

5. PROPOSALS FOR CHANGE:

S.1894, H.R.3054, AND EPA'S PROPOSAL

The leading proposals that address the ozone nonattainment problem include: 1) S. 1894, a comprehensive set of amendments to the Clean Air Act reported from the Senate Committee on Environment and Public Works; 2) H.R.3054, a bill focusing on ozone and carbon monoxide nonattainment introduced by Congressman Waxman and 39 cosponsors; and 3) EPA's proposed post- 1987 ozone policy, as published in the Federal Register on November 17, 1987.

In this chapter, we compare the three proposals in several ways. First, we compare the *overall requirements* adopted by the three proposals. Under this broad category, we discuss:

- o *Deadlines*, including schedules for SIP submittals and approvals, and attainment deadlines for the different categories of nonattainment areas established by each proposal.

- o *Schedules of emissions reductions*. In addition to the ultimate requirement to attain the standard, the proposals include interim schedules of percentage reductions of emissions and control requirements for specific source categories. We discuss which of these requirements will, in practice, be the driving force behind VOC reductions for each proposal. We then compare the percentage reductions in VOC emissions under the three proposals in 1993, 1998 and 2003, assuming that the requirements can be met.

- o *Penalties* in the event of failure, such as sanctions for failing to submit an adequate SIP, penalties for falling behind the required emission reduction schedule, and penalties for not attaining the standard by the specified date.

Next, we compare the details of the *emission control requirements* included in each of the proposals. We divide the control requirements into five categories, some of which overlap:

- o *State-implemented control requirements*, for example, size cutoffs for controls on major stationary sources and stringency of automobile inspection and maintenance **programs**.

o Federally implemented, nationwide regulation, for example, new automobile emission standards or limits on gasoline volatility.

o NO_x controls. Except for California, the States and EPA have in the past exclusively relied on controlling VOCs for lowering ozone levels. Two of the proposals would require NO_x controls in addition to VOC reductions.

o Controls in attainment areas in “transport regions”, for example, in the northeast corridor, where long-distance transport of ozone or precursors may be significantly contributing to nonattainment problems in some areas.

o Long-term strategies, i.e., how each proposal addresses new source growth, maintenance of attainment once it is achieved, and such longer-term control approaches as widespread use of alternatively fueled motor vehicles.

Throughout this chapter, we include relevant background information about current implementation of the Clean Air Act, to put the proposals into context.

5.1 Overall Requirements

Attainment Deadlines And Planning Schedules

The 1977 Amendments established two dates by which nonattainment areas were to attain the ozone standard. Areas with less severe problems were to attain the standard within 5 years, by the end of 1982. Those areas that could not attain the standard by the end of 1982 by adopting all reasonably available control measures were given an additional 5 years (until December 1987, the deadline that recently passed).

Of the new proposals, H.R.3054 sets the tightest attainment schedules. Nonattainment areas must meet the standard within 3, 5 and 10 years, depending on the severity of the problem. EPA's post- 1987 ozone policy establishes the longest schedules. Rather than establishing absolute attainment deadlines, EPA sets a schedule for emissions reductions under which some of the worst areas might take over 20 years to attain the standard. S. 1894 requires areas to attain the standard within 3 to 15 years, depending on the severity of the problem.

Each of the new proposals establishes several categories of nonattainment areas based on: 1) the date by which the area is expected to attain the standard, 2) an area's “design value” -- a measure of its peak ozone concentrations, or 3) a combination of the previous two. Because more stringent control is required in those areas furthest from attainment, more time is allowed to attain the standard, A list of nonattainment areas and their design values can be found in Section 2.2.

The new proposals also set schedules for submittal and approval of SIPS. Again, H.R.3054 sets the tightest schedules, calling for completion of the process within 15 months after enactment. EPA's proposed policy is the longest, allowing about 3 years.

The next two subsections discuss the deadlines included in each of the proposals in greater detail. A later section presents OTA's estimates of the scheduling of emissions reductions under each of the proposals.

Attainment deadlines (by category of nonattainment area):

The three proposals establish the following categories of nonattainment areas and attainment deadlines:

S.1894:

The Senate Environment Committee proposal creates five categories of nonattainment areas, with attainment dates of 1991, 1993, 1998, 2003, and unspecified, depending on the severity of the problem. More stringent controls are required in each successive category.

- 1) Nonattainment areas with a design value less than 0.14 ppm and that are able to attain the standard by 1991 have the fewest control requirements.
- 2) Areas with a design value less than 0.18 ppm are presumed to be able to attain by 1993. However, those areas that declare that they cannot attain by 1993 by adopting all of the source-specific controls required for such areas under the bill have until 1998 to attain.
- 3) All areas with a design value less than 0.27 ppm must attain by 1998.
- 4) Areas with a design value 0.27 ppm or greater are presumed to be able to attain by 2003.
- 5) Areas with a design value 0.27 ppm or greater that cannot demonstrate attainment by 2003 may follow a fixed schedule of emissions reductions and more stringent source-specific controls, in lieu of a fixed attainment deadline.

Three year extensions are possible if additional control requirements are met. Areas that receive extensions are to adopt the control requirements of the next highest category,

H. R. 3054:

The Waxman bill establishes 3 categories of nonattainment areas with attainment deadlines of 3, 5, and 10 years. Again, more stringent controls are required in each successive category.

- 1) Nonattainment areas with a design value less than 0.144 ppm must attain the standard within 3 years of enactment.
- 2) Areas with a design value between 0.144 and 0.18 ppm must attain within 5 years of enactment.
- 3) Areas with a design value 0.18 ppm or greater must attain within 10 years of enactment.

Areas that cannot attain the standard by the required 3-year or 5-year deadline become subject to the requirements of 5-year and 10-year areas, respectively.

EPA post-1987 ozone policy:

Unlike the other two proposals, EPA's post- 1987 ozone policy contains only one "deadline" -- demonstrating attainment within about 6 years from the time EPA calls for a SIP revision. The proposed policy does, however, establish several categories of nonattainment areas based on whether additional controls are needed to attain the standard, and if so, whether attainment can be demonstrated within the six-year time frame. Rather than establishing attainment deadlines, the categories determine planning requirements and whether EPA will impose certain penalties for failure. EPA's post- 1987 policy establishes three major categories:

- 1) Nonattainment areas with design values less than 0.16 ppm that can demonstrate attainment within about 6 years through existing and federally implemented control measures alone.
- 2) Areas able to demonstrate attainment within about 6 years by applying additional control measures.
- 3) Areas not able to demonstrate attainment within 6 years.

Some rural nonattainment areas that exceed the standard because of transport of ozone or precursors from outside of the area are classified separately.

Schedules for SIP submittals and approvals:

Under the 1977 Clean Air Amendments, EPA was to identify and list nonattainment areas by early 1978. The States had to revise plans for each of their nonattainment areas and submit SIPS to EPA by January 1, 1979, about 16 months after enactment. EPA was required to approve or disapprove these plans by June 30, 1979, six months after the States submitted them.

EPA and the States did not succeed in meeting many of the deadlines established in the 1977 Amendments. By April 1980, 15 months after SIPS were due, about 20 percent of the areas had submitted SIPS, half of which were either incomplete or considered deficient by EPA.¹This failure to have SIPS developed and approved in a timely manner continued through the 1980s.

Table 5-1 displays the SIP actions required of the States and EPA, and compares the amount of time allowed by Congress in the 1977 Amendments to complete these actions with the amount of time it actually took. As the table shows, the time frame specified by the Clean Air Act for the completion of 1979 SIP submittals was substantially exceeded by the States and EPA. Rather than taking a little under two years from enactment to approval or disapproval of a SIP, as required under the 1977 Amendments, the entire process took about three to four and a half years.

The schedules for SIP submittals and approvals under the new proposals follow:

s. 1894:

Under the Senate Environment committee proposal, States must submit revised SIPS for nonattainment areas before 1990. EPA must approve or disapprove the SIP within 6 months after the revision is submitted (no change from current law).

H. R.3054:

Under the Waxman bill, States must submit revised SIPS within 9 months of enactment. EPA must approve or disapprove the SIP within 6 months after the revision is submitted.

EPA post-1987 ozone policy:

SIPS must be submitted within 2 years from the date EPA calls for revisions. EPA expects to complete review of each SIP within about 1 year after submittal. Nonattainment areas that will require long-term measures to attain the standard may be granted an additional 3 years for final SIP submittal, but must still submit an initial SIP in 2 years.

¹PES Study for NCAQ, 1980, p. 4-21-

Table 5-1. Time Requirements for SIP Process Under the 1977 Clean Air Act Amendments

<u>Action</u>	<u>Required Time</u>	<u>Actual Time</u>	<u>Difference</u>
1. Designation of a state's attainment status .	6 months (from promulgation of Amendments)	8 months	2 months
2. States' development of technical data base.		3 to 6 months minimum; 15 to 24 months maximum ¹	
3. State submission of revised SIP (including development of ozone control strategy and approval of SIP regulations by State or local regulatory agency) .	By January 1, 1979 (10 months from attainment designation)	19 to 33 months ^{2,3,4}	9 to 23 months
4. EPA review and approval or disapproval of SIP.	Act allows 6 months between date SIPs were due (1/79) and date construction ban was to have been imposed (6/79)	9 to 24 months ⁵	3 to 18 months
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TOTAL TIME	22 months (1.8 years)	36 to 53 months (3.0 to 4.4 years)	14 to 43 months (1.2 to 3.6 years)

¹Study of the 1979 State Implementation Plan Submittals: An Overview of the SIP Review Process at the State Level and the SIPs for Particulate Matter, Sulfur Dioxide and Ozone. Pacific Environmental Services, Inc. , for the National Commission on Air Quality, December 1980.

²PES, 1980.

³To Breathe Clean Air, National Commission on Air Quality, Washington, D.C., March 1981.

⁴Many States started working on SIP revisions as early as 1975 or 1976, about 12 to 26 months before the 1977 Clean Air Act Amendments. This time was not included in the 19-33 month "actual" timeframe listed for Action #3.

⁵NCAQ, 1981; PES, 1980; and comments of participant in OTA "Ozone and the Clean Air Act" Workshop, September 30, 1987.

Schedules Of Emission Reductions

In each of the proposals, the driving force behind emissions reductions is one or more of several types of requirements that must be met by specified dates. These requirements include: 1) source-specific technology or performance standards, 2) area-wide emission reduction requirements, and 3) attaining the standard.

We first present our subjective judgments about which of the requirements will, in practice, be the driving force behind emissions reductions in each proposal. Our judgments are based on two factors: 1) the difficulty of achieving each target by the specified date and 2) the severity of the sanctions for not meeting each of the requirements. We then present estimates of the overall requirements for VOC reductions (as a percentage below 1985 emissions) for each of the three proposals by 1993, 1998, and 2003.

Driving forces behind emission reductions

While none of the proposals alters the Act's ultimate requirement that the standard be attained, the penalty for not attaining the standard by the specified date varies considerably among the proposals. Each of the proposals adds interim requirements and specifies sanctions (again, of varying seriousness) if the requirements are not met by the dates specified.

All three proposals require some or all areas to achieve a set schedule of emissions reductions. Though a requirement for regular increments of emissions reductions was a relatively minor component of the 1977 amendments, it is an important driving force behind all three new proposals.

Both S. 1894 and H.R.3054 also include source-specific technology or performance standards, with S. 1894 requiring the most source-specific controls of the two. While both S. 1984 and H.R.3054 set a series of deadlines for attaining the standard, S.1894's penalties for not meeting the deadline are much more stringent.

Discussions of the driving forces behind reductions in each of the new proposals follow:

s. 1894."

Under the Senate Environment Committee bill, the driving force behind emissions reductions varies by the severity of the nonattainment problem. For those nonattainment areas with low design values (less than about O. 14 ppm), the source-specific control

requirements are probably the toughest to meet. For most other areas, the bill's requirement for meeting a specified schedule of emissions reductions is probably the most important driving force.

Though the bill sets 1993 as the attainment deadline for many areas, those areas that cannot attain the standard by adopting the source-specific control requirements required under the bill can extend the deadline until 1998. Areas with a 1998 attainment deadline must meet an interim schedule of emission reductions: 33 percent below 1987 emissions by 1992, 50 percent by 1995, and an additional 15 percent each 3-year period until attainment. For most areas, if this schedule is met, attainment by the bill's deadlines is quite possible.

H.R. 3054:

The Waxman bill, like S. 1894, is driven by different requirements depending on the severity of the nonattainment problem. For those nonattainment areas with design values 0.144 ppm or less, the only requirement is to attain the standard within three years of enactment.

For those nonattainment areas with higher design values, the Waxman bill places its greatest emphasis on the requirement to meet an annual schedule of emission reductions. Under the bill, the Administrator is to specify the reductions each area needs to attain the standard and establish a schedule to achieve the reductions by the attainment deadline. It is this annual schedule of area-wide emission reduction requirements that is the driving force in the bill. Though requirements to actually attain the standard by specified deadlines are included in the bill, penalties for failure to attain the standard are much less severe than the penalties for falling behind the reduction schedule assigned by EPA.

Less emphasis is placed on source-specific control requirements in H. R.3054 than in S. 1894. However, the bill specifies a substantial number of source-specific requirements for the worst nonattainment areas, those with design values 0.18 ppm or higher, and for nonattainment areas that have not attained the standard within five years after enactment.

EPA post - 1987 ozone policy:

EPA's post- 1987 policy is driven by the single requirement for areas to follow a specified area-wide schedule of emissions reductions. Areas must achieve emissions reductions of 15 percent below 1987 levels by 1993 (not counting reductions from federally implemented measures or pre - 1987 control requirements) and an additional 9 percent below

1987 levels every 3 years thereafter until attainment. Like the Waxman bill, it is this schedule of area-wide emission reduction requirements that is the driving force in the EPA policy.

Of the three proposals, the EPA plan includes the fewest source-specific control requirements. EPA believes that current law does not require them to impose sanctions for failure to attain the standard and does not plan to do so.

VOC Emissions Reductions Through 2003:

In this section, we present our estimates of the VOC emissions reductions required under each of the proposals over the next 15 years. In each case, we assume that nonattainment areas will, if given a choice, choose the set of requirements that imposes the slowest schedule of emissions reductions possible under the proposal. (Some areas might choose faster schedules to avoid certain source-specific controls often required as a condition for the slower schedule, but such cases are difficult to predict.)

Tables 5-2 through 5-4 show our estimates of the VOC reductions required, as a percent of 1985 emissions, for 1993, 1998, and 2003. These are based on our conclusions about the driving forces behind each of the proposals presented in the previous section, and city-specific analyses of control requirements to meet the standard presented in Chapter 3.

Each table includes separate estimates for four design value categories used in the proposals. (Note, however, that not all categories are used in all proposals.) Where appropriate, we present both an average reduction figure, and under it, a range that corresponds to the variation among all cities in the category. The details of the reduction requirements are presented in a later section of this chapter. Here we present a rough estimate of the total reduction requirements.

Table 5-2 shows the VOC reduction targets for 1993. Overall, the Senate Committee bill requires the highest percentage of VOC emissions reductions by 1993 and the EPA proposal the lowest. This varies by nonattainment category, however, as can be seen in the table and discussed briefly below.

For nonattainment cities with the least severe problem (design values in the range of 0.13 to 0.14 ppm), all three proposals require approximately the percentage reductions in VOC emissions (20 to 40 percent) needed to attain the standard. However, for some areas with design values of 0.13 ppm, the source-specific requirements of S. 1894 may result in slightly higher reductions than needed to attain the standard.

Table 5-2--VOC Emission Reduction Requirements by 1993 Under
 s. 1894, H.R. 3054, and EPA's Post-1987 Ozone Policy

Note that for some categories, cities are allowed to choose either attainment or a percentage emission reduction requirement. Both the average reduction requirement and the range is shown.

Design value category (ppm ozone)	1985 emissions (1000 tons/yr)	To attain the standard (%)	S.1894 (%)	H.R. 3054 (%)	EPA post-1987 policy (%)	Potential reductions from 1985 emissions, based on OTA analysis (%) ^a
0.13 - 0.14	2,200	31 (19-44)	Attainment <u>or</u> 40	Attainment	Attainment <u>or</u> 30 (19-38)	28
0.15 - 0.17	3,600	53 (40-65)	Attainment <u>or</u> 40	Attainment	30 (22-35)	29
0.18 - 0.26	1,100	60 (52-69)	40	30 (26-35)	26 (23-27)	25
0.27 or higher	770	84 (80-90)	40			22

^a This column shows the projected VOC emissions reductions (as a percentage of 1985 levels) that each group of cities can achieve by 1993 if all additional mobile and stationary source control strategies we analyzed are adopted in addition to the State and EPA VOC regulations in place in 1985.

Table 5-3--- VOC Emission Reduction Requirements by 1998 Unclear
 S. 1894, H.R. 3054, and EPA's Post-1987 Ozone Policy

Note that for some categories, cities are allowed to choose either attainment or a percentage emission reduction requirement. Both the average reduction requirement and the range is shown

Design value category (ppm ozone)	1985 emissions (1000 tons/year)	To attain the standard (%)	S. 1894 (%)	H.R. 3054 (%)	EPA post-1987 policy (%)
0.13 - 0.14	2,200	31 (19-44)	Attainment	Attainment	Attainment
0.15 - 0.17	3,600	53 (40-65)	Attainment	Attainment	45 (37-51)
0.18 - 0.26	1,100	60 (52-69)	Attainment or 65	Attainment	40 (36-40)
0.27 or higher	770	84 (80-90)	65	Attainment	37 (33-41)

Table 5-4--VOC Emission Reduction Requirements by 2003 Under
S. 1894, H.R. 3054, and EPA's Post-1987 Ozone Policy

Note that for some categories, cities are allowed to choose either attainment or a percentage emission reduction requirement. Both the average reduction requirement and the range is shown.

Design value category (ppm ozone)	1985 emissions (1000 tons/year)	To attain the standard (%)	S. 1894 (%)	H.R. 3054 (%)	EPA post-1987 policy (%)
0.13 - 0.14	2,200	31 (19-44)	Attainment	Attainment	Attainment
0.15 - 0.17	3,600	53 (40-65)	Attainment	Attainment	Attainment <u>or</u> 56 (49-62)
0.18 - 0.26	1,100	60 (52-69)	Attainment	Attainment	51 (48-52)
0.27 or higher	770	84 (80-90)	Attainment <u>or</u> 90	Attainment	49 (48-51)

For the next group of cities, those with design values between 0.15 and 0.17 ppm, H.R.3054 requires attainment by 1993. S.1894 presumes attainment by this date, but areas can opt for a later deadline. We estimate that attainment would require VOC reductions in the range of 40 to 65 percent -- a level probably not achievable by 1993. In such a situation S. 1894 specifies a minimum of 40 percent emissions reductions. The EPA proposal requires the lowest reductions, between about 20 and 35 percent.

For the next category, cities with design values between 0.18 and 0.26 ppm, S. 1894 once again requires VOC reductions of about 40 percent. H.R.3054 requires cities to meet a schedule assigned by EPA, which we estimate as half the reductions needed to attain the standard, or about 25 to 35 percent. The EPA proposal would require reductions in these cities of about 25 percent.

In the cities with the highest ozone concentrations, those with design values above 0.27 ppm, we estimate that both the Senate Committee bill and the Waxman bill require reductions of about 40 percent by 1993. EPA's proposal requires reductions of about 25 percent.

The last column in Table 5-2 repeats our estimates of the reductions achievable from the control strategies we were able to analyze in Chapter 3. Note that by about 1993, all three proposals require emissions reductions about *equal to or greater than?* the amount obtainable from the near-term control measures that we were able to identify.

Table 5-3 shows the VOC reductions required by 1998. By 1998, the Waxman bill requires more VOC control in some areas than the Senate committee bill; the EPA proposal requires the least. Under H.R.3054, all areas are required to attain the standard by 1998 or earlier. As shown in the third column of the table, this might require VOC reductions in excess of 80 percent in areas with the highest design values. The Senate Committee bill requires attainment in most areas or minimum emission reductions of 65 percent below current levels. The EPA proposal requires the lowest reductions, in the range of 40 percent. This would bring most cities with design values below about 0.15 ppm into attainment.

Table 5-4 displays the VOC reduction requirements in 2003, 15 years from now. Again, under H.R.3054, all areas are required to have attained the standard by 1998. S.1894 requires attainment or, at minimum, reductions of 90 percent below current levels. The EPA proposal requires reductions of about 50 percent, enough to bring most cities in the two lowest design value categories into attainment.

Penalties In The Event Of Failure

Each of the three proposals specifies penalties in the event of failure to meet its various requirements. All three proposals distinguish between: 1) the failure of a State to submit an adequate SIP or to implement the required emissions reductions and 2) failure to attain the standard by a given date. Failure to meet the first set of requirements leads to serious sanctions in all three proposals. Failure to actually attain the standard by a given date results in penalties under both the Senate bill and the Waxman bill, with the Senate bill's penalties the more severe of the two. The EPA proposal does not include penalties for failure to attain by a set date, only for failure to adequately plan for attainment.

The Senate and House proposals also include penalties or default provisions in the event EPA does not issue control technique guideline documents (CTGs) for several categories of sources. The Senate bill adds a new penalty for owners of stationary sources that fail to implement reductions required in certain situations.

In this section, we present the penalties included in the proposals for each of the four situations mentioned above.

Failure to adequately plan or implement reductions

For failure of a State to submit an adequate SIP by the required date, or failure of a State or local area to adequately implement required emissions reductions, the proposals include the following penalties:

s. 1894:

- 1) Ban on construction or modification of major stationary sources in the nonattainment area. (The ban applies to new sources emitting more than 25 tons per year of VOC or NO_x, and modifications larger than 10 tons per year.)
- 2) No Federal highway funds other than for safety, mass transit, or transportation improvement projects related to air quality.
- 3) In areas that choose a deadline later than 1993, no sewer hookups to a publicly owned sewage treatment works unless each ton of VOC emissions from or associated with the sewage treatment plant is offset by 4 tons of reductions elsewhere in the nonattainment area.

H.R. 3054:

- 1) No Federal highway funds other than for safety, mass transit, or transportation improvement projects related to air quality.
- 2) Each ton of emission increases from new or modified stationary sources must be offset by 5 tons of reductions from other sources in the nonattainment area.

EPA post - 1987 ozone policy:

- 1) Mandatory ban on construction or modification of major stationary sources in the nonattainment area. (The ban applies to new sources emitting more than 100 tons per year of VOC, and modifications larger than 40 tons per year.)²
- 2) Discretionary ban on federal highway funds other than for safety, mass transit, or transportation improvement projects related to air quality.³
- 3) Discretionary ban on federal sewage treatment grants.⁴
- 4) Discretionary ban on federal grants to a State's air pollution control agency.⁵

Failure to attain the standard

For failure to attain the standard by the required date, the proposals include the following penalties:

S. 1894:

- 1) Ban on construction or modification of major stationary sources in the nonattainment area.
- 2) No Federal highway funds other than for safety, mass transit, or transportation improvement projects related to air quality.

H.R. 3054:

- 1) Areas with a design value less than 0.144 ppm become subject to the requirements for areas with a design value between 0.144 and 0.18 ppm,
- 2) Areas with a design value between 0.144 and 0.18 ppm become subject to the requirements for areas with design values greater than 0.18 ppm,

²Based on Section 11 (a)(2)(I) of the current Act, which requires the Administrator to prohibit the construction of major stationary sources in **nonattainment** areas if a SIP revision is inadequate.

³Based on Section 176(a) of the current Act, which requires the Administrator to withhold federal highway funds, except those for safety, mass transit and transportation improvement projects related to air quality. EPA interprets this sanction to be dependent on a discretionary finding by the Administrator that an area failed to make a reasonable effort to submit a plan meeting Part D requirements. EPA's interpretation was recently upheld in court.

⁴Based on Section 316 of the current Act, which allows the Administrator discretion to withhold, condition or restrict federal grants for sewage treatment plant construction.

⁵Based on Section 176(b) of the current Act, which enables the Administrator to halt federal air program grants if a State or local area fails to adequately implement their SIP. EPA has interpreted this sanction to be discretionary. Others argue that it is mandatory.

- 3) Areas with a design value greater than 0.18 ppm must offset each ton of emissions increases from new or modified stationary sources with 5 tons of reductions from other sources in the nonattainment area.

EPA's post - 1987 ozone policy:

None proposed.⁶

Failure of EPA to issue required "control technique guidance" documents

If EPA fails to issue required control technique guidance documents (CTGs) by the required date, the following penalties are proposed:

S. 1894:

Sources in the category to which the CTG would have applied are required to reduce emissions by 90 percent from uncontrolled levels.

H.R.3054:

Sources *in* the category are required to pay an annual fee of \$5000 per ton of VOC and NO_x emitted.

EPA post - 1987 ozone policy:

Not applicable.

Failure of stationary sources to control

For failure of stationary sources to implement required reductions, the following penalties are proposed:

S. 1894:

In areas with a design value greater than 0.18 ppm, sources that do not reduce emissions by the percentage required for the nonattainment area as a whole are required to pay an excess emissions penalty equal to the cost of control, or an annual penalty of \$5000 per ton, whichever is greater.

H.R.3054:

No new penalties proposed.

⁶Note that GAO believes that Section 110(a)(2)(I) requires the Administrator to prohibit the construction of major stationary sources in this case. EPA has held that this sanction should not apply to areas with approved plans that predicted attainment by the deadline but failed to actually attain the standard by the deadline.

EPA post - 1987 ozone policy:

No new penalties proposed.

5.2 Control Requirements

To help compare the control requirements of the three proposals, we have organized the requirements into five categories. Because air pollution control under the clean Air Act relies on a partnership between EPA and State and local governments, our first two categories present: 1) controls to be implemented by the States in nonattainment areas and 2) federally implemented controls that apply nationwide.

Three additional categories are then discussed: 1) controls in areas that are currently in attainment, but that contribute to nonattainment in other regions through transport of ozone or the pollutants from which it is formed, 2) controls on nitrogen oxides (previously applied only in California), and 3) long-term strategies to attain or maintain compliance with the standard. The first two, if adopted, would be new additions to the Clean Air Act. The last category is highlighted because of the importance of controlling new sources of emissions (a problem identified as one of the reasons why the 1977 Amendments were less effective than anticipated).

Control Requirements To Be Implemented BY States In Nonattainment Areas

In each of the proposals different requirements apply to nonattainment areas depending on their “design value” -- a measure of peak ozone concentrations -- and the date by which they are expected to attain the standard. These categories were presented in a previous section; this section provides details on the controls specified for each category of nonattainment area in the new proposals and under existing law.

Both S. 1894 and H. R.3054 require EPA to issue new “control technique guidelines” (CTGs), which establish the level of control considered to be “reasonably available” (reasonably available control technology or RACT) and thus required for stationary sources in nonattainment areas. The requirements for new CTGs are also presented in this section.

As background, we first review the requirements of the current Act. The Clean Air Act Amendments of 1977 created two categories of nonattainment areas. The following State-implemented controls were required under regulations issued by EPA:

1) Areas that could demonstrate attainment by December 1982:

‘Reasonably available control technology’ (RACT) for all stationary sources of VOC emitting greater than 100 tons per year, for which EPA issued CTGs prior to 1979.⁷

2) **Areas that received extensions of the attainment deadline to December 1987** (“extension” areas):

- a) **RACT for all stationary sources of VOC for which CTGs have been issued, including those issued 1979 and later.**⁸
- b) RACT for all stationary sources of VOC emitting greater than 100 tons per year for which CTGs have not been issued.
- c) Inspection and maintenance (I/M) program for highway vehicles.
- d) “Lowest achievable emission rate” (LAER) of VOC for new stationary sources emitting more than 100 tons per year or modified stationary sources emitting more than 40 tons per year.

The new proposals require the following controls to be implemented by the States in nonattainment areas:

S.1894:

The Senate Environment Committee proposal creates five categories of nonattainment areas, with the following State-implemented controls required:

⁷Prior to 1979, EPA issued the following **CTGs**, which presumptively determine **RACT**:

- 1) Surface coating regulations, including **CTGs** for coating cans, coils, paper, fabrics, autos and light duty trucks, metal furniture, magnet wire, large appliances, flatwood paneling, and miscellaneous metal parts.
- 2) Other solvent-related regulations, including **CTGs** for graphic arts, metal decreasing, and **drycleaners** using **perchloroethylene**.
- 3) Petroleum-related regulations, including **CTGs** for bulk gasoline plants and terminals, liquids in fixed- and floating-roof tanks, miscellaneous sources in petroleum refineries, gasoline tank trucks, and delivery of gasoline to service stations.
- 4) Several additional regulations, including rubber tire manufacture, pharmaceutical manufacture, and cutback asphalt.

⁸EPA issued the following **CTGs** 1979 and later:

- a) Regulations for large petroleum **drycleaners**.
- b) Synthetic organic chemical industry (**SOCMI**) related regulations, including **CTGs** for high density plastic resins, air oxidation processes, volatile organic storage tanks, and leaks.
- c) Regulations applying to leaks from natural gas and gas processing plants.

- 1) Areas with a design value less than 0.14 ppm that can attain by 1991:
 - a) At least one of the following mobile-source related measures:
 - 1) Enhanced inspection and maintenance (I/M) program for highway vehicles in urban areas with more than 100,000 people.
 - 2) "Stage II" control devices on gasoline pumps to capture emissions during refueling.
 - 3) Use of alternative fuels by centrally-fueled fleets with 50 or more vehicles.
 - b) RACT for both VOC and NO_x on stationary sources emitting greater than 25 tons per year.
 - c) LAER for both VOC and NO_x for new stationary sources emitting more than 25 tons per year or modified stationary sources emitting more than 10 tons per year.
 - d) "Such other measures as may be necessary to provide for attainment".

2) Areas that can attain by 1993:

All of the measures listed in 1) above, including *all three* mobile-source related measures.

3) Areas that choose a deadline later than 1993:

All of the measures listed in 1) above (including all three mobile-source related measures), plus:

- a) Adoption of "transportation control measures" (TCMs) to offset growth in vehicle miles traveled (VMT), or emissions associated with increases in VMT.
- b) Area-wide emissions reductions (below the 1987 base) of both VOC and NO_x:
 - 33 percent by 1992,
 - 50 percent by 1995,
 - 65 percent by 1998.
- c) Each stationary source emitting more than 25 tons per year of VOC or NO_x must achieve reductions of both pollutants from 1987 levels at least equal to the area-wide requirement.

4) Areas with a design value of 0.27 ppm or greater:

All of the measures listed in 3) above, plus, in each 3 year period after 1998 until attainment, an additional 15 percent area-wide emission reduction (below the 1987 base) of both VOC and NO_x,

5) Areas that cannot demonstrate attainment by 2003:

All of the measures listed in 4) above plus:

- a) Adoption of transportation control measures to assure that passenger vehicle occupancy on highways exceeds 1.5 people per vehicle.
- b) Emission standards for off-highway vehicles at least as stringent as those in effect for cars.
- c) By 1998, 15 percent, and by 2003, 40 percent, of motor vehicles must be able to use alternative fuels.
- d) Commercial and residential sources of VOC and NO_x emitting more than one ton per year must reduce emissions to the maximum extent possible.

The Senate Environment Committee proposal requires EPA to issue the following CTGs:

- 1) Within two years of enactment, EPA must issue CTGs for sources emitting more than 25 tons per year of VOC or NO_x, for the following 11 source categories:

Wood furniture coating; autobody refinishing; metal rolling; synthetic organic chemical industry (SOCMI) distillation; SOCMI batch process; hazardous waste treatment, storage, and disposal facilities; bakeries; sewage treatment plants; web offset lithography; plastic parts coating; and coke oven by-product plants.

- 2) Within four years of enactment, EPA is to revise all existing CTGs to be consistent with the bill's definition of "reasonably available control technology". These CTGs are to apply to sources emitting more than 25 tons per year of VOC or NO_x.

H.R.3054:

The Waxman bill creates three distinct categories of nonattainment areas, with the following State-implemented controls required:

- 1) Areas with a design value less than 0.144 ppm:

Annual percentage reduction in VOC and NO_x sufficient to attain the standard within 3 years, as calculated by EPA.

- 2) Areas with a design value between 0.144 and 0.18 ppm:

Annual percentage reduction in VOC and NO_x sufficient to attain the standard within 5 years, as calculated by EPA, plus:

- a) Enhanced inspection and maintenance (I/M) program for highway vehicles in urban areas with more than 100,000 people.
- b) LAER for both VOC and NO_x for new or modified stationary sources emitting greater than 25 tons per year.

3) Areas with a design value greater than 0.18 ppm:

Annual percentage reduction in VOC and NO_x sufficient to attain the standard within 10 years, as calculated by EPA, plus:

- a) Enhanced inspection and maintenance (I/M) program for highway vehicles in urban areas with more than 100,000 people.
- b) LAER for both VOC and NO_x for new or modified stationary sources emitting greater than 10 tons per year.
- c) Fleets of 15 or more vehicles must be capable of using alternative fuels. By 1997, 30 percent of new motor vehicles must be able to use alternative fuels.
- d) Catalytic control technology (or technology that achieves equivalent emission rates) on all oil- and coal-fired boilers.

The Waxman bill requires EPA to issue CTGs for the 12 categories of uncontrolled stationary sources that make the most significant contribution to ozone formation, in the judgment of the Administrator. EPA must promulgate 4 CTGs by 1988 and 2 CTGs per year for succeeding years. The CTGs are to apply to sources emitting more than 25 tons per year of VOC or NO_x.

EPA post - 1987 ozone policy:

The EPA proposal creates three distinct categories of nonattainment areas, with the following State-implemented controls required:

- 1) Areas with a design Value less than 0.16 ppm and able to demonstrate attainment with federally implemented and existing control measures within about 6 years:

No new control requirements

- 2) Areas able to demonstrate attainment within about 6 years:

- a) Enhanced inspection and maintenance (I/M) program for highway vehicles in urban areas with more than 200,000 people.
- b) RACT for all stationary sources of VOC emitting greater than 100 tons per year (including those for which CTGs have not been issued), *unless* the State can convincingly demonstrate that not all controls will be required to reach attainment.
- c) VOC emissions reductions of at least 3 percent per year below 1987 levels, not counting reductions from 1) federally implemented measures or 2) control requirements imposed prior to 1987.

3) Areas not able to demonstrate attainment within 6 years:

All of the measures listed in 2) above, with no exemptions for the requirement of RACT on major stationary sources.

Federally Implemented. Nationwide Control Requirements

In this section we review the nationwide controls required under current laws and regulations and summarize the changes and additions under the new proposals.

Current law and regulations include the following controls:

1) New source performance standards (NSPS) requiring the “best available control technology” on certain new stationary sources of VOC and NO_x.⁹(Note that the “lowest achievable emission rate” for VOC required for new sources in nonattainment areas can be more stringent than the nationwide NSPS controls.)

2) Tailpipe exhaust standards for passenger cars:

0.41 grams per mile (g/mi) hydrocarbon (HC) and 1.0 g/mi NO_x. Standards must be met for at least 5 years or 50,000 miles.

3) Tailpipe exhaust standards for light duty trucks:

a) 0.8 g/mi HC and 1.2 g/mi NO_x for trucks with gross vehicle weights up to 3750 lbs.

b) 0.8 g/mi HC and 1.7 g/mi NO_x for trucks with gross vehicle weights over 3750 lbs.

Standards must be met for 120,000 miles.

4) Tailpipe exhaust standards for heavy duty diesel engines:

a) 1.3 grams per brake-horsepower-hour (g/bhp-hr) HC and 10.7 g/bhp-hr NO_x.

b) 5.0 g/bhp-hr NO_x by model year 1991.

Standards must be maintained for 120,000 miles.

⁹EPA has issued NSPS for the following VOC sources:

- 1) Surface coating regulations, including NSPS for coating large appliances, metal furniture, autos and light duty trucks, beverage cans, metal coils, magnetic tape, pressure sensitive tapes and labels, and flexible vinyl coating.
- 2) Petroleum-related regulations, including NSPS for petroleum refining, refinery wastewater, bulk gasoline terminals, storage vessels, and natural gas production.
- 3) Synthetic organic chemical industry (SOCMI) related regulations, including NSPS for air oxidation equipment, distillation operations, reactors and other equipment.
- 4) Others including NSPS for dry cleaning, graphic arts, synthetic fiber production, and rubber tire manufacture.

- 5) Limits on gasoline evaporation from highway vehicles.

S. 1894:

The Senate Environment Committee proposal includes the following changes and additions to current laws and regulations:

- 1) Tailpipe exhaust standards for passenger cars and trucks under 6000 lbs:
 - a) 0.25 g/mi HC by model year 1992.
 - b) 0.4 g/mi NO_x by model year 1990.

Pollution control equipment must be able to meet these standards for at least 10 years or 100,000 miles.

- 2) Tailpipe exhaust standards for light duty trucks:
 - a) 0.5 g/mi HC by model year 1990.
 - b) 0.5 g/mi NO_x by model year 1990.

Light duty trucks are defined as those with gross vehicle weight (gvw) between 6000 and 8500 lbs and curb weight less than 6000 lbs. Trucks less than 6000 gvw are considered light duty vehicles.

- 3) NO_x exhaust standards for heavy duty vehicles:
 - a) 4.0 grams per brake-horsepower-hour (g/bhp-hr) by model year 1991.
 - b) 1.7 g/bhp-hr by model year 1995.
- 4) "Onboard" technology for cars and trucks to control refueling emissions by model year 1991,
- 5) Limit on the volatility (i.e., rate of evaporation) of gasoline sold during warm weather months of 9 lbs Reid Vapor Pressure (RVP) beginning in 1990.
- 6) Regulations for the following source types, promulgated by EPA within 2 years after enactment, to achieve the degree of control equivalent to adoption of reasonably available control technology (RACT): (1) commercial solvents, (2) consumer solvents, (3) architectural coatings, (4) pesticide application, (5) traffic-marking coatings, and (6) metal-parts coatings for military applications and aerospace- industry applications.

H. R.3054:

The Waxman bill includes the following changes and additions to current laws and regulations:

1) Tailpipe exhaust standards for passenger vehicles:

- a) 0.25 g/mi HC by model year 1992.
- b) 0.4 g/mi NO_x by model year 1990.

Standards must be maintained for 50,000 miles.

2) Tailpipe exhaust standards for light duty trucks:

- a) 0.5 g/mi HC by model year 1990.
- b) 0.5 g/mi NO_x by model year 1990.

Standards must be maintained for 120,000 miles.

3) NO_x exhaust standard for heavy duty trucks of 1.7 grams per brake-horsepower-hour (g/bhp-hr) by model year 1994.

4) "Onboard" technology for cars and trucks to control refueling emissions by model year 1990.

5) Limit on the volatility (i.e., rate of evaporation) of gasoline sold between May 16 and September 15 of 10.5 lbs Reid Vapor Pressure (RVP) beginning in 1990, 9.0 lbs RVP beginning in 1993.

6) Regulations to achieve the lowest feasible emission rate for the following source types, promulgated by EPA by 1990: commercial and consumer solvents, architectural coatings, pesticide application, traffic-marking coatings, and metals-parts coatings in military applications.

EPA post - 1987 ozone policy:

EPA has proposed the following changes and additions to current laws and regulations:

1) Tailpipe exhaust standards for light duty trucks:

- a) 0.41 g/mi HC for trucks weighing less than 6000 lbs gvwt.
- b) 0.5 g/mi HC for light duty trucks weighing 6000 lbs gvwt or greater.

(Advanced notice of proposed rulemaking published September 1986.)

2) "Onboard" technology for cars and trucks to control refueling emissions by model year 1990. (Notice of proposed rulemaking published August 1987.)

3) Limits on the volatility (i.e., rate of evaporation) of gasoline sold between May 16 and September 15 of 10.5 lbs Reid Vapor Pressure (RVP) beginning in 1990, and 9.0 lbs RVP beginning in 1993. (Notice of proposed rulemaking published August 1987.)

Transport Regions

Both ozone and its precursors, VOC and NO_x, can be transported from upwind areas into nonattainment regions downwind. Thus, some fraction of the ozone found in nonattainment areas is not subject to local regulatory authority. If the upwind area is also a nonattainment region, at least some further control will take place to bring the area into attainment with the standard. However, if the upwind region already meets the standard, no further control can be expected. Current law does not provide an adequate mechanism to implement controls in areas that currently attain the standard, but contribute to ozone nonattainment problems in areas downwind.

To address this problem, both S. 1894 and H. R.3054 establish multi-state “ozone transport regions”. Controls are required throughout these multi-state regions, regardless of attainment status. Both bills establish a transport region along the Northeast corridor from Maine to Virginia; S. 1894 establishes a second one in the Midwest. Though the EPA proposal identifies the Northeast corridor as a region where multi-day transport occurs, no additional control requirements are proposed.

Discussions of each of the new proposals follow:

S. 1894:

The bill establishes two “ozone transport regions”: one along the Eastern seaboard from Maine to the northern half of Virginia, plus Vermont, New Hampshire, Pennsylvania and Ohio; the second, which includes Illinois, Indiana, Michigan, and Wisconsin. The Administrator may add States to these regions or create additional regions.

The bill requires:

- 1) Enhanced inspection and maintenance (I/M) program for highway vehicles in urban areas with more than 125,000 people.
- 2) RACT on stationary sources for which EPA has published CTG’s prior to enactment.

A commission of Governors and EPA officials is established to make decisions about additional controls, which must be adopted by all States in the transport region if voted for by a majority of the commission.

H.R. 3054:

The bill establishes one “ozone transport region” along the Eastern seaboard from Maine to Virginia, plus Vermont, New Hampshire, and Pennsylvania. The Administrator

may add States to this region or create additional regions. Individual counties, air quality control regions (AQCRs), or States may be exempted from control requirements if they do not significantly contribute to other region's nonattainment problems. Either the Administrator or a commission of EPA and State air pollution control officials can exempt areas.

Specific control requirements for ozone transport regions are the same as those mandated for areas with design values between 0.144 and 0.18 ppm:

- 1) Enhanced inspection and maintenance (I/M) program for highway vehicles in urban areas with more than 100,000 people.
- 2) LAER for both VOC and NO_x for new or modified stationary sources emitting greater than 25 tons per year.
- 3) It is unclear whether the Administrator can specify additional reductions in VOC and NO_x, and if so, whether the Administrator or the commission decides which source categories are to control emissions.

EPA's post - 1987 ozone policy:

EPA will require that planning areas cover entire metropolitan areas (MSAs or CMSAs) to address single-day transport problems. EPA identifies the Northeast corridor as the only region where multi-day transport is a problem. No special requirements for this region are proposed.

Controls On Emissions Of Nitrogen Oxides

Ozone is produced via chemical reactions of both VOC and NO_x. In the past, EPA has encouraged exclusive reliance on control of VOC emissions to achieve compliance with the ambient air quality standard for ozone. Only California has mandated controls of both VOC and NO_x emissions.

In Section 3.1, we discussed the site-specific situations under which NO_x controls would lower ozone concentrations and the situations where NO_x controls might be counterproductive. Combined VOC and NO_x controls will result in lower ozone concentrations than VOC controls alone in many cities. However, in some cities, for example, Baltimore, Boston, Philadelphia, and Washington, combined controls may lead to higher ozone concentrations in some locations within the urban area than would VOC reductions alone. Further complicating the decision about whether to mandate NO_x controls is the expectation that while NO_x controls might be counterproductive for some locations within the urban area, they might lower ozone concentrations in the next city downwind.

Each of the three proposals includes NO_x controls to some degree, and with varying degrees of flexibility. The Senate Environment Committee proposal requires NO_x reductions from both existing and new sources in all nonattainment areas. The Waxman bill requires some NO_x control, but not as much as the Senate proposal. Control of new sources of NO_x is required; the extent to which existing sources of NO_x must be controlled is left to EPA to decide. The EPA proposal allows States to supplement VOC controls with NO_x controls, and in some cases substitute NO_x controls for VOC, but does not require NO_x controls.

Discussions of each of the new proposals follow:

S. 1894:

The Senate Environment Committee proposal applies controls about equally to sources of both NO_x and VOC. Requirements for reasonably available control technology (RACT) on major stationary sources apply to both VOC and NO_x in nonattainment areas (but to VOC alone in attainment areas in transport regions). Percentage reduction requirements for nonattainment areas that cannot attain the standard before 1993 are identical for both pollutants, as are most other requirements of the bill. NO_x emission standards for new cars and trucks are lowered.

In addition, Title II, the portion of the bill that addresses acid deposition, establishes a Statewide maximum emission rate on NO_x from fossil-fuel fired boilers.

H.R. 3054:

The Waxman bill deals with NO_x control in the following way:

- 1) For all nonattainment areas, the Administrator of EPA must specify the percentage reduction of both VOC and NO_x needed to meet the standard by the assigned deadline. Thus the decision of whether to rely on VOC controls alone or combined VOC/NO_x control from existing sources is left to EPA.
- 2) In nonattainment areas with design values greater than 0.144 ppm, new source controls are required on new and modified stationary sources of NO_x above 25 tons per year.
- 3) **In nonattainment areas with design values greater than 0.18 ppm:**
 - a) New source controls are required on new and modified stationary sources of NO_x above 10 tons per year.
 - b) Catalytic technology for the control of NO_x emissions (or a technology that achieves equivalent emission rates) is required for all oil- and coal-fired boilers.
- 4) NO_x emission standards for new cars and trucks are lowered.

- 5) EPA must issue control technique guidelines for 12 categories of uncontrolled stationary sources. The guidelines are to apply to VOC, NO_x, or both, at the discretion of the Administrator.

EPA's post-1987 ozone policy:

The EPA proposal requires some nonattainment areas (those with high ratios of VOC to NO_x in the ambient air) to evaluate the effectiveness of NO_x reductions. In those nonattainment areas where a State determines that NO_x controls will be beneficial, NO_x controls may be used in addition to VOC controls to satisfy the EPA requirements for "reasonable progress" towards attainment. However, while NO_x controls can supplement VOC controls, they cannot be used to avoid VOC controls on major stationary sources, unless the likelihood of attainment is demonstrated by rigorous air quality modeling.

Long-Term Strategies

Even though most of the requirements listed below have already been presented in earlier sections of this chapter, in this section we highlight the requirements that will help attain or maintain the standard over the long-term. These include such components as more stringent emission standards for gasoline- and diesel-fueled motor vehicles, use of alternatively fueled motor vehicles, and strategies to prevent growth in emissions from stationary sources.

As discussed in Chapter 3, even after applying all near-term control measures OTA was able to analyze, many areas will still not attain the standard. Thus, while many areas' ozone nonattainment problems may be remedied in about five years, for many others, ozone nonattainment may remain as a chronic problem for at least a decade. For such areas, two issues must be addressed: 1) additional controls must be identified, some of which (like new motor vehicle controls or use of alternative fuels) may take a decade or more to take effect and 2) steps must be taken to offset emissions increases due to population and economic growth.

The proposals include the following long-term strategies to address ozone nonattainment problems over the next decade or two:

S. 1894:

The Senate Environment Committee proposal requires:

- 1) SIPS must address maintenance of the standard for 20 years after enactment.

- 2) New stationary sources in nonattainment areas emitting more than 25 tons per year and modified stationary sources emitting more than 10 tons per year must achieve the "lowest achievable emission rate" (LAER). The current cutoffs for most nonattainment areas are 100 tons per year for new sources and 40 tons per year for modified sources.
- 3) Use of alternative fuels for centrally fueled fleets of 50 or more vehicles.
- 4) tighter emission standards for cars and trucks.
- 5) In areas that choose an attainment deadline past 1993:
 - a) Each ton of emissions increases from new or modified major stationary sources must be offset by 2 tons of reductions from other sources in the nonattainment area.
 - b) Growth in vehicle miles traveled (VMT), or emissions associated with VMT growth, must be offset.
- 6) In areas that cannot demonstrate attainment by 2003:

All of the measures listed in 5) above plus:

 - a) Adoption of transportation control measures to assure that passenger vehicle occupancy on highways exceeds 1.5 people per vehicle.
 - b) By 1998, 15 percent, and by 2003, 40 percent, of motor vehicles must be able to use alternative fuels.

H.R.3054:

The Waxman bill requires:

- 1) SIPS to include plans for maintaining the standard.
- 2) tighter emission standards for cars and trucks.
- 3) In nonattainment areas with a design value greater than 0.144 ppm, new or modified stationary sources in nonattainment areas emitting greater than 25 tons per year are subject to new source control requirements. The current cutoffs for most nonattainment areas are 100 tons per year for new sources and 40 tons per year for modified sources. Each ton of emissions increases from new or modified major stationary sources must be offset by reductions of 1.2 tons from other sources.
- 4) In nonattainment areas with design value greater than 0.18 ppm:
 - a) New or modified stationary sources in nonattainment areas emitting greater than 10 tons per year are subject to new source control requirements. Each ton of emissions increases from new or modified major stationary sources must be offset by reductions of 1.5 tons.

- b) Fleets of 15 or more vehicles must be capable of using alternative fuels.
By 1997, 30 percent of new motor vehicles must be able to use alternative fuels.
- c) All new boilers must use catalytic control technology (or equivalent) or burn natural gas, methanol, or ethanol.

EPA's post-1987 ozone policu:

Under EPA's proposed ozone policy:

1) To be redesignated as an attainment area, a State must project emissions and detail control requirements for 10 years after attainment.

2) Under current regulations, new stationary sources in nonattainment areas emitting greater than 100 tons per year and modified stationary sources emitting greater than 40 tons per year must achieve the "lowest achievable emission rate" (LAER). Emissions must either be directly offset with decreases at other sources or the State must adopt a strategy to provide "growth accommodation" by controlling beyond federally prescribed measures and other measures needed to show "reasonable further progress".