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Folder Title:
Environment: Climate Change Vol. III [3]

Stack:	Row:	Section:	Shelf:	Position:
S	20	3	2	3

cc: JES
JHF
RP
JF

TO: *See attached list

FROM: OES - Eileen B. Claussen

SUBJECT: Revised Climate Change Paper

Thank you for the valuable comments on the climate change paper, both at our meeting last Friday and subsequently. We have substantially revised the paper, shortening it and incorporating comments received. Please review it quickly and let us know by noon today, November 26, whether there are any serious problems. We will plan to transmit it to the White House for formal distribution this afternoon.

Attachment:
As stated.

Climate Change: U.S. Position for December 1996
(draft 11/26/96 9:00 a.m.)

Contents Page

I. Introduction and Background

At the second meeting of the Conference of the Parties (COP-2) to the United Nations Framework Convention on Climate Change (FCCC), the United States called for next steps under the Climate Convention for the post-2000 period to include verifiable, realistic and achievable, legally binding medium term targets for developed countries with maximum flexibility that would be implemented through national programs and begin to reduce the threat of climate change consistent with economic prosperity. The U.S. position also underscored the need for all nations, including developing nations, to take actions to limit greenhouse gas emissions. Finally, we called for continued work on a longer-term global concentration goal (e.g. 50-100 years). We continue to believe that this is the approach that will produce a successful outcome at the third session of the Parties in Kyoto in December 1997.

To this end, we would like to call attention again to the conclusions of the IPCC Second Assessment Report, which found that "the balance of evidence suggests a discernible human influence on global climate." The potential for impacts of climate change on natural systems, the economy and the quality of life for future generations is truly significant. The scientific evidence suggests climate change, if unabated, could be detrimental for human health, food security and water resources in many regions of the world. The potential for such impacts makes climate change a "high-risk" problem. In our view, all Parties should act on the conclusion Ministers reached last July: that the science provides a compelling basis for urgent action to address climate change.

Notwithstanding the compelling evidence compiled so far, we must continue our efforts to further develop and refine our understanding of the science of climate change, even as we seek to ameliorate its impacts. Such understanding, coupled with advances in the development and application of new technology, will ultimately enable a more targeted and successful long-term approach to solving this pressing problem.

We believe that next steps must be as cost-effective as possible. Our analyses completed to date suggest that more flexible approaches offer significant cost-saving opportunities, and these must be brought into the Convention's basic framework. Flexibility includes allowing Parties nationally to determine the most appropriate policies and measures to meet the agreed target, and allowing emissions trading and joint implementation between Parties to minimize the cost of reductions.

The United States arrived at this basic framework for a number of reasons. It is clear that the Convention's existing framework of a non-binding "aim" is not working, even though, at the national level, numerous voluntary partnerships with industry are working well. Most developed countries, including the United States, will not achieve the goal of returning emissions in 2000 to 1990 levels. A binding commitment will create a stronger incentive for nations to decide on a realistic target, to make the effort required to meet the target, to ensure a level playing field, and to foster development and deployment of advanced technologies.

Our focus must be on appropriate steps over the medium term, while we continue to develop a longer term goal. We reiterate that short term targets (i.e., before 2010) are unrealistic, and we cannot accept them. Short-term targets would be unnecessarily burdensome to national and global economic growth and development. They could mean that few if any countries would ratify the agreement.

Finally, the United States recognizes the need for global climate change to be addressed on a global basis. As a result, we believe it is imperative that the agreement we reach in Kyoto include an enhanced commitment by developing nations to take further steps to mitigate their emissions of greenhouse gases. While recognizing that developed countries must show leadership in addressing this problem, we believe it is very clear that all nations must be part of the solution.

- The Ministerial Declaration in Geneva at the Second Conference of the Parties to the Convention provides climate negotiators with a blueprint for action; we strongly endorse its approach. However, it is now time to develop and agree on concrete proposals.

This paper outlines our view on a number of issues about which we feel strongly, as well as others where several options merit closer scrutiny.

We expect to have further views on specific numbers that should be included in targets and timetables in the future as

the results of our continuing analysis and assessment emerge. We hope that other Parties will join us in developing new proposals to meet our environmental and economic goals.

II. Linkages

A number of key variables under consideration are interdependent. This interdependency must be recognized in negotiating our next steps. The United States proposed a three-part framework for the target in Geneva, including that the target be legally binding, that it focus on the medium term, and that it maximize national flexibility in implementation. In addition, the United States believes it will be critical to include developing countries in next steps; finding a solution to the climate change problem will require a concerted global effort. In our view, all four of these concepts are linked, and all four must be included in the legal instrument.

III. Defining the Form of the Target

As noted above, at COP-2 in July, the United States specifically called for focusing negotiations on a legally binding, medium-term emissions target, incorporating flexibility in time and place of implementation. The United States also expressed an interest in continuing to work toward a longer-term concentration goal. We rejected any target which called for an unrealistic near term goal -- and we continue to reject such an approach. We also remain convinced that the target should be designed in manner that allows for adjustment on the basis of new and evolving science. This paper outlines some of our current thinking on the form and structure of the target.

Multi-year Targets

The United States believes that the target set in the next step should cover a multi-year period in order to accomplish several objectives. First, a multi-year target would smooth year-to-year variability in weather and economic cycles. U.S. analyses of the effects of such variability provide a striking example of the importance of this issue: unusually hot or cold years can change U.S. gross national emissions by as much as two percent -- or about 40 percent of the emissions reductions sought from the energy sector by the year 2000. Because swings in weather, energy prices or economic cycles cannot be predicted with confidence, a single year target would require each country to build in an extra margin of GHG reductions to ensure compliance, significantly and unnecessarily raising the cost.

Second, a multi-year average would give Parties important flexibility to determine the pace at which their emissions budget would be expended over the period (evenly, front-loaded, or back-loaded). This flexibility may be particularly important in helping Parties to reduce their compliance costs in view of differing national circumstances. To provide this flexibility, targets could be set with budgets covering a multi-year period, for example, 2010-2020.

Banking/Borrowing

The United States strongly urges consideration of banking between multi-year average target periods. Such a process would allow emissions below the target in one period to be used to offset higher than target emissions in later periods. Banking of emissions could reward efforts to make reductions in earlier periods. Similarly, we also strongly urge that consideration be given to allowing Parties to borrow against their targets for the next period in order to emit more in a current period. We recognize that borrowing will require that a credible accounting and repayment mechanism be put in place.

Differentiation Among Annex I Parties

A number of Annex I Parties have suggested proposals for differentiation of commitments of the members of this group. While the United States acknowledges the clear distinctions that can be (and are) drawn between different Parties and groups of Parties, we do not believe that developing a complex, formulaic approach which differentiates at an individual Party level is a viable alternative at this stage in the negotiations. To date, we have seen no formula for a differentiated approach which equitably addresses all Parties' concerns.

An effort to define an acceptable differentiation scheme in this legal instrument will likely derail the negotiations, by being too divisive and time-consuming, or by disadvantaging a group of countries which might then choose not to sign or ratify. Either outcome could negate the value of the differentiation effort.

Instead we endorse the adoption of a common approach with respect to targets that maximizes each Party's flexibility with respect to the choice of domestic policies and measures to implement the target, coupled with international trading instruments to minimize and equalize Parties' costs of making reductions. Such an approach would enable the completion of the agreement by December 1997.

Comprehensive Approach

The United States continues to support the inclusion of all greenhouse gases, both sources and sinks, in a comprehensive, verifiable approach to addressing the climate change problem. Gases other than carbon dioxide account for about 30 percent of the radiative forcing from all emissions since the industrial revolution. Furthermore, different gases represent different strategic opportunities from the perspective of effects on the climate system. For example, reductions in methane emissions could yield a lower rate of warming over the next several decades than comparable reductions in carbon dioxide. To forego such a significant source of reduction potential would be both to reduce flexibility and to decrease the cost-effectiveness of the overall effort.

Assuming a comprehensive approach, several issues still require additional consideration, including the different level of certainty with regard to measurement of non-CO2 emissions in various sectors, problems with verification, and the relative importance or weighting to be assigned to different gases. There are also significant technical difficulties concerning accounting of sinks which need to be addressed. We will continue to insist that any agreed approach be fully quantifiable and verifiable, and include appropriate accounting procedures prior to inclusion into the legal instrument. The United States is currently working to address these concerns, and believes that a solution that is technically and politically satisfactory is achievable within the Kyoto timeframe.

IV. Emissions trading and Joint Implementation

The United States believes commitments adopted in Kyoto must be structured so as to allow Parties flexibility to achieve their emissions target as cost-effectively as possible. It is critical that provisions for international greenhouse gas emissions trading and joint implementation be included in the Kyoto agreement in order to meet the new commitments at the lowest cost.

Definitions: Emissions Trading, Joint Implementation, Activities Implemented Jointly

In the U.S. view, some common definitions and distinctions will help clarify discussions in this area. We envision emissions trading as applying between Parties that have assumed a legally binding target for their greenhouse gas emissions. We envision joint implementation as a mechanism to allow credits for emission reductions between Parties with a target

as well as between a Party with a target and a Party without a target. Activities implemented jointly (AIJ) is a pilot program to evaluate the viability of project-based reductions in the absence of targets and without credit. While AIJ will provide valuable insights for JI, we see no role for it in FCCC commitments beyond the year 2000.

Emissions Trading Among Parties With Targets

The United States believes that the Kyoto agreement should include provisions for emissions trading among Parties which have assumed a binding quantified emissions target. This includes Parties that assume such a target in the Kyoto agreement, and additional Parties that do so subsequently. Through emissions trading, such Parties would have the opportunity to meet their emissions target at the lowest cost. This is a matter of ensuring environmental gains in the most cost-effective way.

Trading makes sense when costs of controlling greenhouse gas emissions differ among Parties. In this case, it is more cost-effective for the high-cost Party to buy a portion of the emissions budget of the low-cost Party than to undertake those reductions domestically. This rationalization of emissions reductions would be strictly voluntary, and would occur only if both Parties agreed. Under such an approach, the environment is protected, the high-cost Party saves money, the low-cost Party is compensated, and the combined cost of meeting the targets is reduced.

The United States has had success domestically using emissions trading substantially to reduce the costs of complying with clean air standards for acid rain. Experience with international emissions trading has also been gained under the Montreal Protocol on Substances that Deplete the Ozone Layer through the industrial rationalization provision of the London Amendments.

Based on such successes, the United States believes that an effective and enforceable regime for emissions trading among Parties with a binding target should be developed and must be included in the Kyoto agreement. A number of issues need to be addressed regarding how such an international regime might be structured.

Emissions trading, as noted, would take place only between Parties that have assumed a legally binding emissions target. The target will give each such Party an allowable amount of greenhouse gases it can emit during a time period -- in other words, an "emissions budget" for the relevant period, expressed in metric tons of carbon equivalent. In its most basic form,

the emissions trading regime would allow one Party to transfer (sell or trade) some of its allowable emissions to another Party. The first Party would then be responsible for meeting its emissions target, minus the amount transferred. The second Party would be responsible for meeting its emissions target, plus the amount transferred.

We anticipate that many Parties will desire to develop emissions trading further, in order to allow private firms or other entities within their borders to engage in emissions trades with counterparts in other nations. In addition to government-to-government trades and firm-to-firm trades, we can also envision mixed transactions, in which firms from one Party buy directly from the government of another Party.

Under such a system, it would be necessary for the firms involved in international emissions trades to report the amounts bought or sold to their respective governments. One Party would then have the responsibility to meet its target as augmented by purchases by its firms. The other Party would have the responsibility to meet its target as reduced by the emissions sold by its firms.

Certain fundamental institutional features are necessary for Parties that engage in international emissions trading to ensure that trading is verifiable, efficient, and environmentally beneficial. These include compatible mechanisms for accurately measuring, tracking, and reporting domestic emissions. Parties also must have the means to track amounts of emissions transferred to or from other Parties, to reduce or augment their national emissions target accordingly, and to ensure the integrity of trades undertaken by their nationals. The United States believes that guidance for these areas must be developed by and agreed to at COP-3 in Kyoto.

Joint Implementation

The FCCC Parties have been engaged in discussions of joint implementation for several years. During this time, support has grown regarding the value of joint implementation involving a Party that is subject to an emission target and another Party that is not (whereby a Party with a target gains credit for taking actions that reduce emissions in a Party without a target). Such an approach has the potential to reduce the first Party's cost of meeting its target, while increasing investment in and diffusion of technology to the second Party.

The United States believes that the Kyoto agreement must include the establishment of a joint implementation regime providing for emissions credits. Such a regime will encourage the rapid development and implementation of cooperative,

mutually voluntary projects between partners; encourage private sector investment and innovation in development and dissemination of technologies; and provide an incentive through financial and technical assistance to further the development of non-Annex I country programs to limit increases in greenhouse gas emissions.

In order to realize the potential of joint implementation, the process of developing criteria, currently underway in the Subsidiary Body for Scientific and Technological Advice (SBSTA), must continue. Such criteria will be essential to ensure that joint implementation becomes a credible and significant contributor in solving the climate change problem. The U.S. Initiative on Joint Implementation (USIJI) has been one of the most successful and aggressive programs in the development and application of criteria. We intend to remain active in the further development of criteria (working both in the domestic context of the USIJI and internationally). We reiterate our view that criteria development can be completed prior to the year 2000, in time to include JI credits in national GHG reduction compliance programs.

We continue to stress the importance of three criteria in particular: (1) acceptance by the governments of the participating countries; and (2) the importance of the reporting of data and methodological information with regard to the project, and (3) the need to insure "additionality" (i.e., a reduction in net greenhouse gas emissions as a result of the project).

V. Continuing to Advance the Implementation of Commitments for All Parties (Article 4.1 Commitments)

Recognition is widespread that the threat of climate change is a global problem that can only be overcome through global action. While industrialized countries now account for the majority of the world's past and current greenhouse gas emissions, greenhouse gas emissions are growing most rapidly in the developing countries; emissions there are projected to exceed those of the developed countries by about 2020. The Climate Convention, and the Parties (based on their decisions to date) recognize both realities.

The Berlin Mandate began a process to enable the Parties to take appropriate action for the period beyond 2000. It provides for developed countries to elaborate on policies and measures, and to set quantified emission limitation and reduction objectives for greenhouse gas emissions. For developing country Parties, the Berlin Mandate process will not introduce any new commitments but calls upon Parties to

reaffirm existing commitments in Article 4.1 and continue to advance the implementation of those commitments. The Geneva Declaration from the Second Conference of the Parties last July provides that the outcome of the current negotiating effort should fully encompass the remit of the Berlin Mandate.

Two key points emerge from these documents: (1) next steps under the Convention must include all Parties, and (2) actions ultimately taken by developed and developing country Parties should be appropriately balanced, recognizing the common but differentiated responsibilities and respective capabilities noted in the Convention and upheld both in the Berlin Mandate and the Geneva Declaration.

To date, all Parties have been making progress toward implementing their commitments under the Convention, including those related to the submission of first national communications under Article 12. Through the U.S. Country Studies Program, we are aware that many developing countries are already far along in preparing national inventories of greenhouse gas emissions and in developing national action plans. A number of developing countries have also initiated projects under the Pilot Phase for Activities Implemented Jointly.

Beyond these current efforts to implement existing Convention commitments, a wide range of possibilities exist through which we can "continue to advance the implementation of existing commitments" as contemplated by the Berlin Mandate. Much work remains to be done to gauge the level of effort developed country Parties will undertake pursuant to the Berlin Mandate. Still, it is not too early to advance our thinking about the range of possibilities for continuing to advance the implementation of existing commitments, recognizing the need for all Parties to take action.

National Communications/Policies and Measures

While the Parties have adopted guidelines for the preparation of initial communications from developing countries, they have yet to consider options for reviewing those communications. Such a review process could include systematic efforts to assist developing country Parties in identifying and implementing no-regrets and cost-effective options for mitigating greenhouse gas emissions.

The review could seek to identify key sectors and technological options within them. It could also consider the possibilities for promoting voluntary agreements with industry aimed at identifying and encouraging the implementation of "no regrets" measures. Partnership agreements have proven highly

effective in the United States at enlisting private sector support for mitigating greenhouse gas emissions, and in helping to capture efficient emissions reductions opportunities that are otherwise obstructed by market barriers.

In addition, we could explore various means through which Parties could obtain both the know-how and the technology needed to implement the options identified.

Next Steps

Beyond these kinds of efforts, we could consider agreeing in the context of the Berlin Mandate negotiations on a specified date in the future by which all Parties would be expected to have quantitative commitments with respect to their greenhouse gas emissions. Two variables might also be considered. First, the date need not be the same for all Parties -- we could envision a schedule for phasing in quantitative commitments. Second, the nature of the quantitative commitments need not be the same for all Parties -- we could also envision establishing different levels of commitment based on various factors, including levels of development.

While it would not be necessary to reach specific agreement now on all issues, it would be important to consider carefully the mandate for such discussions, including when they could begin, when they would conclude and what results should be anticipated.

Another option for consideration would be the development of guidelines for revising the Convention Annexes (that establish which Parties assume which commitments under the Convention), and for considering how better to reflect the common but differentiated responsibilities and capabilities of Parties. In our view, as countries develop to -- and beyond -- a certain point, they must graduate to assume responsibilities commensurate with their development. The present groupings do not reflect dynamic changes in the world that have occurred since 1992 and that will only accelerate in the future.

As noted, the range of possibilities is very wide. It represents a kind of continuum beginning with modest efforts, but potentially extending to those which would bring us significantly closer to a truly global response and to the Convention's ultimate objective. It is as yet too soon to determine precisely where along this continuum we should strive to reach as part of the Berlin Mandate process. Inevitably, this will depend in large measure on the level of action that developed countries are prepared to undertake, and it is not yet clear what that level will be. Still, in our view, it is

not too early to think boldly about the possibilities and about how best to position ourselves for the future, recognizing that the steps we take in Kyoto will represent only a second milestone along a much longer path toward the Convention's ultimate objective.

VI. Compliance

The U.S. has called for a legally binding target both to promote a realistic negotiation and to promote compliance with the result. The question is what other elements should be included in the compliance regime, recognizing that, on the one hand, effective compliance is important for both environmental and economic competitiveness reasons and, on the other hand, that too stringent a compliance regime could result in vague commitments and/or scare off countries from joining the agreement.

There are several categories of elements that could promote compliance; they are discussed below.

Structure of commitments

In terms of the target, as a matter of drafting, it needs to be articulated as clearly and quantitatively as possible; as a matter of substance, it should be as objectively measurable as possible. In terms of commitments to advance implementation of Article 4.1, these should, ideally, also be as specific as possible. The desire of developing countries for flexibility could be met by providing flexibility in the choice of implementation options rather than by vague, heavily qualified commitments (such as those in the current Convention).

Ascertaining compliance

Ascertaining compliance will involve a combination of: requirements on parties to monitor and report on their emissions; and an international mechanism to verify such monitoring/reporting. The Convention's current obligations regarding national inventories, national communications, and an international in-depth review process are an excellent basis. The new agreement may require strengthened national and/or international mechanisms. (For example, parties bound by the target could be required to have in place a domestic emissions monitoring system, at a minimum for CO2, at a minimum for specified sources.) There will also be a need to promote uniformity of measurement.

Supporting implementation

Particularly in terms of developing country performance, the availability of sources of technical assistance (such as systematic support for efforts to develop national action plans) and expanded programs aimed at developing, diffusing and deploying climate-friendly technologies could be effective in promoting compliance.

Dispute settlement

The current Convention allows any party to challenge another party's compliance with its obligations before a neutral third party, with a recommendatory result. (Parties can opt for a binding result, but it is not required.) Whether this system would suffice for the new agreement, or whether it would need to be enhanced needs to be considered, taking into account, among other things, the extent to which the target is clear and objectively measurable (which is not currently known). Ways to enhance the system include, for example, requiring the issuance of binding judgments or specifying particular consequences flowing from a binding judgment of non-compliance, such as monetary penalties or trade sanctions.

Additionally or alternatively, the dispute settlement system could be supplemented by a multilateral consultative process, akin to that being developed under the current Convention. Unlike dispute settlement, such a process is considered non-adversarial in that implementation issues can be raised without asserting an actual treaty violation; the parties, rather than third parties, consider issues; and it is multilateral rather than State-against-State.

Non-parties

Development of a compliance regime regarding a global issue also requires consideration of how to deal with non-parties (the so-called "free rider" problem), so that the environmental objective of the agreement is not undermined. Ways to seek to minimize the non-party problem include: the provision of positive incentives for countries to join the regime (for example, assistance, differentiated obligations, allowing opt-outs from certain obligations, side payments, other participatory privileges); through an entry into force clause that requires ratification by countries that account for a particular percentage of global emissions of greenhouse gases; and/or the use of trade measures against non-parties.

drafted: OES/EGC - JCPershing/DAReifsnyder
L/OES - SBiniaz
SEEGC 9859
11/25/96

revised with written and oral comments from:

OES - EClaussen
EB - ALarson/BCates
DOE - DForrister/MChupka/AHaspel/HGruenspecht
EPA - DGardiner/DDoniger/NKete/JLegget-Emil
DOJ - LSchiffer/JRubin
DOC - JHunker
CEQ - SSeidel

cleared: ?

CLIMATE CHANGE MEETING ASSISTANT SECRETARY EILEEN CLAUSSEN

Commerce	Everett Erhlich	482-0432
	Jeffrey Hunker	482-4636
OSTP	Rosina Bierbaum	456-6025
CEA	Alicia Munnell	395-6958
NEC	Elgie Holstein	456-2223
Treasury	Joshua Gotbaum	622-2633
Justice	Lois Schiffer	514-0557
Interior	Brooks Yeager	208-4561
NOAA	~~Doug Hall~~ Terry Garcia	482-6318
OMB	T.J. Glauthier	395-4639
USTR	Jennifer Havercamp	395-4579
Agric	Charlie Rawls	720-5437
DOE	Dirk Forrister	586-9987
DOE	Mark Chupka	586-0861
EPA	Mary Nichols	260-5155
	David Gardiner	260-0275
DOT:	Frank Kruesi	366-7127
OVP	Pete Jordan	456-9500
CEQ	Steve Seidel	456-6546
NSC	David Sandalow	456-2710

re: Climate Change

THE WHITE HOUSE

Office of the Press Secretary
(Port Douglas, Australia)

For Immediate Release November 22, 1996

REMARKS BY THE PRESIDENT
AT INTERNATIONAL CORAL REEF INITIATIVE EVENT

Port Douglas Park
Port Douglas, Australia

1:45 P.M. (L)

THE PRESIDENT: Thank you very much. Premier and Mrs. Borbidge, Mayor Berwick, Minister Hill and Mrs. Hill, members of the Great Barrier Reef Marine Park Authority, and to Minister Moore and Mrs. Moore. Especially to Alicia Stevens for reminding us what this is all about today. (Applause.)

Hillary and I and our party have had a wonderful visit to Australia. We understand now why it is called the Lucky Country. But we believe that there is more than luck involved here. Today we celebrate the commitment of a people of this country, of the United States and people all over the world to the proposition that we must preserve the natural resources that God has given us. We are here near the biggest, best managed protected marine and coastal area in the world, for a clear reason: Australia has made a national commitment to be good stewards of the land with which God blessed you.

I am especially pleased today, as has already been said, that the government of Australia is honoring the United States by naming a section of the Great Barrier Reef after Rachel Carson. Rachel Carson was the great American environmentalist; she was a marine biologist. Vice President Gore wrote about Rachel Carson: She brought us back to a fundamental idea lost to an amazing degree in modern civilization -- the interconnection of human beings and the natural environment. That interconnection clearly imposes upon all of us a shared responsibility. To preserve a future for our children and grandchildren, we must care for our shared environment. It is a practical and a moral imperative.

We are citizens not only of individuals nations, but of this small and fragile planet. We know that pollution has contempt for borders -- that what comes out of a smokestack in one nation can wind up on the shores of another an ocean away. We know, too, that recovery and preservation also benefits people beyond the borders of the nation in which it occurs. We know

MORE

that protecting the environment can affect not only our health and our quality of life, it can even affect the peace. In too many places, including those about which we read too often now on the troubled continent of Africa, abuses like deforestation breed scarcity, and scarcity aggravates the turmoil which exists all over the world. (Applause.)

I am very proud of the work our two nations have done to preserve our natural heritage. Just as we have been allies for peace and freedom, we must be allies in the 21st century to protect the Earth's environment. Our work together on the International Coral Reef Initiative is a shining example of what we can achieve. Founded in 1994 by Australia, the United States and six other governments, this initiative helps nations and regions to conserve, manage, and monitor coral reefs.

Pollution, overfishing, and overuse have put many of our unique reefs at risk. Their disappearance would destroy the habitat of countless species. It would unravel the web of marine life that holds the potential for new chemicals, new medicines, unlocking new mysteries. It would have a devastating effect on the coastal communities from Cairns to Key West, Florida -- communities whose livelihood depends upon the reefs.

Steadily we are making progress. In this part of the world the ICRI has played a crucial role in slowing the use of cyanide to harvest coral reef fish. Around the world, more than 75 nations and scores of organizations have participated in ICRI programs. Today, with your knowledge and leadership, we are seeing to it that the world's reefs make it into the next century safe and secure. And I thank you for that. (Applause.)

Let me say that our effort to save the world's reefs is a model for the work that we can do together in other environment areas, and there is a lot of work to do. Deforestation is claiming an area of South Korea every year. Let us, together with the United Nations, develop a strategy for the sustainable management of all our forests. (Applause.)

Toxic chemicals and pesticides banned here and in the United States can still find their way into our lives, endangering our land, our water and our children. Rachel Carson, whom we honor here today, helped alert us in the United States to these dangers. Let us now forge a global agreement to stop these toxic substances from being released into the world around us. (Applause.)

Today, thanks to the Montreal Protocol, we are slowing the production and the consumption of chlorofluorocarbons, the chemicals that have been eating a hole in the Earth's ozone layer. We're on our way to closing the ozone hole that threatens Antarctica and Australia. Now we must see to it that this landmark treaty is enforced from one corner

of the Earth to the other. We need no more new holes in the ozone. (Applause.)

Finally, we must work to reduce harmful greenhouse gas emissions. These gases released by cars and power plants and burning forests affect our health and our climate. They are literally warming our planet. If they continue unabated, the consequences will be nothing short of devastating for the children here in this audience and their children.

New weather patterns, lost species, the spread of infectious diseases, damaged economies, rising sea levels -- if present trends continue, there is a real risk that sometime in the next century, parts of this very park we are here in today could disappear, submerged by a rising ocean. That is why today, from this remarkable place, I call upon the community of nations to agree to legally binding commitments to fight climate change. (Applause.)

We must stand together against the threat of global warming. A greenhouse may be a good place to raise plants; it is no place to nurture our children. And we can avoid dangerous global warming if we begin today and if we begin together.

If we meet all there challenges, we can make 1997 a milestone year in protecting the global environment. We can do it in a way that encourages sustainable development. One thing we've learned in recent years is that protecting the environment and promoting human progress are not incompatible goals, they go hand in hand. I am very pleased that the United Nations General Assembly will have a special session in New York next year to review our progress in advancing sustainable development since the Earth Summit in Rio.

An Australian folk tale has it that in the beginning the sky was so close to the Earth that it blocked out all the light. Everyone was forced to crawl in the darkness, collecting with their hands whatever they could find to eat. But the birds of that land decided that if they worked together they could raise the sky and make more room to move about. Slowly, with long sticks, they lifted the sky. The darkness passed and everyone stood upright.

If we work together as those birds did, we can preserve our environment for our children, for their children, for generations beyond. Let us lift our sights and ourselves to that great challenge.

Thank you very much. (Applause.)

END 1:52 P.M. (L)

Fri, 11/22/96, 10:30-12:30

United States Department of State
Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs
Washington, D.C. 20520

MEMORANDUM

TO: Assistant Secretaries Group on Climate Change

FR: Eileen Claussen

DA: November 20, 1996

RE: Draft Statement of U.S. Position for the December Meeting

We will meet next from 10:30-12:30 on Friday, November 22 at the State Department in Room 7835 to discuss the attached draft U.S. position for the December climate change meeting. This paper is our effort to reflect the discussions we have had as a group.

Please come on Friday prepared to discuss the draft and to offer specific changes as needed. Because of the change of date for our meeting and the need to have all agencies represented, please send a substitute with authority to speak on your behalf if you are not able to attend. We are on a very tight timeline as our goal is to incorporate all the revisions in time to distribute the paper to the Deputies on Tuesday for their consideration at the December 3rd meeting that has now been scheduled.

I look forward to seeing you on Friday morning.

Climate Change: U.S. Position for December 1996
(draft 11/20/96 3:00 p.m.)

Contents

I. Introduction and Background

At the second meeting of the Conference of the Parties (COP-2) to the United Nations Framework Convention on Climate Change (FCCC), the United States called for next steps under the Climate Convention for the post-2000 period to include realistic and achievable, legally binding medium term targets that would be implemented through national programs and produce real environmental benefits. The U.S. position also underscored the need for all nations, including developing nations, to take actions to limit greenhouse gas emissions. Finally, we called for continued work on a longer-term goal (e.g. 50-100 years). We continue to believe that this is the approach that will produce a successful outcome -- both in terms of achieving an agreement within the allotted time prior to the third session of the Parties (in Kyoto in December 1997), and in terms of providing a significant next step to address this critical global environmental problem.

The United States arrived at this basic framework for a number of reasons. It is clear that the Convention's existing framework of a non-binding "aim" is not working. Most developed countries, including the United States, will not achieve the goal of stabilization in 2000 at 1990 levels. A binding commitment will create a stronger incentive for nations to be realistic in deciding on a target, to make the effort required to meet the target, and ensure a level playing field.

In addition, we believe that next steps should be as cost-effective as possible; our analyses completed to date suggest that more flexible approaches offer significant cost-saving opportunities, and we recommend that these be brought into the Convention's basic framework. Flexibility includes allowing Parties nationally to determine the most appropriate policies and measures to meet the agreed target, and allowing full trading and joint implementation between Parties to minimize the cost of reductions.

Equally important, the U.S. specifically rejects any approach which would impose an unrealistic, short-term target. Such an approach would either have a negligible impact on the problem, or would impose such burdensome obligations that few if any countries could ratify the agreement. Instead, our focus must be on appropriate steps over the medium term, while we continue to develop a longer term goal.

Finally, the United States fully recognizes the need for global climate change to be addressed on a global basis. As a result, we believe it will be imperative that the agreement we reach in Kyoto include a continued commitment by developing nations to take further steps aimed at mitigating their emissions of greenhouse gases. While recognizing that developed countries must show leadership in addressing this problem, we believe it is very clear that all nations must be part of the solution.

The Ministerial Declaration in Geneva at the Second Conference of the Parties to the Convention has provided climate negotiators with a blueprint for action; its approach is one we strongly endorse. However, it is now time to move beyond general statements of intent, and begin to develop and agree on concrete proposals.

In this paper, we wish to table for consideration a variety of alternative structures for targets and timetables to maximize flexibility and minimize costs. We will also introduce some new ideas for compliance procedures (a critical component of any next step in a legally binding regime), and offer a series of options for consideration with respect to "continuing to advance the implementation of commitments under Article 4.1."

The United States has not yet proposed, nor does it now propose, a specific target and timetable. We expect to have additional proposals on these issues as the results of our analysis and assessment emerge. Furthermore, we continue to reject the proposals tabled to date by others, which we do not believe will yield a satisfactory outcome to the negotiations. We hope that other Parties will join us in developing new proposals to meet our environmental goals while safeguarding all of our economic growth and competitiveness.

II. Linkages

The interdependency of key variables presents a difficult issue in coming to grips with next steps in the Berlin Mandate

process. For example, the flexibility offered by emissions trading and joint implementation will be crucial in determining what legally-binding, medium-term target is realistic and achievable. Therefore, it will be important to move forward as expeditiously as possible to elaborate provisions regarding emissions trading and joint implementation to provide the assurance of flexibility needed to gauge a legally-binding, medium-term target that is realistic and achievable.

Similarly, it will be necessary to ensure that steps are taken both by developed country Parties and by developing country Parties -- that they reflect the common but differentiated responsibilities and respective capabilities referenced in the Convention's Article 3.1. Because developed country Parties are expected to take the lead, it will be important to know the level of action that they are prepared to undertake to determine what action would be taken by developing country Parties. But determining a legally-binding medium-term target that is realistic and achievable requires considerable further analysis and assessment, most of which has not yet been completed. Hence, it is difficult at this stage in the Berlin Mandate process to be too definitive on how best and proportionately to continue to advance the implementation of Article 4.1 commitments. What we can do at this stage is explore the wide range of possibilities.

A further example of these linkages involves the compliance regime contemplated for the new legal instrument. The specific compliance regime will depend significantly on nature of the commitments agreed upon and upon how they are stated in the new legal instrument. These commitments, much less how they will be articulated, are not yet clear. In addition, the nature of the compliance regime adopted will depend in part on a sober assessment of the number of Parties likely to adopt and implement the new legal instrument -- while strict compliance will be crucial to the integrity of legally-binding commitments, too severe an approach could undermine efforts to attract the broadest possible participation.

Consequently, the Parties will need to proceed deliberately, recognizing that ultimately several elements must come together simultaneously, but accepting that it will be necessary to develop them according to different schedules.

III. Defining the form of the target

As noted above, at COP-2 in July, the United States specifically called for focusing negotiations on a legally binding, medium-term emissions target, incorporating

flexibility in time and place of implementation. The United States also expressed an interest in continuing to work toward a longer-term concentration goal. We rejected any target which called for an unrealistic near term goal -- and we continue to reject such an approach. This paper outlines some of our current thinking on the form and structure of the target.

Averaging

In national reports submitted under the FCCC, several countries unilaterally adjusted their baselines to reflect weather, economic or energy market conditions. While this approach may not have been appropriate in Parties' initial national communications, the United States believes that the target set in the next step should explicitly provide for averaging to smooth interannual or other variability in weather and economic cycles.

U.S. analyses of the effects of such variability provide a striking example of the importance of this issue: unusually hot or cold years can change U.S. gross national emissions by as much as two percent -- or about 40 percent of the reduction sought by the year 2000. Because swings in weather, energy prices or economic cycles cannot be predicted with confidence, a single year target would require each country to build in an extra margin of GHG reductions to ensure compliance, significantly and unnecessarily raising the cost.

The period for averaging should be taken to be no less than three years, although additional analysis of the fluctuations in weather, economic and energy indicators would be needed to illuminate how much smoothing would be needed. Data for both the base year (1990) and the target year should be averaged in this way. The United States would recommend that a block averaging mechanism be employed. Under such a mechanism, each defined period would lie end-to-end (e.g., 2010-2014; 2015-2019, etc.). Compliance would be determined at the end of each block.

Banking/Borrowing

The United States recommends further examination of the potential for banking or borrowing between multi-year average periods. Such a process would allow emissions below the target in one calendar year to be carried over to offset higher than target emissions in other years. Parties could then determine the pace at which their emissions budget for the period would be expended (evenly, front-loaded or back-loaded), further enhancing their flexibility and reducing their compliance costs. While allowing banking of emissions could reward efforts to make early reductions, borrowing against a later

period in order to emit more in a current period raises more complex issues. We are interested in exploring the possibilities inherent in both options.

Differentiation

Currently, the FCCC differentiates between five different groups of Parties: (1) Annex II countries (countries that were members of the OECD in 1992 when the FCCC was adopted), (2) countries with economies in transition to market economies (CITs), (3) Annex I Parties (a combination of Annex II Parties and CITs), (4) developing countries, and (5) least developed countries. Each group has undertaken different commitments under the Convention.

While the United States acknowledges the clear distinctions that can be (and are) drawn between different Parties and groups of Parties, we do not believe that developing a complex, formulaic approach which differentiates at an individual Party level is a viable alternative at this stage in the negotiations. To date, we have seen no formula for a differentiated approach which seems to equitably address all Parties' concerns.

An effort to define equity explicitly in this legal instrument will likely derail the negotiations, being either too time-consuming and divisive, or disadvantaging a group of countries which then might choose not to ratify. Either outcome would essentially negate the value of the differentiation effort.

Instead we advocate an approach which both maximizes flexibility, and which sets an achievable target level. Flexibility would be obtained both through a national determination of the appropriate policies and measures for next steps, and through the use of trading instruments to minimize the costs of incremental reductions. Such an approach would both enable the completion of the agreement by December 1997, and would protect each Party from over-extending and committing to an unrealistic next step.

Comprehensive Approach

The United States continues to support the inclusion of all greenhouse gases, both sources and sinks, in a comprehensive approach to addressing the climate change problem. Gases other than carbon dioxide account for about 30 percent of the radiative forcing from all post-industrial emissions. Furthermore, different gases represent different strategic opportunities from the perspective of effects on the climate system. For example, reductions in methane emissions could

yield a lower rate of warming over the next several decades than comparable reductions in CO2. To forego such a significant source of reduction potential would be both to reduce flexibility, and decrease the cost-effectiveness of the overall effort.

Assuming a comprehensive approach, several issues still require additional consideration, including the different level of certainty with regard to measurement of non-CO2 emissions in various sectors, and the relative importance or weighting to be assigned to different gases. We will continue to insist that any agreed approach be fully quantifiable, verifiable and include appropriate accounting procedures prior to acceptance into the legal instrument. The United States is currently working to address these concerns, and believes that a solution that is technically and politically satisfactory is achievable within the Kyoto timeframe.

IV. Emissions trading and Joint Implementation

The United States has long held the view that affording flexibility to nations in achieving their emissions targets is critical to the long-term success of the effort to prevent climate change. International greenhouse gas trading and joint implementation allow the attainment of a given commitment at lower cost. We therefore strongly endorse the inclusion of both in the Kyoto agreement.

Definitions: Emissions Trading, Joint Implementation, Activities Implemented Jointly

The United States believes that a useful distinction can -- and should -- be drawn between Emissions Trading (ET), Joint Implementation (JI), and Activities Implemented Jointly (AIJ). We envision that emissions trading will apply only between Parties which have assumed a legally binding target on their greenhouse gas emissions. Such trades would be subject to meeting certain criteria, particularly criteria that will help ensure transparency, and allow for appropriate monitoring and verification. Conversely, Joint Implementation is envisioned as a mechanism to allow trades of emissions reductions between Parties with a target, and Parties without a target. We anticipate that the rules governing such exchanges might be more complicated than those governing a trading regime, and that such exchanges would be "project" based.

We do not believe that AIJ is an acceptable longer-term option. AIJ has been used as a pilot effort to evaluate the viability of project-based reductions in the absence of targets

and without credit. We believe that AIJ will serve no useful purpose beyond its year 2000 sunset date. Instead, the lessons learned from the pilot AIJ program should be used to develop a creditable JI regime, and also be applied, where appropriate, to an emissions trading regime.

Joint Implementation (JI)

The FCCC Parties have been engaged in discussion of Joint Implementation for several years; during that time a growing consensus has emerged regarding the value of a joint implementation approach in lowering the costs of reducing emissions. The United States continues strongly to support a formal, fully-credited Joint Implementation program under the Kyoto agreement. We expect such a program to encourage the rapid development and implementation of cooperative, mutually voluntary projects between partners; to encourage private sector investment and innovation in the development and dissemination of technologies; and to provide an incentive, through financial and technical assistance, to further the development of non-Annex I country programs to combat increases in net greenhouse gas emissions.

In order to realize the potential of Joint Implementation, the process of developing criteria for joint implementation, currently underway in the Subsidiary Body for Scientific and Technological Advice (SBSTA) must continue. Such criteria will be essential to assure that Joint Implementation becomes a credible and significant contributor in solving the climate change problem. The U.S. Initiative on Joint Implementation (USIJI) has been one of the most successful and aggressive programs in the development and application of criteria. We intend to remain active in the further development of criteria (working both in the domestic context of the USIJI and internationally), and note our view that criteria development could easily be completed prior to the year 2000, in time to include JI credits in national GHG reduction compliance programs.

We continue to stress the importance of two criteria in particular: (1) acceptance by the governments of the host and donor countries; and (2) the importance of the provision of data and methodological information sufficient to certify a reduction in net greenhouse gas emissions as a result of the project (a combination of the "additionality" criterion and an obligation to monitor and report on reductions). Without these, we do not believe a credible Joint Implementation program -- one which assures climate change benefits -- can be realized.

Emissions Trading (ET)

To date, Emissions Trading (ET) has had a more limited history within the context of the FCCC than has Joint Implementation; however, ET has found more extensive application beyond the confines of the climate change debate. In particular, the United States has utilized an emissions trading regime substantially to reduce the costs of complying with stringent clean air standards. Experience to date indicates that compliance has been excellent, and costs have been substantially below those anticipated from a regulatory approach.

In part based on such successes, the United States believes that an international trading regime should be carefully developed. Our domestic process has also advanced our thinking on how an international regime might be structured. In particular, we are now considering issues related to: (1) who should trade, (2) what would be traded, and (3) institutional questions.

(1) Who should trade:

As discussed above, in the U.S. view, only Parties that have committed to binding, quantified national emission targets would be allowed to trade emission reductions. We would expect that Parties to the FCCC rather than private entities would be officially responsible for reporting net national emissions to the Convention. However, we envision that within a broad agreed framework, countries could be given considerable flexibility in deciding how to implement any agreed target. We anticipate that both the private sector and non-governmental organizations would be eligible to participate in an emissions trading program.

(2) What would be traded:

We anticipate that, subject to possible technical restrictions, trades would be allowed for both sources and sinks of any greenhouse gas.

We envision two alternative approaches to trading: a trade in "allowances" and a trade in "credits". The former would be allocated at the outset, and represent a quantity of emissions that a participant would be allowed to emit over a specific period of time. In contrast, "credits" would be earned by participants through reductions achieved that exceed some baseline obligation. The United States has successfully experimented with both alternatives, and would be interested in further exploring the potential of each in an international regime.

(3) Institutional Issues:

Certain common features can be presumed to apply both to a Party's domestic Emissions Trading program, and to an international regime. In particular, these include compatible mechanisms for accurately measuring, tracking and reporting domestic emissions, and an ability to reconcile allowances or credits with domestic obligations. Lessons learned from domestic programs underway, and from the still evolving JI programs could be applied to the development of such a regime.

Simple guidelines can and will need to be established to allow a robust emissions trading regime to be developed. In the U.S. view, the attributes of such a regime are relatively straightforward. An international system should be verifiable, environmentally beneficial, efficient, flexible, comprehensive and should motivate all participants continually to improve their performance. We are optimistic such a regime can be adopted and can be used to substantially reduce costs in our next steps to combat the threat of climate change.

V. Continuing to Advance the Implementation of Article 4.1 Commitments

Recognition is widespread that the threat of climate change is a global problem that can only be overcome through global action. While industrialized countries now account for the majority of the world's past and current greenhouse gas emissions, greenhouse gas emissions are growing most rapidly in the developing countries; emissions there are projected to exceed those of the developed countries by about 2020. The Climate Convention, and (based on their decisions to date) the Parties to the Convention recognize both realities.

The Berlin Mandate began a process to enable the Parties to take appropriate action for the period beyond 2000. It provides for developed countries to elaborate on policies and measures, and to set quantified limitation and reduction objectives for greenhouse gas emissions. For developing country Parties, the Berlin Mandate process will not introduce any new commitments but calls upon Parties to reaffirm existing commitments in Article 4.1 and continue to advance the implementation of those commitments. The Geneva Declaration from the Second Conference of the Parties last July provides that the outcome of the current negotiating effort should fully encompass the remit of the Berlin Mandate.

Two key points emerge from these documents: (1) next steps under the Convention must include all Parties, and (2) actions ultimately taken by developed and developing country Parties should be appropriately balanced, recognizing the common but differentiated responsibilities and respective capabilities noted in the Convention and upheld both in the Berlin Mandate and the Geneva Declaration.

To date, all Parties have been making progress toward implementing their commitments under the Convention, including those related to the submission of first national communications under Article 12. Through the U.S. Country Studies Program, we are aware that many developing countries are already far along in preparing national inventories of greenhouse gas emissions and in developing national action plans. A number of developing countries have also initiated projects under the Pilot Phase for Activities Implemented Jointly.

Beyond these current efforts to implement existing Convention commitments, a wide range of possibilities exist through which we can "continue to advance the implementation of existing commitments" as contemplated by the Berlin Mandate. Much work remains to be done to gauge the level of effort developed country Parties will undertake pursuant to the Berlin Mandate. Still, it is not too early to advance our thinking about the range of possibilities, recognizing the need for all Parties to take action.

As noted, the range of possibilities is very wide. In an effort to classify them, we discuss the range of options in three categories: (1) those which are explicitly focused on national communications and policies and measures; (2) those which are related to financial assistance and international lending; and (3) those which consider next steps for developing country Parties.

National Communications/Policies and Measures

While the Parties have adopted guidelines for the preparation of initial communications from developing countries, they have yet to consider options for reviewing those communications. Such a review process could include systematic efforts to assist developing country Parties in identifying cost-effective and no-regrets options for mitigating greenhouse gas emissions, including the development of guidelines for domestic processes to implement Article 4.1 commitments.

The review could seek to identify key sectors and technological options within them. It could also consider the

possibilities for promoting voluntary agreements with industry aimed at identifying and encouraging the implementation of "no regrets" measures. Voluntary agreements have proven highly effective in the United States at building true partnerships with the private sector and at enlisting private sector support for mitigating greenhouse gas emissions.

In addition, we could explore various means through which Parties could obtain both the know-how and the technology needed to implement the options identified.

Financial/Lending Practices

With regard to continuing efforts in the Subsidiary Body for Implementation to refine the Convention's guidance to the Global Environment Facility (GEF) on policies, program priorities and eligibility criteria, the Parties could choose to link the existence of a national action plan to future funding, particularly as developing countries complete such plans in their efforts to prepare initial communications under Article 12. In this regard, it should be noted that all Parties agreed that ratification or acceptance of the Convention should be a criterion for GEF funding in the climate change focal area well before the Convention entered into force.

We could also consider making cost-effectiveness a key factor in the ranking projects submitted for GEF funding. Such a criterion could help to make funding decisions more objective and to ensure the most efficient use of GEF resources. Moreover, we could revisit earlier efforts to make the Convention a fulcrum for promoting changes in the lending practices of multilateral development banks and other agencies to take the mitigation of greenhouse gas emissions more fully into account.

Next Steps

Beyond these kinds of efforts, we could consider agreeing in the context of the Berlin Mandate negotiations on a specified date in the future by which all Parties could be expected to assume quantitative commitments with respect to their greenhouse gas emissions. The date need not be the same for all Parties -- we could envision a schedule for phasing in such quantitative commitments. Indeed, the nature of the quantitative commitments need not be the same for all Parties -- we could also envision establishing different levels of commitment based on various factors, including levels of development. While it would not be necessary to reach specific agreement now on all issues, it would be important to consider carefully the mandate for such discussions, including when they could begin, when they would conclude and what results should be anticipated.

Another option for consideration would be the development of guidelines for revising the Convention Annexes (which establish which Parties assume which commitments under the Convention), and for considering how to better reflect the common but differentiated responsibilities and capabilities of Parties. In our view, as countries develop to -- and beyond -- a certain point, they must graduate to assume responsibilities commensurate with their development. The present groupings do not reflect dynamic changes in the world that have occurred since 1992 and that will only accelerate in the future.

In order for commitments regarding future steps by developing countries to be meaningful, the agreement would need to require ratification by key countries (e.g., by entering into force only after ratification by states representing a certain percentage of global greenhouse gas emissions).

As noted previously, and as demonstrated by the examples offered, "continuing to advance the implementation of Article 4.1 commitments" embraces a very wide range of possibilities. The range represents a kind of continuum beginning with modest efforts but potentially extending to those which would bring us significantly closer to a truly global response and to the Convention's ultimate objective. It is as yet too soon to determine precisely where along this continuum we should strive to reach as part of the Berlin Mandate process. Inevitably, this will depend in large measure on the level of action that developed countries are prepared to undertake, and it is not yet clear what that level will be. Still, in our view, it is not too early to think boldly about the possibilities and about how best to position ourselves for the future, recognizing that the steps we take in Kyoto will represent only a second milestone along a much longer path toward the Convention's ultimate objective.

VI. Compliance

In the climate change context, the United States has substantial environmental, economic, and treaty-integrity interests in achieving an agreement that properly balances the right commitments, the right Parties, and the right incentives to comply. In considering this issue, we need to consider how the commitments themselves can be structured to promote implementation, what kind of review process(es) are appropriate, including how to deal with non-compliance of Parties, and how the agreement should deal with non-Parties.

The new legal instrument will contain at least two key sets of commitments: (1) for developed country Parties, a legally binding medium-term emissions target; and (2) for all Parties, commitments that continue to advance implementation of Article 4.1 of the Convention.

In terms of the "Annex I" target, there are at least three ways in which the structure of the commitment could promote compliance:

-- First, as a matter of form, the target could be legally binding, as the United States has already suggested. We are seeking a legally binding target because, in the climate change context, countries tend to make rhetorical and unrealistic proposals when provisions are non-binding, and the existing "aim" has largely not been implemented. A protocol/amendment regime in ;which targets are legally binding will likely lead countries to seek more realistic and achievable targets at the front end and to implement their commitments more fully later on.

-- Second, as a matter of drafting, the commitments could be articulated as clearly and quantitatively as possible. In 1992, demands by various Parties for differentiation were met with vague qualifying phrases now found in Article 4.2(a) and (b). While the United States may not favor differentiation regarding the target, vague phrases to paper over differences on this point could negate the advantage of going to a binding regime.

-- Third, as a matter of substance, the target could be structured so as to be as objectively measurable as possible. This would enhance the ability of the Parties themselves, as well as third Parties, to determine compliance.

Structuring commitments to advance the implementation of Article 4.1 may be more difficult. Ideally, the commitments should be as specific as possible and avoid provisos that could obscure them. In practice, specificity may be difficult to achieve because developing countries, desirous of flexibility, may seek to make any obligations on them vague and heavily qualified. Their desire for flexibility could better be met by providing flexibility in the choice of implementation options rather than by vague, heavily qualified commitments.

Other than appropriately structuring key commitments to promote compliance, certain collateral commitments could also promote compliance. These might include: (1) requiring Parties to report on their implementation (while specifics could vary for different categories of Parties, this commitment

could apply to all Parties); (2) providing continued and more systematic support for efforts to develop national action plans, particularly for developing countries; (3) expanding programs aimed at developing, diffusing and deploying climate-friendly technologies (including through efforts to identify and remove barriers to technology transfer and to improve the performance of existing financial institutions); (4) requiring developed country Parties to have in place domestically an emissions monitoring system (at a minimum for specified sources); (5) obligating developed country Parties to enforce their domestic laws related to implementation of the target effectively.

The new legal instrument should contain appropriate review/dispute settlement mechanisms to determine whether Parties are implementing their commitments. Key compliance-related questions include: (1) who should do the reviewing, (2) what should they review and (3) what is the status/consequences of their conclusions?

Options for who reviews include: the Parties themselves (through the Conference of the Parties or other institution); experts nominated by Parties; ad hoc panels; standing bodies outside the treaty; the public. What type of expert or panel member is involved depends on what is being reviewed (e.g., a scientist would not be appropriate for an issue involving treaty interpretation).

As to what is reviewed, there is a basic issue of focus: Should a review mechanism focus on alleged non-compliance (i.e., an actual treaty violation), implementation generally, or a particular aspect of implementation, such as verifying facts? Broader review mechanisms, as opposed to non-compliance procedures, have the advantage of being less adversarial (and therefore more likely to be used) and can deal with a wider range of issues. They are also useful where treaty obligations are so general or caveated that it would be difficult to make out a case of actual non-compliance.

A second basic issue involves whether a particular review process should be set up to review facts, law, or both. For example, a dispute involving Article 4.2(b) of the Convention, if it were legally binding, could involve the factual question of actual emissions, the legal question of whether sinks can be counted, or both. Traditional dispute settlement (e.g., conciliation or arbitration) generally reviews disputed facts, disputed interpretation of a treaty provision, or the application of a treaty provision to facts. However, a review mechanism can be limited to fact-finding alone.

As to status of conclusions of a review process, a review process might have no formal conclusion (e.g., discussion, political pressure) or it could produce one of the following: (1) a recommendatory report on possible next steps to promote compliance (such as technical assistance); (2) a factual report; (3) a recommendatory award; or (4) a binding judgment concerning compliance.

As to consequences, the conclusion of a review process could form the basis for further discussions among the Parties, action by the Conference of the Parties; good faith consideration by a Party (in the case, for example, of bilateral conciliation), or a sanction, such as monetary penalties or trade restrictions. The consequences of a conclusion would depend on its status.

There are numerous compliance review options that could be included in a new legal instrument, and many of these are not mutually exclusive. In this regard, an amendment does not necessarily have to be subject to the same mechanisms in the current Convention, provided the amendment so specifies. Examples include:

-- convening regular meetings of the Parties to support Parties' efforts to comply and provide a forum for raising questions about compliance;

-- establishing a subsidiary body focused on implementation issues;

-- requiring Parties to prepare reports on their implementation that would be made publicly to permit public scrutiny;

-- requiring regular factual reviews of Parties' implementation efforts;

-- enabling a Party to request a factual review of another Party's implementation efforts (generally or with respect to particular obligations);

-- establishing a "friendly," multilateral consultative process designed to address either cases of non-compliance or implementation more generally (provided there were no overlap with the functions of any subsidiary body);

-- providing for traditional bilateral dispute settlement, with non-binding conciliation as a minimum requirement;

-- providing for traditional bilateral dispute settlement with binding arbitration or judicial settlement.

To decide which review processes to support, it will also be important to consider the relationship between these issues and the treaty commitments themselves, particularly the target. Relevant aspects of the target (which are not yet known, thereby complicating the task) include:

-- whether it is clear or clouded by ambiguity;

-- whether it is objectively measurable (is assessing compliance a purely factual endeavor? or does it, for example, involve the application of a subjective standard to objective facts?).

Separate from the issue of how to deal with non-complying Parties is the issue of how to deal with non-Parties. Where a treaty addresses a global environmental issue, a non-Party stands to benefit from the actions of other countries while taking no action of its own (the so-called "free rider"). A non-Party can also affirmatively undermining the treaty's objective

There are numerous ways to seek to minimize the non-Party problem:

-- through the negotiating process itself, i.e., figuring out which countries' participation in the regime is essential and ensuring that they are involved in the negotiation;

-- through positive incentives for countries to join a regime (e.g., financial and technical assistance, differentiated obligations; allowing opt-outs from certain obligations);

-- through an entry into force clause that requires ratification by key countries (i.e., those that would be "free riders" if they did not join) (note that an amendment would require 3/4 of the parties to ratify for entry into force; a protocol would need to set its own entry into force requirement).

-- the inclusion of specific consequences against non-Parties

NOVEMBER 20, 1996

CLIMATE CHANGE MEETING ASSISTANT SECRETARY EILEEN CLAUSSEN

Commerce	Everett Erhlich	482-0432
	Jeffrey Hunker	482-4636
OSTP	Rosina Bierbaum	456-6025
CEA	Alicia Munnell	395-6947
NEC	Elgie Holstein	456-2223
Treasury	Joshua Gotbaum	622-2633
Justice	Lois Schiffer	514-0557
Interior	Brooks Yeager	208-4561
NOAA	Doug Hall	482-6318
OMB	T.J. Glauthier	395-4639
USTR	Jennifer Havercamp	395-4579
Agric	Charlie Rawls	720-5437
DOE	Dirk Forrister	586-9987
DOE	Mark Chupka	586-0861
EPA	Mary Nichols	260-5155
	David Gardiner	260-0275
DOT:	Frank Kruesi	366-7127
OVP	Pete Jordan	456-9500
CEQ	Steve Seidel	456-6546
NSC	David Sandalow	456-2710

MEMORANDUM

Lisa

COUNCIL OF ECONOMIC ADVISERS

Nov 22, 1996

TO: ALICIA MUNNELL

FROM: RAY PRINCE

SUBJECT: Comments on the Draft Statement of U.S. Position for the December Meeting (Demarche)

GENERAL COMMENT

The statement should focus on two goals: (1) the successful completion of a protocol or amendment to the Framework Convention on Climate Change treaty of 1992; and (2) ratification of the protocol or amendment. The current draft appears to have given due consideration to the first goal but could be improved with regard to the second goal: ratification.

SPECIFIC COMMENTS

There is an opportunity to improve the likelihood of ratification by modifying the statement on three issues: **time-line, redline, allocation.** The time-line issue concerns the future commitment of non-annex I countries. The redline issue is whether deputies want to give more specific instructions to the negotiators about the kinds of targets that are unacceptable. The allocation issues concerns the formula for distributing permits under an international emissions trading program.

Time-line

p. 2, second paragraph: The statement about developing countries taking further steps could be seen as unduly weak and, therefore, could reduce the chances of ratification. The deputies might want to consider requiring some timetable for full participation by all nations be included in the protocol/amendment. Developing nations will not be happy about the stronger wording but it is also true that we cannot meet our concentration goals with worldwide participation.

Redline

p. 2, fifth paragraph: The Draft states that "we continue to reject the proposals tabled to date by others, which we do not believe will yield a satisfactory outcome to the negotiations." The intent of this statement should be clarified. Does it mean that we are really against everything proposed so far. If not, where is the redline between acceptable and unacceptable? The U.S. rejected the Alliance of Small Independent States (AOSIS) proposal in July. A similar, definitive statement for the December meetings could improve the chances of eventual ratification.

Allocation

p. 8: Some statement describing the nature of the allocation formula in an international trading program could help avoid the impression that we intend to give away the store and avoid raising expectations beyond what the U.S. could reasonably be expected to agree to. An acceptable statement might say that emissions per $ of GDP will be a factor in the allocation formula.

Other - banking and borrowing

p. 4, last paragraph: Banking and borrowing allows nations limited ability to adjust annual targets. This is the only place where the Draft specifically addresses the issue of how to introduce "when" flexibility into the protocol/amendment. While banking and borrowing could prove too complex to implement, the potential importance of when flexibility in reducing the costs of climate change policy argues that we not prejudice this option with statements such as those contained in the last sentence on p. 4. In addition, it is not good bargaining strategy to signal a willingness to concede a point. It will not be perceived as having given up something of value.

c: J. Stiglitz, J. Frankel, M. Mazur, M. Jolin.

MEMORANDUM

COUNCIL OF ECONOMIC ADVISERS

November 21, 1996

TO: ALICIA MUNNELL

FROM: MARK MAZUR

SUBJECT: DRAFT STATEMENT OF U.S. CLIMATE CHANGE POSITION

Here are some comments on the draft statement. You may want to combine these with the information from Ray Prince to develop a comprehensive position for the Assistant Secretary-level meeting at the State Department on Friday morning.

Big Issues:

- Emissions Trading: The draft says unequivocally that the U.S. strongly supports international trading of emissions permits and joint implementation (page 1, bottom and page 6, middle). The rationale is that this combination will minimize the costs of meeting any agreed-upon target.

  Concerns: We have seen no demonstration that an international emissions trading scheme is the most efficient (and cost-minimizing) mechanism (though intuition suggests this may be the case). Moreover, the assertion that such a system is desirable ignores the difficult issue of allocating permits, a necessary part of any trading scheme. If the permits were allocated on the basis of national wealth or current emissions, the U.S. would make out OK; but if allocated on the basis of population, the U.S. would have to make large transfers to developing countries to buy the required permits. I think it is unwise to endorse a system that incorporates massive wealth redistribution without regard to how that redistribution would take place. Accordingly, I would resist including an endorsement of international trading and instead state that international trading potentially can be a means of ensuring flexibility in meeting targets (similar to the language used in the July statement by Tim Wirth). In any event, the Deputies themselves should approve such an endorsement.

  The paper is correct to note that Activities Jointly Implemented should be phased out in 2000, when the demonstration program sunsets. However, the advocacy of a full-blown joint implementation (JI) program rests on the adoption of baseline emissions levels for the developing countries that participate (otherwise there might be no net reduction in worldwide emissions). I suggest that there be 3 categories of countries -- those that can participate in international trading (Annex I countries with legally binding targets); those that can participate in JI (Annex I countries and developing countries with emission baselines); and those outside the JI and trading system (developing countries without baselines and countries that violate the treaty terms).

- The draft clearly states that developing countries "must be part of the solution" (page 2, 2nd paragraph; page 10, 1st paragraph). I take this to mean that eventually all countries must meet binding targets and timetables -- an important marker to lay down.

- The draft states that compliance is "a critical component" of any reasonable regime (page 2, 4th paragraph). This is statement should not be weakened.

- Banking and borrowing: I know that Ray Prince thinks borrowing is crucial to keeping costs down. He would like the draft to more strongly endorse the concept of allowing countries to borrow from future emission allocations.

  Concerns: The paper does not go far enough in pointing up potential problems with borrowing (it merely states that borrowing "raises more complex issues"). I believe that the paper should note the substantial increase in complexity that borrowing creates. For instance, a borrowing regime requires that "borrowing" is really "repaid" in a future period. It is plausible that a country will make very optimistic assumptions about future technology and borrow from future emission allocations to emit more carbon dioxide today. When the technology does not pan out, the country will be faced with a decision to either "default" on its borrowing or else cripple its economy by substantially reducing emissions in a short time frame. Default would look mighty attractive in this case. Until legal structures are created to facilitate fully enforceable borrowing, the U.S. should be hesitant to promote an idea that could potentially lead to much greater emissions than expected.

- The draft states that the U.S. rejects "the proposals tabled to date by others" (page 2, last full paragraph).

  Concerns: Does the U.S. really have nothing positive to say about any other country's proposal? It seems that some other country must have something of value in its proposal that we can use as a lever in negotiating.

Minor Issues:

- Block average: The text states a preference for a block average in determining targets and baselines (page 4, 4th paragraph). I have seen nothing to lead me to believe that a block average is superior to a rolling average or to any other type of averaging scheme. If averaging schemes have more or less the same outcome, the U.S. probably should not endorse any specific one.

- Intermediaries: An emission trading regime would appear to require an intermediary of some sort to keep track of trades, enforce property rights, and disseminate information about prices, etc. There is no mention of such an institution. This could be added to the material on page 9 as an issue to be discussed.

cc: JES, JFrankel, RP, JFurman, SR, MJolin

that an individual served in the military of an enemy government following his or her relocation as evidence that the individual relocated voluntarily.

The Department will thus require individuals who apply for redress under the Act and who relocated to Japan during the statutorily-defined war period to provide information as to their ages and emancipation status upon their dates of departure from the United states to relocate to Japan, and to state whether or not they participated in the active military service on behalf of an enemy government, including the Japanese Government, during World War II. If such individuals state that they were 21 years of age or older, or emancipated minors, as of the dates of their departures, they will be deemed ineligible for redress under the Act. Similarly, if such individuals state that they participated in the active military service on behalf of an enemy government during World War II, they also will be deemed ineligible. In contrast, otherwise eligible relocatees who were under the age of 21 and not otherwise emancipated upon the dates of their departures from the United States, and who did not serve in the military on behalf of an enemy government during World War II, will be eligible for redress under the Act.

III. Regulatory Impact Analysis

The Office of Management and Budget has determined that this proposed rule is a significant regulatory action under Executive Order No. 12866 and, accordingly, this proposed rule has been reviewed and approved by the Office of Management and Budget. Information collection associated with this regulation has been approved by the Office of Management and Budget, OMB No. 1190–0010. Comments about this collection can be filed with the Clearance Officer, Office of Redress Administration, PO Box 66260, Washington, DC 20035–6260, and the Desk Officer, Office of Information and Regulatory Affairs, Office of Management and Budget, New Executive Office building, Washington, DC 20503.

List of Subjects in 28 CFR Part 74

Administrative practice and procedure, Aliens, Archives and records, Citizenship and naturalization, Civil rights, Indemnity payments, Minority groups, Nationality, War claims.

For the reasons set forth in the preamble and by the authority vested in me, including 28 U.S.C. 509 and 510, chapter I of title 28, part 74, of the Code of Federal Regulations is proposed to be amended as follows:

PART 74—CIVIL LIBERTIES ACT REDRESS PROVISION

1. The authority citation for Part 74 continues to read as follows:

Authority: 50 U.S.C. app. 1989b.

2. In subpart B, § 74.4 is revised to read as follows:

Subpart B—Standards of Eligibility

§ 74.4 Individuals excluded from compensation pursuant to section 108(B) of the Act.

(a) The Term "eligible individual" does not include any individual who, during the period beginning on December 7, 1941, and ending on September 2, 1945, relocated to a country while the United States was at war with that country.

(b) Nothing in paragraph (a) of this section is meant to exclude from eligibility any person who, during the period beginning on December 7, 1941, and ending on September 2, 1945, relocated to a country while the United States was at war with that country, and who had not yet reached the age of 21 and was not emancipated as of the date of departure from the United States, provided that such person is otherwise eligible for redress under these regulations and the following standards:

(1) Persons who were 21 years of age or older, or emancipated minors, on the date they departed the United States for Japan are subject to an irrebuttable presumption that they relocated to Japan voluntarily and will be ineligible.

(2) Persons who served in the active military service on behalf of the Government of Japan or an enemy government during the period beginning on December 7, 1941 and ending on September 2, 1945, are subject to an irrebuttable presumption that they departed the United States voluntarily for Japan. If such individuals served in the active military service of an enemy country, they must inform the Office of such service and, as a result, will be ineligible.

Dated: June 5, 1996.

Janet Reno,

Attorney General.

[FR Doc. 96–14721 Filed 6–11–96; 8:45 am]

BILLING CODE 4410–10–M

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 50

[AD–FRL–5519–4]

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_3) and particulate matter (PM). This action announces the Agency's plans to propose decisions on whether to retain or revise the O_3 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_3 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_3 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_3 and PM NAAQS Reviews

The Air Quality Criteria for Ozone and Other Photochemical Oxidants (EPA/600/P–93–004aE 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, DC. EPA Air Docket hours, in Room M1500 of Waterside Mall, are 8 a.m. to 5:30 p.m., Monday through Friday, excluding holidays. EPA Library hours are from 10 a.m. until 2 p.m., excluding holidays. The EPA docket numbers for the O_3 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." [1]

The Act requires periodic review and, if appropriate, revision of existing air quality criteria and NAAQS. The Act also requires appointment of an 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_3 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_3 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.[2] 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 both high O_3 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

[1] 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.

[2] 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 ($PM_{2.5}$).

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_3, 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_3 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_3 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.[3] Proposal of various key aspects of integrated implementation strategies for potential new NAAQS is planned for June 1997, consistent with final action on 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_3 Criteria Document and O_3 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_3 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_3 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_3 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_3 standard reflect an integration of information on acute[4] and chronic[5] health effects associated with exposure to ambient O_3, 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, 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_3 are more directly associated with health effects of concern at lower ambient O_3 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_3 criteria and standards[6], CASAC concluded that the existing 1-hr standard, set at a level of 0.12 parts per million (ppm) O_3, 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 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

[3] 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.

[4] Acute effects associated with short-term (1–3 hr) and prolonged (6–8 hr) exposures to O_3 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.

[5] Chronic effects for which evidence suggests associations with long-term (months to years) exposure to O_3 include structural damage to lung tissue and accelerated decline in baseline lung function which could result in decreased quality of life in later years.

[6] The last review concluded in March 1993 with a final decision that revisions to the O_3 standards were not appropriate at that time (58 FR 13008).

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_3 standard has focused on effects on vegetation[7], 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_3 Staff Paper for selecting a secondary standard include vegetation effects information in the O_3 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_3 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 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_3 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_3 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_3 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_3 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_3 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_3 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_3 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

[7] Vegetation effects that have been associated with O_3 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.

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_{10}. 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_{10}, 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_{10}. 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_3 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_3 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_3 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_3 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_3, 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.

Dated: May 31, 1996.

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.

Shy, C.; Lippmann, M.; Stolwijk, J.; and Speizer, F. (1996). Letter to Administrator Carol M. Browner regarding Supplement to the Closure Letter from the Clean Air Scientific Advisory Committee. March 20, 1996.

Wolff, G.T. (1995a) Letter from George T. Wolff, Chair, Clean Air Scientific Advisory Committee (CASAC) to Administrator Carol M. Browner. Closure letter by CASAC on the Air Quality Criteria for Ozone and Related Photochemical Oxidants. November 28, 1995.

Wolff, G.T. (1995b) Letter from George T. Wolff, Chair, Clean Air Scientific Advisory Committee (CASAC) to Administrator Carol M. Browner. Closure letter by CASAC on the Primary Standard Portion of the Staff Paper for Ozone. November 30, 1995.

Wolff, G.T. (1996a) Letter from George T. Wolff, Chair, Clean Air Scientific Advisory Committee (CASAC) to Administrator Carol M. Browner. Closure letter by CASAC on draft Air Quality Criteria for Particulate Matter. March 15, 1996.

Wolff, G.T. (1996b) Letter from George T. Wolff, Chair, Clean Air Scientific Advisory Committee (CASAC) to Administrator Carol M. Browner. Closure letter by CASAC on the Secondary Standard Portion of the Staff Paper for Ozone. April 4, 1996.

[FR Doc. 96–14912 Filed 6–11–96; 8:45 am]

BILLING CODE 6560–50–P

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40 CFR Part 52

[CA 014–0003b; FRL–5464–5]

Approval and Promulgation of State Implementation Plans; California State Implementation Plan Revision, Five Local Air Pollution Control Districts

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: EPA is proposing to approve revisions to the California State Implementation Plan (SIP) which concern the control of volatile organic compound (VOC) emissions from graphic arts operations.

The intended effect of proposing approval of these rules is to regulate emissions of VOCs in accordance with the requirements of the Clean Air Act, as amended in 1990 (CAA or the Act). In the Final Rules Section of this **Federal Register**, the EPA is approving the state's SIP revision as a direct final rule without prior proposal because the Agency views this as a noncontroversial revision and anticipates no adverse comments. A detailed rationale for this approval is set forth in the direct final rule. If no adverse comments are received in response to this proposed rule, no further activity is contemplated in relation to this rule. If EPA receives adverse comments, the direct final rule will be withdrawn and all public comments received will be addressed in a subsequent final rule based on this proposed rule. The EPA will not institute a second comment period on this action. Any parties interested in commenting on this action should do so at this time.

DATES: Comments on this proposed rule must be received in writing by July 12, 1996.

ADDRESSES: Written comments on this action should be addressed to: Daniel A. Meer, Rulemaking Section (A–5–3), Air and Toxics Division, U.S. Environmental Protection Agency, Region 9, 75 Hawthorne Street, San Francisco, CA 94105–3901.

Copies of the rules and EPA's evaluation report of each rule are available for public inspection at EPA's Region 9 office during normal business hours. Copies of the submitted rules are also available for inspection at the following locations:

California Air Resources Board, Stationary Source Divison, Rule Evaluation Section, 2020 "L" Street, Sacramento, CA 95812

El Dorado County APCD, 2850 Fairlane Court, Placerville, CA 95667

Kern County APCD, 2700 M. Street, Suite 290, Bakersfield, CA 93301

Placer County APCD, 11464 B. Avenue, Auburn, CA 95603

Santa Barbara County APCD, 26 Castilian Drive, B–23, Goleta, CA 93117

South Coast AQMD, 21865 E. Copley Drive, Diamond Bar, CA 91765–4182

FOR FURTHER INFORMATION CONTACT: Erik H. Beck, Rulemaking Section (A–5–3), Air and Toxics Division, U.S. Environmental Protection Agency, Region 9, 75 Hawthorne Street, San Francisco, CA 94105–3901, Telephone: (415) 744–1190, Internet E–Mail: beck.erik@epamail.epa.gov.

SUPPLEMENTARY INFORMATION: This action concerns: El Dorado County Air Pollution Control District (EDCAPCD) Rule 231 "Graphic Arts Operations"; Kern County Air Pollution Control District (KCAPCD) Rule 410.7, "Graphic Arts"; Placer County Air Pollution Control District (PCAPCD) Rule 239 "Graphic Arts Operations"; Santa Barbara County Air Pollution Control District (SBCAPCD) Rule 354, "Graphic Arts"; and South Coast Air Quality Management District (SCAQMD) Rule 1130.1, "Screen Printing Operations". These rules were submitted by the California Air Resources Board (CARB) to EPA on the following dates in respective order: November 30, 1994; May 30, 1991; October 13, 1995; July 13, 1994; and November 18, 1993. For further information, please see the information provided in the Direct Final action which is located in the Rules Section of this **Federal Register**.

Authority: 42 U.S.C. 7401–7671q.

Dated: April 13, 1996.

Felicia Marcus,

Regional Administrator.

[FR Doc. 96–14785 Filed 6–11–96; 8:45 am]

BILLING CODE 6560–50–W

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40 CFR Part 62

[TN–115–01–9616b; FRL–5519–7]

Approval and Promulgation of Air Quality Implementation Plans; Tennessee; Approval of Revisions to Process Emission Standards for Total Reduced Sulfur Emissions From Kraft Mills

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The EPA proposes to approve the State implementation plan (SIP) revision submitted by the State of Tennessee for the purpose of revising the current regulations for Total Reduced Sulfur (TRS) from Kraft Mills. In the final rules section of this **Federal Register**, the EPA is approving the State's SIP revision as a direct final rule without prior proposal because the Agency views this as a noncontroversial revision amendment and anticipates no adverse comments. A detailed rationale for the approval is set forth in the direct final rule. If no adverse comments are received in response to this proposed rule, no further activity is contemplated in relation to this proposed rule. If EPA receives adverse comments, the direct final rule will be withdrawn and all public comments received will be addressed in a subsequent final rule based on this proposed rule. The EPA will not institute a second comment period on this document. Any parties interested in commenting on this document should do so at this time.

Part 2, a reasonable fee may be charged by the Agency for copying docket materials.

DATES: The date of this notice, September 11, 1995, is the official certification date for this application. The equipment is immediately available for installation.

FOR FURTHER INFORMATION CONTACT: Anthony Erb, Technical Support Branch, Manufacturers Operations Division (6405J), U.S. Environmental Protection Agency, 401 M St. SW, Washington, D.C. 20460. Telephone: (202) 233–9259.

SUPPLEMENTARY INFORMATION:

I. Background

On October 24, 1995 Engelhard applied for certification of a kit, for use on 2-cycle petroleum fueled diesel DDC 6V92TA MUI urban bus engines for the 1979 through 1989 model years, that includes a catalytic converter muffler (CCM) and incorporates a ceramic in-cylinder coating applied to the piston crowns, valve face and fire deck on the engine head. The application was submitted under EPA's Urban Bus/Retrofit program under Program 2 only.[1]

The CCM functions as a catalytic converter and a muffler. It takes the place of the original muffler in the engine exhaust system. Through testing in accordance with the Federal Test Procedure for heavy-duty diesel engines, Engelhard documented that emissions of particulate matter (PM) were reduced to a level of 0.22 g/bhp-hr with the candidate equipment installed. Engelhard is certifying this equipment to a maximum PM emission level of 0.25g/bhp-hr.

TABLE A.—CERTIFICATION LEVELS

Engine model	Model year	PM level with standard rebuild and addition of CCM and GPX coating	Code	Family designation
DDC 6V92TA MUI	1979–1989	0.25	All	All.

Emission test results supplied by Engelhard in the application are shown in Table B. The test data show the reduction in PM. Hydrocarbon (HC), carbon monoxide (CO), oxides of nitrogen (NO_X) and smoke emissions were within the applicable emission standards with the CCM installed.

TABLE B. CERTIFICATION EMISSION TEST RESULTS (GM/BHP–HR)

	Baseline engine before rebuild	Rebuilt engine with catalyst and GPX–4 coating
HC	1.19	0.23
CO	2.53	0.46
NO_X	9.55	5.53
PM	0.87	0.22
Smoke Test:		
Accel	.....	6.0%
Lug	.....	3.4%
Peak	.....	7.6%

Urban bus operators who choose to comply with Program 2 and use the Engelhard equipment will use the PM emission value from Table A when calculating their average fleet PM level.

II. Summary and Analysis of Comments

EPA received comments from one party on this Engelhard application during the comment period. The Greater Bridgeport Transit District stated that their experience using GPX–4 ceramic coatings since 1991 has been positive. The engines have gotten better fuel economy, emitted less smoke, and consumed less lubrication oil. A copy of the comments can be found in EPA Docket A–93–42.

III. Certification Approval

The Agency has reviewed this application, along with comments received from interested parties, and finds that this equipment reduces particulate matter emissions without causing urban bus engines to fail to meet any applicable Federal emission requirements. Additionally, EPA finds that installation of this equipment will not cause or contribute to an unreasonable risk to the public health, welfare or safety, or result in any additional range of parameter adjustability or accessibility to adjustment than that of the engine manufacturer's emission related part. The application meets the requirements for certification under the Retrofit/Rebuild Requirements for 1993 and Earlier Model Year Urban Buses (40 CFR 85.1401 and 85.1415). Thus, the Agency hereby approves the certification of this equipment.

IV. Operator Requirements and Responsibilities

For operators who have chosen to comply with Program 2, this equipment is immediately available for use and those who use this certified kit may claim the PM emissions reduction as stated in Table A when calculating their Fleet Level Attained.

As stated in the regulations, operators should maintain records for each engine in their fleet to demonstrate that they are in compliance with the requirements beginning in January 1, 1995. These records include purchase records, receipts, and part numbers for the parts and components used in the rebuilding of urban bus engines.

Mary D. Nichols,

Assistant Administrator for Air and Radiation.

[FR Doc. 95–22491 Filed 9–8–95; 8:45 am]

BILLING CODE 6560–60–P

[1] EPA promulgated the Retrofit/Rebuild Requirements for 1993 and Earlier Model Year Urban Buses on April 23, 1993 (58 FR 21359). This final rule established the provisions for an urban bus retrofit/rebuild program as required by section 219(d) of the Clean Air Act Amendments (CAAA) of 1990.

[FRL–5294–8]

Ozone, Particulate Matter and Regional Haze Implementation Program Subcommittee

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of public meeting.

SUMMARY: On November 8, 1990, the EPA gave notice of the establishment of a Clean Air Act Advisory Committee

(CAAAC) (55 FR 46993) which was established pursuant to the Federal Advisory Committee Act (5 U.S.C. app. 2).

Today, EPA announces establishment of the Ozone, Particulate Matter (PM) and Regional Haze Implementation Programs Subcommittee (Subcommittee) under the CAAAC. The purpose of the Subcommittee is to provide advice and recommendations on integrated approaches for implementing potentially new national ambient air quality standards (NAAQS) for ozone and particulate matter, as well as a new regional haze program. These programs have an interrelationship in the atmospheric processes that form ozone and fine particulate matter and possess common sources of precursor emissions. Further, EPA recognizes the importance of considering these programs in an integrated manner if cost effective control strategies are to be developed to meet public health and welfare objectives. The EPA envisions an open process that will examine key aspects of the existing implementation programs to provide for more effective implementation of the potential new standards, as well as approaches that will more completely integrate broad regional and national control strategies with more localized efforts. The focus of the Subcommittee will be to assist EPA in developing implementation strategies, preparing supporting analyses, and identifying and resolving impediments to the adoption of the resulting programs.

OPEN MEETING DATE: Notice is hereby given that the Subcommittee will hold an open meeting on September 26, 1995 from 9 a.m. to 4 p.m. at the Sheraton Imperial, 4700 Emperor Boulevard, Morrisville, North Carolina 27560. Due to the size of the meeting room, seating is limited to approximately 150 observers and will be made available on a first come, first served basis. To assist EPA in planning the public meeting, persons interested in attending should register with EPA by contacting Ms. Cathy Ward at TRC Environmental Corporation at 919–419–7500 to give their name and address before September 19, 1995.

The public is invited to submit written views and recommendations on new integrated approaches for implementing these programs. Such comments should be submitted (in duplicate) to Docket A–95–38 by October 10, 1995.

INSPECTION OF DOCUMENTS: A transcript of the meeting as well as other relevant materials will be available for public inspection in EPA Air Docket No. A–95–38. The docket is open for public inspection and copying between 8:30 a.m. and 5:30 p.m., weekdays, at the Air and Radiation Docket and Information Center (6102), room M–1500, 401 M Street, SW., Washington, DC 20460. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Mr. John H. Haines, Designated Federal Officer for the Subcommittee, at 919–541–5533, or by mail at U.S. EPA, Office of Air Quality Planning and Standards, Air Quality Strategies and Standards Division, MD–15, Research Triangle Park, North Carolina 27711.

SUPPLEMENTARY INFORMATION: The EPA is presently reviewing the NAAQS for ozone and particulate matter. In a related action, EPA is in the process of developing a regional haze program to address visibility impairment in Federal Class I areas. The EPA's schedule for ozone calls for proposal in mid-1996 and final action in mid-1997. The EPA is under a court-ordered schedule for particulate matter to announce a proposal decision by June 30, 1996, and to take final action by January 31, 1997. The development of a regional haze program is on a schedule similar to the particulate matter review.

Based on the assessment to date, a principle consideration would be to replace the existing 1-hour primary standard for ozone with a new 8-hour standard. Consideration is also given to replacing the existing 1-hour secondary standard for ozone with a new secondary standard with a more appropriate averaging period. While the review of the particulate matter NAAQS has not progressed as far as the ozone review, preliminary assessments of the available scientific information suggest that fine particles are more likely to be associated with reported health effects. In addition, fine particles are the major cause of visibility impairment. Therefore, consideration is being given to the establishment of a new 24-hour and annual fine particle NAAQS to replace the existing 24-hour PM–10 (particles with an aerodynamic diameter less than or equal to a nominal 10 micrometers) standard. The existing annual PM–10 standard is likely to be retained. To address the welfare effects of fine particles on visibility, consideration is being given to a regional haze program which allows for regional variations in implementation.

Given the likelihood that both the ozone and particulate matter NAAQS may be revised, as well as the development of a new regional haze program, EPA believes it is important at this time to obtain the advice and recommendations from a broad spectrum of the public on new approaches for implementing these programs. Toward this end, EPA has established the Subcommittee to be comprised of approximately 50 members from business and industry, environmental groups, State, local and tribal governments, as well as other Federal agencies. Members of the Subcommittee were selected on the basis of their professional qualifications and diversity of perspectives in order that EPA has the benefit of the full range of views in developing new approaches for implementing these programs.

Meetings will be held approximately four times a year, as determined by the chairperson. The meetings will be open to the public and will be announced in the Federal Register. The Designated Federal Officer will be present at all meetings and is authorized to adjourn any meeting whenever it is determined to be in the public interest. Each meeting will be conducted in accordance with an agenda approved in advance of the meeting by the Designated Federal Officer.

Dated: September 6, 1995.

John S. Seitz,

Director, Office of Air Quality Planning and Standards.

[FR Doc. 95–22609 Filed 9–8–95; 8:45 am]

BILLING CODE 6560–50–M

[FRL–5294–2]

Environmental Radiation Protection Standards for Yucca Mountain, NV

AGENCY: U.S. Environmental Protection Agency.

ACTIONS: Notice of Availability, Request for Comments, and Announcement of Public Meetings.

SUMMARY: As required under the Energy Policy Act of 1992 (Pub. L. 102–486), the National Academy of Sciences/National Research Council (NAS) has completed a study of the technical bases for environmental radiation protection standards for the potential repository for radioactive waste at Yucca Mountain, Nevada (hereafter referred to as the NAS Report). The Environmental Protection Agency (EPA) is announcing the availability of the NAS Report and requesting comments on its contents. Instructions for obtaining the NAS Report and submitting comments are given below.

EPA is also announcing public meetings to inform the public of the role which the Agency will play in setting standards for Yucca Mountain and to solicit initial comments and concerns

Staff Draft; Do Not Quote or Cite

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 51

[FRL-]

Implementation of New or Revised Ozone and Particulate Matter (PM) National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations

AGENCY: Environmental Protection Agency (EPA).

ACTION: Advance Notice of Proposed Rulemaking (ANPR).

SUMMARY: The EPA is providing advance notice of key issues for consideration in the development of new or revised policies and/or regulations to implement revised NAAQS for ozone and PM, and development of a regional haze program. The EPA is under court order to issue a proposed decision on whether to retain or revise the PM NAAQS by November 29, 1996, and to issue a final rulemaking for PM by June 29, 1997. The Agency anticipates following the same schedule for the ozone standard and also intends to propose a regional haze program in mid-1997. If revised NAAQS replace existing NAAQS, there would be a period of time to phase in new requirements while continuing to address the requirements of the current programs. Further, ozone, PM and regional haze are products of interrelated chemical

conversions in the atmosphere, and new approaches will be needed to identify and characterize affected areas and to assign planning, management and control responsibilities. This could lead to integrated implementation policies for ozone, PM and regional haze control programs. This ANPR provides a broad scientific and policy perspective on these issues and addresses implementation issues that have been identified, such as the need for regional strategies, and is a continuation of the advisory process first announced on September 11, 1995 (60 FR 47171) and further explained by the Agency on June 12, 1996 (61 FR 29719). Through today's action, the Agency is providing a brief discussion of a broad range of options, principles and questions related to each of these key issues. The options/principles/questions in this ANPR were designed to provide sufficient background information to stimulate public interest and comments and are not intended to indicate preferences or decisions by the EPA. By publishing this information at this time, the EPA is providing more time for the public to develop input and comments than would occur following the publication of the subsequent regulatory notices for the implementation strategies and regional haze program. An explanation and

structure of the Federal Advisory Committee Act (FACA) Subcommittee is provided in SUPPLEMENTARY INFORMATION. Applicable terms and definitions are provided in the Appendix.

ADDRESSES: Comments. Comments should be submitted (in duplicate if possible) to the Air and Radiation Docket and Information Center, 401 M Street, SW, Washington, DC 20460, Attention Docket Number A-95-38.

Docket. The public docket for this action is available for public inspection and copying between 8:00 a.m. and 4:00 p.m., Monday through Friday, at the Air and Radiation Docket and Information Center (6102), Attention Docket A-95-38, South Conference Center, Room 4, 401 M Street, SW, Washington, DC 20460. A reasonable fee for copying may be charged.

FOR FURTHER INFORMATION CONTACT: For general FACA Subcommittee questions and comments, contact Ms. Denise Gerth, U.S. EPA, MD-15, Research Triangle Park, NC 27711, telephone (919) 541-5550. For specific questions and comments on the ANPR, contact Ms. Sharon Reinders, U.S. EPA, MD-15, Research Triangle Park, NC 27711, telephone (919) 541-5284. The following communications and outreach

mechanisms have been established:

Overview information - A World Wide Web (WWW) site has been developed for overview information on the NAAQS and the ozone/PM/regional haze FACA process. The Uniform Resource Location (URL) for the home page of the web site is http://www.epa.gov/oar/faca/

Detailed and technical information - Available on the O3/PM/RH Bulletin Board on the Office of Air Quality Planning and Standards (OAQPS) Technology Transfer Network (TTN), which is a collection of electronic bulletin board systems operated by OAQPS containing information about a wide variety of air pollution topics. The O3/PM/RH Bulletin Board contains separate areas for each of the FACA Subcommittee's five work groups and includes meeting materials, issue papers, as well as general areas with information about the process, participants, etc. The TTN can be accessed by any of the following three methods:

- By modem; the dial-in number is (919) 541-5742. Communications software should be set with the following parameters: 8 Data Bits, No Parity, 1 Stop Bit (8-N-1) 14,400 bps (or less).

- Full Duplex.

- ANSI or VT-100 Terminal Emulation.

The TTN is available on the WWW site at the following URL: http://ttnwww.rtpnc.epa.gov. The TTN can also be accessed on the Internet using File Transfer Protocol (FTP); the FTP address is ttnftp.rtpnc.epa.gov. The TTN Helpline is (919) 541-5384.

SUPPLEMENTARY INFORMATION:

I. Purpose and Objectives

This ANPR outlines policy and technical implementation issues and identifies a broad range of options/principles/questions for each issue associated with the potential revision of the ozone and PM NAAQS and with the development of a regional haze program. Though it is important to stress that no proposal to change either the ozone or PM NAAQS has been made -- and therefore revisions to either of the standards may not occur -- the possibility that such changes may occur necessitates this advance notice, as well as the ongoing implementation discussions under the FACA discussed elsewhere in this notice. The alternative approach of waiting until possible standard revisions are actually promulgated would, in the Agency's judgement, cause inevitable delays and disruptions in

national, State and local efforts to achieve clean, healthy air, especially those related to attainment of the NAAQS for ozone. The ozone and PM NAAQS proposals are scheduled for November 1996 with final action scheduled for mid-1997. The EPA intends to propose a regional haze program in mid-1997.

In advance of these actions, the EPA published an ANPR entitled, National Ambient Air Quality Standards for Ozone and Particulate Matter, on June 12, 1996 (61 FR 29719) which announced the Agency's plans to propose decisions on whether to retain or revise the ozone and PM NAAQS. That ANPR also described the FACA process and the Subcommittee for Ozone, PM and Regional Haze Implementation Programs (Subcommittee). The Subcommittee is composed of 60 representatives from State, local and tribal organizations; environmental groups, industry and trade groups (including small business representatives), consultants; academic/scientific communities; and Federal agencies. The organization of the Subcommittee includes a Coordination Group and four work groups: 1) Base Programs Analyses and Policies Work Group, 2) National and Regional Strategies Work Group, 3) Science and Technical Support Work Group, and 4) Communications and Outreach Work Group. The Subcommittee was established under

the Clean Air Act Advisory Committee (CAAAC) to provide advice and recommendations to the EPA on developing new, integrated approaches for implementing potential revised NAAQS for ozone and PM, as well as for implementing a new regional haze reduction program. Through this process, EPA is engaging in communications with segments of society that may be affected by the implementation of NAAQS and the regional haze program. This announcement is a further attempt to invite stakeholders to participate in the implementation development process, to assure that their concerns will be addressed and their options assessed, and, ultimately increase the effectiveness of NAAQS implementation strategies and the regional haze program.

The implementation issues described in this ANPR form the basis of the Subcommittee's deliberations and for the most part were developed through the various work groups and the Coordination Group. The presentation of these issues and corresponding options/principles/questions is designed primarily to provide advance notice for the public who are not directly involved in the FACA process. Interested readers are directed to EPA's TTN and WWW site for an up-to-date status of the work groups' and Subcommittee's

deliberations on these issues. This includes work group issue papers with options and, where appropriate, draft recommendations.

While the EPA is interested in considering new and innovative approaches to implementation, it is imperative to ensure that momentum is maintained in the current implementation programs, and that current programs and efforts such as the Ozone Transport Assessment Group (OTAG) continue in order to protect public health and welfare. As a consequence, the Subcommittee is providing recommendations to EPA regarding the development of an interim implementation policy (IIP), which EPA intends to propose in late 1996. The IIP will provide EPA's guidance to the State and local agencies on appropriate actions during the transitional period of time between any revision of the NAAQS and the development of new integrated implementation strategies. This is especially important since it is expected that any new NAAQS will be at least as stringent as the current NAAQS, and reductions in emissions to achieve the current NAAQS will be beneficial in achieving the revised NAAQS. While the IIP will provide guidance during the transition period, EPA will also develop implementation

strategies for the potential new ozone/PM/regional haze programs.

The final integrated implementation programs for ozone, PM and regional haze are being developed in two phases. In Phase I, the air quality management framework issues will be addressed (proposal - mid-1997). Phase II will focus on more detailed control strategy development (proposal - mid-1998). These phases are described in more detail in subparagraph IV.

II. Scientific and Technical Discussion

The following discussion relies on the Scientific and Technical Support Work Group of the FACA Subcommittee. This group is developing a draft conceptual model framing our current scientific understanding of ozone, fine particles and haze, the associated gaps and uncertainties, and based on the technical basis and issues underlying the integration of regulatory programs for ozone, fine particles and regional haze, and the specification of geographic scales required for air quality management. This conceptual model provides a technical basis for the Subcommittee's deliberations of these issues. This document is undergoing further review prior to acceptance by the CAAAC. Regarding

the rationality of integration, the initial response of the Science and Technical Support Work Group was a qualified yes, given the regional nature of the pollutants (i.e., regionalization), spatial patterns of air quality indices, precursors, sources, atmospheric chemistry and meteorological processes which affect more than one pollutant, and control options. The following discussion focuses on the relationships between ozone and fine particles, given the close linkage between fine particle levels and regional haze (the widespread impairment of visibility in every direction, mostly attributed to fine particle light scattering and absorption), with the following assumptions:

- Understanding the emission sources and atmospheric processes which are responsible for elevated air pollutant levels requires an examination of urban and regional geographical scales;
- Ozone and fine particles may exhibit similar spatial patterns, although the frequency (and importance) of concurrent patterns is not well understood;
- Many of the emission precursors (and sources of precursors) to ozone, fine particles and regional haze

are the same;

- Many of the atmospheric processes (chemistry and meteorology) affecting ozone, fine particles, and regional haze are the same; and
- Several critically-important information gaps exist which create very difficult challenges for air quality management of these pollutants.

A. Interacting Spatial Scales of Emissions, Atmospheric Processes and Air Quality Indices

As explained in greater detail below, there are a variety of emissions that are precursors to elevated levels of ozone, fine particles, and regional haze and of sources to these emissions. Historically, attempts at air quality management of these problems focused on local sources in the context of an anonymous background term quantifying imported air quality. The evolution in our understanding of the spatial and temporal scales of the effects on ozone, fine particles, and regional haze of the emissions from all sources has, however, spawned the recognition of the need for a larger geographical perspective. This larger geographical perspective, which considers individual sources over regional, as well as local scales, is needed to support

quantitative analysis of the relative contribution of the various source types and of their emission types (species) that contribute to nonattainment levels and regional haze. The need for an altered perspective has been recognized by the establishment of the Ozone Transport Commission (OTC), the OTAG, and the Grand Canyon Visibility Transport Commission (GCVTC).

Air quality management in the metropolitan statistical area or consolidated metropolitan statistical area (MSA or CMSA) has worked well historically to control the local source effect on nonattainment problems. This is evidenced by the significant decrease in the number of ozone nonattainment areas over the past decade. As these controls have reduced emissions and as modeling tools have progressed, the role of the effect of sources beyond the MSA or CMSA and the varying spatial scales of air quality indices and atmospheric processes continue to be investigated and supported by a strong body of scientific evidence:

- The 1991 National Academy of Science (NAS) Report, Rethinking Ozone in Urban and Regional Scales (National Research Council (NRC), 1991);

- The 1993 NAS Report, Protecting Visibility in National Parks and Wilderness Areas (NRC, 1993);
- The National Acid Precipitation Assessment Program (Trijonis et al., 1990); and
- The Southern Oxidant Study (Chameides and Cowling, 1995).

Recent analyses based on ambient air monitoring data (Rao, 1995) and regional acid deposition model air quality modeling (Appleton, 1995) suggest a very broad spatial air pollution region covering the greater part of the Eastern United States (U.S.). These studies indicate that, while sources still have their largest influence in the near field, the zones of potential influence of source regions (e.g., an urban city) can under certain conditions extend out hundreds of kilometers (km) for ozone, fine particles, and regional haze. Moreover, these scales appear to be similar for ozone and fine particles. In other words, sources once thought to be remote with respect to nonattainment levels of ozone, fine particles, and regional haze are seen as potential contributors to those levels. The analyses suggest that chemical and meteorological processes which influence pollutant generation, air mass

movement and pollutant removal (e.g., clouds and precipitation) are key factors in defining regional zones of influence. When the various nonattainment areas of the Eastern U.S. are surrounded by even conservative estimates of the zones of influence of these other sources, what results is a modeling domain that may span the greater part of the Eastern U.S. Accordingly, efficient air quality management requires addressing these additional sources, atmospheric processes and related impacts as scales of interactions over multiple spatial and temporal frames.

In air quality management practice, the term "transport" has been used in a very broad context beyond the strict meteorological definition of the term. This broad context includes: (1) the overall regionalization of both the scale of pollutant distributions and zone of influence of sources, (2) the interaction (or effect of one area on another) among local, urban and regional source scales, and (3) meso and large-scale meteorological phenomena (such as recirculation due to stagnant high pressure systems and land-sea interactions, large-scale movement of air masses with fairly uniform motion, and other events perhaps as simple as widespread elevated temperatures). The prevalence

and importance of biogenic volatile organic compounds (VOC) emissions (e.g., emissions from trees) in the Eastern U.S. are "regionwide," as are many other area source emissions such as those emitted by motor vehicles. All of these regional attributes are enhanced by the relatively flat and consistent terrain in the East and Midwest, contrasting the greater topographic and meteorological effects in the Western U.S., although the West can also experience regional problems.

Several physical and chemical events act together in determining pollutant concentrations over multiple space and time scales. Moving air masses carry all chemical species including precursors, fast-reacting intermediates, and chemical sinks, as well as the specific pollutant species of interest (e.g., fine particles and ozone). Removal of pollutants occurs continuously through deposition. Also, the impact of these pollutants is not simply additive. Ozone (or precursors) transported from one location can affect ozone levels downwind by indirectly accelerating atmospheric chemical reactions through the production of chemical intermediates (e.g., hydroxyl radicals). Clouds play several roles in modifying concentrations by: (1)

dissolving soluble gases (e.g., nitric acid, sulfur dioxide (SO_2), hydrogen peroxide) and generating aerosols through aqueous phase reactions, (2) circulating and venting pollutants to high altitudes where strong winds promote large horizontal transport, and (3) removing pollutants through precipitation. Cloud-related dissolution and transport also contribute to pollutant removal. Vertical air mass movements, or phenomena as basic as the daily mixed layer growth, affect air concentrations on various scales. Superimposed on these processes are a variety of emission sources with their own spatial, temporal and component (speciation) scales. Depending on location, pollutant and season, one particular spatial scale (e.g., urban) may (or may not) exert a dominating influence on air quality relative to another scale (e.g., regional). Even in cases where local and urban sources are responsible for most of the "local" air quality, an assessment of the contribution of distant sources to local air quality is required to reach such a conclusion. Thus, to avoid the exclusion of potentially important considerations in air quality analysis, "regionality" or "interacting scales" is a more descriptive term (than transport) which encompasses the

broader meaning and effects of several complex interacting phenomena operating over extensive and multiple time and space scales.

The Eastern U.S. differs markedly, topographically and climatologically, from the West, so any extension to the West based on Eastern analyses (or vice versa) is not necessarily appropriate (important differences exist between Northern and Southern regions as well). The monitoring data and modeling analyses of the GCVTC process highlight the challenge of identifying and quantifying specific sources, some at great distances in order to estimate their effects in Western national parks and wilderness areas. The variations in topography, meteorology and source distribution across regions require that area- and case-specific differences be accounted for in any air management approach. The effects of emission reduction strategies should be viewed through multiple scales, considering regional and urban scale consequences (i.e., health and welfare protection).

A few points summarizing "interacting scales" and "regionality" should be considered in air management practices:

- Air quality modeling and historical monitoring trends have shown that local air management practices have the greatest influence on near field concentration impacts.
- Analyses of observations in the Eastern U.S. reveal the existence of very broad multistate regions (interacting scales approaching linear scales of 1000 km or more) of elevated pollutant levels and zones of influence (Rao, 1996).
- Air quality modeling data for the East suggest that similar regions of influence exist for ozone and fine particles (Dennis, 1996), although only sparse monitoring data exist to support these similarities.
- Modeling analyses for the Grand Canyon National Park (and other) Class 1 areas show that fine particles and precursors causing visibility impairment episodes are derived from both nearby (less than 50 km) and more distant (up to 1000 km) regions of influence (NRC, 1993; GCVTC, 1996).
- Area and case-specific analyses are required to delineate reasonable geographic areas for air quality planning purposes because of the wide regional variations in meteorology, topography and source

distribution.

- The use of terms such as "transport" or "background" inadequately describes the complex set of emissions, chemistry, meteorological processes and interacting scales which contribute to the regionalization of air pollution.
- Because of broad spatial extents and gradations of interacting scales ranging from regional down to sub-grid cell scales, an air quality assessment focusing on a particular scale (e.g., urban) must consider effects due to interactions across various space and time scales. The concept of a single MSA/CMSA nonattainment area may be inconsistent with the spatial and temporal scales for ozone, fine particles and haze problems.

B. Technical Basis and Considerations for Integrating Ozone, Fine Particles and Regional Haze Implementation Programs

The technical and scientific rationale for underlying the integration of ozone, fine particles and regional haze air quality management practices is based on a mix of empirical observations, atmospheric processes and practical administrative concerns. While this discussion focuses on

common attributes across pollutant groups, it is important to recognize and distinguish those attributes where there is little linkage. Many examples and inferences presented here tend to reflect what is known about Eastern U.S. air quality issues (e.g., ozone) with possibly little relation to Western U.S. phenomena. At the risk of generalizing (and simplifying) air quality descriptions for illustrative purposes, recognition that a generalized approach cannot operate effectively everywhere must be retained. The discussion focuses on the relationship between ozone and fine particles, with the implicit assumption that fine particle levels and chemical composition directly relate to regional visibility impairment, given the strong relationship between the constituents of fine particles and the manmade portion of visibility impairment. Regional haze is a widespread, largely uniform impairment of visibility in every direction over a large area, mostly due to light scattering from fine particles from multiple sources.

1. Empirical evidence for integration

Ozone and PM-10 (particles with an aerodynamic diameter less than or equal to a nominal 10 micrometers) concentrations in the Eastern U.S. can exhibit similar

spatial patterns during summer time episodes (Northeast States for Coordinated Air Use Management (NESCAUM), 1995). Analyses of PM data consistently indicate that fine particles constitute the majority mass fraction of PM-10 in the summertime East (EPA, 1996). In combination, these observations qualitatively imply concurrence of elevated ozone and fine particles. However, quantification of the similarity and frequency of such events is severely restricted by a lack of a fine particles data base in the East. While more data exist in certain Western locations, the episodic relationships between ozone and PM appears to be more complex than in the East. For example, a major component of the fine particle problem in Los Angeles (as well as the San Joaquin Valley, Salt Lake City and Denver) is wintertime formation of ammonium nitrate, which is not stable at the high temperatures associated with elevated ozone. High levels of fine particles in Western nonattainment areas can impair visibility when high ozone concentrations are not observed. Nevertheless, "smog" events in Los Angeles are almost always accompanied by impaired visibility, and visibility is directly associated with fine particle levels. Although some limited empirical

evidence is highly suggestive of area specific concurrent events, other considerations as described below provide a stronger rationale for the appropriate level of integration across ozone, fine particles and regional haze control programs.

2. Emissions and Atmospheric Process Linkages Across Ozone, Fine Particles and Regional Haze

Several connections exist among ozone, PM and the resulting effect of visibility impairment. The linkages are based on the existence of common emission precursors, source categories and atmospheric chemistry and meteorological processes which affect more than one pollutant. For example, emissions of oxides of nitrogen (NOx) potentially can lead to both ozone and fine particle formation. A combustion source often emits both SO_2 (a fine particle precursor) and NOx (an ozone precursor). The sequence of atmospheric chemistry reactions underlying ozone formation is in part responsible for fine particle formation. Similar meteorological processes affect the movement, mixing and removal of ozone, fine particles and precursors. Some of these connections are complicated and will be explained more completely in forthcoming FACA science documents. The

following are very brief descriptions of the connections across pollutant categories.

- Common "direct" precursor emissions. Emissions of NOx, VOC and carbon monoxide (CO) are considered precursors for ozone formation. The NOx, VOC and sulfur (SOx, mostly as SO_2) emissions can also lead to fine particle formation through "secondary" atmospheric chemical reactions. Both ozone and a substantial fraction (which can vary greatly with season and location) of fine particles are the result of secondary formation processes. The major components (which also are highly variant) of secondary fine particles include sulfates, carbon (elemental and organic) and nitrates. The fraction of fine particles due to secondary processes is highly variant in space and time. During certain conditions (e.g., available ammonia, negligible sulfate, low temperatures), NOx emissions can lead to fine PM ammonium nitrate formation. Several directly-emitted organic compounds contribute to fine particle organic aerosols. These organic compounds may contribute as "primary" organic aerosols, that is, they almost immediately condense to the aerosol phase during the emissions process or shortly downstream. Or, certain VOC (e.g., toluene)

which exist as gases under most conditions can undergo atmospheric reactions and transform into condensible "secondary" organic aerosols. Thus, a VOC like toluene can contribute to both ozone or fine particle formation as a precursor emission.

- Common source categories. Based on the multiple roles of precursors, a particular source (natural or anthropogenic) emitting one precursor (e.g., NOx or VOC) can affect ozone and fine particles, and a single source emitting multiple precursors (e.g., combustion process releasing NOx, VOC, CO and SOx) can affect multiple pollutant source categories. In this case, integration is not dependent on atmospheric chemical linkages. This commonality among sources should lead to a more consistent approach in estimating emissions of multiple precursors within a specific source category. For instance, a consistent approach needs to be applied for estimating and projecting both NOx and SOx emissions from a combustion source.

- Interaction of atmospheric chemistry reaction cycles and "indirect" precursors. Much of the general atmospheric chemistry involved in ozone formation can affect fine

particle formation, as alluded to above, in certain instances. For example, ozone is the major initiator of hydroxyl radicals, a chemical intermediate which converts SO_2 and nitrogen dioxide (NO_2) to more oxidized sulfate (e.g., sulfuric acid) and nitrate (nitric acid) forms. Both sulfates and nitrates can contribute to fine particle formation. Clearly, a linkage between ozone and fine particles exists through the role of ozone in generating hydroxyl radicals. Note that this linkage between ozone and fine particles is at the process level and does not require coexisting "high" ozone and fine particle levels. Many other important linkages involving oxidizing chemical species (radicals and peroxides) exist within the NOx, VOC, SOx, ozone chemistry system. A correct characterization of the basic ozone chemistry and the associated linkages among the precursors is needed to predict the affect of changing emissions on air quality indices. Consequently, the predictive air quality models used to assess ozone and fine particle impacts should include a basic core set of atmospheric chemical reactions (i.e., a gas phase ozone chemistry mechanism).

Because of their common atmospheric chemical linkages,

many precursors associated with one pollutant might be considered as an "indirect" precursor for another pollutant as well. Virtually all precursor emissions (NOx, SOx, VOC, CO) undergo initial attack by hydroxyl radicals and participate in the general cycling of various chemical intermediate species. Therefore, precursors that typically may not be associated with a particular secondary pollutant, such as the effect of VOC on either sulfate or nitrate, indirectly participate through their roles in atmospheric chemistry. In this general context, the term precursor does not imply a positive effect on an associated secondary species as the emission precursor may only share in certain atmospheric chemical processes without leading to increases in a secondary pollutant. Multiple possibilities exist. For example, NOx, which affects the cycling of hydroxyl radicals (which convert SOx to sulfate), could act indirectly as a sulfate particle precursor. The majority of VOC species that do not transform into organic aerosols could nevertheless be fine particle precursors through their general role (i.e., cycling of radicals) in atmospheric chemistry. Nitrogen oxides could serve as indirect precursors for aerosol sulfate formation. This "universal"

pool of precursors does not imply that reductions of any specific precursor lead to reductions of every pollutant. Just as reductions in NOx potentially can raise local ozone levels, a reduction of a fine particle precursor possibly can increase ozone or increase a different fine particle component (e.g., SOx reductions leading to increased ammonium nitrate, or NOx reductions increasing sulfate formation). These examples are some of several conceivable indirect precursor relationships. Many other relationships with similarly unknown degrees of effect exist. Thus, integrated implementation is far from a straightforward exercise. Complex air quality simulation models (in combination with simpler models and receptor/observational methods) which include approximations of these process linkages will need to be exercised to account for the multiple nonlinearities and positive and negative feedbacks. This complexity demands that high quality emission inventories, technically credible models, and spatially and temporally representative monitoring data will be needed in predicting pollutant concentrations and control strategies.

3. Integrating Control Strategy Development through an Air Quality Modeling Approach

What does integration mean from an implementation perspective? Given the complex mechanisms for and linkages between ozone and fine particle formation, the formulation of control strategies should acknowledge the need to optimize control options; control of one precursor might affect both ozone and fine particles or might be detrimental for one or both. For example, one might start with ozone management strategies being developed as part of ongoing urban and regional planning efforts and attempt to quantify the future impact on secondary aerosols. On the other hand, because NOx controls might increase ozone levels in certain localized urban areas or because SO_2 reductions might lead to increased concentrations, efficient air quality management would attempt to optimize the system in relation to VOC, NOx and SOx emission reductions.

The real benefit of integration is the prospect of a more systematic, efficient and comprehensive treatment of emission inventories, episode selection, and atmospheric physics and chemistry that might empower the air quality manager to characterize source-to-receptor effects in an orderly way. The addition of data on the costs and effectiveness of control options would enable the air

quality manager to identify the cost-effective means for attaining a variety of air quality goals.

To this end, emission bases underlying most current ozone modeling efforts include most of the sources for aerosol formation (but not necessarily the aerosol-specific emissions such as organic aerosols from motor vehicles). Notable exceptions include emissions from many of the fugitive primary particle sources and most sources of ammonia. The result of this hypothetical exercise could produce the residual aerosol- (and regional haze-) related air quality benefits from an ozone precursor control perspective. [Additional analysis directed at the specific needs for meeting fine particle and visibility concerns could follow this ozone oriented approach. Ideally, an objective (and likely iterative) ability to assess the benefits and tradeoffs associated with managing all three pollutant categories would evolve.] Although this example does not represent "full" integration given the unidirectional information flow (ozone to particles), it does acknowledge similarities among programs and avoids mistakes and inefficiencies incurred from independent analyses. Aside from any direct regulatory policy, the

linkages across pollutants and emissions are reasons by themselves for planning for more effective and efficient development and use of emissions, air quality models and monitoring networks which address sometimes confounding multiple pollutants and their related health/welfare effects, and control options.

4. Distinctions among Ozone, Fine Particles and Regional Haze

Concurrent ozone and fine particle episodes may be expected to occur given similarities in the meteorological and atmospheric chemistry processes underlying ozone and fine particle formation, maintenance and destruction. As discussed above, the linkages associated with emission source categories and physical and chemical processes exist more frequently than the occurrence of coepisodic events. For example, several basic atmospheric chemical reactions involved in ozone and fine particle formation occur whether or not high ozone and fine particle levels are generated in the atmosphere. Nevertheless, several distinctions among the pollutants persist. These differences include the contribution of primary particles to total fine particles (and especially PM-10) and wintertime (actually

nonsummertime) fine particle events. Some primary particles are generated by strong wind conditions (e.g., soil/geologic material) and other mechanical processes (e.g., roadway fugitives). A fraction of primary PM peaks in summer in most of the Western third of the country where there is little precipitation for 6-8 months per year, and dry, windy conditions lead to the generation and movement of geologic materials. As discussed earlier, ammonium nitrate, a significant fine particle component in the West, is stable at relatively low wintertime temperatures and therefore does not form significant levels during the high summertime temperatures. Meteorological effects which influence the creation, maintenance or removal of high levels of ozone and fine particles may be significantly different between pollutants, regions of the country, and times of the year. Other specific emissions-driven events such as forest burning and wintertime woodsmoke (a major wintertime source of urban PM) bear virtually no relation to ozone. Many of these PM episodes can be dominated by either primary or secondary fine particle components, or by primary anthropogenic coarse PM emissions. Research exploring the frequency and characterization of coepisodic and uni-

episodic events would yield further insight into underlying causes of events and provide direction for integrated implementation opportunities.

Visibility protection presents several additional considerations beyond the scope of topics covered under ozone and fine particles. First, fine particle concentrations that are far below any potential NAAQS can adversely affect visibility in a significant manner, particularly in more pristine environments, such as Federal Class I areas in the rural West. For this reason, visibility management needs to consider the protection of "clean" days separately from assessments focusing on highly impaired days. The meteorology and emissions characteristics during "clean" days differ from those common during high pollution episodes. This concern raises complex technical issues related to the ability of models and monitoring instruments, which often have been designed or tested for meeting "high" concentration requirements, to characterize "low" level conditions. Second, relative humidity plays a significant role in enhancing visibility impairment, particularly in the East. In humid conditions, particularly above 70 percent relative humidity, sulfates,

nitrates, and certain organics readily take on water and expand to sizes comparable to the wavelength of light. Particles in this size range (e.g., 0.1 to 1.0 micron in diameter) are efficient scatterers of light. Third, unlike the NAAQS approach of setting a national standard, the regional haze program has as its goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Federal Class I areas which impairment results from manmade air pollution. States are required to make "reasonable progress" toward this goal. The notion of background versus manmade air pollution raises several technical and policy challenges, particularly in the protection of visibility in "cleaner" environments, where small increases of fine particles can lead to significant visibility changes.

Generally, PM-10 is not considered in the integration discussions of ozone, fine particles and regional haze. This is because the coarse fraction (e.g., greater than 2.5 micron) typically is derived from primary emissions (e.g., fugitives and geologic material) with little association to ozone from a process (or episodic) perspective. In addition, visibility impairment leading to regional haze is

overwhelmingly associated with the fine particle fraction of PM-10.

C. Major Technical Issues

The principal technical issues associated with integrated air quality management involve the adequacy of data bases and models (including specific process formulations) on which to base credible assessments. Generally, the tools (ambient data, models and emissions data) underlying ozone analyses are better developed than those for fine particles. Major efforts in chemical mechanism development, ambient monitoring methods and establishment of national and special study efforts for monitoring, emissions and modeling have resulted in a wealth of information and familiarity with these tools. This relative abundance of knowledge for ozone should not be construed as a science lacking uncertainty as significant technical issues remain (e.g., the current North American Research Strategies for Tropospheric Ozone (NARSTO) effort) and even more are yet to be defined. A sampling of these issues include the representativeness of emission inventories, particularly biogenic emissions; uncertainties in the modeling system (e.g., chemical characterizations of

aromatics and biogenics, treatment of vertical mixing processes); difficulties in monitoring techniques (carbonyls, NOx-NO_2, polar VOC); and lack of measurements (e.g., total reactive nitrogen, upper air data). In some cases, these gaps are significant and could compromise our ability to perform highly credible ozone analyses and to ascribe confidence levels in our results.

Consideration of fine particles and regional haze presents several additional issues which are a result of: (1) a very complex multiphase, multicomponent, multiseason aerosol system; (2) the complex covariance of these data; and 3) the present PM-10 form of the NAAQS which has resulted in few regulatory needs to hasten an improved characterization. Significant concerns include major positive and negative measurement artifacts (related to gas-particle phase changes); a simple lack of ambient data, especially urban fine particle measurements; poor quality assurance/control of ambient sampler data; emissions data with poor general spatial applicability; limited availability, limited application and evaluation of regionally-accurate air quality models; and highly empirical treatment of organic aerosols within the available models.

These gaps are interconnected in the sense that quality model evaluation and improvement rely on available quality measurements. The issue is further complicated by difficulties (due to complexities, lack of precedence and resource constraints) in designing a data collection program to evaluate a gridded model's ability to characterize fine particles covering wide scales of time (annual, seasonal, daily) and spatial resolution (regional, urban, local). On the positive side, a strong history of using ambient data for PM source apportionment is probably more adaptable to fine particle analyses than ozone, given that the measurable components of secondary fine particles (e.g., sulfate) have some direct linkage to precursors, whereas an ozone measurement by itself provides no inference regarding contributing precursors.

Several interesting atmospheric chemistry questions remain to be answered; two examples include nitrate fine particle formation and organic aerosols. Where and when do ammonia and sulfate become limiting factors in ammonium nitrate formation? The relatively abundant nitrate fine particles at sites in the urban West contrast with abundant regional sulfate fine particles in the East. Substantive

decreases in SO_2 emissions could lead to increased nitrate fine particle formation in the East if sufficient ammonia (a highly uncertain emissions category) is available. What impacts will NOx emission reductions have on fine particles? Many possibilities exist. If nitrate is significant, one would expect a reduction in fine particles. However, if sufficient sulfur remains available, NOx reductions could increase or decrease sulfate formation (and, therefore, fine particles) depending on a complex cycling of oxidizing species. Reductions in NOx emissions could actually lead to sulfate increases by reducing competition (between SOx and NOx) for gas phase oxidizing radicals, or by increasing peroxide levels leading to greater aqueous phase sulfate production. Or, NOx reductions could slow down sulfate formation through overall reductions in ozone and other oxidants. This relationship is very complex, and we must exercise caution in associating fine particle benefits with NOx reductions in the Eastern U.S.

What are the relative contributions of primary and secondary organic aerosols across varying spatial (and time) scales? The potential for large secondary organic aerosol production from biogenic sources (e.g., pinene emissions)

exists throughout the East. How significant are biogenic-derived aerosols compared to local/urban contributions from primary anthropogenic organic aerosols? How different are these relative contributions across seasons, given that secondary organic aerosol formation increases during the summer? Many uncertainties underlie the integration of primary and secondary particles, aside from integrating particles and ozone. For instance, what are the interactive roles exerted by elemental carbon emissions and other products of incomplete combustion and geologic materials in both primary contribution to PM and as formation nuclei for highly complex secondary PM? On balance, the ability to perform ozone air quality assessments far exceeds that of fine particles. However, the infrastructure for conducting fine particle analyses appears to be in place as a result of progress gained from ozone and acid deposition modeling and existing monitoring programs for ozone and visibility (i.e., the Interagency Monitoring of Protected Visual Environments (IMPROVE) program). Finally, although uncertainties remain in transforming particles into visibility impairment within short averaging times, the IMPROVE methodologies for particle and visibility measurements (and the relationships

between particles and visibility) are widely accepted.

Specific issues across PM and ozone include the ability to formulate fully-integrated models accounting for multidirectional effects on several pollutants. For example, the formation of secondary organic aerosols is a loss mechanism for VOC which presently is not accounted for in ozone modeling efforts. Many other integration topics exist, and collectively there is uncertainty regarding the overall importance of one pollutant imparting an effect on another.

Two basic issues span the gap between science and policy: (1) the manner in which tools are applied, and (2) accommodating scientific findings and uncertainties in air quality management decision making. The first topic reflects the concerns of how one applies deterministic (i.e., models that establish exact cause and effect relationships) and uncertain air quality models to probabilistic forms of the standard in ascribing rigid control requirements. The selection of "severe" meteorological episodes versus "prototypical" episodes for ozone and PM-10 modeling has been controversial and remains a difficult model application issue. Equally complicated is

the emerging need to model seasonal and annual cases. The debate on the credibility of models is fueled by the manner in which they are applied as much as by concerns about their formulations and supporting data bases. The second topic acknowledges the need for conducting policy-relevant as opposed to policy-driven research and recognizing the different time scales operating in research and policy arenas (where the timeframe demands move much faster than research results). Extremely useful information emerges continuously from research programs, yet a separate, sometimes very significant, time-lag occurs before information is considered in the policy-setting process. Hence, opportunities must be available to incorporate the latest science into policy.

D. Integrating Models and Observations for Sound Air Quality Management Practice

Much emphasis has been placed on the complementary and integrated use of models and ambient data in air quality management practice (Rao et al., 1996). Several facets are associated with this topic, ranging from the need to evaluate models with sound data bases to conducting fully integrated analysis optimized through the separate, strong

attributes of data and models. As the technical debate on the use of models and data continues to mature, perceptions such as "model" or "data" are replaced by the intelligent and integrated use of "models and data." Clearly, the demand for measurements initiated by the National Academy of Sciences Ozone Report (NRC, 1991) to provide feedback information loops, as well as empirically-based corroboration of predictive tools, has been adopted by large segments of the air quality community and reflected in major efforts such as the Photochemical Assessments Measurement Stations (PAMS) and NARSTO.

An appreciation of the strengths of models and observations can assist the understanding of current analyses and lead to improved techniques. A model's strength is its ability to: (1) integrate an enormous spectrum of data (e.g., emissions and meteorological variables) and process understandings (e.g., chemical mechanisms and flow phenomena), and (2) serve as an exceptional space and time mapping tool. This latter attribute reflects the model's unique ability to predict into the future and to supplement (or fill in) present gaps in observed data. The process formulations embedded in

models enable the addressing of many "what if" questions related to emissions control. However, models are engineering tools that invoke substantial approximations of scientific understandings of natural phenomena, both their formulations and application methods reflect engineering principles more than fundamental science. Observations provide a basis for testing and diagnosing models. Also, in some instances, observations add another benefit. They can capture process-type relationships by themselves (e.g., the emergence of observational-based models for defining NOx and VOC control preferences). However, often observations are very sparse.

Applied in isolation, the use of either models or observations alone is not desirable. Space and time constraints often bias the interpretation of observational analyses (i.e., analysis results reflect time and space of monitors which may or may not reflect the scales of concern). Models suffer from a very large spectrum of weaknesses because they attempt to portray so many phenomena. Most critical though is the risk of using a potentially biased model that is assumed bias free. The integrated use of observations and models mitigates the

individual weaknesses of both approaches and produces a powerful air quality management tool, especially when applied in an iterative (even retrospective) manner to continually assess model results and related implementation strategies.

E. Summary

Air quality assessments for fine particles, ozone, and regional haze must consider emissions, meteorological processes, atmospheric chemistry, and deposition, all of which interact over multiple spatial and temporal scales. Examining in detail the sources only from the MSA/CMSA surrounding the monitor reporting nonattainment levels of air quality may need to be augmented (on a space and time basis) for responsibly allocating those levels to the sources causing them. When examining the issues on expanded time and space scales, the air quality management should also take into account the similarities of these air quality indices, such as their common precursor emissions (e.g., NOx, VOC); common emissions sources (e.g., mobile sources, stationary and area source combustion emissions, biogenics); and shared chemical and meteorological processes (e.g., transport, transformation, precipitation, and removal).

The principal technical issues associated with integrated air quality management involve the adequacy of data bases and models (including specific-process formulations) on which to base credible assessments. Many of these gaps are interconnected since model evaluations rely on available high quality measurements of emissions, atmospheric processes (such as wind fields) and ambient concentrations. On balance, the ability to perform ozone air quality assessments far exceeds that of fine particles, due mostly to the development of ozone research as well as a lack of urban fine particle measurements and important emissions components. However, many of the components of the infrastructure for conducting fine particle analyses appears to be in place as a result of progress gained from ozone, acid deposition, and visibility modeling and monitoring programs. The integrated application of models and observed data is strongly encouraged. In combination, both approaches help to mitigate the weakness of an isolated approach, producing a powerful tool for air quality management.

III. Schedules

Both the ozone NAAQS notice of proposed rulemaking

(NPR) and the PM NAAQS NPR are expected to be published in November 1996 with promulgation of both the PM and ozone NAAQS scheduled for mid-1997. The previously-described IIP will be proposed for comment in late 1996 and finalized in mid-1997 and will apply during the time period following promulgation of any revised NAAQS. The ozone, PM and regional haze programs are tentatively planned to be developed on a common schedule.

As indicated above, the integrated implementation strategy for ozone and PM NAAQS will be issued in two phases. The Phase I implementation strategy which will give guidance to State and local agencies concerning actions prior to and including designation of areas not attaining potential new PM and ozone NAAQS will be proposed in mid-1997 with a public comment period prior to adoption of the strategy. The EPA expects that the Subcommittee and CAAAC will make recommendations regarding formulation of the Phase I strategy prior to proposal. In mid-1998, the Phase I implementation strategy will be finalized. (Note that prior to recommendations from the Subcommittee and CAAAC, EPA will refer to areas not attaining new NAAQS as nonattainment areas.)

Also in mid-1998, the Phase II implementation strategy will be proposed. This strategy will provide guidance for the events and actions between area designation and submittal and approval of State implementation plans (SIP's). This will include control strategies. The EPA expects that the Subcommittee and the CAAAC will also make recommendations regarding formulation of the Phase II strategy prior to proposal. In mid-1999, the Phase II implementation strategy will be finalized.

Unlike the NAAQS, the regional haze rule will not set a specific ambient pollutant standard. However, the rule will include criteria for measuring reasonable progress and the methods to measure progress. The EPA currently intends to publish the regional haze NPR in mid-1997 (with Phase I). The EPA is exploring ways to coordinate regional haze program implementation with NAAQS implementation.

IV. Framing of Phase I Implementation Issues

The Phase I issues below were identified by EPA with substantial input from the Subcommittee and represent the priority issues which must be addressed as soon as possible after the revision of the NAAQS. These issues and options are subject to change as the FACA process and deliberations

EPA will consider legal authorities and constraints which may be present in the current Act.

The issues identified below regarding implementation of a potential ozone or PM NAAQS revision generally use as their frame of reference the basic planning requirements of part A of title I of the Act and the basic nonattainment planning requirements of subpart 1 of part D of title I of the Act. Similarly, the discussion below addressing development of a regional haze program does not analyze pertinent legal issues but endeavors to use as a general frame of reference the visibility protection provisions in sections 169A and 169B of the current Act. Rather than focusing on the statutory requirements, however, the following discussion identifies technical and policy issues and options under consideration. Again, interested readers are directed to the EPA TTN and WWW site for an up-to-date status of FACA deliberations on these issues. The EPA is including the issues with sufficient background information in this ANPR to allow interested individuals to comment on the development of the implementation strategies.

Upon a proposal to revise current NAAQS or promulgate new NAAQS for ozone and PM and regulations for regional

haze, the following characterize the most important implementation issues identified so far that should be considered. The issues are divided into two phases of implementation development. The options/principles/ questions are presented as a broad range of possibilities and are not listed in any order of preference.

A. Phase I Issues

1. Regional Haze Program Development

In order to place the following discussions on the issues associated with joint programs in the proper perspective, this section begins with a discussion of issues and questions related to the development of a regional haze program. As described in section II, regional haze is produced by emissions of fine particles and their precursors from a multitude of manmade and natural sources located across a broad geographic area. Fine particles impair visibility by scattering and absorbing light. Average visual range in most of the Western U.S. is 100-150 km. In most of the East, the average visual range is less than 35 km. The following discussion includes general background on the existing visibility protection program, recommendations to EPA for improving regional haze conditions, and key

issues for consideration in a new regional haze program.

Under a national visibility goal that calls for the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Federal Class I areas which impairment results from manmade air pollution, the EPA's 1980 visibility regulations addressed local visibility impairment that was "reasonably attributable" to a single source or small group of nearby sources. Under these rules, the 36 States containing mandatory Federal Class I areas were required to: 1) develop a program to assess and remedy visibility impairment from new and existing sources, 2) develop a long-term strategy to assure progress toward the national goal, 3) develop a visibility monitoring strategy, 4) consider "integral vistas" outside of Federal Class I areas in all aspects of visibility protection, and 5) notify Federal land managers (FLM) of proposed new major stationary sources and consider visibility analyses conducted by FLM in their permitting decisions.

The 1980 rules were designed to be the first phase in EPA's overall program to protect visibility. The EPA explicitly deferred action addressing impairment from regional haze due to the need for further research and

improvements in several technical areas, including visibility monitoring, modeling, and the relationship between specific emitted pollutants and visibility impairment. The GCVTC was established to assess scientific and technical information regarding adverse impacts on visibility in the transport region and provide recommendations to the EPA for addressing these adverse impacts. Within 18 months of receipt of the GCVTC recommendations, the Administrator is required to carry out her "regulatory responsibilities under section 169A, including criteria for measuring 'reasonable progress' toward the national goal." In developing the regional haze program, EPA will also have the benefit of recommendations from the 1993 report of the NRC Committee on Haze in National Parks and Wilderness Areas, Protecting Visibility in National Parks and Wilderness Areas, and from the work of the FACA Subcommittee on Ozone, PM and Regional Haze Implementation Programs. The following addresses key issues for consideration in developing a regional haze program.

Issue: Applicability - Currently, States containing mandatory Federal Class I areas where visibility has been identified as an important value, or having sources which

may reasonably be anticipated to cause or contribute to any impairment of visibility in any such area, must revise their SIP's to make reasonable progress toward the national visibility goal. Existing visibility regulations apply to the 36 States containing one or more mandatory Federal Class I areas. Studies have shown that regional haze can be caused by fine particles that are transported hundreds or even thousands of kilometers. Thus, sources in States having no mandatory Federal Class I areas could potentially contribute to impairment in Federal Class I areas in other States. The regional haze program should address the potential applicability to all States.

Issue: Regional Haze Planning Areas - It has been recognized in many forums that programs to mitigate regional haze may require multistate or regional approaches to technical assessment, planning, and/or control strategy implementation. Potential regional approaches are currently under discussion through the FACA process. Key questions to be considered are: (a) if regional approaches are taken, should one set of multistate groupings be developed to address ozone, PM, and regional haze implementation programs, or should separate approaches be taken for each of

the three programs; and (b) should existing or new institutions be responsible for future planning activities related to these three programs?

Issue: Definition of Reasonable Progress - The term "reasonable progress" was not specifically defined in the 1980 visibility regulations for purposes of regional haze. Current regulations require SIP's to contain such emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress toward the national goal, including: 1) requirements for best available retrofit technology (BART) for certain major sources of pollution, and 2) a long-term strategy for making reasonable progress toward meeting the national goal.

In the June 1996 report from the GCVTC, the Public Advisory Committee defines reasonable progress as "achieving continuous emission reductions necessary to reduce existing impairment and attain steady improvement in visibility in mandatory Federal Class I areas, and managing emissions growth so as to prevent perceptible degradation of clean air days." In the GCVTC report, visibility impairment is defined in terms of total light extinction and deciview. The legislative history of the 1990 Amendments to the Act

also addresses the issue of reasonable progress and perceptible improvement. Senator Adams, the sponsor of the 1990 revisions to the visibility protection program stated that, "At a minimum, progress and improvement must require that visibility be perceptibly improved compared to periods of impairment, and that it not be degraded or impaired during conditions that historically contribute to relatively unimpaired visibility."

Question: What should be the criteria for measuring reasonable progress?

The assessment of reasonable progress can involve quantitative and nonquantitative factors. From a quantitative perspective, measurement of reasonable progress could incorporate assessments of visibility trends, emission reductions, or a combination of both. Tracking visibility trends suggests a periodic assessment of visibility conditions (e.g., averages of 20 percent best and worst days, annual average) as derived from visibility monitoring data and use of a common metric nationally. The light extinction coefficient would be a logical choice since it has been used widely for years and is routinely calculated from optical and aerosol measurements for all IMPROVE sites.

Tracking progress will also require the initial documentation of a baseline level of anthropogenic visibility impairment at mandatory Federal Class I areas. The GCVTC has recommended an emission reduction target approach, including review of compliance with an SO_2 percent emission reduction target in the year 2000 and 5-year progress reviews thereafter. Nonquantitative progress factors could address whether a State has taken certain administrative or technical actions determined necessary for measuring and achieving progress over time.

Other questions related to reasonable progress include:

Question: How frequently should progress be measured?

Question: Since monitors are located at only about one-quarter of the 156 mandatory Federal Class I areas, how can progress be demonstrated for sites without monitoring?

Question: Should reasonable progress be demonstrated on a "regional" basis (i.e., for groups of Federal Class I areas), with certain IMPROVE sites deemed representative of others lacking monitoring?

Question: Would tracking of emissions reductions and conducting regional modeling be an acceptable surrogate to using monitoring data?

Question: Would the GCVTC approach, which specifies maintaining (rather than improving) average "clean day" conditions, be appropriate for areas with higher levels of anthropogenic pollution and thus greater room for improvement (such as most of the Eastern U.S. and selected areas in the West)?

Question: How should a reasonable progress determination take into account the degree of improvement in visibility which may reasonably be anticipated, the costs of compliance, the time necessary for compliance, and the energy and nonair quality environmental impacts of compliance, and the remaining useful life of any existing source subject to such requirements?

Question: What should be required in a State's long-term strategy for making reasonable progress under the regional haze program?

One element of the reasonable progress demonstration should describe the State's strategies for preventing future impairment and ensuring continued progress for a long-term strategy. Estimates of future population growth and associated changes in emissions, and a plan to ensure reasonable progress under these anticipated conditions,

could be required by the program. Current visibility regulations require States to revise their long-term strategies every 3 years with respect to reasonably attributable impairment. A regional haze program should address long-term strategies for mitigating all types of visibility impairment, including regional haze impacts.

Another consideration is the implementation of current statutory requirements. An EPA Report to Congress dealing with the effects of the 1990 Act Amendments on visibility in Class I areas estimated that Class I areas from Maine to Georgia would see perceptible improvements in summer and winter visibility under expected implementation of the Amendments. The most significant improvements are expected for Class I areas along the Central and Southern portions of the Appalachian Mountains. The 1993 report indicates that modeled future improvements in annual average Eastern regional visibility are directly related to expected reductions of SO_2 emissions under title IV of the Act (i.e., the acid rain program). Note, however, that current models are not reliable enough to estimate the extent of improvement in the number of clear and hazy days at specific locations.

Question: How should regional haze regulations address the requirement for BART for sources that may reasonably be anticipated to contribute to regional haze?

Rules for regional haze are required to address BART for any major source placed in operation between 1962 and 1977 that "emits any air pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility" in a mandatory Federal Class I area. The EPA's current visibility rules limit BART to major stationary sources whose contribution is "reasonably attributable" to impairment in a Federal Class I area. Recognizing that determinations of BART for regional haze involves contributions from multiple sources, EPA solicits comment on how technological controls, costs, the degree of improvement in visibility which may reasonably be anticipated, and other factors contained in section 169A(g)(2) should be considered.

Section 169A (g)(2) defines BART as follows: ". . . in determining best available retrofit technology, the State (or the Administrator in determining emission limitations which reflect such technology) shall take into consideration the costs of compliance, the energy and nonair quality

environmental impacts of compliance, any existing pollution control technology in use at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology . . .." (42 U.S.C. § 7491(g)(2).

Under the existing visibility program, the BART process has involved extensive technical assessments to demonstrate that emissions from a specific major source contribute a specific amount of impairment at a specific Federal Class I area. The regional haze program should address whether the BART requirement would be interpreted differently for the purposes of remedying existing impairment due to the cumulative emissions from sources located across broad regions.

One alternative interpretation could involve the identification of sources potentially subject to BART, development of emission rates determined to be equivalent to BART for key source categories, the estimation of total emission reductions that would be achieved if BART-level emission rates are implemented, incorporation of these reductions into regional emission reduction targets, and

implementation of programs by the States to achieve these emission reductions. Regional emission reduction targets for BART could be met through reductions from BART-eligible stationary sources, or the program could potentially allow an equivalent level of reductions through some other means, such as a trading program. Under such an approach, proposed emission reductions planned for attaining any new NAAQS will improve visibility conditions to some degree. Thus, program integration is needed to assess the extent to which strategies for attaining the NAAQS will help meet section 169A requirements for making reasonable progress and implementing BART.

Question: What should be the process for FLM's and EPA involvement in reviewing SIP revisions and reasonable progress demonstrations?

States are required to consult in person with the appropriate FLM's before holding a public hearing on any SIP revisions for visibility. The regional haze program, therefore, should define roles and responsibilities of FLM's, States, and EPA in the review of SIP revisions and reasonable progress demonstrations. It should include ways that input from FLM's and EPA can be incorporated early in

program planning activities.

Issue: Visibility SIP revisions due after 12 months - States will be required to revise their SIP's within 12 months of promulgation of regional haze regulations.

The regional haze rules will need to identify the program elements to be addressed in these SIP's. Monitoring strategies, emissions inventories and tracking, emission limitations, schedules of compliance, and adequacy of personnel, funding, and authority for program implementation are all important areas for consideration. The EPA seeks input on other elements that should be included in visibility SIP's and how to coordinate regional haze program implementation with NAAQS implementation.

Issue: Monitoring Program - Since 1987, EPA has supported the IMPROVE network in cooperation with the National Park Service, other FLM's, and State organizations. The IMPROVE network employs aerosol, optical (i.e., nephelometers and transmissometers) and scene (i.e., 35 mm photography) measurements. Direct measurements are taken of fine particles and precursors that contribute to visibility impairment at more than 40 mandatory Federal Class I areas across the country. Aerosol measurements are taken twice a

week for PM-10 and fine particle masses and for key constituents of fine particles, such as sulfate, nitrate, organic and elemental carbon, soil dust, and several other elements. Measurements for specific aerosol constituents are used to calculate "reconstructed" aerosol light extinction by multiplying the mass for each constituent by its empirically-derived scattering and/or absorption efficiency. These reconstructed light extinction levels are cross-checked with nephelometer and/or transmissometer measurements. Knowledge of the main constituents of a site's light extinction "budget" is critical for source apportionment and control strategy development. These methodologies allow estimates of how proposed changes in atmospheric constituents would affect future visibility conditions.

Currently, the IMPROVE monitoring protocols for aerosol, optical, and scene measurements are not included as Federal reference methods because visibility is not regulated under the NAAQS. The EPA is developing a visibility monitoring guidance document, however, that will identify important methods and procedures for effective aerosol, optical, and scene monitoring.

Question: Will the current IMPROVE network be sufficient to determine reasonable progress for mandatory Federal Class I areas?

States implementing a new regional haze program can benefit from the existing infrastructure of the IMPROVE network, established protocols, existing sites, and historical data available. The fact that monitoring equipment is located at only about a quarter of the 156 mandatory Federal Class I areas, however, raises the issue of whether the current configuration is representative of all sites, and whether the network needs expansion. The GCVTC, in its recommendations on future technical needs, states that: "The current IMPROVE monitoring network only measures aerosol samples twice a week and at only a few Federal Class I sites . . .. Consideration should be given to expanding the coverage or redeployment of resources in the IMPROVE network to enhance completeness of the data set, including on tribal lands. In addition, background surveillance sites could be established at intermediate locations between Federal Class I areas and large regional sources (metropolitan areas) to provide a better understanding of the intermediate course of atmospheric

chemistry and transport. Monitoring should be maintained at existing sites in order to allow for long-term trend analysis."

As discussed above, visibility SIP submittals and State reasonable progress demonstrations likely will rely on monitored data from the IMPROVE network. Thus, it should be determined whether the existing geographic distribution of IMPROVE network sites is adequate for making future determinations of reasonable progress in all Federal Class I areas and for verifying models for predicting possible visibility effects of future air quality management strategies. In addition, the ability for the current cooperative arrangement between EPA, FLM's and the States for managing and funding the network in the future should be assessed.

2. Designations for New NAAQS and Regional Haze Planning Areas. Under the current statutory requirements and EPA policy, EPA is required to designate areas as attainment, nonattainment, or unclassifiable after promulgation of a new or revised NAAQS. The designation process allows EPA to identify geographic regions where the public is subject to potential health risks, to alert the

public to the existence of those areas, and to require States to establish control programs to mitigate those health risks.

The EPA is giving advance notice that regional haze planning areas (to address Federal Class I areas) may need to be established for the purposes of conducting technical assessments and developing plans to abate haze on a regional basis. This is the approach to reducing haze recommended by the NRC, as well as the GCVTC. Because haze results from direct emissions of fine particles and fine particle and ozone precursors, the Subcommittee is considering whether regional haze planning areas should coincide with nonattainment areas or other types of control strategy areas established to reduce ozone and PM.

Given that EPA will designate areas and may establish regional haze planning areas, there are several issues that must be resolved. These relate mainly to the timing of designations, the basis for designations (e.g., the use of monitoring or modeling data), the size of nonattainment areas, and the role of transport in the designations process. These requirements raise questions such as the following.

Question: What are EPA's options in developing designation schemes for areas violating the new revised NAAQS?

Question: Should there be differentiation in designations between areas where violations are occurring and the source areas contributing to the problem?

Question: Should nonattainment status be changed to indicate only a public health risk or should nonattainment both indicate the public health risk and trigger control strategies?

Other questions identified to date include the following.

Question: What information should be used as a basis for designating areas and establishing regional haze planning areas, e.g., monitoring data, modeling data, other data, or combinations of monitoring, modeling, and other data?

Question: If monitoring or modeling data are relied upon, will adequate information be available within the appropriate timeframe?

Question: To what extent, if any, should the boundaries of nonattainment areas, control strategy areas

and regional haze planning areas coincide or should there be separate areas for ozone, PM, and regional haze?

Question: How can incentives be created to monitor air quality in order to gain a better scientific understanding of the pollutants and avoid disincentives when NAAQS violations are measured? How can incentives be created for private sectors to form monitoring partnerships with EPA and States?

3. Mechanisms to Address Regional Strategies

Question: How do we develop or use existing institutional mechanisms to effectively implement control strategies incorporating multistate regionally- or nationally-applicable measures?

Reviews of monitoring/modeling data suggest that violations of new ozone NAAQS in the center of the range described by the Clean Air Science Advisory Committee (CASAC) are likely to be more widespread than is the case with the current NAAQS. Further, data available at this time suggest that if a PM-2.5 NAAQS is established in the lower end of the range being considered, it too may result in a problem which is regional in scope. By its definition, regional haze is a regional problem. Areas that present the

most concerns for visibility protection (i.e., Federal Class I areas such as national parks and wilderness areas) are often located at considerable distances from anthropogenic sources of visibility degradation.

The likely regional scope of problems meeting new NAAQS or visibility goals implies a need for measures applied over large (e.g., multistate) geographical areas.

Question: Should a framework for institutional mechanisms be identified and developed for facilitating development and implementation of strategies to reduce regional transport of ozone, fine particles, and their precursors?

Recently, several cooperative efforts have emerged to better understand and address regional problems. Some of these have been mandated, others are voluntary. Examples include NESCAUM, Mid-Atlantic Regional Air Management Association (MARAMA), Lake Michigan Air Directors Consortium (LADCO), OTC, Southeast States Air Regional Management (SESARM), OTAG, Western States Air Resources Council (WESTAR), GCVTC, State and Territorial Air Pollution Program Administrators/Association of Local Air Pollution Control Officials (STAPPA/ALAPCO) and the Environmental

Commissioners of States organization (ECOS).

Question: What attributes of existing multistate institutions have been successful or appear essential for assisting in the development and implementation of a regional strategy? Can or should multistate institutions be developed using one or more existing institutions as a starting point?

To identify an appropriate institutional mechanism to facilitate State implementation of programs to meet several air quality goals which are regional in scope, it is first necessary to more specifically define what principles are appropriate for such a group. The following principles, developed by the National and Regional Strategies Work Group to guide their deliberations, are proposed for consideration.

Principle: The institutional mechanism which is established should develop an operating protocol whereby participating States can reach agreement on regional measures to implement. The protocol would address such issues as, who gets to vote?; what constitutes consensus?; to what extent are consensus decisions binding?; what should be the role of the private sector?; what steps should be

followed if there is no compliance with an agreement?

Principle: The institutional mechanism should develop a means for summarizing and distributing information on the scientific basis, technical viability and capital/operating costs associated with measures under consideration. In addition, the institution should provide a means, along with the EPA, for facilitating distribution of consistent information regarding emissions, air quality, meteorological data and modeling results to member States.

Question: When considering possible regional strategies, what limitations are imposed by State laws or other constraints? Are clear priority options or "operating principles" needed for any institutional mechanism which is formed to help implement regional control measures? The following principles serve as possible examples.

Principle: Use the institutional mechanism as a means to establish positive incentives for upwind areas to reduce precursor emissions. Possible approaches to consider include: having downwind areas/sources defray some of the control costs at upwind locations in exchange for not having to implement the most costly controls in their area, use of performance goals rather than specific measures, and

providing a "bonus credit" for early implementation.

Principle: Use the institutional mechanism as a means for fostering communication among States and the private sector involved with implementing measures. This goal envisions the mechanism as providing an information clearinghouse on what different States are doing and the appropriate contacts for further details. The institutional mechanism might also serve as the means for facilitating periodic meetings on various subjects related to implementing regional strategies in a coordinated fashion.

Principle: Use the institutional mechanism as a means for promoting use of improved analytical tools and data bases as well as to promote use of consistent assumptions among the States which are implementing regional measures.

4. Integration of NAAQS and Regional Haze Implementation Programs

Question: When and where does it make sense to develop and implement integrated criteria and policies for urban ozone, fine particles and regional haze control programs?; for regional ozone, fine particle and regional haze control programs?

As discussed in the previous science section, the

photochemical reactions involving VOC, NOx and sunlight which produce ozone also produce other secondary pollutants. The photochemical reactions can result in oxidation of SO_2 and NOx to produce visibility-reducing species which may be regarded as fine PM or as haze. This realization leads to the question of whether control of ozone, fine particles and haze can be optimized through consideration of all of them together in an integrated fashion rather than considering each separately. This issue considers first how to decide if integration is appropriate and second, if it is, then what integrated control strategies should be implemented to reduce the impact on public health and improve visibility caused by regional haze?

Before key national/regional/multipollutant control strategies can be developed, a clear understanding of what integration of ozone, PM, and regional haze means to the implementation process must be established. For instance, if the goal is to minimize the burden on the regulated industry, then the outcome of the control strategy may look different from one with the goal of maximizing the risk reduction to public health and welfare. Will the knowledge and understanding of these approaches be understood and the

technical tools needed to integrate the programs be available, or must new state-of-the-science and technical tools be developed?

While the focus of control strategy integration centers around the ozone, PM and regional haze programs, some consideration of how other programs affect these programs will need to be assessed (i.e., acid rain, climate change, stratospheric ozone, ecosystem protection, toxics). A number of questions arise when considering the feasibility of an integrated strategy.

Question: What should be the basis for designing control strategies?

Question: Should integration utilize consistent or uniform modeling approaches to understanding long-range transport? What is the most practical way to accomplish this?

Question: Is an atmospheric chemistry linkage needed between all the programs? Currently, efforts are under way for fine particles and ozone. There may be some SO_2 chemistry included and limited toxics integration. Are these adequately characterized?

Question: How should multipollutant integration fit

into the development and initiation of control strategies and programs?

Question: How can contributing sources be identified?

Question: If equity between control of long-range transport and control of local generation of pollutants is important, how could it be defined?

Question: What qualitative considerations can be made to provide assurance that control programs for ozone, PM, regional haze, toxics, acid deposition, etc., are integrated with one another?

To identify an appropriate framework for implementing efficient programs that meet several air quality goals for pollutants which are regional in scope, it is first necessary to more specifically define what principles are appropriate. As indicated above, the following principles are guiding the National and Regional Strategies Work Group deliberations and could provide an initial set for consideration:

Principle: Pursue integrated control strategies for simultaneously reducing ambient concentrations of tropospheric ozone and fine PM if there are sufficient observation-based data to demonstrate both an environmental

and economic benefit to integration.

Principle: Emphasize performance-based control strategies in lieu of prescriptive command-and-control strategies.

Principle: Develop controls that establish emission reduction responsibility based on the contribution to the problems, while also considering cost-effectiveness.

Principle: Emphasize broad-scale control strategies for contributing sources where dictated by sound science.

Principle: Focus on the interactions of the pollutants and the interactions between control strategies, identifying both positive and negative interactions.

Principle: Integrate the implementation of the three programs (ozone, PM, and regional haze) to the greatest extent possible.

Principle: Recognize that decisions need to be made based on scientific information that is improving and find institutional mechanisms to allow for mid-course corrections when significant new information is available.

5. Prevention of Significant Deterioration (PSD) of Air Quality and Nonattainment New Source Review (NSR)

Protection of the NAAQS, including new and revised

standards, is provided in part under Federal regulations requiring the preconstruction review of large new and modified stationary sources of air pollution, referred to as "major stationary sources." As described below, the nature of the changes which EPA will be proposing to the implementation policies for the NAAQS for both ozone and PM will necessitate consideration of significant changes to these regulations commensurate with the types of issues already described in this ANPR.

Two separate preconstruction review programs exist, based on the air quality attainment status of the proposed location of source construction. Major stationary sources locating in areas designated attainment or unclassifiable for a particular pollutant are subject to requirements for the PSD of air quality. Major stationary sources located in areas designated nonattainment for a particular pollutant must undergo review via nonattainment NSR requirements.

Under the PSD program, a major stationary source is defined as one that emits or has the potential to emit 250 tons per year (tpy) or more of any air pollutant, except where a source is one in a category specifically listed as a 100 tpy major source category. In addition to the pollutant

for which the source is major, the PSD preconstruction review applies to each regulated pollutant which the major source will have the potential to emit in significant amounts, as defined by EPA regulations. Sources required to undergo PSD review generally must demonstrate to the applicable permitting authority that proposed emissions increases will not cause or contribute to violations of the NAAQS or maximum allowable pollutant concentration increases (known as increments). Under certain circumstances, the source may also need to demonstrate that emissions will not have an adverse impact on air quality related values in Federal Class I areas. The air quality impact analyses associated with these demonstrations rely upon the use of both predicted (modeled) air quality and measured (ambient monitoring) data. The predictions of air quality using air dispersion models require the use of emissions data for the new or modified source and certain existing sources within the potential area of impact. Where adequate ambient data are not available, the permitting authority may require the PSD applicant to collect 1 year of ambient monitoring data. As described earlier in this ANPR, changes in the way which air quality assessments are made, considering how emissions,

meteorological processes, atmospheric chemistry, and deposition occur over multiple spacial and temporal scales, will likely affect the way in which future PSD air quality impact analyses are carried out for ozone and PM.

In addition, the PSD applicant must demonstrate that proposed emissions increases will be controlled through the use of best available control technology (BACT). The determination of BACT involves the selection of the most effective control technology for reducing emissions of a particular pollutant on a case-by-case basis, taking into consideration energy, environmental and economic impacts and other costs. Decisions for controlling PM, for example, could be affected by the particle size, as well as the chemical composition, of the PM proposed to be emitted. Moreover, changes to the requirements for applying BACT to individual sources may be needed to more adequately address the consideration of precursor contributions and atmospheric chemistry in selecting the best controls to provide the most effective ambient benefits for ozone and PM.

Increments for PM were originally defined for total suspended particulate (TSP). The EPA later replaced those increments with PM-10 increments following replacement of

the TSP NAAQS with the PM-10 NAAQS. Should EPA adopt NAAQS for PM which include standards for both PM-10 and fine particles, then EPA will need to consider how that will affect the current PM-10 increments. Increments for ozone have never been established because of the technical difficulty associated with predicting ambient concentration changes resulting from individual stationary sources of VOC.

Under the nonattainment NSR regulations, "major source" is defined generally as any stationary source that emits, or has the potential to emit, in consideration of controls, 100 tpy or more of the nonattainment pollutant, except in specific cases where lower thresholds apply to more serious nonattainment classifications. The basic nonattainment NSR requirements for the construction or modification of major stationary sources in nonattainment areas and the ozone transport region include the requirement that the lowest achievable emission rate technology be installed, and that the increased emissions of the nonattainment pollutant from the proposed new major source or major modification be offset by actual emissions decreases of the same pollutant from one or more existing sources. The offsets may come from the same nonattainment area or another nonattainment

area of equal or higher classification as long as the offsetting emissions contribute to the air quality problem in the area where the decrease is being credited. As with PSD, the NSR requirements for control technology application and offsets do not adequately account for precursor activities or for the complexities associated with atmospheric chemistry.

Any revised ozone and PM NAAQS may suggest that existing implementing guidance, EPA's nonattainment NSR rules, and the States' nonattainment NSR programs will need to be reviewed and revised in various ways to address the integrated implementation approach being contemplated.

The FACA Subcommittee and work groups will look into how the current PSD/NSR programs for ozone and PM-10 attainment, unclassifiable and nonattainment areas could be adapted or modified. Some PSD/NSR questions that may consider include:

Question: What types of mitigation procedures should be required of major new or modified sources that would contribute to violations of the revised NAAQS for ozone or PM, or to visibility impairment in Federal Class I areas?

Question: Should PSD/NSR requirements reflect the

potential for broad intra and interstate nonattainment areas, control areas, and regional haze planning areas that could result when addressing implementation under revised NAAQS for ozone and PM?

Question: What approach should be developed for the treatment of ozone and fine particle precursors for PSD/NSR applicability purposes?

Question: Should the PSD/NSR programs allow for precursor substitutions when environmentally beneficial to meet offset and control technology requirements?

Question: How can availability, crediting, and location of emissions offsets be restructured under a more regionalized implementation strategy for PM?

6. Attainment Dates

Areas designated nonattainment with respect to a primary NAAQS are, under the current statutory structure, required to achieve attainment as expeditiously as practicable, but no later than 5 years from the date the area was designated nonattainment. The EPA may extend this date up to an additional 5 years. This extension may be a full 5 years or any 1 year increment in between. Additionally, the Administrator may grant two 1-year

extensions.

With respect to a potential new secondary ozone NAAQS, areas designated nonattainment are required, under the current statutory structure, to achieve attainment of the secondary NAAQS as "expeditiously as practicable" following designation. Secondary nonattainment areas are not bound to the same 10-year deadline as primary areas.

Question: Given the preceding discussion, how should attainment dates for primary and secondary NAAQS be established?

B. Phase II Issues

As discussed earlier in this notice, in Phase I, the FACA Subcommittee and work groups will address air quality management framework issues. The EPA plans to propose the resulting Phase I strategy in mid-1997. Phase II of the integrated implementation strategy will focus on more detailed control strategy development. The EPA plans to propose the Phase II strategy in mid-1998. The Phase II implementation issues include:

- Classifications of nonattainment areas;
- Control requirements (e.g., reasonably available control measures including reasonably available control

technology);

- Economic incentive programs;
- State implementation plan requirements;
- Overall control program integration;
- Measures of progress; and,
- Institutional processes.

All of these issues will be discussed in greater detail at a later date. Interested readers are directed to EPA's TTN and WWW site for an up-to-date status of the work groups and Subcommittee deliberations on these issues.

V. Administrative Requirements

A. Executive Order 12866

Under Executive Order 12866, 58 FR 51735 (October 4, 1993), the Administrator must determine whether the regulatory action is significant and therefore subject to the Office of Management and Budget (OMB) review and the requirements of the Executive Order. The Order defines significant regulatory action as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, productivity, competition, jobs, the environment,

public health or safety or State, local, or tribal governments or communities;

(2) create a serious inconsistency or otherwise interfere with an action taken or planned by another Agency;

(3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this ANPR announces a significant regulatory action, and as such, will be submitted to OMB for review. Any written comments from OMB to EPA, any written EPA responses to those comments, and any changes made in response to OMB suggestions or recommendations will be included in the docket. The docket is available for public inspection at the EPA's Air and Radiation Docket and Information Center, which is listed in the ADDRESSES section of this notice.

B. Miscellaneous

Requirements under the Unfunded Mandates Act of 1995,

the Paperwork Reduction Act, and the Regulatory Flexibility Act will be addressed if and when the Agency issues a proposed rule based on the comments received on this ANPR.

List of Subjects in 40 CFR Part 51

Administrative practice and procedure, Air pollution control, Carbon monoxide, Environmental protection, Nitrogen dioxide, Ozone, Particulate matter, Sulfur oxides, Volatile organic compounds.

Date

Carol M. Browner
Administrator

6560-50-P

APPENDIX

DEFINITIONS:

Annual sulfate conversion: Although significant gas phase transformation of sulfur dioxide occurs, aqueous phase oxidation is believed to be responsible for the majority of annual sulfate conversion in the Eastern U.S.

"Best" and "worst" days: Can be defined as the average of the 20 percent best and worst days, respectively, as measured in terms of total light extinction.

Chemical sinks: Termination compounds that essentially remove other compounds (e.g., nitric acid, hydrogen and organic peroxides). Some "sinks" can eventually break down and reform precursor compounds (e.g., peroxy acetyl nitrate, PAN).

Deciview: Derived from the light extinction coefficient and describes changes in uniform atmospheric extinction that can be perceived by a human observer. It is designed to be linear with respect to perceived visual changes over its entire range in a way that is analogous to the decibel scale for sound. A 1-deciview change is roughly equivalent to a 10 percent change in visibility.

IMPROVE: A federally-administered visibility

monitoring network for Federal Class I areas in several States that failed to submit SIP's containing monitoring strategies as required in the 1980 visibility regulations.

Intermediates: Include the short-lived radicals (hydroxyl, hydro-, and organic-peroxy) which perform many of the important atmospheric oxidation reactions.

Mandatory Federal Class I Areas: Areas designated as mandatory Federal Class I areas are those national parks exceeding 6000 acres, wilderness areas and memorial parks exceeding 5000 areas, and all international parks which were in existence on August 7, 1977.

Precursors: Compounds which contribute or lead to the formation of a secondary pollutant. For example, NOx and VOC are ozone precursors.

Reasonably attributable: Visibility impairment, as defined in 40 CFR 51.301, that is "attributable by visual observation or any other technique the State deems appropriate." It includes impacts to mandatory Federal Class I areas caused by smoke, plumes or layered hazes from a single source or group of sources.

Visibility regulations: See 45 FR 80084 (December 2, 1980) (codified at 40 CFR 51.300-307).

VOC species: Most low molecular weight VOC species (which are most prevalent in ambient air) are not expected to contribute significantly to secondary aerosol formation. Certain aromatics, and higher molecular weight alkanes and alkenes (> 6 carbons) are believed to be the major contributors to secondary organic aerosol formation.

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