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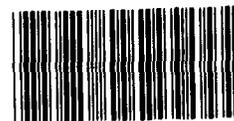
Testimony

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Management of the National Acid Precipitation
Assessment Program and EPA's Proposals to
Control Vehicle Refueling and Evaporative Emissions

Statement of
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Before the
Subcommittee on Oversight and Investigations
of the House Committee on Energy and Commerce



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Mr. Chairman and Members of the Subcommittee:

We are pleased to be here today to discuss two reports that we recently issued dealing with national air pollution issues. One report addresses the progress of the National Acid Precipitation Assessment Program (NAPAP).¹ The other addresses the Environmental Protection Agency's (EPA's) proposed action to reduce gasoline vapors from motor vehicles.² Let me begin by discussing the federal research program under NAPAP.

NAPAP is a 10-year multiagency program established by Congress in 1980 to research the causes and effects of acidic deposition. Mr. Chairman, you asked us to examine NAPAP's research program, including the status of NAPAP's assessment documents and the effects of management changes.

STATUS OF NAPAP ASSESSMENTS

We see the development of comprehensive assessments analyzing research findings as one of NAPAP's most critical functions. Although NAPAP had not issued an assessment at the time of our

¹Acid Rain: Delays and Management Changes in the Federal Research Program (GAO/RCED-87-89, Apr. 29, 1987).

²Air Pollution: EPA's Efforts to Control Vehicle Refueling and Evaporative Emissions (GAO/RCED-87-151, Aug. 7, 1987).

review, it released its first assessment document on September 17, 1987. NAPAP stated that the purpose of this assessment was to summarize current scientific knowledge about acid rain. However, some of its conclusions have stirred considerable controversy.

In our report, we noted that the establishment of an external scientific committee, made up of scientists independent of NAPAP, could provide more credibility to NAPAP's research program. Such a committee would be useful in providing a comprehensive look at the overall program. NAPAP has decided not to establish this committee. Nevertheless, the controversy surrounding the first assessment leads us to believe that some systematic process of external review could enhance the scientific consensus for future assessments, which are expected to contain policy-relevant information.

The September 1987 assessment was originally scheduled to be issued two years earlier, in 1985. However, its release was delayed because the director of research hired in September 1985 decided to significantly rework the draft. Since then, issue dates for the assessment were repeatedly moved back because the director did not have sufficient staff and he underestimated the time involved in getting the document reviewed and approved by NAPAP agencies.

Early NAPAP documents stated that assessments would attempt to integrate, or tie together, the costs of controls with the benefits

of emission reductions. Although required by law to evaluate these economic effects, it is unclear whether NAPAP will be able to accomplish this objective in its future assessments, as efforts in this area have been reduced since 1985.

To ensure that comprehensive assessments be developed, we recommended that NAPAP identify economic information needed to assess the acidic deposition issue and assure that the associated analyses be undertaken. This effort should include reviewing and coordinating the economic effects work being conducted outside of NAPAP and identifying the remaining gaps that need to be addressed.

The EPA Administrator, as Chairman of NAPAP's Joint Chairs Council, responded that he has asked the director of research to set up an interagency economic work group this fall. This work group is viewed by the Administrator as an important element in the course of ensuring a fully integrated 1990 assessment.

MANAGEMENT CHANGES

In 1985, the NAPAP Joint Chairs Council reorganized NAPAP, giving the director of research more authority to direct the research program and manage the assessment effort. NAPAP officials have mixed opinions about the effectiveness of the management changes. While some noted that a director of research provides guidance to the program, others said that communication problems have increased

between the NAPAP task groups and the Office of the Director of Research.

The management changes have also contributed to delays in issuing documents, such as the assessment and annual reports. The director's multiple responsibilities--managing the assessment effort, directing the research program, and acting as principal spokesperson for the program--limit the amount of time he can spend reviewing and revising these documents. Further, we found that staffing shortages in the Office of the Director of Research exacerbated these problems.

To ensure that NAPAP documents are issued in a timely basis, we recommended that the NAPAP Joint Chairs Council direct its program officials to give high priority to developing assessment documents and other key reports. We also stated that the Joint Chairs Council should examine the staffing situation in the Office of the Director of Research, determine where delays occur, and take steps to eliminate the bottlenecks. This could include, for example, the establishment of the position of a deputy director for assessments.

In response to this recommendation, the EPA Administrator stated that he has asked the director of research to provide the Joint Chairs Council with a description of the 1990 assessment and the process of its development. With this information, he indicated that the Council will see that the director has positions and

resources sufficient to complete the research program and to prepare the final assessment.

CONTINUING CONCERNS ABOUT NAPAP MANAGEMENT

While the Joint Chairs Council has generally indicated that it will respond positively to our recommendations, we nevertheless have continuing concerns about NAPAP's ability to issue a final assessment that is both timely and substantive.

First, with only 3 years remaining to issue the final assessment, and with the recent resignation of the director, it is imperative that the Joint Chairs Council soon provide NAPAP with sufficient staff to carry out its mission. Without adequate staff to write the assessment and other documents, we believe delays will likely continue.

Second, the problems resulting from a multiagency structure increase NAPAP's difficulties in issuing timely documents. For example, the director has little authority to control the budget or direct task group leaders. Also, since the participating agencies sometimes have conflicting positions, it is often difficult to obtain consensus on issues, such as the content of the assessment. NAPAP's past difficulties in reaching consensus and issuing policy-relevant assessments indicate that NAPAP could experience similar delays in developing the final assessment in 1990.

Given these problems, the Joint Chairs Council will need to take a stronger and more visible management role over the next three years. The Council members need to communicate with and provide direction to their agencies' representatives on NAPAP's various committees and task forces. In particular, to keep the assessment process on track, we believe that the Council members will need to be more active in assuring timely resolution of differences between the Office of the Director of Research and agency representatives.

REMAINING RESEARCH UNCERTAINTIES

NAPAP officials believe they will have sufficient information by 1990 to serve as the basis for policy recommendations on acidic deposition controls. However, they acknowledge that uncertainties about the causes and effects of acidic deposition will remain beyond 1990.

For example, long-term research associated with forest effects is needed to get reliable trends data. The Forest Service estimates that it may take 20 to 30 years of monitoring to obtain such data.

Another uncertainty concerns materials effects research. The major priority of NAPAP's research in this area is to provide a quantitative understanding of the effect of acidic deposition and associated oxidants on selected materials, such as metals, stone,

and paint. We reported that materials effects research has been a low priority in NAPAP and has received limited funding. As a result, by 1990, the research may not be as far advanced as anticipated early in the NAPAP program.

In highlighting these uncertainties, we caution that any decision on whether or not to control acid rain is likely to be made in the context of scientific uncertainty because, as with many science policy issues, definitive answers on the causes and effects may never be known. In addition to scientific unknowns, the history of the debate on this issue has shown that individual value judgments and political concerns are integral parts of the decisionmaking process. In light of this, decisionmakers will continue to be faced with weighing the risks of potential environmental damage against the risks of economic impact from acid rain control programs that may not be effective.

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Mr. Chairman, I will now discuss EPA's efforts to control refueling and evaporative emissions from motor vehicles. These emissions contribute significantly to ozone formation, so reducing them should help bring ozone nonattainment areas into, or closer to, attainment with the federal ozone standard. I will summarize two issues you asked us to address in our report:

- the status of EPA's efforts to control gasoline vapors from motor vehicles, including those emitted during refueling and those that evaporate from the fuel tank, carburetor, or fuel-injection system, and

- EPA's analyses of the costs and benefits of alternative policy actions.

BACKGROUND

After many years of study, EPA recently proposed two rules to reduce refueling and evaporative emissions. These rules were proposed in the August 19, 1987, Federal Register, shortly after we issued our report to you.

To reduce refueling emissions, EPA would require motor vehicle manufacturers to equip their vehicles with onboard control systems. EPA chose this alternative over another option, requiring service station owners and operators to install stage II vapor recovery equipment on their fuel pumps.

To reduce evaporative emissions, EPA would require oil refineries to lower the volatility of the commercial gasoline consumers use in their vehicles. EPA favored this option over another that would equate the volatility of the gasoline used to

certify current vehicle evaporative emission systems with that of commercial gasoline, modifying those systems as needed.

Not surprisingly, in both EPA's proposed actions, the motor vehicle industry and the oil industry have taken the position that the other should implement the needed controls.

EPA'S PROPOSED ACTION TO
REQUIRE ONBOARD CONTROLS

In its August proposal, EPA states that onboard controls have several advantages over stage II controls--although it recognizes that stage II controls could be considered as an interim measure in some ozone nonattainment areas.

First, onboard controls are expected to provide greater long-term emission reductions, at similar or better cost-effectiveness than stage II controls, after full implementation in the year 2010. We should point out, however, as an indication of the tradeoffs in this decision, that stage II controls are estimated to provide greater emission reductions in the early years and are more cost-effective when only ozone nonattainment area emission reductions are counted.

Second, onboard controls, because of their greater long-term efficiency in reducing emissions, are expected to result in a greater

number of cancer incidence reductions associated with exposure to benzene and gasoline vapors.

Third, EPA notes that, compared with stage II controls in nonattainment areas only, onboard controls will provide automatic coverage in all areas of the country, including areas in marginal attainment with the ozone standard. Further, onboard controls can be managed through the existing federal motor vehicle control program, whereas stage II controls would result in extensive new programs implemented by each of the affected states.

Despite these cited advantages for onboard controls, differences continue to exist between EPA, the motor vehicle industry, and others concerning control costs, implementation time, and safety.

Motor vehicle manufacturers estimate
that EPA's onboard costs are too low

EPA estimates that onboard controls will increase the purchase price of the average vehicle by \$19. This is significantly less than the motor vehicle manufacturers' cost estimates, which range from \$30 to \$115 per vehicle. EPA attributes the higher cost estimates to such things as increased dealer markup and different assumptions about the costs of system design, components, assembly, and maintenance.

Differences exist on implementation
time and safety issues

Motor vehicle manufacturers also disagree with EPA's estimate that it will take 2 years to begin installing onboard controls on new vehicles. Some manufacturers estimate that 4 to 6 years will be needed.

The overall safety of onboard controls, particularly as it relates to implementation time, is another area of disagreement. The National Highway Traffic Safety Administration is concerned about whether EPA has given adequate consideration to potential safety hazards. A director in that agency estimates that 3 to 4 years--rather than EPA's anticipated minimum 2-year leadtime--may be needed to give motor vehicle manufacturers sufficient time to design, test, and install the onboard controls and to properly address the safety issues that may arise.

In response to these concerns, and related ones raised by the Office of Management and Budget, EPA stated in its proposal that it is open to comments on leadtime, although EPA continues to indicate that the minimum 2-year period is adequate for most, if not all, vehicles.

EPA'S PROPOSED ACTION TO REDUCE
COMMERCIAL GASOLINE VOLATILITY

Because of the rise in commercial gasoline volatility over the past several years, most motor vehicles emit evaporative hydrocarbons in excess of the allowable federal standards. EPA proposes to reduce commercial gasoline volatility during the summer months to a level closer to that of the gasoline used to certify the evaporative emission controls that are currently installed on vehicles. This control, which can be implemented within months, is the only short-term strategy available to reduce evaporative emissions.

EPA expects its proposed strategy to reduce hydrocarbon emissions nationwide by 6 percent in 1989 and by 9 percent in 1992. To achieve this emission reduction, EPA estimated that refinery costs would increase by \$490 million a year, raising gasoline prices about 1 cent per gallon. EPA then offset these costs by indicating that the lower volatility gasoline would improve vehicle efficiency, which in turn would result in net costs to the consumer of about \$200 million a year.³

As with the refueling issue, EPA's efforts to select a strategy for reducing evaporative emissions has been extremely controversial.

³EPA has since reduced these costs by \$40 million, bringing the net costs to the consumer to about \$160 million. According to an EPA official, the higher cost estimate provided by EPA and used in our report was based on a worst case scenario that was later revised by EPA.

Motor vehicle manufacturers and oil refiners
disagree over the costs of reducing gasoline volatility

The alternatives considered by EPA to reduce evaporative emissions have generated strong conflicting responses from industry. As we discussed in our report, the motor vehicle manufacturers provided cost estimates for reducing commercial gasoline volatility that were generally less than EPA's estimates, making that approach even more attractive to implement. On the other hand, the oil refineries provided cost estimates that were much greater, making EPA's proposed action less desirable than the approach the oil industry supports, which is to raise certification gasoline volatility and modify the vehicle control systems as needed.

REFINEMENTS COULD IMPROVE

EPA'S ANALYSES

In its economic analyses of alternative methods to control refueling and evaporative emissions, EPA considers the relative importance of and tradeoffs associated with a variety of factors such as costs, emission reductions, ease of enforcement, and timeliness. Although the EPA draft analyses we reviewed provide useful information on the costs and benefits of the various control strategies, we identified several issues that EPA should address as it moves forward in the rulemaking process.

We found, for example, that EPA's draft analyses provided limited documentation to support the standard, or benchmark figure, used to decide which refueling and evaporative emission controls would be cost-effective. Second, EPA's draft analyses, which were based on cost-effectiveness ratios, were limited as guides to decisionmaking where the strategies being compared achieved different levels of air quality. Third, the draft analyses did not clearly portray how the ranking of strategies was affected by different assumptions about key uncertain costs and benefits of each strategy.

To address these shortcomings, we recommended that EPA better document the cost-effectiveness of alternative ozone control strategies, including support for its benchmark standard. Further, we recommended that EPA's analyses include a more explicit comparison of all the costs and benefits associated with the various refueling and evaporative emission control strategies, including a more thorough analysis of the effects of key uncertainties.

While EPA's August 19, 1987, proposals present additional analyses of uncertainties, their effects on the comparison of regulatory alternatives are not shown. For example, EPA shows how onboard's cost-per-megagram of emission control is affected by different assumed values of the monetary benefits of avoiding cancers. EPA does not, however, show how this assumption also affects stage II cost.

In summary, EPA's proposal to lower commercial gasoline volatility is the only short-term control available for reducing motor vehicle emissions. EPA's onboard control proposal, on the other hand, will also help to reduce these emissions, but it will take many years before any significant reductions can be realized. Further, the safety issue needs to be resolved before the onboard control strategy can be implemented. If that issue is not resolved, or if it is determined that refueling emissions need to be reduced as quickly as possible, then stage II controls remain a viable alternative.

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Mr. Chairman, this concludes my prepared statement. We would be glad to respond to your questions at this time.