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SPECIAL REPORT

June 15, 1990

The House- and Senate-passed clean air bills: a side-by-side comparison

Attainment and maintenance of air quality standards

by Jim Ketcham-Colwill

The House and Senate shortly will begin efforts to reconcile competing versions of the mammoth clean air bill, a daunting task that will require compromise on many important issues before final legislation can be sent to the president.

The House May 23 voted 401-21 to pass its bill (HR 3030, H. Rpt. 101-490, Parts I, II and III) after adopting several major amendments that, with some exceptions, moved the House bill closer to the Senate version. The Senate passed its bill (S 1630) April 3 by a vote of 89-11.

The bills are similar in goals and structure. Both would tighten control requirements for cities that have not attained federal air quality standards, establish a tough acid rain control program, and create a new system for regulating toxic air pollution.

The two bills also would require tighter auto tailpipe standards, mandate cleaner gasoline and clean-fueled vehicles in some cities, and phase out production of chemicals that contribute to depletion of the stratospheric ozone layer.

The sheer volume of differences in the 700-page bills ensures that the conference will take some time. Controversy is inevitable because on a number of issues, the House and Senate chose different paths to reconcile conflicting interests of environmentalists, states, industries, the Bush administration, and different regions of the country.

Despite the differences, the House and Senate are virtually certain to reach a compromise and send a clean air bill to the president for the first time since 1977. Representatives of environmental and industry groups say that the House bill is more stringent in some respects, and the Senate bill more stringent in others.

About this publication: This publication, the first in a series, contains a side-by-side

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comparison of Title I of the House and Senate clean air bills as passed. Title I is aimed primarily at reducing ozone, carbon monoxide and fine particle pollution levels that exceed federal air quality standards in many U.S. cities. The title also contains other amendments to the Clean Air Act to promote attainment and maintenance of air quality standards in clean and dirty air areas.

Subsequent publications will compare other parts of the two bills on acid rain, motor vehicles and fuels, toxic air pollution, ozone layer depletion, and permits and enforcement.

This series will update the Environmental and Energy Study Conference's already published five-part, side-by-side comparison of the Senate-passed bill with the House bill as reported by the House Energy and Commerce Committee. Although much of the original comparison remains valid, the House passed several major floor amendments to the committee version of the bill. (For a summary of the amendments, see May 31 *Special Report*, "Amendments to the House clean air bill [HR 3030].")

Conference outlook: A few House staffers are predicting a quick conference, but most staffers say that the conference will not finish work until September or October. Many issues could provoke controversy.

One of the biggest issues to resolve is how to promote development and use of clean-fueled cars and trucks. The House provisions, developed in a last-minute compromise before House passage, call for a California pilot program mandating production and sale of very clean cars. The Senate bill would require all vehicles sold in the nine cities to meet clean-fueled vehicle standards that are much less stringent. The House bill requires a fleet-vehicle program in more than 30 cities, compared with a nine-city program in the Senate bill.

Negotiators also will have to reach an accord on a second tightening of auto tailpipe standards early in the next century, after an initial round of tighter standards in the 1990s. The Senate bill contains a trigger that would automatically put second-round standards into effect if enough smoggy cities fail to meet the standard by 2001. The House bill would give the Environmental Protection Agency more discretion on whether and how much to tighten standards, but would automatically impose standards similar to those in the Senate bill if EPA failed to make a formal decision.

The House bill authorizes up to \$250 million over five years to compensate and retrain workers who lose their jobs because of the clean air bill. That proposal drew an administration veto threat, but supporters said that it would be politically impossible for President Bush to veto the bill on that basis. The Senate barely rejected a related proposal by a 50-49 vote.

The acid rain control programs in the two bills are similar in structure, but differ on how they reconcile the competing interests of the Midwest, where many dirty, old coal-fired power plants are located, and the "clean" states.

Reaching a compromise on the allocation of marketable pollution allowances is likely to be difficult, both politically and technically.

Both bills would require best technology for controlling air toxics from industrial plants, but they differ on more stringent second-phase standards to provide fuller health protection. The Senate version sets out minimum cancer risk standards for toxic emissions. The House bill would retain a current law requirement that air toxics standards provide "an ample margin of safety to protect the public health." The meaning of that phrase continues to be interpreted by EPA and the courts.

The bills also contain major differences in control requirements that would apply in cities where the air does not meet federal air quality standards for ozone, carbon monoxide and fine particles.

Other differences that might be difficult to resolve involve provisions on permits and enforcement, and requirements for municipal incinerators included only in the Senate bill, a Senate staffer said.

(For more on the conference outlook and politics, see June 4 *Weekly Bulletin*, p. B8.)

Title I differences: The House and Senate requirements for attainment and maintenance of air quality standards are similar in structure, but differ in many significant ways. Most view the House version as more stringent on several key provisions — the size of non-attainment areas, the number of pollution sources required to be regulated, requirements for federal implementation plans, and waivers from progress requirements for cities with dirty air.

Some of the key differences (described further in the following side-by-side comparison) are:

- **Deadlines and classification:** Both bills set deadlines and control requirements for ozone non-attainment areas — areas where ozone levels exceed the federal air quality standard — that vary according to the severity of the pollution. Deadlines and control categories are more graduated in the House bill.

- **Requirements for steady progress toward attainment:** Both bills would require ozone non-attainment areas to make specified percentage reductions in emissions to demonstrate steady progress toward attainment of the ozone health standard. Both bills would allow a waiver from the percentage reduction requirement on grounds of technological infeasibility after the first six years; the Senate bill only would allow a waiver based on cost considerations.

- **Controls on small polluters:** In comparison with the Senate bill, the House bill would apply control requirements to new and existing plants that emit smaller amounts of ozone-forming volatile organic compounds, in the case of ozone non-attainment areas classed as serious or worse.

- **Federal implementation plans:** The House bill would require EPA to issue a federal plan within two years after a state fails to submit an adequate pollution reduction plan for a clean or dirty air area. By contrast, the Senate bill

would give EPA discretion to issue a federal plan if a state fails to submit an adequate plan. In the case of non-attainment areas, EPA would have to impose one or more federal control measures after a specified period.

- *Boundaries of non-attainment areas:* The House bill would automatically expand the boundaries of seriously polluted ozone and carbon monoxide areas — where stringent control requirements would apply — to include the entire metropolitan area. Under the Senate bill, states and EPA would set the boundaries.

- *Sanctions:* Both bills would require EPA to levy at least one sanction if the state fails to submit or fully implement an adequate pollution reduction plan for a non-attainment area. The Senate bill would provide a broader menu of potential sanctions; the House bill requires application of a second sanction unless the failure is corrected within two years.

- *Offset requirements:* Current law requires new plants in non-attainment areas to obtain offsetting emis-

sions reductions from other facilities at a ratio of at least 1-to-1. The House bill, but not the Senate bill, would increase the offset ratio for ozone areas, with the ratio depending on the area's pollution classification.

- *NOX controls:* The House bill contains more extensive control requirements for nitrogen oxides in ozone non-attainment areas.

- *OCS emissions:* The Senate bill would retain Interior Department authority to regulate emissions from outer continental shelf oil drilling and production platforms. The House bill would transfer jurisdiction to EPA, except for the portion of the OCS off four Gulf Coast states.

- *Visibility in the national parks:* The House bill contains more extensive requirements to protect visibility in national parks in the West than the Senate version.

- *Worker compensation and retraining:* Only the House bill contains a five-year, \$250 million program to provide compensation and retraining benefits to workers who lose their jobs because of the clean air bill.

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Title I: Attainment and maintenance of air quality standards

Subject	Senate bill	House bill
<i>General provisions</i>	Both bills contain general provisions regarding air quality planning, designation of attainment and non-attainment areas (clean air and dirty air areas), and requirements generally applicable to non-attainment areas. Highlighted here are provisions on federal implementation plans, sanctions, non-attainment area boundaries, and conformity of transportation plans with clean air plans.	See note in Senate column.
Federal implementation plans	EPA may issue a federal implementation plan, or a partial FIP, when a state fails to submit an adequate state implementation plan (pollution reduction plan) for an attainment or non-attainment (clean or dirty air) area. For non-attainment areas, if the state does not correct the failure within one year after EPA levies a sanction, EPA must require one or more federal control measures. For ozone non-attainment areas, the federal measures must achieve a 3-percent reduction in volatile organic compound (VOC) emissions and include at least one of three measures: stage II at-the-pump controls to capture gasoline vapors, reasonably available control technology (RACT) on many existing plants, or improved inspection and maintenance programs to require tune-up or repair of vehicles exceeding tailpipe standards. For non-attainment areas for other pollutants, at least one control measure is required.	EPA must issue a FIP within two years after a state fails to submit an adequate state implementation plan. The FIP can be a partial or a complete plan, supplementing or replacing the state plan, but must provide for attainment of the air quality standard. The mandatory FIP requirement in the House bill applies to plans for both attainment and non-attainment areas, while the mandatory FIP control measure requirements in the Senate bill apply only to plans for non-attainment areas.

Sanctions for failure to submit and fully implement an adequate plan

For non-attainment areas, EPA must levy sanctions if the state fails to submit an adequate state implementation plan, or fails to fully implement an approved plan. For attainment areas, EPA is given discretion to levy sanctions.

EPA is required to impose at least one of four sanctions:

- immediately if the state is not making reasonable efforts to correct the failure.
- within one year if the state is making reasonable efforts but the state has not corrected the failure.

The four choices are a ban on construction or modification of stationary sources that emit 25 tons per year or more, a cutoff of certain federal highway funds, a ban on new hookups to public drinking water systems, and a total or partial ban on federal grants to the state air pollution program.

Sanctions generally apply within the non-attainment area or a portion of the area. In the case of ozone areas, EPA may extend the construction ban to the area 25 miles beyond the non-attainment area boundary.

Similar. For non-attainment areas, sanctions also are required if the state fails to make any submission required by the act.

One of two sanctions is required unless the failure is corrected within 18 months. A second sanction would apply six months later. Both would apply initially if the state is not making reasonable efforts to correct the failure.

The two choices are a cutoff of certain federal highway funds, or a requirement that new plants or plant modifications obtain offsetting emissions reductions from other pollution sources at a ratio of at least 2-to-1. In addition, EPA is given discretion to impose a total or partial ban on federal grants to the state air pollution program.

EPA may apply the highway funding and offset sanctions in any portion of the state the agency deems reasonable and appropriate. For two years after EPA formally recognizes the deficiency (through disapproving the state plan, or making a finding or determination), EPA is not to levy sanctions on a statewide basis where one or more political subdivisions are principally responsible for the deficiency. Staff say it is ambiguous whether these provisions apply to non-attainment areas as well as attainment areas.

Sanctions for failure to attain the standard by the deadline

The highway sanction bars the transportation secretary from approving or awarding any grant for transportation projects except for listed types of projects. Among those are mass transit projects, traffic flow improvements, driving restrictions, and others that would improve air quality and would not encourage single-occupancy vehicles. Exempt from the prohibition would be projects to eliminate safety hazards and certain bridge rehabilitation or replacement projects.

Except for extreme areas, ozone areas that fail to attain would be bumped into the next higher pollution category, making them subject to tougher controls.

In extreme ozone areas, each major stationary source of VOCs in the area must pay an annual fee of \$5,000 per ton of emissions exceeding 80 percent of the permitted level. The fee would apply in other ozone areas that fail to attain within 15 years of enactment.

Boundaries of non-attainment areas

Boundaries of non-attainment areas are to be proposed to EPA by states; EPA can make adjustments.

The highway sanction bars the transportation secretary from approving or awarding any grant for transportation projects, other than for safety or mass transit.

Except for severe and extreme areas, ozone areas that fail to attain are bumped into the next higher pollution category, making them subject to tougher controls.

In severe and extreme ozone areas, each major stationary source of VOCs in the area must pay an annual fee of \$5,000 per ton of emissions exceeding 80 percent of the actual or permitted level. Also, the 3-percent emissions reduction requirement, including NOx control, continues to apply to the area. Failure to achieve the reductions is subject to sanctions. In certain circumstances, new and existing source requirements for extreme areas are applied in severe areas.

Similar — except that boundaries of serious, severe and extreme ozone and carbon monoxide non-attainment areas would be expanded by operation of law to include the entire metropolitan statistical area (MSA) or consolidated metropolitan statistical area (CMSA). If the state demonstrated to EPA that a portion of an MSA or CMSA does not contain sources that contribute significantly to the violation of the air quality standard, EPA would have to exclude that portion from the non-attainment area.

Conformity of transportation plans with clean air plans

Current law requires federal agencies to ensure that their actions — including approvals and awards of financial assistance for activities or projects, such as highway projects — conform to the state or federal implementation plan. Metropolitan planning organizations (MPOs), which develop transportation plans, are barred from approving any project, program or plan that does not conform to the applicable state or federal implementation plan. The bill provides a definition to clarify the meaning of “conformity.” EPA is to prescribe criteria and procedures for conformity designations within one year of enactment.

A transportation plan conforms only if:

- it provides for implementation of transportation-related provisions of the applicable implementation plan on the schedule in that plan;
- resulting motor vehicle emissions are projected to be consistent with estimates in the implementation plan; and
- the transportation plan will not lead to new violations of air quality standards or delay attainment of the standards or interim reduction goals.

No similar provision. (Opinions vary on whether the Senate bill requires much more project-by-project review than the House bill.)

Generally similar. However, EPA is to issue separate criteria and procedures for determining conformity of transportation plans and projects, and conformity of other actions. Those related to transportation plans and projects require the concurrence of the Transportation Department.

Generally similar.

Conformity of transportation plans is to be determined for the plan as a whole and not for projects in the plan, except as provided in the following provisions.

A transportation project is conforming only if:

- the project comes from a conforming plan;
- the design, scope and emissions of the project have not changed significantly since the conformity finding;
- the emissions from the project remain consistent with emissions reduction schedules in the applicable implementation plan; and
- if not demonstrated when the plan was approved, it is demonstrated that the project will not lead to new violations of air quality standards or delay attainment of the standards or interim reduction goals.

Any project in a conforming transportation plan shall be treated as conforming if:

- it is a control measure from the implementation plan; and
- the design and scope of the project have not changed since the conformity finding regarding the transportation plan.

If the transportation plan has been found to conform within the previous two-year period, other projects shall be treated as conforming only if it is shown that:

- projected emissions from the project would not cause the plans in the non-attainment area to exceed emissions projections and reduction schedules in the implementation plan; or
- the project's emissions are taken into account in a revised transportation plan or implementation plan, before the project is approved.

Requirements for ozone non-attainment areas

Deadlines and classification

Ozone areas would be placed in categories according to the severity of the pollution. Areas with higher pollution levels would be allowed more time to attain the ozone standard, but would be subject to more stringent and more numerous control requirements. The requirements would be in addition to those under existing law.

Similar, but the House bill establishes five categories of areas, compared with four in the Senate bill. Deadlines and minimum control requirements are more graduated than under the Senate bill. State plans must provide for attainment as expeditiously as practicable.

Subject**Senate bill****House bill**

An area would be categorized according to its EPA ozone design value — a near-peak ozone level used to determine whether the area's air meets the ozone standard. The standard is 0.12 parts per million (ppm).

Moderate	5 years	0.12 ppm-0.144 ppm
Serious	10 years	0.144 ppm-0.18 ppm
Severe	15 years	0.18 ppm-0.264 ppm
Extreme	20 years	above 0.264 ppm

Based on 1986-88 EPA data, there would be 62 moderate areas, 31 serious areas, eight severe areas, and one extreme area — Los Angeles.

**Interim progress requirements
(milestones)**

All except moderate ozone areas must reduce emissions of volatile organic compounds (VOCs) by 12 percent within three years of the area's classification, and another 12 percent in the subsequent three years. Plans also must provide for attainment by the deadline for the area set by the bill.

See note in House column.

Similar, except that EPA would have discretion on classifying areas within 5 percent of the design value dividing one category from another.

Marginal	3 years	0.121 ppm-0.138 ppm
Moderate	6 years	0.138 ppm-0.160 ppm
Serious	9 years	0.160 ppm-0.180 ppm
Severe	15 years	0.180 ppm-0.280 ppm
	17 years	0.190 ppm-0.280 ppm
Extreme	20 years	above 0.280 ppm

Based on 1986-88 EPA data, there would be approximately 41 marginal areas, 32 moderate areas, 18 serious areas, eight severe areas, and one extreme area — Los Angeles. Chicago, New York and Houston would be given 17 years, rather than 15 years in the Senate bill, to attain the ozone standard.

All except marginal ozone areas must achieve a 15-percent reduction in VOC emissions within six years of enactment. (See note below.) Those areas also must achieve additional annual reductions in emissions of VOCs and nitrogen oxides (NOx) as necessary to achieve the ozone standard by the deadlines in the bill. The requirement for NOx reductions does not apply to areas for which EPA determines that additional reductions of NOx would not contribute to attainment.

The Senate and House percent reduction requirements for the first six years are not directly comparable because the reductions that can be counted are very different. Most importantly, the Senate bill allows reductions from federal motor vehicle emissions regulations to be counted. The House bill does not.

Waivers from interim progress requirements

Serious, severe and extreme areas must achieve VOC reductions of 3 percent per year after the first six years, with compliance measured every three years.

Similar.

After the first six years, EPA can approve a state plan designed to achieve less than 3 percent per year if the state shows EPA that the plan includes all measures that can feasibly be implemented in the area in light of technological achievability, costs, and any non-air-quality and other air-quality-related health and environmental impacts.

EPA's authority to waive the 3-percent requirement is more limited under the House bill. A waiver is allowed only if the plan includes all measures that can feasibly be implemented in the area in light of technological achievability. To qualify, the state must show that the plan includes measures achieved in practice by similar sources in areas in the next higher ozone pollution category. No cost waiver is allowed.

No waiver from percent reduction requirements is permitted during the first six years.

A waiver also is available from the requirement for a 15-percent reduction in the first six years — but an additional condition applies. The plan must include controls on new and existing sources that have the potential to emit 5 tons per year of VOCs or more.

NOx substitutions

For purposes of meeting percent reduction requirements, state plans can substitute NOx reductions for part of the VOC reductions if the state shows that the resulting reduction in ozone levels would be at least as great.

Generally similar provisions apply to ozone areas classified as serious, severe or extreme.

Failure to meet interim progress requirements

Areas that fail to achieve the reductions must make up the difference by the end of the next three-year period.

For areas that fail to meet those milestones, the state must choose to have the area reclassified to the next higher category, or implement measures to make up the emission reduction shortfall and meet the next milestone. Such measures could include an economic incentive program. The program could include a system of emissions fees, marketable permits, or fees on the sale or manufacture of products that contribute to the ozone problem.

Subject	Senate bill	House bill
Controls for existing industrial plants and businesses (RACT)	Current law requires reasonably available control technology (RACT) in non-attainment areas for existing sources. EPA has interpreted the RACT requirement to apply to sources for which EPA has issued control technique guidelines (CTGs), and other sources that have the potential to emit 100 tons per year or more. The Senate bill would keep the 100-ton-per-year threshold except in severe and extreme ozone areas, where the threshold for VOCs would be 50 tons per year.	In comparison with the Senate bill, the House bill would require RACT for smaller sources of VOCs in severe and extreme ozone areas. The threshold would be 50 tons per year in serious areas, 25 tons per year in severe areas, and 10 tons per year in extreme areas.
Definition of major source, controls for new industrial plants and businesses	As under current law, major sources are those that emit more than 100 tons per year of a pollutant (except for purposes of the construction ban in ozone areas). New major sources are subject to stringent requirements — construction permits, the lowest achievable emission rate (LAER), and a requirement for offsetting emissions reductions from other sources at a ratio greater than 1-to-1.	The 100-ton definition of "major source" and "major stationary source" is lowered to 50 tons per year of VOCs in serious ozone areas, 25 tons per year in severe ozone areas, and 10 tons per year in extreme ozone areas. The effect is that smaller pollution sources are subject to: • stringent requirements for new sources; • RACT requirements for existing sources (see above provision); and • requirements for operating permits under title IV of the bill.
Netting	Current law allows modifications of existing plants to escape stringent requirements for new sources if the net emissions increase is below certain levels — 40 tons per year in the case of VOCs. This is called "netting." The Senate bill would allow netting if there is no net emissions increase.	The use of netting is restricted in serious and severe ozone areas to modifications that increase emissions less than 25 tons over five years. In extreme areas, netting is banned. Depending on the size of the source and classification of the ozone area, plant modifications could meet alternative requirements (such as a 1.3-1 offset requirement within units of the facility) in lieu of certain new source requirements that otherwise would apply (such as LAER).
Offsets	The Senate bill would maintain current law provisions that require new major sources in non-attainment areas to obtain offsetting emissions reductions from other sources at a ratio greater than 1-to-1.	Offset requirements would be made more stringent in ozone areas — in general, 1.1-to-1 in marginal areas, 1.15-to-1 in moderate areas, 1.2-to-1 in serious areas, 1.3-to-1 in severe areas, and 1.5-to-1 in extreme areas.

NOx controls

In ozone non-attainment areas other than moderate areas, the bill requires RACT for sources of NOx that have the potential to emit 100 tons per year or more. (Under current law, EPA has not required NOx controls for existing stationary sources in most ozone areas.) In extreme ozone areas, aggregate NOx emissions must be reduced 12 percent every three years. As under current law, non-attainment area requirements for new major sources do not apply to NOx sources.

No similar provision.

In ozone non-attainment areas, major stationary sources of NOx must meet the same requirements as major stationary sources of VOCs, unless EPA makes certain findings. The same size thresholds for major stationary sources of VOCs apply to NOx sources — 100 tons per year in marginal and moderate areas, 50 tons per year in serious areas, 25 tons per year in severe areas, and 10 tons per year in extreme areas. The effect is that the House provision:

- requires RACT for smaller NOx sources than the Senate bill, for ozone areas ranked serious or worse;
- applies requirements for major new sources in non-attainment areas to NOx sources; and
- requires operating permits for major NOx sources.

The NOx control requirement applies unless EPA determines one of the following:

- that net air quality benefits would be greater without the NOx reductions;
- that the NOx reductions would not contribute to attainment (this applies to areas not in an ozone transport region); and
- that the NOx reductions would not produce net ozone air quality benefits in the ozone transport region. This applies to non-attainment areas in a transport region.

Other required control measures

Note: Control requirements listed above for ozone areas are not included in this chart. These include: interim progress requirements, RACT for existing sources, new source requirements for smaller sources, offset requirements for new sources, restrictions on netting, and NOx controls.

Each category of areas must implement certain additional controls. Areas in higher categories must implement the controls for lower categories as well.

Moderate areas

Must implement one of two measures, unless they qualify for an exemption available to areas with ozone design value of 0.13 ppm or less:

- enhanced motor vehicle inspection and maintenance programs in metropolitan areas of 100,000 or more. ("Enhanced" programs would contain more stringent testing and inspection requirements than programs required by current law.)
- stage II hose-and-nozzle controls at gas pumps to capture vapors during refueling at stations dispensing more than 20,000 gallons per month. (Title II allows EPA to waive stage II requirements once onboard canisters to capture the vapors are in widespread use throughout the motor vehicle fleet.)

Serious areas

- transportation control measures — such as carpooling programs, driving restrictions, or high-occupancy vehicle lanes — must be selected by the state if growth in miles driven exceeds projections.
- enhanced inspection and maintenance programs.
- stage II refueling controls.
- measures implementing alternative fuels program for federal government fleet vehicles.

Similar.

Marginal areas

Must revise plans to remedy deficiencies and add controls required by existing law. (Senate bill also requires plan corrections for ozone areas.)

Moderate areas

- basic motor vehicle inspection and maintenance programs meeting requirements of existing law, even in areas not currently required to have programs.
- stage II hose-and-nozzle controls at gas pumps to control refueling vapors at stations that dispense at least 10,000 gallons per month — 50,000 gallons for independent small business marketers. (Stage II requirements do not apply in moderate areas after EPA issues regulations requiring onboard canisters in new motor vehicles. For serious and severe areas, EPA can waive the requirement after onboard systems are in widespread use.)
- automatic contingency measures in case the areas fail to attain or meet interim requirements.

Serious areas

- enhanced motor vehicle inspection and maintenance programs in urbanized areas of 200,000 or more. "Enhanced" programs would contain more stringent testing and inspection requirements than programs required by existing law.
- requirement for transportation control measures similar to Senate bill.
- measures to ensure effectiveness of clean fuels program required by Title II.

Enhanced inspection and maintenance programs for motor vehicles

Severe areas

- transportation control measures or other enforceable strategies to offset emissions increases from growth in vehicle miles traveled.
- a program requiring employers of 100 people or more to increase the average number of people per commuting vehicle by at least 25 percent.
- measures implementing alternative fuels programs for private fleets and general vehicles.

Extreme areas

- expand controls to the area 25 miles beyond the boundary of the metropolitan area.
- reduce NOx emissions 12 percent every three years.
- plans could include traffic controls during heavy traffic hours, requirements anticipating new technologies, and economic incentives such as emissions fees, marketable permits, and road use and congestion fees.

Enhanced inspection and maintenance programs (required in certain ozone and carbon monoxide non-attainment areas as noted in charts on pp. 13 and 18) must include specific elements. Requirements are generally similar in ozone and CO areas, except that the programs and required emissions reductions apply to different pollutants.

Programs must cover all light-duty vehicles (cars) in metropolitan statistical areas with populations of 100,000 or more.

Required elements include an inspection for tampering and misfueling, and use of computerized emission analyzers.

Severe areas

- all reasonably available technology for reducing aggregate vehicle emissions, including enforceable strategies to offset emissions increases from growth in vehicle miles traveled. State must justify proposal not to implement listed transportation control measures.

Extreme areas

- clean fuels or advanced controls within eight years to reduce NOx from new and existing utility, industrial and commercial boilers.
- plans could include traffic controls during heavy traffic hours and requirements anticipating new technologies.

Generally similar.

Programs must cover all light-duty vehicles and light-duty trucks in urbanized areas with populations of 200,000 or more.

The Senate requirements and additional ones apply. On-road testing devices are specified. Inspection of onboard diagnostic systems is required by the bill, rather than left to EPA discretion. Annual emission testing, and centralized testing programs, are required unless the state demonstrates that biennial testing or decentralized programs would be at least as effective.

If a state chooses to include a repair waiver, the minimum waiver would be \$200. The waiver allows the car to be registered and driven even though it does not meet the standard, if the cost of compliance would exceed the waiver amount.

No waiver is permitted for vehicles and parts covered by the performance warranty required of manufacturers by the Clean Air Act, unless warranty coverage is denied or repairs are tampering-related. The minimum waiver for non-warranty repairs is \$450.

Numerical performance standards are set for emissions reductions required of programs in ozone and CO areas.

EPA is to set performance standards that are achievable by programs with certain elements.

Federal and interstate measures to control ozone

Interstate transport regions

The bill creates a 13-state Northeast ozone transport region stretching from Virginia through Maine, and authorizes EPA to create other ozone transport regions. Minimum controls for ozone transport regions include reasonably available control technology (RACT) on certain existing sources, motor vehicle inspection and maintenance programs in cities with 100,000 people or more, and stage II at-the-pump controls to capture gasoline vapors at stations dispensing more than 50,000 gallons per month.

Generally similar. Virginia, except for parts in the D.C. metro area, is not included in the Northeast transport region. Stage II is required automatically in ozone transport regions, but comparable reductions are required. RACT is required for sources that have the potential to emit 50 tons per year or more.

Consumer and commercial products (solvents, paints, etc.)

Within two years of completing a three-year study, EPA must issue regulations to aid in attainment of the ozone standard by reducing emissions of ozone precursors from consumer and commercial products.

After a three-year study, EPA must list categories of commercial and consumer products that account for at least 80 percent of ozone-forming VOC emissions from those products in ozone non-attainment areas. EPA is to divide the list into four groups and regulate one group of categories every two years.

The regulations are to be equivalent in stringency to reasonably available control technology (RACT), and must reduce nationwide VOC emissions by at least 1 percent within two years of promulgation. If EPA approves, a state may implement and enforce the regulations under state law.

The regulations must require best available controls. In lieu of the regulations, EPA may issue control technique guidelines (to help states regulate products) if EPA determines that the guidance will be substantially as effective as regulations in reducing VOC emissions in ozone non-attainment areas.

Control technique guidelines (CTGs) and EPA regulations for various industries

The regulations may include any systems of implementation EPA deems appropriate, including requirements for registration, labeling, self-monitoring and reporting, and prohibitions or limits concerning the manufacture, processing, distribution, use, consumption, or disposal of the product.

EPA must issue control technique guidelines (CTGs) to help states regulate 12 categories of existing sources, plus emissions from aerospace coatings and solvents, and loading and unloading of petroleum products from marine vessels. Regulations are required for emissions from hazardous waste facilities.

Similar provision, but fees, economic incentives such as marketable permits and auctions of emissions rights also are listed. A separate provision says EPA may control or prohibit any activity, including the offering for sale or sale of the product.

EPA must issue 11 CTGs rather than 12. A CTG is required for coatings and solvents used in the aerospace industry, and in shipbuilding and repair. Federal regulations, rather than a CTG, are required to limit emissions from petroleum loading and unloading from marine vessels. EPA is to give priority to issuing a CTG — not regulations — for hazardous waste facilities.

Emissions from outer continental shelf oil facilities and associated vessels

Authority to regulate emissions from OCS oil drilling and production platforms, and associated vessels, remains with the Interior Department.

The Interior Department must issue regulations to limit OCS emissions offshore California. The regulations, which require the concurrence of EPA, must be as stringent as regulations applied to onshore pollution sources in adjacent air districts in California. The regulations may incorporate rules of the adjacent onshore air districts. EPA is to delineate OCS air districts that extend 25 miles from the shoreline, and can extend the boundary.

Specific requirements for a source can be waived on feasibility or health and safety grounds. Requirements for new facilities to obtain offsetting reductions from other facilities for construction-phase emissions may be averaged over a number of years.

Authority to regulate OCS emissions is transferred to EPA and states except for OCS sources off four Gulf Coast states — Texas, Louisiana, Mississippi and Alabama.

EPA must issue regulations to control air pollution from OCS facilities and vessels offshore states along the Pacific, Arctic and Atlantic coasts, and along the Gulf Coast off the state of Florida. For sources within 25 miles of the state boundary, requirements must be the same as would be applicable if the source were located onshore — including state and local requirements for emissions control, offsetting emissions reductions, permitting, monitoring, testing and reporting.

Sources can be exempted from specific requirements on feasibility or health and safety grounds, but EPA must require offsetting emissions reductions.

	A fund is created to acquire or create emissions offsets to mitigate emissions from OCS activities. (To meet requirements for offsetting emissions reductions, new facilities could obtain offsets through the fund, rather than directly from the owner of a facility that is reducing emissions.)	No similar provisions.
	For portions of the OCS that are adjacent to states other than California, the Interior Department is to consult with EPA to assure coordination of onshore and offshore regulation. The department is to study the impact of OCS emissions on ozone and nitrogen dioxide non-attainment areas, and determine in consultation with EPA whether additional actions are necessary.	Similar, but the provisions apply to OCS sources that remain under Interior Department jurisdiction off the four Gulf Coast states listed above.
<i>Requirements for carbon monoxide areas</i>	Like ozone areas, carbon monoxide areas would be classified according to the severity of the pollution. Deadlines, sanctions, milestones and other requirements would be analogous but not identical to those for ozone areas. Some key provisions are highlighted below.	Generally similar.
Deadlines and classification	Moderate areas — those with CO design values (near-peak pollution levels) up to 55 percent above the standard would have five years after enactment to attain the standard. Serious areas — those more than 55 percent above the standard — would have 10 years.	Similar in structure. However, the dividing line between moderate and serious areas is 83 percent above the standard. Plans must provide for attainment as expeditiously as practicable within the deadlines. EPA has discretion on the classification of areas that have pollution levels within 5 percent of the level that divides moderate areas from serious areas.

Oxygenated fuels programs

Oxygenated fuels programs — requiring the addition of additives such as ethanol or MTBE, a natural gas derivative, to gasoline to boost its oxygen content — are required in all carbon monoxide areas, subject to certain waivers. The oxygen content of gasoline from Oct. 1 to March 31 in those areas must be 3.1 percent or greater. Fuel sellers may buy and sell oxygen credits, which would allow fuels with less oxygen than required to be sold if offset by sale of fuels with more oxygen than required. (For more, see title II provisions.)

Generally similar, but the oxygen content standard for gasoline in those areas would be 2.7 percent. The standard would be 3.1 percent for “serious” areas that failed to attain the CO standard by the deadline in the bill. The requirement applies during the part of the year that EPA determines the area is prone to high levels of CO. (For more, see title II provisions.)

Other control requirements

Other required control measures include:

All areas

- enhanced motor vehicle inspection and maintenance programs.
- quantitative milestones (interim goals) in state implementation plan.
- planned contingency measures that would automatically take effect if an area fails to attain by its deadline.

Serious areas

- transportation control measures as needed to attain by the area’s deadline.
- a program requiring employers of 100 people or more to increase the average number of people per commuting vehicle by at least 25 percent.

Other required control measures include:

Moderate areas with design value above 12.7 ppm

Requirements are generally similar to Senate bill requirements for all carbon monoxide areas. Contingency measures also are required in case there is growth in projections of vehicle miles traveled, which are required annually.

Serious areas

- If an area fails to achieve the total of the annual emissions reductions required by the end of 1995, the state is required to implement an economic incentive and transportation control program.
- all reasonably available techniques for reducing aggregate vehicle emissions, including enforceable strategies and transportation control measures to offset emissions increases from growth in vehicle miles traveled.
- stationary source controls on sources that have the potential to emit 50 tons per year or more.

Requirements for PM-10 areas

Areas not in compliance with the fine particle (PM-10) standard are made subject to attainment deadlines, sanctions, milestones and other requirements that are analogous but not identical to those for ozone areas. EPA and states are given far more discretion on specific requirements for reducing PM-10 than for ozone. (Specific control requirements for PM-10 areas are not summarized in this comparison.)

Generally similar. A significant difference is that the House bill would require reasonably available control measures (RACM) for sources in moderate areas, and best available control measures (BACM) in serious areas. The Senate bill does not contain a BACM requirement.

Deadlines

PM-10 areas generally must attain by the end of 1994, but EPA can extend the deadline for up to 10 years after the date the area was designated non-attainment. Plans must provide for attainment as expeditiously as practicable. Other deadlines apply to newly designated areas.

Moderate areas generally must attain by the end of 1994. Serious areas generally must attain by the end of 2001. Attainment dates can be extended — up to two years for moderate areas, and up to five years for serious areas — in certain circumstances. Plans must provide for attainment as expeditiously as practicable. Other deadlines apply to newly designated areas.

EPA guidelines

EPA is to issue guidelines for controlling PM-10 emissions from major stationary sources and area sources (such as road dust) through reasonably available control technology (RACT) and RACM. Guidelines must at a minimum cover wood smoke, prescribed burning for silviculture and agriculture, and urban fugitive dust. Other guidelines are required for sources that states report will prevent areas from attaining because control technology is not available.

Generally similar, but guidelines for BACM also are required.

EPA must issue guidelines for curtailment of residential wood burning. States must implement the guidelines for areas in which residential wood burning contributes 20 percent of PM-10 levels.

EPA must issue guidelines for curtailment of residential woodburning.

Visibility improvement

The bill authorizes \$8 million per year for five years for research by EPA, the National Park Service, and other federal agencies on visibility, including identification of pollution sources that impair visibility in national parks and other pristine class I areas. EPA also is to assess visibility improvements likely to result from the bill.

EPA is authorized to establish transport regions and commissions to recommend measures to improve visibility, and is required to establish a commission for the Grand Canyon.

Taking into account the studies and recommendations, EPA is to carry out its responsibilities to protect visibility under current law. Current law requires EPA to issue regulations to assure reasonable progress toward meeting the national goal of preventing and remedying visibility impairment in federally designated class I areas (major national parks, wilderness areas and certain other public lands). The bill requires any regulations issued to require affected states to revise their implementation plans within one year.

No similar provision.

See related provisions below. (House visibility provisions are in Title VII.)

No similar provisions.

Within two years of enactment, EPA must issue regulations to reduce regional haze that harms visibility in federally designated class I areas west of the 100th meridian (which runs through states from North Dakota to Texas). States must revise their implementation plans to implement the haze regulations within one year. EPA also is to amend its existing regulations to reflect the bill's requirements relating to visibility protection in class I areas.

EPA with two years of enactment must study the impact on visibility of plumes — pollution caused by an identifiable single source or group of small sources — from large uncontrolled sources of sulfur dioxide that are within 100 miles of federally designated class I areas. Within one year of the study of a source, EPA is to make a determination under existing law on whether these sources must install best available retrofit technology to protect visibility in a federally designated class I area. These provisions apply west of the 100th meridian (which runs through states from North Dakota to Texas).

Subject	Senate bill	House bill
	No similar provision.	EPA, in consultation with federal land managers, must periodically assess visibility impairment in federally designated class I areas and determine whether reasonable progress — defined in the bill — is being achieved. If not, EPA must require states to revise their implementation plans to make reasonable progress, unless the state has adopted all feasible measures.
	States are to provide a copy of permit applications, and notice of the application, to federal land managers for class I and certain other areas.	Similar. The bill also contains other provisions to give federal land managers greater input into EPA and state decisions concerning the permitting of proposed new pollution sources near class I areas.
	No similar provision.	The bill redesignates as mandatory class I areas all national parks (greater than 6,000 acres) that were created after enactment of the 1977 amendments to the Clean Air Act, but before Jan. 1 of this year. The redesignation makes the areas subject to the act's visibility protection requirements.
<i>Unemployed worker compensation and retraining</i>	No similar provisions.	The bill includes a program intended to provide unemployment and retraining benefits to workers who lose their jobs because of the clean air bill. The provisions authorize the appropriation of up to \$250 million over five years — fiscal years 1992 through 1996 — to fund the program.

Unions or other worker groups can petition the labor secretary to be certified as eligible to apply for benefits. A group can be certified only if the secretary determines that:

- a significant number or proportion of the workers in the firm or subdivision of the firm have been (or are threatened to become) laid off or had their hours of work or wages reduced (by a specified amount);
- that sales or production of the firm or subdivision have decreased absolutely; and
- that compliance with the Clean Air Act contributed importantly to the employment effects and sales or production declines.

Additional eligibility requirements apply to individual workers.

Eligible workers can receive six extra months of unemployment benefits called "clean air employment transition allowances." The cash benefits are in addition to the six months of federal unemployment insurance to which workers are entitled under existing law. Amounts differ according to state laws.

To receive the extra unemployment benefits, workers must enter a retraining program. Retraining is to be provided under guidelines in the Job Training Partnership Act. In certain circumstances, workers can be provided with job search and relocation expenses. (For more, see May 23 *Floor Brief*, p. 6.)

ENVIRONMENTAL AND ENERGY STUDY CONFERENCE

SPECIAL REPORT

June 19, 1990

The House- and Senate-passed clean air bills: a side-by-side comparison

Acid rain controls

by Jim Ketcham-Colwill

Conferees on the House and Senate clean air bills are expected to have a difficult time reaching an acid rain control accord that satisfies competing regional and industry interests.

The two bills contain acid rain control programs that are similar in structure. But they differ on how to reconcile the competing interests of the Midwest, where many dirty, old coal-fired power plants are located, and the "clean" states, where utility emissions are low.

Both bills would establish a system of marketable pollution allowances to control acid rain. An allowance would authorize a utility to emit one ton of sulfur dioxide, and could be sold by one utility to another. Reaching a compromise on the allocation of marketable pollution allowances among utility power plants is likely to be difficult, both politically and technically.

The clean air conference is expected to begin shortly after the House appoints conferees, which staff say may occur this week. No schedule for the conference has been set.

About this publication: The Environmental and Energy Study Conference on May 17 published a side-by-side comparison of the House acid rain control provisions — as approved by the Energy Committee — and the Senate-passed provisions. The introduction lists some of the key differences that must be resolved by conferees.

This special report updates the May 17 comparison in light of House floor action, and adds a description of provisions that would provide utilities with allowances to encourage early emissions reductions. The House left the acid rain provisions of the committee bill untouched, except for a single minor amendment adopted as part of an Energy Committee package.

This publication is the second part of a series comparing the House and Senate bills as passed. The first part, on attainment and maintenance of air quality standards, was published June 15. Subsequent publications will compare provisions on motor vehicles and fuels, toxic air pollution,

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ozone layer depletion, and permits and enforcement.

Early reduction allowances: When the House Energy bill went to the floor, it already contained important provisions that would award marketable pollution allowances to utilities as an incentive for reducing sulfur dioxide emissions earlier than required. The House adopted a minor amendment to those provisions.

The Senate bill contains no program to provide allowances as an incentive for early reductions.

The House provision would provide allowances for early reductions made before the bill's phase I acid rain control deadline — Dec. 31, 1995. A utility would be eligible only if it achieved the reductions solely through use of control technology that achieves a 70-percent emissions reduction.

The floor amendment added a special provision for Wisconsin, and other provisions exempting certain plants — a very limited number — from the condition requiring use of 70-percent control technology.

The 70-percent control technology provision, which would apply to most utilities, is designed to encourage utilities to use scrubbers or other control technologies, rather than switch from high- to low-sulfur coal, to reduce sulfur dioxide emissions. This would reduce job losses in high-sulfur coal mining in the Midwest and Appalachia, and provide additional allowances that dirty utilities could sell to offset control costs to a limited degree.

Provisions in detail: The House bill requires the Environmental Protection Agency to issue regulations for early reduction allowances within one year of enactment. EPA is to issue allowances to utility units subject to phase I reduction requirements if the owner or operator shows

EPA that four conditions are met:

- The unit has reduced SO₂ emissions after the date of enactment, but before the first phase begins (Dec. 31, 1995).
- The emissions reductions are not otherwise required by the act.
- The emissions reductions are obtained solely through control technology that achieves at least a 70 percent reduction in emissions.
- The unit complies with monitoring, reporting and record-keeping requirements.

Each allowance issued would authorize a single ton of SO₂ emissions for a single year during the first or second phase of the acid rain control program. Reductions generally would be measured from a level representing the amount of SO₂ the unit would emit at its 1985 SO₂ emissions rate, assuming the plant burned the same amount of fuel as it did during the 1985-87 period.

Early reduction allowances are authorized for a few units that do not use 70-percent control technology — if the unit receives authorization from the state's governor and is part of a utility system that meets two requirements.

The special provision for Wisconsin authorizes allowances for early reductions achieved through any means between the date of enactment of the clean air bill and the effective date in 1993 of a Wisconsin acid rain control law. Units could receive allowances under the provision only so long as it does not result in a net decrease in high-sulfur coal-mining jobs.

The Wisconsin law will require reductions in statewide annual SO₂ emissions by at least 40 percent below the state's 1980 levels.

ENVIRONMENTAL AND ENERGY STUDY CONFERENCE

SPECIAL REPORT

July 12, 1990

The House- and Senate-passed clean air bills: a side-by-side comparison

Motor vehicles and fuels

by Jim Ketcham-Colwill

Two of the major issues facing conferees on the House and Senate clean air bills are how much to tighten auto tailpipe standards and how to promote development and use of vehicles that run on fuels cleaner than conventional gasoline.

Both bills would tighten auto tailpipe standards, mandate reformulated gasoline as the only gasoline available in the nine cities with the worst ozone pollution, and establish clean-fueled vehicle programs. Both contain myriad other new requirements to reduce emissions from motor vehicles and fuels.

However, the two bills differ substantially on specifics that are viewed as critical by the auto and oil industries, alternative fuels industries, environmentalists, state regulators and the Environmental Protection Agency.

The first meeting of House and Senate conferees on the clean air bill is scheduled for Friday, July 13. Most staffers expect the conference to continue into September or October. (For more on the conference outlook and major issues to be resolved, see introduction to June 15 *Special Report*.)

About this publication: This publication, the third in a series, contains a side-by-side comparison of Title II of the House and Senate clean air bills as passed. Title II contains provisions on motor vehicles and fuels.

Already published are a June 15 comparison of Title I provisions on attainment and

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maintenance of air quality standards, and a June 19 update of a May 17 comparison of acid rain control provisions.

Future publications will compare other parts of the two bills on toxic air pollution, ozone layer depletion, and permits and enforcement.

This series will update EESC's already published side-by-side comparison of the Senate-passed bill with the House bill as reported by the House Energy and Commerce Committee. Although much of the original comparison remains valid, the House approved on the floor several major amendments to the committee version of the bill. [For a summary of the amendments, see May 31 *Special Report*, "Amendments to the House clean air bill (HR 3030)."]

Format note: This publication compares a nine-city general clean-fueled vehicle program in the Senate bill with the California pilot program in the House bill. The purpose is to show how the two programs address similar issues. Conferees are not expected to view the individual provisions of the two programs as competing.

Major issues: One of the biggest issues conferees must resolve is how to promote development and use of clean-fueled cars and trucks. The House provisions, developed in a last-minute compromise before House passage, call for a California pilot program mandating production and sale of very clean cars. The Senate bill would require all vehicles sold in nine cities with the worst ozone pollution to meet clean-fueled vehicle standards that are much less stringent.

The House bill requires a percentage of new fleet vehicles to be clean-fueled in more than 30 cities, compared with nine cities in the Senate bill. The House requirement also is broader because it applies to more fleets, and covers heavy-duty vehicle fleets. The Senate bill contains a separate program for federal government fleets.

Another major issue will be requirements for reformulated gasoline, which both bills would mandate in the nine cities with the worst ozone pollution. The House bill requires greater reductions in ozone-forming volatile organic compounds: 15 percent beginning in 1994, increasing to 20 percent in 1997 and 25 percent in 2000. The Senate bill requires a 15 percent reduction. The House bill also contains a provision that House staff say would give refiners greater flexibility to use a formulation that does not meet specifications in the bill, if equivalent or greater emissions reductions would be achieved.

Negotiators also will have to reach an accord on a second

tightening of auto tailpipe standards early in the next century, after an initial round of tighter standards in the 1990s. The Senate bill contains a trigger that would automatically put second-round standards into effect if enough smoggy cities fail to meet the standard by 2001. The House bill would give EPA more discretion on whether and how much to tighten standards, but would automatically impose standards similar to those in the Senate bill if EPA failed to make a formal decision.

Reformulated gasoline and clean-fueled vehicles:

Another major issue is what to do about the overlap between the reformulated gasoline mandates in both bills and the general clean-fueled-vehicle program in the Senate bills. Reformulated gasoline mandates and clean-fueled-vehicle programs were major political issues in both houses, but evolved independently in the legislative process.

The two bills would mandate sale of reformulated gasoline meeting detailed standards in the same nine cities where the Senate bill would require all new cars to meet clean-fueled vehicle standards. To comply with the Senate's first-phase clean-fueled vehicle standards, automakers are generally expected to comply through selling vehicles that burn some form of reformulated gasoline. Opinions vary on whether the phase II standard is likely to be met by vehicles using reformulated gasoline, or by vehicles using a variety of alternative fuels.

Some conferees may view the House reformulated gasoline as being in competition with the Senate's general clean-fueled vehicle program. A House staffer said that the reformulated gasoline provisions of the House bill would require approximately the same reductions in ozone-forming emissions as the Senate's general clean-fueled vehicle program: 25 percent versus 27 percent (assuming waivers in the Senate program are not used).

Another House staffer said that multiple issues would be involved in coordinating the reformulated gasoline and clean-fueled vehicle programs. For example, would the reformulated gasoline mandated in the nine cities be the same as the reformulated gasoline specified for the clean-fueled vehicle program? Should the deadlines for use of reformulated gasoline and clean-fueled vehicles in the two programs be synchronized? What fuels should EPA require to be sold at what time under the clean-fueled vehicle program?

The reformulated gasoline programs also bear a relationship to the bills' clean-fueled fleet-vehicle programs, the staffer said. Vehicles running on reformulated gasoline may satisfy House bill standards for clean-fueled fleet vehicles, at least during the less-

stringent first phase.

Other issues: Some of the other motor vehicle and fuels issues include:

- *First-round tailpipe standards:* Both bills would phase in tighter auto and light-duty truck tailpipe standards during the 1990s. But the House bill gives vehicle manufacturers a longer phase-in period, and provides less stringent standards for use in determining whether models on the road should be recalled for failing to meet the standards.

- *Durability requirements:* Current law requires cars to meet emissions standards for a useful life of five years or 50,000 miles, whichever comes first. Both bills would extend that period, but the Senate requirements are more stringent for tailpipe emissions standards and other standards. The House bill would shorten the useful life requirement in the case of tailpipe standards for light-duty trucks, which is set by current EPA regulations at 11 years or 120,000 miles, whichever comes first.

- *Control of refueling vapors:* The Senate bill would require EPA to issue regulations requiring onboard canisters on all new motor vehicles to capture vapors during refueling. The House bill requirement applies to new cars.

- *Oxygenated fuels:* Both bills would set a standard for the oxygen content of gasoline in the 44 areas with carbon monoxide levels that exceed the federal air quality standard. The Senate standard is 3.1 percent, the House standard is generally 2.7 percent. The higher standard in the Senate bill would encourage greater use of ethanol, as opposed to other additives such as the natural gas derivative MTBE.

- *State pre-emption:* Both bills would require EPA to consider regulating emissions from non-road vehicles and engines, such as diesel locomotives, farm and construction equipment, and lawn and garden equipment. The House bill would pre-empt state regulation of many types of non-road engines; the Senate bill would not.

- *Leaded gasoline:* Only the Senate bill would ban the sale of leaded gasoline for motor vehicles designed for street or highway use.

- *Recall testing of clean-fueled vehicles:* The Senate bill would establish special procedures for EPA to determine whether a model should be recalled because it fails to meet clean-fueled vehicle emissions standards in customer use. Vehicles that are not properly maintained would be among the pool of vehicles to be tested. Under the House bill, only properly maintained vehicles could be tested.

Title II: Motor vehicles and fuels

Subject	Senate bill	House bill
<i>Clean-fueled vehicle programs</i>		
Overview	The Senate bill sets up three clean-fueled vehicle programs to reduce ozone and toxic air pollution. One program requires new vehicles in nine cities to be clean-fueled. A second program requires many of the new vehicles added to fleets — for example, taxis and delivery vans — to be clean-fueled. Separate requirements apply to federal government fleets. A third program requires new urban buses in many cities to be clean-fueled. Clean-fueled vehicles in each of the programs must meet different emissions standards.	The House bill relies on a broader fleet program, a California pilot program, and an urban bus program to promote similar objectives. There is no requirement for all new vehicles in nine cities to be clean-fueled, and no separate program for federal fleets.
Definition of clean alternative fuel	Clean fuels are methanol, ethanol, mixtures of those fuels with gasoline, reformulated gasoline, natural gas, liquefied petroleum gas, electricity, or any other fuel or power source provided that such fuel or power source, when used in a motor vehicle, results in compliance with standards for clean-fueled vehicles.	Generally similar.
Fleet vehicle program	A clean-fueled program for fleet vehicles is required in the nine cities with the worst ozone pollution (ozone areas originally classified as severe or extreme).	The House bill sets up a fleet program that is broader in scope. Requirements apply in: • serious, severe and extreme ozone areas with a population of 250,000 or more. • carbon monoxide areas that have a 1988 design value (near-peak CO level) of at least 16.0 parts per million, and a population of 250,000 or more (excluding carbon monoxide areas where mobile sources do not contribute significantly to CO concentrations). • ozone areas reclassified as serious, severe or extreme.

• *Covered fleets*

Requirements apply to fleets of 20 vehicles or more that are centrally fueled and maintained. Certain fleets are exempt, including law enforcement or emergency vehicles, and retail rental fleets.

Requirements apply to fleets of 10 vehicles or more that are centrally fueled or *capable* of being centrally fueled. Exemptions are generally similar; an additional exemption applies to non-road vehicles (including specialty farm vehicles).

• *Car and light-duty truck fleets*

Beginning in 1997, 30 percent of new light-duty vehicles (cars and very light trucks with loaded vehicle weight of 3,750 lbs. or less) and light-duty trucks bought by commercial fleets must meet standards for clean-fueled fleet vehicles. The vehicles must be operated exclusively on clean fuels when in the non-attainment area.

Generally similar but more ambitious. The percentage of covered fleet vehicles required to be clean-fueled is 30 percent beginning in 1995, 50 percent in 1996, and 70 percent in 1998.

• *Heavy-duty truck fleets*

No similar provision.

Fleet program requirements are established for heavy-duty vehicles (over 8,500 lbs. gross vehicle weight). The percentage of heavy-duty fleet vehicles required to be clean-fueled is 30 percent beginning in 1998, 50 percent in 1999, and 70 percent in 2000.

• *Fleet vehicle emissions standards*

No similar provision.

EPA must issue standards for clean-fueled fleet vehicles based on the best technology that can reasonably be anticipated to be available at the time the measures are to be implemented, taking costs, safety, lead time, energy and other factors into account.

Clean-fueled fleet vehicles must meet standards that are "otherwise applicable," as well as standards for clean-fueled fleet vehicles.

Clean-fueled fleet vehicles must comply with the most stringent standard applicable to conventional vehicles of the same type and model year, as well as standards for clean-fueled fleet vehicles.

Clean-fueled fleet vehicle standards for light-duty vehicles (cars and very light trucks) must yield the following in-use emissions:

- *ozone-forming volatile organic compounds (VOCs)* — not more than 0.25 grams per mile (gpm) (a 74 percent reduction from the bill's baseline gasoline car).
- *five carcinogens* — a level that, in comparison to the bill's baseline gasoline vehicle, reduces the estimated number of human cancer cases by 75 percent.
- *formaldehyde* — 0.015 gpm.

If EPA determines it is not technically feasible for cars and very light trucks to meet both the clean-fueled fleet vehicle standards and the bill's nitrogen oxides tailpipe standards for gasoline vehicles, EPA can relax the NOx standard as it applies to clean-fueled fleet vehicles to 1.0 gpm in 1995-1997 and 0.7 gpm for 1998-2000. EPA may grant equivalent waivers during the same two periods for light-duty trucks.

EPA is to issue standards for light-duty trucks comparable to those for cars. Standards are to cover ozone-forming VOCs, carcinogens and formaldehyde.

Clean-fueled fleet vehicle standards for cars and very light trucks (excluding cars of 3,750 lbs. loaded vehicle weight or more) must limit emissions to the following levels:

- *ozone-forming VOCs* — not more than 0.66 gpm beginning in 1995, and 0.25 gpm beginning in 2000.
- *air toxics* — no standards required; air toxics standards required by the bill for conventional vehicles apply.

If necessary for cars and very light trucks to achieve the 0.25 gpm VOC standard, EPA shall waive the NOx emission standard for up to three model years and establish a different NOx standard not to exceed 0.7 gpm. No waiver is available for light-duty trucks.

For light-duty trucks (and cars of 3,750 lbs. loaded vehicle weight or more), the standards must require that ozone-forming VOCs do not exceed the light-duty truck equivalent of a car at 0.53 gpm beginning in 1995, and the light-duty truck equivalent of a car at 0.25 gpm beginning in 2000. An equivalent reduction in hazardous air pollutants is required in each of the two phases.

	No similar provisions.	For heavy-duty trucks, the standards at minimum must require either NOx or particulate matter (PM) not to exceed 50 percent of emissions from a conventional vehicle of the same type and model year. In addition, PM cannot exceed 0.1 grams per brake-horsepower-hour. EPA must relax the 50 percent requirement (to no more than 70 percent) if the agency determines it is not technologically feasible for clean diesel engines, taking into account costs and other factors.
• <i>Credits for fleet operators</i>	Fleet operators exceeding the requirements could sell credits to other fleet operators for use in demonstrating compliance.	Similar.
• <i>Fuel availability to public</i>	No similar provision.	At federal facilities where fleet vehicles are supplied with clean alternative fuel, the fuel must be offered for sale to the public during reasonable business times and subject to national security concerns, unless the fuel is commercially available in the vicinity.
• <i>Fuel and vehicle availability for fleets</i>	The choice of clean-fuel vehicles and clean fuels is to be made by fleet operators.	Similar.
	State governors can give fleet operators repeated one-year exemptions from program requirements if suitable clean fuels or clean-fueled vehicles are not available, and credits are not reasonably available. EPA is to issue regulations for determining whether clean fuels and vehicles are available.	No similar provision.
	EPA is to issue regulations as the agency finds necessary to ensure that clean-fueled fleet vehicles needed for the private and federal fleet programs are certified and made available for purchase. Nothing in this provision authorizes EPA to mandate production or sale of a specific quantity of vehicles by any manufacturer.	No similar provision.

Subject	Senate bill	House bill
• <i>Federal government fleets</i>	A similar fleet program is established for federal government fleets of cars and light-duty trucks in serious, severe and extreme ozone non-attainment areas (40 cities, using 1986-1988 EPA data). The percentage of new vehicles required to be clean-fueled is 30 percent in 1995 and 1996, 60 percent in 1997 and 1998, and 90 percent thereafter. EPA is given authority to lower the percentages. The program is subject to appropriations.	No similar provisions. Federal fleets are subject to the general fleet provisions.
California waiver/pilot program <i>(For details of the California pilot program in the House bill, see comparison below with the Senate's general clean-fueled vehicle program for nine cities. On fuel availability and related issues, see fuel availability requirements starting on page 11.)</i>	No California pilot program is mandated. The bill allows California, unlike other states, to set standards for clean-fueled vehicles that are different from the federal standards.	EPA must establish a pilot program in California to demonstrate the effectiveness of clean-fueled vehicles in controlling air pollution in ozone non-attainment areas. In 1998, EPA must submit a report to Congress discussing the effectiveness of the program and the desirability of continuing or expanding it.
Nine-city general clean-fueled vehicle program (Senate bill) compared with California pilot program (House bill) <i>Note: These two programs are placed side by side because their provisions address similar issues. Conferees are not expected to view the individual provisions of the two programs as competing. Staffers say there is substantial overlap between the Senate general clean-fueled vehicle program and House and Senate reformulated gasoline mandates (see introduction).</i>	Beginning in 1995, light-duty vehicles (cars and very light trucks) sold in the nine metropolitan areas with the worst ozone pollution must be clean-fueled vehicles meeting certain emissions standards. Phase I standards begin in 1995. Tougher, phase II standards begin in 1999.	No similar nine-city program, but some provisions of the California pilot program are analogous (see below). Like the Senate nine-city program, the pilot program applies to cars and very light trucks, and sets phase I and II emissions standards. Phase II standards apply beginning in 2003.

• *Vehicle production and sales mandates*

Automakers are not required to produce clean-fueled vehicles, but all vehicles made available in the nine areas must meet clean-fueled vehicle standards.

Clean-fueled vehicles must be produced, sold and distributed in accordance with normal business practices and applicable franchise agreements to ultimate purchasers in California according to a schedule: 150,000 clean-fueled vehicles annually in model years 1994 through 1996, and 300,000 in model year 1997 and thereafter. A separate provision says EPA shall have no authority under clean-fueled vehicle provisions to mandate production of clean-fueled vehicles except as provided in the California pilot program, or to specify the models, lines or types of vehicles, or marketing and price practices, policies or strategies.

• *Areas covered*

Applies in nine metropolitan areas: Los Angeles, Houston, New York City, Milwaukee, Baltimore, Philadelphia, greater Connecticut, San Diego and Chicago.

Applies in California.

• *Emissions standards in general*

No general standard.

EPA must issue emissions standards for California pilot program vehicles that are based on the best technology that can reasonably be anticipated to be available at the time the measures are to be implemented, taking costs, safety, energy and other relevant factors into account.

Clean-fueled vehicles must comply with standards "that are otherwise applicable," as well as clean-fueled vehicle standards.

Clean-fueled vehicles must comply with the most stringent standard applicable to conventional vehicles of the same type and model year, as well as clean-fueled vehicle standards.

Subject	Senate bill	House bill
• <i>Phase I emissions standards</i>	In 1995-98, clean-fueled vehicle standards for cars and very light trucks must yield the following emissions in use: • <i>ozone-forming volatile organic compounds (VOCs)</i> — no more than 0.75 grams-per-mile (gpm). (This is 21 percent less than the baseline gasoline vehicle specified in the Senate bill, which has emissions of 0.95 gpm.) • <i>five carcinogens</i> — a level that, in comparison with emissions from the bill's baseline gasoline vehicle, reduces the estimated number of human cancer cases by 12 percent.	Beginning in 1995, California pilot program vehicles must be 50 percent cleaner than conventional vehicles of the same type and model year for emissions of ozone-forming VOCs and at least five air toxics.
• <i>Recall exemption</i>	If a manufacturer elects to meet phase I clean-fueled vehicle emissions standards through vehicles using reformulated gasoline, the vehicles are not subject to EPA-ordered recalls for failure to meet those standards, as long as the vehicles meet standards for conventional gasoline vehicles.	No similar provision.
• <i>Phase II emissions standards</i>	In 1999 and after, clean-fueled vehicle standards for cars and very light trucks must yield the following emissions in use: • <i>ozone-forming VOCs</i> — no more than 0.66 gpm of ozone-forming VOCs (a 30 percent reduction from the bill's baseline gasoline vehicle). • <i>five carcinogens</i> — a level that, in comparison with emissions from a baseline gasoline vehicle, reduces the estimated number of human cancers by 27 percent. If 27 percent is not feasible, EPA can ease the standard to as little as 18 percent. • <i>formaldehyde</i> — 0.015 gpm. No similar provision.	In 2003, the standards must require California pilot program vehicles to be 75 percent cleaner than conventional vehicles of the same type and model year for emissions of ozone-forming VOCs and at least five air toxics — unless EPA finds that level not technologically feasible (considering costs and other factors). In that case, EPA must require lesser reductions; the minimum is 50 percent. Standards for California pilot program vehicles allow clean-fueled vehicles to use a fuel other than a clean fuel if, when operated on the fuel, the vehicle complies with emissions standards for conventional gasoline-fueled vehicles of the same type and model year.

- *Waiver*

Manufacturers can apply for a two-year waiver from the phase II VOC standard; EPA must approve the waiver if the manufacturer shows the vehicle meets certain standards.

No similar provision.

- *Credits for vehicle manufacturers*

EPA must grant manufacturers credits for selling vehicles cleaner than required by the standards for clean-fueled vehicles under the general and fleet programs. EPA also must grant manufacturers credits for selling vehicles that meet standards for clean-fueled fleet vehicles in the numbers required by the federal and private fleet programs. States may establish programs to grant credits for selling clean-fueled fleet vehicles in numbers greater than required, or for selling vehicles that achieve emissions reductions greater than required by the state implementation plan. Manufacturers can use credits to demonstrate compliance with the standards for clean-fueled general vehicles in a current or future year, or can be sold to other manufacturers.

Under the California pilot program, EPA may grant credits to manufacturers for selling more clean-fueled vehicles than required. Credits can be sold to other manufacturers for use in demonstrating compliance.

Fuel availability requirements

- *Selection of fuels*

EPA is to determine the clean fuels that will be made available for phase I and phase II clean-fueled vehicles and issue certification specifications for the fuels. For phase I, specifications for fuels must include at least one reformulated gasoline that satisfies phase I emissions standards for general vehicles when used in phase I vehicles. Fuel specifications for phase II vehicles must include at least one reformulated gasoline that satisfies phase II standards, or achieves the maximum emissions reductions that are economically and technologically feasible.

EPA may issue specifications for any clean fuel produced and made available under the California pilot program.

• *Fuel mandates*

Clean fuels needed for vehicles meeting the fleet, general vehicle and California clean-fueled vehicle standards must be made available by fuel providers in areas subject to the clean-fueled vehicle program, in a manner specified by EPA. EPA is given authority to require clean fuels along major nationwide transportation corridors when vehicle manufacturers project sales of vehicles that run exclusively on alternative fuels (other than reformulated gasoline).

Fuel refiners must produce and make available in California clean fuels for vehicles required by the pilot program. Sufficient clean fuels must be produced to ensure that all vehicles required by the California pilot program can operate exclusively on clean fuels in the area, to the maximum extent practicable.

EPA is to issue regulations requiring that at least one clean fuel — and at maximum one clean fuel in addition to reformulated gasoline — must be sold by service stations dispensing at least 50,000 gallons of motor vehicle fuel per month, in areas subject to the general vehicle and California programs.

Under EPA regulations for the California pilot program, at least one clean fuel must be offered for retail sale at service stations dispensing at least 50,000 gallons of motor vehicle fuel per month.

• *Exemption*

The governor can exempt some service stations for up to four years, if fuels will be readily available throughout the area.

No similar provision.

If a service station would have to remove or replace an underground storage tank and accompanying piping to comply, but already had done so before enactment, the station would not have to comply until seven years after the removal or replacement occurred.

Generally similar provision for the California pilot program: If a service station would have to remove or replace an underground storage tank and accompanying piping to comply, but had already done so to comply with EPA regulations on underground tanks before enactment of the clean air bill, the service station does not have to comply until seven years after the tank was replaced or removed.

• *Fuel projections, requirements and credits*

EPA must determine the types and amounts of clean fuels to be required, based on vehicle manufacturers' projections of future sales and consultation with state and local governments. EPA is to assign types and amounts of clean fuels that must be distributed to the nine metropolitan areas by those "who first introduce" motor vehicle fuels to those areas (often fuel refiners and terminals), according to their relative market shares. EPA may grant credits to those fuel vendors for exceeding the requirements; the credits could be sold to other vendors to help them comply.

Nothing in the clean-fueled vehicle section shall give EPA authority to mandate marketing or pricing practices, policies or strategies for fuels. Under the California pilot program, EPA may grant fuel refiners credits for exceeding the requirements under conditions set by EPA. Credits may be sold to other refiners for use in demonstrating compliance.

State options and responsibilities

• *State options to extend program requirements*

States can elect to apply the clean-fuels programs for general vehicles or fleets to additional cities. Any new requirements would apply after the time needed for vehicles and fuels to be made available, as determined by EPA.

No similar provision. The bill leaves intact a waiver in existing law that allows California to set and enforce standards for new motor vehicles that are different from federal standards. Other states can elect to have the California standards apply.

States can request an increase in the percentage of required fleet vehicles. States also can propose requiring that all cars meet the federal clean-fuel standards for general vehicles, or the California standards for clean-fueled vehicles. EPA must approve the state's proposed plan if the administrator determines it is feasible to produce the needed clean vehicles and fuels according to the plan's timetable.

No similar provision.

States can propose requiring that only some cars meet the standards for clean-fueled fleet vehicles or California clean-fueled vehicles — but EPA can only approve the plan if it contains incentives for purchase of the vehicles sufficient to achieve sales in quantities proposed in the plan. If EPA approves such a plan, EPA must require vehicle manufacturers to begin production and distribution of vehicles, and to make reasonable efforts to promote and sell the vehicles.

No similar provision.

Subject	Senate bill	House bill
• <i>State option for substitute program</i>	States can propose a substitute program in lieu of all or part of the clean-fuels program. The substitute program must achieve equal or greater reductions in long-term emissions of ozone-forming VOCs and carcinogenic air pollutants, and must consist exclusively of measures other than those required for the non-attainment area by the bill.	Generally similar provision in Title I for serious, severe and extreme ozone areas.
• <i>State role/price of alternative fuels</i>	For ozone areas subject to the clean-fueled vehicle program, state implementation plans must include measures as may be necessary to ensure the effectiveness of the program.	For ozone areas classified as serious or worse, state implementation plans must include measures as may be necessary to ensure the effectiveness of the clean-fueled vehicle program — including “all measures necessary” to make the use of clean fuels economic for vehicle owners. (Options that have been mentioned include wholesale fuel sales requirements and tax incentives.) (Provision is in Title I.)
Purchase incentives for clean-fueled vehicles	No similar provision.	EPA must issue regulations establishing incentives to encourage the purchase of clean-fueled vehicles. The regulations are due when EPA submits a report on the California pilot program, which is required in 1998. The regulations must include a procedure under which states may submit implementation plan revisions to incorporate incentive programs.
	No similar provision.	The regulations may include: • a state registration fee on new motor vehicles that are not clean-fueled. Proceeds would be used to provide financial incentives to vehicle buyers and dealers. • provisions to exempt clean-fueled vehicles from high-occupancy vehicle or trip reduction requirements that may apply in the area. • provisions to provide preference in the use of existing parking spaces for clean-fueled vehicles.

Miscellaneous provisions

• *Vehicle recalls*

The bill establishes special procedures for EPA to determine whether a model should be recalled because it fails to meet clean-fueled vehicle emissions standards in customer use. EPA staff say the special procedures have the effect of making the standards more stringent.

Recall of models that fail to meet clean-fueled vehicle standards is to be conducted under procedures in existing law.

Only vehicles that have been obviously abused or tampered with in a manner that would affect emissions performance can be excluded from the pool of vehicles to be tested. (This means that vehicles that are not properly maintained must be included in the recall testing pool.) EPA may require a manufacturer to recall a model for repairs when a substantial number of vehicles fails to comply with clean-fueled vehicle emissions standards, or the average emissions performance of tested vehicles exceeds the standards.

Under existing law, EPA can only test vehicles that have been properly maintained and used. EPA must recall a model for repairs if the agency determines that a substantial number of vehicles do not meet emissions standards.

• *Transportation control measure exemption*

Any state that requires covered clean-fueled fleet vehicles to comply with certain transportation control measures — trip reduction ordinances and restrictions on vehicle operation — is barred from counting emission reductions from the non-federal fleet program toward certain interim progress requirements. (Those requirements, in Title I, require ozone areas classified as serious or worse to achieve VOC emissions reductions averaging 4 percent per year for six years.) An exception is provided.

EPA must issue regulations ensuring that certain transportation control measures — including high-occupancy vehicle lanes, time-of-day or day-of-week restrictions, and other similar measures that restrict vehicle usage — do not apply to any clean-fueled vehicle that is subject to fleet program requirements.

• *Conversions*

Fleet program requirements can be met by conversion of existing gasoline and diesel vehicles to clean fuels. EPA is to issue regulations governing conversions. The converter is responsible for recall and warranty requirements.

Clean-fuel program requirements can be met through conversions. Requirements governing conversions are generally similar to the Senate bill, but specifics vary. The Transportation Department shall if necessary issue rules regarding the safety of converted vehicles.

Subject	Senate bill	House bill
• <i>Tank and fuel system safety</i>	The Transportation Department is to issue regulations on safety and use of fuel storage cylinders and fuel systems in vehicles capable of operating on clean fuels.	Similar.
• <i>State refueling facilities</i>	No similar provision.	For purposes of compliance with non-attainment area requirements, EPA may give credit to a state for emissions reductions that result from enforceable provisions of a state implementation plan that provide that the public can buy clean fuels from existing state refueling facilities, or that the state will build and operate refueling facilities for sale to the public.
• <i>Ultra-clean vehicle study</i>	EPA is to conduct a study in coordination with other agencies and develop a plan to foster joint public-private development of ultra-clean vehicles (e.g., electric, hydrogen-fueled, etc.) and encourage their gradual introduction.	No similar provision.
Bus program	The bill requires new urban buses in metropolitan areas of 1 million or more to be capable of operating on low-polluting fuels, and to operate exclusively on such fuels.	Generally similar, but requirements apply to metropolitan areas with a population of 750,000 or more.
• <i>Phase-in schedule</i>	For large cities, the requirement is phased in between 1991 and 1994. (Ten percent of new urban buses must comply in 1991, 25 percent in 1992, 60 percent in 1993, and 100 percent in 1994.) For medium-sized cities (1 million to 1.5 million in population), the requirement is phased in between 1993 and 1997.	The requirement is phased in between 1994 and 1996 (30 percent in 1994, 60 percent in 1995, and 100 percent in 1996).
• <i>Fuel options</i>	The term "low-polluting fuel" is not defined.	Clean alternative fuel is any fuel (including diesel) used in a clean-fueled vehicle that complies with emissions standards when using the fuel or power source.

• *Emissions standards*

No similar provision.

EPA must issue standards for clean-fueled buses based on the best technology that can reasonably be anticipated to be available at the time the measures are to be implemented, taking costs, safety, lead time, energy and other factors into account. Except to the extent specific clean-fueled bus standards are issued, clean-fueled buses must meet standards for conventional heavy-duty vehicles of the same type and model year.

Low-polluting buses must meet a particulate emissions standard of 0.1 grams per brake horsepower-hour (g/bhp-hr).

Clean-fueled buses must meet the same 0.1 g/bhp-hr standard. In addition, either NO_x or particulate matter (PM) cannot exceed 50 percent of emissions from a conventional vehicle of the same type and model year. EPA must relax the 50 percent requirement (to no more than 70 percent) if the agency determines it not technologically feasible, taking into account costs and other factors.

• *Diesel*

Diesel buses qualify as low-polluting if they meet the 0.1 g/bhp-hr standard. All new urban buses must meet that standard beginning in 1992.

Diesel-fueled urban buses must meet PM standards of 0.25 g/bhp-hr in 1991 and 1992, and 0.1 g/bhp-hr in 1993 and thereafter.

• *Retrofit of existing buses*

In the cities subject to the bus program, beginning Jan. 1, 1992, urban buses must be retrofitted to meet the 0.1 g/bhp-hr standard at the time of any major engine overhaul.

In the cities subject to the bus program, urban buses that have their engines replaced or rebuilt after Jan. 1, 1996, must be clean-fueled and operate exclusively on clean fuels when in the area.

Fuels

Reformulated gasoline

Reformulated gasoline is the only gasoline that can be sold in the nine metropolitan areas with the worst ozone pollution. EPA must set standards within one year of enactment, based on requirements in the bill. Standards are to be phased in between 1992 and 1996.

Generally similar, but standards are more stringent overall. Standards are to be phased in between 1992 and 2000. Reformulated gasoline is required in any ozone non-attainment areas reclassified in the future as severe or extreme, as well as in the nine metropolitan areas.

- *State option to expand program*

States may propose in state implementation plan revisions that reformulated gasoline be required for any moderate and serious ozone areas — more than 90 areas — beginning on the date specified in the revision.

At a state's request, EPA must apply reformulated gasoline requirements in any ozone areas classified as marginal, moderate or serious areas — more than 90 areas. EPA must establish an effective date not later than Jan. 1, 1994, or one year after the state application is received.

States may propose that reformulated gasoline specified by EPA as a clean fuel under the clean-fueled vehicle program be required starting Oct. 1, 1994, for ozone areas classified serious or worse. EPA can delay the date to provide adequate lead time for fuel to be made available in the necessary quantities. (This provision is separated from other reformulated gasoline provisions.)

- *Standards for reformulated gasoline*

No similar provision.

Reformulated gasoline standards must require the greatest achievable reduction in emissions of ozone-forming volatile organic compounds (VOCs) during the high ozone season (as defined by EPA) and hazardous air pollutants, taking into consideration costs, non-air-quality health and environmental impacts, and energy requirements.

Subject to limits in the bill for gasoline volatility and regulations for non-reformulated gasoline (see below), reformulated gasoline specifications must at minimum provide for:

- *oxygen content* — at least 2 percent in 1992, 2.5 percent in 1993, and 2.7 percent in 1994 and thereafter, except where higher oxygen content is mandated by requirements for oxygenated fuels in carbon monoxide non-attainment areas. EPA may waive the oxygen content requirement if EPA determines that use of oxygenated fuels would interfere with an area's attainment of a federal air quality standard for a pollutant other than CO.
- *aromatic hydrocarbon content* — no more than 30 percent in 1992, 28 percent in 1994, and 25 percent in 1996 and thereafter.
- *benzene* — the lowest concentration that can be achieved without additional capital investment beyond that required to meet the aromatic hydrocarbon standard, but no more than 1 percent.
- *ozone-forming VOCs* — during the high ozone season as defined by EPA, a reduction of at least 15 percent in ozone-forming potential of VOCs and no increase in nitrogen oxide (NO_x) (compared to conventional gasoline with Reid Vapor Pressure of 9.0 lbs. per square inch sold in 1989).
- *hazardous air pollutants* — no similar provision.

Standards for reformulated gas must comply either with specified fuel content specifications, or emissions performance requirements — whichever are more stringent. (For purposes of determining the more stringent provision, emissions performance requirements for hydrocarbons and hazardous air pollutants are to be considered independently.)

Fuel content specifications:

- *oxygen content* — at least 2 percent in 1992, 2.5 percent in 1993, 2.7 percent in 1994 and thereafter, except as otherwise required by this act.
- *aromatic hydrocarbon content* — no more than 30 percent beginning in 1992, 28 percent beginning in 1994, and 25 percent in 1996 and thereafter.
- *benzene* — no more than 0.8 percent.

Emissions performance requirements:

- *ozone-forming VOCs* — during the high ozone season, a reduction of at least 15 percent beginning in 1994, increasing to 20 percent in 1997 and 25 percent in 2000 (compared to fuel used for certification testing of 1990 vehicles). (See NO_x provision below.)
- *hazardous air pollutants* — same reductions as VOCs (or other levels EPA determines will achieve at least as great a reduction in aggregate adverse health effects).

See NOx provision above. The Senate bill has lead-ban and detergent additive requirements that apply to a broader range of fuels. (See leaded gasoline and fuel quality entries below.)

EPA regulations must prohibit the sale, dispensing, transport or introduction into commerce of any gasoline (for use in conventional gasoline-fueled vehicles) that does not meet requirements for reformulated gasoline. The regulations must take effect in accord with the phase-in schedule for specific requirements.

• *Flexibility in reformulating gasoline*

EPA may certify a gasoline as complying with reformulated gasoline requirements if it complies with the oxygen content and VOC and NOx emissions requirements, and achieves equivalent or greater emissions reductions than a gasoline meeting the specifications for aromatic content and benzene content.

• *Fuel availability waivers*

EPA can delay requirements for moderate and serious areas for up to three years to allow time for the fuel to be manufactured in the needed quantities.

In addition, reformulated gasoline standards must require:

- no lead content.
- the fuel to contain additives to prevent deposits in vehicle fuel supply systems.
- no aggregate increase in NOx emissions, in comparison with conventional gasoline (as defined by EPA) of the same grade.

Beginning in 1994, the bill prohibits the sale and dispensing of fuel (by retailer, marketer or refiner) in severe or extreme ozone areas (for use in conventional gasoline-fueled vehicles) that has not been certified by EPA as meeting reformulated gasoline standards. In 1992 and 1993, the same prohibition applies to fuels not certified as complying with the 30 percent aromatic hydrocarbon content limit, the 2 percent oxygen content requirement and the prohibition on increased NOx emissions.

EPA must approve an alternative fuel formulation, or slate of fuel formulations, if the fuel or fuels:

- achieves equivalent or greater reductions in ozone-forming hydrocarbons and hazardous air pollutants than a fuel meeting reformulated gasoline standards; and

- meets the requirement for no aggregate increase in NOx emissions.

EPA must approve or deny petitions for approval of alternative fuel formulations within 90 days of receipt; failure to act shall be deemed a denial.

If EPA determines there is insufficient domestic capacity to produce reformulated gasoline, EPA must extend the effective date in marginal, moderate and serious areas for one additional year, and may renew the extension for two additional one-year periods. Any person may petition EPA to extend the date; EPA must rule within six months of receipt.

• *Credits*

Sellers of reformulated gasoline with oxygen content greater than required are eligible for credits that could be used to offset sale of fuels that do not comply. Sellers can use credits or sell them. Exchange of credits is barred between sellers in different non-attainment areas. Exchanges are allowed in CO areas if the average oxygen content of fuels is 3.1 percent or greater.

Fuel refiners may obtain credits for producing fuel that has oxygen content that is greater than required, or that has lower aromatic hydrocarbon content than the standard in the bill. Refiners can use credits or sell them. EPA regulations must prohibit granting and transfer of credits in a non-attainment area if the result would be higher average fuel aromatic hydrocarbon content, and lower fuel oxygen content, than would occur without the credits.

• *Other gasolines*

EPA must issue regulations to ensure that gasoline sold on a nationwide basis does not result in per-gallon emissions greater than from gasoline sold in 1989. The regulations, effective by 1993, must apply to VOCs, NO_x, CO and overall emissions of carcinogenic air pollutants.

Generally similar, but the regulations must be effective one year earlier.

Fuel quality regulations

EPA must set fuel quality specifications to minimize — to the extent economically and technically feasible — emissions of hydrocarbons (HC), CO, NO_x, particulates and hazardous air pollutants. The regulations must be effective in 1994, and may prohibit fuel impurities and other substances or mandate additives. If EPA fails to issue regulations, sale of fuel containing additives to prevent deposits in fuel-injected engines is barred starting in 1994.

No similar provision.

Fuel volatility

To reduce VOC emissions, EPA is required to tighten existing limits on gasoline volatility (tendency to evaporate) during the high ozone period of the year — May 16 to Sept. 15 or a longer period set for a region by EPA. The limit cannot exceed, but may be lower than, a Reid vapor pressure of 9 lbs. per square inch in class C areas. (The country is divided by temperature into regions; most areas are class C.) EPA must set standards for hotter areas (class A and B areas) that achieve reductions comparable to those in class C areas. (Some areas would have RVP limits less than 9 lbs. psi, some areas would have higher limits.)

EPA must issue regulations banning sale of gasoline with RVP greater than 9 lbs. psi during the high ozone season, as defined by EPA. The regulations must be more stringent for a non-attainment area as EPA finds necessary to achieve comparable per-vehicle evaporative emissions in non-attainment areas.

The volatility of gasoline containing 10 percent ethanol can be 1 lb. psi higher.

Generally similar provision for gasoline containing at least 10 percent ethanol.

Oxygenated fuels for carbon monoxide non-attainment areas

Oxygenated-fuels programs to reduce carbon monoxide emissions from motor vehicles are required in all 44 areas exceeding the carbon monoxide air quality standard. The sale of gasoline with less than 3.1 percent oxygen is banned in those areas between Oct. 1 and March 31 unless the seller holds oxygen credits. EPA may reduce the period. The requirement is effective Oct. 1, 1991.

Generally similar, but the oxygen content standard is 2.7 percent. The standard would be 3.1 percent for "serious" areas that failed to attain the CO standard by the deadline in the bill. The requirement is broader than in the Senate bill, applying to the metropolitan statistical area (MSA) or consolidated MSA in which the non-attainment area is located. The requirement applies during the part of the year that EPA determines the area is prone to high levels of CO, beginning no later than Oct. 1, 1992. For serious areas designated after enactment, EPA must adjust oxygenated fuels deadlines where necessary.

• Credits

EPA must issue regulations allowing sellers of fuels with oxygen content higher than required to sell oxygen credits to sellers of fuels with lower oxygen content than required. Exchange of credits is barred between sellers in different non-attainment areas. Exchanges are allowed in CO areas if the average oxygen content of fuels is 3.1 percent or greater.

Generally similar, but EPA is to issue guidelines rather than regulations. No limits on exchange of credits are specified.

• *Waivers*

EPA may waive oxygenated-fuels requirements in whole or in part if the state shows that oxygenated fuels would interfere with attainment of air quality standards for a pollutant other than carbon monoxide. EPA may waive the requirement in CO areas in Alaska if EPA finds that prevailing temperatures cause engine or fuel system malfunctions in vehicles using oxygenated fuels.

Similar waiver is mandatory when oxygenated fuels would interfere with attainment of a standard. No Alaska waiver is provided. EPA also must waive the requirement where mobile sources do not contribute significantly to carbon monoxide pollution in an area, upon a showing by the state that is satisfactory to EPA.

• *Labeling*

Retailers must label pumps with a notice that the fuel is oxygenated and will reduce CO emissions.

Generally similar.

Leaded gasoline

The sale of leaded gasoline for motor vehicles designed for street or highway use is banned Jan. 1, 1992. EPA must extend the deadline annually for up to three years if the ban will reduce the availability of leaded gas for farm vehicles, and substitutes or lead additives are unavailable for use in gasoline-powered farm vehicles. Manufacture of new engines requiring leaded gasoline is banned after 1992.

No similar provisions.

Lead-substitute additives

No similar provisions.

EPA must develop test procedures to test lead-substitute gasoline additives. EPA may impose a user fee of up to \$20,000 per additive to recover the costs of testing any fuel additive; use of revenues is subject to appropriations. A total of \$3.5 million is authorized over six years for EPA to develop test procedures and conduct engine tests.

Subject	Senate bill	House bill
Diesel fuel desulfurization	The sale of motor vehicle diesel fuel that has sulfur content of more than 0.05 percent by weight, or fails to meet a minimum cetane index of 40, is banned effective Oct. 1, 1993. EPA must require manufacturers and importers of diesel fuel not intended for motor vehicles to dye it to distinguish it from motor vehicle diesel fuel. (This provision would reduce diesel particulate emissions and limit aromatic hydrocarbons to current levels, according to the Senate committee report, S. Rpt. 100-228.) The diesel fuel limits do not apply to certain refiners on the North Slope of Alaska with crude oil or feedstock capacity of 25,000 barrels per day or less whose products are used on the North Slope.	Similar, but EPA is given discretion to require dyeing of fuel. An additional provision specifies the sulfur content of fuel used to certify heavy-duty diesel vehicles starting in 1991. EPA may exempt Alaska and Hawaii from diesel fuel limits.
Non-road fuels	No similar provision.	EPA is given authority to regulate fuels for non-road vehicles and engines.
Misfueling	The bill generally makes it unlawful for any individual to dispense or allow dispensing of leaded gasoline into vehicles designed for unleaded gasoline. The bill also makes it unlawful to dispense diesel fuel that does not meet the bill's standards into any motor vehicle, starting Oct. 1, 1993.	Similar provision for leaded gasoline. Similar prohibition for dispensing diesel fuel that does not meet standards is included in desulfurization section.
Fuel waivers	No similar provision.	The House bill expands a current law requirement that manufacturers obtain waivers for new fuels and fuel additives that are not substantially similar to the fuels used in vehicle certification. The committee report says the bill makes clear that the requirement applies not only to unleaded gasoline, but to all other fuels and fuel additives — including leaded gasoline, diesel fuel and consumer additives.

Motor vehicle standards

Cars — tier I tailpipe standards

Tailpipe standards for light-duty vehicles (cars and very light trucks of less than 3,750 lbs. loaded vehicle weight) are tightened once in the 1990s (tier I) and possibly again after the turn of the century (tier II).

Tier I standards are phased in between 1993 and 1995, with 40 percent of new cars having to meet the standards in 1993, 80 percent in 1994, and 100 percent in 1995.

Tier I standards for gasoline-fueled light-duty vehicles (cars and very light trucks) are:

- *non-methane hydrocarbons (NMHC)* — 0.25 grams per mile (gpm).
- *hydrocarbons (HC)* — 0.31 gpm.
- *nitrogen oxides (NOx)* — 0.4 gpm.
- *carbon monoxide (CO)* — 3.4 gpm.

These standards apply for five years or 50,000 miles, whichever comes first; 25 percent less stringent standards apply for 10 years or 100,000 miles.

Generally similar.

For non-methane hydrocarbons (NMHC) and carbon monoxide (CO), tier I standards are phased in between 1994 and 1998. The new nitrogen oxide (NOx) standard is phased in during 1994 and 1995. (For NMHC and CO, standards for certification tests, which a model must pass before it can be sold, are phased in between 1994 and 1996. Recall of models that do not comply in customer use is based on separate standards to be phased in between 1994 and 1998.)

Similar standards apply for purposes of certification testing, except that the House bill has no total hydrocarbon standard. The separate recall standards (interim and final) are less stringent during the phase-in period.

For NMHC and CO, for purposes of certification testing, similar durability requirements apply. Final recall standards are the same as certification standards for the first five years or 50,000 miles; less stringent recall standards apply up to seven years or 75,000 miles. The NOx standard applies for five years or 50,000 miles, both for certification and recall purposes.

Subject	Senate bill	House bill
Cars — tier II tailpipe standards	Tier II standards automatically take effect in 2004 if more than 11 seriously polluted ozone areas outside California continue to exceed the ozone standard during the 1999-2001 period. A second chance for triggering the standard is provided with all dates pushed back three years. EPA must study alternative measures for reducing emissions and report to Congress in 1999; the report may include recommendations for legislation. Tier II standards automatically take effect starting in 2004 in any severe and extreme ozone area that has an ozone design value (near-peak ozone level) exceeding 0.15 parts per million (ppm) on Dec. 31, 2000. (Under this provision, an equivalent standard for total-vehicle HC emissions is substituted for the HC tailpipe standard in the following chart.) Tier II tailpipe standards for gasoline-fueled light-duty vehicles (cars and very light trucks) are: • <i>HC</i> — 0.125 gpm. • <i>NOx</i> — 0.2 gpm. • <i>CO</i> — 1.7 gpm.	If EPA determines that tighter standards are needed, technologically feasible and cost-effective, the agency must issue them. EPA has discretion over the levels but must consider standards specified in the bill. The standards must take effect no earlier than 2003 but no later than 2006. If EPA fails to take action, the tighter standards specified in the bill automatically take effect in 2003. No similar provision.
Durability of vehicle emission controls (useful life) for light-duty vehicles	Standards for light-duty vehicles (cars and very light trucks) apply for five years or 50,000 miles through model year 1994. In 1995, the period is extended to 10 years or 100,000 miles. (Tailpipe standards for light-duty vehicles include differing provisions; see above.)	No similar provision. Current law applies standards for light-duty vehicles for five years or 50,000 miles; the bill's tailpipe standards for light-duty vehicles include more stringent requirements (see above).
Diesel car standards	Tier I and II standards also are provided for diesel-fueled light-duty vehicles; a particulate matter standard is added and the NOx standard is less stringent than for gasoline-fueled light-duty vehicles.	Generally similar, but the NOx standard is the same as for gasoline-fueled light-duty vehicles.

Cold-temperature carbon monoxide tailpipe standard

Cold-temperature standards for carbon monoxide from light-duty vehicles and light-duty trucks are required. (Because CO emissions are higher in cold weather, violations of the CO air quality standard occur during the cold months.) An initial standard — 10 gpm at 20 degrees F — is to take effect in 1993. In 2000, light-duty vehicles must meet a 3.4 gpm standard at 20 degrees F.

A cold CO standard like the 1993 standard in the Senate bill is to be phased in between 1993 and 1995. EPA is to study the need and feasibility of a tighter standard for 1998 and later vehicles. EPA is authorized to issue cold CO standards for 1998 and later light-duty vehicles and light-duty trucks. EPA is also authorized to issue cold CO standards for heavy-duty vehicles.

Light-duty truck tailpipe standards

Light-duty truck standards are tightened in 1995. Light-duty trucks (other than those to be regulated as cars) are divided into two weight categories, with less stringent standards for the heavier class. The committee report says the standards are derived from the bill's standards for cars, adjusted for the heavier weight and carrying capacity of trucks. Standards apply to NMHC, CO, NOx and particulate matter (PM).

Generally similar for lighter weight class, but standards and deadlines vary. No standards are provided for the heavier weight class. Standards apply for a shorter useful life than the 11 years or 120,000 miles provided by current EPA regulations. Standards are analogous to the system of tier I standards in the House bill for cars, and are phased in between 1994 and 1998.

Any vehicle with a loaded vehicle weight of 3,750 lbs. or less is a light-duty vehicle. (This provision means that very light trucks — such as compact pickups — are to be regulated as cars.)

No similar provision. However, very light trucks less than 3,750 loaded vehicle weight are given the same standards as cars for tailpipe emissions and clean-fueled vehicle standards.

Heavy-duty truck tailpipe standards

Particulate matter standards for heavy-duty trucks scheduled to take effect in 1991 and 1994 under EPA standards would be codified. The NOx standard scheduled to take effect in 1991 would be codified, and tightened in 1998.

No standards are specified for heavy-duty trucks, but the committee report says EPA is given more flexibility in setting emissions standards for heavy-duty vehicles and engines. EPA could revise current standards, or could set standards that reflect the great emissions reduction achievable through technology EPA determines will be available, taking cost and other factors into account. EPA is authorized to regulate engine rebuilding and emissions from rebuilt engines.

Urban bus standards

The particulate matter standard for urban buses — which under current regulations will be 0.1 grams per brake horsepower-hour starting in 1991 — would be set by statute at 0.25 g/bhp-hr in 1991 and 0.1 g/bhp-hr in 1992 and thereafter.

Diesel-fueled urban buses must meet particulate matter standards of 0.25 g/bhp-hr in 1991 and 1992, and 0.1 g/bhp-hr in 1993, one year later than in the Senate bill. (Provision is in clean-fueled bus section.)

Subject	Senate bill	House bill
Onboard controls for refueling vapors	Onboard canisters to capture fuel vapors during refueling are required for new light-duty vehicles (cars and very light trucks) beginning in 1993 (except as provided below) and for other vehicles at the earliest date EPA determines it is feasible. The systems must capture at least 95 percent of the fuel vapors. The Transportation Department is to study the impact on vehicle safety of onboard systems. If DOT finds they present an unreasonable risk, Congress is to consider recommendations for changing onboard requirements under expedited legislative procedures. If no legislation is enacted within 12 months, the regulations take effect in 1995.	Similar, but only for cars. EPA, in consultation in DOT, must determine that such systems are safe.
Stage II hose-and-nozzle controls on gas pumps	The Senate bill requires stage II hose-and-nozzle controls on gas pumps in 40 areas with ozone pollution classed as serious, severe or extreme. Another 62 have a choice between stage II and enhanced motor vehicle inspection and maintenance programs. EPA can revise or waive the stage II requirements once onboard systems are in widespread use throughout the motor vehicle fleet. (For more on stage II requirements, see first part of this publication, "Attainment and maintenance of air quality standards," p. 13.)	The House bill requires stage II controls in 27 areas with ozone pollution classed as serious, severe or extreme. Stage II controls also are required for 32 areas classed as moderate, but the requirement does not apply to moderate areas after EPA issues onboard canister regulations that are required within one year of enactment. For serious and severe areas, EPA can revise or waive requirements for stage II once onboard systems are in widespread use throughout the motor vehicle fleet.
Evaporative emissions controls	EPA must issue regulations to control evaporative emissions for new gasoline vehicles within 18 months of enactment. The regulations must take effect beginning in 1994 and must require the greatest degree of emission reduction achievable by means expected to be available during any model year to which the regulations apply. (EPA estimates that evaporative emissions account for 30 percent of all volatile organic compound (VOC) emissions, and two-thirds of VOC emissions from passenger cars.)	Generally similar, but does not require regulations to take effect in 1994. EPA must commence rulemaking within 12 months of enactment. If EPA does not issue final regulations within 18 months, the agency must provide an explanation and set a deadline for issuing the regulations within an additional 15 months. The standard for emissions reductions is the same, except that EPA is to consider fuel volatility, cost, energy and safety.

Onboard diagnostic systems

New cars and light-duty trucks beginning in 1994 are required to have on-board diagnostic systems to identify emission-related systems deterioration or malfunction, including at least the catalytic converter and oxygen sensor. The systems must alert the driver to the need for maintenance or repairs. EPA is given discretion to require onboard diagnostic devices for heavy-duty vehicles. EPA must issue regulations within 18 months of enactment.

Generally similar, but the House requirement applies to all vehicles. EPA is to determine the effective date based on time needed for technological development and cost. EPA must commence a rulemaking within 12 months. If final regulations are not issued within 18 months, EPA must explain and set a deadline for issuance within an additional 15 months.

EPA must require state inspection and maintenance programs to provide for inspection of onboard diagnostic systems and maintenance or repair of problems identified with the emissions control or diagnostic systems. Additional provisions are intended to ensure that independent repair shops as well as vehicle dealers can use and service onboard diagnostic systems.

Similar, except that EPA is given discretion to require state programs to inspect onboard diagnostic systems. Provisions in Title I require inspection of onboard diagnostic systems as part of enhanced motor vehicle inspection and maintenance programs.

Warranties

The existing Clean Air Act requires manufacturers to provide car buyers with minimum warranties for emission-control components. The bill would shorten the warranty period for light-duty vehicles from five years or 50,000 miles in current law to two years or 24,000 miles starting in 1995. However, the warranty would extend for eight years or 80,000 miles for catalytic converters, onboard diagnostic devices, electronic emissions-control units, and major components over \$200 that were not in general use on vehicles made before 1990.

Similar, except that onboard diagnostic equipment is not automatically covered by the eight-year, 80,000-mile warranty period.

Averaging

Automakers may not comply with emissions standards through averaging emissions of different engine families or models — except in the case of heavy-duty vehicles and engines.

No provision. The legality of motor vehicle emissions averaging under current law is a matter of dispute.

Motor vehicle air toxics

No standards are required for toxic emissions from motor vehicles (other than for clean-fueled vehicles). EPA must issue fuel-quality regulations, effective by 1994, to reduce emissions of hazardous air pollutants. (See fuel-quality entry.)

EPA must issue regulations to reduce emissions of hazardous air pollutants from motor vehicles and motor vehicle fuels within 54 months of enactment. Standards must reflect the greatest degree of emissions reduction EPA determines achievable through the application of technology that will be available, taking into account cost and other factors. The regulations at minimum must apply to benzene and formaldehyde. EPA is to study the need to regulate air toxics for motor vehicles and fuels.

Non-road engines

(Examples are diesel locomotives, farm and construction equipment, lawn and garden equipment, marine vessels and airport vehicles.)

EPA must list all categories of non-road engines and vehicles and estimate their contribution to ambient ozone and carbon monoxide levels in non-attainment areas, and to levels of nitrogen oxides and total particulate matter. Whenever EPA determines that a category contributes significantly to concentrations of those pollutants — or to air pollution that may endanger public health or welfare — EPA must issue regulations for the category. Standards must achieve the greatest emissions reduction achievable through the application of technology that will be available, considering cost and other factors. In determining the degree of emissions reduction, EPA must first consider standards equivalent to those for comparable motor vehicles or engines, if any, taking into cost, feasibility and other factors.

EPA must study emissions from non-road engines and vehicles, and determine within 30 months of enactment whether they are significant contributors to ozone or carbon monoxide levels in more than one ozone or carbon monoxide non-attainment area. If so, EPA must issue emissions standards for categories that in EPA's judgment contribute to such air pollution. The regulations must apply to the useful life of the engines as determined by EPA. EPA is given discretion to regulate other pollutants (such as air toxics) from non-road engines and vehicles. The bill prohibits use of emissions controls or design elements for complying with standards for non-road engines if they will contribute to an unreasonable risk to public health, welfare or safety.

No similar provision; states could adopt more stringent requirements.

States are pre-empted from regulating emissions from new non-road engines or vehicles subject to regulation under the act.

No similar provision.

A Title I provision says that nothing in Title II relating to non-road engines shall be construed to apply to stationary internal combustion engines.

Testing and certification

EPA must revise certification tests — which a vehicle model must pass before it can be sold — to ensure that tests reflect actual current driving conditions, including conditions relating to fuel, temperature, acceleration and altitude. Procedures must include evaporative and tailpipe emissions tests, and tests of trucks of 6,000 lbs. gross vehicle weight or more in a loaded mode. An idle test must be added to the certification test procedure.

Certification test procedures must be revised to better reflect real-world conditions (e.g. temperature and fuels) to ensure that properly maintained cars can pass state inspection and maintenance program tests.

If 10 percent or more of vehicles taken from the assembly line fail to meet emissions standards, the model cannot be sold until the manufacturer shows the problem is corrected. (The figure is 40 percent under current EPA regulations.)

No similar provisions.

Compliance program fees

No similar provision.

EPA may impose fees on domestic and foreign manufacturers to recover the costs of certification of new vehicles and engines, and the costs of compliance monitoring and testing of new and in-use vehicles and engines. Fees would be deposited in a special fund for use by EPA's compliance program, subject to appropriation.

Testing financed or conducted by vehicle manufacturers

If EPA has reason to believe that vehicles or engines in use do not meet emissions standards, EPA may require the manufacturer to pay costs EPA incurs in procuring and testing the vehicles or engines.

An information collection provision authorizes EPA to require manufacturers of vehicles, engines or engine parts to perform tests "where such testing is not otherwise reasonably available under this part (including fees for testing)."

Federal compliance

Federal agencies must comply with EPA-approved state implementation plans, and supply requested information on air pollutant emissions expeditiously to regulators. Federal agencies must comply with vehicle inspection and maintenance programs, except for military tactical vehicles. Federal agencies must require owners of non-federally owned motor vehicles that operate on federal installations to show proof of compliance with inspection and maintenance programs.

No similar provisions.

Enforcement

The bill strengthens and broadens EPA's authority to enforce motor vehicle and fuel requirements. The bill raises the maximum civil penalty for certain violations of vehicle requirements from \$10,000 to \$25,000, and gives new authority to EPA to assess administrative penalties up to \$200,000 for violations of certain motor vehicle and fuel requirements. Individuals are prohibited from tampering with emissions control systems, and the manufacture or sale of devices that bypass or defeat emissions controls is made illegal. The maximum civil penalty in such cases would be \$2,500. The bill provides courts with authority to restrain violations of fuels regulations by injunction.

Generally similar; a number of provisions differ.

ENVIRONMENTAL AND ENERGY STUDY CONFERENCE

SPECIAL REPORT

July 24, 1990

The House- and Senate-passed clean air bills: a side-by-side comparison

Toxic air pollution

by Jim Ketcham-Colwill

The House and Senate have approved comprehensive clean air bills that include ambitious requirements for reducing toxic air pollution.

Both bills would require regulation of major sources — such as oil refineries, chemical plants and steel-making plants — and “area” sources, which are diverse small sources such as dry cleaners and gas stations. Both bills also would establish programs to reduce the threat of accidental releases of air toxics.

Although the two bills are similar in many ways, important toxics issues remain to be settled in conference.

The first meeting of House and Senate conferees on the clean air bill was held Friday, July 13. Most staffers expect the conference to continue into September or October. (For more on the conference outlook and major issues to be resolved, see introduction to June 15 *Special Report*.)

About this publication: This publication, the fifth in a series, contains a selective side-by-side comparison of Title III of the House and Senate clean air bills as passed. Title III contains provisions on control of toxic air pollution.

Already published are:

- a June 15 comparison of Title I provisions on attainment and maintenance of air quality standards;
- a June 19 update of a May 17 comparison of acid rain control provisions;
- a July 12 comparison of provisions to regulate motor vehicles and fuels; and
- a July 24 comparison of provisions to protect the stratospheric ozone layer.

This series updates EESC’s already published side-by-side comparison of the Senate-

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passed bill with the House bill as reported by the House Energy and Commerce Committee. Although much of the original comparison remains valid, the House added several major floor amendments to the committee version of the bill. [For a summary of the amendments, see May 31 Special Report, "Amendments to the House clean air bill (HR 3030)."]

The air toxics problem: Two kinds of pollutants are regulated under the Clean Air Act. For the most widespread pollutants (so-called "criteria pollutants"), the Environmental Protection Agency sets national ambient air quality standards, and states develop state implementation plans (SIPs) to reduce pollution levels to the standards. EPA has set standards for six criteria pollutants: sulfur dioxide, carbon monoxide, lead, ozone, nitrogen dioxide and particulates.

Hazardous air pollutants — often called toxic air pollutants — are regulated under a separate system: EPA sets emissions standards limiting the amount of a pollutant that can be emitted from various types of sources. Many hazardous air pollutants cause cancer. Some cause other health problems such as damage to the nervous system or birth defects.

The system for regulating hazardous air pollutants is generally regarded as a failure. Since enactment of the 1970 Clean Air Act, EPA has regulated only some sources of seven hazardous air pollutants, although hundreds of air toxics exist. EPA says that the procedure mandated by the act for setting health-based, pollutant-by-pollutant standards proved unworkable. Members of Congress have said that EPA was reluctant to regulate when standards stringent enough to protect health would have put industries out of business.

The Senate Environment Committee report (S. Rpt. 101-228) says a 1989 EPA study estimates that exposure to some 15 to 40 hazardous air pollutants may result in approximately 2,700 cancer cases a year. Elevated cancer risks are faced by people living near major industrial plants and in urban centers where emissions from a variety of sources produce a mixture of pollutants. Another threat is posed by the accidental release of air toxics in thousands of chemical accidents and other incidents each year.

EPA estimates that more than half of toxic emissions are from motor vehicles. Both bills would reduce those emissions through regulation of motor vehicles and fuels. (See Title II comparison in July 12 *Special Report*.)

Overview of toxics provisions: The air toxics provisions of the two bills are similar in structure, but there are significant differences in control requirements.

Both bills would:

- require major industrial pollution sources to install best technology controls — "maximum achievable control technology" — to reduce routine emissions. To expedite issuance, the bills call for EPA to set the standards by industry category, not pollutant by pollutant. Both bills would require EPA to regulate all categories of major sources.

- allow a future Congress a chance to specify how much further remaining health risks from major sources should be reduced. If Congress did not act, both bills would require EPA to issue stricter standards to regulate residual risks. The House bill would require standards to protect public health with an ample

margin of safety, as under current law. The Senate bill would establish a new system of risk-based standards for carcinogens.

- require regulation of routine emissions from "area sources" — diverse small sources such as gas stations, dry cleaners, wood stoves, furniture manufacturers, printing plants, small-plastics manufacturers, apartment building boilers, wastewater treatment plants, drinking-water supply systems, solid and hazardous waste landfills, and pesticide applications.

- require standards for prevention and detection of accidental releases of air toxics, and establish an accidental release investigation board.

Residual risk: The stringency of health-based standards has been the most contentious air toxics issue, and one of the touchiest in the entire clean air bill. Environmentalists and industry strongly disagree on how much cancer risk from an industrial plant should be tolerated before the plant is required to shut down, perhaps 15 or 30 years from now.

At this point, it is clear that neither environmentalists nor industry will get what they originally wanted. Environmentalists had said all plants should reduce the lifetime cancer risk to the most exposed person to 1-in-1-million or shut down. Industry supported the administration proposal, which would have required EPA to issue regulations eliminating "unreasonable" risks.

Surprisingly, both environmental groups and industry groups are supporting the House provisions preserving current law over the new cancer-risk standards in the Senate bill. David Doniger of the Natural Resources Defense Council has said the standards in the Senate bill are "riddled with loopholes." Bill Fay of the Clean Air Working Group, an industry coalition, has said industry representatives are leery of standards in the Senate bill that could require plant shutdowns.

Plant shutdowns also could be required by the current "ample margin of safety" standard, depending on its interpretation by EPA and the courts. For carcinogens, courts have allowed EPA to set standards based on levels of cancer risk, but controversy continues over how safe is safe. A Senate Environment Committee staffer said both environmentalists and industry apparently are betting that they can win favorable interpretations of current law.

Differences: Among other differences in the toxics provisions are:

- **MACT:** Maximum achievable control technology standards for existing plants are slightly more stringent in the Senate bill than in the House bill.

The Senate bill contains a "hammer clause" only in case EPA fails to issue MACT standards on time. Pollution sources could not operate unless they obtained a permit. To get a permit, they would have to commit to installation of technology and practices that an independent engineer certifies as the best available.

- **Plant modifications:** Both bills would authorize EPA to set less stringent standards for existing plants than for new plants. The House bill would require existing plants that undergo expansion to meet new source standards, if toxic emissions would increase significantly. The Senate bill would require existing sources to meet new source standards only if they are reconstructed.

- **Steel industry coke ovens:** The Senate bill would grant steel industry coke ovens an extension to 2020 before residual risk

standards apply, in exchange for meeting stringent emissions limits before 1995.

• **Area sources:** Both bills would require control of hazardous emissions from area sources, but the approach varies.

The House bill would require EPA to issue technology standards for area sources. The Senate bill would give EPA discretion to set technology standards for area sources, but would require the agency to prepare a national urban air toxics strategy.

• **Electric utilities:** The Senate bill would require EPA to issue MACT standards for utility power plants after five years, but says EPA is not authorized to require utilities to use flue-gas scrubbers to control toxic emissions. The House bill would require EPA to regulate air toxics from power plants if EPA finds it appropriate and necessary based on a study.

• **Pesticides:** The Senate bill would exempt agricultural pesticide use from regulation under the hazardous air pollution provisions of the Clean Air Act where the use is regulated under the Federal Insecticide, Fungicide and Rodenticide Act.

• **Radionuclides:** Both bills contain special provisions for regulation of radioactive air pollutants. For example, the Senate bill would authorize EPA not to regulate radionuclide emissions from sources licensed by the Nuclear Regulatory Commission if EPA determines that NRC regulations provide an ample margin of safety. The House bill would require standards for radionuclides to be set based upon radiation dose.

• **Municipal waste incinerators:** The Senate bill contains provisions to regulate air emissions and disposal of ash from municipal waste incinerators. The House bill would subject incinerators to standards for hazardous air pollutants.

• **Great Lakes:** The Senate bill would require an ongoing assessment of deposition of air toxics into the Great Lakes, Lake Champlain and coastal waters. Deposition-monitoring networks would be required for those waters. The House provision would require EPA to conduct a two-year study covering the Great Lakes, Chesapeake Bay and tributary waters. The House bill explicitly requires EPA to consider additional regulation of air toxics based on the study.

• **Prevention of accidental releases:** The Senate bill would impose a "general duty" upon facility owners and operators to design and operate a safe facility to prevent accidental releases.

The Senate bill would require EPA to list at least 50 extremely hazardous chemicals; the House would require EPA to list at least 100.

The Senate bill would require facilities handling more than threshold amounts of listed chemicals to develop hazard assessments. EPA would be authorized to require risk management plans as well. The House bill would require such facilities to develop risk management plans that include hazard assessments.

The Senate bill contains detailed requirements for hazard assessments that EPA must consider. The House requirements are less detailed but are mandatory.

Both bills would require EPA to issue regulations to prevent accidental releases. The regulations would apply to more chemicals under the Senate bill than under the House bill. The House bill would require the regulations to be consistent, to the extent practicable, with recommendations and standards estab-

lished by certain professional societies and institutes.

The Senate bill gives broader investigatory power to the proposed accidental release investigation board by requiring investigation of accidents that result in substantial property damage. The Senate bill also contains additional provisions to ensure that board's independence from federal agencies.

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Title III: Toxic air pollution

Subject	Senate bill	House bill
<i>Major sources</i>		
Overview	The bill requires maximum achievable control technology (MACT) — in layman's terms, best control technology — on plants that are major sources of air toxics. After MACT controls are installed, EPA is to assess remaining health risks and issue more stringent "residual risk" standards if needed.	Similar.
List of pollutants	The bill lists 191 toxic pollutants (hazardous air pollutants). EPA must add or delete pollutants from the list based on specified criteria, on its own initiative or in response to a petition. EPA must respond to petitions within 12 months. EPA must review and revise the list at least every five years. EPA cannot list elemental lead as a hazardous air pollutant.	Generally similar. Ammonia and hydrogen sulfide are not on the House list, but are on the Senate list. EPA must respond to petitions within 18 months. EPA must periodically review and revise the list. No pollutant listed for purposes of establishing national ambient air quality standards can be listed as a hazardous air pollutant.
Definition of major source	Regulations for major sources apply to those that emit at least 10 tons per year of any one of the listed pollutants, or 25 tons of any pollutants in combination. EPA can set a lesser quantity for a major source based on certain factors.	Regulations for major sources also apply to those with the <i>potential</i> to emit the 10- or 25-ton threshold levels.
List of source categories	Within one year of enactment, EPA is to publish a list of all categories of major sources of hazardous air pollutants. EPA also must list categories of area sources that it finds present a health or environmental threat warranting regulation. For seven types of pollutants, EPA must establish minimum emissions rates for categories of sources, ensuring that at least 90 percent of aggregate emissions of each pollutant are regulated.	Generally similar. EPA must list sufficient categories of area sources to ensure that 90 percent of the area source emissions of each hazardous air pollutant are subject to regulation. No similar provision on the seven types of pollutants.

EPA can designate additional source categories for regulation at any time. EPA can delete from the list categories in which no source (or group of area sources) emits a listed pollutant in quantities posing a lifetime risk of cancer greater than 1-in-1-million to the most exposed person — if all pollutants emitted are carcinogens with no other adverse health or environmental effects.

EPA must revise, if appropriate, the list from time to time, and no less than every eight years. EPA can choose not to list, or delete from the list, a source category if no source (or group of area sources) emits a listed pollutant in quantities that may cause a lifetime risk of cancer greater than 1-in-1-million to the most exposed person. In the case of non-carcinogens, emissions could not exceed a level adequate to protect public health with an ample margin of safety.

MACT standards

EPA is required to issue within 10 years maximum achievable control technology standards for all categories of major sources that emit the 191 pollutants. (The standards are to be issued by industry category, not pollutant by pollutant.)

Similar.

Schedule for standards

EPA must issue standards for source categories emitting 13 pollutants (including coke oven emissions, organic solvents and metals) within two years.

EPA must issue standards for at least 10 source categories within two years.

For remaining source categories, standards must be issued for 25 percent within four years of enactment, 50 percent within six years, and all within 10 years.

EPA must issue standards for 25 percent of source categories within four years, 50 percent within seven years, and all within 10 years.

New sources generally must comply with MACT standards once they are issued. Existing sources must comply with MACT standards within three years of their promulgation, with certain exceptions. (See compliance deadlines entry below.)

Similar.

“Hammer clause”

If EPA fails to issue standards on time, a “hammer clause” takes effect. Six months after the date the standards were to be issued, it is unlawful for sources in the category to emit any hazardous air pollutant except under a permit from EPA or the state. To receive the permit, the source must commit to installation of the best technology and practices available, as certified by an independent, registered professional engineer. Emission limits in the permit must be met immediately for new sources and three years after the permit is issued for existing sources.

No similar provision.

MACT definition

MACT standards are to require the maximum reductions in toxic emissions that EPA determines are achievable, taking cost and other factors into account.

Similar.

For new sources, MACT must be at least as stringent as the most stringent emissions level achieved in practice by a similar source.

For new sources, MACT must be at least as stringent as the emissions level achieved in practice by the best controlled similar source.

For existing sources, MACT can be less stringent but must be at least as stringent as the average emissions limitation achieved by the best-controlled 10 percent of similar sources. For categories with fewer than 30 sources, the standards must not be less stringent than the average of the best-controlled three sources. The bill says that an average reduction of 90 percent (95 percent in the case of particulates) from uncontrolled levels is an appropriate benchmark for standards for existing sources.

For existing sources, MACT can be less stringent but must be at least as stringent as the average emissions limitation achieved by the best-controlled 15 percent of similar sources. For categories with fewer than 30 sources, the standards must not be less stringent than the average of the best-controlled five sources.

Voluntary or early reductions

EPA or the state must exempt an existing source from MACT requirements if the source voluntarily reduces emissions by 90 percent — 95 percent in the case of particulate emissions. The voluntary reductions from 1985 (or later) emission levels must be accomplished within three years of enactment for 13 pollutants, and within four years of enactment for other toxic pollutants on the list of 191. "Voluntary" means not required by federal air pollutant law or regulations.

States are authorized to allow existing sources that reduce emissions by 90 percent — 95 percent in the case of particulate emissions — before EPA proposes the applicable MACT standard to maintain that reduction, rather than comply with MACT, for a period of five years after the MACT compliance date. Existing sources that achieve the reduction after the proposal of the applicable standard, but before Jan. 1, 1994, can qualify if the source makes an enforceable commitment to achieve the reduction before the standard is proposed. The reduction is to be from emissions in 1987 or later.

Existing sources that voluntarily achieve a 90 percent reduction in toxic emissions by 1993, and before an air toxics standard is issued, need not comply with the standard until five years after the reduction is achieved.

Residual risk — studies and provisions for further congressional action

A commission is established to report to Congress on questions involving residual risks from toxic pollutants after MACT controls are installed. Expedited procedures are provided to ensure that Congress votes on the recommendations. In addition, EPA is to revise its risk assessment guidelines for carcinogens based on a study by the National Academy of Sciences.

EPA is required to conduct a study on residual risks, control methods and health effects within eight years and submit recommendations to Congress.

Residual risk standards (health-based standards)

If Congress does not enact legislation regulating health risks from toxic pollutants remaining after MACT controls, EPA must issue health-based standards under provisions of the bill.

After MACT controls are applied, EPA must evaluate remaining risks to health and the environment for source categories. If EPA finds that a significant risk remains, the agency is required to issue more stringent, health-based standards within five years after issuance of the MACT standard. The health-based standards are required if, after MACT controls, the lifetime risk of cancer to the most exposed individual exceeds 1-in-1-million. Health-based standards also are required if MACT controls do not prevent adverse health effects from non-carcinogens with an ample margin of safety.

For non-carcinogens, the standards must protect public health with an ample margin of safety, unless a more stringent standard is needed to protect the environment. For known, probable or possible human carcinogens, two risk levels are set.

Existing sources must reduce lifetime cancer risk to the most exposed individual to 1-in-10,000 or shut down. They also must meet a 1-in-1-million standard, but can obtain a repeated exemption if that standard is not achievable.

New sources emitting carcinogens must comply with the 1-in-1-million standard on the effective date of health-based standards for that source category.

Alternative emission limits

In the case of health-based standards, sources can obtain less stringent, alternative emissions standards if they perform a site-specific health assessment of risk to public health. EPA is to issue rules governing the site-specific health assessments, which would provide an approximation of actual health risks. (Current EPA risk assessments employ very conservative assumptions that would result in higher risk estimates.)

If Congress does not act, EPA is required to issue health-based standards under provisions of the bill.

After MACT controls are applied, EPA must issue health-based standards for a source category if needed to provide an ample margin of safety to protect public health (the standard under current law). The standards are required for a source category eight years after MACT standards are issued for the source category (nine years in the case of categories for which MACT standards are required within two years of enactment).

Standards must protect public health with an ample margin of safety, as under current law. (For carcinogens, courts have allowed EPA to set standards that are based on risk levels.)

A broader House provision allows states implementing the program to provide alternative emissions limitations in lieu of standards under the air toxics section of the bill.

	Alternative limits must reduce lifetime cancer risk to 1-in-10,000 for the actual person who is most exposed, according to site-specific health assessment. Sources must meet that standard or shut down. Alternative limits also must require available technology to reduce cancer risk to the most exposed actual person to 1-in-1 million, to the extent achievable. For non-carcinogens, the limits must protect public health with an ample margin of safety, unless a more stringent standard is needed to protect the environment.	Alternative limits are allowed if the source shows that the lifetime risk of cancer does not exceed 1-in-1-million to the most exposed actual person. For non-carcinogens, the limits must protect public health with an ample margin of safety. Alternative limits also are allowed for early reductions. (See "voluntary or early reductions," p. 6.)
Plant modifications	If reconstruction of an existing source begins after EPA first proposes regulations under the hazardous air pollutants section establishing emissions standards applicable to the source, the source must meet requirements for new sources.	If reconstruction or modification of an existing stationary source begins after EPA proposes MACT or residual risk standards applicable to such a source category, the source must meet requirements for new sources. "Modification" means any physical or operational change in a major source that increases emissions of any hazardous air pollutant by more than a <i>de minimus</i> (insignificant) amount or that results in emission of any hazardous air pollutant not previously emitted by more than a <i>de minimus</i> amount.
Work-practice standards	In addition to numerical emissions standards, EPA is authorized to issue design, equipment, work-practice or operational standards. EPA must issue such standards when it is not feasible to prescribe or enforce an emissions standard.	If EPA finds that it is not feasible to prescribe or enforce an emissions standard, EPA may instead require design, equipment, work-practice or operational methods, process changes, reuse or recycling, and other measures.
Monitoring and leak prevention	Emissions standards shall include, where appropriate, leak prevention, detection and correction requirements. EPA or a state with an approved program (see "state programs," p. 12) may require a facility to monitor, install leak detection systems, and report the results.	No similar provisions.
Deadlines for compliance	New sources must meet MACT and health-based standards as soon as standards are issued. EPA is to require existing sources to comply within three years of the effective date of a standard, with certain exceptions.	Similar. Similar for MACT. For health-based standards, standards for existing sources apply 90 days after the effective date.

• *Extensions*

Alternative emissions limits are effective on the compliance date for the health-based standard, except that EPA or the state may provide a one-year extension if the source shows additional time is necessary to comply.

EPA or the state may grant existing sources a temporary exemption from the 1-in-1-million risk standard for carcinogens if the source shows that standard cannot be achieved using all available controls. The source must use all available controls. Controls so expensive that they would shut down the source, or severely impair its economic viability, are not considered to be "available." The source must apply for an extension each time its permit is renewed.

Existing sources meeting standards for reasonable available control technology (RACT), best available controls technology (BACT), or lowest achievable emissions rate (LAER) are given a five-year compliance extension from MACT and health-based standards.

No similar provision.

Sources constructed or reconstructed after MACT standards are proposed, but before health-based standards are proposed, need not comply with health-based standards for 10 years.

The president may exempt sources from compliance deadlines for air toxics standards for up to 2 years if the technology to comply is not available and operation of the source is required for national security. The exemption may be extended for additional two-year periods.

No similar provision.

For health-based standards, EPA can grant a two-year compliance extension if EPA finds the extension necessary for installation of controls and that steps will be taken in the interim to ensure that people's health will be protected from imminent endangerment.

States can allow existing sources meeting BACT or LAER to obtain a five-year compliance extension for MACT.

States may grant existing sources a two-year extension for compliance with MACT if it is necessary for installation of controls. (Another three years can be allowed for drying and covering mining waste.)

No similar provision.

Similar.

Subject	Senate bill	House bill
Steel industry coke ovens	Steel plants meeting stringent limits on coke oven emissions before 1995 get an extension to 2020 before residual risk standards apply. Risk assessments must be made available to the surrounding communities by 2000. Coke ovens not owned or operated by an integrated steel company, if in operation before 1990, can qualify for the same extension if they meet one set of limits within three years and a second stringent set in 10 years. EPA and the Energy Department must undertake a six-year research program to assess coke oven production control technologies and assist in the development and commercialization of technically practicable and economically viable control technologies. Federal funds may be used for up to 50 percent of project costs. The bill authorizes appropriations of \$5 million annually in fiscal 1991 through 1996 for the program.	No similar provisions. No similar provision. No similar provision.
Electric utilities	EPA is to study utility power-plant emissions of toxic particulates within three years and of mercury within four years. EPA is to issue MACT standards for power-plant emissions of those pollutants not sooner or later than five years after enactment. Utilities must comply within eight years of enactment. Nothing in the toxics section authorizes EPA to issue standards requiring use of flue-gas scrubbers by power plants for toxic emissions. EPA cannot issue standards to control emissions of any listed toxic pollutant other than mercury that is emitted in gaseous form by utility power plants.	EPA is required to conduct a study on the health hazards of air toxics from utility power plants and report to Congress within three years. EPA must regulate utility power plants under the bill's air toxics section if the agency finds it appropriate and necessary based on the study. No similar provisions.
Pesticide exemption	The authorities of section 112 (to regulate emissions of hazardous air pollutants) are not available for protecting health or the environment from use of a pesticide in a commercial agricultural operation where the use is regulated under the Federal Insecticide, Fungicide and Rodenticide Act.	No similar provision.

Hydrofluoric acid

No similar provision.

EPA within three years must complete a study on alternatives to use of hydrofluoric acid by oil refineries. If EPA determines there is an alternative that provides a net benefit to public safety, human health and the environment, within 15 months of the study EPA must issue regulations requiring all oil refineries to convert to the alternative within 10 years.

Oil and gas wells, other industry-specific provisions

Emissions from oil or gas exploration or production wells, and pipeline compressor stations, shall not be aggregated in determining whether they are major sources. Oil and gas exploration wells shall not be listed as an area source category for regulation.

Similar provision for major sources (pipeline pump stations also are covered). Emissions from oil and gas exploration wells shall not be aggregated for any purpose under this section. Unless risks from oil and gas wells exceed certain levels, EPA shall not issue standards for them.

Other industry-specific provisions apply to publicly owned treatment works (municipal wastewater treatment plants), metal and mineral mining processing, and research and laboratory facilities.

Other industry-specific provisions apply to regulation of publicly owned treatment works, mineral fiber emissions, and research and laboratory facilities.

Area sources

EPA can list area source categories just as it lists major source categories and require MACT. EPA also can require area sources to use generally achievable control technology, a less stringent standard than MACT.

Generally similar. (For specifics on listing, see "list of source categories," p. 4.)

EPA is required to prepare a national urban air toxics strategy to reduce area source emissions. The goal is to reduce the estimated number of cancer cases from area sources by 75 percent.

No similar provisions.

The strategy must identify at least 10 of the most hazardous pollutants emitted by area sources. The agency must regulate sources accounting for 90 percent of the aggregate emissions of each of the 10 pollutants. All sources must be in compliance within nine years of the bill's enactment.

EPA is required to issue technology standards for enough area source categories to ensure that 90 percent of the area source emissions of each hazardous pollutant are subject to regulation.

Any requirements for motor vehicles or fuels must be established under Title II.

The requirement does not include motor vehicles and non-road vehicles subject to regulation under Title II.

EPA is to conduct research on area sources. The program is to include monitoring and an inventory of sources of toxic emissions.

No similar provisions.

Permits

A permit program is established for sources of hazardous air pollutants. EPA within 12 months of enactment must issue regulations establishing minimum program elements.

No similar provisions; sources of hazardous air pollutants regulated by the bill are subject to permitting requirements of Title IV.

Sources cannot legally operate without a permit, except that an existing source may continue operations before issuance of a permit if the owner or operator certifies that the source will comply with all applicable requirements. (See also "hammer clause," p. 5, in relation to MACT standards.)

Standards must be met immediately for new sources, and not later than three years after the permit is issued for existing sources. Permits must be revised to reflect new standards at the time of permit renewal. EPA can veto state issuance of a permit as being not in compliance, but need not review each permit to be issued by a state. To the maximum extent practicable, permits under this section must be consolidated with other permits required under the act.

State programs

States may seek EPA approval to operate programs to implement and enforce emissions standards for hazardous air pollutants or requirements for prevention of accidental releases. States may apply for partial or complete delegation of EPA authorities. EPA must publish guidance to help states develop programs. Provisions are included for EPA to withdraw approval of a state program if the state is not administering and enforcing it in accord with EPA guidance.

States are required to submit to EPA comprehensive permit programs to implement emissions standards under Title IV of the bill.

Technical assistance

EPA must establish an air toxics clearinghouse to provide technical assistance and information to state and local agencies and, on a cost-reimbursable basis, to others. EPA may make grants to help states develop and implement programs.

Similar.

No similar provision. (Both bills contain separate small business technical assistance programs.)

EPA and states with permit programs must supply technical assistance and information on emissions reduction methods and accident prevention and detection to area sources and non-major stationary sources. EPA should establish an information clearinghouse.

Great Lakes

EPA is to assess the extent of atmospheric deposition of air toxics into the Great Lakes, Lake Champlain and coastal waters. EPA is to establish monitoring networks for deposition of air toxics into those waters. EPA is to report to Congress every two years.

EPA is to conduct a two-year study of the sources and effects of atmospheric deposition of air toxics into the Great Lakes, Chesapeake Bay and their tributary waters. Based on the study, EPA may require further controls to prevent health and environmental effects from air toxics deposition in those waters.

Radionuclides

EPA can choose not to issue radionuclides emissions standards for sources licensed by the Nuclear Regulatory Commission if EPA determines that NRC regulations provide an ample margin of safety. Nothing in this subsection shall prevent states from having stricter standards than the federal government.

No similar provision.

Nothing in section 112 (the hazardous air pollutants section of the Clean Air Act) shall authorize a state to impose any standard on radionuclide emissions from NRC-licensed facilities when it would be barred by other law, including the Atomic Energy Act.

No similar provision.

Standards for categories of radionuclides for which standards were proposed by EPA in March 1989 (except NRC-licensed sources) shall be established under existing law.

Similar.

Municipal waste incinerators

In the case of radionuclides, EPA can use different criteria for defining a major source of hazardous air pollutants than the tonnage levels that apply for other pollutants, on the basis of certain factors.

No similar provision.

EPA must issue new source performance standards for municipal incinerators, medical waste incinerators, and incinerators burning commercial and industrial wastes. The standards are based on good combustion, acid gas scrubbers and particulate emissions control. Numerical limits are required for several pollutants.

EPA is to issue guidelines for regulation of existing units that would be enforced by states.

Areas served by incinerators must recycle 25 percent of the waste stream. If that rate is infeasible, the state may establish a lower recycling rate, subject to review every two years with a maximum extension of five years.

Requirements are included for monitoring emissions, training operators and issuing operating permits. Permits for solid waste incinerators shall be issued by the administrator or state for a period of up to 30 years and shall be reviewed every five years.

Incinerator operators are given four options for handling ash:

- disposal in a landfill with a double liner with leachate collection and groundwater monitoring;
- disposal in a monofill (ash-only landfill) with a single liner, groundwater monitoring and leachate collection;
- disposal of treated ash that passes toxicity tests in a conventional sanitary landfill;
- recycling and reuse of ash, provided the ash meets EPA standards for each type of reuse.

For radionuclides, the term “major source” shall have the meaning specified by EPA by rule, considering radiation dose.

Standards for radionuclides must be based upon radiation dose.

No similar provisions. Unlike the Senate bill, the House bill subjects municipal waste incinerators to the bill’s control requirements for hazardous air pollutants.

Accident prevention program

List of pollutants

EPA within 24 months of enactment must promulgate a list of at least 50 substances that, as a result of sudden events, may cause acute adverse health effects in humans. The list is to be drawn from, but not limited to, a list of approximately 360 extremely hazardous substances established under section 302 of the Emergency Planning and Community Right-to-Know Act of 1986 (part of the 1986 superfund law). The bill mandates inclusion of 25 specified substances.

Generally similar, but EPA must list at least 100 substances that may cause serious adverse effects to public health or the environment. The bill mandates inclusion of 16 specified substances. No pollutant for which a national primary ambient air quality standard has been established can be included. In listing substances, EPA is to consider the severity of acute health effects, likelihood of release and potential magnitude of human exposure.

• Revisions

EPA is to review and revise the list at least every five years, adding substances that meet the criterion for inclusion. (Deletion of substances is not mentioned.)

EPA is to review and revise the list at least every five years. EPA is to establish procedures for addition and deletion of substances consistent with those for the list of hazardous air pollutants subject to emissions controls under the bill.

• Threshold quantities

When a substance is placed on the list, EPA must establish a threshold quantity for each substance, taking into account certain factors.

Generally similar, except that EPA in listing substances can consider the likelihood of accidental release.

• Ammonia tanks exemption

No similar provision; however, a similar exemption applies to emissions standards for hazardous air pollutants.

EPA must exempt from accidental release requirements cargo tanks transporting anhydrous ammonia and operated by private carriers exclusively for agricultural purposes.

Definition of accidental release

An "accidental release" is the release "of an extremely hazardous substance into the air under circumstances that are not routine and are not authorized" by permits or standards of the Clean Air Act or other federal law. An exemption says that the term does not include a release from a vent or relief valve, or a release that results from a disturbance in a process that is planned and designed to prevent catastrophic events.

An "accidental release" means an unanticipated emission of a listed substance from a stationary source.

Subject	Senate bill	House bill
General duty of facility owners and operators	Whether or not explicit requirements have been imposed, facility owners and operators have a “general duty” to: • identify hazards resulting from accidental releases of extremely hazardous substances using appropriate hazard assessment techniques; • design and maintain a safe facility to prevent releases; • minimize the consequences of release. Extremely hazardous substances include those listed by EPA under the accidental release program, as well as approximately 360 extremely hazardous substances listed by EPA under section 302 of the Emergency Planning and Right-to-Know Act of 1986. Nothing in the general duty provision shall create any liability for compensation for bodily injury or property damages that may result from accidental releases.	No similar provision.
Accident prevention regulations	EPA must issue accident prevention, detection and correction regulations for releases of extremely hazardous substances (whether listed or not) from devices and systems, including vessels but not rolling stock (railroad cars).	EPA must issue regulations for prevention and detection of accidental releases of listed substances from stationary sources, and for response to releases by the owners or operators.
• <i>Scope</i>	The regulations must include requirements for monitoring, record-keeping, reporting, training, vapor recovery, secondary containment, and other design, equipment, work practice and operational requirements.	The regulations must cover the use, operation, repair, replacement and maintenance of equipment to monitor, detect, inspect and control releases, including training of persons in the use and maintenance of such equipment and in the conduct of inspections. Regulations must include emergency response procedures and measures, and cover storage as well as operations.
• <i>Deadlines</i>	No similar provisions.	EPA must issue the accident prevention regulations within three years of enactment; the regulations must take effect three years after issuance (or three years after the addition of a substance to the list).

• *Coordination with other requirements, radionuclides*

EPA is to consult with the Labor Department and seek to coordinate any requirements with requirements established by the Occupational Safety and Health Administration. Nothing in this section gives EPA or the proposed chemical safety board authority to regulate accidental releases of radionuclides from facilities licensed by the Nuclear Regulatory Commission.

EPA is to issue regulations in consultation and coordination with the Transportation and Labor departments. Regulations are to be issued and implemented in a manner consistent with other applicable law, and consolidated to the maximum extent practicable with similar requirements under other law.

Release detection regulations

Within 36 months of enactment, EPA must submit to Congress a report assessing the best available technology to monitor facilities for accidental releases of extremely hazardous substances. Within 24 months of completing the study, EPA must issue regulations containing accidental leak detection monitoring requirements, taking cost effectiveness and technological feasibility into account.

No similar provision.

Risk management plans

Accidental release regulations may require facilities handling an extremely hazardous substance to prepare and implement a risk management plan to detect and prevent accidental releases, and to provide prompt emergency response. EPA may require that plans be reviewed by independent engineers and that any identified deficiencies be corrected.

Accidental release regulations must require stationary sources with more than a threshold amount of a listed substance to prepare and implement a risk management plan to detect and prevent accidental releases, and to provide a prompt emergency response.

No similar provisions.

Risk management plans must provide for compliance with accidental release requirements and include a hazard assessment, prevention program and response program. Prevention programs are to include safety precautions and maintenance, monitoring and employee training measures. Response programs are to provide for specific actions to be taken in response to an accidental release, including procedures for informing the public and local response agencies, emergency health care, and employee training measures.

Hazard assessments and risk management plans

Because the structure of the two bills differs, this section compares some Senate provisions for hazard assessments with some House provisions for risk management plans. In the House bill, hazard assessments are part of risk management plans. In the Senate bill, hazard assessments are separate from risk management plans.

- **Ban on operation**

Within 12 months of the time a substance is listed, facilities with more than a threshold amount must complete a hazard assessment for each substance present. EPA is authorized to exempt or establish a greater threshold quantity for any substance that is a nutrient used in agriculture when held by a farmer. (A hazard assessment is an engineering analysis of a facility to determine the potential for any accidental release of extremely hazardous substances and the likely consequences.)

Hazard assessments are to assess the potential effects of accidental release, including an estimate of potential release quantities, downwind effects and potential exposures to exposed populations. The assessment must include a history of previous releases of the past five years, and an evaluation of worst-case accidental releases.

After a hazard assessment requirement is effective for a facility, it is illegal to operate the facility until the hazard assessment has been prepared or updated.

No similar provision.

- **Guidance**

Within 12 months of enactment, EPA must publish guidance for preparing hazard assessments. EPA is to consider the extent to which listed elements should be required. Among the list are basic data on the facility, population of nearby communities, identification of potential sources of release, identification of previous releases, identification of a range of possible releases (including worst-case events), determination of potential exposure, and a review of release prevention and control measures. EPA may collect and publish information on accident scenarios and consequences.

When regulations are issued, EPA must issue guidelines to assist stationary sources in the preparation of risk management plans. Guidelines are to include model plans to the extent practicable.

- **Health effects information**

EPA must prepare and distribute information on health effects and other hazards of each listed substance that must be included in each hazard assessment.

No similar provision.

- **Updating**

Each hazard assessment must be updated every five years, or within six months of any facility alteration that may substantially change the risks of accidental releases.

Risk management plans must be updated periodically as EPA requires by rule.

• <i>Railroad yards and railroad cars</i>	Hazard assessments cannot be required to include potential releases from “rolling stock” — railway cars — that infrequently and temporarily are located at a facility, but may be required for rolling stock regularly present at the facility. [The committee report (S. Rpt. 101-228) says this provision gives EPA discretion to include railroad yards where railroad cars containing extremely hazardous substances are frequently located.]	No similar provision.
• <i>Coordination with OSHA, state pre-emption</i>	To the maximum extent practicable, EPA is to coordinate requirements for hazard assessments with any comparable requirements of the Occupational Safety and Health Administration — provided that listed conditions are satisfied. One condition is that nothing in the regulation diminishes the right of any state or political subdivision to impose more stringent requirements for hazard assessment or accident prevention and mitigation.	No similar provision specifically for hazard assessments (but see related coordination requirements that apply to accidental release regulations in general).
• <i>Consistency with standards of societies and institutes, small business concerns</i>	To the extent practicable, where there are a large number of small similar facilities, EPA must design generic hazard identification and assessment tools such as training manuals, checklists and workbooks.	To the maximum extent practicable, accidental release regulations must be consistent with recommendations and standards established by the American Society of Mechanical Engineers, American National Standards Institute, American Society of Testing Materials, and other organizations. EPA must take into consider the concerns of small businesses in issuing regulations.
• <i>Public availability</i>	Hazard assessments must be available to EPA, the release investigation board established by the bill (see “investigation board,” p. 20), the state, local emergency planning entities or public safety agencies, and the public subject to conditions specified in the Emergency Planning and Community Right-to-Know Act of 1986.	Stationary sources must register risk management plans with EPA. Plans also must be submitted to the release investigation board established by the bill, the state, local agencies with responsibility for planning or responding to accidental releases, and the public under section 114(c) of the Clean Air Act.
• <i>Compliance audits</i>	EPA must conduct compliance audits of hazard assessments, reviewing at least 1.4 percent a year.	EPA must establish by rule an auditing system to regularly review and require revisions in risk management plans to ensure compliance.

Subject	Senate bill	House bill
Investigation board	An independent Chemical Safety and Hazard Investigation Board is established within EPA. The board is to consist of three members, including a chairman, appointed by the president with the advice and consent of the Senate. The terms of office of board members are five years. The president can remove members for inefficiency, neglect of duty, or malfeasance.	Generally similar Accidental Release Investigation Board is established, but the board has five members and the bill does not say that the board is within EPA. The terms of office are to be established by the president.
• <i>Accident investigations and reports</i>	The board must investigate and issue written reports on accidental releases (of about 360 extremely hazardous substances) involving chemical production, processing, handling or storage that result in a fatality, serious injury or substantial property damages.	The board must investigate any significant accidental release of a listed substance, or a similarly hazardous unlisted substance, from a stationary source resulting in a fatality or serious injury. Excluded are releases of certain radioactive materials that the Nuclear Regulatory Commission is authorized to investigate, and any transportation-related release that the National Transportation Safety Board is authorized to investigate. For each investigation, the board must develop a written report.
	No similar provision.	Reports are not subject to review by federal agencies or the courts. No conclusions, findings or recommendations of an accidental release report by the board shall be admitted as evidence or used in any damage suit. Board reports may include recommendations to EPA or OSHA for the adoption of regulations concerning detection and prevention of accidental releases of listed substances, and for reducing the potential effects.
• <i>Recommendations on hazard assessments</i>	Within 18 months of enactment the board must publish a report containing recommendations to EPA on types of facilities and substances for which hazard assessments would be appropriate.	No similar provision.
• <i>Board recommendations to EPA and OSHA</i>	The board must issue periodic reports recommending measures to reduce the likelihood or consequences of accidental releases. The reports may include proposed rules or orders that should be issued by EPA or the Occupational Safety and Health Administration.	Generally similar; reports are required within two years of enactment and every two years thereafter. Any recommendations must be specific and identify the substances to which the recommendations apply.

• <i>EPA and OSHA response</i>	When the board submits a recommendation to EPA or OSHA on the safety of chemical production, processing, handling and storage, the agency in question must respond in writing within 180 days. The response must say whether the agency will initiate a rulemaking or issue orders to implement the recommendation. If the agency declines to implement all or part of a recommendation, the agency must explain in an accompanying statement.	EPA and OSHA must respond to board recommendations within 12 months of receipt. If either fails to conform to the recommendations, the agency must publish an explanation.
• <i>Accident reporting regulations</i>	The board must establish by regulation binding requirements for reporting accidental releases subject to the board's investigatory jurisdiction.	Similar.
	After the effective date of reporting requirements, failure to report a release of extremely hazardous substances as required is a violation subject to specified enforcement provisions.	No similar provision.
• <i>Coordination with NTSB and OSHA</i>	The board is to coordinate its activities with other federal agencies. The board must enter into a memorandum of understanding designating NTSB as the lead agency for investigation of transportation-related releases. The board must enter into a memorandum of understanding with OSHA to limit duplication of activities.	Similar.
• <i>Board powers</i>	The board can hold hearings, administer oaths, subpoena witnesses and evidence, and enter property and inspect records for investigation purposes. These powers extend to any authorized board member, administrative law judge employed by or assigned by the board, or officer or employee designated by the board.	Generally similar, but board powers are limited to the board and authorized board members.
	The board may establish procedural and administrative rules to exercise its functions. The board is authorized to enter into contracts, leases, cooperative agreements or other transactions.	No similar provision.

Subject	Senate bill	House bill
• <i>Worker rights</i>	When EPA or the board conducts a facility inspection under the accidental release section, workers and their representatives have the same rights to participate as provided for in the Occupational Safety and Health Act.	Similar.
• <i>Public availability and trade secrets</i>	Records, reports or information obtained by the board must be available to the public, except upon a showing that it would cause substantial harm to the person's competitive position. In that case, the material is to be kept confidential, except that it may be disclosed to other employees or authorized representatives of the United States or disclosed when relevant under any proceeding under the Clean Air Act. This provision does not authorize withholding of materials from Congress.	Similar.
• <i>Board independence</i>	Whenever the board submits certain items — budget requests, legislative recommendations, prepared hearing testimony, recommendations or studies — to the president, EPA or the Office of Management and Budget, it must concurrently transmit a copy to Congress.	No similar provision.
• <i>Board funding</i>	Members, officers and employees of the board are not responsible to or subject to supervision or direction by any other part of EPA or other federal agency. The bill authorizes appropriations of \$12 million annually in fiscal years 1990 through 1994 to carry out investigation board provisions. EPA must provide the board facilities and support needed for operation.	No similar provision.
• <i>Annual report</i>	EPA must submit to Congress an annual report including information on releases investigated or reported, recommendations for legislative or administrative action that the board has made, actions taken by agencies to implement the recommendations, etc.	No similar provision.

Other provisions

• <i>Emergency relief and orders</i>	When EPA determines there may be an imminent and substantial endangerment to public health, welfare or the environment, EPA may ask the district court to require relief. EPA, after notice to the state, also may issue orders. A person subject to an order is subject to a \$25,000-per-day fine for failure to comply. EPA is to publish guidance for using order authorities, and may provide for coordinated use with other emergency powers under the Clean Air Act or other environmental statutes.	No similar provision.
• <i>Enforcement</i>	Accidental release and hazard assessment requirements are subject to the same enforcement authorities as emissions standards for hazardous air pollutants.	Accidental release requirements are subject to enforcement provisions of Clean Air Act section 113 (Title VI of the bill).
• <i>Federal agency coordination</i>	The president must conduct a review of the release prevention, mitigation and response authorities of the various federal agencies, and must clarify and coordinate agency responsibilities.	No similar provision.
• <i>State pre-emption</i>	Nothing in the accidental release section shall limit the right of states or political subdivisions to adopt or enforce more stringent requirements.	No similar provision.
• <i>Authorization of appropriations</i>	The bill authorizes appropriation of such sums as may be necessary to carry out the accidental release subsection of the bill.	No specific authorization.
Chemical process safety management	A separate section requires the Labor Department, in coordination with EPA, to issue a chemical process safety standard pursuant to the Occupational Safety and Health Act. The standard, due within 12 months of enactment, is to protect employees from hazards associated with accidental releases of highly hazardous chemicals in the workplace. The standard is to include a list of highly hazardous chemicals.	Similar.

The standard, which does not pre-empt state law, must require employers to take certain actions, including:

- develop safety information identifying workplace hazards;
- perform a workplace hazard assessment;
- consult with workers on hazard assessments and chemical accident prevention plans, and provide access to records;
- establish a system addressing prevention, mitigation and emergency response in light of the hazard assessment findings;
- develop operating procedures for the chemical processes;
- provide safety and operating information and training to employees, and ensure that contractors are provided information and training;
- train and educate employees and contractors in emergency response;
- establish a quality assurance program for process-related equipment, establish maintenance systems for critical equipment, and conduct pre-start-up safety reviews of new equipment; and
- investigate every incident that results or could have resulted in a major accident.

Similar.