CVS News

California Motor Vehicle Pollution Control Program
News and Analysis for September 1991

In This Edition:

CARB Phase II Gasoline Workshop

On August 14, 1991, CARB staff from the Stationary Source Division held the second public workshop on CARB's Phase II reformulated gasoline proposal. CARB staff present included Dean Simeroth, Susan Huscroft, Bob Fletcher, Dan Donohoue, Tom Jennings, John Courtis, Rich Vincent, and Jim Aguila. The main focus of the workshop was discussion of the revised specifications for Phase II gasoline, which will, in general, be

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much more difficult for the oil industry to comply with than those originally proposed by CARB. The revised specifications were published by CARB without any accompanying justification or estimate of cost effectiveness. The basis for many of the revised specifications appears to be ARCO's recently announced "EC-X" gasoline. The changes to the CARB proposal were coupled with statements by CARB staff that substantial changes may yet be made to the proposal using data not currently available. Despite the uncertainties surrounding the Phase II gasoline proposal, the Board Hearing date for this item remains November 1991.

Background

At the June 11, 1991 workshop regarding Phase II gasoline, CARB staff proposed the following specifications that were discussed in the July edition of CVS News:

Phase II Reformulated Gasoline Specifications
June 1991 Proposal

Parameter	Proposed Specification
Aromatics	<25 vol%
Benzene	Average 0.8 vol%, plus cap to be determined
C9+ Aromatics	to be determined (TBD)
Olefins	<10 vol%
Winter Oxygen	2.7 wt% minimum
Summer Oxygen	2.0 wt% minimum
Summer RVP	7.0 psi maximum
Sulfur	150 ppm maximum
T90	TBD
Driveability Index	TBD
Cyclohexane	TBD

Since the first workshop, CARB staff has developed draft regulatory language and made major modifications to the proposed specifications. Other changes since the previous workshop include the addition of provisions for certifying substitute gasolines that do not meet the Phase II specifications but allow the same emission reductions to be realized. All of the changes to the staff proposal are discussed in detail below.

Proposed Fuel Specifications

The revised Phase II gasoline specifications proposed by CARB staff are given below:

Phase II Reformulated Gasoline Specifications
August 1991 Proposal

Parameter	Proposed Specification
Aromatics	<25 vol%
Benzene	1.0 vol% max., or average of 0.8 vol%, with 1.2 vol% cap
C9+ Aromatics	TBD
Olefins	<5 vol%
Winter Oxygen	2.1 wt% maximum*, 1.5 wt% minimum with averaging
Summer Oxygen	2.1 wt% maximum*, 1.5 wt% minimum with averaging
Summer RVP	7.0 psi maximum
Sulfur	30 ppm maximum
T90	300°F
T50	200°F
Driveability Index	1100
Cyclohexane	TBD

As noted, these specifications differ significantly from those proposed in June. Details on each change are discussed below.

Benzene - CARB has modified the proposed benzene specification to allow refiners to meet either a flat 1.0% maximum or an average level of 0.8% with a cap of 1.2%. A refiner must select either the flat limit or the averaging option and must adhere to that selection for one year. The averaging option requires the refiner to set an alternative benzene limit (between 0 and 1.2%) for each batch of gasoline. This limit must be reported to CARB at least 12 hours before the refiner transfers or commingles the fuel. Credits for batches with benzene content below 0.8 vol% are banked by a specific facility and cannot be marketed to other companies or transferred among facilities owned by the same company. There is no time limit on how long a credit lasts, but limits on the amount of credits that can be banked and a beginning bank balance of zero are being proposed.

Olefins - The proposed specification for the olefin content of gasoline has been revised downward from a maximum of 10% by volume to a maximum of 5% by volume. Although no technical justification for the change or the limit has been published by CARB, staff indicated that they believe a lower olefin content would yield NOx emission reductions, based on

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* CARB will allow but not require oxygenate contents of up to 2.7% by weight if MTBE is the only oxygenate.

work performed by ARCO, and that reductions in 1,3 butadiene (a toxic air contaminant) might also be realized. CARB staff presented no explanation for the mechanism by which lowering the olefin content of gasoline reduces NOx emissions, nor could ARCO provide such an explanation.

Oxygenates - The CARB proposal with respect to oxygenates was drastically revised by staff. The previous CARB proposal for wintertime gasoline was a minimum of 2.7% oxygen by weight with a minimum of 2.0% oxygen by weight for summertime gasoline. The revised CARB proposal contains provisions for a maximum oxygen content of 2.1% by weight for both winter and summer gasolines unless MTBE is used, in which case a maximum oxygenate level of 2.7% would be allowed, but not required. In addition, refiners may select between either a flat minimum of 2.0% or an averaging program that would require an average of 2.0% and a minimum of 1.5%. Details of the averaging program would be similar to those of the benzene averaging program with the exception being that a rolling average over a 180-day period (the previous 90 days and subsequent 90 days) would be used. Use of the averaging program would appear to provide an incentive for the use of MTBE, the only oxygenate that could be used above the 2.1% maximum. However, at the workshop CARB staff suggested that other oxygenates, such as ETBE, TAME, and even ethanol, could be used at levels above 2.1% if it could be demonstrated that no NOx increase would result. The proposal also contains variance procedures for situations beyond the reasonable control of a refiner.

Previously with respect to wintertime gasolines, the CARB staff indicated that it has the authority to restrict the use of specific oxygenates as well as marketable credits for oxygenate usage. The staff also stated that it did not anticipate being able to demonstrate that a significant NOx increase would result from use of oxygenates at a level of 2.7% by weight. However, the revised CARB proposal does not specify a wintertime oxygen level of 2.7% oxygen using only MTBE, as would be logical based on CARB's tentative determination that MTBE is the only oxygenate that can be used at that level without a NOx increase. This is because the CARB staff has questions regarding MTBE availability. The staff believes that only 55% of the MTBE required for a 2.7% oxygen level will be available in California during the fall of 1992. Therefore, the staff would be forced either to delay the winter oxygenate program in California or to allow the use of other oxygenates. The staff has obviously chosen the latter option, not wanting to delay the start of California's wintertime oxygenate program for any reason.

Sulfur - The latest CARB proposal is that sulfur content be kept below 30 ppm, down from 150 ppm as in the original proposal. The reason for this change is recently released data from the Auto/Oil research program demonstrating that reducing sulfur levels can lower emissions of HC, CO, and NOx by approximately 20%. The accepted mechanism for this effect is reversible sulfur poisoning of three-way catalytic converters. At low sulfur levels, catalyst activity improves, resulting in lower emissions of all pollutants. The Auto/Oil data spanned a range of sulfur contents from 450 ppm to 50 ppm. Questions still exist as to the form of the relationship between sulfur and emissions. At present, CARB staff is assuming a linear relationship, but there is evidence to suggest that it may be a non-linear relationship. Again, CARB staff is anticipating

that new data will be available shortly to clarify the nature of the sulfur versus emissions relationship.

Distillation Points and Driveability Index - CARB has chosen to specify T90, T50, and driveability index for Phase II gasoline. The current proposal is to limit T50 to a maximum of 200°F, T90 to a maximum of 300°F, and driveability index to a maximum of 1100. The T90 specification is a result of the Auto/Oil research program which found that lowering T90 reduced emissions of HC. It is thought that reducing T90 acts to reduce levels of heavy aromatic compounds, which results in lower emissions. The T50 and driveability index specifications are related in that data from several sources indicate that as both parameters are lowered, HC emissions improve. The explanation given for this is that the fuel vaporizes more readily, resulting in more complete combustion. The driveability index is also being investigated by CARB as a means of assuring that lower RVP does not increase exhaust emissions of HC. The approach here is to keep the driveability index constant as RVP is reduced. The result is lower front-end volatility, which is compensated for by better mid- and high-range volatility.

Proposed Procedures for Certifying Alternatives to Phase II Gasoline

CARB has proposed a procedure, based on vehicle testing, for certifying gasolines that do not meet the Phase II gasoline standards. The procedure proposed is very similar to that proposed by CARB for qualifying substitute clean fuels.

Test Plans and Vehicle Testing - CARB staff is proposing a requirement that applicants seeking to certify a gasoline must submit a test plan for approval by CARB's Executive Officer. This test plan would include a description of the fuel to be qualified and the properties of the fuel that affect exhaust emissions. This list must include, at a minimum, those properties specified for Phase II gasoline and must designate whether the values given represent maximum or minimum specifications. Regulatory specifications for these parameters will be based on the actual values for the fuel used in testing.

With respect to vehicle testing, the plan must specify the following:

1. The categories of vehicles that are to be tested. As many as eight categories of vehicles may have to be tested. Vehicle testing would be required for all categories of vehicles that account for either 5% of on-road gasoline-fueled vehicle mileage or 3% of the NMOG emissions from that group of vehicles.
2. The number of vehicles to be tested. CARB is proposing that a minimum of 5 vehicles must be tested in each of the required vehicle categories.

3. The number of tests to be performed. CARB is proposing a minimum of two back-to-back tests per fuel (Phase II gasoline and the alternative gasoline) on each vehicle. Additionally, the CARB proposal would require that vehicle preconditioning

consist of a highway fuel economy test followed by two FTP cycles (without cold soaks or evaporative test requirements).

4. The vehicles to be used in testing. All vehicles must be tested in as-received condition with the exception that any routine maintenance scheduled to occur may be performed.

6. The pollutants to be measured during testing. CARB staff is proposing that emissions of NMOG, evaporative NMOG, CO, NOx, benzene, 1,3 butadiene, formaldehyde, and acetaldehyde be measured.

Analysis of Emissions Data - CARB is proposing to average the values of the emissions differences between alternative gasoline and Phase II gasoline for each pollutant over all vehicles tested in a given category. The averages for each category would then be combined for each pollutant, taking into account the percentage of the vehicle fleet represented by each vehicle category. The result of this will be one composite value per pollutant per fuel tested. For toxic compounds, the results for each vehicle test will be used to calculate a potency-weighted toxic emissions parameter, which will be treated as a pollutant in all of the calculations described above.

Statistical Tests to be Used in Analysis of Emissions Data - CARB is proposing to use the composite average emissions differences to calculate an upper confidence limit for those differences for each pollutant. This upper confidence limit would be calculated using a one-tailed t-variate at the significance level of 0.15 and an estimate of the standard error that is derived from the standard deviations of the emissions difference within the vehicle test categories. The upper confidence level for each pollutant must be less than a criterion value that has yet to be established by CARB. According to CARB, this test will provide an 85% confidence that emissions using the alternative gasoline would not exceed those obtained using Phase II gasoline. One point of interest is that CARB is requiring an alternative gasoline to demonstrate no increase in both mass and reactivity-adjusted NMOG emissions.

Duration of Alternative Gasoline Approval - CARB is proposing that fuel approval would last a minimum of five years. Approval could be renewed without additional vehicle testing if the statistical approval criteria are still met after recombining the emissions difference values to reflect changes in the composition of the vehicle fleet using the fuel. Applicants might also be required to perform additional testing if the determination is made that new categories of vehicles must be included in the analysis.

Predictive Models - CARB staff is still interested in using predictive models to certify alternative gasolines. This is the approach being taken by EPA for reformulated gasolines. However, CARB has yet to present any details regrading the model it would use or how the certification process would work.

Industry Comments

Oil industry reception of the latest CARB proposal was very cool, as expected. ARCO was the only company that stated support for the proposal. Most of the questions raised were directed at the technical basis for CARB's choice of standards. Another major issue was the accuracy of the test methods being proposed by CARB to monitor compliance with the Phase II gasoline specifications. In many cases, the variability of the testing methods may be as great as the value of the proposed fuel specification. CARB indicated that it would take test uncertainty into account when determining compliance and would strive to improve the test methods. A number of oil industry representatives cautioned CARB about interactions among the various parameters for which specifications have been proposed, and urged CARB to develop and use predictive models for certifying Phase II gasoline, rather than setting absolute limits of fuel properties. Refiners also stressed that the use of models would give them the flexibility they need to optimize the capabilities of their refineries in producing Phase II gasoline. Oil industry representatives also urged CARB to better align the Phase II gasoline requirements with those for federal reformulated gasoline and to perform an incremental assessment of the benefits and costs associated with Phase II gasoline. CARB staff indicated that it had no intention of doing either, asserting that Phase II gasoline will result in significantly larger emissions reductions and that Phase I gasoline is the appropriate basis for cost effectiveness calculations.

In contrast to the oil industry, auto industry reaction was very favorable, with General Motors (GM) being the most vocal in its support for the CARB proposal. Paul Wuebben of the South Coast Air Quality Management District and Ken Smith of the Sacramento Metropolitan Air Quality Management District generally supported the CARB proposal but stressed the importance of assuring that NOx emissions will not increase as a result of using oxygenated fuels. Wuebben also urged CARB to lower the proposed benzene limit and to make the certification procedure for alternative gasolines more stringent.

Presentations were made at the workshop by GM, ARCO, Unocal, Chevron, and WSPA. The main points of interest here were a heated discussion between ARCO and Chevron regarding the effect of reducing aromatic content and a WSPA proposal for CARB to slow down its rulemaking in order to take full advantage of the data being collected in various fuel research programs. CARB's response to WSPA's proposal was that it could not delay the Phase II gasoline rulemaking without jeopardizing the entire clean fuels/low emission vehicle program schedule.

Analysis

The CARB staff continues to move forward with the Phase II gasoline specifications, amending the proposal to reflect the results of each new report or study released. CARB's wholesale adoption of EC-X specifications is the latest example of this approach. The CARB staff has indicated that it is still waiting for data from a number of emissions studies upon which to finalize the proposal. Given this, it

is almost a certainty that further changes to the proposal will result. The CARB staff has yet to justify any of its proposed specifications from a technical or cost effectiveness basis, and it does not appear that such justifications will be forthcoming until very late in the rulemaking process. While these regulations will benefit the auto industry, the magnitude of the emissions reductions and the air quality benefits derived therefrom are very uncertain.

CARB Publishes New Reactivity Protocol

On August 16, 1991, CARB's Research Division issued a revised draft protocol for "Development of Ozone Reactivity Scale for Low-Emission Vehicles and Clean Fuels Regulations". As we have reported several times over the past few months, CARB is attempting to review, revise, and validate Dr. William Carter's "Maximum Incremental Reactivity" (MIR) scale. CARB intends to use the MIR scale as the basis for the reactivity adjustment factors (RAFs) in the "Low-Emission Vehicles and Clean Fuels" program. The latest protocol is an updated version of the work plan first presented by CARB in June (see the July edition of CVS News), which outlines the work CARB proposes to do in peer reviewing and updating the MIR scale. The work plan also forms the basis of CARB's discussions with the Reactivity Advisory Panel (RAP), an ad hoc group drawn from industry, trade, and other governmental organizations. Meetings of the RAP have served as the primary means of public input into the review and update of the MIR scale. Adoption of the MIR scale will be considered by the Board this November, according to the CARB staff.

In general, the revised protocol differs little from the June version except that more detail is provided regarding the nature of the work to be done in evaluating and revising the MIR scale. Notable changes include CARB's specifying one-hour peak ozone concentrations as the appropriate basis for evaluating the MIR scale in airshed model runs and the inclusion of so-called "null testing" to assure that application of the MIR scale to different mixes of vehicles leads to equivalent air quality impacts. The evaluation of the MIR scale using airshed model runs will apparently involve making two model runs: one run assuming that all vehicles use one fuel and another run assuming that all vehicles use a fuel having a substantially different organic emission profile. The NMOG emissions of the two runs will be adjusted using MIR factors to equivalent ozone-forming potential. If the airshed model predicts the same peek ozone concentration, the MIR scale will have been validated.

Perhaps the most notable thing about the revised protocol is the lack of results from any of the work outlined in the plan, all of which will supposedly be finished, analyzed, and put into perspective with respect to the validity of the MIR scale by the time of the next RAP meeting, September 4, 1991. This coupled with statements in the protocol such as "Unless ARB staff is given a practical and clearly superior alternative the Carter chemical mechanism will be used to calculate the RAF values that will be considered by the Board in November" indicate that having

adopted regulations requiring RAFs, CARB staff is not going to be thwarted by the lack of a generally accepted means of calculating RAFs. It appears that CARB might proceed with the MIR scale in November regardless of the outcome of much of the work outlined in the protocol. CARB will of course make changes as time permits and as new data become available; by then, however, many investment decisions will have been made by both fuel producers and the auto industry that may be very costly to modify. CARB is apparently ready for this possibility as evidenced by the following statements in the protocol regarding its proposal to review the RAFs at three-year intervals:

> "It is expected that changes in the chemical mechanism alone will not greatly change the RAF values for vehicles whose emissions are dominated by a few species, such as ethane, methanol or formaldehyde, whose mechanisms are already well tested. However, industry must be prepared to anticipate and deal with changes that may occur since the Board intends to base all of its regulations on the best available knowledge."
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> "If they (industry) keep abreast of advances in the field and conduct their own uncertainty studies when decisions need to be made, they should not be caught by surprise when the time comes to recalculate the reactivity scale."

It is clear that CARB has no reservations about going forward with a reactivity scale despite serious questions regarding the air quality benefits. If deficiencies of the MIR approach are subsequently accepted by CARB, CARB can be expected to revise the scale and impose an additional financial burden on the affected industries.

CARB Staff Proposes Further Revisions To OBD II Requirements

On July 26, 1991, CARB released the staff report and technical support document for revising the On-Board Diagnostic (OBD II) requirements, but we did not receive them in time to be reviewed and covered in last month's CVS News. These revisions will be considered by the Board September 12, 1991,in Sacramento. The final version of the proposed regulatory language differs little from that contained in Mail-outs 91-27 and 91-28, which were issued in June. Changes to the proposal were made mainly for clarification and include the following:

- Redefining OBD II monitoring requirements to include only powertrain components that can affect emissions rather than any component that can affect emissions;
- Requiring manufacturers of Diesel engines with computer controls to submit a plan for complying with OBD II requirements to CARB for Executive Officer approval;

- Allowing alternatives to CARB's proposed method of defining similar operating conditions to be proposed for Executive Officer approval;

- Allowing, with Executive Officer approval, relaxation of evaporative emission control system monitoring requirements from once per trip to only during steady-state operation between 20 and 50 mph if it can be demonstrated that monitoring once per trip would cause vehicles to exceed evaporative emissions standards; and

- Requiring FFVs to demonstrate OBD II system performance on both M85 and gasoline.

Other than the minor changes noted above, the staff report indicates that insufficient lead time for implementation of catalyst monitoring requirements is an issue of controversy. CARB staff is proposing that another report to the Board be made in November 1992 "to determine if a delay until 1995 in the catalyst monitoring requirement or some other particular requirement would be warranted." The staff proposal for another status report provides another opportunity for staff to diffuse any controversy that might arise at the Board hearing regarding the feasibility of a particular requirement, especially FTP-based catalyst monitoring and the stringency of malfunction thresholds, while leaving the door open for additional changes to the regulations by staff in the future, if they so desire.

Registration-Enforced Recall Program Begins

CARB recently announced (Mail-Out #91-33) the implementation of its new registration-based emissions recall enforcement program, which was scheduled to begin August 1, 1991. CARB expects the new program to dramatically increase the 50 percent response rate typical of its current recall program. The new program will require vehicle owners who do not respond to an emissions recall notice within six months, to submit proof of repair to the Department of Motor Vehicles (DMV) in order to renew their vehicle registrations. This proof will be a "Vehicle Emission Recall - Proof of Correction" certificate developed by CARB and DMV and shown on the following page.

Under the provisions of the program, manufacturers will be required to monitor owner response to a given recall program for the first six months and then supply CARB with a list of VINs that have not been corrected. CARB will forward this list to DMV, and DMV will then include a notice that recall repairs are required with the owner's registration renewal notice. The owner must have the recall repairs performed by a dealership, which will issue the "Proof of Correction" certificate. The owner will then send this certificate back to DMV along with the rest of the registration forms. Manufacturers will also be required to update the list of uncorrected VINs monthly to prevent a

large percentage of owners who have responded to the recall from receiving DMV notices.

Vehicle Emission Recall - Proof of Correction

License Number	Make	Year Model	Body Type	Vehicle Identification Number

Manufacturer _____ Recall Number _____

The above described vehicle has been repaired, modified and/or equipped with new emission control devices to meet applicable California Emission Control Laws.

Dealer's Name | Address, City, State and Zip

Date | Dealership's Authorized Signature

X

This certificate must be returned to the DMV with your billing notice.

New MAC Addresses Sale of Emissions Labels

[*Ed. Note*: Beginning this month, reviews of significant CARB Manufacturers' Advisory Correspondence (MACs) are being added to CVS News. As many of our readers know, these circulars can contain technical and regulatory "interpretations" every bit as important as formal laws or regulations.]

In 1987, when demand for "gray market" foreign import vehicles was substantial, investigations by the California Department of Motor Vehicles determined that sellers and owners of such vehicles could easily obtain California emissions labels over-the-counter as "spare parts". With California labels installed, gray market vehicles could be registered without expensive or performance-inhibiting modifications otherwise necessary to comply with California emissions requirements. In response, CARB issued MAC #87-02 requiring manufacturers to control the sale of California emissions labels so that they would be installed only on California-certified vehicles.

In October of last year, California imposed a $300 surcharge for initial registration of any non-California certified vehicle, in an effort to supplement state revenues. Typically, the surcharge would apply to a 49-state vehicle owned by a person moving to California. The surcharge has apparently revived the demand for California emissions labels, as a

means for avoiding the $300 surcharge. In an effort to reduce such illegal avoidance, CARB has reissued MAC #87-02.

MAC #87-02 briefly (in two pages) states CARB's policy that "all over-the-counter sales of official tune-up labels as spare parts should be controlled such that the dealership selling the labels ascertains that the labels will be used only with legal vehicles that can legally display such label and not fraudulently used [sic]". This MAC leaves the method of control up to manufacturers, but suggests that one of three methods be employed: 1) a check of VINs, 2) actual vehicle inspection, or 3) installation of the label directly by the dealership.

In its cover letter of August 7, 1991, CARB requests that all manufacturers "set up and maintain procedures to assure that California emissions labels are issued for installation only on California certified vehicles", and requests that "each manufacturer submit documentation of the procedures it has established" to prevent unauthorized sales of labels.

MAC #87-02 also cites Revenue and Taxation Code Section 6263, which imposes a $5,000 fine and/or one year in jail (maximum) if an emissions label is affixed by any person other than a vehicle manufacturer or a person authorized by a manufacturer. While the CARB letter implies that a manufacturer that does not comply with MAC #87-02 might be liable under Revenue and Taxation Code Section 6263, Sierra believes that noncompliance with the MAC carries no liability, per se. MAC #87-02 implicitly acknowledges this view by requesting, rather than requiring, manufacturers to submit documentation of their control programs. In fact, a manufacturer would be exposed to liability under Section 6263 only if it knowingly participates or assists in the affixing of a label by an unauthorized person. Nevertheless, voluntary compliance with MAC #87-02, by creating a program with procedures and information that will effectively prevent illegal installation of California emissions labels, should help reduce a manufacturer's potential exposure to fines or penalties under Section 6263 through improper activities of its employees or dealers' employees.

CARB Moves Toward Locomotive Emissions Control

At the August 8-9, 1991 Board hearing held in Sacramento, CARB staff presented two items regarding control of emissions from locomotives. The first of these items was a report to the Governor and the Legislature mandated by Section 5 of Chapter 1326 of the Statutes of 1987. As required, the report included the following items:

- A survey of past research into locomotive emissions;
- A review of present locomotive emissions and current technology available to reduce those emissions;

- A cost benefit analysis regarding the economic impact on the railroad industry of utilizing present and proposed technology; and

- A review of existing and proposed technologies that are economically feasible and practical for the railroad industry to implement in order to contribute to a reduction of railroad locomotive emissions.

The report was prepared under the direction of the Locomotive Emissions Advisory Committee (LEAC), which was composed of representatives from the rail industry, CARB, and local air pollution control districts. Significant findings of the report included the following:

- Locomotives account for a significant fraction of mobile source emissions in California, especially with respect to emissions of NOx, SOx, and PM_{10};

- The bulk of locomotive emissions are due to operation of line-haul freight trains;

- A standardized test procedure for measuring locomotive emissions should be developed;

- Changes in railway operation and improved maintenance of locomotive starting systems can reduce emissions associated with locomotive idling for long periods of time;

- Retrofit emission control strategies such as retarded timing, use of lighter Diesel fuels, higher pressure injectors, charge air cooling, selective catalytic reduction, and to some degree alternative fuels and electrification could significantly reduce emissions from current locomotives; and

- Control strategies such as charge air cooling, selective catalytic reduction, alternative fuels, and electrification could significantly reduce emissions from new locomotives.

The report also recommends that demonstration projects for most of the proposed emission control strategies be developed to accurately assess their impact on emissions. The limited testimony regarding the report was generally favorable and the Board voted to approve the report and send it on to the Governor and the Legislature.

The second item considered was a regulatory plan for the control of locomotive exhaust emissions. The California Clean Air Act requires that CARB consider the adoption of emissions regulations prior to November 15, 1991. The regulatory plan submitted by CARB staff fulfills this requirement. Staff expects to return to the Board with a regulatory package in the Fall of 1992.

As one would expect, the LEAC report approved by the Board at this hearing formed the basis for much of the regulatory plan. However, as

the Federal Clean Air Act preempted California's authority to set standards for new locomotives, only those control strategies with potential application to in-use engines were included in the regulatory plan. With respect to retrofit control measures, CARB has engaged a contractor to further evaluate their feasibility and cost effectiveness.

In addition to the potential control measures contained in the LEAC report, the staff plan contains a proposal for a market-based control (MBC) program. While details regarding this program are extremely limited, the MBC program proposal includes rail company averages on emissions, air basin caps for rail company emissions, and an emissions trading program for rail companies. The emission inventories contained in the LEAC report are being proposed as the baseline for this program. The proposed regulatory plan was also adopted unchanged by the Board. Testimony was limited to industry statements expressing a desire to work with CARB staff in developing the regulations and caution that demonstration projects are needed to fully evaluate the potential and cost effectiveness of each control strategy. Both the retrofit and MBC proposals will be developed by staff prior to the Fall 1992 hearing. If and when the staff returns to the Board with a specific recommendation for controls, there may be a less cooperative attitude on the part of locomotive operators at that time.

Legislation Update

The Legislature resumed activity on August 19, following their summer recess. Two of the bills we have been following -- SB 135 and SB 290 -- have now gone to the Governor. Four other bills -- AB 280, AB 598, SB 352, and SB 1160 -- are being held over as two-year bills. Each of these, as well as the other active bills we have been following, is discussed below.

AB 280 (Moore) - This bill, sponsored by the California Trucking Association, would change the civil penalty applied to owners of heavy-duty Diesel vehicles cited in violation of Diesel smoke limits. Presently, there is a $300 penalty that applies regardless of what corrective action is taken, with the funds thus raised going to support research into clean Diesel fuels. According to CARB, this penalty represented an agreement with the trucking industry reached when the original legislation was first enacted. Under the previous version of this bill, the $300 penalty would have been reduced to $25 if, within 45 days of the date the citation was issued, CARB received certification that corrective action had been taken. The bill was amended by the author, however, to delete the time limit imposed upon vehicle owners to avoid the $300 penalty. Under the current version of the bill, the $300 penalty would be reduced to $25 as long as corrective action were taken, with no time frame specified.

CARB has taken a formal position opposing the bill, which has been awaiting hearing in the Senate Transportation Committee. The bill is now being held over as a two-year bill.

AB 434 (Sher) - Nonattainment areas are presently authorized to impose an additional registration fee of two dollars ($2) on motor vehicles registered within their districts if they adopt a program for reducing vehicular emissions pursuant to the California Clean Air Act. An exception to this has been the Bay Area Air Quality Management District. AB 434 would authorize this additional fee for the Bay Area District, and provide certain specifications for the distribution of revenue generated from the fee.

The bill was amended in the Senate Committee on Transportation, deleting the reference to indirect source control programs as one of the types of programs to be funded with revenues generated by the fee. The bill then passed Senate Appropriations, and is now on the Senate floor.

AB 598 (Elder) - This bill proposes a "State of California Recycled Auto Program" (SCRAP). Under this proposed program, CARB would be required to prepare a list of vehicle models that are significant sources of air pollution. The Department of Motor Vehicles (DMV) would then be required to develop and implement a program to acquire and scrap these vehicles, with priority given to the most heavily polluting models. The bill specifies that to be eligible for buy-back, a vehicle must be in operable condition and have been driven at least 5,000 miles during the previous calendar year. To fund the program, the bill would require that DMV impose a "pollution mitigation fee" upon persons who receive a certificate of compliance or noncompliance under the Smog Check program due to a cost waiver.

The bill would also require CARB to establish the Recycled Auto Program Technical Advisory Committee, which would advise CARB and DMV on implementation of the program. The bill specifies that the committee should consist of one representative each of CARB, DMV, and the Bureau of Automotive Repair; and two representatives each of air pollution control districts/air quality management districts, the oil and gas industry, and the motor vehicle manufacturing industry.

The bill was amended by the author on August 19, altering the provisions pertaining to the pollution mitigation fee. Under the current version of the bill, a fee will be assessed if the cost of repair to bring the vehicle into compliance exceeds the repair cost limit. The amount of the fee will equal 50% of the repair cost limit.

The bill is being held in the Senate Transportation Committee as a two-year bill. CARB had not yet taken a position on the bill.

AB 859 (Vasconcellos) - This bill would mandate the phase-out of CFC-based vehicle air conditioning units. A phase-out schedule is proposed that would allow only 75% of new 1993 model-year vehicles to be equipped with CFC-based air conditioners, and only 30% of 1994 model-year vehicles. As of January 1, 1995, no 1995 or later model-year vehicles equipped with CFC-based air conditioners would be allowed to be sold. CARB would be required to adopt regulations by March 1, 1992, that would enforce these requirements. Each deadline would be allowed to be extended for up to two years if CARB determines that chemical or

technological alternatives are not yet available, or that vehicle manufacturers require additional time to redesign vehicle air conditioning systems.

Under the bill, vehicle manufacturers would be required to submit quarterly records and an annual report to CARB detailing the percentage of new models certified for sale, sold, or offered for sale in California with non-CFC-based air-conditioning systems. These records would then form the basis for determining compliance with the requirements of the bill.

The bill passed Senate Appropriations and is now on the Senate floor.

SB 135 (Boatwright) - This bill, sponsored by the author, would require public transportation vehicles operated in nonattainment districts to be low emission vehicles, as defined by CARB. Public transportation vehicles are specified as taxi cabs, buses, airport shuttles, and transit authority or transit district vehicles. In nonattainment areas, those vehicles covered under this bill that are capable of operating on more than one fuel shall be operated to the maximum extent practicable on either the designated clean fuel on which the vehicle was certified or on any other fuel designated by CARB as a substitute for the designated fuel. This would apply to all new vehicles purchased or any vehicle whose engine is replaced on or after January 1, 1997.

The bill would also require CARB to adopt emission standards and procedures for new engines for transit buses, to be effective by January 1, 1996. CARB would be required to consider the projected costs and availability of cleaner burning alternative fuels and low-emission vehicles relative to other air pollution control measures when adopting these standards.

The bill passed the Assembly on August 19, and the Senate concurred with the Assembly amendments on August 30. The bill has now gone to the Governor. CARB has taken a neutral position on the bill.

SB 245 (Presley) - This bill contains several provisions pertaining to the Smog Check certificate of compliance (or noncompliance). Under existing law, when disclosing the price of a car, motor vehicle dealers are required to disclose all costs to the purchaser. Certain costs, however, are allowed to be excluded, including $25 for the cost of a certificate of compliance or noncompliance. This bill would increase that amount to $35.

A second provision of the bill would require that in the event of an auctioneer selling a vehicle not registered to a public agency, the vehicle purchaser be provided with a valid certificate of compliance or noncompliance for the vehicle. Currently, auctioneers are required only to notify the purchaser that a certificate will be required before the vehicle can be registered. (Exemptions are made for vehicles being sold for wrecking or dismantling.) Lien sales would be exempt from this requirement if the lienholder provides specific notices to the purchaser.

The bill would also specify that Smog Check repair cost limits would apply to fleet owners in cases where the certificate of compliance is required solely for the disposal or sale of the vehicle. (Presently, vehicles owned by fleet owners are not subject to repair cost limits.) Based on our discussions with staff of the Bureau of Automotive Repair, there is some concern that this final provision has been added at the behest of fleet operators who own vehicles in very poor condition and are seeking a mechanism for disposing of the vehicles without having to make them pass a Smog Check.

The bill was amended in the Assembly Ways and Means Committee on August 28, adding a provision lowering from 15 to 10 the number of vehicles required to be contained in a fleet in order for fleet owners to perform their own inspection and maintenance (the same provision is contained in SB 290). The bill is now on the Assembly floor.

SB 290 (Presley) - This bill proposes several changes to the Smog Check program offered by the Bureau of Automotive Repair. Most of the provisions in this bill address requirements pertaining to Smog Check stations and mechanics. Under the bill, all stations performing Smog Check inspections would be required to post a sign listing the maximum repair cost limits. (At present, this is required only of stations that perform repairs.) The bill would also ease the requirement that a Smog Check mechanic's qualification be permanently revoked upon receipt of a fourth citation for violating inspection, repair or certification requirements. Under this bill, the revocation would be authorized rather than required. The bill would also lower from 15 to 10 the number of vehicles required to be contained in a fleet in order for fleet owners to perform their own inspection and maintenance, and would subject fleet owners seeking a certificate of compliance in order to sell or dispose of a vehicle to repair cost limits. This latter proposal is the same as a provision contained in SB 245, also a Presley bill.

The bill would also require CARB to report to the Legislature by April 30, 1992, on remote sensing and any other technologies that would improve detection of high-emitting vehicles through the vehicle inspection program. CARB does not object to this, and views it as a compromise to study the potential use of remote sensing, rather than requiring any specific programs at this point.

The bill passed the Assembly on August 22 and the Senate concurred in the Assembly amendments. The bill has now gone to the Governor.

SB 352 (Green) - The California Clean Air Act (CCAA) (AB 2595, 1988) requires nonattainment districts to develop indirect source control (ISC) programs, to the extent necessary to attain state ambient air quality standards by the earliest practicable date. An indirect source is defined as any building, structure or installation that generates vehicle traffic and produces emissions (e.g., shopping malls). The bill states that no district regulations to reduce or mitigate emissions from an indirect source would be allowed to require a permit for its construction and operation without express statutory authority.

As we have noted before, the bill had some strong supporters, being sponsored by the Building Industry Association, Los Angeles County and the County Supervisors Association of California, but CARB was opposed to it The bill was heard in the Assembly Committee on Natural Resources and failed passage. Reconsideration has been granted, but the bill is now being held over as a two-year bill.

SB 568 (Hill) - The previous version of this bill required CARB (in consultation with the Bureau of Automotive Repair, the Department of Transportation, the California Highway Patrol, and air quality management districts/air pollution control districts) to prepare a report identifying actions to reduce air pollution from older model vehicles and/or to remove such vehicles from the road. This report would be required to be submitted to the Legislature and the Governor by January 1, 1993. The bill was amended in the Assembly Transportation Committee on August 26 to refer to high emission motor vehicles, rather than older model vehicles. A provision was also added stating that the report should take into account the costs to people who own high emission vehicles, and what effect any such proposed plan would have on them. Under the bill, if enacted, the statute would be repealed as of January 1, 1993, unless changed by a later statute.

Following amendment and passage in the Assembly Transportation Committee, the bill passed the Assembly Ways and Means Committee. It is now on the Assembly floor.

SB 1160 (Leonard) - This bill, sponsored by ARCO, would require that CARB establish standards for reformulated gasoline by January 1, 1996. The bill specifies that these standards must be at least as stringent as those established under the Federal Clean Air Act Amendments. It does not prohibit CARB from establishing more stringent standards, or from specifying different implementation dates for different geographic areas. CARB feels that the bill is not necessary because it does not require them to do anything that they weren't already planning to do. CARB has not taken a position either for or against the bill.

The bill has been assigned to the Assembly Committee on Transportation, but is being held over as a two-year bill.

SB 1166 (Hill) - Under existing law, gasoline blends consisting of at least 10% ethyl alcohol are exempt from meeting the volatility standard as long as the gasoline used in the blend meets the standard. This exemption is currently due to expire October 1, 1993. Under the provisions of this bill, sponsored by the California Renewable Fuel Council, after October 1, 1993, an exemption would be allowed so long as the blend met specific requirements. Under the previous version of the bill, those requirements were that the blend did not result in a net increase in total vehicular emissions. As we noted last month, CARB objected to this language because it would have allowed an increase in some pollutants, such as NOx, so long as they were offset by decreases in other pollutants. In response to CARB's informal opposition, this

language of the bill was amended in the Assembly Committee on Transportation.

The bill now states that from October 1, 1993, through December 31, 1995, any blend of gasoline consisting of at least 10 percent ethyl alcohol would not violate the RVP standard unless CARB determined that use of the blend would result in a net increase in the ozone-forming potential of the total emissions, excluding NOx, when compared to emissions, again excluding NOx, from vehicles running on gasoline that meets the Phase I gasoline specifications. After December 31, 1995, similar provisions would apply, except that the comparison would be between vehicles running on the blend and vehicles running on gasoline meeting the Phase II gasoline specifications. The bill specifies that any increases should be determined by CARB on the basis of exhaust and evaporative emission tests performed on a representative automobile fleet.

As we expected and noted last month, deleted from the bill was the language originally added by ARCO amending the Business and Professions Code to allow a waiver from the ASTM volatility standards for gasolines containing ethanol if the gasoline portion of the blend complied with the ASTM Reid vapor pressure (RVP) standards, the ethanol portion did not exceed its waiver condition as specified by EPA, and no additional alcohol or other additive had been added to increase the RVP of the ethanol portion.

The bill had been referred to the Assembly Committee on Natural Resources, but according to the author's office, it will probably not be heard in that committee, but instead go to the Assembly Committee on Ways and Means.

SB 1211 (Committee on Energy and Public Utilities) - As discussed in the October 1990 edition of CVS News, when CARB adopted its low-emission vehicle regulation, the provisions were dropped that would have required fuel suppliers to sell minimum volumes of "clean fuels." This bill notes in its legislative intent section that although CARB's regulation requires specified gasoline suppliers and outlets to provide the public with clean fuels, if they fail to market those fuels in a reasonable, cost-effective manner, the clean fuels program is likely to fail. To monitor the success of the program, this bill would require CARB to adopt regulations requiring clean fuels producers, suppliers, distributors and the owners and lessors of retail gasoline outlets that are selling clean fuels to provide CARB with data and information on the wholesale and retail costs and prices for those fuels. Beginning on January 15, 1993, CARB would be required to report the fuel information annually to the Legislature, including information on whether clean fuels are being marketed at commercially reasonable terms.

As we noted last month, there were some indications that the bill's author, Senator Rosenthal, might be trying to gather support to reintroduce a provision to reinstate the clean fuels sales mandate. On the other side of the issue, the oil industry was trying to convince Senator Rosenthal that further reporting requirements are not necessary. CARB had been watching the bill closely, but had not taken any formal

position. The bill is being held over in the Senate Transportation Committee as a two-year bill.

SB 1212 (Committee on Energy and Public Utilities) - Under existing law, a certain percentage of motor vehicles purchased by the state are required to be low-emission vehicles, if available (50% in 1993, 75% in 1994 and 100% each year thereafter). This bill would extend that requirement specifically to include alternative-fuel vehicles. Under the bill, alternative-fuel vehicles are defined as those capable of operating on a non-petroleum-based alternative fuel, such as electricity, ethanol, hydrogen, liquified petroleum gas, methanol, or natural gas, either by design or retrofit.

Existing law also allows specified tax credits for the conversion of a vehicle to a low-emission vehicle or the cost of a low-emission vehicle. This bill proposes to change that, instead applying the credit for the purchase of new or retrofit alternative-fuel vehicles. CARB does not have a formal position on the bill, but some staff members are known to be supportive. According to CARB staff, the idea behind the bill (which is sponsored by Senator Rosenthal) is to further the use of alternative-fuel vehicles so that more in-use experience and data can be obtained on these vehicles.

The bill was amended in the Assembly Transportation Committee on August 19, altering one of the provisions pertaining to credit allocation. The bill is now in the Assembly Ways and Means Committee.

SB 1214 (Killea and Rosenthal) - This bill states that it is the policy of the state to establish a state transportation energy policy that results in the least environmental and economic cost to the state. It requires the California Energy Commission (CEC) to meet specific reporting requirements, including a biennial forecast of statewide and regional transportation energy demand for a 5-, 12- and 20-year planning horizon. Under the requirements of the bill, this would include a forecast of energy use under a maximum petroleum use reduction scenario and a "least environmental and economic cost" scenario. This latter scenario should incorporate to the extent feasible, costs and values associated with air pollution and other adverse environmental impacts, future price changes in energy resources and supply disruptions, and considerations of energy security and preparedness.

The bill also requires the CEC, in consultation with CARB, the California Transportation Commission, the Office of Planning and Research, and air pollution control districts/air quality management districts, to identify and evaluate energy programs that would achieve a least environmental and economic cost scenario. Under the bill, these programs are to include conservation programs, economic and regulatory incentives, accelerated introduction of nonpetroleum-based vehicles and fueling facilities, accelerated sale of nonpetroleum-based fuels, and transportation control measures. Based on the information developed in preparing this report and the forecasts, the CEC would be required to establish long-range and interim targets for transportation and fuel

diversity, designed to achieve the least environmental and economic cost forecast.

After passing the Assembly Committee on Natural Resources as described above, the bill was referred to the Assembly Committee on Ways and Means.

1991 Rulemaking Calendar Update

There has been another round of rescheduling of items on the CARB rulemaking calendar since last month's report. Presentation of amended procedures for certifying alternative-fuel retrofit systems is still scheduled for the November 14 Board hearing, although indications are strong that it will be postponed. The staff's status report and regulatory plan for controlling locomotive emissions were approved by the Board in August, and a regulatory package will be presented for approval in the fall of 1992.

A status report and regulatory plan for marine vessel emissions is scheduled to be presented to the Board in November 1991. For off-road motorcycles, a status report and regulatory plan will be presented in October, and the full regulation package in November. The control plan for off-highway vehicle emissions will also be presented at the November 14 Board hearing.

A full regulatory package for controlling emissions from off-road construction and farm equipment is also scheduled to be presented for the Board's approval in the November hearing.

The final reactivity adjustment factors were discussed in a workshop on September 4, and the Board hearing is still scheduled for November 14. Likewise, the Board hearing for adopting the Phase II reformulated gasoline specifications is still scheduled for November. Amendments to the OBD regulations will be presented for Board approval at the September 12 hearing.

The following table summarizes the current status of the 1991 Rulemaking Calendar.

CARB Rulemaking Calendar
Projected by Sierra Research
Status as of September 1991

Subject	Next Action	Date of Next Action	Projected Hearing Date	Model Year or Implementation Date
amendments to certification procedures for alternative-fuel retrofit systems	Board Hearing	November 1991	1991	?
locomotive emission control regulations	Workshops?	?	Fall 1992	'92-'95
marine vessel emission control regulations	Status Report & Regulatory Plan	November 1991	?	1993?
off-road motorcycle emission control regulations	Status Report & Regulatory Plan	October 1991	November 1991	?
off-highway vehicle emission control regulations	Present Control Plan	November 1991	?	1995
off-road construction and farm equipment emission control regulations	Board Hearing	November 1991	?	
reactivity adjustment factors, other changes to "low emission vehicle/clean fuel" regs	Workshop	September 1991	November 1991	1994
phase II reformulated gasoline specifications and specs for alternative fuels	Board Hearing	November 14, 1991	November 1991	1994
modifications to Diesel fuel regulations	?	?	?	?
revised OBD II requirements	Progress Report, Regulatory Amendments	September 1991	September 1991	1994

Next Month:

- CARB Board Hearing on OBD II Regs
- Meeting of the Reactivity Advisory Panel
- Smog Check Program Update
- Legislation Update