to get from A to B, and I am going to be very insistent on that.

I thank the chairman.

Senator FAIRCLOTH. Thank you, Senator Warner.

I will begin with——

Senator WARNER. Mr. Chairman, I am in a markup of the Armed Services Committee and I must return shortly, so I regret the absence.

Senator FAIRCLOTH. Thank you for coming.

We will begin with questions. I have just a very few questions for Ms. Dunlop and one or two for Mr. Getz.

Ms. Dunlop, has Virginia's General Assembly adopted a centralized testing plan yet?

Ms. DUNLOP. No, sir, they have not. They actually voted in 1994 to hold off signing any contracts until the Allen administration could review the program. It was during that review of the program that we determined that the test-and-repair program, enhanced, would actually achieve our goals. In this last General Assembly session they affirmed that decision that we made by voting in support of a decentralized test-and-repair program.

Senator FAIRCLOTH. Is Virginia currently conducting an evaluation of the effectiveness of its current testing program?

Ms. DUNLOP. Well, we do an ongoing evaluation. As I indicated to you, I have the director of the Enforcement Program here. Of course, part of his performance standard as a Government employee is to try to make certain that he is tracking the work of his compliance inspectors every day. We have a very rigorous enforcement program. We have teams of people out doing both direct audits and covert audits of the program. There are punishments for people who do not engage in proper activity, or even make mistakes; there are punishments for people who even make mistakes.

Mr. Bowden is a former police officer and is very proud of the fact that his record over the past 5 years has been improving increasingly.

Senator FAIRCLOTH. Well, maybe we'll hear from him before we get on.

Ms. Dunlop, how many businesses in Virginia are currently engaged in decentralized emissions testing? How many stations?

Ms. DUNLOP. We have approximately 385 service stations that are doing testing. Of course, there are many more than that that also do repairs, but those 385 may also do repairs if the consumer chooses. The consumer does have a choice about where to have the vehicle repaired.

Senator FAIRCLOTH. Did you say that all of the 385 that do testing offer repairs?

Ms. DUNLOP. Yes, they offer repairs.

Senator FAIRCLOTH. They can fix the problem if it exists?

Ms. DUNLOP. That is correct.

Senator FAIRCLOTH. If you went to centralized testing, how many sites do you think you would have?

Ms. DUNLOP. Based on the calculations that were done, the budgetary numbers, it appears that we would have about 12 sites in all of Northern Virginia for running 600,000 tests annually.

Senator FAIRCLOTH. Twelve?

Ms. DUNLOP. Twelve.

Senator FAIRCLOTH. For——

Ms. DUNLOP. For 600,000 tests.

Senator FAIRCLOTH. How often does this testing have to be done?

Ms. DUNLOP. Biennially. That means 600,000 different vehicles annually would have to go through these 12 sites. I dare say, Congress' business would probably be held up because you have a number of employees who live in Virginia and they would probably be sitting in long lines; then when they fail, they would have to go get their car repaired and then go sit in line again.

Senator WARNER. But that's if it was centralized?

Ms. DUNLOP. Correct.

Senator WARNER. Let's make that clear. Under the present program, we can accommodate those employees of Capitol Hill——

Ms. DUNLOP. We can, indeed.

Senator WARNER [continuing]. And at the same time achieve clean air standards?

Ms. DUNLOP. Our air quality is improving dramatically. In 1988 we had 72 exceedances; last summer, we had 7.

Senator WARNER. Now, that's very important. If I might interject, she somewhat lightly touched on that, but the statistical data curve is very clearly that Virginia is making substantial gains in meeting the goals of the Clean Air Act.

Ms. DUNLOP. That is absolutely correct, and we are improving our enforcement with our current test-and-repair program. We also are looking for opportunities to have economic growth in Northern Virginia so that those people who drive those polluters can trade up into a car that no longer poliutes.

Senator FAIRCLOTH. I'm sure the dealers will be in favor of that.

Are most of these testing stations in franchised automobile dealerships, or independent garages, or a lot of both?

Ms. DUNLOP. I would say both.

Senator FAIRCLOTH. Franchised dealers and independent garage owners?

Ms. DUNLOP. Yes. We have many small businessmen in Northern Virginia who do have independent garages, and of course, this is an important program for them.

Senator FAIRCLOTH. Do you have any idea what the cost of adopting a centralized testing program would be to the State of Virginia in terms of jobs, revenue, taxes, and inconvenience?

Ms. DUNLOP. Well, I don't think that anybody has actually done a calculation with respect to the inconvenience, but respect to all the other numbers, those calculations have been run and I would be happy to supply them to you. I don't recall them off the top of my head.

[Information to be supplied follows:]

ADDITIONAL INFORMATION SUPPLIED BY VIRGINIA SECRETARY OF NATURAL RESOURCES DUNLOP

Regarding State enhanced vehicle emissions inspection programs, the question asked of Secretary Dunlop was, "What would it cost to set up a test-only vehicle emissions inspection program in Virginia?"

In answering the question, two assumptions will be made. First, that the question was in reference to the enhanced inspection program required in the Northern Virginia area only, and second, that the question was in reference to the potential, incremental cost above that of a comparable test-and-repair program.

The program which would be implemented in Northern Virginia, regardless of network design, would be a biennial program and cover about 1.2 million vehicles. A test-only network would have approximately 12 inspection stations (versus approximately 250 [1] in a test-and-repair program) and a total of 55–60 lanes. The test fee would be $20 regardless of network design. The motorist is charged a fee of $4 per vehicle per 2-year test cycle at the time of registration for oversight costs the State must bear. This amounts to a basic cost for each vehicle of $24 per biennium. A retest is free if performed within 14 days. A passing certificate or a waiver is good for 2 years.

If a test-only design is implemented, inspection stations would be fewer in number but have more inspection lanes per station. This means that there is a potential for increased driving distance to the inspection station. Since Northern Virginia is such a congested area, a small increase in drive distance can translate to a significant increase in drive time. It is estimated that the average motorist could expect to drive an extra 30 minutes to get to a test-only inspection station and also a return trip of an additional 30 minutes. At an hourly labor cost of $15, this amounts to an extra cost of $18,000,000 for the 1.2 million motorists every 2 years.

Perhaps the most distressing aspect of a test-only network design is the fact that, after failing a test, the motorist must drive to a different location to obtain repairs and then back to the inspection station to get retested. This has been dubbed the "ping-pong" effect. This driving exercise may take the average motorist a half a day to accomplish. We assume that approximately 20 percent of motorists will fail the test and require repairs. For the 240,000 motorists who would be expected to fail, this extra 4 hours of time at $15 per hour would cost $14,400,000 every 2 years.

Another particularly egregious aspect of test-only designs is that the repair facility may not be able to assure the motorist that the repairs will definitely cause the vehicle to pass the retest. Consequently, as the State of Maine experienced, there is a retest failure rate of approximately 40 percent. That is, 40 percent of those vehicles which get repaired and are submitted for retest will fail again, the repair having been ineffectual. This means the motorist will have to return to the repair facility for additional repairs and then go back to the test facility once more. This third test will cost the motorist $20 and the ping-pong effect will occur again. For the 96,000 vehicles which will fail the retest, the ping-pong drive time will cost $1,440,000 and the $20 retest fee will total $1,920,000.

The grant total for these factors is $35,760,000 more than our citizens are currently paying and the goal is to improve just 7 hours or even days of ozone exceedances.

One final factor which affects a smaller population is potential job loss among existing emissions inspectors. There are approximately 1,000 licensed emissions inspectors in Northern Virginia. By the service industry's estimate, half of their labor time is spent on safety inspections. This means that 50 percent of these jobs, or 500 people, are full time emissions inspector jobs. A test-only program would employ approximately 330 inspectors [6 inspectors per lane in 55 lanes (this includes any required management personnel)]. Six inspectors are required because the stations would work two shifts and have multiple inspectors per lane. This factor could eliminate approximately 170 private industry inspector jobs.

Ms. DUNLOP. But I can tell you, Senator, that I have had many people who ordinarily disagree with the Allen administration on points of philosophy who have come to me privately to remind me that the value of an individual's time is seldom calculated when we think in terms of the cost of some of these "sit and wait" programs.

[1] There are 385 test-and-repair stations participating in Northern Virginia's current program. The Virginia Department of Environmental Quality estimates that the most expensive testing equipment required in its proposed enhanced test-and-repair program will cause a reduction in the number of operators.

And then we talk about issues such as "environmental justice;" I know that's an important term being heard in the Capitol these days. Of course, oftentimes we find that the people who have the older vehicles that are more likely—although not always—the gross polluters are those on the lower end of the income scale, the hourly wage employees who are least able to spend time sitting in a long line, and then taking their car elsewhere to have it repaired. So we think that the cost to the consumers in terms of their time, properly calculated, would actually be the highest cost of this program.

Senator FAIRCLOTH. That's the reason I asked the question.

One last question, and it's a hypothetical question. If you could change one element of the Clean Air Act to make it work better in Virginia, what would it be?

Ms. DUNLOP. Gosh, that's a very tough question. Obviously, Senator, I would have to say, as we're looking at the sanctions provisions of a number of aspects of the Clean Air Act—this is probably the most troubling to us—we think there are Constitutional questions. We have raised this in the court system through lawsuits, and we believe that that would probably be the area that needs to be fixed most quickly.

Senator FAIRCLOTH. Mr. Getz, I'm using up my time and I'm going to go to the other Senators, but I have one quick question for you, and then I'll end that.

Did I understand you correctly? Did you say the States should have the right to select whatever method they want to do this inspection?

Mr. GETZ. Yes, sir, I did. I said that the most important thing is to meet the air quality objectives of the non-attainment area. The State should be required to demonstrate the air quality reductions to meet those objectives, whether it be a centralized program or a decentralized program. In our viewpoint the reductions must be based on good, sound science.

Senator FAIRCLOTH. Thank you.

Senator Chafee.

Senator CHAFEE. Senator Warner, I know you have a markup to attend, and I would be perfectly glad to wait if you want to go ahead.

Senator WARNER. If I may, thank you very much.

I just would like to ask our Secretary this. EPA has announced a new approach to evaluating the State plans. What do you feel this new approach may achieve?

Ms. DUNLOP. Well, as always we are hopeful, Senator Warner. Our Chief of Enforcement for the Northern Virginia area recently made a presentation to the new director of the Mobile Source Office, and we have high hopes that we will be granted 100-percent credit for what we think is a very effective program.

Senator WARNER. Good.

Mr. Getz, I'm interested in how your State overcame the problem of inconvenience. I want to spell that out a little bit more in my question. I didn't mean to be trite when saying we're trying to accommodate the employees of the Hill. Of course in my State, in Northern Virginia, all the citizens are concerned with air pollution, and certainly the test models show that in this area of Northern Virginia, which is now overburdened with its mobility—every road

is clogged—suddenly, if we took and centralized one of these things, we would have lines that go to the horizon, in our judgment.

So it is a matter of inconvenience in a highly congested metropolitan area. I have some knowledge of your State; some of my family are resident there. I don't know of any parallel in Colorado to the congestion and concentration of people that we have in Virginia.

So what you are experiencing in overcoming inconvenience is important, and I would like to know how you went about it.

Mr. GETZ. Yes, sir. I think we still have more work to do in this area. We are not there yet. We are not entirely happy with out wait times——

Senator WARNER. Which is how much now, your wait time?

Mr. GETZ. Our average wait time is 9 minutes. The average when the program started was approximately 14 minutes, on an average. Now, that can be misleading because there is about a 12-hour time period, and there were certain times early on in the program when the 10 o'clock to 2 o'clock time period was very congested and wait lines could have gone as high as 45 minutes for an individual person.

One of the things that the contractor did in order to reduce the wait time, was to discount the cost of the test at the beginning of the day and at the end of the day. This strategy reduced the number of cars being inspected in the middle of the day. We have about as many people going in for inspections early in the morning as we do during the lunch hour rush hour.

We also had a provision within the contract to say that if we did experience wait times, the stations would be designed to accommodate additional lanes. Early in the program we found out that we did have a need for expansion, and it is occurring right now. Within the next 30 days we will have an additional six or seven lanes added to the system.

Senator WARNER. Are you familiar enough with Northern Virginia to say that your centralized feature is in an area quite different from what we have in Northern Virginia?

Mr. GETZ. I would say there would be some people in the Denver metropolitan area who would say that the roads are too congested right now, Senator. I lived in Northern Virginia a number of years ago so I am familiar with the area. I would say that your densities would probably be greater here than in Colorado.

Probably one of the complaints with the Colorado program was the citing of the stations. There were concerns that more stations should be located in Denver.

We did, however, meet all the criteria that 85 percent of the population has to——

Senator WARNER. I appreciate your concurrence in my view, that you don't have anything quite like Northern Virginia.

Secretary Dunlop, do you feel that Colorado's baseline of experience with centralized inspection could overlay in any way what you could have done in Northern Virginia? And specifically, what kind of wait times did you calculate for Northern Virginia?

Ms. DUNLOP. Let me say first of all that I am very pleased to learn that the Colorado plan is working for Colorado. Of course, our

whole goal, as you and I have discussed, is that every area should be able to design a plan that we believe will work best for that area, and that is one of the points that we've made.

As we developed the contract for a centralized program, we wrote into that contract that there would be no longer than an average wait time of 15 minutes or the contractor would be fined. But as my colleague here pointed out, averaging out wait time makes it look a lot more "average," if you will. And as you well know and the other Senators well know, our work force in Northern Virginia is pretty much a "9 o'clock to 5 o'clock at the office" work force, and probably more like 8:30 to 7 o'clock. We would have expected that we would have had long lines early in the morning, however early we had the stations open; slack times during the day; and then long lines in the evenings and on the weekends, and those wait times would be very long, while during the day you may have no wait time. So when you averaged it out, the contractor might well be able to come back and say, "Well, the average wait was only 15 minutes," but of course that does not make happy the consumer who sat in line for 2 hours and then had to take his car elsewhere to have it repaired.

Senator WARNER. Other than being just wasted time, it's wasted personal and family time. That time is getting more precious now because in so many families both parents are working and there's so little time left for job and family.

Now, I guess we can't ask EPA, but I'll have a question relative to their comment that Virginia has now reached 7 days last year——

Ms. DUNLOP. Actually, it would be 7 hours.

Senator WARNER [continuing]. I mean 7 hours. That's pretty good.

Thank you very much.

Senator FAIRCLOTH. Thank you, Senator Warner.

Senator Chafee.

Senator CHAFEE. Thank you, Mr. Chairman.

Ms. Dunlop, why are you here? You are satisfied with what you have done there, and you are objecting to not getting full credit, is that it? You object to the 50-percent provision?

Ms. DUNLOP. We do in Virginia. Of course, I'm here because I was asked to come.

[Laughter.]

Senator CHAFEE. Well, I know you're here because you were asked. It's like in the Supreme Court, they once asked a lawyer, "How did you get here," through what circuit, and so forth. "Well, I came up on the Southern Railroad."

I know you are here because you were invited, but you are here because you believe that your system has proven effective as far as you can tell, and therefore you don't like the 50-percent discount that you receive because you don't have the centralized testing. Is that it?

Ms. DUNLOP. Yes, that's correct. We have other concerns; for instance, we think remote sensing should be able to be a more well-used component for which one would get credit to identify gross polluters. But with respect specifically to the decentralized versus

centralized, we think our decentralized program deserves 100-percent credit.

Senator CHAFEE. Now, I am interested in this remote testing facility. You yourself, I think in your testimony, suggested that it's got a lot of problems with it. Frankly, I've never seen one. I've seen the dynamometer; it's pretty impressive but very expensive. I guess those things go a couple hundred thousand dollars, don't they?

Ms. DUNLOP. Well, I am told the IM240 equipment, which includes the dynamometer, runs about $140,000, and of course for a service station, that would be a lot of money.

Senator CHAFEE. How much would it be?

Ms. DUNLOP. About $140,000.

Senator CHAFEE. What do you say, Mr. Getz? Is that about right?

Mr. GETZ. If you include all the hardware, including the dynamometer, that's true. You can get that cost lower, but that's the ballpark figure. You have to look at the whole system, though.

Senator CHAFEE. Where I saw it, actually, was in Mexico City where they have a very strict system. You get a sticker on your car, and if you're supposed to have a red sticker but you've got the blue period from the past period, you have to come back.

But on the remote sensing, how have you found that working, your folks? You indicated that you had some reservations about it.

Ms. DUNLOP. Well, I have heard concerns expressed. I can tell you that Arizona has begun using it, and they are telling me they are very pleased, and I believe you have a witness later who will speak more specifically to remote sensing.

Senator I will tell you that on July 29 we are having an innovative technology fair at Springfield Mall in Northern Virginia, and Mr. Bowden informed me as I arrived today that he has arranged to have remote sensing there. So we invite you to Springfield Mall to see some innovative technology to help us improve air quality in Northern Virginia, and one of those pieces of equipment will be remote sensing equipment.

Senator CHAFEE. Well, I would be very nervous about coming because I have a Ford Escort——

[Laughter.]

Senator CHAFEE. It sounds interesting. I noticed that Mr. Getz laid considerable stress on the conflict of interest when you have your local filling station man do the work. What do you say about that, Ms. Dunlop? By the way, we have a safety inspection system we've had in operation for many years in my State which is performed by the local filling station. I don't want to be cynical, but I think the approval rate is about 99.9 percent of everybody that comes through any of those stations, particularly if you're a regular customer.

So I have some skepticism about the validity of the local station doing it. What's been your experience?

Ms. DUNLOP. Well, in Virginia we have a high degree of confidence in the integrity of our service station personnel, both owners and emissions inspectors. I would say that by and large they live in the area and they want to improve the air quality, and most of them understand that it is the improperly maintained automobile that contributes gross amounts of pollution. So I recognize you may have a staff member or two who lives in Northern Vir-

ginia and perhaps who has been passed when they should have been failed——

Senator CHAFEE. No, I wasn't talking about your State. I was talking about my State, and now I am confident my car will be rejected the next time I go there.

[Laughter.]

Ms. DUNLOP. Let me just say that we believe that by and large, our service station owners and inspectors are honest people of integrity. However, let me simply say we have a very strong enforcement program, and our enforcement people do not hesitate to take action against people who are not handling their work properly.

Senator CHAFEE. How does the enforcement program work? In other words, you find somebody who has passed, and then you check on that individual? Or do you pick that individual up in some fashion, and then check back with the station—what do you do, give them a sticker if they've passed?

Ms. DUNLOP. May I ask my expert to come up and answer these questions?

Senator CHAFEE. Sure. We are delighted to have him.

Ms. DUNLOP. This is Mr. John Bowden, and he is a champion enforcement person, although not related to Bobby Bowden, the champion football coach.

Senator CHAFEE. All right. Thank you.

Mr. BOWDEN. Senator Chafee, in Virginia we do have a very strong enforcement program, and the key is to hire competent, professional, well-trained, dedicated compliance staff, and they serve as a sounding board and a resource to the public. We get calls for a variety of reasons all the time, every day; citizens are calling us because they want to check on the validity of their tests, or they have some reason to doubt. People will fail, and they want to know, "Did I actually fail?"

So we have a response mechanism. We will conduct referee inspections, and we will thoroughly and fully investigate—and we do this all the time—any citizen who has a complaint or an inquiry regarding the validity of their test or repairs. Our staff is well-trained and fully qualified in automotive technology, in the equipment that is being used. We audit these stations continuously. In Virginia we have conducted over 2,000 audits every year on these stations on a regular basis.

Senator CHAFEE. How does an audit work? You mean that you bring in an automobile and have them check it out?

Mr. BOWDEN. Yes, sir. We have what are called covert audits where we will fix a car to fail in a variety of ways. It's an undercover officer, and it has regular tags and everything. We will bring that car into the station and see how they perform the inspection or any other aspects of the procedure. We record that data, and if we see things that are done inappropriately, then we are right back out there the next day taking enforcement action. It's a big deterrent.

We also have what we call regular audits. We audit each station at least four to five times a year; right now, we're averaging about five times a year, on a regular basis. We go into that station and we do a complete check of their equipment, of all their licensing, of their inspectors, and everything that they do from A to Z.

Senator CHAFEE. How many people do you have on your staff, sir?

Mr. BOWDEN. I have a staff of 12 in Northern Virginia; that includes the office staff.

Senator CHAFEE. Are you responsible just for Northern Virginia?

Mr. BOWDEN. Yes, sir.

Senator CHAFEE. I see.

Mr. Getz, in your remarks you indicated that you were a combination of—that you are operating both centralized and decentralized I/M programs. Now, how does that work as far as the credit goes?

Mr. GETZ. We have two different sets of credits for the outside part of our nonattainment—there are actually a couple of nonattainment areas, one in Colorado Springs and one in Greeley, and they have a smaller air quality problem, so they operate a decentralized program and they do not get full credit like we do in the centralized area within Denver, where we get the full IM240 credit.

Also, within the centralized I/M program we sort of have a hybrid program where we have a centralized contractor-run program for the newer vehicles, and then for the older vehicles we allow privately owned test-only stations, which are smaller facilities, to test the older fleet. So we have a hybrid program, and I think we have the best of both worlds.

Senator CHAFEE. I suppose when you get an average, as you say, of—what did you say, you were down to 9 minutes or something, that's an average, but the waits could be longer than that. You could probably get—you said 45 minutes is about your maximum wait?

Mr. GETZ. Yes, sir. If you look at the overall time period, we find that about 97 percent of the time the average wait is less than 15 minutes. It's only that 3 percent of the time period within the month when we have problems.

Senator CHAFEE. Then once you're in the testing, how long does that take?

Mr. GETZ. The testing cycle can last as long as 6 minutes to do the testing, although we have a provision called "fast pass," and we have a second-by-second analysis of the program. We can actually put somebody out prior to the 6 minutes; we can actually pass somebody within the first minutes. There are other times, too, where we may have to go over the trace again, so that it may take longer. So the time within the testing can range probably between 5 and 20 minutes, somewhere in there.

Senator CHAFEE. And if somebody fails, then they come back?

Mr. GETZ. Yes.

Senator CHAFEE. And there's a free retest if they come back within the first 10 days.

How much does the test cost?

Mr. GETZ. The test is $24.50.

Senator CHAFEE. In your situation, it's left up to the individual station owner?

Mr. BOWDEN. No, sir. The maximum fee they can charge is $11.40. They can charge anything less than that, but no more.

Mr. GETZ. Let me follow up. Our test is a biennial inspection, so it's $24.50 every 2 years.

Mr. BOWDEN. As is ours.

Senator CHAFEE. I think I'll get my test in Virginia, Mr. Getz. [Laughter.]

Senator FAIRCLOTH. Did you say yours is every 2 years?

Mr. GETZ. Yes, sir.

Senator FAIRCLOTH. How often is Virginia?

Mr. BOWDEN. Every 2 years. Once every 2 years.

Senator FAIRCLOTH. So the inspection lasts for 2 years.

Senator CHAFEE. And then, also, there is no inspection on the car during the first x years of its life?

Mr. BOWDEN. That's correct. If a vehicle has been purchased after October 1994, there are no inspections for 4 years. The only time you would have to get your car inspected would be if you sold it, and then the new owner would have to get the car inspected. So there's a provision in our act that requires vehicles on change of ownership to get the vehicles retested.

Senator CHAFEE. Do you have anything like this remote sensing device that Ms. Dunlop was talking about?

Mr. GETZ. We have used remote sensing in the past in Colorado. As part of our contract with our contractor, there is a provision that we have to spend on the order of $450,000 this year on a remote sensing approach. We are designing a program right now to implement in the fall. We are looking at it in three different ways. We are trying to determine the possibility of using remote sensing in the Greeley area. In this way we can determine the emission factors in a basic program versus decentralized program.

One of the things we feel very strongly about in remote sensing is the ability to calculate fleet-wide emissions of the car fleet to try to determine the overall emission levels of a fleet of vehicles. We will be using this approach to compare our centralized system versus the basic program. We are also looking at remote sensing to conduct correlation studies on IM240 versus remote sensing, and third, we are also going to be looking at remote sensing for a way to pick out clean cars. We have been studying the California data very closely, and it appears that one of the strongest correlations with remote sensing is to find clean cars. This might be one way to make the program more consumer-friendly, that is to use remote sensing to show that a vehicle is clean and thereby avoiding an inspection cycle.

Senator CHAFEE. How does the remote sensing—just briefly, what is it?

Mr. GETZ. Remote sensing is a way that you can catch the carbon monoxide, NOx, and hydrocarbons which——

Senator CHAFEE. Does the vehicle have to be in a stationary position? How do you do it?

Mr. GETZ. The current way that most people do it is that the vehicle drives by the sensor. The sensor has to be in a single lane, and there must be adequate space between the previous car; otherwise, you can be measuring the emissions from the vehicles.

One of the things that we're concerned about with remote sensing is that it is an emissions snapshot of a vehicle. A vehicle has different emissions characteristics during different driving conditions. In order to assess a vehicle during these conditions we will be evaluating a program in Ontario where they have a number on

ramps and off ramps. In this way we can evaluate down remote sensing in some controlled driving modes.

There are some problems with remote sensing, but I think there needs to be more work and more investigation done to look at that technology.

Senator CHAFEE. Thank you very much, Mr. Chairman.

Senator FAIRCLOTH. Thank you, Senator Chafee.

I see where Mr. Getz was in Rhode Island for about 16 years or so.

Mr. GETZ. Yes, sir. And I would also have to observe Senator Chafee's comments about the private garage system. One of my first tasks in Rhode Island was to look at the inspection and maintenance program in the State. As you mentioned, there were some problems.

Senator FAIRCLOTH. Mr. Getz, I have a copy of a letter here from the Colorado Democratic Caucus and the Colorado Department of Revenue and the Department of Public Health and the Environment, and I will enter the letter into the record.

[The referenced letter follows:]

State Representative
PEGGY KERNS
1245 S. Oakland Street
Aurora, Colorado 80012
Home: (303) 696-7173
Capitol: (303) 866-2920

COLORADO
HOUSE OF REPRESENTATIVES
STATE CAPITOL
DENVER
80203

HOUSE MINORITY LEADER
Member
Executive Committee
Legislative Council

April 4, 1995

Renny Fagan
Director
Colorado Department of Revenue
1375 Sherman
Denver, CO 80203

Patti Shawyder
Acting Director
Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, CO 80222-1530

Dear Mr. Fagan and Ms. Shawyder:

As members of the House Democratic Caucus we are writing to express our outrage at the failure of Envirotest to perform its responsibilities under the term of its contract with the State of Colorado.

Our constituents are furious -- and with good reason. While Envirotest promised that no motorist would wait more than 15 minutes for a test, many people sit in line for up to two hours before their vehicles are tested. In addition to long waits, our constitutents report that Envirotest employees are not well trained and often cause serious damage to their vehicles. We have heard just about every horror story imaginable!

As legislators, we too are furious. And, like the public we have run out of patience. Most of us who were here in 1993 and voted in favor of the bill creating the new testing program have lost confidence in the ability of Envirotest to perform in a satisfactory manner. For that reason, we are calling upon you to immediately suspend mandatory emissions testing for a period of 30 days in order for Envirotest to correct its operational problems. During this period of time we expect Envirotest to:

Mr. Fagan and Ms. Shwayder
Page 2

(1) determine how waiting times will be reduced to 15 minutes or less at all testing stations, including a plan to process vehicles from auto dealers and other fleets in a manner that does not impact individual motorists. This plan should include a provision for free testing if the 15-minute waiting time is exceeded,

(2) correct problems with faulty dynamometers,

(3) make sure that computer software operates properly and consistently so vehicles are tested accurately,

(4) provide additional training for employees so that all are adequately trained in the use of equipment and correct processing of paperwork.

The delays and damages to vehicles are inexcusable. The report last week that Envirotest plans to require more training of employees is too little, too late. We urge you to impose the maximum fines on Envirotest for the inconvenience they have caused thousands of Coloradans.

We take very seriously our duty to the people of Colorado. Clean air and customer service will continue to be the Democratic Caucus' bottom line on this issue. In order to fulfill our obligation, we believe it is necessary under the current circumstances, to ask you to take bold action in order to force Envirotest to meet its contractual obligations. If the company is unwilling to make the necessary corrections within the next thirty days, we recommend that Envirotest's contract be terminated.

Sincerely,

Peggy Kerns
House Minority Leader

Diana DeGette
Assistant House Minority Leader

Peggy Reeves
House Minority Caucus Chair

Glenda Swanson Lyle
House Minority Whip

Senator FAIRCLOTH. From the tone of this letter, it seems that a lot of people in Colorado are having a much worse time with this IM240 program than you might have indicated here today, so much so that the House Majority Leader and other Democrats demanded the Departments of Revenue and the Environment to immediately suspend mandatory centralized emission testing and take bold action to decentralize the testing, that the people doing the testing are poorly trained technicians, and many problems with it.

Would you care to respond to that? And are you familiar with the letter?

Mr. GETZ. I am not familiar with the letter, but I can certainly go through the legislative experience in the State of Colorado this year and shed some light on the thinking of the legislature, if you'd be interested in that, Senator.

This year there were a number of bills—I would say three or four bills which would have killed the program. The Colorado Senate and House in every case rejected those bills. There were concerns raised early on in the program, and there were hearings in January and February concerning these problems. One of the start-up problems was the inability to produce zoning permits in a timely fashion for a number of sites. Therefore the construction of the facilities was delayed. This caused a lot of the problems with the startup of the program.

The legislature acknowledged the start-up problems and wanted to give this program a chance to sort out its problems. The legislature told the contractor loud and clear that they will give him this year to work on those problems, and if they are not resolved, then the issue will be reviewed. I think everybody in the last 4 months has been working very hard to mitigate the problems. There has been a lot of changes in the contractor in order to make positive changes in the program.

Senator FAIRCLOTH. I thank you, Mr. Getz.

Do you have any other questions, Senator Chafee?

Senator CHAFEE. Yes, just one quick question, Mr. Chairman.

Mr. Getz, if the differential between the credits given for centralized versus decentralized were eliminated, would that kill the centralized effort?

Mr. GETZ. I think it would have severe ramifications within the State. No. 1, if they just eliminated that difference, it would be the wrong decision. We have to make the decision based on sound science. We have seen problems within our own program which would, in our mind, indicate that there is a difference between the two programs, and I think——

Senator CHAFEE. In other words, you believe that the centralized system, using the equipment—that is quite sophisticated—that you are achieving a greater reduction in emissions?

Mr. GETZ. There's no doubt in my mind, Senator, that that's true, that the IM240 test is a much more sophisticated test, and we will get more emission reductions.

If we went to a basic program, my concern would be that we would not meet our clean air objectives in carbon monoxide. As I mentioned before, we don't have the ability to reduce emissions from stationary sources and to look at regulations on the stationary sources.

Senator CHAFEE. Any other States doing centralized that you know of? As you pointed out, in your State you have centralized in some nonattainment areas but not in others.

Mr. GETZ. Yes, that's correct.

Senator CHAFEE. Other States, Arizona, California——

Mr. GETZ. I believe Arizona has a centralized program. I believe Wisconsin is moving in that direction. Connecticut is also moving in that direction, too.

Senator CHAFEE. But absent the differentiation in the credit——

Mr. GETZ. Excuse me, I didn't hear your question, Senator.

Senator CHAFEE. Absent the differentiation in credit, not getting the 50-percent credit, that's the incentive for pushing toward centralized?

Mr. GETZ. Well, I think the issue really comes down to emission reductions, yes. Whether it's 50 percent, 45 percent, or whatever that number is, certainly in our minds the IM240 technology shows us we can get additional credits, and we need those credits to meet our carbon monoxide standard.

Senator CHAFEE. Thank you.

Senator FAIRCLOTH. Thank you, Senator Chafee.

My question is this. You say the 50-percent reduction if you use decentralized—you only get credit for 50 percent of your reduction if you use decentralized testing, is that the way it works?

Mr. GETZ. Yes.

Senator FAIRCLOTH. I understand that. Well, why not get credit for the reduction you produce? Why a percentage of it?

Ms. Dunlop, if you are reducing your pollution in Virginia by 75 percent, why not get credit for 75 percent?

Ms. DUNLOP. Well, Senator, that's what we feel very strongly about in Virginia. We have come a long way in terms of improving our air quality and reducing emissions, and we think that our current program has done a very good job. We have made representations to EPA about our willingness to enhance our program and use more sophisticated equipment, although not the IM240 equipment, and strengthen our training programs for mechanics and inspectors. We believe that by enhancing our program and using remote sensing to both identify the gross polluters, who are really the biggest part of the problem in the mobile sources, as well as eliminating the need to test clean cars, that you will have the result that we all seek, which is improving the air quality.

Senator FAIRCLOTH. Well, that's what we're after. It seems ludicrous to me that you only get credit for half of your reduction if you do it with one machine rather than another.

Now, Senator Chafee, you will be much surprised to know that I have owned many dynamometers and know how to run one.

[Laughter.]

Senator FAIRCLOTH. So I just can't see the credit you would get because of the type of machine you use.

Ms. DUNLOP. Another big difference, Senator, if you will, is the cost differential. These pieces of equipment are incredibly expensive. It would very much discourage local service station operators from purchasing them and putting them in their garages—if they could fit them in their garages—so you would end up increasing

the cost to get any additional reductions you might get by quite an enormous sum of money.

Mr. GETZ. Senator, I would agree with you that it's appropriate to get the appropriate credit, based on the technology that you're using. I think that's the issue. I don't think we should be worrying about the numbers. I think it's up to the States to show what kinds of emission reductions we get.

There is a difference, though, however, on the technology of machines. The IM240 tests vehicles under load, and I think that's one of the reasons why we feel very positive about it. Under our old program we were missing a lot of vehicles that had emission characteristics that we were saying were clean cars; under the IM240 we found out that these cars are actually a lot dirtier than they were. Also, under the old idle tests we found out that a lot of the vehicles were showing up as dirty, and under the IM240, which is actually pressing the engine and making it drive under typical driving conditions, we're finding out that they were clean.

So the question comes down whether the technology really can identify different kinds of vehicles, and your emission credit should be dependent upon the dirty vehicles that you find, and also how they are being repaired.

Senator FAIRCLOTH. One quick question. What you're saying is that testing it under load conditions, which is what a dynamometer does—we use them on trucks, and then you, by water pressure, force the vehicle to pull as if it were climbing under great stress and strain, and you can actually stall it.

So you're saying that the difference is an idle test or a stress test?

Mr. GETZ. Yes.

Senator FAIRCLOTH. All right. Thank you.

We will move on to the next panel.

Thank you, Ms. Nichols.

EPA has expressed concern about the integrity—Ms. Nichols, do you have an opening statement?

Ms. NICHOLS. I do, Mr. Chairman, but I would be happy to waive it. You have been listening to the information here.

Senator FAIRCLOTH. No, go ahead. How long is it?

Ms. NICHOLS. Well, let me tell you. It is about 5 pages, and I will try to summarize if I can.

Senator FAIRCLOTH. All right. Go right ahead.

Ms. NICHOLS. Thank you.

STATEMENT OF MARY NICHOLS, ASSISTANT ADMINISTRATOR FOR AIR AND RADIATION, ENVIRONMENTAL PROTECTION AGENCY

Ms. NICHOLS. Mr. Chairman, air pollution continues to be a major public health problem in nearly every major city across the United States. Many citizens who live and work in our urban areas are exposed to unhealthy levels of carbon monoxide and smog. Like cars and trucks, air pollution also travels hundreds of miles.

The Clean Air Act Amendments of 1990 established a carefully balanced and comprehensive approach to protecting our health by reducing the threat of air pollution. The law requires every sector to contribute its fair share in lowering emissions of harmful pollut-

ants: factories, power plants, large and small businesses, auto makers, fuel providers, and individual car owners have also been asked to do their part.

Automobiles continue to be a significant source of pollution. The vehicle inspection and maintenance program is a critical element in our national effort to improve air quality and to protect human health.

The goal of this Administration is to implement the I/M program (inspection and maintenance program) in ways that make both economic and environmental sense. The three most common-sense and cost-effective ways to control air pollution from motor vehicles are (a) cleaner cars, (b) cleaner fuels, and (c) better maintenance. To achieve cleaner cars, we have been working with the auto manufacturers to improve new car technology and, of course, tremendous progress has been made. New cars today emit 90 percent less pollution than they did 20 years ago, but the sad fact is that cars deteriorate as they age, and even the highly sophisticated computer-controlled and fuel-injected cars that are being produced today often pollute between 2 and 17 times as much as the new car standards which they were designed to meet.

An inspection program is the cleanest, cheapest, and smartest way to identify those cars that would benefit from repairs and ensure that the repairs are made effectively, thereby protecting public health.

Congress first required States to begin inspection and maintenance programs in the 1977 amendments to the Clean Air Act. Some States chose to implement programs with stations that only perform tests, while other States adopted programs that allow auto repair shops to perform both the testing and repairs. At the time, under the 1977 amendments, EPA policy gave equal emissions reduction credit both to the test-only and to the test-and-repair networks.

Over the past 15 years, EPA and States have collected and analyzed a vast array of data on inspection and maintenance effectiveness and how it relates to program design. We found that test-and-repair programs are much less effective in reducing emissions levels for protection of public health than test-only programs. The Clean Air Act Amendments of 1990 specified that serious, severe, and extreme ozone nonattainment areas—in other words, the ones with the worst air pollution—and all the large cities within the Northeast Ozone Transport Region improve or enhance their existing I/M programs. This includes 83 cities in 23 States.

Enhanced I/M programs, required in the most polluted areas, reduce VOC emissions at a cost of about $500 per ton. This compares very favorably with other measures, such as stationary source controls, which cost anywhere from $2,000 to $10,000 per ton of VOCs reduced.

Maintaining our investment in testing and maintaining cars is a common-sense approach to protecting public health. In fact, implementing effective I/M programs instead of alternative controls on factories or further controls on new cars will save over $1 billion annually and increase the number of people employed in the automotive repair industry by between 4,000 and 11,000 people, so there is an upside even to the repairs in terms of jobs created.

Now, the most controversial element of the inspection and maintenance program in the 1990 amendments is without a doubt the statutory requirement that enhanced I/M programs be test-only, unless a State can demonstrate that a test-and-repair program is equally effective. Congress saw that in the 1980's, test-and-repair I/M programs suffered from improper testing problems, and that despite many attempts, States were unsuccessful in correcting these problems.

EPA relied heavily on the results from actual program performance data from California and other States in developing the discount for test-and-repair programs. EPA also conducted audits of I/M programs, as have the General Accounting Office and our own Office of the Inspector General. These audits involved over 10,000 separate undercover car runs and showed that a majority of the time, cars were being passed that should not have passed the test.

EPA realizes that some test-and-repair programs may be achieving greater effectiveness than these levels, and we are prepared to give more credit to States that can show greater effectiveness with actual operating data. EPA is working with several States to evaluate current program data to determine the appropriate levels of credit for those programs, and I'm happy to say that that includes the Commonwealth of Virginia.

EPA Administrator Carol Browner announced 6 months ago, that the EPA would create a new, low-enhanced performance standard that will be substantially less stringent than the current performance standard. These changes were proposed in the Federal Register on April 28, and a public hearing was held on May 17. Under this approach, States will not have to implement test-only programs if they do not need the higher level of emissions reductions that such programs provide.

In addition, EPA's new policy allows for hybrid systems that combine some test-only and some test-and-repair components. The hybrid approach offers greater public convenience possibilities and supports businesses currently involved in I/M testing and repair. Several States are also pursuing this approach, including the State of New Jersey.

For the majority of motorists who keep their cars reasonably well-maintained, the 15 minutes twice a year to get your car tested will be the extent of their involvement with inspection and maintenance. These cars will pass and they will be on their way, and the cars that do not pass will get needed repairs.

In closing, I have found that the vast majority——

Senator FAIRCLOTH. Did you say twice a year, or every 2 years?

Ms. NICHOLS. Every 2 years, I'm sorry. It's a biennial test. That was unclear.

Most people accept that they have a responsibility to maintain their cars in a reasonable manner and not to remove or disable the emissions controls. Most people—and this has been shown in a variety of different polls and focus groups and, I think, in terms of the way the programs have been accepted—most motorists agree that spending about $20 or 15 minutes every couple of years is a small price to pay for cleaner air and better health, provided that that test is accurate, fair, and convenient.

Thank you, and I would be pleased to answer your questions.

Senator FAIRCLOTH. Thank you, Ms. Nichols.

We have now been joined by the Senator from Florida, the very Honorable Bob Graham, who I understand has been tied up on the Senate floor and is now with us.

Senator Graham, would you care to make a statement?

Senator GRAHAM. Thank you, Mr. Chairman. I do not have an opening statement, and in light of my late arrival, I won't take any more time.

Senator FAIRCLOTH. Thank you, Senator Graham.

Ms. Nichols, I have some questions, and I will try to be brief so the others will have an opportunity quickly.

EPA has expressed concern about the integrity of mechanics and the possible fraud associated with test-and-repair facilities. It bothers me to a degree, as a long-time private businessman, that for the integrity of the business community of this country and their employees, this is somewhat a slap in the face to the American worker to imply or indicate—for EPA to imply or indicate—that they are not trustworthy, that to really get this job done right, you have to have Government workers or those tested. These are the workers who are paying the tax dollars to support EPA, and yet EPA is saying they aren't really to be trusted; you've got to go another way.

I don't find that I like that. Would you like to respond to it?

Ms. NICHOLS. Senator Faircloth, I'm not happy either, and it's quite ironic in some ways that the results have shown what they've shown. This is not something that EPA set out to try to establish. As I indicated, these tests that have been done over the years, both by States and EPA, were done on a wide variety of stations in many tests, and not all States have had the problem to the same degree. That's why we're going back now and working with individual States that have done a better job of enforcement.

But the basic question as to why this happens, I think, is a little bit surprising. You might assume, as I did—when I was first learning to drive and first driving around in New York State, they had a safety test. You would go in for your annual safety test and, lo and behold, the mechanic would say, "Oops, you need new windshield wipers," or you need something, and you always ended up having to pay a little something to get your sticker.

Senator FAIRCLOTH. I understand that.

Ms. NICHOLS. Now, in this program, it's the opposite. What we found, and what these tests have shown over and over again, is that in the average testing situation the incentive seems to be for the service station to simply sell the person a sticker, in effect; not to flunk them because they don't want them to go to the inconvenience of having to get the repairs.

Now, is this always a fraud? Is it a deliberate ripoff kind of thing on the public? I tend to think not. I think there are certainly some, and some have been prosecuted. In California, where I have lived for the last 25 years, there has been a very active program and some station owners have been prosecuted for literally being in cahoots with some used car dealers. But this is not the major problem——

Senator FAIRCLOTH. May I ask you a question? What kind of testing program does EPA have on the testing of the integrity of its own employees?

Ms. NICHOLS. EPA does not hire Inspectors, Senator, and we don't advocate a program where the Government would have to run the testing program. I think there is perhaps some confusion about this term "centralized station." A test-only station can be run by a single contractor. A State can franchise the test-only station. It is not something that has to be done.

Senator FAIRCLOTH. Well, maybe we can move on to another question.

Ms. Nichols, as you may be aware, there is a draft bill in the House prepared by Representatives Istook and McIntosh which seeks to expose to the light of day Federal Government grants to lobbying groups. This draft bill was the subject of a Wall Street Journal article on June 23, and I am delighted to see this bill and will seek to work with other Senators to see that it passes in the House.

Ms. Nichols, could you tell me, how much money does EPA give to advocacy groups each year to promote the Clean Air Act? And by advocacy groups I include nonprofit groups—supposedly nonprofit, such as AARP and the American Lung Association. You tell me how much money you give them.

Ms. NICHOLS. I don't have that information with me, Senator. I'd be happy to provide it, but I can assure you we don't provide any money to groups for the purpose of lobbying Congress or the EPA on the Clean Air Act. We do provide grants from time to time to nonprofit organizations—as I understand the tax laws, groups that are 501(c)(3) can spend up to 10 percent of their funds to do lobbying, but those funds cannot be funds that they receive from the Federal Government, and we would not be giving groups funds for that purpose.

Senator FAIRCLOTH. Do you audit the use of the funds?

Ms. NICHOLS. We do. Our grants, both——

Senator FAIRCLOTH. You mean you audit AARP, what they do with their——

Ms. NICHOLS. I personally don't. I don't believe we give any money to AARP.

Senator FAIRCLOTH. EPA does?

Ms. NICHOLS. I don't believe EPA has grants with AARP. I'm not aware of any such grants.

Senator FAIRCLOTH. You don't believe what, I'm sorry?

Ms. NICHOLS. I don't believe that EPA has any grants with the AARP, to my knowledge. I would be happy to check that for you, but in my personal knowledge, we don't.

Senator FAIRCLOTH. I understand, for example, that EPA has given money to the lobbying groups for the I/M folks, the Coalition for Safer, Cleaner Vehicles, or one of its subsidiaries or associates, and AARP receives at least $20 million per year from EPA. The Senior Environmental Employment Program, $20 million a year. This is nearly half of the $45 million budgeted annually for this program, $20 million of it going to AARP.

It is inconceivable to me that EPA, always talking about not having enough money to do their job, constantly wanting more money,

is giving these vast amounts of money to other organizations. Do you have any explanation of it?

Ms. NICHOLS. Senator Faircloth, as I indicated, I am not familiar with AARP grants. I don't believe those are in the air program, but I will check that for you.

With respect to the Coalition for Safer, Cleaner Vehicles, I recall that that question has been asked with respect to a program that we had with this group to do mechanic training so that when cars flunk at an I/M program, they can be properly trained to perform——

Senator FAIRCLOTH. That's AARP training the mechanics?

Ms. NICHOLS. No, no. This was the Coalition for Safer, Cleaner Vehicles.

A note was handed to me. The only thing I can think of with respect to AARP is a clerical staff program where we hire retired former Federal workers. They are called AARPs, and I didn't remember the acronym. I know I have one employed in my office who answers the phone early in the morning, before the other people get to work, and does Xeroxing and other clerical tasks for us on a very inexpensive basis, up to the limit that they are allowed to earn under their Social Security. These are retired workers. That's the AARP program that I am familiar with.

Senator FAIRCLOTH. How many people have you employed, or do you have in your office, that are opposed to the EPA programs and the I/M testing program?

Ms. NICHOLS. I have no idea, Senator. I don't take a loyalty oath from my employees about any program.

Senator FAIRCLOTH. Ms. Nichols, I am surprised that you don't know about the AARP. Members of my staff have spent a great deal of time trying to determine where your grants really go and these enormous amounts of money and what the money is really used for, and so far we haven't been able to determine it. Apparently EPA has no systematic way to track the use of the programs or the grants, and we want to find out why this is.

I won't go into it deeper today. I'm going to give the others a chance to ask questions, but I would like for you to provide me with a comprehensive written answer to the questions I've asked on this as to where it goes, who gets it—I mean, pretty infinite answers.

[Information to be supplied follows:]

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

AUG 10 1995

OFFICE OF
AIR AND RADIATION

The Honorable Lauch Faircloth
Chairman, Subcommittee on Clean Air, Wetlands,
Private Property and Nuclear Safety
Committee on Environment and Public Works
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

Enclosed are responses to the questions you asked in your letter of July 20, 1995, regarding vehicle emissions inspection programs. I hope these responses are useful to you and members of the Subcommittee.

My staff and I are ready to assist you further in any way possible. Please contact us if you have additional questions.

Sincerely yours,

Mary D. Nichols
Assistant Administrator
for Air and Radiation

Enclosures

RESPONSES BY MARY NICHOLS TO QUESTIONS FROM SENATOR FAIRCLOTH

EPA'S EMISSIONS MODEL

Question 1. Briefly describe all of EPA's evidence that conclusively demonstrates real world emissions reductions resulting from centralized I/M programs, and compare this to emissions reductions from fleet turnover and stationary source controls.

Answer. Initially, EPA conducted a large-scale study of the effectiveness of Oregon's centralized I/M program in 1979 and 1980 that showed that the program reduced CO emissions among subject vehicles in Portland, Oregon, by 36 percent and HC emissions by 20 percent compared to similar vehicles in Eugene, Oregon, where there was no I/M program. EPA conducted vehicle tampering surveys from 1979 to 1990 in urban areas all over the country, including areas with centralized programs, decentralized programs and no I/M programs. These surveys found that rates of tampering with emission control systems on vehicles were lower in areas with centralized I/M programs than in areas with decentralized programs.

EPA has been conducting an extensive study of the effectiveness of the IM240 test at test lanes in Indiana and Arizona including verification that commercial repairs of vehicles which fail IM240 yield significant emissions reductions. EPA has also compared the emissions of vehicles subject to California's test-and-repair I/M program with emissions of vehicles subject to Arizona's test-only program and found emissions of Arizona cars to be lower. This comparison is detailed further in the "EPA Response to the California I/M Review Committee Report on I/M Effectiveness," which is enclosed. Additionally, a recent study of the effectiveness of Minnesota's test-only I/M program by Sherman Engineering showed significant emission reductions from that program.

With regard to fleet turnover, it is important to note that turnover will only reduce fleet emissions as long as new car standards are continually being reduced and as long as vehicles are maintained to retain those lower emission levels. It is important to note that the introduction of Tier 1 standards in 1994 was the first tightening of new car standards since 1981, and that no further reductions in standards are required by the Clean Air Act. The emission reduction potential of I/M relative to stationary source controls depends on the relative contribution of mobile and stationary sources to the air quality problem in a given area. In some areas mobile sources contribute well over half of the ozone precursors, hence, the attainment strategy for such an area would need to rely heavily on mobile source control strategies, of which test-only enhanced I/M is the most effective, and most cost-effective presently known. On the other hand, there are areas where stationary sources contribute heavily to the air quality problem, hence, the attainment strategy would need to rely more on stationary source controls. One of the primary goals of EPA's flexibility rule on I/M is to give States the freedom to make such choices.

As you requested, the above information represents a brief response to your question. There is, of course, a large amount of technical data available on this issue. We would be pleased to have our staff explain the data to Subcommittee staff if that would be useful.

Question 2. Has EPA run any complete I/M evaluation program using real world (not model) data from roadside or other surveys to demonstrate that any centralized 1M240 program achieves EPA's own performance standard?

Answer. There are two IM240 programs currently in operation. Both have been operating for less than a year and, hence, are too new to have had a complete evaluation. EPA will continue to review data from these programs as they become available. As was stated at the Subcommittee hearing on June 29, all I/M programs, regardless of network type or test type, will be carefully evaluated with actual emissions data to determine whether their emission reduction targets are being met.

Question 3. Has the accuracy of EPA's mobile source emission model been demonstrated by scientists outside of EPA? If so, please identify each scientist or scientific organization, and provide a copy of each accuracy report and conclusion.

Answer. A number of independent studies have been done checking the accuracy of EPA's models. The tunnel studies that have been performed in the last 8 years, particularly the Van Nuys study (1987) and the Fort McHenry and Tuscarora Mountain studies (1992), have been used to examine the ability of the model to estimate emissions under the conditions represented by such studies. Tunnel studies are somewhat limited as a check on the accuracy of the model since they measure emissions under a very specific set of conditions in terms of roadway type, traffic speed and other variables. Reviews of the equations and assumptions in the model have been done by Sierra Research and Systems Applications International (SAI) under contract to the American Petroleum Institute. EPA has used these studies in devel-

oping recent revisions to the MOBILE model. These studies, their findings, and implications for the MOBILE model are summarized in the enclosed EPA white paper, "Highway Vehicle Emission Estimates—II."

THE CREDIT DISCOUNT

Question 4. When asked if EPA would give full credit for actual emissions reductions, regardless of the type of plan a State used, you responded EPA would give full credit. Will EPA give full credit for a State implementation plan (SIP) prospectively if a State can demonstrate that its proposed enhanced program, irrespective of network type or equipment, will reduce emissions? If EPA favors imposing the credit discount prior to the development of program specific data on the enhanced programs, please explain the basis for this policy.

Answer. EPA intends to give States full credit for actual demonstrated emissions reductions from their I/M programs. EPA is prepared to give credit prospectively to States implementing test-and-repair or hybrid enhanced I/M programs based upon the effectiveness of their current test-and-repair I/M programs as demonstrated by actual program data. EPA is working with the States of Utah and Virginia to develop a protocol for evaluating the effectiveness of current test-and-repair programs. Once complete this protocol could be used to evaluate current programs in any other State.

Question 5. Immediately after your testimony on June 29, 1995, that States would receive full credit for their emissions reductions, Dr. Lynn Scarlett testified that California was told by EPA on June 28, 1995—the day before your testimony—that California would not receive full credit for its reductions under its submitted SIP. Please explain, in detail, the discrepancy between EPA's opposing positions.

Answer. See enclosed letter of July 11, 1995 to the Honorable John H. Chafee.

Question 6. How will EPA address the question of evaluation criteria for test-and-repair programs? Will EPA jointly develop these with the States and use a uniform set of criteria to evaluate programs nationwide? What are EPA's proposed program and evaluation protocols?

Answer. EPA is developing an evaluation protocol cooperatively with officials in the States of Utah and Virginia to evaluate the effectiveness of their current test-and-repair programs based upon emission test data and other factors. EPA is still in discussions with these States and plans to seek other input on the protocol before considering it final. Once it is final it can serve as a standard for evaluating any current test-and-repair program.

Question 7. Considering the recent Utah and Virginia experiences, would EPA object to changing the presumptive equivalency policy to allow States to claim up to 100 percent of the performance standard for SIP purposes and allow States up to 2 years to evaluate program performance?

Answer. Utah and Virginia have provided data to EPA that suggest their current testing programs have overcome past problems of improper testing of cars when first presented for inspection. However, the analyses in Utah and Virginia regarding overall program effectiveness are still under way. Important questions of repair effectiveness and second test accuracy need to be resolved.

Question 8. During the hearing, you mentioned that EPA performed an audit of Virginia's I/M program in 1990. How many of the audited vehicles received pass certificates, and what was the sample size compared to total annual tests performed in Virginia's program.

Answer. EPA covertly audited 36 inspection stations. Of those only 5 properly failed the vehicle, 25 improperly passed a vehicle with a missing catalytic converter, and 29 improperly passed a vehicle with disconnected evaporative hoses. The Virginia program had 354 licensed stations as of January, 1990, hence, this sample represented about 10 percent of the licensed stations.

Question 9. In light of recent Utah and Virginia experiences, how will EPA modify its test-and-repair discount policy? Will this include changes in: (1) the Mobile5a model, and (2) 40 CFR 51.353?

Answer. The evaluations in Utah and Virginia are still under way. EPA has not yet been able to draw any overall conclusions about the effectiveness of those two programs.

STATE IMPLEMENTATION PLANS (SIPS)

Question 10. Please detail the status of SIP sanction clocks for State enhanced I/M programs based on the most recent information, including the July 15, 1995, SIP

submittals. Please include information on: the status of each submittal; State negotiation status; sanction actions being considered, taken, or scheduled; and third-party lawsuits.

Answer. Enclosed is a summary report detailing the status of SIP submittals and related actions for each enhanced I/M State. Overall, we have been very successful in working with States to meet the clean air planning requirements while avoiding sanctions. In fact, while over 1900 separate State plan revisions have become due since 1991, only seven resulted in sanctions and four of these have been corrected. Only one State—Vermont—is under sanction for failure to submit an I/M SIP. Two-to-one stationary source offsets are in effect; highway sanctions will not take effect because the affected area is not designated nonattainment. All other States have either submitted I/M SIPs, or are expected to submit them prior to the expiration of their sanctions clocks.

SANCTIONS

Question 11. What is the current EPA policy on enhanced I/M sanctions; has it been published; and has it been made generally available?

Answer. EPA recognizes that States wishing to take advantage of the new flexibility rules will need to make adjustments to their programs and is working to help those States avoid sanctions in the meantime. EPA is working with the States to help them submit SIPs meeting the requirements for completeness. Once the SIP is submitted a completeness finding by EPA stops the sanctions clock thereby lifting the threat of sanctions from the State. EPA then has up to a year to approve or disapprove the SIP. The State can also revise its SIP at any time after turning it in to EPA. EPA has communicated this policy to the affected States through ongoing working groups dealing with SIPs. A written explanation of this policy has also been placed on the Technology Transfer Network (TTN) electronic bulletin board where it is accessible to State program personnel and the general public.

Question 12. Does EPA currently have the regulatory flexibility to delay sanctions against States that may technically be in violation of SIP provisions but have agreed to specific actions to implement enhanced I/M, or does EPA need changes in its regulations or the Clean Air Act statute itself to achieve this type of flexibility?

Answer. All States affected by the enhanced I/M requirement are in a position to be able to turn in a complete SIP to EPA before their SIP clocks expire, and EPA is working with each State to identify the necessary steps to do so. At this point the agency has every indication that all States required to do enhanced I/M that are actively developing programs will be able to submit SIPs to EPA, enabling EPA to stop their sanctions clocks before those clocks expire.

Question 13. Since final rulemaking on the proposed flexibility regulations is not due until August, how will EPA evaluate the enhanced SIP elements submitted on July 15, 1995? Will sanctions be issued even if the topic causing the sanction is under regulatory review?

Answer. EPA's first action, when a SIP is submitted, is to determine whether or not it is complete. This action stops the sanctions clock. The agency then has up to a year to review the SIP to determine whether or not the SIP can be approved. In the interim, the State can revise its SIP submittal. Hence, the complete plan that stops the sanctions clock might be different from the plan that is ultimately approved and implemented. No State with a sanctions clock due to expire in the next few weeks is expected to incur sanctions.

THE WAIVER

Question 14. Is it correct to assert that the waiver burden will fall most heavily on those least able to pay? Please discuss the environmental justice ramifications of the waivers. Do you think that, for the economically disadvantaged, $500 spent on health care, or better food, or books, might result in longer, more productive lives than $500 spent chasing the last remnant of automobile pollution control?

Answer. It is true that older vehicles are more likely to fail an I/M test than new vehicles, and it is true that lower income people generally own older vehicles. Consequently, an equity issue could exist with the statutory requirements regarding waiver eligibility. It should be pointed out that program data from Phoenix, Arizona, and Denver, Colorado, show that IM240 failures are being repaired at an average cost of around $160, and that waiver rates are low. Hence, most motorists are not being subject to repair costs of $450 or more. Also, our data suggests fuel economy improvements resulting from repairs can offset most, if not all, of the repair cost. EPA's flexibility rule gives States additional options such as the phase in of the repair cost limit and allowing greater use of extensions. The new low enhanced per-

formance standard can also be used to grant exemptions or extensions to groups of economically disadvantaged individuals and substitute reductions from other sources, if substitution is needed to meet other clean air targets. Finally, States can, and have adopted special provisions to assist low income motorists in paying for necessary repairs. EPA expects that States will use the additional flexibilities to address the equity issues your question indicates.

PUBLIC ACCEPTANCE AND COST

Question 15. In the initial rulemaking, EPA discussed the importance of public acceptance of the program. Yet, EPA has built a program seemingly designed to encourage public hostility. Could you describe how EPA has taken public acceptance into account, especially focusing on those States which have never had a centralized test-only program.

Answer. The experience of States implementing centralized, test-only I/M programs in the late 1970's and early 1980's, when I/M programs were being implemented for the first time, indicated that the public is willing to accept such programs under a couple of conditions. The first is that testing networks be designed to offer convenient service; i.e., to assure convenient hours of service, short driving distances, short wait times, and certainty of service. The second is that the public receive detailed information on how the program will work and why it is being implemented. With that experience in mind, EPA included requirements in the I/M rule that States demonstrate that test networks will provide convenient service to motorists, and that State implementation efforts include a public information and outreach effort. In addition, EPA has provided States substantial flexibility in designing effective programs that are also consumer friendly. For example, New Jersey decided to generally allow retests to be provided by the service facility.

Question 16. One of the elements of the test-and-repair program that EPA appears to have concerns with is the possibility of conflict of interests. Do you think that test-only State-contracted facilities will face political pressure to keep lines short and failure rates low, and economic pressure to keep contractor award fees high and budgetary stress minimal?

Answer. EPA is aware of the possibility that improper testing can occur in test-only programs as well as test-and-repair. Audits are required of all I/M systems, including test-only programs. While EPA's audits of test-only programs have occasionally found operational problems, those problems were generally found to be corrected in follow-up audits, whereas follow-up audits of test-and-repair programs generally found problems persisting from previous audits.

Question 17. In your testimony, you mentioned that with enhanced I/M, VOC emissions can be reduced at a cost of $500 per ton. Please provide a step-by-step calculation of how EPA derived the $500 per ton figure.

Answer. The derivation of this figure is detailed on pages 79 to 81 of EPA's report entitled "I/M Costs, Benefits, and Impacts," which is enclosed.

EPA EXPENDITURES RELATED TO I/M

Question 18. Please list the date, amount, and purpose for all contracts, grants, interagency agreements, cooperative agreements, or other funding mechanisms used by or issued under the auspices of the Office of Mobile Sources subsequent to the Enhanced I/M Rule's issuance on November 5, 1992. Please also identify the same, from November 1989 to the present, for the following organizations.

Answer.

Organization	Amount	Date	Purpose
American Association of Retired Persons	None		
American Lung Association	None		
Automotive Support Programs for Inspection, Repair, and Emissions (ASPIRE).	None		
Center for Auto Safety	None		
Clean Air Vehicle Association	None		
Coalition for Safer Cleaner Vehicles (CSCV)	$46K	April 1995	Support CSCV's effort to develop a corps of master automotive repair trainers with expertise in diagnosis and repair of emissions malfunctions.
CSCV along with the Consumer Federation of America.	$150K	June 1995	Develop and distribute public informational materials on I/M

Organization	Amount	Date	Purpose
Coordinating Committee for Automotive Repair (CCAR).	$250K	February 1994	Coordinate automotive repair technical education and training efforts throughout the country, to identify sources of automotive repair training, and to enhance the image of the automotive repair technician.
CCAR	$75K	April 1995	Reauthorization of CCAR grant (see above).
Council of Advanced Automotive Trainers Education/Training Advisory Board.	None		
Environmental Defense Fund	None		
Envirotest	None		
Equipment and Tool Institute	None		
Federation of Automotive Qualified Technicians National Education Resource Center.	None		
Natural Resources Defense Council	None		
Public Citizen	None		
Systems Control	None		
Tejas Testing	None		

Note: Some of the listed organizations with whom EPA did not enter into any contracts or assistance agreements directly are member organizations of CCAR and/or CSCV. Therefore, it is possible that CCAR and/or CSCV procured the services of some of these organizations using the funds listed above. For example, we know that CSCV has given funds to ASPIRE to prepare training materials used in EPA/CSCV's "Train the Trainer" project. If requested by the subcommittee, EPA could submit further details on CCAR and CSCV projects.

Senator FAIRCLOTH. Senator Chafee, I will turn Ms. Nichols over to you.

Senator CHAFEE. Well, thank you very much, Mr. Chairman.

Ms. Nichols, one of the points seems to be being made here is, instead of having the credit determined by what the State does, i.e., centralized versus decentralized testing and monitoring, that instead of doing that we ought to go by the progress that's been made in meeting the pollution standards. In other words, if Virginia has a completely decentralized system with no centralized facilities whatsoever, but if they are on a downward curve in the pollution, wonderful. Now, that's the proposition as I understand it here, and it's rather appealing. What's the downside to that? What's the hitch? Trying to find the baseline?

Ms. NICHOLS. Yes, Senator. The issue here, I think, is attainment of air quality standards. That's what this is all about. We aren't asking people to inspect cars because we want them just to inspect cars for the fun of it; it's because these programs are supposed to be helping us reach the ultimate goal, which is healthy air. So you have a certain number of tons of VOCs and carbon monoxide that you have to get out of the air through some fashion or another.

It is EPA's belief that States should have as much flexibility as possible in designing the programs that will get them to that ultimate goal. The one thing that we want to be sure of is that we aren't giving people credits in advance for programs which either haven't been done, or which can't be demonstrated; that when a State such as Virginia has a program which they claim does better than the average in terms of a decentralized test-and-repair program, with good enforcement where the rate of mistesting would be better than that 50 percent, we are prepared to assign them more credit based on actual data.

Senator CHAFEE. So therefore they wouldn't have the sanctions imposed on them, the loss of the highway funds?

Ms. NICHOLS. That's correct.

Senator CHAFEE. Well, I'm not so sure—is that totally understood by each of the States? In other words, it seems to me that the Virginia folks are saying, "We're doing an excellent job; we are monitoring the system, but we think we ought to get 100-percent credit instead of 50-percent credit."

Ms. NICHOLS. Senator, I think there are two answers to that question.

The first is that under the old regulations, prior to the proposal that EPA put out in April, EPA in essence could not allow States to vary from the IM240 test-only system unless they had data of a very narrow kind which essentially made it difficult for States to do a different kind of program.

Since that proposal came out we have made it very clear that States can establish additional credit for a number of different kinds of enhancements other than just switching their programs to get up to the full credit, as well as being allowed, if they wish to—for example, if a State has other ways of getting the necessary reductions in VOCs, they can go with a low-enhanced program and really not do any significant changes to their existing basic programs. So States really have both of those choices.

The one thing that we haven't been able to figure out how to do, and frankly don't think we should do, is to "cook the books" in terms of assigning numbers that we don't know how to assign without any real data. But as soon as we get the data, once States start these programs, whatever they choose to do, we will be happy to give them credits in terms of adjusting their SIPs, adjusting their attainment demonstrations, to meet the real world credits that they are generating. So in a sense, we're in sort of a hypothetical argument, I think, with some of the States about whether we will up front give them the credit. As I said, we are trying to give credit for anything we can find in their programs that we can give credit to, but we cannot say that 50 percent is 100 percent, or that any decentralized program is as good as a centralized program. We need to have some data to look at.

Senator CHAFEE. I'm not sure I totally understand this. Let's say that you have two States—let's just take Virginia's decentralized program that's wonderful, it's well-monitored and it does the job in a splendid fashion. Now, you have another State with a centralized program, but it's badly run and the equipment doesn't work and so forth. Now, the one with the centralized program, as I understand it, gets 100-percent credit for having adopted this enhanced I/M; am I correct?

Ms. NICHOLS. No, not exactly, and let me try to explain.

Prior to 1990—and I'll use Virginia—the data that EPA and the State of Virginia had, and these tests were done by the States, EPA in 1990 audited Virginia's I/M program, and at that time, prior to the passage of the 1990 amendments, they visited 36 stations. They found that five stations falsely passed a car on a tailpipe test; 25 stations falsely passed a car on a catalyst check; 29 stations falsely passed the car on a check of the evaporative system hose, as well as a number of other omissions or failures in the testing program, for an 85-percent failure rate in terms of the number of opportunities that that inspection system had to correctly inspect cars.

Now, since that time, and since the amendments were passed, Virginia has apparently greatly expanded its system of covert audits and its enforcement, as you heard from the witness earlier, and they now claim to have data based on several years of new data that shows that their system is much more effective.

Now, based on the old audit data that we had for Virginia, we should be giving them 15-percent credit for their I/M program. We instead developed a set of regulations that laid out a model I/M program using state-of-the-art dynamometer equipment and using a test-only system, and called that the "ideal world," and then discounted from that to various other kinds of things that States might actually choose to do. If Virginia were to leave its plan intact, they would get 50-percent credit, but——

Senator CHAFEE. But they can't get over 50?

Ms. NICHOLS. Well, no, they can, actually, because now under our new proposed regulations they have additional data that shows they deserve better, so we will review that data with them and we will give them more.

Senator CHAFEE. I think that's also what the Gregg amendment does, that went on our National Highway System bill.

Ms. NICHOLS. Yes, that's correct.

Senator CHAFEE. One quick final question. I know Senator Graham is waiting.

This is in connection with California. As I understand it, California didn't want to go to a centralized program, and EPA allowed them to do a study on the effectiveness of the decentralized program. So they submitted the study to EPA, and EPA hasn't yet acted on it—or, they haven't approved it yet. Action is needed because pretty soon California is facing sanctions.

So my question to you is, what's the status of the California study? And can a decision be expected soon, before the sanction clock ticks further?

Ms. NICHOLS. California is under a clock to submit their final I/M plan to EPA by the end of the month, and the board has passed a plan which we are awaiting. The study that you referred to was a study that was a part of a memorandum of agreement with the State of California which showed that the State, with all of the various improvements that they will make and have made in equipment and enforcement and monitoring and so forth, that they could do a program which was a hybrid program in which approximately 36 percent of the cars would go to a test-only system and the rest would go to a test-and-repair system, and they were targeting which cars would go to which kind of a system.

If the State submits the plan to us with that provision in it, we will be able to approve it and it will pass the completeness test based on the studies that they have submitted. We have not yet actually received the plan.

Senator CHAFEE. It was my understanding that they had submitted some kind of study to you and were awaiting approval of the study, and they were quite anxious to get that approval quickly because of sanctions about to be levied on them.

Ms. NICHOLS. That's not quite accurate. We had indicated that the study was acceptable to us, and now we're just waiting for the plan.

Senator CHAFEE. OK, fine. Thank you.
Thank you, Mr. Chairman.
Senator FAIRCLOTH. Thank you, Senator Chafee.
Senator Graham.
Senator GRAHAM. Thank you, Mr. Chairman.

Ms. Nichols, I am looking at section 182(c)(3) of the Clean Air Act Amendments of 1990, which contains the enhanced vehicle inspection and maintenance program statute. It has now been 5 years since these amendments were adopted, and approximately 2 to 3 years since States were under the mandate to have a plan for implementation.

With that degree of experience, would there be any modifications in the statute that you would recommend for Congress to consider?

Ms. NICHOLS. Senator Graham, I think that despite the difficulties of startup of these programs and the delays, which in part were caused by EPA's slowness in getting the initial regulations out and then the shifting approach which really came about as a result of greater interaction with the States and some of the difficulties that they were experiencing in designing programs that would work for them, I think we are on track now with most of the States to get programs up and running which will greatly improve the state of vehicle inspection and maintenance in this country in the areas that need these programs. I don't know of any State where the process has been completely simple—possibly your own State of Florida, which I understand has a centralized I/M program, although it is an attainment State and seems to have had a good experience with the program. It might be the exception. But in most States, any type of change in what people have to do with their cars is a very difficult process for the legislature, for the administration, and so forth.

But we are now moving forward, I think, quite successfully in the States that have their programs under way—Arizona, Connecticut, the midwestern States are moving forward. A number of States have just made the decisions about the kind of programs they want to do, such as New Jersey and New York. Maryland, after a pause, is beginning to get ready to startup their program.

We still have a couple of States where we have to work out the details of the programs with the States, but overall I feel that we will be in a situation by the end of this year in which all the States that needed enhanced inspection programs will be well under way to improving those programs in ways that they find acceptable and that will really improve the air for their citizens.

So it is not my feeling that we need legislative amendments to accomplish that result.

Senator GRAHAM. In terms of that ultimate goal, improving the quality of air for citizens, what are the principal indicators you look to to assess whether in fact that goal is being attained, particularly indicators that would assess the impact of vehicle emissions on the attainment of that goal?

Ms. NICHOLS. Well, ultimately, of course, the test of all of our efforts is whether the air, as it is monitored in the communities, is getting cleaner. And happily, it is.

In terms of assessing the contribution of any individual program to that overall air quality improvement, it's a little bit more com-

plicated. But with automobiles, the real world data that we should look to, I believe, is the emissions test. I think we should take cars and audit them in terms of how they do on a real world-type test, such as the test that they were originally certified on, using the Federal test procedure. And we can, then, once programs have been underway for a period of time, actually see whether we're getting the reductions on those automobiles that we anticipated from the I/M programs. We are beginning to get some of those kinds of data, and they are, I think, supporting the effectiveness of the programs.

But it is early in the process.

Senator GRAHAM. Using those types of performance indicators, what is your evidence that as a general rule a centralized system using the stated equipment, which is currently predominant, is superior to a decentralized system? What is your assessment of the degree of superiority?

Ms. NICHOLS. There are two studies that we can look at. One is a study that was done by Radian Corporation, which also did the California study that was cited earlier, for British Columbia, using a test-only, but not an IM240. They used an ASM test and found that the program was achieving the performance goals——

Senator GRAHAM. If they were using British Columbia as their model for a centralized system, what was their comparable for a decentralized system to give a comparative effect?

Ms. NICHOLS. That program only looked at the program compared with its predicted performance. The comparative data that we have at this point would compare Arizona, which has a centralized IM240, with California, which at this point is using a decentralized program with a BAR90. And we do have now some data that compared the 326 vehicles that California studied with 1,143 vehicles that were evaluated in Arizona. I have a chart here which I will provide to the committee which shows a differential.

It depends on the model year of the car. It ranges from about .1 grams per mile for the 1993 cars, to something closer to .8 grams per mile going back to the 1984 cars. But across the model years, it indicates that the Arizona cars are cleaner than their exact counterparts in California, and since you've got two States with comparable climates and comparable fleets, that's a pretty good comparison that would indicate that the Arizona program is working better than California's current program. Now, that doesn't take into account the fact that the California new car standards are actually cleaner than Arizona's. New cars sold in California are required to be somewhat cleaner than they are in Arizona, so the fact that the Arizona fleet is turning up cleaner on these inspection and maintenance tests is a pretty significant indicator, I think, of the fact that the Arizona program is a better program.

Now, I would hasten to say that California recognizes that they need to upgrade their program, and they are moving in that direction. This is based on the old program, not their new, enhanced program.

Senator GRAHAM. Is the new program also going to be a decentralized program?

Ms. NICHOLS. The new program will be a hybrid, a mixed program, with some of the cars going to test-only. Mostly, the older

cars are the ones that are expected to be the gross emitters, and the newer cars will go to decentralized.

Senator GRAHAM. New cars going to the decentralized, and old cars are required to go to the centralized——

Ms. NICHOLS. Will have to go to the centralized system, right. That's California's choice. It doesn't have to be done that way, but I believe they feel it is more effective to target the gross emitters, and they are most likely to be the older cars, or cars that have failed on a remote sensing test. There are various other criteria that they are using to try to assign cars to the centralized stations. But they will allow consumers to choose, actually; if a customer wants to go to a centralized station, they will be allowed to do so.

Senator GRAHAM. One final question, if I could, Mr. Chairman.

Are there any other studies that are currently under way or contemplated that will do a comparative assessment of centralized and decentralized?

Ms. NICHOLS. Senator Graham, we are in the process of convening an outside panel of people from academia, States, the auto industry, the fuels industry, to give EPA technical advice about a number of issues relating to evaluation of our programs and our data. One of the issues that we are going to be asking them to address is to help us design a program that will help to answer many of the questions that have been raised about the effectiveness of inspection and maintenance programs. I think that, given the amount of controversy, particularly in States that have had existing test-and-repair systems that have now been moving or partially moved into centralized, that it is very important that we design a test that has some independent peer review and hopefully will help to answer many of those questions.

Senator GRAHAM. Mr. Chairman, that concludes my questions. If I could make an editorial comment, I am a strong believer, whether it's in environmental areas or education or health or whatever other area of public programs, to evaluate based on performance as opposed to process. I would suggest that this section, section 182(c)(3), which is highly process-oriented, as we look forward to the next Clean Air Act Amendments, that it would be helpful if the Department, applying some of the experience that it has and is gaining in terms of how to approach regulation through performance rather than through process, might apply some of that learning in terms of restructuring this relationship of EPA to the States, to be one of telling the States, "Here are the standards of performance upon which you are going to be judged; it's your responsibility to figure out a program that makes the most sense in order to accomplish those, and if you do so, that's fine with us, whatever the program is. If you don't meet that performance standard, then we are going to reserve the right to come in and tell you how to do it." But the initial responsibility ought to be at the State level against a clear set of performance standards.

Ms. NICHOLS. Senator, we agree with you that that's the objective and that is the way the program should work. I think we will be assisted by the fact that the States that are doing enhanced programs, that were required to enhance their programs under the Clean Air Act, are doing an evaluation of those programs. That's actually part of the existing regulations. So within 2 years of the

time that the program begins, they will start generating data about the effectiveness of their programs, and that will give us a base to respond to.

Senator FAIRCLOTH. Thank you, Ms. Nichols.

Thank you, Senator Graham, and I agree totally with your editorial comment.

Ms. Nichols, I would like to ask you one quick question because time is moving on and we have other panelists, and if it's possible, I'd like a yes or no answer.

Are you telling us that if any State reduces emissions by 80 percent, that that State would get full credit for all of its reduction instead of—it would get credit for all of the 80 percent, no matter how they tested for it?

Ms. NICHOLS. Yes.

Senator FAIRCLOTH. All right. Thank you so much.

Senator CHAFEE. Now, Mr. Chairman, one point. As I understand the Gregg amendment, which we adopted—again, I'm replaying this back to the National Highway System bill that we passed a week or so ago—that covered the situation that Senator Graham is discussing. In other words, it is results rather than process, as I understand the Gregg amendment. Therefore, if the achievements are only a 10-percent reduction, then that's all they get credit for; if it's an 80-percent reduction, then they get credit for it.

Now, the problem with the Gregg amendment is that it hasn't passed the House yet; and indeed, they haven't dealt with their National Highway System bill yet. Also, was it suggested that that amendment only apply for a year, did you say? Are you familiar—take a look at it.

Ms. NICHOLS. Yes. We have looked at the amendment. We think it's consistent with the approach that EPA is now taking under the proposed amendments to the inspection and maintenance regulations.

Senator CHAFEE. So what you're saying is that you don't even need the amendment?

Ms. NICHOLS. Well, we believe that the approach that we are now taking in our discussions—with Utah, for example, and with Virginia—you will see when the results are done that in fact we are capable of giving credit based on the real world performance of their existing programs.

Senator CHAFEE. Well, that seems to make an awful lot of sense. Thank you.

Senator FAIRCLOTH. Thank you, Senator Chafee, and thank you, Ms. Nichols.

I ask that our third and final panel come to the witness table.

I would like to welcome Dr. Lynn Scarlett from The Reason Foundation in Los Angeles, California; Dr. Doug Lawson of The Desert Research Institute in Reno, NV; and Mr. Michael Walsh, a private consultant based in Arlington, VA.

If I may ask, in view of the hour and time—it's almost 4 o'clock, and I understand we have a vote at 5 o'clock or thereabouts—if you would limit your opening statements to about 5 minutes, and we would be happy to enter any additional statement into the record.

Dr. Scarlett, we will begin with you and your opening statement, if you have one.

STATEMENT OF LYNN SCARLETT, THE REASON FOUNDATION, LOS ANGELES, CA; ACCOMPANIED BY DOUGLAS LAWSON, THE DESERT RESEARCH INSTITUTE, RENO, NV

Ms. SCARLETT. Thank you, Senator.

Just a clarification for the record. I actually have completed my Ph.D. exams and coursework but I have not finished my dissertation, so in the lingo I'm what's called "ABD," a not-quite-doctor. "ABD" is "all but dissertation."

[Laughter.]

Ms. SCARLETT. I am Lynn Scarlett, chair of California's Inspection and Maintenance Review Committee. I would like to thank Senator Faircloth for holding hearings on these issues, which are critical to the State of California.

Briefly, I want to tell you what the function is of the I/M Review Committee in California. We are independent from any agency. We are not part of the Bureau of Automotive Repairs, the Air Resources Board. We were independently appointed by the Governor and the State Legislature. Our function is to recommend to the State of California, after reviewing immense amounts of data from several pilot studies that we put in place, and make recommendations to the State on what kind of I/M program might be expected to achieve real world reductions in vehicle emissions in the most cost-effective manner.

I want to emphasize, as Secretary Dunlop emphasized, that our goal is in fact clean air. We want, however, to measure that goal in the real world and achieve real reductions, not measure ourselves against a hypothetical model.

I want to make a few comments on our views of what is required for program success. There is no magic bullet, whether it's IM240, whether it's centralized testing, whether it is, indeed, remote sensing. We believe that success is a function of a complex set of factors, especially for a State like California. You've heard some figures on vehicles out there. We have 20 million vehicles in the State of California, all of which in one way or another need to be tested or examined.

There are five components, in our minds, that are important to the success of our program.

The first is identifying gross polluting vehicles. By that I mean that that, of course, is the test; how do you identify the cars?

I want to point out—Mary Nichols made the point that there are vehicles out there that are currently at two times the FTP standard. That is a tiny, insignificant amount of emissions when you might understand that there are cars out there with emissions of eighty—80—times the FTP standard. Our concern is those cars, finding those gross emitting vehicles.

The second component is to diagnose what it is that's causing those cars to have high emissions.

Third is, of course, to repair those. Simply doing the test does not do the job. One must repair those vehicles.

Fourth, one wants to verify that those repairs endure over time. One of the things we have seen is the "clean for a day" phenomenon; that is, on the day of the test cars do go in and they get temporarily repaired, but folks have an incentive to get a certificate, not to get their cars repaired in an enduring fashion. So we think

you need to monitor in between tests, whether it's in between those 2-year tests or in between those 1-year tests, a constant monitoring of whether vehicles are in fact continuing to have those emission reductions.

Finally, as was suggested by Secretary Dunlop, we need to provide a context that creates incentives for folks to clean their cars, not just get a certificate. We are examining the prospects of having a "clean screen" for cars that are operating clean so that it gives people an incentive to have their cars clean. If they go by a remote sensor and it reads their car as clean several times, we might screen them out of the program and exempt them. That gives them an incentive to keep their cars clean.

Does the EPA enhanced program satisfy these five criteria that I have set forth? We would suggest that it does not.

First of all, the EPA enhanced program focuses all of its attention, or a great deal of its attention, on the test, all the bells and whistles in an expensive IM240 test, notwithstanding the fact that our own pilot study in which we examined different test types suggests that many different tests, some of which are much less expensive, actually fairly well identify these gross emitting vehicles. Test type is not the significant factor in identifying gross emitters.

The second point, EPA's ideal program, as has been suggested, targets all vehicles equally rather than simply dirty cars. If you recognize that many of the cars out there are clean, and clean all the time, what you want to focus on is that subset that is as much as 80 times the FTP.

I see that yellow light on, so I am going to scurry forward here.

Senator FAIRCLOTH. No, you need not rush. Just stick close to the 5 minutes. We'll work it out.

Ms. SCARLETT. I do that at the stop signs, too.

[Laughter.]

Ms. SCARLETT. Finally, the EPA program ignores motorist incentives to just pass the test. By the way, this motivation to just pass the test is a phenomenon that we see in both test-only programs—notwithstanding all the comments you heard from the State of Colorado and from Ms. Nichols—we find this phenomenon of just passing the test a problem in both test-only programs and in test-and-repair programs.

I want to make a point about the State of Arizona, which was mentioned. The State of Arizona has a test-only centralized program. An Auditor General's report for that State, in a survey of auto technicians, reported that 88 percent of auto technicians in that test-only program said that consumers asked them simply to repair their cars to pass the test for the day. A fourth of consumers surveyed in that State said that they do readjust their cars after the test, so the test-only program does not overcome that problem.

Why do we see EPA's current regulations on oversight of inspection and maintenance as a problem for the State of California and other States? I would suggest to you that, notwithstanding what you've heard about EPA's commitment to flexibility, that that flexibility is illusory. Currently they do not—and notwithstanding Ms. Nichols' final comments, they will not—approve a program and give full credits ahead of time. Once your program is under way and after you've had it in place for several years, if you can dem-

onstrate with real world data, you may get increases in the credits allotted to you. The State of California was informed yesterday that the program that we are proposing, which is a hybrid test, will not receive full credits. This I heard last night at about 12:30.

I want to note also, just so we don't have any illusions, that none of the programs currently under consideration, including EPA's enhanced I/M model, have really been tested in the real world. These are all new programs, new designs, new efforts to achieve air quality. So EPA's program is as hypothetical as the hybrid programs that the State of California is examining.

EPA continues to rely—and this is a fundamental problem—on a mobile emissions model, not real world evidence of program performance, to assess equivalence. Why is this a problem? I want to state a few points about that model.

The model is only as good as the assumptions within the model and the degree to which the model reflects reality. We would suggest that based on our examination, the model does not meet a reality test. Consider two brief points. Model results do not match well with actual ambient air data that have been observed by Doug Lawson and others; that is, when you run the model, you get certain emissions and expected emissions reductions. When you compare that to the real world, they do not match up. In fact, the model understates actual emissions ambient air data by two- to three-fold, and yet this is what EPA relies on to develop program equivalence.

Second, the assumptions in the model are not always based on empirical evidence. We have a commitment in the State of California to science, and that is why we developed the I/M Review Committee, which is independent and which hired independent scientists to help us understand these. Most notably, the 50-percent discount that EPA applies to test-and-repair programs is not based—again, notwithstanding what you heard earlier today—not based on science. To my knowledge, the California Inspection and Maintenance Review Committee is the only committee that has undertaken an independent review of all of the data that EPA has utilized, the audit data that have been cited, the tampering survey data, and all other emissions data. We are the only ones who have done an independent review of those data to see whether they in fact demonstrate a 50-percent discount.

Specific findings, very briefly. We find among the different test-only versus test-and-repair States no significant difference in tampering rates; that is, the degree to which vehicles have been tampered with, whether they're in a test-only or a test-and-repair State.

Second, we find that——

Senator FAIRCLOTH. What do you mean by tampering?

Ms. SCARLETT. Vehicles whose emissions equipment, catalytic converters, have been tampered with, hoses that are disconnected, that sort of thing that might be associated with high emissions from a vehicle. You find a fair amount of that on cars, particularly when you do random roadside pull-overs of cars and look under the hood and so on.

Now, tampering is not always deliberate. The word "tampering" is used both for undeliberate——

Senator FAIRCLOTH. Now, how did it come up? How did you get into using the word "tampering"? You said there is no significant difference between the test-only and the test-and-repair States as regards tampering?

Ms. SCARLETT. That's correct. Doug Lawson, who is here as my technical consultant, is actually going to show a chart on that. But essentially, there have been many roadside pull-over programs in which vehicles have been pulled over and examined to see the degree to which there is tampering or not. Those data for many vehicles in both test-only States and test-and-repair States demonstrate no significant difference in tampering rates between the two kinds of programs.

Second, the State audits——

Senator FAIRCLOTH. Are you about through with your statement?

Ms. SCARLETT. Almost done. One minute.

Also, State audits do not demonstrate the superiority of test-only, and I will refer you to the I/M Review Committee's report for that analysis.

Finally, emissions data—also, you heard a lot about Arizona compared to California. We did look at those data and we found that in its analysis EPA failed to control for such things as the fact that one State had oxygenated fuel and one did not, which results in significant differences in emissions. They did simply not control for confounding variables, if you will. We find no difference between Arizona emissions in a test-only State and California's test-and-repair.

I am going to conclude with the bottom line. At issue is not whether we pursue clean air goals; we are committed to that. At issue is not whether we have an I/M program. The State of California is committed to that. At issue is what program will work best. It is the State of California's view that the EPA approach, which targets all vehicles with a high-tech, sophisticated test, will be a high-cost option. We think we can do better. We think we can do better with a hybrid program, and to do that we need flexibility and we need full credit for the program that we're going to implement, and we need that up front. Then we want to put our feet to the fire and actually measure our performance, see how we do, and adjust our program accordingly.

Thank you.

Senator FAIRCLOTH. Thank you, Dr. Scarlett.

Now we will have an opening statement from Mr. Walsh.

Again, if you could keep it short, because time is running on.

STATEMENT OF MICHAEL WALSH, CONSULTANT, ARLINGTON, VA

Mr. WALSH. Thank you, Mr. Chairman and members of the committee. I will keep it short. I will submit my full statement for the record.

Senator FAIRCLOTH. Well, thank you. We are not rushing you, but we have three Senators who would like to ask questions.

Mr. WALSH. I understand. You can always read the statement afterwards.

Let me go right to the heart of the matter, then, and try to address what I think are three questions that seem to be of interest

to you. First, what is the real world potential of the centralized, or test-only, I/M programs?

Second, can well-designed test-and-repair programs likely achieve the same potential?

And third, what is the role that remote sensing should ultimately play in these programs, potentially as an alternative, which some people have suggested?

In my experience over many years, I think the difference between centralized and decentralized programs has tended to stand out. I had a similar experience to Senator Chafee. I used to work for the city of New York a number of years ago, and I think you had to bribe somebody to pass the program, it was such a——

Senator CHAFEE. Now, I didn't get that far.

[Laughter.]

Mr. WALSH. I know. I know. I didn't say I did, either——

[Laughter.]

Senator CHAFEE. I've been brooding over what I said, and what I said was that there is a very high rate of passage. But I never mentioned the word "bribery" in there.

[Laughter.]

Mr. WALSH. The point is that the programs in Portland, OR, in Phoenix and Tucson, AZ, and in New Jersey for a number of years stood out as examples of very successful programs, compared to—in the case of New Jersey, it was being compared to the New York City program, and comparable comparisons with the others.

I think the most recent example of a good centralized program was touched on briefly by Ms. Nichols, and that is the program in British Columbia. The program started in 1992 with an I/M program in the Lower Fraser Valley. It incorporated what was then a state-of-the-art inspection and maintenance program. It tested for hydrocarbons, carbon monoxide, oxides of nitrogen, using the so-called acceleration simulation mode test, and it demonstrated in a recent audit—now we have a couple years' experience to see how well it worked—that emissions have been reduced in that program by approximately 20 percent for hydrocarbons, 24 percent for carbon monoxide, and 3 percent for the oxides of nitrogen. They found in the audit that fuel economy for the failed vehicles, when they were repaired, improved by approximately 5.5 percent, for a substantial savings for each of those vehicles per year. It also demonstrated that the centralized program was resulting in a high-quality test. After reviewing over 2 million tests, the auditor concluded that only in 1.1 percent were incorrect emissions standards applied to these vehicles, and not one instance was found where a vehicle was given a conditional pass or a waiver inappropriately.

Available data also indicate that many of the vehicles that failed and were repaired successfully passed the retest when they went through in the following I/M cycle, over 53,000 vehicles in that category.

Overall, I think these data confirm the conclusion that I/M programs, when properly performed—and that doesn't indicate that you can't do a centralized program badly—but when they are properly performed in a centralized facility using a loaded mode test procedure, there is real world data that says that these programs work.

Looking at some of the enhancement that EPA has called for for these programs, such as including an evaporative test, going beyond the ASM test to IM240, and so forth, one would expect that you would get additional benefits from such a program.

Now, as we look at combined test-and-repair programs, they are seen to have many advantages over the centralized program. More convenience has been mentioned, lower cost, more flexibility. Most importantly, if a person fails, they could get the vehicle fixed right away and not face this ping-pong effect that we all are concerned about.

I must say, as a citizen of Virginia, having lived there for 20 years and gone through their program—and I commend the State for improving that program and I think making it one of the better decentralized programs—I wouldn't argue that it's a more convenient program. It is a rare occasion for me to go through that program and not take at least an hour, waiting. Each vehicle takes 20 minutes, at least; pull into the bay, get the inspection, pull out of the bay, get the paperwork done, the next car pulls in. So unless you're the first car there in the morning—which I guess I don't get to be—it usually takes—you know, if you're third in line, it takes you an hour. That's typical, and I think it's something you live with. In a centralized program I think the waiting times generally are less, and I had the experience in New Jersey, where I lived for a couple of years. I perhaps gamed it properly, but I knew to go at the early part of the month, and I tended to get through those inspections quite rapidly.

There are some fundamental problems with the test-and-repair program that I don't think anyone has adequately overcome. Even in the State of California, which in comparison to Northern Virginia has over 600 State employees inspecting the inspection program, I think it's the most intensely looked-after program in the country. When you look at what the problems are; first, the potential for good quality control in a garage environment where you have tools and lubrication oils spilling occasionally and grease on the floor and so forth, the ability to quality-control the inspection itself is much harder than it is in a facility that mass-produces inspections and just brings vehicles through in a high volume.

Second, the ability to prevent fraud is much more difficult in that environment. That's not to say there aren't a lot of very honest people doing that work, but as pointed out to me in some discussions I had when I chaired a California peer review committee a couple of years ago with the District Attorney, it is inherently easier to police 200 lanes than it is to police 8,000 lanes. It's just an inherently more difficult problem.

Finally, the cost-effectiveness of doing high-volume tests in a throughput lane is just inherently easier and more cost-effective than it is one by one in a private garage-type environment.

Let me jump and just say that of all of the data that I have ever seen, I have yet to see a program—and I held out California as the state-of-the-art—I have yet to see a decentralized or combined test-and-repair program get reductions, demonstrated reductions, real world reductions, that are anything like what we now see from the British Columbia program.

Finally, remote sensing has been held out as a tool that has great promise for complimenting—and perhaps substituting for—an I/M program. Proponents have argued that it's a very useful tool to screen cars for subsequent in-depth inspection. They argue that it is uneconomic to test all cars when only a fraction are expected to be high emitters, and remote sensing can identify those vehicles.

There are several logistic and technical concerns in this regard. The primary concern is, how do you remotely sense the majority of the population? In its current use, remote sensing requires that vehicles pass the sensor in a single line, in single file. It has not been shown to be practical to constrict heavily traveled roadways to a single lane during rush hours, for example. Concepts of how remote sensors could be used in multiple lane situations have yet to be adequately tested. In addition, remote sensing cannot yet measure evaporative hydrocarbons, which are an important source. I am optimistic that they will be able to test NOx, but not yet. They have not been demonstrated to be able to do that.

The best program of that type has been carried out in Sacramento just a few months ago. While it expected to test most of the vehicles in Sacramento, it was really unable to test very many of the older vehicles, some of which are very high-polluting.

I think I will conclude by just saying that as I look at the available data, it does say that the prospects of cost-effective and effective inspections and repairs tend to be much greater with centralized than with decentralized, and the use of remote sensing as a compliment to I/M holds out very high promise, but not as a substitute for I/M.

Thank you, Mr. Chairman.

Senator FAIRCLOTH. Thank you, Mr. Walsh.

Dr. Scarlett, I have just a couple of very quick questions, and I will move on to the other Senators and give them an opportunity.

This is more of a statement than a question, but maybe you can respond to it. I asked this to Ms. Nichols as the last question, whether EPA would give full credit to a State for all of its credits; that is, would you get 80 percent if you test 80 percent? And she said that they would, that that was the policy. Now, if I understood you correctly, you said that California was informed last night that it cannot get full credit for its testing program. Did I hear both of the statements correctly?

Ms. SCARLETT. I believe you heard both statements correctly, and I think the confusion is that, at least as we understand it, EPA currently will not give full credit prospectively; that is, at the outset of a program you will not get full credit. I think what they are perhaps contemplating is that after your program has been up and running, and if you measure the reductions and can demonstrate them, then sometime down the road you may get your credits adjusted. That, of course, is not good solace for States that are facing sanctions in the meanwhile; they will have to find those credits from somewhere else.

Senator FAIRCLOTH. For right now, for the first round, I am going to go to Senator Chafee and see if he has some questions.

Senator CHAFEE. Thank you, Mr. Chairman.

Mr. Lawson, you are here to back up Dr. Scarlett and help her, is that it?

Mr. LAWSON. Yes. I had actually prepared a 5-minute statement. There was a misunderstanding between staff and us, I think, about that.

Senator CHAFEE. I'm sorry, did you have an opening statement?

Mr. LAWSON. Yes.

Senator FAIRCLOTH. I was informed that you did not. I'm sorry. Please go ahead and give it. I was of the opinion that you did not have an opening statement, but we would be delighted to hear it. I didn't mean to ignore you. Thank you.

Mr. LAWSON. Thank you. That was a misunderstanding on my part.

STATEMENT OF DOUGLAS LAWSON, THE DESERT RESEARCH INSTITUTE, RENO, NV

Mr. LAWSON. Good afternoon, Senators. I appreciate your holding this hearing this afternoon.

I would like to mention a few points, just summarize and take a few minutes here. My presentation will consist of the following components.

As an introduction, my name is Doug Lawson. I'm a research Professor at The Desert Research Institute in Reno, NV. We're part of the University of Nevada System, and we're serving as consultants to the California I/M Review Committee.

I would like to summarize in my presentation the following points.

First, I want to discuss the use of mobile source emission models; second, I want to summarize mobile source emission characteristics; then we want to discuss real world observations of I/M program effectiveness; next we want to discuss results from the California pilot study that was just completed; we then want to discuss the test component of I/M programs, and following that the repair component of I/M programs; and finally, brief conclusions.

Senator FAIRCLOTH. All in 5 minutes.

[Laughter.]

Mr. LAWSON. First I would mention that EPA's mobile source emissions model has not been independently verified for accuracy. Every time we have performed comparisons of real world data with the model—and I've been involved personally with that—we see that the model greatly underpredicts mobile source hydrocarbon and carbon monoxide emissions. It also overstates the effectiveness of I/M programs.

Also, the model is used to construct emissions inventories, which are the cornerstone of our Nation's air pollution control policies and programs. Therefore, costly and ineffective control strategies are enacted by Government agencies if the official inventories are incorrect. Also, incorrect and inefficient I/M program policies are enacted if the model itself is incorrect.

Next, if we look at mobile source emissions characteristics themselves, what we observe in the real world when cars are warm and in stable operating conditions is that at least half of the carbon monoxide comes from fewer or less than 10 percent of the vehicles; also that in the case of hydrocarbons, exhaust hydrocarbons, again, more than half of the hydrocarbon emissions come from less than 10 percent of the vehicles.

We don't know much about nitrogen oxide emissions and how they are distributed among vehicle, but we suspect also there is a skewedness in those emissions, as well as some data analysis that we have done.

What we don't know is the absolute magnitude of evaporative hydrocarbon emissions. We don't know that information, although the EPA model says they are half of the mobile source emission inventory. Therefore, since what we do know should be the focus of the program, I/M programs should really focus on the high-emitting vehicles.

Now, let me talk about I/M program effectiveness. I have a graph here that I want to present, first saying that EPA's model says that decentralized or test-and-repair programs are only half as effective as centralized programs. Let me put up our poster here.

These are real world data from EPA's tampering surveys, conducted between 1985 and 1990, from 44,000 vehicles stopped nationally as they were driven on the road. What we observe here—I know the printing is a bit small—the top row is newest vehicles that were stopped in that survey; the middle row is the middle-technology vehicles, from 1975 to 1980; and then—excuse me, from 1980 to 1984—and the bottom row is the oldest vehicles, from 1975 to 1979 model years.

Then the data are divided into columns, where we have the newest cars, as far as odometer, in the left column; the oldest cars, as far as odometer readings, in the right column.

Within each panel here I've divided it into a tampering rate or broken failure rate of "N," which is program cars from non-I/M areas; the "D" stands for tampering or broken vehicle rates in decentralized areas; the "C" is data from cars that are from centralized areas. As you move across each row you see that tampering rates increase as mileage increases on the odometer. Also, the oldest cars have the highest tampering rates.

What is most noteworthy, however, is that centralized and decentralized failure rates are nearly identical, but the most disturbing feature is that those program types are not much better than no program at all. So what we observe here as far as broken vehicle failure rates is that these failure rates are nearly identical between centralized and decentralized areas, and those two program types are about the same as no I/M program at all. That's very different from what EPA's model says, and these are real world data.

So there is no basis in fact for the 50-percent discount in effectiveness that EPA's model gives to decentralized I/M programs.

Next I want to summarize just briefly the findings from the California pilot study, and I'll do that just quickly.

First, the majority of vehicles—and I'm saying about 70 to 80 percent of vehicles—that currently fail I/M tests are only marginal emitters. We've learned that half of these vehicles' emissions actually increase after repairs, in the real world.

Second, more than half of the total excess or repairable emissions of hydrocarbons, carbon monoxide, and nitrogen oxide emissions come from only 20 percent of the failing vehicles. Let me repeat that. More than half of the repairable emissions that come from failing cars come from only 20 percent of those vehicles. So if we have an I/M program that is failing about 20 percent of its vehicles,

then 20 percent of 20 percent is 4 percent, so we should only be concerned about targeting as little as 4 percent of the fleet to find at least half of the repairable emissions of hydrocarbons, CO, and nitrogen oxide. It's a very small part of the fleet.

Again, the focus on I/M, as Lynn Scarlett mentioned, should be on quickly identifying high emitters, diagnosing them properly, repairing them, and verifying the repairs. We call this an IDR program.

The third point is that we learned that all of the emissions tests are nearly equivalent in identifying high emitters. For carbon monoxide and hydrocarbons, idle tests and all the dynamometer tests are nearly equivalent. For nitrogen oxides, all the dynamometer tests are nearly equivalent.

The issue in the current I/M debate has been on the tests, such as loaded mode tests versus idle tests or the testing scenario, that is, centralized versus decentralized. It appears that this is the least important issue. The test itself does not reduce emissions, as has been implied here earlier today. That's just an inspection. So $20 plus 15 minutes every 2 years does not clean the air; that's simply a test. Again, what's most important in the lack of success in I/M are hypotheses about human behavior and motorists' desires to pass the test.

Also, the costs of I/M are greatly underestimated. Ms. Nichols, in her testimony, mentioned a $500 per ton cost for hydrocarbons. Our data from the new California program indicate that the costs will exceed more than $5,500 per ton for the combined pollutants. So there is an order of magnitude between what we observe in the data and what Ms. Nichols mentions. This needs to be fully investigated.

Finally, we have learned from the recent study that to repair broken vehicles, it costs much more than previously reported. In the recent California study it was costing about $400 per vehicle to repair cars that were broken. We just completed a study in Orange County, CA, where the costs were probably exceeding more than $500 to $600 per car.

The common-sense approach to reducing mobile source emissions is to spend the limited resources on rapidly identifying and diagnosing and repairing vehicles instead of just emphasizing the test. There is a tremendous economic potential for qualified, competent, and honest technicians to repair vehicles.

Finally, and maybe most importantly, there needs to be real world evaluation of I/M program effectiveness so that corrections and adjustments can be made if those are needed so that we can improve the effectiveness of the programs. These can be done by several methods, such roadside surveys, remote sensing surveys, and tunnel studies, where we actually measure the emissions of vehicles as they drive through the tunnels. As Senator Graham said, performance should be mentioned and measured.

In my opinion, there are no provisions for I/M program evaluation provided for by the 1990 amendments to the Clean Air Act. They are simply not there.

To summarize, mobile source emission models are not sufficiently accurate for evaluating I/M program effectiveness.

Second, mobile source emission characteristics show a very skewed emission distribution, even among failing vehicles.

Third, there is no scientific basis for the 50-percent discount in program effectiveness for decentralized test-and-repair programs, as stated in EPA's model.

Fourth, although I believe that I/M programs must be doing something, we can't see any effect of any I/M program type in reducing tampering or real world emissions.

And fifth, I/M should focus on rapid identification, diagnosis, and repair of vehicles, with verification of those repairs, because as little as 4 percent of the fleet may be the part of the fleet that is most important to be targeted in these programs.

Thank you.

Senator FAIRCLOTH. Thank you, Mr. Lawson.

I have a question for Dr. Scarlett, if I may. As I said earlier, time is moving on; if you will concentrate on keeping your answers brief so that we can finish up here this afternoon.

Has an appreciable difference in air quality been obtained as a result of centralized testing in any area that has implemented it in the country, as opposed to the other types of testing?

Ms. SCARLETT. Briefly, I would suggest that we have not seen data to indicate that, but I would like to defer to Dr. Lawson because he has reviewed those data carefully.

Senator FAIRCLOTH. Dr. Lawson?

Mr. LAWSON. Yes. Given that we don't see much of an effect from the different program types on reducing failure rates in vehicles, it would be very difficult to observe a change in ambient air quality. In fact, there is work that has been done by investigators at the University of Minnesota that indicates at most about a 1-percent decrease in ambient carbon monoxide due to Minnesota's centralized I/M program. So there's very little indication that you can actually observe any noticeable or attributable effect to improving air quality from I/M programs.

Senator FAIRCLOTH. Dr. Scarlett, in 1988 the country was in the grips of a once-in-a-century heat wave. Because of that, many EPA programs were devised to allegedly alleviate the poor air quality we recorded during the heat wave. Dr. Scarlett, do you know what has happened in these so-called "poor air quality areas" since 1988? Has it continued to be poor? Or as the weather has abated, has it become better?

Ms. SCARLETT. Well, as we know, never say "always" with the weather.

You are quite right to point out those data. Some of the figures used to push additional air quality programs and emissions reductions were based on kind of a spike in weather conditions that made air particularly bad. In intervening years, the air quality does appear to have been somewhat better. However, I must say—and certainly in the State of California, notwithstanding the 1988 weather conditions, we do continue to have an air quality problem that does need some addressing. Now, whether that is more generalizable over the rest of the country is less clear, but our problem has been so acute that it continues even when the weather conditions are more favorable.

Doug may have a comment on that, too.

Mr. LAWSON. Yes. There are a number of areas that are now currently in attainment that weren't, based on that hot summer of 1988. I know there has been some consideration of how that might influence possible revisions or changes or modifications to the 1990 amendments.

Mr. WALSH. Can I make an observation on that, Senator?

Senator FAIRCLOTH. Yes, you may.

Mr. WALSH. I think it is important to note that already this year—and it's not even July yet—we have had a number of violations in this part of the country of the ozone standard. I note, for example, Detroit is one of the cities that Dr. Lawson refers to that we hoped was going to be in attainment, but they now have had a couple of violations already this month, so the weather is turning on us again, unfortunately, and it does indicate that the problems are not solved, by a long shot.

Senator FAIRCLOTH. Do you think there is any possibility that an inch of rain every other day has had any effect on it?

Mr. WALSH. The last week, it has.

Senator FAIRCLOTH. I ask Senator Chafee if he has any questions, but let me comment very quickly——

Senator CHAFEE. Sure.

Senator FAIRCLOTH [continuing]. On something you asked about. When Mr. Walsh or Dr. Scarlett mentioned tampering, if you look under the hood of an automobile, particularly those that might have a little age on them, 5, or 6, or 7 years, when this first air pollution control came out, it is a maze of pipes and tubes and equipment under there, and some of it was not as well thought-out as it might have been when it was put on there, and it was not as well put on or installed, and as this car or vehicle ages this stuff gets loose and floppy and tends to make it not run as well, so a lot of people simply reach in and take it out and simplify the carburation of the automobile.

Senator CHAFEE. I was going to say, that's spoken like somebody who has had some experience in it.

[Laughter.]

Senator CHAFEE. Mr. Chairman, first of all, I want to thank you for holding this hearing, and I'd like to hearken to the statistics that Mr. Walsh gave us because I think they are very significant, and I think they call to mind why we're doing this. This isn't just some big exercise that a bunch of bureaucrats are imposing on us. I refer to page 2 of Dr. Walsh's testimony. These statistics, by the way, I have heard before, and thus I have reason to believe that they are accurate, and perhaps you could give us your source, Mr. Walsh. But let me just read this:

"In 1990 there were 50 million more cars on U.S. highways than there were in 1970." In other words in 20 years, 50 million new vehicles have been added to the number of vehicles—not total vehicles, cars only—on the roads of the country. Now, where is that from?

Mr. WALSH. That's from the American Automobile Manufacturers Association.

Senator CHAFEE. OK. Now, with 50 million more vehicles, there has been a reduction in carbon monoxide—I'm sorry you didn't give

these in percentages—but the carbon monoxide has been reduced from 67.9 tons per year——

Mr. WALSH. Senator, the last line has it in percentages. It's a 60-percent reduction in CO.

Senator CHAFEE. OK. In 20 years, with 50 million more vehicles, the carbon monoxide has been reduced by 60 percent; the hydrocarbons have been reduced by 70 percent; and the NOx has been reduced by 46 percent.

Now, you might say, "What do we care? What difference does it make?" Well, I think it has a lot to do with the condition of those who live in areas where the pollution is heavy. If you look on page 3, Mr. Walsh has pointed out that motor vehicles remain the largest single source of pollution in this country; this is especially true in the most polluted areas. And who lives in the most polluted areas? The poorest people in our society. And where are our children who have possibilities of risk under this? They are in the most congested areas, and they are from the lowest income groups in our society.

So there's a lot of talk around the Senate about regulations and Government and all the wicked things such as that, but I call attention to these extraordinary statistics that Mr. Walsh has brought to our attention. Remarkable things have been achieved. They weren't all done by Government, but Government told the manufacturers, "You reduce the pollutants that come from the vehicles you produce."

Was it you, Mr. Walsh, who said that a modern vehicle today has 90 percent less pollution than a vehicle built several years ago? Was that you, Mr. Walsh?

Mr. WALSH. No, it wasn't, but the standards for new vehicles are 90 percent lower. The actual reduction is less than that, but still quite dramatic.

Senator CHAFEE. The other point is a very interesting one and gets to cost efficiency, and that's the point that Mr. Lawson was making. As I understood your point, Mr. Lawson, it is that if you really want to get to this problem, get to the high emitters; don't fiddle with the others; you're just working around the edges. And if you correct the high emitters, you're taking care of the greatest percentage of your vehicles. Now, you have the high emitters down to 4 percent. How did you do that? Wasn't it you that gave——

Mr. LAWSON. High emitters down to 4 percent? Could you clarify?

Senator CHAFEE. Somebody had the percentage of getting it down, 20 percent of 20 percent—wasn't that you?

Mr. LAWSON. Oh, yes. My statement was that it looks like about—as small as maybe 4 percent of the entire fleet is responsible for half of the repairable or reducible emissions of hydrocarbons, carbon monoxide, and nitrogen oxides.

Senator CHAFEE. It's too bad that we don't have some kind of a system that you could go through quickly and determine whether you're an emitter, or you're a severe emitter. Somebody, maybe Dr. Scarlett, mentioned a "clean screen" that you could go through and determine whether you're a problem-causer. It seems to me that if we had some kind of a system where you could get off the highway and go through this clean screen, and if you're clean, you get your

sticker and you're on your way without delaying things, without going through the testing that Mr. Walsh was describing where you wait some time.

Is there such a thing as a clean screen?

Mr. WALSH. Senator, there are efforts underway to develop such technologies in the future where you could remotely sense—the on-board diagnostic system on the vehicle—so that you could remotely identify whether there are defects on vehicles. Unfortunately, I think this is a technology that isn't here today. It may be here in the next 5 or 10 years, then will take 10 years or so to become the dominant part of the fleet. I think in the interim we have to deal with the vehicles that we have today.

Senator CHAFEE. Isn't California—aren't some States involved in buying up the clunkers? Isn't that true?

I'm calling you "Doctor Scarlett" because I figure you're going to pass your orals, or do you have to write your thesis?

Ms. SCARLETT. I have to write that darned thing.

Yes, California does have a buy-back program for vehicles. One of the problems with the program is that it does not necessarily target dirty cars; it targets old cars. But what Dr. Lawson and others have found is that not all old cars are dirty. So what you want to do is better target that to the really dirty cars, the ones that are as much as 80 times their standard, for example.

I would like to disagree slightly with Mr. Walsh in that we do think there is some role right now in technology in the form of remote sensing—not as a magic bullet, not to be used all by itself, but we are exploring the prospects of putting remote sensors either at test sites, at our small component of test-only sites, so that cars as they go in there and go by can get a quick screen with the remote sensor. We have done some work on that and have found that the remote sensor does a very good job of screening out the clean cars in a predictable fashion again and again and again. So we think that that is an option that is here now. It obviously can be refined.

Senator CHAFEE. Now, with this type of remote sensing, you must have to use it in a setting that is relatively unpolluted by other vehicles, don't you? You can't just do it with a car going by like with a hand-held radar, can you?

Ms. SCARLETT. Doug can describe the technology, but what we have in mind with the pre-screen would be to actually do it at a test site, so they would be relatively free of other cars all going all over the place.

An alternative is to have remote sensors on the road, but have them on single lanes where you're not likely to have multiple cars going by at once. We do agree with Mr. Walsh that there are problems with doing that, but we think there's still an option here to use this as a clean screen.

Mr. WALSH. If I could just add to that, I think we agree. I don't think we disagree on that. I think remote sensing is a wonderful device and it has a great utility—again, as a supplement, though, not as an alternative to the inspection program. It can help focus you on these very dirty vehicles.

Senator CHAFEE. Do you agree, Mr. Walsh, that if you identify the high-emitters and get them out, you've gone a long ways toward solving your problem?

Mr. WALSH. Yes, definitely, but I don't think it's 4 percent of the vehicles. I think there are probably 20 percent of the vehicles that we can productively cleanup. It's finding those 20 percent that's the real challenge and getting them cleaned properly. As Dr. Scarlett has pointed out, it's not just finding them; it's getting them repaired properly, and I think a good inspection test after the repair is also a critical element in this program—not just identifying them, but making sure they are repaired properly.

Senator CHAFEE. Thank you, Mr. Chairman.

Senator FAIRCLOTH. Thank you, Senator Chafee.

A quick question. Were you thinking about offering the Escort to the California program?

[Laughter.]

Senator FAIRCLOTH. I want to thank the current panel members and all of those who have been with us today who have testified. I think we are all going away a lot smarter and with a lot better understanding and a sounder basis for what we're trying to do. I think we're all headed in the same direction; it's just the method by which we get there. We all agree that we have to clean up the air, we have to eliminate the pollution as best as practical and possible, so we are headed the same way.

The American Automobile Association and a number of groups have had great problems with centralized testing as opposed to testing in individual stations. I don't know that we've heard a lot here today to say that there's a lot of advantage to be gained from centralized testing. The data will be analyzed, we will look at it, and we will probably be back in touch with some of you to try to finalize the results before we start writing law. But I tend to agree that centralized testing sounds pretty cumbersome, and I think it's maybe not the way to go.

But I thank you all for coming, and we will be back in touch. I thank you.

Senator CHAFEE. Mr. Chairman, could I just say one other thing?

I think it was Mr. Lawson—we got into the cost per ton of vehicles as opposed to the cost per ton for cleaning up from a stationary source. The statistics I had was that it costs $500 per ton for vehicles as opposed to stationary, but somebody said it was $5,000. Was that you?

Mr. LAWSON. Yes, I did say that.

Senator CHAFEE. Well, that's some jump from $500, but still half of the stationary source if it costs $10,000 per ton to clean up from stationary sources. Do you agree with the $10,000?

Mr. LAWSON. I am not an expert on the costs of stationary source control, but I will say that if we were to use the approach to test and inspect every car, we're looking at least at an order of magnitude higher cost than what EPA, what Ms. Nichols wrote in her testimony, and that discrepancy needs to be resolved.

Second, if in fact you focus the limited or finite resource, which is our dollars, toward repairing the high emitters, we would see that the overall costs would be significantly less than the more than $5,000 per ton.

Senator CHAFEE. And the challenge being finding the high emitters?

Mr. LAWSON. Yes, and we know how to do that.

Senator FAIRCLOTH. Again, thank you for coming. You've served your civic duty. Thank you.

[Whereupon, at 4:48 p.m., the subcommittee was adjourned, to reconvene at the call of the chair.]

[Additional statements submitted for the record follow:]

STATEMENT OF BECKY NORTON DUNLOP, SECRETARY OF NATURAL RESOURCES, COMMONWEALTH OF VIRGINIA

I. INTRODUCTION

Thank you Mr. Chairman and members of the subcommittee for inviting me to present testimony on automobile emissions inspection and maintenance. I am honored to be here today representing Virginia and our Governor, George Allen.

Virginia and a growing number of States across the country believe that the Clean Air Act has veered off-course. The Federal bureaucrats administering the Act—mainly the EPA—are wrong-headed in their mandates of a one-size-fits-all prescription for clean air—to the detriment of our citizens, jobs, and, frankly, to the goal of clean air.

Let me state, once again in very clear language that like most Americans I am for clean air. The Governor is for clean air and Virginians are for clean air. The question that is ripe for debate is how best to achieve improvements in air quality and the need for practical, reasonable, cost-effective, science-based approaches. I would argue that much brain-power at the State and Federal level, which could be focused on improving air, is being diverted to paperwork exercises that do nothing to improve air quality.

The regulatory structure of the Clean Air Act serves neatly as a microcosm of many environmental regulatory structures: Congress passes a well-meaning, but nebulously drafted law; EPA begins to promulgate regulations, which at first are only complicated, but which over time become progressively more detached from the intent and language of the original statute (as well as any common sense approach); and finally, States, businesses, and citizens are left trying to decipher and implement the maze of law and regulations in a timeframe that fails to consider interim changes in site and situation specific circumstances and the continually changing regulatory regime.

Ultimately, the only remedy left is to attempt to relegislate the issue—the Hydralike regulations are impossible to untangle and it becomes apparent that the law is not working toward its stated goals.

This is the stage at which we presently find ourselves with respect to the Clean Air Act Amendments of 1990, especially as they pertain to automobile emissions inspection and maintenance programs.

II. PROBLEMS

To be succinct, we believe that there are several defects with EPA's approach to I/M which have rendered the program unworkable in its current form.

Public Acceptance

First, there is the program's lack of emphasis on the most important element of any program involving the public—public acceptance. In its 11/5/92 rulemaking, EPA stressed the important relationship between public approval and convenience; each is necessary to assure the success of any automobile emissions inspection and maintenance program. They stated crisply and correctly that "I/M programs need to be accepted and supported by the public to be successful; therefore, public inconvenience associated with I/M programs needs to be minimized." 57 Fed. Reg. No. 215 at 52959. This prediction was on target (as subsequent events in Maine, Pennsylvania, Texas, Maryland, and other States have shown); it is unfortunate that EPA did not attempt to build a program around this premise. As States have moved from planning to implementation, the ping-pong effect, problems associated with purge and pressure testing, the extreme cost of laboratory-grade equipment, and other practical difficulties have begun to shift public focus away from clean air and to the defects of the EPA-created I/M–240, centralized, test-only approach.

Many States have long shared EPA's initial understanding that public support is the only method for achieving compliance with programs, such as I/M, that affect

large segments of the public. Conversely, loud threats of punitive measures and sanctions breed resentment and tend to confirm a general and growing belief among the public that the program must be significantly flawed. Very few people have to be bullied into doing what they believe to be right.

In Maine, the program was terminated after only 2 months of operation due to a stunningly obvious lack of public support. Was the lesson learned? Not really. In assessing the flaws of the program, EPA concluded that the citizens had not been properly educated about the program.

In addition to mentioning test frequency as "the single most significant factor influencing I/M convenience", EPA added "cost, driving distance, certainty of service, hours of operation, wait times, and necessity for multiple trips" as "other influential features" that affect public acceptance of the program. (57 Fed. Reg. No. 215 at 52959.) Given these criteria (which we believe are valid), we are unable to comprehend EPA's conclusion that a centralized test-only system is the best in all places and at all times. Simply put, for many States, Virginia among them, a test-and-repair program is the only program that will generate the public support necessary for program success. And, program success means reduction of mobile emissions.

EPA was obviously aware of the warning signs, but simply refused to heed them. In their rulemaking, for example, one of the essential criteria mentioned by EPA was the avoidance of multiple trips. Yet EPA itself recognized that, "centralized programs necessarily require owners of failed vehicles to make an extra trip to obtain repairs . . . while "[a]t the stations that do have an engine/emission repair capability, the vehicle may be able to complete the test-repair-retest process in one trip." 57 Fed. Reg. No. 215 at 52959–60. On this point, EPA has indicated that they expect a 40-percent rate of repair failure, which would of course involve a second repair and then a third test. With respect to the driving distance criteria, EPA stated that "[t]he station-to-vehicle ratio . . . in service station based networks is typically on the order of 1 to 1,000," while the ratio in centralized networks "is about 1 to 35,000". Fed. Reg. No. 215 at 52959.

The Use of Past Performance

Despite all this, and despite likely public concern over yet another function being absorbed by government bureaucracy, EPA decided to move ahead with mandated centralized testing. In the rulemaking, they asserted that, "it is not possible for a decentralized test-and-repair program to meet the performance standard for enhanced I/M regardless of the test type or vehicle class coverage." 57 Fed. Reg. at 52959.

In the CAAA, Congress directed EPA to "provide the States with continued reasonable flexibility to fashion effective, reasonable, and fair programs for the affected consumer." 42 U.S.C. 7511a(a)(2)(B)(ii). Congress clearly envisioned that some States would adopt decentralized test-and-repair systems—or continue and improve already existent test-and-repair systems—when it stated in the Act that States were to be provided an opportunity to "demonstrate to the satisfaction of the Administrator that a decentralized program will be equally effective" as a centralized system. But even before any demonstration was attempted, EPA ridiculed and undercut this congressional intent by pronouncing that:

> EPA believes it could not accept any of the currently operating decentralized systems as equally effective to centralized. With these effectiveness losses, it is not possible for a decentralized test-and-repair program to meet the performance standard for enhanced I/M, regardless of the test type or vehicle class coverage. 57 Fed. Reg. at 52959.

After announcing that it could not accept any of the currently operating decentralized programs as equally effective to centralized, EPA closed the noose by making "past performance" the only method by which equivalency could be judged. In other words, even before anyone got to demonstrate anything, EPA had already determined that they would fail based on past performance.

Credit Discount

I will not extensively address EPA's arbitrary decision to impose a 50-percent penalty on all test-and-repair networks. This issue is critically important to Virginia, along with a host of other States. We believe that the discount is based on an insufficient data set. For example, in Virginia EPA performed covert audits on 35 vehicles 5 years ago. Only 5 cars were improperly passed, which means that about 85 percent of the tests performed correctly failed the inspected cars. But the real point is that the entire covert audit universe was only 35 data points. Moreover, the audit was assessing the performance of our basic test-and-repair program. EPA wants to extrapolate that data—35 tests out of 650,000 performed annually—and use it to

predict our future performance under an enhanced program. Beyond that, they have taken this limited data that indicates that we correctly failed 85 percent of the tested cars and want to use it to justify a 50-percent credit discount.

I bring this to your attention not to argue for 85-percent credit, but rather to demonstrate the limitations of EPA's approach. We believe that each program's credit should be dependent on how they perform relative to other programs. To be truly meaningful, one would have to compare our covert audited rate of improper passes and fails with Maryland, New Jersey, and other States that use centralized systems.

Frankly, we think that our program is now the best in the country. Virginia DEQ now handles enforcement. To safeguard against possible abuses through intention or neglect, Virginia's program is characterized by well-trained emissions inspectors and compliance officers, a reliance on technically advanced information systems, and rigorous auditing and enforcement.

Virginia initiated a comprehensive emissions inspectors training course in July 1990. To our knowledge Virginia is the only State that requires any formal training whatsoever for emissions inspectors. Each member of the compliance staff has been employed in the automotive technology industry, and each has received specialized training in emissions control technology and quality assurance in decentralized vehicle emission programs. To meet the technical assistance needs of emissions inspectors, the Department of Environmental Quality has a duty officer or hot line officer available everyday during business hours.

Our data suggests that Virginia's program effectiveness is substantial. Results of covert compliance efforts in 1993 indicate that 92 percent of the covertly audited stations correctly detected equipment tampering; 92 percent of the stations executed the major inspection procedures correctly; and 88 percent of the stations performed other minor inspection procedures correctly. In 1992, 85 percent of the stations correctly detected equipment tampering; 90 percent of the stations executed all major inspection procedures correctly; and 85 percent performed all minor inspections procedures correctly.

Additionally, enforcement was swift and sure. There were 116 enforcement actions pursued in 1993 (out of approximately 375 inspection lanes). Almost 65 percent of these actions resulted in suspensions of inspection authority or civil charges. Furthermore, based on our improving air quality, I believe some credit should be given to the DEQ employees responsible for the improvements in this program.

As a final note, EPA's discount seems based on a simple predicate: government workers or contract employees are somehow more likely to be honest than private sector garage mechanics and owners. I reject this assumption, as I am sure many if not all of you do.

You have also no doubt heard much recently about EPA's recent conversion to flexibility in policy—a new willingness to grant the States flexibility in implementing I/M programs. EPA's new views are welcome, but a day late and a dollar short. EPA remains steadfast in denying one of the most important elements the States want—full credit for the test-and-repair option. By adhering to its arbitrary 50-percent discount for test-and-repair programs, EPA continues to effectively foreclose this option. The bottom line is simply this—test-and-repair appears to be among the most favored approaches by significant fractions of the population of the largest States in the Union. California, Pennsylvania, Texas, perhaps even New York and Massachusetts, might proceed expeditiously with a program if the discount were lifted. By keeping it, EPA intentionally thwarts the will of the people in many States and ignores the will of the Congress as expressed through the Clean Air Act Amendments of 1990.

III. SOLUTIONS

How should the statutory and regulatory framework of the CAAA be changed to accommodate States' needs and the imperative to design a I/M program which our citizens will find acceptable and State governments will be able to administer?

First, and most importantly, the arbitrary discounts should be eliminated. If EPA believes that a specific program is deficient, it should be compelled to prove that it is and to demonstrate the extent to which it is deficient and that its deficiency is harming the air quality. As it currently stands, the States must approach EPA as supplicants, hoping that their programs will be granted equivalency. We in Virginia reject this imbalanced and unfair government. We know that our citizens support Virginia's government standing up for them.

The default credit assignment encoded in the MOBILE model should be 100 percent, and only when EPA can prove that an individual program deserves less, for reasons unique to that program, should less than 100-percent credit be assigned. In changing the law to reflect this belief, we should remain cautious of the overall atti-

tude of EPA—that the burden is on the States to prove their worthiness. That paradigm should be reversed—it ought to be assumed *a priori* that the States and their citizens will do the right thing. The burden of proof ought to be placed squarely on EPA to demonstrate that a program is defective, its participants negligent, and the citizens accomplices. Moreover, such a demonstration should be judicially reviewable.

Given the advances in quality assurance and control technology, we believe that EPA should amend the inspection and maintenance regulations in 40 CFR 51 Subpart S to encourage States to develop programs employing a test-and-repair network which meet the total mobile source emission reduction goals outlined in the CAAA. In cases where EPA challenges the adequacy of a State's program, the final determination should include deterrence measures, detection measures, enforcement measures, and compliance rates.

After Virginia's experience with EPA, we believe that all changes should be placed in the statute. At a minimum, the language in the amended final rule at Section 51.353(b)(1) and (2) should be revised as follows:

> (b) *Provisional Equivalency.* (1) Enhanced I/M areas may choose to implement a decentralized, test-and-repair network and shall be granted presumptively equivalence. EPA shall bear the burden of demonstrating that such a program does not deserve to be considered presumptively equivalent. If EPA makes such a demonstration, which shall be judicially reviewable, the State in question may submit a plan meeting the requirements of this paragraph.
>
> (2) *Test-and-Repair Evaluation.* The SIP shall include a commitment to submit to EPA an assessment of the program which includes, in part, the evaluation testing required in Section 51.353 as well as compliance reports, deterrence reports and any other information which the State believes to be necessary for EPA to properly evaluate the program.

Second, States should be allowed in future programs to take credit for all enhanced program design elements which were not present in the basic test-and-repair programs previously extant. EPA rules ostensibly provide the ability to demonstrate equivalency of test-and-repair systems by providing:

> Better surveillance, more rigorous enforcement and the like will reduce the egregious levels of improper testing found in these programs. . . . Therefore, EPA will consider SIP submissions designed to demonstrate that decentralized, test-and-repair programs are equally effective to a centralized program in meeting the performance standard by using the criteria established for case-by-case equivalency. 57 Fed. Reg. at 52959.

However, the case-by-case equivalency section continues with the statement that "smaller *reduction in credits* for the various test protocols may be claimed if a State can demonstrate . . . that based on *past performance* with the specific test type and inspection standards employed, its test-and-repair system will exceed those levels" (emphasis added).

In the rule, EPA only allows States to seek an equivalency designation by using its past test-and-repair performance. The rule does not take into account new program features mandated by EPA which will improve both centralized and decentralized programs. For example, EPA has emphasized the integrity of automation; the rule requires the same automation for the new enhanced programs for both centralized and decentralized sites.

The rule also requires items such as real-time data linkage, enhanced enforcement mechanisms, increased program auditing, inspector training and licensing (which we have been doing for some time in Virginia), repair training, waiver issuance limitations, roadside inspections and on-going program evaluation. Even though EPA has included these elements as necessary enhancements to the system, it refuses to recognize that they will improve test-and-repair programs beyond past performance levels.

If EPA can conclude, as they have done, that these improvements have value in centralized programs, they should be able to calculate the benefits that these improvements will have on decentralized programs. By looking only to the future to judge centralized programs and only to the past judge decentralized programs, EPA has aggravated the inherent defects of the 50-percent discount for test-and-repair programs.

Perhaps the most salient new technology affecting this issue is remote sensing. Again, EPA has been dragged to this technology; they have not embraced it willingly. Even now, they have yet to tell the States how much credit can be received for various levels of commitment to remote sensing programs. Ideally, an in-use

emissions control program would be based on identifying and correcting gross polluting vehicles. The technology which could perform this identification—remote sensing—is still relatively new and needs to become a bit more mature before it can be used as the core of an in use emissions control program. But we are confident that it will ultimately become sufficiently refined. With this in mind, we believe that programs should be designed to allow the phase-in of remote sensing and the phase-out of scheduled testing.

In the long term, we need to move away from strict reliance on command and control techniques and devise ways to incorporate incentives to encourage beneficial behavior in society. First, we can give tax breaks for those businesses which purchase enhanced testing equipment either before it is required or testing equipment that is better than the required equipment. Second, we can offer financial incentives for those testing station owners who run exemplary programs. Third, by utilizing remote sensors as screening devices, we can waive the tests for thou drivers who keep their cars running clean.

I'd like to offer a new approach to conflict resolution surrounding clean air issues. For too long, EPA has enjoyed the virtually unfettered ability to drive the regulatory regime in whichever direction it chooses. Important factors in this control are the computer models on which we all rely, and about which we sometimes have substantial disagreements. I believe, given the importance of these models, that some thought should be given to creating a group, consisting of State representatives and EPA senior officials, which will have the ability to make binding decisions on the components of the models.

It appears to be exceedingly unlikely that EPA, which has clung tenaciously to the 50-percent discount, will be willing not only to abandon it, but also to accept the burden of demonstrating that individual programs ought not be granted presumptively equivalence, is the best agent to change the legal regime surrounding I/M. Therefore, we believe that Congress should reopen the CAAA and make changes to the statutory foundation underpinning this program.

IV. CONCLUSION

Mr. Chairman, we in Virginia are committed to improving air quality and have demonstrated this, but we need legislative relief from regulatory obstacles that prevent us from pursuing this goal. As even one of EPA's principal staffers on this issue acknowledged, "If we could turn back the clock, it is obvious EPA would redesign its program." BNA California Environment Reporter Vol. 5, No. 7, pg. 108. Well, we can turn back the clock and redesign the program, and I encourage you to do just that.

Thank you for this opportunity to appear before you today. We look forward to working closely with you in searching for ways in the Clean Air Act may be improved.

STATEMENT OF MARY D. NICHOLS, ASSISTANT ADMINISTRATOR FOR AIR AND RADIATION, ENVIRONMENTAL PROTECTION AGENCY

Mr. Chairman and members of the subcommittee. Good morning. I appreciate the opportunity to appear before you today to address a most important air pollution control program—the motor vehicle emissions inspection and maintenance program.

Air pollution continues to be a major public health problem in nearly every major city across the United States. Many citizens who live and work in our urban areas are exposed to unhealthy levels of smog and carbon monoxide pollution. The Clean Air Act Amendments of 1990 established a carefully balanced and comprehensive approach to reducing this health threat. Factories, power plants, large and small businesses, automakers, fuel providers, and individual car owners have all been asked to do their part. The vehicle inspection and maintenance (I/M) program is a critical element in our effort to improve air quality. Motor vehicles typically contribute as much as one-half of the ozone-forming emissions and up to 90 percent of the carbon monoxide emissions in urban areas. We have made tremendous progress in reducing vehicle emissions but more people are driving more vehicles more miles every year. Vehicle miles traveled have doubled over the past 20 years. We need to keep finding ways to lower emissions just to keep up with this trend.

There are three critical elements to controlling motor vehicle pollution: cleaner cars, cleaner fuels, and better maintenance. We have been working with the auto manufacturers to improve new car technology and tremendous advances have been made. New cars emit 90 percent less pollution today than they did 20 years ago. The simple fact is, however, that cars deteriorate as they age, even the highly sophisticated computer controlled and fuel injected cars that are being produced today.

It is not unusual for cars on the road today to emit from 2 to 17 times as much as the new car standards to which they were designed and built. About 20–40 percent of the vehicles on the road today need repairs to bring down emission levels. The best way we know of to identify these gross polluters and ensure effective repairs is a periodic inspection program—enhanced I/M.

In the past 15 years, EPA has been working with States to design and implement I/M programs that are effective, efficient and convenient for motorists. EPA did not start out with a bias toward one type of I/M program or another. After the 1977 Amendments to the Clean Air Act, EPA policy gave equal emission reduction credit to programs that had stations that only perform I/M tests (test-only) and programs that allow auto repair shops to perform I/M tests (test-and-repair). Some States chose to implement test-only networks and some chose to implement test-and-repair networks. Since 1977, EPA has collected and analyzed many types of data on I/M effectiveness. Some of these data were generated by State agencies or special study commissions set up by legislatures, while other studies have been conducted by EPA. EPA carefully reviewed all of this information and the inescapable conclusion was that test-and-repair programs are much less effective than test-only programs.

The Clean Air Act Amendments of 1990 specified that serious, severe, and extreme ozone nonattainment areas and all large cities in the northeast ozone transport region implement enhanced I/M programs. About 80 cities in 23 States are required to implement enhanced programs. Moderate and marginal ozone areas are required under the 1990 Amendments to continue existing basic I/M programs. Some of these cities have since reached attainment of the air quality standards and now about 90 cities are required to have-basic programs.

After the Clean Air Act Amendments of 1990 became law, EPA initiated an extensive public participation and outreach process to develop a consensus on how to proceed with enhanced I/M regulations. EPA worked closely with the States, industry, and other groups both before and during the rulemaking process. Public meetings were held throughout the country before the regulations were proposed. Almost all sectors—industry, States, and environmental groups—strongly supported a high performance standard for enhanced I/M, one that would involve both advanced testing procedures and separation of testing from repair to make the programs effective. The regulations that EPA issued in November 1992 established a model I/M program that can reduce motor vehicle VOC and CO emissions by about one-third. In addition, it can reduce oxides of nitrogen emissions by about 15 percent. EPA also worked hard to improve the cost effectiveness of I/M. By doing a better test but doing it less often, substantial cost savings are achieved in the inspection process while emission reductions are improved. As a result, enhanced I/M reduces VOC emissions at a cost of about $500 per ton. This compares very favorably with other measures, such as stationary source controls which cost up to $10,000 per ton of VOCs reduced.

Maintaining our investment in motor vehicle pollution control equipment instead of trying to get diminishing returns from factories and small businesses is a common sense approach. In fact, EPA estimates that implementing effective I/M programs instead of alternative controls on factories and small businesses would save over $1 billion annually and would increase the number of people employed in the automotive repair industry by 4,000 to 11,000. I have found that the vast majority of Americans understand and accept their responsibility to maintain their cars in a reasonable manner and not to remove or disable emission controls. The vast majority of motorists agree that spending about $20 and 15 minutes—about what it takes for an oil change—is a small price to pay for cleaner air, providing the test is accurate, fair, and convenient. New emission testing procedures mean that States may choose to have cars checked only once every 2 years and test results are far more accurate than ever before.

Let me describe the elements that make up the enhanced I/M program. The IM240 test procedure is a central feature of the test but it is not really new. The IM240 was derived from the Federal Test Procedure (FTP), which has been used by the auto industry and EPA to certify new vehicles for more than 20 years. Like the FTP, the IM240 tests a vehicle on a treadmill or dynamometer. The car is driven onto the dynamometer and operated over a set driving cycle for several minutes that simulate real-world city driving. This fully automated test was specifically developed to overcome the many problems of the basic I/M test that only measures a car's emissions at idle. The IM240 has been successfully demonstrated in a pilot program involving over 10,000 vehicles in real-world I/M testing and has been practically and economically implemented in I/M programs in Colorado Arizona. IM240 is only part of the test process. EPA has found that evaporative emission control systems on cars in use were failing with surprising frequency and that very large quantities of excess gasoline vapors were occurring as a result. This raw gasoline

is a significant contributor to the ozone problem. So, two new functional checks of the evaporative emission controls were developed to identify malfunctioning systems.

The most controversial I/M element of the Clean Air Act Amendments of 1990 is, without a doubt, the requirement that enhanced I/M programs be "centralized" (that is, test-only) unless a State can demonstrate that a "decentralized" (test-and-repair) program is equally effective. The basis for this requirement is well supported by the experience of the 1980's. Test-and-repair I/M programs suffered from severe operating problems and repeated attempts by States to correct these problems were not successful. The most aggressive efforts were probably made in my home State of California. The State developed a huge enforcement bureaucracy and spent large amounts of money to oversee and enforce the test-and-repair system over the last decade. Aggressive enforcement in California ranges from monetary fines, to suspension of testing, to jail time.

EPA relied heavily on the results in California in developing the so-called 50-percent discount for test-and-repair I/M programs. EPA and other States have also conducted audits of I/M programs, as have the General Accounting Office and EPA's Office of Inspector General. Without exception, these audits have shown that test-and-repair programs suffer from severe operating problems. EPA's covert audits showed improper testing about 81 percent of the time and State audits involving over 10,000 separate undercover car runs found similar results.

There has been no lack of trying to make test-and-repair I/M programs work. For example, the State of New York required stations to buy cutting edge technology equipment—fully automated and connected by modem to the Department of Motor Vehicles for rapid data capture and oversight. The testimony provided by New York officials during EPA's pubiic hearing on I/M laid out in stark terms the overwhelming obstacles that exist in the test-and-repair system.

The fundamental problem is a conflict of interest in which inspectors have strong incentives to pass cars that should fail and in need of repairs. EPA asked States to come forward with ways to make a test-and-repair system effective so that we could build it into our I/M regulations. EPA even proposed a trial period in which States could further attempt to make test-and-repair systems work. The response we got was a resounding, No! States did not know of any way to make the test-and-repair system effective and they argued that we should not allow a trial period because it would not lead to success and would instead simply delay getting needed air quality improvements. California EPA, for example, wrote to U.S. EPA and said, "We urge EPA to delete the one-more-try-at-test-and-repair program option from the final rule. . . ." The South Coast Air Quality Management District (Los Angeles) wrote, "We believe that EPA should require centralized test-only facilities."

Given these consistent comments from State officials, EPA worked hard to craft a policy that recognizes the law's intent and the limitations of test-and-repair programs.

There are advocates of alternatives that will tell you otherwise: either that there is a magic bullet that can make test-and-more effective or that test-only I/M is just as bad as test-and-repair. We disagree with both assertions. Our interest is achieving the air quality goals in a practical and cost-effective manner. We do not have a vested interest in how that is accomplished, but we are concerned that continuing ineffective programs will not only mean wasted resources and public dissatisfaction, but it will also mean we do not accomplish the goal of protecting public health.

EPA realizes that some State test-and-repair programs may be achieving greater effectiveness than these typical levels. EPA will give more credit to States that can show greater effectiveness with actual operating data. EPA has begun discussions with the States of Utah and Virginia and is reviewing data from the two States on the effectiveness of their test-and-repair programs. The purpose of this work is to arrive at a decision on the appropriate credits for test-and-repair programs in the two States based on State data and an EPA-stakeholder protocol on idle-test data. We expect to reach a decision on the credits for the two State programs by the end of the summer.

In an effort to provide additional flexibility to States, EPA is in the process of modifying its I/M regulations to create a new, "low enhanced" performance standard that will be substantially less stringent than the current "high enhanced" performance standard. These regulatory changes were proposed in the Federal Register on April 28, and a public hearing was held on May 17. Under this new approach, States will not have to implement test-only programs if they do not need the high level of emission reductions that such programs provide. They will have the option to implement test-and-repair systems, as long as they can find enough emission reductions elsewhere to achieve the 15-percent reduction in VOC emissions and, even-

tually, attainment of the ozone or carbon monoxide standards as required by the Clean Air Act.

In February 1995, EPA issued new I/M emission credits for auto technician training and certification, and an alternative to the IM240 test procedure. These credits will help States provide incentives to the repair industry to upgrade its skills, training, and equipment to meet the challenges presented by the ever-changing new technologies on modern cars. Our new policy also allows hybrid programs which combine test-only and test-and-repair components. The hybrid approach offers greater public convenience, possibilities and supports businesses currently involved in I/M testing and repair of vehicles. Several States are pursuing this approach, including New Jersey and Georgia. The Clean Air Act and EPA regulations require that enhanced I/M programs include a certain amount of "on-road testing." Although States have flexibility in the type of on-road testing they conduct, many are planning to install roadside remote sensors.

To conclude, enhanced I/M is a critical component of this Nation's efforts to improve air quality. A good enhanced I/M program is cost-effective and practical. By its very nature, however, it affects car owners directly, and therefore is a visible target for critics of any new government program. The fact remains, however, that if we as a society value clean air we need to assure that the emission controls on the millions of cars and trucks used in urban areas are working. A periodic emissions check is the best way we know to accomplish this goal. Keep in mind that EPA recommends the I/M test only be performed once every 2 years and some States exempt from testing cars that are less than 4 years old.

For the majority of motorists who keep their cars reasonably well-maintained, about 70 percent of the population, the 15-minute biennial test will be the full extent of their involvement with I/M. Their cars will pass and they will be on their way. Even for the motorists whose cars fail, there are indirect benefits. The most common engine problems cause a car's fuel consumption to increase. By fixing the problem the motorist will actually end up saving some money at the gas pump. These savings will largely offset the repair costs needed to pass the I/M test.

I hope I have clarified for this subcommittee EPA's views on vehicle I/M programs. We have listened to the many comments we have received over the past months and are responding with common sense revisions to our regulations. For these reasons, I believe the Clean Air Act does not need to be amended in order to provide States with the flexibility to implement effective I/M programs tailored to local needs and conditions.

Thank you very much. I would be pleased to answer any questions you may have.

STATEMENT OF THOMAS GETZ, DIRECTOR, AIR POLLUTION CONTROL DIVISION, COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Honorable Ladies and Gentlemen of the Senate, thank you for the invitation to speak before your subcommittee this afternoon. appreciate being here to share with you information on Colorado's experience with both decentralized and centralized I/M programs. In particular, I appreciate being able to present the Colorado Department of Public Health and Environment's (CDPHE's) perspective on centralized vs. decentralized emissions testing, and EPA's policy of granting only 50-percent credit for State programs which do not rely exclusively on centralized (inspection-only) testing.

BACKGROUND

Colorado's enhanced I/M program has been designed to meet the air quality needs of Colorado. It was designed with the basic tenet of protection of the public's health and welfare in mind. The program conforms with the requirements of the Clean Air Act (designed using U.S. EPA guidance), but foremost it represents a program which represents the needs of Colorado.

The State remains committed to maintaining the goals of the Clean Air Act. While we believe States should have the flexibility needed for design approaches which best work in their State, we have not wavered from the intent or goals of the Clean Air Act, and the need to achieve and maintain air quality standards.

In the metropolitan Denver carbon monoxide nonattainment area, an enhanced I/M program utilizing the IM240 test for 1982 and newer vehicles has been in place since January 2, 1995. This program is a centralized biennial inspection, with an exemption for the first four model years. Pre–1982 vehicles are inspected at private inspection-only stations using the Colorado 1994 idle test. A "basic" decentralized program is used for vehicles in less serious nonattainment areas (Fort Collins-Greeley, Colorado Springs).

ACHIEVEMENTS

After some startup problems, Colorado's enhanced I/M program is beginning to achieve the air quality goals set out for it. The program is detecting vehicles with excess emissions, and is causing those vehicles to be repaired. A good reduction in vehicle emissions is being seen for vehicles which fail and then are repaired. At the present time vehicles initially failing the enhanced I/M program are averaging 82.0 g/mi of carbon monoxide, and 4.5 g/mi hydrocarbon emissions. After repairs, these same vehicles are averaging less than 34 g/mi of carbon monoxide and 2.5 g/mi of hydrocarbon emissions. This is a 58-percent and 44-percent reduction of emissions respectively. As the program is phased-in, these final average emissions will be further decreased, thereby increasing the effectiveness of the program even more. It is our view that the centralized inspection program clearly offers the most cost effective approach to reducing CO emissions in the metropolitan Denver area.

The major problems with the introduction of our program occurred due to the limited number of inspection stations completed at the start of the program, equipment durability, and staff experience. Excessive wait times for some motorists thus occurred, with some vehicles being incorrectly inspected. As the system has been built out to the initial design, and equipment and personnel problems have been mitigated, the problems encountered during the startup of the program have dramatically decreased. Average customer wait times have been reduced, and there have been a declining number of violations of the 15-minute average wait time standard.

Compared to Colorado's old decentralized program, the new program is much more effective at detecting problem vehicles. Vehicles such as mid–80's Ford Escorts which have high failure rates, were largely missed by the older decentralized program. In identifying these and other excess emitting vehicles, the IM240 test is proving to be a reliable and effective test. Additionally, the use of this test is allowing the development of proper repair procedures for problem vehicles, such as the Ford Escort.

CENTRALIZED VS. DECENTRALIZED I/M CREDITS

Colorado is operating both centralized and decentralized I/M programs. Colorado also has had long experience with decentralized programs, and the problems connected with them, such as incorrectly conducted inspections, and the conflict of interest which results from test-and-repair inspection stations. Based upon this experience, the CDPHE encourages that air quality credits be based on true air quality benefits received.

We favor an approach which provides credits for real world air quality reductions. Centralized test-only programs which provide greater air quality benefits than others, such as decentralized test and repair programs, should receive more credit. It is our opinion that the EPA's 50-percent discount is reasonable, based on the currently available scientific information.

The State believes that it is important to promote the public health and welfare goals incorporated within the Clean Air Act. The air quality standards are based on good science and are designed to protect the public's health. We need to maintain them.

We also must recognize the need for flexibility in technology, and the need for flexibility of the States to take approaches which fit their specific needs. For Colorado, the IM240-based program is best suited for our needs, which are based primarily on carbon monoxide exceedances. For other States with ozone problems this may not be the case. Each State however, should be given the opportunity to develop their own approaches which meet the standards set forth in the Clean Air Act. The credit for these programs should be based on air quality benefits received, with science-based alternative credits available for innovative strategies.

CONCLUSION AND RECOMMENDATIONS

In summary, Colorado has developed its enhanced I/M program based on the most technically correct information available, and is very hesitant to compromise the criteria used in that development. As such, the CDPHE recommends the following:

- The U.S EPA should continue to develop appropriate procedures to evaluate the effectiveness of centralized vs. decentralized programs, and based on this, appropriate discounts should be developed.
- Standards set by the Clean Air Act should be maintained.
- States should have maximum flexibility in adopting approaches (and flexibility in technology) which meet those standards.
- Air quality credits must be based on true air quality benefits received, with science-based alternative credits for innovative strategies.

- The conflict of interest of test-and-repair is eliminated in centralized (inspection-only) stations and credit should be given for this.
- The EPA's 50-percent discount for test-and-repair programs is justified at this time, pending further study in this area.

STATEMENT OF LYNN SCARLETT, CHAIRPERSON, CALIFORNIA INSPECTION AND MAINTENANCE REVIEW COMMITTEE

I. INTRODUCTION

On behalf of the Inspection and Maintenance Review Committee of the State of California, I am pleased to testify regarding current Federal regulatory requirements for State inspection and maintenance (I/M) programs in non-attainment areas.

California's I/M Review Committee is committed to: (1) recommending inspection and maintenance policies that will achieve measurable vehicle emission reductions in California; and (2) ensuring appropriate evaluation of the State's I/M program to determine program effectiveness.

The I/M Review Committee's fundamental goal is cleaner air in California; its focus is on how to design I/M programs to achieve the most cost-effective achievement of that goal.

II. BACKGROUND

California's I/M Review Committee, appointed in 1994 by the Governor and the State's legislature, has three primary functions:

- to review results of two pilot projects undertaken by the State of California to examine I/M program options;
- to make policy recommendations to the State of California regarding its I/M program; and
- to evaluate the performance of the State's I/M program.

Pursuant to a Memorandum of Agreement signed on March 21, 1994, between the State of California and the United States Environmental Protection Agency (USEPA), the State funded two pilot studies to examine several issues relevant to understanding I/M program performance. The first of these studies, performed by the California Air Resources Board, evaluated claims by EPA that a transient, loaded-mode IM240 inspection test was superior to other test options in properly identifying vehicles that exceeded allowable emission levels. The second study, performed by the State's Bureau of Automotive Repair, evaluated the prospects of deploying remote-sensing devices (RSD) on a community-wide basis to "read" the emissions of a significant percentage of vehicles in a geographic area and to accurately identify gross emitters.

Initial results of these two pilot studies show three important findings: (1) identification of high-emitting vehicles does not vary significantly by test type; (2) test type does not significantly affect repair effectiveness; and (3) remote-sensing devices set up over a 10-week period performed at least one "reading" of nearly one-half (over 400,000) of the vehicles registered in the test area of metropolitan Sacramento. This "coverage" would appear to be adequate for use of remote-sensing as a deterrent to tampering and as a means of identifying high emitters during periods between any regular vehicle testing.[1]

These conclusions are at odds with numerous other studies of remote sensing in which the device has been shown successfully to identify excess emissions. The Austin/Heirigs study suffers from a number of analytical shortcomings. For example, the authors fail to explore the impacts in California's remote-sensing pilot study of comparing IM240 test results with remote-sensing results taken three months earlier. That 3-month interval was critical for a variety of reasons: At a minimum, when remote-sensing tests were undertaken, non-oxygenated gasoline was being sold in the test area; during the IM240 test phase, oxygenated gasoline was being sold. The latter reduces CO emissions by 15 percent to 20 percent on average. One would, therefore, not expect high correlations between the IM240 test data and the RSD data.

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[1] One recent widely reported assessment of California's remote-sensing pilot study in Sacramento offers a misleading indictment of the potential effectiveness of remote-sensing. That study, "The Effectiveness of IM240 Testing, ASM Testing, and Remote Sensing Based on the California I/M Pilot Projects," by Thomas C. Austin and Philip L. Heirigs (Sierra Research, Inc.), states that remote sensing "is incapable of detecting the most common forms of tampering, prone to a high rate of false failures, and unable to identify most of the excess emissions that exist in the fleet. . . ."

Motor vehicles are a significant source of air pollution in California. Emissions from motor vehicles may account for some 60 percent of hydrocarbon emissions, half of all nitrogen oxide emissions, and as high as 90 percent of carbon monoxide emissions. However, studies conducted over the past several years have demonstrated that government agencies' official inventories greatly underestimate mobile source emissions. In urban areas, for example, mobile sources and their associated emissions may account for as much as 80 percent of hydrocarbon emissions. Despite outstanding gains in new-vehicle technologies, which have resulted in dramatic reductions in average emissions from new cars, a subset of vehicles on the road continues to contribute substantially to air emissions.

Achieving desired air-quality standards in the State therefore requires that in-use emissions from these high emitters be reduced. As indicated in the work of Dr. Douglas Lawson, Dr. Donald Stedman, and others, vehicle emissions are highly skewed, with a small percentage of vehicles accounting for a very large percentage of total emissions. Programs that identity high-polluting vehicles and reduce their emissions are, thus, an important component of achieving improved air quality in California.

California's I/M Review Committee is committed to recommending measures that will assist the State in implementing a successful inspection and maintenance program. The I/M Review Committee defines such a program as one that can be demonstrated to achieve required reductions in vehicle emissions in the most cost-effective manner possible.

Program Success: EPA Perspective. To date, EPA has focused primarily (though not exclusively) on three variables as relevant to program success:

- *Test Type.* Implicit in EPA literature and regulations on I/M programs is the view that test type is a critical determinant of program success. Specifically, EPA has argued for increasingly sophisticated test types, with an emphasis on a transient, loaded-mode, dynamometer test (IM240) to replace idle tests.

Results of California's pilot test comparing IM240 with other test modes undermine claims that test-type is a critical variable for program success. EPA has begun to acknowledge that alternative test modes might function as effectively as the IM240.

- *Locus of Test.* EPA literature and regulations assume that separating test functions from repair activities significantly improves program success. Thus, for full program credits EPA requires test-only programs and assumes that programs combining test-and-repair functions will be half as effective as test-only (usually centrally operated) programs.

A California I/M Review Committee assessment of this assumption demonstrates that empirical data do not support EPA's claims for test-only programs. At best, we can conclude that neither test-only nor test-and-repair programs have worked well to date; and, though no testing program appears to have worked particularly well, some test-and-repair programs have worked better than some test-only programs and vice versa. Thus, other factors that affect human behavior and incentives to comply appear to be more critical to determining degree of program effectiveness.

- *Repair Cost Limits.* EPA literature implies that past programs with low repair-cost limits were an important impediment to achieving significant emission reductions from I/M programs.

No data are available to assess this assumption.

Alternative Perspective on Program Success. Test type and location of test do not appear to determine program success or failure. Dr. Jerry Aroesty, et al., note in a report for California's Senate Transportation Committee that "a preoccupation with the process for screening and identifying vehicles misses the point: an effective system must not only find the broken cars, but it must fix them. The measure of success is total emission reduction, not merely identification rates."

A report prepared by Joel Schwartz for California's I/M Review Committee concludes: "Whether an I/M program is centralized or decentralized has not been an important factor in determining I/M program effectiveness." The report notes that "trends in ambient ozone and CO levels between 1983 and 1992 show that, on average, regions with decentralized I/M and regions with centralized I/M had about the same reduction in the two pollutants."

Program success is likely, instead, to be a function of a broader and more complex set of issues. At least five components of I/M programs appear relevant to program success.[2]

[2] Dr. Jerry Aroesty, et al. suggested four of these five components in their report, "Restructuring Smog Check. A Policy Synthesis," prepared for the California Senate Transportation Com-

These include the ability of a program to:
- Identify high-emitting vehicles rapidly;
- Diagnose emission problems associated with high-emitting vehicles;
- Result in effective and enduring repairs of high-emitting vehicles;
- Verify that repairs occur and that emission reductions are maintained over time;
- Provide a context in which consumers and automotive technicians have strong personal motivations to properly maintain vehicles, avoid tampering of emission-control equipment, and secure enduring repairs and reductions in vehicle emissions.

The current focus by EPA on programs that use high-tech test equipment to perform periodic (annual or biennial) inspections on all vehicles in test-only stations: (1) fails adequately to take into account motorist and mechanic behavioral responses to test programs; (2) targets all vehicles equally rather than focusing on high emitters from which one can anticipate achieving significant reductions after repairs are performed; (3) ignores the need for real-world verification that emission reductions are being achieved.

IV. REGULATORY FRAMEWORK: CRITIQUE OF EPA MODEL AND ASSUMPTIONS

In its regulatory guidance document for I/M programs, EPA states that "States have the flexibility to design their own programs if they can show that their program is as effective as the model program used in the performance standard." California's I/M Review Committee lauds a Federal Government commitment to State flexibility.

However, EPA has failed to translate that commitment to flexibility into their regulations or program evaluation criteria. To determine program equivalence, EPA relies on a mobile emissions model, not real-world evidence of program performance.

EPA Model. EPA's mobile emissions model includes variables for fleet composition, weather, vehicle speed and vehicle miles traveled, and other factors relevant to modeling current and future vehicle emissions. In addition, the model includes assumptions regarding the expected impact on vehicle emissions associated with a select subset of I/M program features. The model includes few variables relevant to consumer behavior associated with program type; and credits proposed for remote sensing currently provide only crude accommodation of potentially positive impacts from remote-sensing (ongoing on-road emission tests between scheduled testing) of vehicles.

For a given State, showing program equivalence requires inputting into the model a subset of specific features of a State's I/M program (along with other data regarding fleet composition, miles travelled, etc.). Each I/M program feature is given a numerical value in the model regarding its assumed impact on air emissions. Some program features, particularly relating to behavioral incentives and disincentives, are not included at all in the model. The result is that these features are not included in EPA's evaluation of a State's program and its potential (and actual) effectiveness.

Where EPA does include features relating to behavior, numerical assumptions appear to be arbitrary and skewed toward assuming that centralized test-only programs result in near-perfect compliance. For example, EPA's model uses an assumption of 96-percent compliance for test-only programs and also assumes a high degree of repair effectiveness.

Using all inputs, the model is then run to estimate total emissions at different points in time. These results are compared to results derived when EPA's "ideal" program features are input into the model. The performance standard for any location is not a set of measurable, real-world emissions reductions. Instead, a computer modeling of EPA's ideal enhanced program is compared to a modeling of a State's program to determine program equivalence. In short, the model is the performance standard.

Why is this a problem for the State of California and other States? This performance standard poses a fundamental problem for States since the model is just that-a model. Its utility as a measure of emission reductions is a function of how well the model actually reflects real-world emission dynamics.

Evidence presented to California's I/M Review Committee suggests that the model does not meet a "reality test." Consider three points in particular:

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mittee. In that report, they state, "everything we have learned about I/M in the past few years shows that all of these phases must be effective for the entire system to operate properly and economically." They note that focus on whether or not a program separates test from repair activities "is an overly simplified approach to a far more complex problem and neglects the important behavioral, technical, and social dimensions of an I/M system."

(1) Model results regarding air emissions do not match well with actual ambient air data and other empirical evidence regarding vehicle air emissions.

Dr. Douglas Lawson has noted that "top-down" comparisons of ambient data with the modeled emission inventory show that hydrocarbons are 2 to 2.5 times higher than the modeling inventory predicts. Likewise, in "tunnel studies" in which an urban vehicle fleet's emissions were measured in tunnels, hydrocarbon and carbon monoxide measurements of vehicle emissions were 2 to 4 times greater than predicted by the model.

Moreover, as Dr. Jerry Aroesty has noted, "modem emissions control systems often exhibit unstable and highly variable emissions characteristics when they deteriorate. . . . The implications are . . . that estimates of I/M performance based on crude, highly aggregated emission system deterioration models fail to reflect variability and other real world failure modes. " Dr. Aroesty concludes that "even today, the 'official' models still appear to be playing catch-up with the data."

(2) Numerical values of specific inputs into the model are not always based on empirical evidence.

The most important of these factors is the 50-percent discount that EPA applies to decentralized (test-and-repair) programs. As an input into the model, all test-and-repair programs receive a discount of 50 percent for emission reductions relative to reductions estimated to occur with centralized (test-only) programs.

EPA has stated that this discount was derived pursuant to data from tampering surveys and audits of State programs. EPA used these data to compare centralized and decentralized programs. Their published reports of these data conclude that decentralized programs are half as effective as centralized (test-only) programs.

California's I/M Review Committee disputes this claim. In an independent review of the tampering surveys and State audits, California's I/M Committee finds:

- little difference in vehicle tampering rates among areas with test-only programs and those with test-and-repair programs;
- no empirical evidence from State audits that test-only programs function better than test-and-repair programs. Specifically, (1) EPA analyzed data that included errors in favor of centralized programs; (2) its audits, which were not designed to compare program types, included (possibly unintentional) methodological and other biases against decentralized programs; (3) EPA did not collect audit data that could be used to assess I/M emission reductions associated with program types.
- ambient air data discussed by EPA and used to compare test-only with test-and-repair programs in its "I/M Briefing Book" (but not used in its initial development of the 50-percent discount) did not correct for differences in vehicle mileage among States, included selection bias in the vehicles evaluated in test-only sites, and did not show that cars in test-only areas were uniformly cleaner than in test-and-repair areas.[3]

(3) Some potential program elements are not incorporated into the model at all, or are only given very crude numerical credits within the model.

In particular, the model is ill-suited to incorporating program elements that affect consumer and automotive technician behavior. For example, the State of California and other States have considered adding on-road use of remote sensors as part of their I/M programs. The model does not to calculate emission credits for: (a) any deterrent effect against tampering that remote-sensing might have; (b) any incentive effect remote-sensing might have on consumers to seek full vehicle repairs during a periodic smog check to avoid being "caught" by a remote sensor at a later date; (c) any "oversight" effect remote sensing might have on automotive technicians whose repairs could be challenged if motorists were "caught" by a remote sensor after repairs had been completed; and (d) any "second-check" effect remote sensing might play in identifying vehicles that passed a periodic test but soon after again became high emitters. (That these program elements may be difficult to model does not reduce or eliminate their potential significance for program success. The dif-

[3] The I/M Review Committee analysis of data cited by EPA shows that EPA's comparisons of fleet emissions in Arizona and California do not support concluding that test-only programs perform better than test-and-repair programs. While many other factors may influence differences in fleet emissions between California and Arizona, even an analysis of Arizona and California fleet emission data show a more complex picture than that offered by EPA. Our analysis of the Arizona and California data showed that vehicles in Arizona (test-only program) have CO emissions that are about the same as in California (test-and-repair program). Arizona cars are cleaner for hydrocarbons; California cars are cleaner for nitrogen oxides. Adjusted for emissions standards, the Committee finds that California cars are cleaner for CO; Arizona is cleaner for hydrocarbons; and the fleets are the same for nitrogen oxides.

ficulty in isolating the effects of these behavioral variables in a model underscores the importance of measuring program results by using real-world air emission observations).

Rethinking Program Evaluation. What is the bottom line of this discussion regarding EPA's modeling? On February 1, 1995, at a meeting of California's I/M Committee, EPA reaffirmed that State I/M program performance would be evaluated against the model. EPA has continued to base program approval and State Implementation Plan (SIP) credits on modeling outputs. The emphasis on modeling places at a significant disadvantage those States that prefer to rely primarily on decentralized test-and-repair facilities. This disadvantage accrues to States despite no substantive evidence that centralized test-only programs necessarily perform more effectively than other program designs.

In light of the importance EPA gives to the model, the I/M Review Committee asked that EPA perform a "reality check" of the model to determine how well the model results mirror real-world air emissions for a given area. EPA underscored that no reality check of the model is possible, since the model is simply a series of aggregated and averaged assumptions that may not reflect any specific real-world situation. EPA suggested that the only way to check the model would be to examine the specific assumptions or parameters that make up the model.

California's I/M Review Committee finds:

(1) that current real-world evidence indicates that the model results diverge substantially from observable ambient air data and urban tunnel study data;

(2) that examination of at least one important model parameter-that of the 50-percent discount for test-and-repair programs relative to test-only programs shows no empirical evidence for the model's assumption regarding test-only and test-and-repair programs.

EPA is requiring of States that their program performance be evaluated against model results that are at least in part based on fiction rather than fact. Use of the modeled results as the "gold standard" against which State programs are evaluated has serious consequences for both State flexibility and potential program effectiveness.

First, there is no real-world evidence that EPA's "ideal program" will, in fact, achieve the reductions shown by EPA's model. Thus, State programs are being asked to show equivalence to an unsubstantiated model. Success is defined by the model rather than by achievement of real-world emission reductions. The end result may be that States will expend large sums of money implementing programs that show equivalence with EPA's model but achieve little real-world emission reductions.

Second, while EPA appears in principle to agree that the State of California can undertake a real-world evaluation of its programs to determine whether programs have been successful, this evaluation in no way affects the initial allocation of SIP credits. Under a current California proposal for a hybrid program that includes some test-only and some test-and-repair facilities, EPA has indicated that the State will not receive full SIP credits. This failure to give the State full SIP credits occurs despite the existence of any agreed upon evidence to demonstrate that test-only programs outperform well-designed test-and-repair programs. This failure of EPA to give full credit to California for its proposed program, which incorporates a variety of sophisticated program elements designed to ensure real-world emission reductions, makes EPA's announced flexibility more apparent than real.

Third, States have little incentive to introduce program components that may improve program performance unless those elements are already parameters within EPA's model. Since EPA significantly downplays or omits behavioral aspects that affect program success, program elements (such as use of remote-sensing as a deterrent, incentive, emissions monitor, and oversight mechanism) that provide incentives for consumers to seek "clean cars" rather than merely smog certificates are in effect discouraged. (As noted earlier, that these program elements may be difficult to model does not reduce or eliminate their potential significance for program success. The difficulty in isolating the effects of these behavioral variables in a model underscores the importance of measuring program results by using real-world air emission observations).

Remedy: What Do States Need?

At issue in the current I/M debate between EPA and the States is not whether clean air goals ought to be pursued. The State of California and its I/M Review Committee are fully committed to achieving clean-air goals.

At issue is whether the State of California and other States will be able to implement I/M programs that have some prospect of achieving air emission reductions in the most cost-effective manner.

This challenge requires:

- *State flexibility.* EPA currently pays lip service to the concept of flexibility. However, its reliance on a model that includes unverified assumptions, omits important parameters, fails to give credit for all possible program elements, and has been shown to be an inaccurate reflection of real-world emissions, significantly narrows program options for States.
- *Program evaluation.* Currently, no systematic, real-world program evaluations exist for all State programs. Program success is measured against a model, not empirical evidence that a program has achieved some prescribed reductions in emissions. That developing protocols for measuring such reductions is difficult offers an insufficient excuse to discard altogether any effort at empiricism.
- *Attention to personal behavior.* EPA has over-relied on technocratic aspects of program design, emphasizing such matters as equipment test type and identification of vehicle emissions. The State of California has over 20 million vehicles on the road, many millions of drivers, and over 9,000 service-station operators that repair vehicles. Key to any program success will be whether institutional, technical, and economic aspects of I/M programs provide a situation in which individuals have incentives to drive clean-operating vehicles and automotive technicians have both incentives and opportunities to repair "broken" vehicles.

EPA posits that separation of test from repair activities will deter fraud. Empirical evidence does not appear to sustain this view. Hence, States need to be able to focus on other options, such as that offered by remote sensing and other program enforcement elements, to create conditions where consumers have a motivation to minimize vehicle emissions. Measuring program success by use of real-world data (rather than a model) allows for the impact (if any) from these behavioral aspects to "count" fully in program evaluation.

- *Attention to high-emitting vehicles.* Most—about 80 percent—of vehicles on the road are relatively clean. EPA continues to assume that the best program is one that measures emissions from all cars. Doing so has two adverse effects: (1) money spent to identify all emissions absorbs resources that could be expended to ensure that high-emitting vehicles are repaired (or removed from the road); and (2) targetting all vehicles equally opens up the prospect that, through the test and repair procedures, marginal emitters may actually be rendered less clean—a prospect observed in California's El Monte pilot study and elsewhere. States need the latitude to decide where they will get the "biggest bang for the buck," again, measuring program performance by examining real-world evidence rather than a EPA model.

A minimal first step to providing States with broader program flexibility would be achieved through elimination of EPA's 50-percent discount for test-and-repair programs. A second step, still operating within the confines of a modeling approach to assessing program equivalence, would be to fundamentally revisit and revise that model to better take into account a wide variety of program variables not now considered and not now given a numerical "credit" value. Ultimately, however, program effectiveness should be assessed through real-world data. The third step, thus, is to align I/M programs with other air emission programs in which real-world emissions data are used to evaluate performance and determine program adjustments.

In conclusion, I would like to thank the Senate Subcommittee on Clean Air, Wetlands, Private Property and Nuclear Safety for having held these hearings.

STATEMENT OF MICHAEL P. WALSH, CONSULTANT, ARLINGTON, VA

Good afternoon, ladies and gentlemen. My name is Michael P. Walsh. I am a mechanical engineer and an independent consultant in the field of motor vehicle pollution control and energy. Several years ago, I was the Director of the EPA motor vehicle pollution control program and I am currently a technical advisor to many countries around the world in the design and implementation of their motor vehicle pollution control programs. During 1993, I was asked by the California legislature and the California Air Resources Board to serve as Chairman of a technical Peer Review Panel, to assess the results of an analysis of I/M carried out by the Inspection and Maintenance Review Committee and I will draw in part on that effort in making my presentation today.

Over the course of the past 25 years, the emission rate for on-highway cars in the United States has declined dramatically. As newer vehicles equipped with advanced emissions controls have replaced older, higher polluting ones, there has been a clear downward trend in emissions of all three pollutants. This is especially encouraging in light of the continued rapid growth in vehicles and vehicle miles traveled by cars during this same period; in 1990 there were 50 million more cars on

U.S. highways than there were in 1970. Had emissions per mile not been reduced, passenger cars in 1990 would have emitted 65 percent more CO, HC, and NOx than they did in 1970. In other words, as illustrated in Table A, instead of passenger car CO having been reduced from 68 million metric tons to 27, these emissions would have climbed to 112 tons.

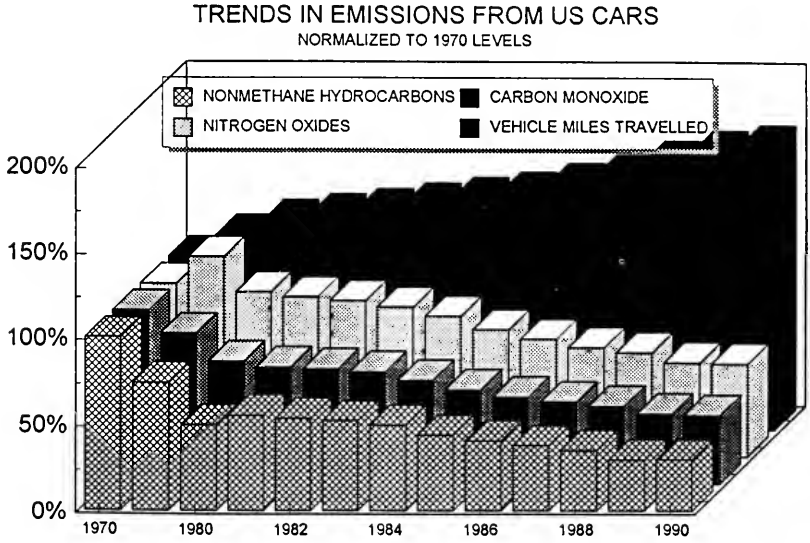
Table A—Emissions Trends in the U.S. (1970–1990)

Passener Cars (Tons Per Year)

	Carbon monoxide	Hydrocarbons	Nitrogen oxides
1970 actual	67.9	8.87	4.36
1990 actual	26.9	2.65	2.34
1990 potential[1]	112.0	14.6	7.2

[1] What would have occurred had pollution controls not been put on cars over this period.

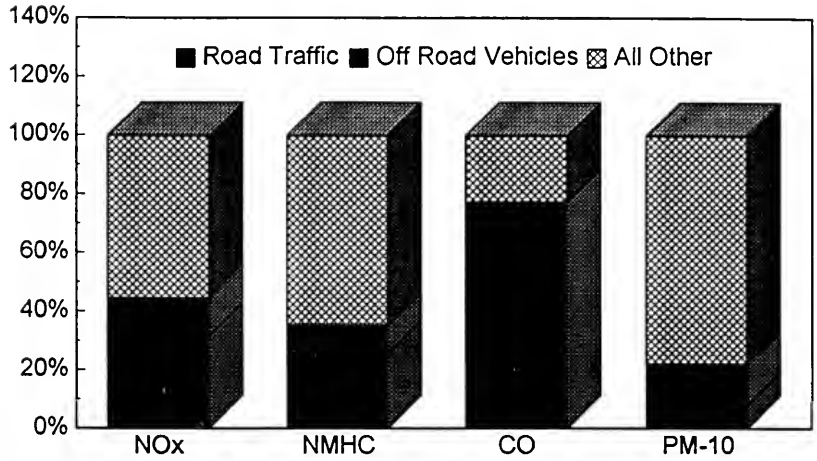
Figure 1 illustrates the auto emissions reductions to date, 60 percent for CO, 70 percent for HC, and 46 percent for NOx.



However, in spite of this progress, vehicular related air pollution remains a serious problem across the United States. For example, we have already had violations of the ozone standard here in Washington, DC, this summer and it is not even July yet. In order to attain the current air quality standard, EPA projects that NOx and VOC reductions on the order of 50–75 percent will be needed throughout the Northeast ozone transport region. These reductions are needed from a 1990 baseline emissions inventory, assuming that all growth in emissions since 1990 must be neutralized in addition to achieving these percentage reductions.

Further, as illustrated below, motor vehicles remain the single largest source of pollution in the country; this is especially true in the most polluted areas.

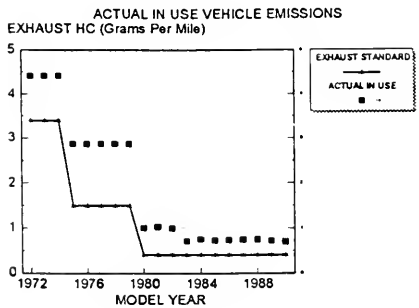
Sources of Emissions In The United States - 1993

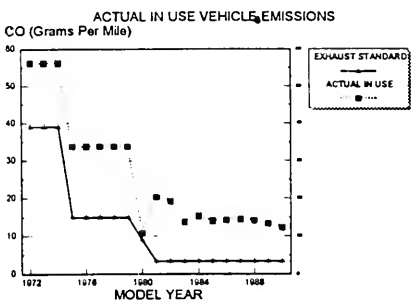


Our continuing air pollution problem is of concern primarily because it poses serious public health risks. Ground-level ozone, for example, damages lung tissue, reduces lung function, and sensitizes the lungs to other irritants. Exposure to ozone for 6 to 7 hours at relatively low concentrations has been found to reduce lung function significantly in normal, healthy people during periods of moderate exercise. This decrease in lung function is often accompanied by such symptoms as chest pain, coughing, nausea, and pulmonary congestion.

Animal studies have demonstrated that repeated exposure to ozone can produce permanent structural damage in the lungs and accelerate the rate of lung function loss, as well as the lung aging period. Each year ground-level ozone is also responsible for several billion dollars worth of agricultural crop yield loss. Studies also indicate that current ambient levels of ozone are responsible for damage to forests and ecosystems.

The hazards of air pollution fall most heavily on the young. For example, in a recently released report, the American Lung Association estimates that over 27 million children under 14 years of age are potentially at risk for developing breathing disorders such as asthma attacks caused by ozone air pollution. Over 50 percent of the children in this age bracket according to the study are presently at risk. In addition it should be noted that minorities and the poor are disproportionately represented in this group.





The previous figures show typical in-use emissions performance relative to emissions standards for cars over the past two decades and illustrate that while in use emissions have gradually improved as standards have been tightened, actual in use emissions for CO and HC remain approximately twice as high as they should. While several factors contribute, the main problem is poor or improper maintenance on in-use vehicles.

The 1990 Clean Air Act Amendments address this problem in several ways such as requiring more durable emissions control systems to reduce their deterioration and mandating onboard diagnostic systems to highlight failed components when they occur. However, these improvements will be phased in over many years and won't have their full impact until about 2010. In the meantime, today's vehicles are absolutely dependent on properly functioning emission controls to keep pollution levels low. Minor malfunctions in the emission control system can increase emissions significantly. Major malfunctions in the emission control system can cause emissions to skyrocket. A relatively small number of vehicles with serious malfunctions frequently cause the majority of the vehicle-related pollution problem. Unfortunately, it is rarely obvious which vehicles fall into this category, as the emissions themselves may not be noticeable and emission control malfunctions do not necessarily affect vehicle driveability. Effective I/M programs, however, can identify these problem cars and assure their repair. By assuring good maintenance practices and discouraging tampering and misfueling, I/M remains the best demonstrated means for protecting a national investment in emission control technology and achieving the air quality gains which are needed.

As a general matter, maximum I/M effectiveness occurs with centralized I/M systems using loaded mode tests. These programs also cost much less overall and are more convenient to the public.

In the remainder of my testimony, I would like to address three questions: What is the real potential for centralized, test only I/M programs; can well done combined test and repair systems be reasonably expected to achieve an equivalent reduction to well done test only systems; and what is the appropriate role for remote sensing?

THE POTENTIAL FOR CENTRALIZED, TEST ONLY I/M PROGRAMS?

Over many years, the real world experience has consistently shown that centralized, test only inspections have advantages compared to combined test and repair programs. As far back as the late 1970's, the programs in Portland, Oregon, Phoenix, Arizona, and New Jersey stood out as superior to private garage systems in terms of test accuracy and quality control. Over the course of the years, there have been many changes and improvements in both test only and combined test and repair systems but the centralized systems usually continue to excel.

In the most recent demonstration of centralized I/M capability, in 1992, the province of British Columbia implemented an emissions inspection and maintenance (I/M) program in the Lower Fraser Valley (LFV) area which incorporated then state-of-the-art inspection procedures.[2] It was the first I/M program to measure hydrocarbons (HC), carbon monoxide (CO) and the oxides of nitrogen (NOx) using the acceleration simulation mode (ASM) test, which is a loaded mode test simulating vehicle acceleration. The inspection also included an idle test and an anti-tampering check to further assure that high emitting vehicles were identified and repaired.

	HC (g/km)	HC	CO	CO	NOx	NOx
Model year	Before repair	After repair	Before repair	After repair	Before Repair	After repair
Pre–1981	3.5	1.9	33	17	3.3	1.4
198–1987	2.2	1.2	29	12	2.8	2.1
Post–1987	0.49	0.24	8.6	2.9	3.0	1.7

The above table summarizes the emissions reductions following repairs for HC, CO, and NOx for each of the model year groups and illustrates that repairs signifi-

[2] When the BC program was designed, EPA had not yet finalized its rule calling for the use of the IM240 test procedures.

cantly reduced HC, CO, and NOx of the failed vehicles in all model year groups.[3] Overall, about 88 percent of the repairs were effective in reducing emissions.[4]

Based on the audit results, overall emissions were reduced by approximately 20 percent for HC, 24 percent for CO, and 2.7 percent for NOx.[5]

In addition to the emissions reductions, the audit program found that fuel economy for the failed vehicles improved by approximately 5.5 percent for an estimated annual savings of $72 per year per vehicle.

The audit program also demonstrated that the centralized program was resulting in a very high quality test program. For example, after reviewing over 2 million tests, the auditor concluded that in only 1.1 percent were incorrect emissions standards applied. Not one instance was found where a vehicle was given a conditional pass or waiver inappropriately.[6] About 1 percent of the failed vehicles were found to be receiving waivers even though their emissions are excessive, i.e., they exceed either 10 percent CO, 2,000 ppm HC, or 4,000 ppm NOx. If the cost limits were increased such that this percentage were halved, the auditor concluded that HC and CO reductions from the program would each increase by about 5 percent.

Available data also indicates that many vehicles are repaired sufficiently that they remain low emitting. For example, almost 53,000 vehicles which failed the test the first year were repaired well enough to pass the following year.

Overall these data confirm the conclusions that I/M programs when properly performed in a centralized facility using a loaded mode test are achieving a substantial reduction in emissions. These reductions are approximately equal to those predicted by EPA's mobile emissions model and are accompanied by substantial fuel savings. According to the auditor, improvements to the program such as including evaporative testing, reducing or eliminating cost waivers, adding the IM240 test, or tightening the standards could all increase the overall benefits significantly. I would expect that in a year or two, when we have the full opportunity to evaluate programs such as that in Colorado which incorporate some of these advances, we will find that these additional reductions are being achieved.

CAN COMBINED TEST AND REPAIR PROGRAMS ACHIEVE THE SAME BENEFITS AS TEST ONLY?

Combined test and repair I/M programs are seen by many people to have advantages over test only systems—more convenience, lower cost, more flexibility, etc. Most importantly, if the same facility repairs a failed vehicle and conducts the retest, the potential for the so called ping-pong effect is minimized. However, after analyzing all the available data, our Panel in California concluded that there are several inherent advantages to a test only system compared to combined test and repair:

1. The potential for good quality control—properly calibrated instruments, correct inspection procedures, etc.—will be much greater in a smaller number of lanes which focus on one job than on a much larger number of lanes which have responsibility to not only test vehicles but repair them.

2. The ability to prevent fraud will be much greater. As noted in meetings our Peer Review Panel had with representatives of the Los Angeles District Attorney, "it is inherently easier to police 200 lanes than 8,000 lanes".

3. If advanced test procedures with the greatest potential for maximum emissions reductions are used, the cost effectiveness of test only will be much greater than with a combined test and repair system. Even using lower cost tests, it seems unlikely that lower throughput test and repair facilities could be as cost effective as test only systems.

State covert audits carried out throughout the 1980's on over 10,000 vehicles have demonstrated the problem of improper testing in decentralized programs.

I know of no currently available data from which to conclude that the inherent problems associated with the combined test and repair program could be overcome sufficiently to achieve equivalent, cost-effective emissions reductions as with test only systems. It is not that there aren't some very good individual service facilities

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[3] "Audit Results: Air Care I/M Program", Prepared For B.C. Ministry of Environment, Lands and Parks and B.C. Ministry of Transportation and Highways, Radian, December 9, 1994.

[4] In its recent evaluation of its I/M program, which is probably the most advanced but certainly the most intensely enforced decentralized I/M program in the world, California found that only about 50 percent of the repairs were effective in reducing emissions, as measured by the full Federal test procedure.

[5] These reductions are almost identical to those predicted by the EPA Mobile 5a Emissions Model, 20 percent, 20 percent, and 1 percent, respectively for HC, CO, and NOx.

[6] If the vehicle is taken to an authorized technician and spends at least $200 on repairs, it can receive a conditional pass or waiver even if it does not meet the emissions standards.

or that State and local officials haven't tried very hard to make these systems work. However, even the best of these systems such as the one which has run in California for the last several years, has been found inadequate. For example, the I/M Peer Review Panel identified some of the inherent problems:

1. In the over 8 years since the Smog Check program was introduced, there is no evidence that there has been any improvement in the performance of the program in identifying and repairing defects which only show up with functional or visual testing. This is true in spite of a massive enforcement effort which dwarfs that carried out by any other I/M program in the country.

2. A previous assessment of the program carried out in 1986 identified many of the same problems which exist today and extensive efforts to upgrade the program including "substantial efforts to upgrade from BAR84 to BAR90 analyzers" have not succeeded in correcting the problems.

3. The need for functional and visual testing will not be eliminated by the shift to loaded mode testing; air injection systems, PCV systems, evaporative emissions control systems, and malfunction indicator lights are among the remaining systems that still require inspection.

4. Based on the 1110 vehicle sample, crankcase ventilation and evaporative related problems alone are a factor in 15 to 20 percent of all vehicles that should fail an I/M test and less than one third of these vehicles are being properly identified and corrected in the current program.

5. The potential for fraud is inherently higher in large numbers of stations.

Arguments have been made by proponents of combined test and repair systems that test only systems can (and currently likely do) have problems with accurate inspections and potential fraud. Our Panel agreed that this is true. However, the Panel also concluded that "there is a fundamental difference between the feasibility of ensuring proper inspections in a high volume testing network and a decentralized [test and repair] program." The Panel agreed with the California I/M Review Committee that with "98 percent fewer inspection facilities to monitor . . . it is reasonable to expect the effectiveness of inspections in centralized facilities to approach 100 percent". As noted above, in the recent evaluation of the BC program, centralized programs can and do work.

CAN REMOTE SENSING REPLACE "CONVENTIONAL" I/M?

Proponents of remote sensing have advocated it's use as a tool to screen cars for subsequent in-depth inspections. They argue that it is uneconomic to test all cars when only a fraction are expected to be high emitters and remote sensing can identify the broken vehicles on the road. It is clear that remote sensing has an advantage of being able to test large numbers of vehicles quickly and relatively cheaply. However, the critical issue is how well it can be used to test a broad cross section of the overall vehicle population for all pollutants on a routine basis without excessively disrupting the free movement of goods and people.

There are several logistic and technical concerns in this regard. The primary concern is over how to remotely sense the majority of the vehicle population. In its current use, remote sensing requires that vehicles pass the sensor in single file. It is not practical to constrict heavily traveled roadways to a single lane during rush hours. Concepts of how remote sensors could be used in multiple-lane traffic situations have yet to be tested. Placement on single lane on and off ramps is a possibility, but this raises concerns over the proportion of the vehicle population that could be covered by such a scheme. The recent Sacramento study appears to bear out these concerns.

There are also concerns about the current limitations of remote sensing with respect to the species detected. Remote sensing has been shown to identify vehicles with excessive exhaust emission rates of hydrocarbons (HC) and carbon monoxide (CO). However, remote sensing currently is not effective in identifying vehicles emitting excessive quantities of oxides of nitrogen (NOx). Additional control of NOx emissions appears to be necessary in order to bring many non-attainment areas into compliance with the ozone standard.

Remote sensing is also unable to identify vehicles with excessive quantities of evaporative emissions.

The Sacramento pilot study is the most comprehensive evaluation of remote sensing to date. Two contractors operated several RSD vans over a 2-month period at various locations. The vans collected data for about 500 days. One purpose of the Sacramento program was to establish the relationship between average emissions in stop-and-go driving (as measured by IM240), vehicle characteristics (e.g., make, model, age, previous I/M test results), and emissions measured by RSDs. Another was to determine how many vehicles could be detected by RSDs at a given time.

Remote sensing test results were very poorly correlated with average emission during stop-and-go driving (as measured by the IM240 test) according to one report.[7] "Using mobile vans equipped with remote sensing devices, measurements could not be obtained on about 75 percent of pre-1980 model vehicles during 500 van-days of testing." Further, using carbon monoxide (CO) standards of about 4 percent and hydrocarbon (HC) standards of 1,000 ppm, only about 10 percent of the excessive HC and CO emission in the fleet were identified, the report concluded.

Fifty-eight percent of the vehicles tested were remote-sensing device (RSD) false failures but had passed an IM240 test. "While the presence of a remote sensing program is expected to have some deterrent effect on tampering, it is clear that the technology is incapable of detecting the most common forms of tampering, prone to a high rate of false failures, and unable to identify most of the excess emissions that exist in the fleet even using cut points that yield a relative high false failure rate," the report says.

Another analysis of the same data, however, indicated that remote sensing could play a useful role in identifying gross polluters for further testing.[8] Relying solely on remote sensing data, the authors noted that "there is a tradeoff between the amount of excess emissions identified and the percent of vehicles that are falsely failed." However, using a high emitter profile in addition enabled them to reduce false failures by about half without significantly affecting the percent of excess HC identified.

Based on all the data I have seen, exhaust HC and CO emissions remote sensing would seem to be a powerful data gathering tool which offers unique opportunities for future emissions reductions. Further, it presents opportunities to heighten consciousness of vehicle emissions and should deter at least some tampering by those so inclined. It should also help identify vehicles with failures that occur between regularly scheduled I/M tests. Its role, therefore, as an adjunct to periodic I/M should be significant. Remote Sensing is not, however, an appropriate substitute for periodic I/M at the present time because practical difficulties regarding the comprehensiveness of testing have not been resolved and it is currently limited in its ability to sense high NOx and evaporative hydrocarbon emissions.

STATEMENT OF DOUGLAS R. LAWSON, THE DESERT RESEARCH INSTITUTE, RENO, NV

Good afternoon, Mr. Chairman and members of the committee. For the record, my name is Douglas R. Lawson, and I am a research professor at the Desert Research Institute in Reno, NV. DRI, where I work, is a part of the University and Community College System of Nevada. At the Desert Research Institute, we conduct air pollution research programs for industry and government sponsors throughout the world. I have carried out research on air pollution for more than 20 years and am interested in obtaining clean air at the lowest cost. This afternoon I will discuss some of the research I have conducted for the past several years on the effectiveness of motor vehicle inspection/maintenance programs and summarize some recent work we have carried out for the California I/M Review Committee.

My presentation this afternoon consists of the following topics:

- a statement of the problem
- the use of mobile source emissions models
- a summary of mobile source emission characteristics
- real-world observations of I/M program effectiveness
- the test component of I/M programs
- the repair component of I/M programs
- conclusions

STATEMENT OF THE PROBLEM

Since the mid–1960's we have made significant strides in cleaning our air. Air quality has improved, even though growth in the number of vehicles on the road and the miles they are driven has increased substantially. However, despite thirty years of increasingly stringent new car certification standards, about 90 cities in the United States exceed the national ambient air quality standard for ozone, which is one of the major components of urban smog. Ozone is not directly emitted by pollution sources, but it is formed through a complex series of reactions in the atmos-

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[7] "The Effectiveness of IM240 Testing, ASM Testing and Remote Sensing, Based on the California I/M Pilot Project", presented at the 16th North American Motor Vehicle Emissions Control Conference in Seattle, WA, Sierra Research, Inc.

[8] "Evaluation of the California Pilot Inspection/Maintenance (I/M) Program" Radian, Draft Final Report, 31 March 1995.

phere involving hydrocarbons, nitrogen oxides, and sunlight. In the past few years, we have shown in urban locations that mobile sources are the major contributor to ozone. The ozone of which I am speaking can be called "ground level" ozone, and it is responsible for health effects to people and damage to crops and forests. This "ground level," or bad, ozone is not to be confused with upper air or "good" ozone which serves to protect the Earth from the harmful components of solar radiation.

Carbon monoxide is an air pollutant that comes almost exclusively from motor vehicles, and it is also responsible for human health effects. In 1994, 11 urban locations in the U.S. were in violation of the air quality standard for carbon monoxide. Our recent research has also shown that high-emitting motor vehicles are also responsible for a number of toxic pollutants, such as benzene and tiny airborne particles, such as the kind you see from smoking vehicles.

Since 1966, motor vehicle manufacturers have reduced the emissions of new vehicles by about 95 percent, but our air quality has not improved by that amount. Why is it that we still have air in many urban areas that is not meeting the standards? I believe the major reason is that inspection/maintenance (I/M) programs have not functioned as the models have predicted, and I will present data today that support this hypothesis.

Inspection/maintenance programs are designed to ensure that motor vehicle emission control systems are functioning properly throughout the lifetime of the vehicle. Two major I/M program types have been carried out in the United States: centralized (generally run by a single contractor, where the test is separated from the repair); and decentralized (where the inspections are carried out by private garages, and generally the tests and repairs are performed at the same location). Some I/M programs require an annual test; others a biennial test; some require testing upon change of ownership. Some programs require emissions testing only; others require inspections for tampering only (where the emission control system components may be missing, modified or disconnected), and others require testing for both emissions and tampering.

THE MODEL

In 1987 I was responsible for organizing and coordinating the largest urban air pollution study in the United States. It was carried out in Los Angeles, the nation's "Smog Capital". This $14 million study had a number of government and private sector sponsors and was the first collaborative air pollution study of its kind. One of the projects in that study was sponsored by the motor vehicle and petroleum industries, and it showed that the hydrocarbon emissions of motor vehicles driving through a tunnel were about four times higher than model predictions, and that carbon monoxide emissions were about three times higher than model predictions. Nitrogen oxide emissions were slightly higher than the model predicted. These surprising results prompted several additional studies which independently confirmed the tunnel study observations.

Why were these results so significant? They demonstrated that the models used to predict mobile source emissions were inadequate, and that they greatly underestimated the influence of motor vehicles on our cities' air quality. These models are used to construct motor vehicle emission inventories which are used by government agencies and others to design air quality strategies for reducing air pollution. Our work and the research of others since 1987 has demonstrated that the current inventories severely underpredict the dominating influence of motor vehicle emissions on urban air quality. With erroneous emission inventories, regulatory agencies may design misdirected and costly programs that produce only marginal improvements in air quality.

The mobile source emission models also are used to predict the effect of inspection/maintenance programs on reducing emissions. However, none of the models have been demonstrated to be accurate, and when they have been compared with real-world data they have been shown to greatly underpredict vehicle emissions and overestimate the effects of I/M programs. Therefore, it does not appear that the current generation of models should be relied upon as the sole basis for designing pollution control strategies.

MOBILE SOURCE EMISSION CHARACTERISTICS

Twelve years ago, in 1983, a contractor reported to the State air pollution agency in California that 12 percent of the vehicles were responsible for nearly half of the carbon monoxide pollution. That consultant recommended that the agency study the characteristics of those high-emitting vehicles because they were responsible for such a large portion of the fleet's emissions. That recommendation remained unnoticed until the tunnel study and other real-world observations demonstrated that

clearly half of the motor vehicle fleet's tailpipe carbon monoxide and hydrocarbon emission readings, when the vehicles are in warm and stable operating conditions, come from only 10 percent of the fleet. We have also learned that the highest emitters come from all model years, and that relatively little pollution comes from old vehicles because they tend to be driven relatively little compared with the newer cars. This tremendously skewed emissions distribution has important control strategy implications: If those high emitters can be identified and repaired, tremendous strides can be made toward improving our nation's air quality. This is what I/M programs are supposed to do.

REAL-WORLD VEHICLE DATA

In 1989 I was responsible for a study sponsored by the California Air Resources Board in the Los Angeles area where we used a remote sensing device with the help of the California Highway Patrol to pull over a number of high-emitting vehicles for inspection. We found that more than 90 percent of the stopped vehicles failed an I/M test when it was administered to those high emitters. This study showed that when a remote sensing device is used to identify high-emitting vehicles, it can do so with greater than 90-percent accuracy. Another study I coordinated in 1991 demonstrated correlation between remote sensing readings and other emissions tests, including the IM240 test, when the cars were given these tests on the same day. These studies also demonstrated that the remote sensors provided accurate readings for carbon monoxide and hydrocarbons. When remote sensors are used properly, more than 90 percent of the cars they identify as high emitters will fail any other type of emissions test when given on the same day.

In the 1989 study I also learned that the State of California and the U.S. Environmental Protection Agency had been conducting voluntary roadside tampering surveys for several years. In these surveys, the agencies collected data from vehicles as they were stopped for an unannounced roadside inspection where an emissions test and an underhood inspection were given for tampered or broken emission control system components. These data have been used by the agencies to examine tampering rates in vehicles, to examine trends in vehicle operating conditions, and to evaluate the effectiveness of different I/M programs.

California Tampering Surveys

We first obtained the data collected in California's voluntary tampering surveys and discovered some interesting results. We found that the overall tampering and emission failure rates were nearly identical in portions of the State that had the Smog Check program and portions of the State that did not. We examined the data from more than 11,000 vehicles stopped at random over a several-year period and could find no observable effect of the Smog Check program on reducing vehicle emissions. We also observed that the vehicles' emissions were clean for the test, as shown by the State's Smog Check records for those vehicles, but that their average emissions were much higher on all other days.

What does this mean? Although we must go on record to say that we believe that California's Smog Check program must do something, we cannot observe its effect, in spite of annual program costs of nearly one-half billion dollars to California's citizens. Our hypothesis is that the failure of the program to achieve the results as predicted by the model (the model predicts that the current program is reducing emissions from vehicles by 18 percent for hydrocarbons, 15 percent for carbon monoxide, and 7 percent for oxides of nitrogen) is due mostly to human behavior and motorists' desires to "pass the test."

California's experience is not unique, however.

EPA National Tampering Surveys

We also obtained data from EPA's national voluntary tampering surveys, which consist of 60,000 vehicles stopped on the road in many U.S. locations between 1985 and 1992. This valuable survey, which is the most effective way to evaluate the effectiveness of I/M programs, was discontinued in 1992. With this data set, we compared the effectiveness of different I/M program types from throughout the country. We took special care to adjust the vehicle populations for year of manufacture and number of miles driven. Our observation is that vehicles in centralized I/M program areas have slightly lower tampering rates only some of the time when compared with decentralized I/M program areas, but not always. As you recall, tampering of the vehicle's emission control system, whether done intentionally or through neglect, does lead to higher emissions. What is even more surprising is that neither program type was much better than no program at all as far as tampering was concerned.

Meanwhile, EPA, on the basis of its model, discounts the benefit of an I/M program by 50 percent if the program is decentralized. The real-world data show that

there is little, if any, real-world basis for the benefit itself, much less for the 50-percent discount on it.

THE "TEST" OR "I" PORTION OF I/M

As we stated previously, much of the current debate in the I/M arena centers on the method and type of emissions test to be used in I/M programs. In the 1990 amendments to the Clean Air Act, the EPA originally mandated the use of a type of treadmill test for cars called an IM240 test, because it lasts 240 seconds. The EPA has recently modified their requirements somewhat; they may explain those changes to you in these hearings.

During the past year, the California Air Resources Board carried out a pilot study to understand which type of emissions test would be most effective in helping technicians diagnose and repair vehicles. We have compared the results from several different types of emission tests from that study, and we observe relatively little difference among those test types in measuring hydrocarbon, carbon monoxide and nitrogen oxides emissions, especially among high-emitting vehicles. The two-speed idle test, ASM tests and IM240 tests were nearly equivalent in measuring hydrocarbon and carbon monoxide; the ASM tests and IM240 test were equivalent for measuring oxides of nitrogen.

"M" PORTION OF I/M

How good is the repair portion of I/M programs? In 1991 the California Air Resources Board recruited a group of about 1,100 vehicles which previously had failed the Smog Check inspection. These vehicles were sent to randomly selected Smog Check stations in the Los Angeles area for undercover inspections and repairs. What we learned from this study really surprised us. We found that only a few of the vehicles in this data set were high emitters, and that the majority were only "marginal" emitters. Most people had previously thought that all failing vehicles were high emitters. Furthermore, we discovered that half of the "marginal" emitters had increased emissions after repairs. We do not know all the reasons why this happened; the study was not designed to answer that question. Most of the emphasis in today's I/M debates is on the type of test and how it should be performed. More information is required for the most important component of I/M programs—the repair component.

CONCLUSIONS

Although we have made good progress in reducing air pollution in the United States during the past 30 years, we still are not in attainment of the national ambient air quality standards. In a series of independent experiments and analyses over the past 8 years, several research groups throughout the country have demonstrated that in-use emissions from mobile sources in urban locations are much higher than the emission models predict. When we have made comparisons of mobile source emission models and emission inventories with real-world observations, we observe that the models do not agree at all with real-world data. These findings suggest that the models are not reliable for predicting emissions from mobile sources.

Several independent groups also have shown that when motor vehicles are in stable and warm operating conditions, a majority of their emissions come from just a small percentage of those vehicles. This small group of high emitters spans all model years; little pollution comes from the oldest vehicles.

This phenomenon has led us to our examination of current I/M program data. We have examined data from more than 70,000 vehicles that have been stopped at random throughout the United States, and we see that the different I/M program types have not been very successful in reducing vehicle emissions. We have analyzed motor vehicle emissions and tampering rates in decentralized, centralized and non-I/M program areas and, although we believe I/M programs must be doing something, we are able to observe only minor effects of I/M programs, regardless of the program type. This observation shows that the 50-percent credit allowed by EPA in its emissions model for centralized I/M programs is not justified or correct.

Our hypothesis is that the major factor in this failure of I/M programs appears to be from human behavior and motorists' desires to cheat and to "pass the test." We also have observed that the test type and mode of testing do not seem to be the most important issues in dealing with the success of I/M programs—new programs that take account of the realities in human behavior must be designed. With promising new technologies available to us, such as remote sensing, we can quickly identify high-emitting vehicles, get them to repair facilities for prompt diagnosis and repairs, and then follow up on those repairs with in-use surveillance methods. We also recommend the acquisition of real-world data from roadside surveys, remote

sensing, and tunnel studies in order to monitor I/M program effectiveness and to provide for rapid changes to the programs if necessary and less reliance upon mobile source emission models until they can independently be shown to be credible, accurate and reliable.

STATEMENT OF COMMISSIONER RICHARD E. JACKSON, JR., NEW YORK STATE DEPARTMENT OF MOTOR VEHICLES

We appreciate this opportunity to provide New York State's perspective on the impact of the federally-mandated "enhanced" vehicle emissions inspection and maintenance (I/M) program. Under the Clean Air Act and EPA regulations, New York and many other States are now facing the need to implement such an I/M program, or face the imposition of severe sanctions against federally funded transportation grants and economic development initiatives.

I want to state emphatically that Governor Pataki fully supports the goal of clean air and is committed to implementing reasonable and cost effective methods of achieving and maintaining clean air. However, we believe that the current EPA enhanced I/M rules, as well as the recently proposed changes to those rules, do not adequately take into consideration the impact upon, or the acceptability to, the State's motorists. The most technologically advanced and designed I/M program will have minimal impact on air quality if the public refuses to participate. Recent suspension of the IM240 program in States such as Pennsylvania, Maryland, Texas and Maine, after contractors built test centers, clearly illustrates the level of public opposition these programs have generated.

The eight million New York motorists who would be affected by EPA's current I/M proposal, and the legislators who represent them, are acutely concerned about the requirement that inspections be done at a facility that can only perform emissions tests. This approach limits the number of private sector participants and the number of test locations, since a test-only facility is constrained as to the services and functions that can be performed. Failure to have significant private sector participation will cause long lines and long distances to be traveled.

Twenty to thirty percent, or at least 800,000 motorists a year, are expected to fail the emissions test. These motorists would then have to make two or more additional trips between repair facilities and test facilities in order to meet their I/M obligations. This could mean at least 1.6 million extra trips each year in New York alone which will add to the pollution burden from mobile sources.

EPA's determination that no test-and-repair system could receive more than 50 percent of the credit available for centralized test-only systems presumes that independent auto repair and dealer facilities are incapable of adequately performing emissions testing. However, we believe that these private sector entities are fully capable of responsibly and accurately performing the federally required emissions tests. During a recent consultation with the representatives of the businesses which now perform emissions inspection and repair in New York, they argued that there is a strong economic disincentive to falsely certify someone as passing an emissions test if a failure would mean that a necessary, potentially expensive, repair would be performed by the station.

In testimony presented to Congress in October 1993, the U.S. General Accounting Office questioned whether the 50-percent credit EPA's regulations give for decentralized test and repair networks is warranted. The GAO indicated that while the data showed that test and repair programs have, in the past, been less effective, there wasn't quantifiable support for the 50-percent reduction.

More recently, in February of this year, the California Inspection and Maintenance Review Committee issued a draft report entitled "An Analysis of the EPA's 50 Percent Discount for Decentralized I/M Programs."

This draft report is very critical of the 50-percent reduction, and the methodology EPA followed to arrive at it. The draft report concludes that the audits of improper testing in current decentralized emissions programs "appear to have been biased against decentralized I/M programs," and concludes that: ". . . there is no empirical or scientific basis for a discount for decentralized programs relative to centralized programs."

More importantly, the draft report points out that although EPA has stated that "The most critical aspect in evaluating an I/M program is the emission reduction benefit it achieves," EPA has not conducted studies to measure whether such reductions have, in fact, occurred. The draft report goes on to note that the studies which have been conducted by other entities have found that:

- In both centralized and decentralized programs, tailpipe emissions measurement show little or no difference between I/M and non-I/M fleets.

- In both centralized and decentralized programs, both ambient and tailpipe data show little or no emissions reductions attributable to I/M.
- Nationwide average reductions in ambient CO and ozone levels over the last decade appear to be independent of the type of I/M program in a given region.

Finally, EPA's continued perseverance with the 50-percent rule ignores the new technologies which will allow States to more effectively enforce the test and repair system. The more sophisticated dynomometer test that will be required permits greater control of the test environment. For example, specific changes in the cycling, controlled by the software, can be used to determine that a car is actually being tested on a dynomometer. Companies are now developing methods to read engine signatures which will also prevent vehicle switching during the test. The fixed nature of the dynomometer as opposed to the BAR90 equipment will allow tests to be captured by video camera or computer video imaging. These materials will be useful in providing evidence for the enforcing of the program and will act as a deterrent to those who would cheat.

Clearly, the purpose of enhanced I/M should be to identify and repair high emitting vehicles, not needlessly subject millions of vehicle owners to expense and inconvenience with no concurrent improvement in air quality. In fact, in an article contained in the May 19, 1995 issue of Science magazine, several scientists set forth their conclusion that EPA's current approach of requiring testing of all vehicles in a given area is vastly over-inclusive. Based upon on-road remote sensing, they discovered that 7 percent of vehicles accounted for 50 percent of the on-road CO emissions and 10 percent of the vehicles accounted for 50 percent of the on-road HC emissions, and suggested that the most cost-effective means of achieving pollution reduction is to identify and repair the 20 percent of vehicles which are severe polluters.

We believe, in addition, that the I/M program is over-inclusive because, under the Clean Air Act, vehicle inspections are required in metropolitan areas located in Ozone Transport Regions even if the areas are in attainment with air quality standards.

Considering that on-board diagnostic technology is rapidly developing to the point where it can store and download emission-related problems on a vehicle's engine management processor, we have to ask whether any resources spent on equipment for enhanced I/M testing might not be an investment in certain obsolescence.

Because of negative public reaction to the implementation of I/M programs and because of the uncertainty created by EPA's recent attempts at a more flexible approach to I/M program implementation, New York, in conjunction with other States, has sought a moratorium of at least 2 years on the further implementation of the Clean Air Act and imposition of sanctions. Such a moratorium has, for example, been proposed in the House of Representatives in H.R. 46. During such a moratorium, a task force, including representatives from EPA and the States should, we believe, work together to develop recommendations for changes to the Clean Air Act, to achieve enhanced air quality in a publicly acceptable manner. We request your support for such legislation.

Your willingness to investigate the repercussions of the I/M mandate are deeply appreciated and, on behalf of the people of New York, we applaud your efforts.

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

Resources, Community, and
Economic Development Division

B-270501

November 16, 1995

The Honorable Lauch Faircloth
Chairman, Subcommittee on Clean Air,
Wetlands, Private Property, and Nuclear Safety
Committee on Environment and Public Works
United States Senate

Dear Mr. Chairman:

This interim report responds to your request for an assessment of the accuracy and completeness of the information that the Environmental Protection Agency (EPA) provided to you on grants, interagency agreements, and cooperative agreements issued or used by the agency's Office of Mobile Sources. During hearings before your Subcommittee on June 29, 1995, witnesses argued over the fairness of EPA's decision to give states different emissions reduction credits under the Clean Air Act, depending on the type of automobile emissions testing used by the state. The credits are based, among other things, on whether the state has a test-only or a test-and-repair program. Test-only programs require the testing of automobile emissions in facilities that do not repair vehicles, while test-and-repair programs permit the facilities to do both. According to EPA's November 5, 1992, rule, a state having a test-and-repair program would receive, for certain tests, only 50 percent of the emissions reduction credits that it would receive if it had a test-only network.

In a July 20, 1995, letter to EPA's Assistant Administrator for Air and Radiation, you asked EPA a series of questions about its inspection and maintenance programs for automobile emissions testing. Included in the questions, you specifically requested (1) a listing of the date, amount, and purpose of all contracts, grants, interagency agreements, cooperative agreements, or other funding mechanisms issued or used by the Office of Mobile Sources after November 5, 1992, and (2) the same information from November 1989 to the present for 19 organizations that you identified, including environmental groups and business coalitions. EPA replied to your request by letter dated August 18, 1995, and by a follow-up letter dated September 1, 1995. Subsequently, you asked us to (1) determine the completeness of EPA's list, (2) verify the information contained in EPA's responses, (3) describe

the procurement procedures that EPA followed in awarding each procurement, and (4) describe the scope of work for each task issued under the contractual agreements and other funding mechanisms identified.

On October 27, 1995, we reported (GAO/RCED-96-33R) to you on our assessment of the accuracy and completeness of the information EPA provided to you on contracts issued or used by the agency's Office of Mobile Sources. As with our evaluation of EPA's response on contract data, your office asked for an interim report on the completeness of EPA's list as it relates to grants, interagency agreements, and cooperative agreements and verifying the information contained in EPA's responses because of impending congressional oversight of the inspection/maintenance program.[1] As agreed with your office, we will report to you, at a later date, on the results of our review of the procurement procedures followed by EPA in awarding each procurement, and a description of the scope of work for each task issued under the contractual agreements identified.

DATA PROVIDED BY EPA ON GRANTS AND AGREEMENTS WERE NOT COMPLETE

EPA's response to you on grants issued by its Office of Mobile Sources was incomplete. EPA identified only four of the seven grants issued by the Office of Mobile Sources to the organizations that you identified. In addition, EPA did not identify 33 grants issued by the Office of Mobile Sources after November 5, 1992, and 26 grants that were active as of that date which may have been used. In addition, two grants issued by EPA's Office of Research and Development may have been used to support research on mobile source pollution but were not identified in EPA's responses to you. Additional information on these grants follows.

EPA's August 18, 1995, reply to your Subcommittee indicated that its Office of Mobile Sources had awarded four grants to 2 of the organizations you identified in your request. However, we found that the Office of Mobile Sources awarded seven grants to 4 of the organizations you identified in your request.[2] (The three grants valued at $1.1 million and not identified by EPA are listed in enc. I.) We found that none of the other organizations identified in your request received an Office of Mobile Source grant during the period from November, 1989, through September 30, 1995. However, we found that after EPA replied to your request for data, its Office of Enforcement and Compliance Assurance issued a grant, on September 18, 1995, to the Coordinating Committee for Auto Repair for $800,000. The grant was for the

[1]Throughout this report, we refer to grants, interagency agreements, and cooperative agreements as grants because EPA's database does not distinguish among these funding mechanisms.

[2]Other EPA offices, including the Office of Research and Development, issued 104 additional grants to six of the organizations you identified.

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National Automotive Compliance Center to provide multimedia environmental compliance information.

In addition, we found that after November 5, 1992, the Office of Mobile Sources issued 33 grants valued at about $7.6 million that were not disclosed in EPA's replies to you. (The 33 grants are listed in enc. II.) We also found that the Office of Mobile Sources had issued three additional grants since EPA replied to your request for data valued at over $1.6 million, including a grant to the West Virginia University Research Corporation for the Alternative Fuel Vehicle Training Program valued at $1.5 million. In addition, the Office of Mobile Sources had issued 26 grants that were active as of November 5, 1992; however, these grants were not identified in EPA's response to you. The expiration dates of these grants ranged from February 28, 1993, to October 10, 1996, and may have been used after November 5, 1992. We will report to you at a later date the extent to which the Office of Mobile Sources used each of the grants after November 5, 1992.

While you did not ask EPA to report on grants issued by offices other than the Office of Mobile Sources, we identified two grants valued at about $1.4 million issued by the Office of Research and Development that appear to have supported research on mobile source pollution. These grants were not identified by EPA in its responses to you. (These two grants are listed in enc. III.) In addition, the Office of Research and Development had eight grants active as of November 5, 1992, that appear to have supported research on mobile source pollution. The expiration dates of these grants ranged from May 21, 1993, to June 21, 1995, and may have been used after November 5, 1992. We will also report to you at a later date the extent to which these grants were used after November 5, 1992.

AGENCY COMMENTS

We discussed the information contained in this report with the Director, Office of Mobile Sources, who stressed that EPA interpreted Senator Faircloth's July 20, 1995, letter to be requesting only inspection/maintenance expenditures by the Office of Mobile Sources with the 19 organizations identified in the letter. The Director attributed the omission of grants and agreements issued by the Office of Mobile Sources to a different interpretation of Senator Faircloth's request. The Director emphasized that because the agency's staff were furloughed on November 14, 1995, EPA was unable to verify the accuracy of the data contained in this report.

SCOPE AND METHODOLOGY

In conducting our work, we obtained documentation and interviewed officials from EPA's Office of Administration and Resources Management to obtain a listing of all grants, interagency agreements, and cooperative agreements awarded by EPA from October 1988 to September 30, 1995. We reviewed the database listings, which does not distinguish among these funding mechanisms, and selected those grants and agreements issued by the Office of Mobile Sources between November 5, 1992, and

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September 30, 1995. We also selected grants and agreements issued by the Office of Research and Development for research on mobile source pollution. In addition, we reviewed EPA's awards from October 1988 to September 30, 1995, to determine whether any grants and amendments were awarded to the 19 organizations you identified in your July 20, 1995, letter to EPA. We conducted our work in November 1995 in accordance with generally accepted government auditing standards.

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As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 14 days after the date of this letter. At that time, we will send copies to the Administrator of the Environmental Protection Agency and other interested parties. We will also make copies of the report available to others upon request.

Please call me at (202) 512-6111 if you or your staff have any questions.

Sincerely yours,

Peter F. Guerrero
Director, Environmental Protection Issues

Enclosures - 3

ENCLOSURE I

GRANTS AND AGREEMENTS ISSUED BY EPA'S
OFFICE OF MOBILE SOURCES (FROM NOV. 1, 1989, THROUGH SEPT. 30, 1995)
TO ANY OF THE 19 ORGANIZATIONS BUT NOT IDENTIFIED BY EPA

Grants and Agreements	Grantee	Project period	Project title	Award value
816733-01-0	American Association or Retired Persons (AARP)	3/2/90 3/1/93	Senior Environmental Employment Program for Clean Air	$933,860
818718-01-0	American Lung Association	10/1/91 9/30/95	Comprehensive Outreach Campaign Motor Vehicle Emissions Control System Tampering	188,660
992123-01-0	American Lung Association	2/15/95 7/01/95	Education/Media Outreach-Enhanced Inspection/Maintenance	2,000
3 Grants and Agreements				**$1,124,520**

Note: During the same time period, other EPA offices, including the Office of Research and Development, issued 104 other grants to one or more of the 19 organizations: 47 additional grants to the American Association of Retired Persons, 34 additional grants to the American Lung Association, 3 grants to Consumer Federation of America, 1 grant to the Coordinating Committee for Auto Repair, 13 grants to the Environmental Defense Fund, and 6 grants to the Natural Resources Defense Council

ENCLOSURE II

GRANTS AND AGREEMENTS ISSUED BY EPA'S OFFICE OF MOBILE SOURCES
(FROM NOV. 5, 1992, THROUGH SEPT. 30, 1995) BUT NOT IDENTIFIED BY EPA

Grants and Agreements	Grantee	Project period	Project title	Award value
820766-01-0	University of Wisconsin	01/01/93 12/31/94	Design, Development, and Testing of a Passenger Car Hydropneumatic Energy Storage System	$396,270
822533-01-0	National Council of Senior Citizens	12/27/93 12/26/96	Senior Environmental Employment	182,000
822571-01-0	University of Wisconsin	05/01/94 2/06/96	Design,Construction, and Development of a Series Hydrostatic Energy Design, Construction and Development	354,230
822672-01-0	Colorado School of Mines	10/01/93 12/31/95	Measurement of High Altitude Heavy Duty Engine Emissions	500,000
824083-01-0	Michigan State University	5/27/95 5/26/96	Effects of Ambient Conditions on the Emissions of Two and Four-Stroke Air-Cooled Engines	105,940
824093-01-0	Organization for Econ. Coop and Dev.	3/1/95 7/30/95	Sustainable Transport- -The objective of this project is to assist in the completion of a report.	15,000
824252-01-0	Colorado School of Mines	5/22/95 5/21/96	Measurement of High-Altitude Heavy Duty Emissions	294,000
902836-01-0	Colorado State University	9/1/94 8/31/97	Continuing the National Center for Vehicle Emissions Control and Safety	258,720
902838-01-0	West Virginia Univ Research Corp.	10/1/94 9/30/97	Alternative Fuel Vehicle Training Program – Implementation of the natural gas vehicle curriculum.	1,280,000
914049-01-0	Matthew Frank Adler	6/1/93 10/31/93	School of Natural Resources	6,500
914225-01-0	Andrew Wacker	3/10/94 4/28/94	Physics and Astronomy	5,700
914226-01-0	Delano, Raymond, III	3/1/94 9/1/95	Clinical Laboratory Sciences	5,700

ENCLOSURE II

Grants and Agreements	Grantee	Project period	Project title	Award value
914320-01-0	Colleen Marie Heflin	5/4/94 12/3/94	Public Policy Studies	6,500
914368-01-0	Michele Richards	4/25/94 8/24/94	Automotive Technology	3,250
914374-01-0	Tonya D. Williams	4/25/94 8/24/94	Automotive Technology	3,250
914676-01-0	Murchie, Peter	6/7/95 10/5/95	Public Health	6,500
914681-01-0	Polovick, Christopher	8/21/95 2/28/96	Resource Development	8,600
914696-01-0	Harris, Churita	6/26/95 9/25/95	Political Science	6,000
935931-01-0	General Services Administration	4/1/93 10/31/93	Computer Software Development and Maintenance Support for the Certification and Fuel Economy Program	792,000
935946-01-0	General Services Administration	4/1/93 9/30/93	Specialized Data Processing Support for the Regulation Development and Support Division	205,000
935963-01-0	General Services Administration	4/1/93 9/30/93	Federal Test Procedures Revision Study Support	283,840
935964-01-0	General Services Administration	4/1/93 9/30/93	Computer Software and Database Development for the Emission Planning and Strategies Division	832,310
935989-01-0	Dept. of Health and Human Services	3/15/93 3/15/94	MTBE and Health Effects in "MTBE-Control City"	82,600
936251-01-0	Dept. of Transportation	3/1/93 9/30/94	National Symposium on Air Quality and Transportation	30,000
936280-01-0	General Services Administration	1/1/94 9/30/95	Specialized Data Processing Support for the Regulation Development and Support Division	189,000

ENCLOSURE II

Grants and Agreements	Grantee	Project period	Project title	Award value
936287-01-0	Dept of Health and Human Services	10/1/93 9/30/96	Employee Counselling Service Program	11,660
936676-01-0	Department of Transportation	9/1/94 9/30/96	Integrating Transportation and Air Quality-Phase II	100,000
936725-01-0	Department of Energy	7/7/94 9/30/98	Development of the Transportation Analysis and Simulation System	1,000,000
936750-01-0	General Services Administration	9/1/94 9/30/95	Specialized Data Processing Support for the Regulation Development and Support Division	180,000
937002-01-0	Office of Personnel Management	10/31/94 9/30/95	Office of Mobile Sources Reinvention Team Services	130,440
937157-01-0	Department of Transportation	5/1/95 9/30/97	Transportation/Air Quality Public Education Campaign-Phase II	50,000
937186-01-0	Department of Energy	5/1/95 9/30/96	Evaluation of Changes to Motor Vehicle Fuel Quality for Emissions Control	225,000
937359-01-0	General Services Administration	10/1/95 11/30/95	Computer Software and Data Base Development for the Emission Planning and Strategies Division	74,700
33 Grants and Agreements				$7,624,710

ENCLOSURE III

GRANTS AND AGREEMENTS ISSUED BY EPA'S
OFFICE OF RESEARCH AND DEVELOPMENT (FROM NOV. 5, 1992, THROUGH
SEPT. 30, 1995) FOR SUPPORT OF EPA'S MOBILE SOURCE PROGRAM

Grants and Agreements	Grantee	Project period	Project title	Award value
822840-01-0	The Regents of the Univ. of Michigan	6/1/94 5/31/96	Methods for Remote Sensing –This research is expected to produce information products such as journals	$144,780
823020-01-0	Georgia Tech Research Corporation	10/1/94 9/30/99	The Research and Development of Improved Emission Inventory Methodologies for Highway Vehicles	1,247,700
2 Grants and Agreements				**$1,392,480**

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United States Senate
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
WASHINGTON, DC 20510-6175

September 14, 1995

The Honorable Charles A. Bowsher
Comptroller General
General Accounting Office
441 G Street, NW
Washington, D.C. 20548

Dear Mr. Bowsher:

Enclosed is a copy of my correspondence with the Environmental Protection Agency (EPA) about contracts, grants, interagency agreements, cooperative agreements, and other funding mechanisms used by or issued under the auspices of the EPA Office of Mobile Sources subsequent to the Enhanced Inspection and Maintenance (I/M) Rule's issuance on November 5, 1992. I am particularly concerned about extending contracts, grants, and other funding mechanisms to groups that favor the EPA's position on centralized inspection and maintenance for State auto emission programs. It was my understanding that States were given flexibility to design their own I/M programs as long as they meet emission reduction goals and did not necessarily have to adopt a centralized testing program. In EPA's response, the Agency failed to address my question about possible use of funds to pay environmentalists, citizen groups, and others to influence Congress and/or States in favor of EPA's controversial vehicle emissions testing program.

The Subcommittee requests that your agency examine EPA's response of August 18, 1995 and verify the information contained in the listing of contracts, grants, interagency agreements, cooperative agreements, or other funding mechanisms. Please also determine the completeness of EPA's list and identify any other funding mechanisms (from November 1989 to the present) that may have been awarded to the 19 environmental groups, public citizen and business coalitions listed in my July 20, 1995 letter to EPA's Assistant Administrator for Air and Radiation (copy enclosed). In addition, for each contract, grant, interagency agreement, cooperative agreement, or other funding mechanism identified, describe the procurement procedures followed by EPA in awarding the procurement. Also, please describe the scope of work for each task issued under the contractual agreements and other funding mechanisms identified.

Please keep our Staff Director, Mr. Sean Callinicos at (202) 224-3783, informed about your progress.

Sincerely,

Lauch Faircloth,
Chairman
Subcommittee on Clean Air, Wetlands,
Private Property, and Nuclear Safety

Enclosures

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

JUL 11 1995

OFFICE OF
AIR AND RADIATION

The Honorable John H. Chafee
Chairman
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

I would like to clarify and expand upon my responses to a line of questioning you had at Chairman Faircloth's Subcommittee hearing on June 29, 1995. The subject of the hearing was the vehicle inspection and maintenance (I/M) program.

During the hearing you asked about the status of California's I/M plan. As you know, if California had not submitted a complete I/M plan by June 30, 1995, Clean Air Act mandatory sanctions would have gone into effect. I responded that no formal decision had yet been made because the state had not yet submitted its plan to EPA, but the hybrid plan the state had developed in draft would appear to be approvable under the Environmental Protection Agency's (EPA) I/M requirements. I did not address the question of whether California's plan would receive full credit as a high enhanced I/M program.

In fact, on June 30, California submitted its I/M plan to EPA. EPA found the plan complete and, thereby, stopped sanctions from being imposed. A letter was sent to the State from the EPA Regional Office in San Francisco informing them of these actions later on June 30.

Under California's I/M program, 15 percent of vehicles will initially go to test-only stations, while the remaining vehicles will have the option of going to test-and-repair stations. The State will finalize the program design features of the second phase of the program by December 31, 1997, including the number of vehicles to be sent to test-only stations. EPA believes the State has the flexibility to implement such a phased program.

The only remaining question is how much emission reduction credits California's program will achieve. The initial phase is consistent with EPA's recently proposed I/M flexibility rule, and should exceed the low enhanced I/M performance standard. Although the initial phase does not achieve full credit (i.e., does not meet the high enhanced performance standard), we are hopeful the second phase will do so. We will work closely with State officials to evaluate the emission reduction potential of the second phase design features.

I hope this clarifies my comments at the hearing about the California I/M program. We will keep you and your staff informed as new developments occur. Thank you for your continued support of clean air programs.

Sincerely yours,

Mary D. Nichols
Assistant Administrator
for Air and Radiation

JONATHAN ADLER

Putting EPA to the I/M grant test

The Environmental Protection Agency's plans to force millions of car owners to submit to costly and time-consuming vehicle emissions inspection programs has sparked a fierce backlash throughout the country.

In response, EPA has solicited support from non-profit and other private organizations. Over the past several years, the EPA has even disbursed hundreds of thousands of dollars to promote its regulatory initiatives. Yet when asked by a senator to account for the use of taxpayer dollars to fund grants or contracts in support of the inspection and maintenance (I/M) program, the EPA was not wholly forthcoming. Indeed, according to a just completed investigation by the General Accounting Office, the EPA withheld information from the Senate.

Under current EPA regulations, state governments must impose stringent annual vehicle emission inspection programs in most major cities and throughout the Northeastern United States. States that do not implement emission testing programs that meet the EPA's precise definition of "enhanced" I/M do not receive full credit toward meeting the Clean Air Act's regulatory requirements and face the possibility of federal sanctions. "EPA is forcing states into a one-size-fits-all program by virtue of its arbitrary 50 percent reduction in emission credit," complained five Republican governors in a recent letter to the congressional leadership. Bills to reform the 1990 Clean Air Act and allow states to pursue emission reduction policies other than enhanced I/M programs will soon be introduced in both the House and Senate.

On June 29, Mary Nichols, assistant EPA administrator for air and radiation, defended EPA's "enhanced" I/M requirements before a Senate environmental subcommittee on the vehicle emissions inspection program. While acknowledging that portions of the program were "controversial," Ms. Nichols claimed that the program is necessary for states to meet federal air quality standards, a claim many air pollution experts dispute.

At the hearing, Sen. Lauch Faircloth asked Ms. Nichols to account for grants and contracts to organizations that have advocated implementation of the EPA's stringent emission regulations. In written responses provided to the subcommittee two months later, Ms. Nichols listed "funds that may have been provided to certain organizations for activities related to EPA's I/M rule" from the EPA's Office of Mobile Sources. There was only one problem: Several million dollars worth of grants and contracts were omitted from the list, including nearly $200,000 given to the American Lung Association for "outreach" activities related to the I/M program.

At Mr. Faircloth's request, the General Accounting Office reviewed the "accuracy and completeness" of the information Ms. Nichols provided and found it wanting. "EPA's response to you on grants issued by its Office of Mobile Sources was incomplete," the GAO concluded. Missing from Mary Nichols' response to the subcommittee were numerous grants and contracts to organizations specified by the committee, as well as other grants that should have been cataloged as well.

Moreover, the GAO review revealed that organizations receiving money from EPA's Office of Mobile Sources to support the I/M program also receive financial support from other parts of the Agency. For instance, over the past six years, the EPA's Office of Research and Development issued 34 grants to the American Lung Association and three grants to the Consumer Federation of America.

The EPA maintains it does not issue grants to pay for lobbying activity. However the pattern of EPA grants suggests that the agency certainly sought to increase support for its controversial emission testing program in the face of mounting opposition.

One recipient of grants from the EPA's office of mobile sources is an organization called the Coalition for Safer Cleaner Vehicles. Members include numerous auto part, repair and testing companies that benefit from the emissions inspection program, as well as Naderite outfits such as Public Citizen and the Center for Auto Safety.

In May, CSCV released a report that purportedly exonerated the EPA program. One Coalition official commented that "enhanced testing is essential to achieving the nation's clean air goals." One month later, according to the EPA, CSCV and the Consumer Federation of America received a $150,000 grant from the EPA to "develop and distribute public informational materials on I/M."

The incompleteness of the EPA's responses to direct congressional inquiries has raised concerns in Mr. Faircloth's office. In October, Mr. Faircloth referred the matter to Senate Government Affairs Committee Chairman Ted Stevens, Alaska Republican. In the House, Rep. George Gekas, Pennsylvania Republican, has also raised concerns about discrepancies between information provided by the EPA to members of Congress and the actual experiences of states seeking to comply with the Clean Air Act. Last week, Mr. Gekas wrote to EPA Administrator Carol Browner that "The contradictions between your letter to Speaker Gingrich and correspondence with various state officials over the past few years are of great concern."

Neither Ms. Nichols' testimony nor her written responses to Senate inquiries were delivered under oath. This may be a good thing, as it was 10 years ago when a Reagan EPA official Rita Lavelle was sentenced to six months in prison and fined $100,000 for lying to Congress about her activities as head of the EPA's Superfund program. Now that both the House and Senate are looking carefully into EPA's administration of the act, EPA officials may wish to be more careful if they wish to avoid Ms. Lavelle's fate.

Jonathan H. Adler is director of environmental studies at the Competitive Enterprise Institute and the author of "Environmentalism at the Crossroads" (Capital Research Center).

STATEMENT OF AUTOMOTIVE PARTS AND ACCESSORIES ASSOCIATION

The Automotive Parts and Accessories Association is pleased to provide the following testimony regarding the Environmental Protection Agency's enhanced emissions inspection program. APAA is a trade association representing over 1,700 manufacturers, manufacturers representatives, distributors and retailers of automotive parts and services. APAA strongly supports emission inspection as the most cost effective method for reducing in-use vehicle emissions. Since most of our members do not perform emissions testing, APAA does not hold an official position regarding whether inspection should be centralized or decentralized. However, our members do play an important role in providing both the parts and services necessary to keep vehicle emissions systems properly maintained and therefore APAA is greatly interested in the future of the enhanced I/M program.

A. INTRODUCTION

Mr. Chairman, if the Clean Air Act had been implemented as Congress had planned, we believe that this Nation would now have in place a viable, publicly supported emission inspection program. Unfortunately, such a program does not currently exist in most States. Instead, we find the inspection program has been under siege by Governors, legislators, industry and the public due to the high cost and public inconvenience imposed by EPA's mandated centralized I/M 240 program. What is worse is that the Agency has been unwilling to make the regulatory changes to its I/M program necessary to address growing public opposition. Due in large part to the Agency's intransigence, I/M has been threatened with either elimination or delay through actions being undertaken in the States and in Congress.

It is these dire circumstances that compelled APAA, along with 11 other automotive related organizations, to send a letter warning EPA that changes are necessary in order to put the I/M program back on track. The letter dated March 3, which is attached to this statement, reiterates strong industry support for the emission inspection/maintenance program, but calls for changes to current EPA regulations which will result in programs that are both effective and acceptable to the public, States and industry.

The good news is that since the letter, the Agency has initiated efforts to provide the States with a significant amount of flexibility in determining which type I/M program will best meet the public and air quality needs of their State. For example, California is poised to receive approval for one of the most comprehensive and innovative emissions inspection programs, centralized or decentralized, anywhere in the Country. APAA is particularly supportive of attempts by the State to profile high polluting vehicles for test-only inspection. Since only a minority of the vehicles are responsible for most of the pollution, it makes sense both politically and environmentally to target those vehicles for the most rigorous inspection, while allowing less onerous inspection for the vast majority of other car owners. In addition, the California program will utilize remote sensing to further target high emitting vehicles for emissions repairs. While certain technical questions regarding the accuracy of this technology remain, remote sensing holds great promise for strengthening the I/M program by providing car owners with a strong incentive to keep vehicles properly maintained all year long rather than just obtaining repairs prior to undergoing regular inspection.

B. INSPECTION PROGRAMS SHOULD BE JUDGED BY PERFORMANCE

Despite the Agency's progress in providing flexibility, we do not believe that emissions inspection programs will reach implementation in many States unless EPA eliminates the controversial 50-percent penalty for decentralized I/M program, such that nonattainment areas may adopt and receive credit for an effective test and repair programs. Instead of pushing a "one-size-fits-all" I/M program on the States, the Agency should provide appropriate credit to each State program based on the ability of that program to target and repair high emitting vehicles. Whether centralized or decentralized, the programs should be judged on the merits of each individual plan rather than by an arbitrary and out of date credit assumption.

Once implemented, monitoring of program performance in the real world would be an important component in the EPA I/M effort. Should the State I/M program fail to meet the expected performance, either the credit, the program or both would need to be revised.

While APAA agrees with the Agency that past decentralized emissions inspection programs have not been effectively administered by the States; improvements in test equipment, administration and enforcement could eliminate many of the past program deficiencies. Yet, no where in any of the EPA literature have we found any

discussion of proposals to improve decentralized programs. It appears that the Agency has been so enamored with centralized I/M 240, that they believe no other network could come close and therefore all reasonable alternatives should be abandoned. We feel that this view has been both unfair and unrealistic. While this negative view toward decentralized I/M appears to be changing, we wish that the Agency would expend the same energy it has invested in developing and defending centralized I/M 240 toward generating methods for assisting the States improve the effectiveness of their test and repair programs.

In advocating a performance based I/M standard, we are not calling for the elimination of EPA's ability to ensure that State emissions inspection programs are effective in reducing in-use pollution from motor vehicles. Clearly, if we are to require the public to undergo the inspections, they must be meaningful.

The same public backlash that EPA suffered for making the programs too rigorous, will be repeated if the public perceives that the programs are not effective in reducing in-use pollution. In addition, the States and the repair industry will have spent an extensive amount of time, energy and money establishing a testing program which will fail to produce the necessary emissions reductions to meet Federal Clean Air Act standards.

EPA I/M requirements also must consider the fact that in the very near future, the testing of on-board diagnostic systems will be the most effective method for measuring vehicle emissions in-use. This new sophisticated technology has the capability of monitoring nearly all emissions related functions of the vehicle and testing could be conveniently conducted by most vehicle service facilities at a minimum cost to both the consumer and the inspection facility. It seems unreasonable for the Agency to require States and businesses to expend large sums of money implementing expensive and unwieldy I/M programs which may become unnecessary as vehicle equipped with the OBD system become more prevalent.

C. EFFECTIVE REPAIRS IMPORTANT TO I/M PROGRAM SUCCESS

Just as important as the inspection element of I/M is the need to ensure that the vehicles which are found through testing to be polluting are repaired and that they are kept properly maintained. In fact, the language in the Clean Air Act mandates that car owners spend up to $450 for repairs in order to pass an emissions inspection program. The need to include a high waiver amount was due to the fact that many States had repair minimums which were too low to ensure that vehicle emissions systems were being properly repaired. By enacting the waiver provision, Congress felt that if significant emissions reductions were to be achieved as a result of I/M, car owners must spend the necessary funds to obtain all necessary repairs.

Based on the importance of repairs. to achieving emissions reductions, APAA urges the current waiver requirement be maintained. However, it also is critical that EPA and States pursue opportunities to help motorist who are unable to afford the repairs that are necessary to bring the vehicle into compliance.

Assistance for indigent car owners could be accomplished with funds from testing fees or from stationary sources which would provide repairs in exchange for emissions credits.

APAA also strongly supports efforts by States and EPA to ensure that technicians will have the ability to repair vehicles failing emissions inspection programs. We particularly commend efforts by EPA to implement the service information availability provisions mandated by Section 202(m)(5) of the 1990 Clean Air Act Amendments. The rule, which was signed by EPA Administrator Carol Browner on July 26, 1995, requires car companies to provide technicians with all information necessary to use new on-board diagnostic systems and to make emissions related repairs. We believe that such requirements will be of major assistance in providing technicians access to the training and information necessary to work on today's high tech vehicles.

D. TECHNICIAN CERTIFICATION REQUIREMENTS ALSO SHOULD BE PERFORMANCE BASED

However, APAA is concerned about the growing number of States which are requiring technicians to undergo a minimum number of training hours in order to be certified to repair failed vehicles. While we support training as an important element in the success of the I/M program, many I/M technicians already have sufficient training and real life experience to work on most vehicles. Training mandates, such as the program adopted in Connecticut, impose extensive burdens on small and medium size shops which must surrender their technicians for long periods of time in order to undergo training. If a technician already is properly trained, a training mandate is redundant and places an unnecessary drain on shop resources.

APAA contends that like I/M programs, State training efforts should be performance oriented. While the State does play a role in ensuring that training is available for technicians so desiring, it should be up to the individual technician or shop to determine how the technicians will meet the performance requirement. Technicians which already have undergone training or have sufficient real life experience to work on I/M failures, should be able to take a test in order to become certified.

E. CONCLUSION

If anything has been learned from the past 4 years, it is that public policy cannot be developed in a vacuum. While EPA may have had the best of intentions in putting together the enhanced inspection program, the failure to consider whether the program would be accepted by the public has turned out to be fatal. However, based on the apparent change of attitude at EPA. APAA strongly believes that an opportunity still exists to build an effective emissions inspection program which is convenient and will bring about significant pollution reductions from motor vehicles.

We further understand that there has been a major reorganization in the Office of Mobile Sources at EPA and that new staff are being brought in to address the I/M issue. Without a doubt, a fresh look at the Agency's I/M program is definitely called for and we applaud the decision by Office Director, Margo Oge, to make the necessary changes.

Mr. Chairman, we strongly urge the Congress and industry to put aside past differences and to work with the new personnel in order to bring about much needed revisions to the I/M implementation program, as soon as possible. For APAA's part, we stand ready to do whatever is necessary to work with both the Congress and the administration to obtain timely implementation of a workable and effective enhanced emissions inspection program.

Thank you for the opportunity to provide this statement and we would be more than willing to respond to any questions you might have regarding this statement.

March 3, 1995

Ms. Carol Browner
Administrator
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Dear Ms. Browner:

We are writing to reiterate our strong support for emissions inspection/maintenance (I/M) programs as a cost effective method for reducing in-use vehicle emissions. Implemented conveniently and effectively, well designed I/M programs can significantly reduce emissions and be accepted by the motoring public.

As you are aware, many states are considering or have already passed legislation to delay implementation of their I/M programs, in large part due to growing public and service industry opposition to EPA's mandated test-only performance standard. In addition, several bills have been introduced in the U.S. Congress addressing I/M. For example, Congressman Gekas has introduced legislation that would mandate an equivalent decentralized enhanced performance standard, delay program implementation, and provide relief to areas in the Ozone Transport Region. Senator Gregg also offered legislation which could delay implementation of I/M programs while rules are promulgated permitting decentralized testing. Congressman DeLay's bill would repeal the mandatory requirement for I/M programs.

While legislation may in the end be necessary, we believe that the Agency already possesses sufficient authority to make changes that result in I/M programs that are more acceptable to the public, states and industry. Regulatory action by EPA is preferred over reopening the Clean Air Act, especially given the unavoidable delay and unpredictability associated with potential legislation.

We therefore urge the Agency to work with the states and industry to issue revised I/M regulations/guidance as soon as possible. This action should occur no later than August, 1995, with full state implementation by August, 1996. At minimum, we believe these revisions must include the following elements to ensure political and public acceptance.

- Elimination of the controversial 50% credit penalty for decentralized I/M programs to permit any nonattainment area to adopt and receive credit for effective test and repair programs

- Sufficient additional time for states to finalize or revise their I/M programs.

- A requirement that states retaining centralized (test-only) I/M programs provide for pilot testing. Limited "trial runs" of public vehicle fleets are necessary to ensure that programs operate at peak performance before they open to the public.

- An efficient and timely redesignation/reclassification process for eligible areas.

In addition, we urge you to strongly promote to the states the development of waiver assistance programs funded with testing fees as an effective means of reducing the potential impact of costly emission system repairs.

In closing, including the above elements in the rulemaking could eliminate the perceived need for significant legislative action. We look forward to working with the Agency to develop regulations that provide for acceptable, effective, and timely I/M programs.

We thank you for your immediate attention.

Sincerely,

Automotive Engine Rebuilders Assoc.
330 Lexington Drive
Buffalo Grove, IL 60089-6998
Contact: Barry Soltz

Auto International Assoc.
1317 F Street, NW, Suite 550
Washington, DC 20004
Contact: Chris Kersting

Automotive Parts and Accessories Assoc.
4600 East-West Highway
Bethesda, MD 20814
Contact: Aaron Lowe

Automotive Parts Rebuilders Assoc.
4401 Fair Lanes Court, Suite 210
Fairfax, VA 22033
Contact: William Gager

Automotive Service Industry Assoc.
1555 Wilson Boulevard, Suite 300
Arlington, VA 22209
Contact: Tyler J. Wilson

Automotive Warehouse Distributors Assoc.
1100 Connecticut Avenue, Suite 1100
Washington, DC 20036
Contact: George Tobin

Coalition for Auto Repair Equality
119 Oronoco Street
Alexandria, VA 22314
Contact: David Parde

Motor & Equipment Manufacturers Assoc.
1325 Pennsylvania Avenue, Suite 600
Washington, DC 20004
Contact: Paul Haluza

National Automobile Dealers Assoc.
8400 Westpark Drive
McLean, Virginia 22102
Contact: Douglas Greenhaus

Petroleum Marketers Assoc. of America
1901 N. Fort Myer Drive, Suite 1200
Arlington, VA 22209-1604
Contact: John Huber

Service Station Dealers of America
9420 Annapolis Road, Suite 307
Lanham, MD 20706
Contact: Jim Daskal

Specialty Equipment Market Assoc.
1317 F Street, NW, Suite 550
Washington, DC 20004
Contact: Chris Kersting

STATEMENT OF JIM HORN, STATE REPRESENTATIVE, STATE OF TEXAS

INTRODUCTION

My name is Jim Horn and I have served as a State representative in Denton County since 1981. I am here to testify to the fact that the State of Texas needs the support of Congress in developing a successful and publicly supported auto emissions testing program.

Prior to the inception of federally mandated auto emissions testing, Texas experienced a long-term downward trend in air pollutants. Upon the passage of the Clean Air Act Amendments of 1990, Texas acted in good faith and set about formulating a plan to reduce air pollutants by the federally mandated deadline. Despite this cooperation from the State of Texas, the Environmental Protection Agency (EPA) has shown no flexibility toward the State in regards to methods used to bring air quality into compliance. Due to the lack of full credit for remote sensing mechanisms and for decentralized testing stations, the EPA forced Texas to implement a testing program on January 1st of this year using the controversial IM240 test at inconvenient central testing stations. I have yet to receive definitive data as to the improved effectiveness of both the IM240 test and the centralized stations.

Instead, I have heard quite the opposite, both from the people of Texas and from the General Accounting Office (GAO) which conducted an internal governmental study of the EPA's I/M approach and of their lack of study of alternative options to the IM240 test.

EPA Administrator Carol Browner and her agency contend that they are flexible in their dealings with States, yet they refuse to accept that a more convenient and publicly supported plan could be used in Texas. Despite the GAO findings and the findings of the Bar–90 test program conducted in Dallas/Fort Worth, the EPA has denied Texas credits for successful alternative testing programs besides the IM240 and they refuse to acknowledge the recent improvement in air quality. The EPA chooses instead to penalize Texas, a State which has done everything in its power to improve air quality, for not going along with exactly what the agency wants.

HISTORICAL BACKGROUND

In Texas, Houston experienced excessive ozone levels for 85 hours during 37 days in 1989; 75 hours during 37 days in 1991; and 53 hours during only 25 days in 1994. Houston has seen a nearly 40-percent drop in dangerous ozone levels since 1988, and only four incidents in 1994 stayed at dangerous level for a prolonged period of time. Dallas experienced excessive ozone levels at different times on 31 days during the 3-year period from 1984–1986; 6 days during the 3-year period from 1991–1993; and 2 days during 1994. Dallas County and the city of Fort Worth experienced zero days of excess ozone levels during 1994 according to the Texas State Inspection Association ("Emissions Testing," February 1995, ii). Since 1986, Dallas has experienced an 80-percent drop in dangerous ozone levels.

These statistics further show that these two major metropolitan areas were out of compliance less than 1 percent of the time. At this time, Dallas/Ft. Worth and El Paso have complied, or are nearly in compliance, with Federal levels. Cities like Houston have also implemented their own testing sites over the past 20 years and these testing sites have kept up with the changing demographics of the State as opposed to EPA test sites, some of which have not been updated since 1972.

In determining the non-attainment zones, the EPA used questionable data. As most any expert in the field will tell you, heat has a direct effect on ozone levels, and in evaluating the testing data the EPA failed to take into account the record-breaking temperatures of 1988. The EPA also failed to take into account several other factors which contribute to an urban area's air quality levels. These include percentages of pollutants produced by automobiles as compared with those produced by factories and small businesses such as printers and dry cleaners. For example, vehicles in the Beaumont-Port Arthur fell under the testing mandate despite the fact that vehicles account for only 6 percent of the emissions recorded in that area.

Also absent from the non-attainment determination factors is the fact that air does not observe international boundaries. For example, El Paso, which is located on the border with Mexico, has been deemed by the EPA to be a non-attainment area. El Paso's smog problem is unique due to its proximity with the city of Juarez. Juarez's emission levels are far above the United State's EPA standards which caused the city of El Paso to be considered "moderately" non-compliant. Tens of thousands of American citizens in the El Paso area were therefore subjected to a test, and required to pay a fee, for a problem they did not create. However, the EPA refused, until recently, to exempt El Paso from the same standards they applied to non-border cities.

Data collected by both the EPA and city-sponsored testing sites supports the fact that auto emissions in Texas have been significantly reduced over the past 10 years. A large part of this reduction can be attributed to testing programs already in place.

THE DALLAS/FORT WORTH BAR–90 TEST

In the Dallas/Fort Worth metroplex area, cars, city buses, and light trucks account for nearly 60 percent of emissions. Since 1990, Dallas conducted a decentralized, inspection-based emissions test using the Bar–90 method test. This test was conducted in conjunction with an automobile's annual inspection and met with high public approval. As of the end of 1994, 1,400 Bar–90 testing stations were operating in the Dallas/Fort Worth area. These machines successfully tested an average of 1.6 millions vehicles per year. With a cost of $40,000 per testing apparatus as compared to $150,000 for each IM240 unit, the Bar–90 test is more economical and has yet to be proven less effective than the IM240 test. While the IM240 test may be nominally more effective in detecting the marginal polluter, numerous statistics show that between 10 and 15 percent of the cars on the road produce 80 percent of the pollution emitted by automobiles. These cars are the gross polluters, and it would seem logical to develop a program which would target these cars without inconveniencing 85 percent of the public. The Bar–90 testing program in Dallas does exactly that.

The Bar–90 tests, the improved vehicle maintenance that they have promoted, and improved technology of newer vehicles have largely accounted for the dramatic decrease in air pollutants in the Dallas/Fort Worth metroplex. The Bar–90 test has proven its effectiveness over a 4-year period, a period much longer than the one the EPA used to designate the non-attainment areas, yet the EPA still refuses to accept it as a viable solution to the air contaminant problem.

PROBLEMS RELATING TO THE IM240 TEST IN TEXAS

The EPA has consistently pushed the IM240 testing program as the most effective and, in many cases, the only method of reducing auto emissions. However, in September, 1992, the same year the EPA was initially forcing States like Texas to come up with State implementation plans (SIPs) or face economic sanctions in the form of withholding highway funds (States were later given until November, 1993), the GAO found numerous problems associated with the IM240 program. The most notable problem is the fact that of the cars tested by the GAO, 25 percent failed an initial IM240 test but passed a retest with no repair. In Texas, roughly 4 million vehicles are scheduled to be tested each year. Of these vehicles, 20 percent are expected to fail ("Air Pollution Threatens the Future of Texas," State-wide ad paid for by Tejas Testing Technology, L.C., of Texas, p4). This means that 800,000 vehicles will fail each year and 200,000 of those will fail unnecessarily. If the owners of these 200,000 vehicles spend even half of what the EPA required in the Clean Air Act of 1990 (CAA) to bring the cars into compliance ($225), that figure would amount to $45 million. That is $45 million dollars spent for absolutely no reason at all except for the colossal stubbornness of the EPA in admitting that flaws exist in their IM240 plan.

There is also evidence that cars tested using the IM240 test are exposed to greater risk of damage than cars which are tested using the Bar–90 technology. In an IM240 test, cars are placed on a dynamometer which rotates the cars' tires to simulate driving conditions of 60 mph. This requires the cars to be secured to the dynamometer by chains and straps. During the short testing period in Texas, numerous vehicles tested have been reported damaged. Of the vehicles tested during the 3-week voluntary testing period from December 12 to December 31, 1994, over 100 vehicles were reported damaged, some of them permanently. This figure does not include damage to the cars which the customer may not be immediately aware of. This damage includes premature wear on the tires, chipped paint, and stress and leaks in radiator and gas line and hoses as a result of using a pressure test. Furthermore, many of the hoses which are removed during the IM240 test are damaged when removed and subsequently replaced in damaged condition. This leads to the auto leaving the testing center emitting more noxious gasses than before it was tested.

One of the biggest complaints I have heard from my constituents is that the IM240 test is not convenient. According to some of my constituents, they had to wait in line for over an hour to have their car tested. The Texas Natural Resources Conservation Commission, which oversees the Texas testing program, claims that the average time would have been 15 minutes once the technicians were more experienced. However, I have heard testimony that in order to comply with OSHA standards and to complete these tests in an effective fashion it would take almost a half-

hour to test each car. Furthermore, in Texas the initial testing program was only offered at 27 facilities in Houston, 25 facilities in the Dallas/Ft. Worth area, three facilities in Beaumont/Port Arthur, and four facilities in El Paso. Each testing center in Houston must test on the average 220 cars per day, and the centers in Dallas must test over 250 cars per day. That's roughly 30 cars per hour. Each station has on the average four testing lanes, which means to handle the amount of cars in need of testing each lane must test a car every 8 minutes. We've seen repeated data that the test can barely be conducted in 15 minutes, much less in 8 minutes. So from the testing's very conception it was not set up as a convenience to the consumer.

The inconvenience of the IM240 program continues to mount in light of the fact that the test facilities were only open from 9 a.m. to 5 p.m. during the week. This apparently meant that an individual would have to take off work to have their car tested. Further, in Houston all but one of the testing stations were established in the suburbs. This means that only one station with approximately four lanes handles the dense inner-city population.

After having to take time off work, travel a sometimes considerable distance, then wait over an hour, a vehicle owner must then be subjected to the true insanity of this program—their vehicle's failure. Upon failing, the vehicle has to be repaired at another location and then has to be retested. The cost to repair a car in Texas was initially capped at $450 and due to public pressure was lessened to $150. Furthermore, there was no guarantee that a car which failed, and was then supposedly "fixed", would pass a retest. I have actual documentation of cars which initially failed one or two of the three noxious gasses for which a car is tested and upon retesting failed passage for two or all three emissions including those emissions for which the car had previously passed. In one instance, one of my constituents initially failed the nitrous oxide section, and after having spent $85 to have their car fixed failed both the nitrous oxide and hydrocarbon sections of the test. In another instance reported in the *Houston Post*, Don Dunick took his 1983 Ford Fairmont seven times to five different testing centers and never received the same results (Plesa, "Doubt, confusion cloud future of auto emission test program," December 25, 1994). These findings are consistent with those found in the GAO report, page 5.

The IM240 test has been sold to the States by the EPA as a foolproof method of reducing air pollution. The EPA claims the IM240 test is far superior to any other test. The facts presented in my testimony, in the GAO report, and in a University of California Irvine study have not shown this fact to be true. The University of California-Irvine study found that the dynamometer-based tests were only slightly more effective than tailpipe-based tests, and that "the consequences of this difference are not large" (Henderson, *Reason*, March 1994, p1). A radio show host and a car dealer in Denver found that the differences between the IM240 test and the Bar–90 test were significant and not in favor of the IM240. They intentionally set up several cars to fail the IM240 test and then subjected the cars to both tests. The IM240 test passed all of the cars and the Bar–90 test detected all of them for what they were, gross polluters (Tillie Fong, "Emissions testing is a scam . . .," *Rocky* Mountain News, January 6, 1995, p32A).

The IM240 is just as susceptible to human and mechanical error as any other test because just as no two people (therefore no two test operators) are the same, neither are no two automobiles the same. However, the EPA would like to think that they are. The EPA categorically requires every municipality in the designated non-attainment zones, with the exception of those in California, to use the same computer-generated model to evaluate improvements in their air quality. This means that according to the computer there's no difference between Boston and Austin. The computer model also relies on preformulated averages which many experts have agreed are decidedly skewed on the side of the gross polluters. According to Patrick Bedard in a recent article on auto emissions in *Car and Driver*, "the average . . . in the case of on-road emissions . . . is skewed so far off the middle of the group that it no longer describes the typical participant. So programs aimed at averages will never produce the intended results" ("Still Smoggy," April 1995, p107). Therefore, States are stuck in a situation where they are always reaching for an unattainable goal because the data the goal was based on, and the data the EPA continues to insist on using, was flawed.

THE NEED FOR DECENTRALIZED TESTING STATIONS

Auto emissions testing from its conception at the national level by the EPA, to its implementation at the local level by testing companies such as Tejas Testing which operates in Texas, is based on the premise that the average American does not care about the quality of the air they breathe. Not only do they not care about the air and their environment, they will go to great lengths to circumvent any plan

put in place to improve the air, the environment, and their quality of life. The EPA's assumption behind requiring centralized testing stations is that Americans on both sides of the testing process, the testers and the ones being tested, are inherently dishonest and will make every attempt to defraud the tests and/or the repair process to make or save a few dollars. The EPA's distrust of the average citizen extends so far that Texas was required to institute a registration-based testing program which assesses a $.25 fee for every motor vehicle registered in the State. According to the EPA, this is to assure that residents in non-attainments areas don't register their cars in areas that don't fall under the SIP. This pervasive distrust on the part of the EPA is estimated to cost Texans $3.5 million annually.

Once again, the EPA fails to recognize that Americans have gladly been doing their part to improve air quality. Most notably, consumers spend $2,000 on average for emissions controls on every new car purchased. The American Automobile Association's report "Clearing the Air" found that automobile's have played a decreasing role in the production of urban pollutants over the past 25 years and that this fact "is due primarily to the success of tightening Federal tailpipe emission standards, cutting hydrocarbon and NOx levels by 96 percent and 76 percent, respectively, over the past 25 years" ("Clean Air Controls," October 4, 1994, p2). Consumers haven't revolted against the emissions controls program for cars because it is a program, unlike the centralized IM240 testing program, that has been proven effective.

Despite the claims by the EPA that the centralized testing facilities are necessary to combat fraud, there is evidence that the tests conducted by Tejas Testing in Texas were altered to pass or fail individual vehicles. One of the employees at a Tejas Testing facility in Dallas relayed to our office events whereby cars were passed by entering into the computer erroneous information relating to vehicles mileage, make and model. It's apparent that operators do exert control over the IM240 test results.

Further compounding the problem is the fact that the testing facilities are unable to diagnose the source of the emission problem for a particular vehicle. Thus, a centralized testing program leads to what has been termed the "ping-pong" effect. This problem too was discovered by the GAO (p2). Owners must travel back and forth between test and repair facilities in a tireless attempt to be certified. Mechanics at separate sites must therefore go through a lengthy and costly guessing game to try and fix a problem they themselves have never seen (see also GAO, p7). This is yet another reason why decentralized test and repair facilities would better benefit the public. The car owner would benefit by not having to travel between facilities, and the mechanic would benefit by being able to immediately retest the car to insure the car has been brought into compliance.

THE FIFTY-PERCENT CREDIT DEBATE

While the EPA claims it gives States the flexibility in determining their testing methods, Mike Eastland, Executive Director of the North Central Texas Council of Governments, contends that "we [in Texas] were never really given a choice" (Dallas Morning News, January 2, 1995, p10A). Numerous other State officials involved in the State Implementation Plan (SIP) process echo Mr. Eastland. William H. Quortrup, an environmental engineer and member of the Texas Air Control Board in 1993 when it approved centralized testing, says that "We were hammered to go central . . . We had to accept [centralized testing]. It was wrong. It will always be wrong" (Loftis, "Residents slam auto emissions testing," *Dallas Morning News*, March 11, 1995). Tarrant County Commissioner Marti VanRavenswaay, who serves as the chair of the North Central Texas Council of Government's clean-air panel, contends that local officials were also forced into using centralized testing, despite the fact that they "had the right idea the first time" in implementing decentralized tests ("Residents slam . . .") such as the Bar–90 tests which were so successful in Commissioner VanRavenswaay's county and Dallas County.

The EPA system rates each air pollutant reduction method using a credit system. Each non-attainment area must have a certain number of credits to come into compliance. The centralized testing method is rated so heavily that many areas, Texas included, had no choice but to use it so that they would have enough credits to satisfy the EPA's requirements. This is despite the fact that, according to John Hall, chairman of the TNRCC, some areas could meet Federal standards without the stringent centralized testing program (Plesa, "EPA to give States more leeway on emission tests," *Houston Post,* December 10, 1994).

The EPA has also said in the past they will not give Texas full credit for any testing program which is not centralized. Thus, if hard, scientific data collected during a 1-year period showed emission levels down by 20 percent, the EPA would only give Texas credit for a 10-percent reduction. This is yet another example of how the

EPA intentionally skews data so States are forced to comply with their regulations and implementation plans.

The refusal of the EPA to give Texas full credit for decentralized tests other than IM240 has resulted in a major loss of revenue for many small business previously involved in the successful Bar–90 test program. Some of these businesess have had to lay off as many as eight or ten employees. Prior to 1995, Texas' commitment to clean air in the form of investment in Bar–90 and Bar–84 test machinery totaled some $21 million (data reported by State Representative Elvira Reyna in a letter to U.S. Representative Sam Johnson, February 21, 1995). The cost of State inspection stickers has also been reduced by almost $10 to offset the $23 charge for the IM240 testing and make the testing program more palatable to consumers. Approximately 1,300 small businesses are involved in the decentralized State inspection testing program (Reyna), and with this reduction in inspection fees the income these businesses can generate from inspection stickers has been cut in half. The centralized testing system has confused motorists who do not know if they need to continue getting annual safety inspections or not. Furthermore, according to many a garage owner, centralized testing "has threatened their financial survival" (Loftis, "New emissions plan may decentralize tests," *Dallas Morning News,* February 11, 1995). Auto emissions testing has been touted as a necessary reform that will help business, but how can anybody tell me that cutting a business' earning potential in half, or closing down that business, is helpful?

In addition to not granting full credit for decentralized testing sites, the EPA has told our TNRCC that they would give Texas fewer emission reduction credits if the cars which failed were not repaired by "certified emissions technicians". I have heard from many a mechanic who feel that a number of the cars which fail don't need to be repaired at all. Even technicians at the testing facilities have told customers that if they were to drive their cars around so that their catalytic converters can get hot their car's would pass. Therefore, many of these cars can come into compliance with minimal repairs like changing the car's oil and/or spark plugs. To require that all repairs be done by a certified technician is ridiculous. It should make no difference who repairs the vehicle so long as the car complies with set emission standards. Again, it is the EPA who required the usage of certified technicians because of their inherent fear that any mechanic not certified would defraud the testing system, yet I have already given evidence that "certified" testing technicians defrauded the system by entering erroneous data into the test computer.

REMOTE SENSING TECHNOLOGY AS AN ALTERNATIVE TO THE IM240 TEST

Despite the encouraging downward trend in air pollution since the mid–1970's, the EPA has insisted that States implement an onerous and irrational testing program which uses IM240 equipment. What the EPA wants to do is hunt squirrels with the 4th Armored Division. Why? Because it seemed like the best idea in 1990. Only now we're 4 years down the road and technology has changed dramatically. As early as 1992, the GAO found that two-speed dynamometer procedures used in IM240 tests "are not effective in measuring emissions from . . . vehicles because they do not simulate actual driving conditions" (p4). What newer technologies exist that would clean the air and be consumer friendly? If the EPA gets its way, States may never know because they are given no credits or monetary incentives to try new programs such as using remote sensing and instituting programs to salvage vehicles which are gross polluters and have proven to be irreparable. Only recently has the EPA acknowledged that remote sensing technology, which does use actual driving conditions, could receive reduction credits. EPA's "head in the sand" approach to these initiatives does not help States who are trying to improve the air quality without unduly burdening their citizens. Again, we can all agree that clean air is the objective; however, Federal micromanaging is not the solution.

The EPA claims that it has provided the States with flexibility under the Clean Air Act, yet I hardly call allowing the use of remote sensing technology .5 percent of the time in Texas flexible when the remote sensors have the capability of testing 1,000 cars per hour with little inconvenience to the motorist. Remote sensing technology has the capability to test the vehicles in a real-world situation. According to proponents of remote sensors, they would test each car approximately six times per year as opposed to the once every other year format of the IM240 test. Nearly everyone can see that testing a car 12 times in a 2-year period is much more likely to catch instances of high emission than testing that same car only once in 2 years. Everyone, that is, except the EPA which refuses to admit real-world data and continues to hold States to their flawed computer models.

By weighing each possible solution differently from State to State the EPA has forced States like Texas to adopt programs which will not garner public support. As

a State official, I have a hard time facing my constituents and telling them that there is a less oppressive program that will reach compliance but that we can't implement it because some bureaucrat in Washington contends that they know what is best for Texas. Most importantly, in this technologically advanced age of media, news travels fast. Citizens in Texas know that as of March 13, 1995, two States are suing the EPA over the testing program mandates. They know that at least five States are resisting implementing the IM240 program, and that of these five States, two, New Jersey in particular, have made no attempts to even submit SIPs ("Inspection/Maintenance Programs: A State-by-State Analysis," American Legislative Exchange Council, March 13, 1995, p4–5). In the case of New Jersey, the EPA has not followed through by imposing sanctions. Citizens in Texas see that other States are not being punished for not following along with the EPA and they write to my office saying that in actuality, Texans are being punished more for doing what they were supposed to do. Why should a car driver in Texas have to wait in long lines, make numerous trips between stations, and spend money on unnecessary repairs when someone in New Jersey or Vermont or Maine or Virginia, States with as many emissions problems as Texas, does not have to? The EPA's unequal treatment of the States has led to the massive public outcry against the IM240 testing program implemented in Texas, and I for one cannot disagree with a single voice out there who refuses to take such treatment from the Federal Government.

CONCLUDING REMARKS

I would like to conclude my testimony by repeating several key facts. Since 1988, emissions pollution has dropped by 40 percent in Houston and by 80 percent in Dallas/Fort Worth. Publicly supported, decentralized, inspection-based Bar–90 tests have been proven effective in reducing air contaminants in Dallas/Fort Worth. IM240 tests have not been proven significantly more effective than Bar–90 tests, but have instead been proven susceptible to operator error, vehicle damage, and burdensome time constraints placed on vehicle owners. Additionally, centralized testing has not been proven more effective than decentralized testing, but has instead added mass confusion to the testing process by necessitating that vehicle owners make at least three separate trips between test and repair facilities if their vehicle fail. Last, the EPA has weighed the reduction credits structure heavily in favor of centralized testing and has given Texas no leeway in pursuing other options such as the already effective Bar–90 tests and the newer remote sensing technology.

I have spoken with Governor Bush and he has continually requested more flexibility from the EPA with regards to implementing a testing program in Texas which will be given full credit. A stringent, EPA-mandated program will not be deemed successful if it requires more sacrifice from our already overburdened businesses and taxpayers. Contrary to the EPA's belief, citizens have willingly gone along with many efforts to improve the quality of the air around them. They pay more for new, efficient cars, and, in the Dallas area, they submitted their vehicles to a yearly inspection. Again, let me emphasize that the programs we have in place are already reducing emission levels and will continue to do so in the future because they have garnered the public support. Any program, such as the EPA-mandated centralized IM240 tests, embarked upon without the public support is certainly doomed to failure and we can all agree that failure in the area of improved air quality is an option none of us can live with.

STATEMENT OF THE STEVE KOPPERUD, SENIOR VICE PRESIDENT, AMERICAN FEED INDUSTRY ASSOCIATION

The American Feed Industry Association (AFIA) applauds you and your subcommittee for holding today's oversight hearing on inspection and maintenance programs required under the Federal Clean Air Act (CAA). We wish this to be AFIA's formal submission for the record of the hearing.

AFIA is the national trade association representing more than 70 percent of the primary formula livestock and poultry feed sold annually in the U.S. AFIA's more than 730 member companies also include the suppliers of feed ingredients, animal drugs, equipment, as well as companies providing goods and services to the feed industry. AFIA companies represent more than 3,000 facilities in all 50 States, employing more than 175,000 people. By Federal definition, nearly 85 percent of AFIA's members are small businesses.

AFIA has been active over the years in working to make implementation of the Federal CAA practical for our member facilities. In the last year, for instance, AFIA has participated in three major Environmental Protection Agency (EPA) rulemakings We are also active in a number of coalitions which bring together indus-

tries and individual companies with a common goal of practical application of the CAA.

AFIA's comments to the subcommittee will focus on four areas of EPA/CAA inspection and maintenance program standards. These are the following:

1. Potential versus actual emissions;
2. AP–42 (Air Pollution Emission Factors);
3. Field Citation Program, and
4. Regulations governing awards under Sec. 113 of the CAA.

In addition, AFIA will comment in support of S. 490, an amendment to the CAA by Sen. Charles Grassley (R–IA), that recognizes not only the unique nature of agricultural facilities as they are regulated under the CAA, but also addresses serious flaws in the CAA rulemaking which holds these facilities to unrealistic standards.

POTENTIAL VS. ACTUAL EMISSIONS

The CAA amendments of 1990 established new thresholds and emission goals for all major air pollutants. All facilities which emit pollutants over established thresholds are subject to new technology and permit requirements. These major sources of air pollutants are defined by their "potential" to emit, not their "actual" emissions.

AFIA believes the 1990 amendments are seriously flawed in this regard, and create unattainable compliance criteria for industry. Many, if not all, feed mill and grain elevator facilities in the U.S. are affected by this classic example of theoretical "worst case" risk, all based upon a facility's potential to emit particulant matter of 10 microns or smaller (PM10).

Most of these feed mills and grain elevators do not come close to qualifying under CAA Title V definitions, based on actual emissions. However, these facilities are forced into expensive, unnecessary and time-consuming compliance processes and paperwork based on the assumption they operate 24 hours a day, 365 days per year, without any emission controls. It would be difficult to find such a facility in the feed industry.

AFIA's calculations-based upon operations of the largest feed mills in the country-reveal actual emissions to be less than 25 tons per year (TPY) of PM10. However, if these same plants were to operate without emission controls, and at full capacity continuously, their potential emissions would exceed 1,500 TPY of PM10. These conditions are totally unrealistic. Mature market conditions, along with the use of routine state-of-the-art engineering controls, prevent these facilities from achieving these potentials.

For the reasons stated above, AFIA strongly supports S. 490, an amendment to the CAA introduced by Sen. Charles Grassley (R–IA). Rep. Jim Nussle (R–IA) has introduced identical legislation in the House. The Grassley amendment corrects the "potential-versus-actual" inequity of the CAA by providing regulatory relief for feed, grain, or rice mills, grain elevators, and grain processing facilities.

S. 490 gives specific direction to EPA to use realistic criteria when determining if grain-handling facilities are required to obtain operating permits and pay fees under the CAA amendments of 1990.

As noted, EPA requires agricultural facilities to calculate emissions as if they operate 24 hours a day, 365 days a year. S. 490 would require EPA to acknowledge the "maximum realistic operation" of facilities. The maximum realistic operation of a facility incorporates seasonal shifts—unique, in many cases, to agricultural facilities-and is based on actual hours of operation.

S. 490 would also assist agricultural facilities subject to EPA's new source performance standards and operating permits. Currently, any agricultural facility—with more than 2.5 million bushels of storage capacity—is subject to EPA's source performance standards regardless of how much grain it actually handles, the seasonal nature of its business, or its dust control processes. In addition, any facility subject to EPA's new source performance standards is automatically required to obtain an operating permit. S. 490 exempts "non-major" source facilities from these unrealistic standards and permits.

AFIA strongly supports Sen. Grassley's efforts to provide for realistic measurements, not theoretical ones. S. 490 corrects regulation which is unnecessary and without scientific basis. At the very least, regulations must be based on real-world operating characteristics of these facilities.

Compounding this problem is the fact many States regulate air pollutants using Total Suspended Particulants (TSP) as the measurement of CAA emissions. TSP, which is calculated by weight, is a much larger measure. Using TSP almost automatically causes all operating facilities with air emissions to quality as major sources. In fact, some States set the major source threshold levels below 100 TPY.

For example, Minnesota sets its threshold at 25 tons of TSP. This qualifies virtually every facility within the State as a major air pollution source.

Some have suggested an alternative automatic major source classification would be the use of the synthetic minor permit, which specifically limits allowable emissions to a declared maximum per facility. This permit scheme would apply limitations to annual emissions. However, in reality this system works no better, if only because of the costs involved.

For example, in Indiana, Synthetic minor permits cost $3,000 in application fees, plus $1,500 in fees each year. AFIA estimates there are approximately 400 feed mills in Indiana Application fees plus first-year permit fees would total $1.8 million in this State alone. The domestic feed industry can't afford the cumulative effect of these fees, especially since the industry's emissions record demonstrates no harm to humans or the environment.

The subcommittee must also understand that any regulation which increases the cost of production to a feed company, automatically increases the cost of production to that company's farmer customers. Given that feed represents 70 percent of the on-farm cost of producing meat, milk and eggs, any increased production cost translates to higher food prices at the supermarket .

AP–42 (AIR POLLUTANT EMISSION FACTORS)

AFIA believes the use of TSP criteria by the States and the resulting conclusion that surrounds State administration of the CAA amendments of 1990 is due in large to the lack of scientific data quantifying emission levels from various point sources.

EPA, at its facility in Research Triangle Park, NC, publishes an air emissions document, AP–42, for various industries, including grain elevators and grain processing plants. Currently, many of the factors contained in the document are outdated, and not representative of routine control technologies used today.

AFIA believes these factors to be archaic and over-stated, causing emission calculations to also be over-stated, and quantifying many facilities falsely as major sources.

In addition, most of the data contained in AP–42 is for TSP, not PM10. States are using the TSP emission factors to calculate emissions rather than basing major source classification on PM10 simply because they have not been provided better numbers. Congress requires EPA to regulate PM10; however, EPA has no PM10 emission factors which can be applied. EPA is forced to use the next "best" factors-the outdated, archaic, and artificially high emission factors for TSP.

In essence, Congress required Federal and State EPAs to enforce air emission standards which cannot be administered effectively. At the same time, this bureaucratic catch–22 places regulated industry in an automatically "guilty" status based upon theoretical levels of emission.

AFIA has been working with EPA, Research Triangle Park, in its efforts to redraft AP–42 to bring it in line with contemporary technologies. However, sample data simply does not exist. Stack tests are very expensive to conduct, and there is no incentive for industry to proceed with such testing if the Federal and State administration of the program remains confused at best.

EPA should work with industry to find incentives—tax credits, etc.—to establish point source testing programs in affected industries to create the data that will restore confidence in AP–42. Then, and only then, should the States move forward with permit applications, using current and accurate PM10 emission factors as the basis for determining what facility qualifies as a major source of air pollutants.

FIELD CITATION PROGRAM

EPA published a proposed rule on May 3, 1994, to adopt a program for the issuance of citations resulting from minor violations of the CAA. This would create an inspection and abatement program similar to that of the Occupational Safety & Health Administration (OSHA).

AFIA responded to the rulemaking with comments stating the proposed penalties are too extreme for so-called minor violations. It is inevitable inconsistencies in enforcement will result due to discretion being used in determining which violations are minor and the associated level of fines. Pre-hearing conferences, similar to those used by OSHA, should be a routine step in the review process, and not left to the discretion of the EPA area administrator.

AFIA recommended that, if promulgated, EPA must develop a list of minor violations and corresponding penalties. This list should be published and made available for public review and comment. This will enable all States to administer the program equitably.

REGULATIONS GOVERNING AWARDS UNDER SEC. 113 OF THE CAA

In the same proposed rule (May 3, 1994), EPA proposed authorizing the EPA administrator to accept petitions and to pay citizens who "blow the whistle" on industrial violators of the CAA.

AFIA believes concerned citizens will report CAA violations without the Federal Government offering "bounties." AFIA responded to the rulemaking, commenting that such a "bounty hunter" provision would encourage volumes of so-called petitions to be filed, with many making false accusations for any number of reasons unrelated to protecting the environment. This would require government and industry to spend valuable time and money researching the validity of such petitions.

Industry has been victimized by false complaints in regulatory enforcement in the past. Regarding OSHA compliance, OSHA's own numbers show more than 30 percent of all complaint inspections performed uncover no violations, and more than 50 percent find no willful, repeat, or serious violations. This occurs without the incentive of a "bounty." EPA must avoid the same costly enforcement mistake.

AFIA has recommended to EPA that enforcement dollars would be better spent through planned and targeted inspections. AFIA has also long held that cooperative, negotiated rulemaking between the enforcement agency and the regulated industry is far more efficient—both for the government and the industry—than the adversarial relationship which currently exists.

AFIA appreciates the Subcommittee's consideration of its views during this important oversight process. Please feel free to contact us at any point where we may be of additional assistance.

STATEMENT OF THE NATIONAL AUTOMOBILE DEALERS ASSOCIATION

The National Automobile Dealers Association (NADA) is a national trade association representing almost 20,000 franchised automobile and truck dealers, who are primarily engaged in the retail sale of new and used motor vehicles, both foreign and domestically produced.

NADA member dealerships are directly impacted by EPA's inspection and maintenance (I/M) proposal to the extent that they perform inspections, service and repair emission-control systems, and sell emissions-related parts and equipment. Dealers share the goal of achieving strong, well-administered I/M programs that will make an important contribution to air quality. NADA is committed to working with EPA in an attempt to develop appropriate and reasonable performance standards, and has urged EPA to provide States with the maximum possible flexibility to adopt a decentralized "enhanced" I/M program.

LOW ENHANCED PERFORMANCE STANDARD

NADA applauds EPA's proposal for a new "low enhanced" performance standard. This revised proposal will prove helpful to two distinct groups: (1) the Northeast Ozone Transport Region (OTR) since within an OTR enhanced I/M is required if the population exceeds 100,000 people, regardless of their attainment status, and (2) areas where opting to implement low enhanced I/M could provide the extra credit toward reaching and maintaining attainment (for example Utah).

HIGH ENHANCED PERFORMANCE STANDARD

NADA also supports EPA's proposal to provide more flexibility in the "high enhanced" performance standards and supports the requirement of a visual components check. Flexibility on this issue will enable many areas to implement workable and politically acceptable programs capable of meeting clean air goals.

While NADA supports EPA's recent willingness to be flexible, several outstanding issues have not been fully and adequately addressed. Providing true flexibility requires that EPA:

- *Eliminate or reduce the 50-percent credit penalty for decentralized, test and repair programs.* Recent studies conducted by the California I/M Review Committee and Georgia Tech suggest this is an arbitrary and unjustified penalty. The elimination or reduction of this penalty could benefit several States working hard to achieve their clean air goals.
- *Allow States flexibility to adopt "high enhanced" performance standards based on test equipment other than I/M 240 and test networks and other than centralized, test-only.* EPA should circumscribe the universe of test equipment options and issue technical guidelines for those options as soon as possible.
- *Provide credit for and encourage high emitter profiling.* Effectively using information to target those segments of the in-use vehicle fleet most likely to con-

tribute to excess emission will save State resources and reduce public burdens, thereby helping to achieve clean air goals in a more politically acceptable manner.

- Issue detailed regulations on steady State, loaded mode testing equipment (i.e., ASM, RG–240, etc.).
- *Recognize State programs designed to reduce I/M program intrusiveness.* These include:
  - randomly selecting less than 100 percent of the in-use fleet subject to I/M testing;
  - properly administering remote sensing programs; or
  - incorporating an On Board Diagnostics (OBD) III concept.
- *Require those States electing to implement centralized I/M testing to pretest those programs using government and non-government fleets for pilot testing.* Limited "trial runs" for public vehicle fleets are necessary to ensure that programs operate at peak performance before they open to the public.

WAIVERS

NADA takes exception to EPA's proposal to delay and reduce the $450 waiver requirement. It is illogical for EPA to fine tune test networks and equipment type only to make it easy for people whose vehicles fail these tests to obtain waivers.

EPA should not focus on delaying the implementation of the statutory waiver requirement or expanding the availability of hardship exemptions. Instead, the rule should bolster the use of "cash for clunker" programs and other market-based incentives designed to either get these vehicles fixed or get them off the road. For example, for low income households, assistance could be available from stationary sources and other regulated entities. Businesses could receive an appropriate emissions reduction credit in return for repairing vehicles, consistent with President Clinton's Number 1 item of the 25 most important environmental regulation reinvent ion priorities.

NADA favors EPA's proposal to allow pre-inspection repairs to count toward the waiver amount. This change would make the waiver accessible to the motorist who spends money keeping the vehicle running clean all the time and in anticipation of an I/M test.

OTHER ISSUES AND CONCLUSION

NADA supports EPA's proposal to allow additional credit for technician training and certification. At the same time, EPA should take steps in its final regulation to stress that under no circumstances should technician training and/or any particular technician training curricula be made mandatory.

NADA also supports EPA's proposals on simplified evaporative emission testing. NADA generally supports the proposals to raise the population "floor" for basic I/M and redesignation of nonatainment areas.

NADA understands that the most critical element to a successful I/M program is public acceptance. EPA should aggressively pursue its public information/public education initiatives. Greater efforts in this area will help to build public support for I/M programs.

In conclusion, it is NADA's position that EPA has sufficient authority to make the modifications that will result in I/M programs that are more acceptable to the States, industry, and the public. If EPA adequately addresses these important issues, Federal legislative action will likely prove unnecessary.

NADA thanks Senator Faircloth and the Clean Air, Wetlands, Private Property and Nuclear Safety Subcommittee for the opportunity to present written testimony on this matter.

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