

**ENVIRONMENTAL PROTECTION AGENCY**

**(40 CFR Part 50)**

**AD-FRL-**

**National Ambient Air Quality Standards for  
Ozone and Particulate Matter**

**AGENCY :** Environmental Protection Agency

**ACTION :** Advance Notice of Proposed Rulemaking

**SUMMARY :** In accordance with sections 108 and 109 of the Clean Air Act, the Environmental Protection Agency (EPA) is nearing completion in its reviews of the air quality criteria and national ambient air quality standards (NAAQS) for ozone (O<sub>3</sub>) and particulate matter (PM). This action announces the Agency's plans to propose decisions on whether to retain or revise the O<sub>3</sub> and PM NAAQS under the same schedule, by November 29, 1996, with final action scheduled for mid-1997. Further, this action announces the Agency's process for developing integrated strategies for the implementation of potential new O<sub>3</sub> and PM NAAQS, as well as a regional haze program. This action reflects the Agency's recognition of important scientific and technical factors with both these pollutants, associated standards, and implementation strategies to meet such standards. Through this action, the Agency is providing advance notice of key issues that are being considered in the reviews of these standards to allow more time for the public to develop input and comments beyond that which will be provided following the notices of proposed rulemaking.

**FOR FURTHER INFORMATION CONTACT :** Dr. David McKee on the O<sub>3</sub> NAAQS review, MD-15, Air Quality Standards and

Strategies Division, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711 (919-541-5288); Dr. Jane Caldwell on the PM NAAQS review, same address (919-541-0328); and Ms. Denise Gerth on the integrated implementation strategy development process, same address (919-541-5550).

**SUPPLEMENTARY INFORMATION :**

**Availability of Related Information**

*A. Documents related to the O<sub>3</sub> and PM NAAQS reviews*

The Air Quality Criteria for Ozone and Other Photochemical Oxidants (EPA/600/P-93-004aF thru EPA/600/P-93-004cF); Review of the National Ambient Air Quality Standards for Ozone: Assessment of Scientific and Technical Information: OAQPS Staff Paper (EPA-452/R-96-007); the Air Quality Criteria for Particulate Matter (EPA/600/P-95-001aF thru EPA/600/P-95-001cF); and Review of the National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information: OAQPS Staff Paper (EPA-452/R-96-xxx) are now available on the Agency's Office of Air Quality Planning and Standards' (OAQPS) Technology Transfer Network (TTN) Bulletin Board System (BBS). The telephone number for the TTN BBS is (919) 541-5742. To access the bulletin board a modem and communications software are necessary. The following parameters on the communications software are required: Data Bits-8; Parity-N; and Stop Bits-1. The documents will be located

on the Clean Air Act Amendments BBS, under Title I, Policy/Guidance Documents. If assistance is needed in accessing the system, call the help desk at (919) 541-5384 in Research Triangle Park, NC.

Copies of each of these documents are available for public inspection at the EPA Air Docket and the EPA library, both at Headquarters, Waterside Mall, 401 M Street, Washington, D.C. EPA Air Docket hours, in Room M1500 of Waterside Mall, are 8:00 a.m. to 5:30 p.m., Monday through Friday, excluding holidays. EPA Library hours are from 10:00 a.m. until 2:00 p.m., excluding holidays. The EPA docket numbers for the O<sub>3</sub> and PM NAAQS reviews are A-95-58 and A-95-54, respectively.

A limited number of copies of other technical support documents for these standard reviews, such as documents pertaining to air quality, human exposure, health risk, and economic analyses, are available and can be obtained from: U.S. Environmental Protection Agency Library (MD-35), Research Triangle Park, NC 27711, telephone (919) 541-2777. These and other related documents are also available for inspection in the EPA dockets identified above.

*B. Documents related to the development of integrated implementation strategies*

Documents associated with the development of integrated implementation strategies are filed in EPA docket number A-95-38, and are available from this docket as described above.

**Background and Schedules**

The Clean Air Act requires the establishment, review, and revision of NAAQS, and directs the Administrator to identify pollutants which "may reasonably be anticipated to endanger public health and welfare" and to issue air quality criteria for them (42 U.S.C. 7408, 7409). These air quality criteria are to "accurately reflect the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on public health or welfare which may be expected from the presence of [a] pollutant in the ambient air . . . ." The Administrator is directed to propose and promulgate both "primary" and "secondary" NAAQS for such pollutants. A primary standard is defined as one "the attainment and maintenance of which, in the judgment of the Administrator, based on the criteria and allowing an adequate margin of safety, [is] requisite to protect the public health." A secondary standard must "specify a level of air quality the attainment and maintenance of which, in the judgment of the Administrator, based on [the] criteria, is requisite to protect the public welfare from any known or anticipated adverse effects associated with the presence of [the] pollutant in the ambient air." <sup>1</sup>

The Act requires periodic review and, if appropriate, revision of existing air quality criteria and NAAQS. The Act also requires appointment of an

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<sup>1</sup>Welfare effects as defined by the Act include, but are not limited to, effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being.

independent scientific review committee to review criteria and standards and recommend to the Administrator new standards or revisions of existing criteria and standards, as appropriate. This committee is known as the Clean Air Scientific Advisory Committee (CASAC), a standing committee of EPA's Science Advisory Board.

The EPA initiated action to update the air quality criteria documents for O<sub>3</sub> in August 1992 (57 FR 38832) and for PM in April 1994 (59 FR 17375). As discussed more fully in the next two sections of this notice, both reviews have included a series of peer-review workshops on the air quality criteria, as well as CASAC and public reviews of draft air quality criteria documents and staff papers. The staff papers evaluate the policy implications of key studies and scientific information contained in the criteria documents; identify factors relevant to the evaluation of current primary and secondary NAAQS; summarize air quality, exposure, and risk analyses, to the extent possible, of alternative standards; and present staff conclusions and recommendations of suggested options for the Administrator to consider in her review of the NAAQS.

In conjunction with the reviews of the O<sub>3</sub> and PM NAAQS, the EPA has also initiated action to address strategies for the implementation of potential new NAAQS. This action includes examining the ramifications of any changes to the NAAQS on current implementation efforts, and, if appropriate, developing new implementation control strategies. In addition, the EPA is reviewing options to ensure a smooth transition for implementation of any new NAAQS. A process for providing significant

stakeholder involvement in the development of such strategies and options is outlined in the final section of this notice.

These ongoing reviews and related implementation strategy activities to date have brought out important common factors between  $O_3$  and PM. Several similar health effects have been associated with exposure to  $O_3$  and PM, including for example aggravation of respiratory disease (e.g., asthma), increased respiratory symptoms, and increased hospital admissions and emergency room visits for respiratory causes. Other similarities in pollutant sources, formation, and control exist between  $O_3$  and PM, in particular the fine fraction of particles addressed by the current PM NAAQS <sup>2</sup>. These similarities include 1) atmospheric residence times of several days, leading to regional-scale transport of the pollutants; 2) similar gaseous precursors, including compounds of nitrogen ( $NO_x$ ) and volatile organic compounds (VOC), which contribute to the formation of both  $O_3$  and PM in the atmosphere; 3) similar combustion-related source categories, such as coal and oil-fired power generation and industrial boilers and mobile sources, which emit particles directly as well as gaseous precursors of particles (e.g.,  $SO_x$ ,  $NO_x$ , VOC) and  $O_3$  (e.g.,  $NO_x$ , VOC); and 4) similar atmospheric chemistry driven by the same chemical reactions and intermediate chemical species which favor

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<sup>2</sup> The current PM NAAQS addresses particles with an aerodynamic diameter less than or equal to a nominal 10 microns ( $PM_{10}$ ). The fine fraction of such particles is generally taken to address particles with an aerodynamic diameter less than or equal to a nominal 2.5 microns ( $PM_{2.5}$ ).

both high O<sub>3</sub> and fine particle levels. High fine particle levels are also associated with significant impairment of visibility on a regional scale. These similarities provide opportunities for optimizing technical analysis tools (i.e., monitoring networks, emission inventories, air quality models) and integrated emission reduction strategies to yield important co-benefits across various air quality management programs. This integration could result in a net reduction of the regulatory burden on some source category sectors that would otherwise be impacted separately by O<sub>3</sub>, PM, and visibility protection control strategies.

In recognition of the potential benefits of integrating the Agency's approaches to providing for appropriate protection of public health and welfare from exposure to O<sub>3</sub> and PM, the Agency plans to complete these NAAQS reviews and develop associated implementation strategies under coordinated schedules. Thus, the Agency plans to propose decisions on whether to retain or revise the O<sub>3</sub> and PM NAAQS by November 29, 1996, with final action planned for June 1997, consistent with the current schedule established by court order for the PM NAAQS review<sup>3</sup>. Proposal of various key aspects of integrated implementation strategies for potential new NAAQS is planned for June 1997, consistent with final action on

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<sup>3</sup> In response to a suit filed by the American Lung Association in February 1994 to compel EPA to complete the present review of the PM NAAQS, the U.S. District Court for the District of Arizona has issued orders requiring publication of proposed and final decisions by November 29, 1996 and June 28, 1997, respectively.

the NAAQS reviews, with proposal of full implementation strategies planned for June 1998.

The EPA encourages involvement of interested parties in these regulatory actions and is providing opportunities for public participation and comment throughout the processes. The Agency also recognizes that these schedules are accelerated relative to past NAAQS reviews and is thus providing this advance notice to alert potential participants in the reviews to the important considerations and key issues which the Administrator will take into account in making decisions in these actions.

#### **Review of the Ozone NAAQS**

The CASAC has completed its review of the O<sub>3</sub> Criteria Document and O<sub>3</sub> Staff Paper, and has advised the Administrator that the documents provide an adequate review of the available scientific data and relevant studies, as well as an adequate scientific basis for making regulatory decisions concerning primary and secondary O<sub>3</sub> standards (Wolff, 1995a,b, 1996b). Thus, the Administrator is primarily focusing attention on the staff conclusions and range of staff recommendations presented in the O<sub>3</sub> Staff Paper, together with specific CASAC recommendations outlined below for the primary and secondary standards.

##### *A. Primary Standard Issues*

In selecting a primary standard, the Administrator must specify an averaging time, O<sub>3</sub> concentration (i.e., level), and form (i.e., the air quality statistic to be



used as a basis for determining compliance with the standard). The key factors outlined in the Staff Paper for selecting these elements of a primary O<sub>3</sub> standard reflect an integration of information on acute<sup>4</sup> and chronic<sup>5</sup> health effects associated with exposure to ambient O<sub>3</sub>, expert judgments on the adversity of such effects for individuals, and policy judgments, informed by air quality and human exposure analyses and quantitative risk assessment when possible, as to the point at which risks would be reduced sufficiently to achieve protection of public health with an adequate margin of safety. Such an approach has been endorsed by CASAC and is consistent with its advice to the Administrator (Wolff, 1995b) that "ozone may elicit a continuum of biological responses down to background concentrations." In such a case, CASAC has advised that the traditional paradigm of standard setting cannot be applied in the usual way, and that "EPA's risk assessments must play a central role in identifying an appropriate level." Thus, the Administrator is giving preliminary consideration to the task of selecting a standard level that will reduce risks sufficiently to protect public health with an adequate margin of safety,

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<sup>4</sup> Acute effects associated with short-term (1-3 hr) and prolonged (6-8 hr) exposures to O<sub>3</sub> include transient pulmonary function decrements, increased respiratory symptoms, and effects on exercise performance, as well as increased airway responsiveness, susceptibility to respiratory infection, increased hospital admissions and emergency room visits for respiratory causes (e.g., asthma), and acute pulmonary inflammation.

<sup>5</sup> Chronic effects for which evidence suggests associations with long-term (months to years) exposure to O<sub>3</sub> include structural damage to lung tissue and accelerated decline in baseline lung function which could result in decreased quality of life in later years.

based on her understanding that a zero-risk standard is neither possible nor required by the Act.

#### 1. Consideration of New 8-Hour Primary Standard

The Administrator is giving strong preliminary consideration to the unanimous recommendation of CASAC "that the present 1-hr standard be eliminated and replaced with an 8-hr standard" (Wolff, 1995b). This recommendation reflects the consensus CASAC view that an 8-hr standard is more appropriate for a human health-based standard since 8-hr average exposures to O<sub>3</sub> are more directly associated with health effects of concern at lower ambient O<sub>3</sub> concentrations than are 1-hr average exposures. In considering an appropriate level for a possible new 8-hr standard, the Administrator notes that during the last review of the O<sub>3</sub> criteria and standards<sup>6</sup>, CASAC concluded that the existing 1-hr standard, set at a level of 0.12 parts per million (ppm) O<sub>3</sub>, provided "little, if any, margin of safety" (McClellan, 1989). The Administrator also notes the CASAC consensus that 0.07 ppm to 0.09 ppm is an appropriate range for consideration for a new 8-hr standard, and further, that none of the CASAC panel members have expressed an opinion that such a standard should be set at a level below 0.08 ppm (Wolff, 1995b). In addition, a number of CASAC panel members have recommended that, since there is no apparent threshold for responses and no "bright line" in the risk assessment, a pollution warning system be initiated to allow particularly sensitive individuals to take

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<sup>6</sup> The last review concluded in March 1993 with a final decision that revisions to the O<sub>3</sub> standards were not appropriate at that time (58 FR 13008).

appropriate action, potentially building upon the Agency's Pollutant Standards Index or on infrastructures already in place in many areas of the country for designating days when voluntary emission reduction measures may be encouraged locally.

## 2. New Approaches to Defining the Form of the Primary Standard

In giving preliminary consideration to the form of a possible new 8-hr standard, the Administrator is aware that since promulgation of the current NAAQS in 1979, a number of concerns have been raised about the current 1-expected-exceedance form. These concerns include, in particular, the year-to-year stability of the number of exceedances and, thus, the stability of the attainment status of an area; data handling conventions, including the procedures for adjusting for missing data; and the evaluation of air quality on a site-by-site basis rather than some form of population-weighted averaging across monitoring sites within an area. The CASAC has advised that such concerns should be addressed by considering a more robust, concentration-based form to "provide some insulation from the impacts of extreme meteorological events." (Wolff, 1995b) In particular, all CASAC panel members who expressed their opinions in this area favored a form of the standard that allowed for multiple exceedances within the range of 1 to 5 exceedances recommended in the Staff Paper.

In light of historic concerns and recent advice from CASAC, the Agency is evaluating new approaches to defining the form of the primary standard. Such approaches include the use of less extreme and

concentration-based air quality statistics, the specification of a range of air quality rather than a single measure, and the use of some form of population-weighted measure of air quality combining data across monitors. In particular, the Agency is examining potential advantages of a concentration-based form over an expected-exceedance-based form. A principal advantage is that a concentration-based form is more directly related to the ambient  $O_3$  concentrations that are associated with health effects; that is, the degree and extent to which public health is affected is related to the concentration of  $O_3$  in the ambient air, not just whether that concentration is above or below some specific level. Further, a concentration-based form has greater temporal stability than the expected-exceedance form, and, thus, would facilitate the development of more stable implementation programs by the States. The specification of a range rather than a single value may facilitate individual and/or regulatory agency efforts to provide additional safeguards against responses that may, in a small number of particularly sensitive individuals, occur at levels even below the level of a standard that protects public health with an adequate margin of safety.

Any consideration of some form of population-weighted measure of air quality raises issues about environmental equity, the adequacy of the current monitoring network, and the specificity of monitoring siting requirements. On the other hand, such a conceptual approach may better reflect population exposure and risk. As part of its review of the primary standard, the Agency will be interested in particular in

analyses that inform questions about appropriate criteria for using data from multiple monitors in developing population-weighted measures of air quality and the distribution of public health protection that would result from such an approach.

*B. Secondary Standard Issues*

The Agency's review of a secondary O<sub>3</sub> standard has focused on effects on vegetation<sup>7</sup>, including agricultural crops and native vegetation, recognizing that such effects can indirectly impact natural ecosystem components such as soils, water, animals, and wildlife. The key factors outlined in the O<sub>3</sub> Staff Paper for selecting a secondary standard include vegetation effects information in the O<sub>3</sub> Criteria Document, including information on biologically relevant measures of exposure; analyses of air quality, particularly in rural areas; and rough estimates of vegetation exposure to ambient O<sub>3</sub> and potential risks in terms of the extent of impacts and, where possible, the economic values associated with such risks. The Agency is also considering the potential degree of vegetation protection that may be afforded by a possible new primary standard.

The Administrator is giving strong preliminary consideration to the unanimous conclusion of CASAC "that damage is occurring to vegetation and natural resources at concentrations below the present 1-hr national ambient air quality standard," and to its unanimous

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<sup>7</sup> Vegetation effects that have been associated with O<sub>3</sub> exposures include visible foliar injury, growth reductions and yield loss in annual crops, growth reductions in tree seedlings and mature trees, and ecosystem level impacts.

recommendation "that a secondary NAAQS, more stringent than the present primary standard, was necessary to protect vegetation from ozone" (Wolff, 1996b). Further, CASAC recognizes that vegetation response to ambient O<sub>3</sub> is cumulative, suggesting that a secondary standard with some cumulative, perhaps seasonal, form would better reflect biologically relevant measures of exposure than a short-term average concentration form. The Administrator also recognizes, however, that there remains a diversity of views within the scientific community in general and the CASAC panel members in particular as to an appropriate level and measure of exposure for such a standard. This diversity of views is consistent with the consensus view that significant uncertainties remain in understanding the nature, degree, and long-term patterns of responses to O<sub>3</sub> exposures across the large number of species of annual and perennial plants and trees that are part of the commercial and native vegetation to be addressed by a national O<sub>3</sub> standard.

In light of the consensus that the current secondary standard is not sufficiently protective of vegetation, as well as the diversity of views with regard to an appropriate level and form for a new standard, the Agency is giving preliminary consideration to two approaches to selecting a standard. The first approach is to consider the degree of protection that may be afforded by a possible new primary standard, while recognizing that such a form would be only a surrogate for more biologically relevant cumulative exposure measures. Alternatively, the Agency is also considering cumulative forms and seasonal averaging times within the ranges of

options presented in the Staff Paper to identify a reasonable policy choice for such a standard, recognizing that no one form could reflect all biologically relevant factors across the broad range of species being addressed. These alternative approaches are consistent with the range of views expressed by the CASAC panel members (Wolff, 1996b).

CASAC has also provided the Administrator with its insights as to why there are such divergent opinions on the selection of a new secondary standard, citing the lack of sufficient rural O<sub>3</sub> data and the lack of relevant plant exposure studies under field conditions as the main reasons (Wolff, 1996b). The Agency recognizes the importance not only of additional vegetation effects research, but also of enhancing the existing O<sub>3</sub> monitoring network to provide better coverage in more rural areas of agricultural and ecological importance, regardless of the regulatory approach taken in this review. Thus, the Agency will be interested in information and analyses that would inform future decisions as to how to enhance the O<sub>3</sub> monitoring network on an appropriate spatial scale and in a cost-effective manner. Based on such information, consideration could also be given to spatially integrating O<sub>3</sub> concentrations across multiple monitors in conjunction with establishing a form for a secondary standard that could provide a more representative indication of relevant vegetation exposures over appropriate spatial scales.

**Review of PM NAAQS**

CASAC has completed its review of the PM Criteria Document and is nearing completion on the PM Staff Paper. CASAC has advised the Administrator that the PM Criteria Document included an excellent integrative summary of the state of knowledge about the health effects of airborne PM, and that, as revised to reflect CASAC's final comments, the document provides an adequate review of the available scientific data and relevant studies of PM and scientific basis for regulatory decisions on PM (Wolff, 1996a). The schedule calls for CASAC to complete its review and advice to the Administrator on the PM Staff Paper and recommendations on possible new or revised PM standards by mid-June.

A. *Primary Standard Issues: Consideration of Fine Particle Standards*

Based on CASAC's review of the PM Criteria Document, the Agency is focusing on the primary conclusions highlighted in that document as a basis for its preliminary consideration of possible new PM primary standards. In particular, the PM Criteria Document concludes that newly emerging studies of the effects of community air pollution provide reasonably consistent results indicative of increased mortality and morbidity effects, including hospital admissions and respiratory illness, associated with short- and long-term exposures to ambient air containing PM concentrations currently found in many U.S. urban areas, including areas which comply with the current 24-hr and annual PM standards.



Further, the PM Criteria Document concludes that analyses of the epidemiological evidence suggest stronger associations of mortality and some morbidity effects with fine particles than with the coarse particles within PM<sub>10</sub>. For this and other reasons, the PM Criteria Document concludes that fine and coarse fraction particles, which together comprise the mix of particles in PM<sub>10</sub>, should be considered as separate pollutants. This conclusion was supported by many CASAC panel members (Wolff, 1996a, Shy et al., 1996), with others noting important uncertainties to be addressed in using this conclusion as a basis for selecting possible new fine particle standards. The PM Criteria Document also concludes that coarse fraction particles have been more directly associated with some morbidity effects.

In selecting a primary standard or suite of standards for PM, the Administrator must specify an indicator or indicators to define the pollutant in terms of which particles, within the broad class of chemically and physically diverse substances that comprise airborne PM, a given standard addresses. Based on the conclusions and CASAC advice outlined above, the Agency is giving preliminary consideration to the task of selecting a suite of standards that would focus risk management approaches so as to provide appropriate public health protection across the range of effects that have been associated with both the fine and coarse fraction particles within the particle mix that comprises PM<sub>10</sub>. The Agency is interested in information and analyses that will inform decisions as to the most effective and efficient suite of standards for providing the requisite

degree of health protection. Further, new approaches to defining the form of short-term primary standards, as discussed above in the section on the  $O_3$  primary standard, are also of interest to the Agency in considering alternative PM standards.

*B. Secondary Standard Issues*

The Agency's review of a secondary PM standard is focusing on visibility impairment that has been associated in particular with fine particles. The PM Criteria Document notes that the level of this impairment varies greatly from eastern to western U.S. regions as do background levels of fine particles and other factors that are associated with visibility impairment. Because of significant regional variations in visibility conditions and the problems this presents in establishing a uniform national standard, the Agency is giving strong consideration to addressing visibility impairment through a new regional haze program, under section 169A of Act, rather than through a secondary NAAQS.

**Development of Integrated Implementation Strategies**

The Agency has initiated a process designed to provide for significant stakeholder involvement in the development of integrated implementation strategies for possible new or revised  $O_3$  and PM NAAQS and a new regional haze program. As described below, this process involves a new subcommittee of the Agency's Clean Air Act Advisory Committee (CAAAC), established in accordance with the Federal Advisory Committee Act (FACA) (5 U.S.C. App.2).

*A. Background*

The FACA was enacted in 1972 to open the advisory committee process to public scrutiny and to protect against undue influence by special interest groups over government decision making. Federal Advisory Committees may be established by statute, the President, or by the head of a Federal Agency. An advisory committee or subcommittee is established under FACA to obtain advice or recommendations from advisory groups established by or closely tied to the Federal Government.

The CAAAC was established to provide independent advice and counsel to the EPA on policy and technical issues associated with the implementation of the Act. The CAAAC advises EPA on the development, implementation, and enforcement of several of the new and expanded regulatory and market-based programs required by the Act.

The CAAAC advises on issues that cut across several program areas. The programs falling under the purview of the CAAAC include those for meeting national ambient air quality standards (NAAQS), reducing emissions from vehicles and vehicle fuels, reducing air toxic emissions, issuing operating permits and collecting fees, and carrying out new and expanded compliance authorities. The CAAAC holds meetings, analyzes issues, conducts reviews, performs studies, produces reports, makes recommendations, and undertakes other activities necessary to meet its responsibilities. Comments, evaluations, and recommendations of the CAAAC and responses from the EPA are made available for public review, in accordance with Section 10 of FACA.

A new subcommittee of the CAAAC, the Subcommittee for Ozone, Particulate Matter, and Regional Haze

Implementation Programs (the Subcommittee), was established in August 1995 to address integrated strategies for the implementation of potential new O<sub>3</sub> and PM NAAQS, as well as a regional haze program. The Subcommittee is composed of representatives selected from among state, local, and tribal organizations; environmental groups; industry; consultants; science/academia; and federal agencies. Recommendations made by the Subcommittee will be submitted to EPA through CAAAC. To facilitate communication between the Subcommittee and CAAAC, some members of CAAAC are on the Subcommittee.

*B. Purpose of the Subcommittee on Integrated Implementation Strategies*

The Subcommittee is charged with providing advice and recommendations to EPA on developing new, integrated approaches for implementing potential revised NAAQS for O<sub>3</sub> and PM, as well as for implementing a new regional haze reduction program. The Subcommittee is expected to examine key aspects of the implementation programs for O<sub>3</sub> and PM, to provide for more flexible and cost-effective implementation strategies, as well as to provide new approaches that could integrate broad regional and national control strategies with more localized efforts. In addition, the Subcommittee will consider new and innovative approaches to implementation including market-based incentives. The focus of the Subcommittee will be on assisting EPA in developing implementation control strategies, preparing supporting analyses, and identifying and resolving impediments to the adoption of the resulting programs.

Issues involved in possible revision of the O<sub>3</sub> and PM NAAQS, such as the averaging time, level, and form of any revised standards, are being addressed in accordance with the NAAQS review process described in the above sections, including review by CASAC, and are not within the Subcommittee's charge. CASAC is charged with providing advice and recommendations to the Administrator on all matters pertaining to the review of and possible revisions to the NAAQS. Similarly, selection of the appropriate indicator or units of measurement for quantifiable changes in visibility are being addressed through an independent, scientific peer-review process and, thus, will not be a subject for recommendations by the Subcommittee.

### *C. Subcommittee Structure*

The organization of the Subcommittee includes a coordination group and four work groups that will address specific issues. The coordination and work groups consist of members of the Subcommittee, as well as others recommended by the Subcommittee.

#### 1. Coordination Group

The coordination group is responsible for assuring that the outputs of the various work groups are coordinated and support the overall project goals. This group serves as the communication link between the full Subcommittee and the work groups. It sets the agendas for the Subcommittee meetings and coordinates presentations of key issues and related options to the full Subcommittee. The coordination group provides direction to work group chairs in determining priority issues to be considered by the full Subcommittee and in

setting time frames for addressing issues and options with the Subcommittee. This group serves as a "sounding board" on potential work group products, resource needs, and any potential impediments to the progress of the work groups. It ensures that adequate progress is made by work groups and that issues are appropriately identified and addressed in accordance with established time lines. Finally, the coordination group provides a forum for determining the extent to which work groups address similar or related issues.

## 2. Base Program Analyses and Policies Group

The Base Program Analyses and Policies Group is responsible for conducting a reexamination of the existing base regulatory program to take into account the potential new NAAQS, as well as the regional haze program, and to better integrate broader-based regional and national control programs including the perspective of both receptors and generators of emissions. This includes reexamination of the designation and classification process to better reflect the associated health risks and definition of air quality problems. An important component of this group's assignment is the development of recommendations that will facilitate moving from existing to new programs.

## 3. National and Regional Strategies Group

The National and Regional Strategies Group is responsible for development of broad regional and national strategies for addressing transport issues. This group examines broad-based market and trading approaches and other innovative strategies for achieving emission reductions. To do this, the group has to

consider the technical, policy, and institutional issues associated with these types of approaches from the perspective of both generators and receptors of emissions.

#### 4. Communications and Outreach Group

The Communications and Outreach Group is responsible for developing a focus on the education of the general public to the nature and extent of air quality problems and the associated health and welfare impacts. This includes providing explanations of the measures being taken now and in the future to address these problems and summaries of associated costs and benefits. The initial focus of the group was to explain the current understanding of health and welfare effects information. This includes the steps EPA is taking to address health and welfare effects through possible new NAAQS and the regional haze program. Finally, this group describes how EPA, through the Subcommittee, is developing new integrated approaches to assure that public health and environmental objectives are attained as effectively and efficiently as possible.

#### 5. Science and Technical Support Group

The Science and Technical Support Group is responsible for preparing an assessment of the current state of the art with respect to emission inventories, air quality models, meteorological models, and analysis of air quality monitoring data to provide a scientific basis for decisions on integrated implementation strategies. These efforts are coordinated with the ongoing work of the Ozone Transport Assessment Group (OTAG), the Grand Canyon Visibility Transport Commission

(GCVTC), the Southern Appalachian Mountains Initiative (SAMI), and the North American Regional Strategies for Tropospheric Ozone (NARSTO). The Science and Technical Support Group assessment is expected to be a short-term effort to provide baseline information to the other working groups. In the longer term, this group will provide scientific and technical support to the other groups as requested.

*D. Ongoing Process and Schedule for Addressing Issues*

The work groups will develop options and recommendations, and present these to the Subcommittee for further consideration. When consensus is not obtained on recommendations, minority and majority options will be presented to the Subcommittee via the coordination group. The Subcommittee will then forward its recommendations to the CAAAC for consideration and recommendation to EPA.

The integrated implementation programs for O<sub>3</sub>, PM, and regional haze will be developed in a two-phased approach. In Phase I, the Subcommittee and work groups will address air quality management framework issues. EPA plans to propose the resulting Phase I strategy in June 1997. Phase II of the integrated implementation strategy will focus on more detailed control strategy development. EPA plans to propose the Phase II strategy in June 1998.

Generally, Phase I implementation issues include: 1) designations for new NAAQS and regional haze planning areas, 2) mechanisms to address regional strategies, 3) integration of NAAQS and regional haze implementation programs, 4) regional haze program definition, 5) new



source review, and 6) dates for potential new NAAQS and regional haze programs. Phase II implementation issues include: 1) classifications, 2) control requirements, 3) economic incentives, 4) State implementation plan requirements, 5) overall control program integration, 6) measure of progress, and 7) institutional process.

**List of Subjects in 40 CFR Part 50** : Environmental protection, Air pollution control, Carbon monoxide, Lead, Nitrogen dioxide, Ozone, Particulate matter, Sulfur oxides.

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Dated:

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Mary D. Nichols, Assistant  
Administrator for Air and Radiation

## References

- McClellan, R.O. (1989) Letter from Chairman of Clean Air Scientific Advisory Committee to the EPA Administrator concerning "closure" on the Ozone Criteria Document Supplement and the Ozone Staff Paper, dated May 1, 1989.
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