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Category: 45 – Criteria for Plan Revisions for Nonattainment Areas

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

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OFFICE OF
AIR AND WASTE MANAGEMENT

SUBJECT: Criteria for Approval of 1979 SIP Revisions for Nonattainment Areas

FROM: The Administrator (A-100)

TO: Regional Administrators, I-X

The attachment to this memo summarizes the elements which a 1979 State Implementation Plan (SIP) revision for a non-attainment area must contain in order to be approved by EPA as meeting the requirements of Part D of the Clean Air Act.

In summary, the Act requires the demonstration of attainment of the air quality standards (primary and secondary) as expeditiously as practicable, but in the case of national primary standards not later than December 31, 1982. However, for carbon monoxide (CO) and oxidants (Ox), if the State can demonstrate attainment is not possible by 1982 despite the implementation of all reasonable stationary source and transportation control measures, the Act provides for up to a five-year extension. In those cases the plan revisions must demonstrate attainment as expeditiously as practicable but no later than December 31, 1987. The extension is not automatic; a demonstration of need must be made and the State must fulfill the other statutory requirements.

It is the intent of the Agency to establish reasonable and achievable goals for SIP submissions and to take a firm posture on the imposition of sanctions where the reasonable goals are not achieved. Accordingly, while the policy requires a commitment to many specific strategies in the 1979 submissions (e.g., RACT on stationary sources, inspection/maintenance programs where attainment for carbon monoxide or oxidants extends beyond 1982, other reasonable transportation control measures, etc.) the memo also requires (for carbon monoxide and oxidants) a commitment to a continuing process. This process must be one which extensively involves the public as well as State and local elected officials and which ambitiously pursues a wide range of alternatives.

Since reliance on stationary controls and Federal new car standards alone will not enable most areas with oxidant and carbon monoxide problems to attain these standards by 1982, each Regional Office will need to put particular emphasis on additional measures to reduce transportation system emissions. The process committed to in the 1979 plan submission must lead to the expeditious selection and implementation of comprehensive transportation control measures. In judging the adequacy of the 1979 plan submission for the transportation sector, each Regional Administrator should ensure that ambitious alternatives (as described in the draft "Transportation Planning Guidelines" which have been circulated) will be analyzed.

The Department of Transportation (DOT), Housing and Urban Development (HUD) and EPA are seeking to integrate the transportation/air quality planning and implementation required by the Clean Air Act into existing planning and programming procedures. The air planning activities should be included in the Unified Work Program required by DOT and the adopted transportation measures should be included in the Transportation Improvement Program required by DOT. In complying with the Clean Air Act requirements, the Regions should also keep in mind the requirements of the HUD-EPA Agreement which provides for coordination of air quality planning and planning assisted under the HUD Comprehensive Planning Assistance (701) Program. Integration of air and transportation planning with comprehensive planning which incorporates growth management concerns should improve the effectiveness of air quality planning and could reduce the need for enforcement measures in the future.

States will be provided some discretion regarding the amount of emissions growth to be accommodated within the SIP. EPA generally will not question the growth rates desired by the State so long as reasonable further progress is demonstrated and there is a demonstration of attainment by the statutory deadline (1982 or 1987). However, the growth rate identified in the SIP must be consistent with growth rates used (or implied by) other planning programs in the area (e.g., FWPCA Section 208, 201, HUD Section 701, FHWA Section 134).

You should note that there are other SIP revisions which are not discussed in the attachment but which are required by the 1977 Amendments. These include:

1. Section 128 (relating to State boards)
2. Section 126 (relating to interstate pollution)
3. Section 127 (relating to public notification)
4. Part C (relating to prevention of significant deterioration)
5. Section 110(a)(2)(K) (relating to permit fees)
6. Section 123 (relating to stack heights for existing source in other than non-attainment areas)

7. Section 121 (relating to consultation)

Although incorporation of these provisions is required by the law, failure to achieve final approval by July 1, 1979 does not trigger the new source prohibition of Section 110(a)(2)(I).

It is important to emphasize to the States that all current SIP requirements remain in effect despite the development of the 1979 revisions. Any suspension, or discontinuance of an existing SIP provision must be submitted for EPA approval. This should be done as part of the revision submitted in January 1979. Exceptions to this procedure may be found in certain new provisions of Section 110 relating to reduction of on-street parking, bridge tolls, and other measures.

The development of the January 1979 SIPs to meet the minimum requirements of the Clean Air Act Amendments of 1977 is a complex and demanding program. It will require the commitment of significant resources on the part of the air programs staff of the Regional Office to ensure that the States develop and submit a comprehensive and approvable plan. We are working with your staff to develop the necessary guidance and follow-up programs which will assist your office and the State to carry out this very difficult but important part of the overall air program.

Attachment

cc: Air & Hazardous Division Directors
Air Branch Chiefs

Criteria for Approval of 1979 State Implementation Plan Revision for Non-Attainment Areas

Purpose

The purpose of this document is to define the criteria by which State Implementation Plan (SIP) revisions for non-attainment areas required by the clean Air Act Amendments of 1977 (the Act) will be approved. These revisions are to be submitted to EPA by January 1, 1979

Categories of SIP Revisions

SIP revisions submitted by January 1, 1979 can be divided into two categories:

1. Those which provide for attainment of the Primary Ambient Air Quality Standards (primary standards) for all criteria pollutants on or before December 31, 1982.

2. Those which provide for attainment of the primary standards for sulfur dioxide, nitrogen oxides, and particulate matter on or before December 31, 1982 but show that despite the implementation of all reasonable transportation and stationary source emission control measures attainment of the primary standards for carbon monoxide and/or oxidants cannot be achieved until after this date. In these cases, the revisions must demonstrate attainment as expeditiously as practicable but no later than December 31, 1987.

In order for an adequate SIP revision to fall into the second category, the State has an affirmative responsibility to demonstrate to the satisfaction of EPA that attainment of the primary carbon monoxide and/or oxidants standards is not possible in the area prior December 31, 1982.

It should be noted that SIP revisions of either category should also provide for attainment of Secondary Ambient Air Quality Standards (secondary standards) as expeditiously as practicable although there is no specific deadline contained in the Act.

General Requirements of All 1979 SIP Revisions

Each 1979 SIP revision must contain the following:

1. A definition of the geographic areas for which control strategies have been or will be developed. Consideration should be given to the practical benefits of defining areas which correspond whenever possible to those substate districts established pursuant to Part IV, Attachment A of OMB Circular No. A-95.

2. An accurate, comprehensive, and current (1977 calendar year) inventory of existing emissions.

3. A determination of the level of control needed to demonstrate attainment by 1982 (including growth). This demonstration should be made by the application of modeling techniques as set forth in EPA's Guideline on Air Quality Models. For oxidants, any legitimate modeling technique (e.g., those referenced in "Use, Limitation and Technical Basis of Procedures for Quantifying Relationships Between Photochemical Oxidants and Precursors." EPA 450/2-77-021a. November 1977) can be used. Consideration of background and transport for oxidants should generally be in accordance with the procedures documented in "Procedures for Quantifying Relationships Between Photochemical Oxidants and Precursors." In developing photochemical oxidant control strategies for a particular area, states may assume at a minimum that the standard will be attained in adjacent states.

If a state can demonstrate that the level of control necessary for attainment of the primary standards for carbon monoxide and/or oxidants is not possible by 1982 despite the application of all reasonable measures, an extension past 1982 (but not beyond 1987) is authorized.

4. Adoption in legally enforceable form¹ (Footnote 1) of all measures necessary to provide for attainment by the prescribed date or, where adoption of all such measures by 1979 is not possible, (e.g., certain transportation control measures, and certain measures to control the oxides of nitrogen and total suspended particulate) a schedule for expeditious development, adoption, submittal, and implementation of these measures. The situations in which adoption of measurement may be scheduled after 1979 are discussed in the pollutant specific sectors of this document, each schedule must provide for implementation of all reasonably available control measures as expeditiously as practicable. During the period prior to attainment, these measures must be implemented rapidly enough to provide at a minimum for reasonable further progress (see discussion

¹Written evidence that the State, the general purpose local government or governments, or a regional agency designated by general purpose local governments for such purpose, have adopted by statute, regulation, ordinance or other legally enforceable document, the necessary requirements and schedules and timetables for compliance, and are committed to implement and enforce the appropriate elements of the plan. The relevant organizations shall provide evidence that the legally enforceable attainment measures and the "criteria, standards and implementing procedures necessary for effectively guiding and controlling major decisions as to where growth shall and shall not take place," prepared by State and local governments in compliance Section 701 of the Housing Act of 1954, as amended, are fully coordinated in the attainment and maintenance of the NAAQS.

below). Each schedule will be considered part of the applicable implementation plan and thus will represent a commitment on the part of the State to meet the key milestones set forth in the submitted schedule.

5. Emission reduction estimates for each adopted or scheduled control measure or for related groups of control measures where estimates for individual measures are impractical. It is recognized that reduction estimates may change as measures are more fully analyzed and implemented. As such estimates change, appropriate responses will be required to insure that the plan remains adequate to provide for attainment and for reasonable further progress.

6. Provision for reasonable further progress toward attainment of the primary and secondary standards in the period prior to the prescribed date for attainment. Reasonable further progress is defined as annual incremental reductions in total emissions (emissions from new as well as existing sources) to provide for attainment by the prescribed date. The plan shall provide for substantial reductions in the early years with regular reductions thereafter.

Reasonable further progress will be determined for each area by dividing the total emission reductions required to attain the applicable standard by the number of years between 1979 and the date projected for attainment (not later than 1987). This is represented graphically by a straight line drawn from the emissions inventory submitted in 1979 to the allowable emissions on the attainment date. However, EPA recognizes that some measures cannot result in immediate emission reduction. Therefore, if a State can show that lag in emissions reduction is necessary, a SIP will be acceptable, even though reductions sufficient to produce decreases at the "Straight-Line Rate" are not achieved for a year or two after 1979. This lag in achieving the "straight-line rate" for emissions reduction is to be accepted only to accommodate the time required for compliance with the first set of regulations adopted on or before January 1, 1979, if immediate compliance is not possible. It does not authorize delays in adoption of control requirements.

The requirement to demonstrate reasonable further progress will, in most areas designated non-attainment for oxidant or carbon monoxide, necessitate a continuous, phased implementation of transportation control measures. In areas where attainment of all primary ambient standards by 1982 is not possible EPA will not accept mere reliance on the Federal Motor Vehicle Control Program by itself as a demonstration of reasonable further progress.

In determining "reasonable further progress", those emission reductions obtained from compliance between August 7, 1977, and December 31, 1979, with (1) SIP revisions that have been submitted after August 7, 1977 and (2) regulations which were approved by the Agency prior to the enactment of the 1977 Clean Air Amendments, can be treated as having been achieved during 1979. There should be an assurance, however, that these are real emission reductions and not just "paper" ones.

7. An identification and quantification of an emissions growth increment which will be allowed to result from the construction and operation of major new or modified stationary sources within the area for which the plan has been developed. Alternatively, an emissions offset regulation can be adopted to provide for major new source growth.

The growth rates established by states for mobile sources and new minor stationary sources should also be specified, and in combination with the growth associated with major new or modified stationary sources will be accepted so long as they do not jeopardize the reasonable further progress test and attainment by the prescribed date. However, the growth rate identified in the SIP must be consistent with the growth rates used (or implied by) the other planning programs in the area (e.g., FWPCA Section 208 [201], HUD Section 701, FHWA Section 134). A system for monitoring the emission growth rates from major and minor new stationary sources and from transportation sources and assuring that they do not exceed the specified amounts must also be provided for in the revision.

8. Provision for annual reporting on the progress toward meeting the schedules summarized in (4) above as well as growth of mobile sources, minor new stationary sources, major new or modified stationary sources, and reduction in emissions from existing sources to provide for reasonable further progress as in (6) above. This should include an updated emission inventory.

9. A requirement that permits be issued for the construction and operation of new or modified major sources in accordance with Section 173 and 110(a) (2) (0).

10. An identification of and commitment to the financial and manpower resources necessary to carry out the plan. The commitment should be made at the highest executive level having responsibility for SIP or that portion of it and having authority to hire new employees. This commitment should include written evidence that the State, the general purpose local government or governments, and all state, local or regional agencies have included appropriate provision in their respective budgets and intend to continue to do so in future years for which budget have not yet been finalized, to the extent necessary.

11 Evidence of public, local government, and state legislative involvement and consultation. It shall also include an identification and brief analysis of the air quality, health, welfare, economic, energy, and social effects of the plan revisions and of the alternatives considered by the State, and a summary of the public comment on such analysis.

12. Evidence that the SIP was adopted by the state after reasonable notice and public hearing.

Additional Requirements for Carbon Monoxide and Oxidant SIP Revisions which Provide for Attainment of the Primary Standards Later than 1982

For those SIP revisions which demonstrate that attainment of the primary standards for carbon monoxide and/or oxidants is not possible in an area prior to December 31, 1982 despite the implementation of all reasonable emission

control measures the following items must be included in the January 1, 1979 submission in addition to all the general requirements listed above:

1. A program which requires prior to issuance of any permit for construction or modification of a major emitting facility an analysis of alternative sites, sizes, production processes, and environmental control techniques for such proposed source which demonstrates that benefits of the proposed source significantly outweigh the environmental and social cost imposed as a result of its location, construction, or modification.

2. An inspection/maintenance program or a schedule endorsed by and committed to by the Governor for the development, adoption, and implementation of such a program as expeditiously as practicable. Where the necessary legal authority does not currently exist, it must be obtained by June 30, 1979. Limited exceptions to the requirement to obtain legal authority by June 30, 1979 may be possible if the state can demonstrate that (a) there was insufficient opportunity to conduct necessary technical analyses and/or (b) the legislature has had no opportunity to consider any necessary enabling legislation for inspection/maintenance between enactment of the 1977 Amendments to the Act and June 30, 1979. In addition, where a legislature has adequate opportunity to adopt enabling legislation before January 1, 1979, the Regional Administrator should require submission of such legal authority by January 1, 1979. In no case can the schedule submitted provide for obtaining legal authority later than July 1, 1980.

Actual implementation of the inspection/maintenance program must proceed as expeditiously as practicable. EPA considers two and one half years from the time of legislative adoption to be the maximum time required to implement a centralized inspection/maintenance program and one and one half years to implement a decentralized program. In no case may implementation of the program, i.e., mandatory inspection and mandatory repair of failed vehicles be delayed beyond 1982 in the case of a centralized program (either state lanes or contractor lanes) or beyond 1981 in the case of a decentralized (private garage) system.

3. A commitment by the responsible government official or officials to establish, expand, or improve public transportation measures to meet basic transportation needs as expeditiously as is practicable.

4. A commitment to use in so far as is necessary Federal grants, state or local funds, or any combination of such grants and funds as may be consistent with the terms of the legislation providing such grants and funds, for the purpose of establishing, expanding or improving public transportation measures to meet basic transportation needs.

Note that HUD has prepared guidelines for local development codes and ordinances to provide special requirements for areas which for significant periods of time may exceed the primary standards. These guidelines specify criteria for new construction operation of buildings which minimize pollutant concentrations to ensure a healthy indoor and outdoor environment. States are encouraged to adopt such measures as part of the SIP.

Pollutant Specific Requirements

Sulfur Dioxide

Specifically, with regard to item (4) of the General Requirements, the January 1979 plan revisions dealing with sulfur dioxide must contain all the necessary emission limitations and legally enforceable procedures -to provide for attainment by no later than December 31, 1982 (i.e., schedules for the development, adoption, and submittal of regulations will not be acceptable).

Nitrogen Oxides

For NO_x, the January 1979 plan must contain all the necessary emission limitations and the legally enforceable procedures, or as a minimum, the appropriate schedules to adopt and submit the emission limitations and legally enforceable procedures which provide for implementation so that standards will be attained by no later than December 31, 1982. EPA is currently evaluating the need for a shortterm NO₂ standard and expects to promulgate such a standard during 1978. If such a standard for air quality is promulgated, a new and separate SIP revision will be required for this pollutant.

Particulate Matter

The January 1979 plan revisions dealing with particulate matter must contain all the necessary emission limitations and legally enforceable procedures for traditional sources. These emission limitations and enforceable procedures must provide for the control of fugitive emissions, where necessary, as well as stack emissions from these stationary sources. Where control of non-traditional sources (e.g., urban fugitive dust, resuspension, construction, etc.) is necessary for attainment, the plan shall contain an assessment of the impact of these sources and a commitment on the part of the state to adopt appropriate control measures. This commitment shall take the form of a schedule to develop, submit, and implement the legally enforceable procedures, and programs for controlling non-traditional particulate matter sources. These schedules must include milestones for evaluating progress and provide for attainment of the primary standards by no later than December 31, 1982, and attainment of the secondary standards as expeditiously as practicable. States should initiate the necessary studies and demonstration projects for controlling the non-traditional sources as soon as possible.

Carbon Monoxide and Oxidant

An adequate SIP for oxidant is one which provides for sufficient control of volatile organic compounds (VOC) from stationary and mobile sources to provide for attainment of the oxidant standard. Accordingly, the 1979 plan revision must set forth the necessary emission limitations and schedules to obtain sufficient control of VOC emissions in all nonattainment areas. They must be directed toward reducing the peak concentrations within the major urbanized areas to demonstrate attainment as expeditiously as practicable but in no case later than December 31, 1987. This should also solve the rural oxidant problem by minimizing VOC emissions and more importantly oxidants that

may be transported from urban to rural areas. The 1979 submission must represent a comprehensive strategy or plan for each non-attainment area; plan submissions that address only selected portions of non-attainment are not adequate.

For the purpose of oxidant plan development, major urban areas are those with an urbanized population of 200,000 or greater (U.S. Bureau of Census, 1970). A certain degree of flexibility will be allowed in defining the specific boundaries of the urban area, However, the areas must be large enough to cover the entire urbanized² area and adjacent fringe areas of development. For non-attainment urban areas, the highest pollutant concentration for the entire area must be used in determining the necessary level of control. Additionally, uniform modeling techniques must be used throughout the non-attainment urban area. These requirements apply to interstate as well as intrastate areas.

Adequate plans must provide for the adoption of reasonably available control measures for stationary and mobile sources.

For stationary sources, the 1979 oxidant plan submissions for major urban areas must include, as a minimum, legally enforceable regulations to reflect the application of reasonably available control technology (RACT)³ to those stationary sources for which EPA has published a Control Techniques Guideline (CTG) by January 1978, and provide for the adoption and submittal of additional legally enforceable RACT regulations on an annual basis beginning in January 1980, for those CTGs that have been published by January of the preceding year.

For rural non-attainment areas, the Ox plan must provide the necessary legally enforceable procedures for the control of large HC sources (more than 100 ton/year potential emissions) for which EPA has issued a CTG by January 1978, and to adopt and submit additional legally enforceable procedures on an annual basis beginning in January 1980, after publication of subsequent CTGs as set forth above. For mobile sources in urbanized area (population 200,000) SIPS must provide for expeditious implementation of reasonably available control measures. Each of the measures for which EPA will publish information documents during 1978 is a reasonably available control measure. These measures are listed on the following page:

²As defined by the U.S. Bureau of Census, urbanized area generally include core cities plus any closely settled suburban areas.

³While it is recognized that RACT will be determined on a case-by-case basis, the criteria for SIP approval rely heavily upon the information contained in the CTG. Deviations from the use of the CTG must be adequately documented.

1. To be published by February 1978
 - a. inspection/maintenance
 - b. vapor recovery
 - c. improved public transit
 - d. exclusive bus and carpool lanes
 - e. area wide carpool programs

2. To be published by August 1978
 - a. private car restrictions
 - b. long range transit improvements
 - c. on street parking controls
 - d. park and ride and fringe parking lots
 - e. pedestrian malls
 - f. employer programs to encourage car and van pooling, mass transit, bicycling and walking
 - g. bicycle lanes and storage facilities
 - h. staggered work hours
 - i. road pricing to discourage single occupancy auto trips
 - j. controls on extended vehicle idling
 - k. traffic flow improvements
 - l. alternative fuels or engines and other fleet vehicle controls
 - m. other than light duty vehicle retrofit
 - n. extreme cold start emission reduction programs

The above measures (either individually or combined into packages of measures) should be analyzed promptly and thoroughly and scheduled for expeditious implementation. EPA recognizes that not all analyses of every measure can be completed by January 1979 and, where necessary, schedules may provide for the completion of analyses after January 1, 1979 as discussed below. (If analysis after January 1979 demonstrates that certain measures would be unnecessary or ineffective, a decision not to implement such measures may be justifiable. However, decisions not to implement measures will have to be carefully reviewed to avoid broad rejections of measures based on conclusory assertions of infeasibility.)

As described previously, annual incremental reductions in total emissions must occur in order to achieve reasonable further progress during the period prior to attainment of the standards. Therefore, not all transportation measure implementation activities should wait until the comprehensive analyses of control measures are completed. Demonstration studies are important and should accompany or precede full scale implementation of the comprehensive strategy. It is EPA's policy that each area will be required to schedule a representative selection of reasonable transportation measures (as listed above) for implementation at least on a pilot or demonstration basis prior to the end of 1980.

Every effort must be made to integrate the air quality related transportation plan and implementation required by the Clean Air Act into planning and programming procedures administered by DOT. EPA will publish "Transportation Planning Guidelines" which will, if followed carefully, insure

that an adequate transportation planning process exists.

EPA recognizes that the planning and implementation of very extensive air quality related transportation measures can be a complicated and lengthy process, and in areas with severe carbon monoxide or oxidant problems, completion of some of the adopted measures may extend beyond 1982. Implementation of even these very extensive transportation measures, however, must be initiated before December 31, 1982.

In the case of plan revisions that make the requisite showing to justify an extension of the date for attainment, the portion of the 1979 plan submittal for transportation measures must:

1. Contain procedures and criteria adopted into the SIP by which it can be determined whether the outputs of the DOT Transportation planning process conform to the SIP.

2. Provide for the expeditious implementation of currently planned reasonable transportation control measures. This includes reasonable but unimplemented transportation measures in existing SIPS and transportation controls with demonstrable air quality benefits developed as part of the transportation process funded by DOT.

3. Present a program for evaluating a range of alternative packages of transportation options that includes, as a minimum, those measures listed above for which EPA will develop information documents. The analyses must identify a package of transportation control measures to attain the emission reduction target ascribed to it in the SIP.

4. Provide for the evaluation of long range (post-1982) transportation and growth policies. Alternative growth policies and/or development patterns must be examined to determine the potential for modifying total travel demand. One of the growth alternatives evaluated should be that prepared in response to Section 701 of the Housing Act of 1954, as amended.

5. Include a schedule for analysis and adoption of transportation control measures as expeditiously as practicable. The comprehensive analysis of alternatives (item 2 above) must be completed by July 1980 unless the designated planning agency can demonstrate that analysis of individual components (e.g., long range transit improvements) may require additional time. Adopted measures must be implemented as expeditiously as practicable and on a continuous schedule that demonstrate reasonable further progress from 1979 to the attainment date. Determinations of the reasonableness of a schedule will be based on the nature of the existing or planned transportation system and the complexity of implementation of an individual measure.

Additional Carbon Monoxide and Oxidant Monitoring Requirements

It is EPA's policy to require that all SIPS which provide for attainment of the oxidant standard after December 31, 1982, must contain commitments to implement a complete oxidant monitoring program in major urbanized areas in order to adequately characterize the nature and extent of the problem and to

measure the effectiveness of the control strategy for oxidants. The 1979 plan submittal must provide for a schedule to conduct such CO monitoring as necessary to correct any deficiencies as identified by the Regional Office.

SIPS for Unclassified Areas Redesignated Non-Attainment

With respect to unclassified areas which are later found to be non-attainment areas the state will be required to submit a plan within nine months of the non-attainment determination. During plan development, the state will be required to implement the offset policy for that area. However, it should be noted that in many cases, because of previous plan revisions or adoption of previous control regulations, the baseline for offsets will be more restrictive and thus offsets may be more difficult to obtain. For oxidants, state-wide regulatory development (for at least all sources greater than 100 tons/year), however, would permit the state to utilize the regulations developed for the entire state as the applicable plan for the newly designated non-attainment area. This would normally constitute an approvable SIP per the above criteria and could essentially accommodate the proposed growth within the previously submitted state plan and not require offsets once the area is designated as non-attainment.