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AIR POLLUTION

Regional Approaches Are Needed to Protect Visibility in National Parks and Wilderness Areas

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Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to discuss federal and state efforts to address the problem of visibility impairment in our national parks and wilderness areas. While these areas are among our greatest national treasures, an important part of our enjoyment is the ability to see them clearly. Congress recognized this in the Clean Air Act Amendments of 1977, when it established a national goal of correcting and preventing pollution that causes visibility impairment in the 158 large national parks and wilderness areas, referred to as class I areas. Seventeen years later, however, visitors to these areas are not able to fully enjoy the spectacular views, such as those at the Grand Canyon, that would exist in the absence of air pollution. Haze caused by human activities often eliminates important color distinctions and makes distant landscape features difficult or impossible to see. According to the National Park Service, some degree of visibility impairment caused by air pollution occurs in every park that it manages, and visibility degradation is a constant problem at some locations.

We testified before this Subcommittee in March 1990 regarding the extent to which the Prevention of Significant Deterioration (PSD) program was helping to protect air quality in class I areas.[1] The PSD program was designed to ensure that the construction of new facilities would not contribute to air quality deterioration in areas where the air is already clean. In our 1990 testimony, we noted that the program was doing little to protect air quality in class I areas. Our testimony today responds to your request that we determine whether there have been improvements in the PSD program in the past 4 years and that we examine several other federal initiatives intended to remedy or prevent visibility impairment in class I areas.

In short, we found that despite some progress since our last testimony to you, visibility impairment in many class I areas remains a serious problem.

- First, programs to control air pollution from individual sources near class I areas have had only a limited impact and are, in some respects, costly and difficult to implement. Further, some pollution sources are exempt from the program either because they existed prior to 1977 and were grandfathered or because they fall below an emission threshold.

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[1] Protecting Parks and Wilderness From Nearby Air Pollution Sources (GAO/T-RCED-90-43, March 9, 1990)

- Secondly, regional sources of air pollution are also significant contributors to visibility impairment. Even though these regional sources could be controlled under existing Clean Air Act authorities, Environmental Protection Agency (EPA) has not issued regulations or initiated other control measures to address the problem.

EFFORTS TO REDUCE VISIBILITY IMPAIRMENT FROM NEARBY SOURCES ARE NOT EFFECTIVE

As was the case when we testified before this Subcommittee in March 1990 which followed our February 1990 report,[2] the PSD program continues to provide limited opportunities for improving visibility impairment in class I areas. The PSD program prohibits the construction or modification of "major emitting facilities" in areas that have attained national air quality standards unless they demonstrate that they will not exceed certain air emission levels and install the best available control technologies. However, because PSD requirements relate to the construction of facilities, they do not affect facilities built prior to 1977, unless these facilities undergo major modification. Furthermore, PSD requirements do not apply to many minor sources whose cumulative emissions are believed to adversely impact visibility in class I areas.

In our 1990 report, we found that only 1 percent of the sources near the class I areas we looked at were subject to PSD requirements; 99 percent were exempt. Moreover, these exempt sources account for a significant portion of the air pollutants emitted near class I areas. For example, in the Shenandoah National Park approximately 98 percent of the sulfur dioxides and 87 percent of nitrogen oxides--two of the primary contributors to visibility impairment--emitted near the Park in 1992 came from exempt facilities.

Concerned that existing sources not subject to PSD requirements may be major contributors to visibility impairment in class I areas, EPA's Assistant Administrator for Air and Radiation established a workgroup in November 1993 to examine this issue. While workgroup members agree that significant visibility problems in class I areas are directly attributable to existing sources, they have not reached a consensus on how best to solve the problem.

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[2] Air Pollution: Protecting Parks and Wilderness From Nearby Pollution Sources (GAO/RCED-90-10, February 7, 1990)

Park Service Has Influenced Emission Levels For New Facilities

Although the scope of the PSD program is not sufficiently inclusive, it is nevertheless working somewhat better than when we reported to you in 1990, specifically, with regard to the Park Service's role in reviewing permit applications. One of the problems with the PSD program that we reported to you in 1990 was that some permit applications for proposed new facilities were not being forwarded to the federal land managers having jurisdiction over class I areas. According to Park Service officials, the process has improved, with EPA and state agencies more consistently forwarding new permit applications. Further, EPA guidelines provide that generally the federal land managers need to be notified of permit applications when a proposed facility will be located within 100 kilometers of a class I area. However, Park Service officials would also like an opportunity to review some applications for facilities beyond this range.

With its increased opportunity for reviewing applications, the Park Service appears to be having some success in helping control the rate of increase in emissions that contribute to visibility impairment. For example, following the Park Service's review of 13 permit applications for proposed facilities near the Shenandoah National Park, emission levels actually permitted were about 40 percent or almost 24,000 tons less than the proposed emission levels in the original permit applications. In aggregate, however, the new facilities will contribute an additional 31,000 tons per year of sulfur dioxide and nitrogen oxides.

Another example of the Park Service negotiating reduced emission levels recently occurred in Alaska. Alaska's Department of Environmental Conservation issued a PSD permit for the construction of a new 50-megawatt clean coal demonstration power plant to be built less than 4 miles from the border of the Denali National Park, even though the Park Service recommended that the state deny the permit. Subsequent to the permit's approval, however, Park Service officials were instrumental in negotiating reduced emissions from a nearby power plant to help offset most of the increased emissions from the new facility.

Nevertheless, while federal land managers are able to negotiate reduced emission levels for some proposed PSD permits, state permitting authorities have approved some permits despite the Park Service's recommendations that the permits not be approved unless increases in emissions were offset by reductions from other sources. For example, in 1990 the Park Service recommended to Virginia that the state not issue permits for new pollution sources near the Shenandoah National Park unless the additional emissions would not adversely affect air quality in

the park or emission reductions were achieved elsewhere. In 1992, the Park Service made a similar recommendation for the area surrounding the Great Smoky Mountains National Park. In both cases, states bordering the parks have continued to issue permits despite the Park Service's recommendations.

Provisions to Reduce Emissions From Existing Individual Sources Are Difficult And Costly

Although the PSD program generally exempts sources constructed prior to the implementation of the program, the 1977 amendments allow regulators to require these sources to install best available retrofit technology (BART), if they can demonstrate that these sources are causing or contributing to visibility impairment in class I areas. However, this authority has only been used once in the 14 years in which the BART program has existed. According to EPA and Park Service officials, BART is not an effective way of controlling visibility impairment because of the extensive time and money needed to develop legally sufficient studies which attribute specific emissions of individual pollution sources to visibility impairment. According to Park Service officials, in the one case in which BART was used, approximately 10 years was required and an estimated $5 million was spent on studies of air pollution entering Grand Canyon National Park from the nearby Navajo Generating Station. While the Navajo Generating Station is a primary contributor to certain visibility impairment episodes in the Grand Canyon, other more remote sources also contribute to the problem.

EFFORTS TO ADDRESS VISIBILITY IMPAIRMENT CAUSED BY REGIONAL SOURCES HAVE BEEN LIMITED

Modeling studies conducted by EPA and the Park Service suggest that regional sources may at times account for over 80 percent of the visibility problems in some class I areas. To address these regional sources, in 1980 EPA announced its intention to issue regulations to control air pollution within a broad region surrounding class I areas. The agency deferred issuing the regulations, however, until sufficient scientific data on which to base the regulations became available. Despite findings by the National Research Council of the National Academy of Sciences and the Park Service that adequate scientific data exists to begin developing regional haze regulations, EPA officials told us they are not certain that the regulations are needed and are waiting for additional information before reaching a final decision.

Additional Research Undertaken But Monitoring Has Been Curtailed

The 1990 amendments required EPA, working with the Park Service and other federal agencies, to significantly expand its research and monitoring activities to address visibility impairment problems in class I areas and authorized $8 million per year for 5 years for this purpose. EPA and Park Service visibility funding has increased since enactment of the 1990 amendments to support a number of research and monitoring efforts, including the Mohave Project[3], the Grand Canyon Visibility Transport Commission[4], and other atmospheric research related to visibility impairment.

Since fiscal year 1991, visibility funding levels have fluctuated between $5.5 and $6.6 million. According to EPA and the Park Service, the requested funds for fiscal year 1995 are about $4.6 million. According to EPA officials, the decrease is due to a reduction in visibility research by EPA's Office of Research and Development, in favor of higher priority health related research. However, officials note that some of this research--on small particulates--has application to visibility problems. Furthermore, EPA and Park Service officials are doubtful that the agencies will receive the resources needed for future years because of overall budget constraints and competition with other higher priority programs.

Ironically, although overall program funding increased, support for air quality monitoring in class I areas actually decreased following enactment of the 1990 Clean Air Act Amendments. The data from visibility monitors support research projects and are useful in identifying the sources and types of pollutants that are impacting visibility in class I areas. Yet, the Park Service's funding for monitoring was reduced by more than 37 percent during fiscal years 1991-94. As a result, the number of visibility monitoring sites in class I areas was reduced by 40 percent, dropping from 62 to 37. With fewer monitors, the Park Service has less data to demonstrate the impact that pollutants have on visibility.

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[3]The Mohave Project is a study of the emissions from the Mohave power plant and their impact on visibility in class I areas in southwestern states.

[4]The Grand Canyon Visibility Transport Commission is responsible for assessing the impact of long distance transport of pollutants on the visibility of the Grand Canyon National Park and other class I areas in southwestern states and recommending measures to improve visibility in these areas.

No Additional Transport Commissions Established

The 1990 amendments authorize EPA, on the Administrator's initiative or at the request of states, to designate visibility transport regions wherever the Administrator believes that the interstate transport of air pollution contributes significantly to visibility impairment in class I areas. For each visibility transport region designated, the Administrator is required to establish a visibility transport commission consisting of the governors of the affected states and representatives of EPA and the federal land managers. The commissions are supposed to assess the information pertaining to adverse impacts on visibility and recommend to the Administrator what measures, if any, should be taken to remedy any adverse impacts.

However, only the Grand Canyon Visibility Transport Commission, which was specifically required by the 1990 amendments, has been established. EPA has delayed issuing regional haze regulations pending the recommendations of this Commission, but Park Service officials and others question the applicability of the Commission's findings to class I areas in other regions of the country, especially eastern states, where pollutant levels and meteorology are quite different. Further, EPA and Park Service officials doubt that other visibility transport commissions will be established. According to these officials, the agencies have not considered visibility a high enough priority to devote the resources required at the federal level to establish and adequately support visibility transport commissions. Secondly, few states have expressed an interest in participating in visibility transport commissions.

Other Clean Air Act Provisions Are Not Expected To Have Much Impact

Another reason that EPA held off issuing regional haze regulations was because the agency expected that the implementation of title IV of the 1990 amendments--acid rain control measures--would significantly reduce visibility impairment in class I areas caused by sulfur dioxide and nitrogen oxides emissions. However, EPA has since concluded that while reductions of these pollutants could improve visibility in some class I areas in eastern states, the reductions would not solve all of the visibility problems. Although the reductions are estimated to improve visibility by approximately 20 percent on an average day in many eastern parks, Park Service officials told us that this level of improvement will not be apparent to many park visitors.

In western class I areas, EPA concluded that any reductions in emissions of sulfur dioxide and nitrogen oxides achieved by the implementation of title IV would be offset by increases in pollution caused by population growth and the construction of new

emission sources. Therefore, EPA projects little or no change in visibility for national parks and wilderness areas in western states, which account for 126 of the 158 class I areas.

Lending support to the need for regional haze regulations is a 1993 National Research Council report which concluded that neither existing nor planned emission control programs, including title IV, will solve the nation's visibility impairment problem. The report argued that real progress in reducing visibility impairment will require regional programs that control pollution from sources in large geographic areas. According to the Council's report, visibility impairment is probably as well understood as any other air pollution problem. Consequently, the report concluded that while additional research is worthwhile, current scientific knowledge is adequate and control technologies are available for taking regulatory action to improve visibility. In commenting on the Council's report, the Park Service stated that the report confirmed what it has believed for years, that scientific data and control technologies are available to begin developing regional haze regulations.

CONCLUSIONS AND RECOMMENDATIONS

Mr. Chairman, we know that your Subcommittee has a long standing interest in improving visibility in national parks and wilderness areas. In view of the limited success of the PSD and other programs in controlling air pollution in class I areas and in light of increasing scientific evidence that regional sources are major contributors to visibility impairment, we believe that some type of regional approach is needed to address the problem. EPA has indicated its intentions to wait for additional information before deciding whether to issue regional haze regulations. However, it is unclear when the information will be available in view of reductions in the number of monitoring sites in class I areas and the fact that only one visibility transport commission has been established.

At the same time, it should be noted that the National Research Council and the Park Service have both stated that current scientific knowledge is adequate and control technologies are available for taking regulatory actions to improve visibility in class I areas. It seems to us that they have made convincing arguments. Accordingly, we recommend that the EPA Administrator begin developing a control strategy for addressing visibility impairment caused by regional sources.

Mr. Chairman, this concludes my prepared remarks. I would be pleased to respond to any questions.

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