PUBLIC MEETING AGENDA

January 26,2006

9:00 a.m

Agenda Items to be heard;

06-1-1: 06-1-2: 06-1-3:

06-1-4: 06-1-5

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ELECTRONIC BOARD BOOK

California Environmental Protection Agency

Air Resources Board

LOCATION:
Air Resources Board
Byron Sher Auditorium, Second Floor
1001 I Street
Sacramento, California 95814

PUBLIC MEETING AGENDA

This facility is accessible by public transit. For transit information, call (916) 321-BUSS, website: http://www.sacrt.com
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January 26, 2006
9:00 a.m.

DAY 1

Item #

06-1-1: Public Hearing to Consider 5 Research Proposals

"Differences in Inflammatory Response to Exposure Concentrated Ambient Particles in Susceptible Volunteers", University of California, Los Angeles, Proposal No. 2601-250.

"Impact of Reactive Halogen Species on the Air Quality in California Coastal Areas", University of California, Los Angeles, Proposal No. 2602-250.

"On-Road Measurement of Light-Duty Gasoline and Heavy-Duty Diesel Vehicle Emission Trends", University of California, Berkeley, Proposal No. 2598-250.

"Evaluation of the Proposed New European Methodology for Determination of Particle Number Emissions and its Potential in California for In-use Screening", University of California, Riverside, Proposal No. 2595-250.

"Process-Based Farm Emission Model for Estimating Volatile Organic Compound Emissions from California Dairies", has been submitted by the University of California, Davis, Proposal No. 2590-250.

06-1-2: Report to the Board on the State of the State's Air Quality

ARB staff will make a presentation on the progress that has been achieved in reducing exposure to unhealthy air and meeting State and federal standards. The presentation will cover ozone and particulate matter, and will look at how 2005 air quality compares to previous years.

06-1-3: Report to the Board on the ARB Action Plan for 2006

ARB Executive Officer Catherine Witherspoon will brief the Board on major initiatives, rulemakings, and other activities scheduled for 2006.

06-1-4: Public Hearing to Consider Identifying Environmental Tobacco Smoke as a Toxic Air Contaminant

Staff proposes a regulatory amendment that would add Environmental Tobacco Smoke to California's list of Toxic Air Contaminants.

06-1-5: *Public Hearing to Consider Amendments to the Heavy-duty Vehicle Smoke Inspection Program (Implementation of Assembly Bill 1009, Pavley 2004, Chapter 873)*

AB 1009 requires ARB, in consultation with the CHP, to develop regulations to ensure that heavy-duty commercial vehicles over 10,000 pounds gross vehicle weight operating in California meet emission standards at least as stringent as U. S. EPA standards applicable for the year of engine manufacture.

The purpose of the bill is to prevent higher emitting vehicles from operating in the State, thereby reducing excess NOx and PM emissions, and preventing increases of such emissions in the future.

Staff is proposing that the Board amend ARB's existing Heavy Duty Vehicle Inspection Program to ensure that vehicles at least meet the federal emission standards for the year of manufacture and thereby satisfy the requirements of AB 1009. ARB inspectors would determine the emissions standards that each engine was originally designed to comply with by inspecting the engine's emission control label. The amended regulations would prohibit operation in California of vehicles that do not meet at least federal emission standards for the year of manufacture of the engine. Monetary penalties are proposed for missing engine labels and the use of non-compliant engines to enforce the amended regulations.

CLOSED SESSION – LITIGATION

The Board will hold a closed session as authorized by Government Code section 11126(e) to confer with, and receive advice from, its legal counsel regarding the following pending lawsuits:

- *Central Valley Chrysler-Jeep, Inc. et al.* v. *Witherspoon*, U.S. District Court (E.D. Cal. – Fresno), No. CIV-F-04-6663 REC LJO.
- *Fresno Dodge, Inc. et. al. v. California Air Resources Board and Witherspoon*, Superior Court of California (Fresno County), Case No. 04CE CG03498.
- *General Motors Corp. et. al. v. California Air Resources Board and Witherspoon*, Superior Court of California (Fresno County), No. 05CE CG02787.
- *Commonwealth of Massachusetts, et al. v. United States Environmental Protection Agency*, U.S. Court of Appeal for the District of Columbia Circuit No. 03-1361.
- *Caterpillar et al. v California Air Resources* Board, Superior Court of California (Sacramento County), No. 05AS01133.
- *Engine Manufacturers Association v. California Air Resources Board*, Superior Court of California (Sacramento County), No. 05CS00386.
- *California Trucking Assn., et al.* v. *California Air Resources Board, et al.*, Superior Court of California (Fresno County), Case No. 00 CE CG 10832.
- *State of New York, et al. v. Environmental Protection Agency*, U. S. Court of Appeals, D. C. Circuit, Case No. 03-1380 (NSR II).
- *El Comite para el Bienestar de Earlimart; Association of Irritated Residents; Community and Children's Advocates Against Pesticide Poisoning; Wishtoyo Foundation; Ventura Coastkeeper* v. *Paul Helliker; Terry Tamminen; Catherine Witherspoon; Alan Lloyd; William Burke; Joseph Calhoun; Dorene D'Adamo; Mark DeSaulnier; C. Hugh Friedman; William F. Friedman; Matthew McKinnon; Barbara Patrick; Barbara Riordan and Ron Roberts, in their official capacities,* U.S. District Court (E.D. Cal.), No. CIV.S 04-0882
- *National Paint and Coatings Association, Inc. v. State of California, California Air Resources Board*, Superior Court of California (Sacramento County), Case No. 04CS01707.
- *People of the State of California and California Air Resources Board v. Yamaha Motor Corporation USA, et al.*. Superior Court of California (Orange County), Case No. 05CC08702.

OPEN SESSION TO PROVIDE AN OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE BOARD ON SUBJECT MATTERS WITHIN THE JURISDICTION OF THE BOARD.

Although no formal Board action may be taken, the Board is allowing an opportunity to interested members of the public to address the Board on items of interest that are within the Board's jurisdiction, but that do not specifically appear on the agenda. Each person will be allowed a maximum of five minutes to ensure that everyone has a chance to speak.

TO SUBMIT WRITTEN COMMENTS ON AN AGENDA ITEM IN ADVANCE OF THE MEETING:

CONTACT THE CLERK OF THE BOARD, 1001 I Street, 23rd Floor, Sacramento, CA 95814 (916) 322-5594
FAX: (916) 322-3928
ARB Homepage: www.arb.ca.gov

To request special accommodation or language needs, please contact the following:

- TTY/TDD/Speech-to-Speech users may dial 7-1-1 for the California Relay Service.
- Assistance for Disability-related accommodations, please go to http://www.arb.ca.gov/html/ada/ada.htm or contact the Air Resources Board ADA Coordinator, at (916) 323-4916.
- Assistance in a language other than English, please go to http://www.arb.ca.gov/as/eeo/languageaccess.htm or contact the Air Resources Board Bilingual Coordinator, at (916) 324-5049.

THE AGENDA ITEMS LISTED ABOVE MAY BE CONSIDERED IN A DIFFERENT ORDER AT THE BOARD MEETING.

SMOKING IS NOT PERMITTED AT MEETINGS OF THE CALIFORNIA AIR RESOURCES BOARD

California Environmental Protection Agency

Air Resources Board

LOCATION:
Air Resources Board
Byron Sher Auditorium, Second Floor
1001 I Street
Sacramento, California 95814

PUBLIC MEETING AGENDA

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January 26, 2006
9:00 a.m.

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TITLE 17. CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC HEARING TO IDENTIFY ENVIRONMENTAL TOBACCO SMOKE AS A TOXIC AIR CONTAMINANT

The Air Resources Board (ARB or Board) will conduct a public hearing at the time and place noted below to consider the adoption of a regulatory amendment identifying environmental tobacco smoke (ETS) as a toxic air contaminant (TAC). In addition to identifying ETS as a TAC, the proposed regulatory amendment specifies that there is not sufficient available scientific evidence to support the designation of a threshold exposure level to ETS below which no significant adverse health effects are anticipated.

DATE: January 26, 2006

TIME: 9:00 a.m.

PLACE: California Environmental Protection Agency
Byron Sher Auditorium, Second Floor
Air Resources Board
1001 I Street
Sacramento, California 95814

This item will be considered at a two-day meeting of the ARB, which will commence at 9:00 a.m., January 26, 2006, and may continue at 8:30 a.m., January 27, 2006. This item may not be considered until January 27, 2006. Please consult the agenda for the meeting, which will be available at least ten days before January 26, 2006, to determine the day on which this item will be considered.

This facility is accessible to persons with disabilities. If you have a disability-related accommodation need, please go to http://www.arb.ca.gov/html/ada/ada.htm for assistance or contact the ADA Coordinator at (916) 323-4916. If you are a person who needs assistance in a language other than English, please contact the Bilingual Coordinator at (916) 324-5049. TTY/TDD/Speech-to-Speech users may dial 7-1-1 for the California Relay Service.

INFORMATIVE DIGEST OF PROPOSED ACTION AND POLICY STATEMENT OVERVIEW

Section Affected: Proposed amendments to title 17, California Code of Regulations (CCR) section 93000.

Background:

Assembly Bill 1807 (Stats. 1983, ch. 1047; Health and Safety Code section 39650 et seq., Food and Agriculture Code section 14021 et seq.) sets forth procedures for the identification and control of toxic air contaminants in California. In accordance with those procedures, staff is proposing that ARB amend section 93000 of title 17,

California Code of Regulations, by adding ETS to the list of toxic air contaminants with no identified threshold exposure level below which no significant adverse health effects are anticipated.

In accordance with Health and Safety Code sections 39660 and 39661, the Office of Environmental Health Hazard Assessment (OEHHA) staff has prepared an evaluation of the health effects of ETS. In addition, ARB staff has prepared a report (Report) on ETS, which includes the OEHHA health effects evaluation. OEHHA staff found that exposure to ETS is directly associated with a variety of adverse health outcomes involving developmental, respiratory, carcinogenic, and cardiovascular effects. Some of these adverse health outcomes include heart disease; lung cancer; nasal sinus cancer; and breast cancer in younger, primarily premenopausal women. ETS has also been shown conclusively to be the cause of a number of serious impacts to children's health, such as sudden infant death syndrome (SIDS); pre-term delivery; low birth weight; induction and exacerbation of asthma; chronic respiratory symptoms; and increased acute lower respiratory and middle ear infections.

OEHHA staff estimated a nonsmoker's risk associated with various health outcomes. For example, OEHHA staff estimates that approximately 1,700-5,500 deaths will occur annually in California due to heart disease in nonsmokers exposed to ETS. Likewise, OEHHA estimates that about 400 to 1,100 lung cancer deaths in California per year are ETS-related. For ETS-exposed premenopausal women, OEHHA estimates an increase of 68 to 120 percent in breast cancer cases, relative to non ETS-exposed non-smoking women. For children, OEHHA determined that each year ETS may cause low birth weight for 1,600 newborns in California and at least 31,000 children in California will experience one or more ETS-related asthma episodes (new onset or exacerbation). About 50,000 children annually are estimated to develop middle ear infections and 18,000 to 36,000 children each year may develop lower respiratory infections, due to ETS exposure. With lung cancer deaths, heart disease deaths, and cases of SIDS, one can attribute about 4,000 deaths per year in California to ETS exposure.

OEHHA staff also found that there was not sufficient scientific evidence to support the identification of an exposure level below which carcinogenic effects would not have some probability of occurring and recommended that ETS be treated as having no identified threshold.

Other agencies and scientific bodies have also published comprehensive reviews of ETS. These include the 1986 Report from the Surgeon General by the National Research Council (NRC), the 1992 U.S. Environmental Protection Agency (U.S. EPA) report, and a 1997 California Environmental Protection Agency, OEHHA review. These reports show that ETS exposure is causally associated with respiratory illnesses, lung cancer, childhood asthma, and lower respiratory tract infections. However, scientific knowledge about ETS-related effects has grown considerably since the release of these reviews.

The Scientific Review Panel (SRP), established pursuant to Health and Safety Code section 39670, has reviewed the Report, and has submitted written findings to ARB, in

accordance with Health and Safety Code section 39661. The SRP found the Report on ETS, as well as the scientific procedures, methods, data, conclusions, and assessments to be based upon sound scientific knowledge, methods, and practices, and adopted findings recommending ARB identify ETS as a TAC.

Description of Proposed Regulatory Action:

In accordance with Health and Safety Code section 39662, ARB staff has prepared a proposed regulation identifying ETS as a TAC with no identified threshold exposure level. No control measures for ETS are proposed for adoption at this hearing. If ETS is listed as a TAC, Health and Safety Code section 39665 provides for the development of a report on the need for, and appropriate degree of, control measures to reduce ETS emissions. The report will be developed in a full, open, public process and in accordance with Health and Safety Code sections 39665 and 39666.

COMPARABLE FEDERAL REGULATIONS

There are no comparable federal regulations.

AVAILABILITY OF DOCUMENTS AND AGENCY CONTACT PERSONS

ARB staff, with the participation of OEHHA staff, has prepared a Staff Report: Initial Statement of Reasons (ISOR) for the proposed regulatory action. The ISOR summarizes the basis for the proposed regulation, the environmental and economic impacts of the proposal, and the findings of the SRP. The technical support documents reviewed by the SRP are referenced in the ISOR. The technical support documents consist of the SRP-approved Executive Summary; Part A, Exposure Assessment, prepared by ARB staff; Part B, Health Assessment, prepared by OEHHA staff; and Part C, Public Comments and ARB/OEHHA Staff Responses, prepared by both ARB and OEHHA staff.

Copies of the ISOR and technical support documents, the full text of the proposed regulation, and any other information on which the proposal is based may be accessed on ARB's website listed below, or may be obtained at ARB's Public Information Office, 1001 I Street, Visitors and Environmental Services Center, 1st Floor, Sacramento, California 95814, (916) 322-2990, at least 45 days prior to the scheduled hearing January 26, 2006.

Upon its completion, the Final Statement of Reasons (FSOR) will be available and copies may be requested from the agency contact persons listed in this notice, or may be accessed on ARB's website listed below.

Inquiries concerning the substance of the proposed regulation may be directed to the designated agency contact person, Jim Stebbins, Air Pollution Specialist, Substance Evaluation Section, Air Quality Measures Branch, Stationary Source Division, at (916) 322-2778, or to Jim Aguila, Manager, Substance Evaluation Section, Air Quality Measures Branch, Stationary Source Division, at (916) 322-8283.

Further, the agency representative and designated back-up contact persons to whom non-substantive inquiries concerning the proposed action may be directed are Artavia Edwards, Manager, Board Administration & Regulatory Coordination Unit, (916) 322-6070, or Amy Whiting, Regulations Coordinator, (916) 322-6533.

This notice, the ISOR and all subsequent regulatory documents, including the FSOR, when completed, are available on ARB's Internet site for this rulemaking at: www.arb.ca.gov/regact/ets2006/ets2006.htm

COSTS TO PUBLIC AGENCIES AND TO BUSINESSES AND PERSONS AFFECTED

The determinations of the Board's Executive Officer concerning the costs or savings necessarily incurred in reasonable compliance with the proposed regulatory action is presented below.

Pursuant to Government Code sections 11346.5(a)(5) and 11346.5(a)(6), the Executive Officer has determined that the proposed regulatory action will not create costs or savings to any state agency or in federal funding to the state; costs or mandate to any local agency or school district whether or not reimbursable by the state pursuant to Part 7 (commencing with section 17500), division 4, title 2 of the Government Code; or any other nondiscretionary cost or savings to local agencies.

The Executive Officer finds that the identification of ETS as a TAC will not require any private person or business, including any small business, to incur any cost in reasonable compliance with the proposed action. If, and when, the need and appropriate degree of control for ETS are considered by ARB during the risk management process, all costs of compliance will be described and considered.

In developing this regulatory proposal, ARB staff evaluated the potential economic impacts on representative private persons and businesses. ARB is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

The Executive Officer has made an initial determination that the proposed regulatory action will not have a significant adverse statewide economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states, or on representative private persons.

In accordance with Government Code section 11346.3, the Executive Officer has determined that the proposed amendment will not affect the creation or elimination of jobs within the State of California, the creation of new businesses or the elimination of existing business within the State of California, and the expansion of businesses currently doing business within the State of California. A detailed assessment of the economic impacts of the proposed amendments can be found in the ISOR.

The Executive Officer has also determined, pursuant to title 1, CCR, section 4, that the proposed regulation will not affect small businesses because the proposed regulation will have no regulatory effect on small businesses.

Before taking final action on the proposed regulatory action, the Board must determine that no reasonable alternative considered by the Board or that has otherwise been identified and brought to the attention of the Board would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.

SUBMITTAL OF COMMENTS

The public may present comments relating to this matter orally or in writing at the hearing, and in writing or by email before the hearing. To be considered by the Board, written submissions not physically submitted at the hearing must be received **no later than 12:00 noon January 25, 2006,** and addressed to the following:

Postal mail is to be sent to:

Clerk of the Board
Air Resources Board
1001 I Street, 23rd Floor
Sacramento, CA 95814.

Electronic mail is to be sent to: ets2006@listserv.arb.ca.gov, and received at ARB **no later than 12:00 noon, January 25, 2006.**

Facsimile transmissions are to be transmitted to the Clerk of the Board at (916) 322-3928 and received at ARB **no later than 12:00 noon, January 25, 2006.**

The Board requests, but does not require, that 30 copies of any written statement be submitted and that all written statements be filed at least ten days prior to the hearing. ARB encourages members of the public to bring any suggestions for modification of the proposed regulatory action to the attention of staff in advance of the hearing.

STATUTORY AUTHORITY

This regulatory amendment is proposed under the authority granted in sections 39600, 39601, and 39662 of the Health and Safety Code. This action is proposed to implement, interpret, or make specific, sections 39650, 39660, 39661 and 39662 of the Health and Safety Code.

HEARING PROCEDURES

The public hearing will be conducted in accordance with the California Administrative Procedure Act, title 2, division 3, part 1, chapter 3.5 (commencing with section 11340) of the Government Code.

Following the public hearing, The Board may adopt the regulatory language as originally proposed or with nonsubstantial or grammatical modifications. The Board may also adopt the proposed regulatory language with other modifications if the text as modified is sufficiently related to the originally proposed text that the public was adequately placed on notice that the regulatory language as modified could result from the proposed regulatory action. In the event that such modifications are made, the full regulatory text, with the modifications clearly indicated, will be made available to the public for written comment at least 15 days before it is adopted.

The public may request a copy of the modified regulatory text from ARB's Public Information Office, 1001 I Street, Visitors and Environmental Services Center, 1st Floor, Sacramento, California 95814, (916) 322-2990.

CALIFORNIA AIR RESOURCES BOARD

Catherine Witherspoon
Executive Officer

Date: November 29, 2005

California Environmental Protection Agency
Air Resources Board

INITIAL STATEMENT OF REASONS FOR RULEMAKING

STAFF REPORT

PROPOSED IDENTIFICATION OF ENVIRONMENTAL TOBACCO SMOKE AS A TOXIC AIR CONTAMINANT

Release Date:
December 9, 2005

State of California
AIR RESOURCES BOARD

STAFF REPORT: INITIAL STATEMENT OF REASONS FOR PROPOSED RULEMAKING

PROPOSED IDENTIFICATION OF ENVIRONMENTAL TOBACCO SMOKE AS A TOXIC AIR CONTAMINANT

To be considered by the Air Resources Board on January 26, 2006, at:

California Environmental Protection Agency
Byron Sher Auditorium
1001 I Street
Sacramento, California

Principal Authors:

Staff of the Air Resources Board and
Office of Environmental Health Hazard Assessment

Reviewed by:

Robert D. Fletcher, Chief, Stationary Source Division
Bob Barham, Ph.D., Assistant Chief, Stationary Source Division
Janette Brooks, Chief, Air Quality Measures Branch
Jim Aguila, Manager, Substance Evaluation Section

This report has been prepared by the staff of the California Air Resources Board and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Air Resources Board, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

Initial Statement of Reasons
for the Proposed Identification of
Environmental Tobacco Smoke as a Toxic Air Contaminant

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Appendix III: Proposed Identification of Environmental Tobacco Smoke as a Toxic Air Contaminant – as approved by the Scientific Review Panel on June 24, 2005

Under Separate Cover:

Executive Summary
Part A – Exposure Assessment
Part B – Health Effects
Part C – Public Comments and ARB/OEHHA Staff Responses

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INITIAL STATEMENT OF REASONS FOR RULEMAKING

STAFF REPORT

I. INTRODUCTION

In accordance with California Health and Safety Code sections 39660-39662, the Air Resources Board (ARB or Board) staff is recommending that the Board identify environmental tobacco smoke (ETS) as a toxic air contaminant (TAC). Appendix I contains the proposed regulatory amendment.

This Initial Statement of Reasons for Rulemaking for the Proposed Identification of ETS as a TAC consists of:

1) An ARB Staff Report, which summarizes the scientific basis for the proposed regulation and includes a discussion of the environmental and economic impacts of the proposal;
2) Appendix I (the Proposed Regulation Order);
3) Appendix II (the Findings of the Scientific Review Panel [SRP]); and
4) Appendix III (the SRP-approved version of the Executive Summary and the three-part report that contains the analysis of the exposure and health assessments of ETS, Parts A, B, C, as approved at the June 24, 2005 SRP meeting).

Part A, prepared by ARB staff, is an evaluation of emissions of, and exposure to, ETS. Part B, prepared by the Office of Environmental Health Hazard Assessment (OEHHA) staff, assesses the health effects of ETS. Part C consists of copies of the public comments received on the March 2005 draft report, and ARB/OEHHA staff responses.

II. BACKGROUND

A. Definition of a Toxic Air Contaminant

Section 39655 of the California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health." California Health and Safety Code section 39013 defines air pollutant as "any discharge, release, or other propagation into the atmosphere and includes, but is not limited to, smoke, charred paper, dust, soot, grime, carbon, fumes, gases, odors, particulate matter, acids, or any combination thereof." In addition, the Hazardous Air Pollutants listed in section 7412 of title 42 of the United States Code have also been identified as TACs under the state's air toxics program pursuant to section 39657(b) of the California Health and Safety Code.

B. The California Program for Identification and Control of Toxic Air Contaminants

The Toxic Air Contaminant Identification and Control Program was established by a California law, Assembly Bill 1807 (AB 1807, Tanner, Chapter 1047, statutes of 1983, Health and Safety Code section 39650 *et seq.*, Food and Agriculture Code section 14021 *et seq.*). AB 1807 created a comprehensive program administered by ARB to reduce the potential adverse public health impacts caused by emissions of toxic substances to the ambient air.

AB 1807 established a two-phased process which separates risk assessment (identification) from risk management (control). During the identification phase, a report is developed which determines whether there may be potential adverse health effects from substances in consideration of their toxicity, quantities of emissions, and human exposure in California. If the Board formally identifies a substance as a TAC, the substance enters the risk management phase. In the risk management phase, ARB determines the need for and appropriate degree of controls in consideration of costs and potential health benefits. The identification phase and the control phase are open public processes in which ARB staff actively seeks industry and public participation. (Health and Safety Code section 39660-39666).

In setting priorities for substances to enter the AB 1807 identification process, ARB must consider factors relating to: 1) risk of harm to public health; 2) amount or potential amount of emissions; 3) manner of, exposure to, and usage of the substance in California; 4) persistence in the atmosphere; and 5) ambient concentrations in the community. (Health and Safety Code section 39660(f).)

Once a substance is entered into the identification process, ARB and OEHHA staffs prepare a report that serves as the basis for listing the substance as a TAC. Health and Safety Code section 39660 requires OEHHA, upon request of ARB, to evaluate the health effects of a potential TAC while ARB evaluates the exposure data associated with it.

ARB's exposure assessment is based, to the extent available, upon research and monitoring data, and information on estimated actual exposures from data on ambient and indoor air environments. (Health and Safety Code section 39660(f).)

OEHHA's health evaluation includes an assessment of the availability and quality of data on the substance's health effects, including its potency and mode of action. Where it can be established that a threshold of adverse health effects exists, OEHHA must identify a safe exposure level. If there is no threshold of significant health effects, a range of risk for exposure to the substance is determined. (Health and Safety Code section 39660(c)). In both cases, OEHHA provides a full explanation of any uncertainties associated with the data.

The report, together with the scientific data on which the report is based, is made available to the public and is formally reviewed by the Scientific Review Panel (SRP) pursuant to Health and Safety Code section 39661. The SRP is composed of nine members, one each with recognized scientific expertise in the field of oncology, pathology, epidemiology, atmospheric science, biostatistics, occupational medicine, toxicology, and biochemistry (or molecular biology), and one member with relevant scientific experience who is experienced in the operation of scientific review or advisory bodies. The SRP reviews the scientific procedures and methods used to support the data, the data itself, and the conclusions and assessments on which the report is based. The SRP conducts all of its business at noticed meetings that are open to the public.

If the SRP approves the report, it adopts formal findings. If the SRP determines that the report is not based on sound scientific knowledge, methods, or practices, it will return the report for revision and resubmittal. Once the SRP has reviewed and approved a report, it transmits the report with the SRP-adopted findings to ARB. The Board conducts a public hearing to determine, based on the staff's report and the SRP's findings, if a substance should be listed as a TAC. If the Board decides to list the substance as a TAC, it is added to section 93000 of the California Code of Regulations. Health and Safety Code section 39665(a) then requires ARB to prepare a report that assesses the need for and appropriate degree of control for that substance.

III. DEVELOPMENT OF THE REPORT ON ENVIRONMENTAL TOBACCO SMOKE

Environmental tobacco smoke entered the TAC identification process in June 2001 and has undergone a thorough and extensive evaluation. ETS was entered into the process because it has potential cancer and non-cancer health effects, serious impacts on infants and children, and widespread exposure in California. ARB and OEHHA gave priority to the evaluation of ETS emissions because it met the TAC program criteria related to potential risk of harm to public health, amount of emissions, exposure and use, and persistence in the atmosphere.

Some of the information in this report is based upon data presented in OEHHA's 1997 report: *"Health Effects of Exposure to Environmental Tobacco Smoke."* The National Cancer Institute, acting for the U.S. Public Health Service, recognized the importance of the 1997 OEHHA report and incorporated it into their Smoking and Tobacco Control Monograph series.

On December 17, 2003, the first draft TAC identification report was released to the public for a 90-day comment period. On March 15, 2004, a public workshop was held to discuss the report. The SRP held a meeting on November 30, 2004, to discuss the first SRP version of the report "Proposed Identification of Environmental Tobacco Smoke as a Toxic Air Contaminant" developed by ARB and OEHHA. Comments and responses to comments on the first draft TAC identification report were also discussed.

Several SRP meetings were to follow. On January 6, 2005, comments from the November 30, 2004, SRP meeting were addressed, such as indoor versus outdoor emissions, verification of referenced studies, and expanded discussion of ETS physical characteristics over time. On March 14, 2005, ARB and OEHHA discussed the second SRP version of the report with the SRP. Discussions involved various aspects of the Part B – Health Effects of the ETS report. A third SRP draft version of the report was prepared for the June 24, 2005, SRP meeting which addressed the remaining SRP issues. The SRP approved the draft report and agreed on its findings. In its findings, the SRP concludes that ETS should be listed as a TAC and that the report, with the revisions requested by the Panel, is based on sound scientific knowledge. The SRP further recommended that should ARB list ETS as a TAC, it also be added by OEHHA to the list of TACs that may disproportionately impact children. Appendix II contains the SRP's findings as adopted at the June 24, 2005, meeting.

IV. ENVIRONMENTAL TOBACCO SMOKE IN CALIFORNIA

ARB staff reviewed and evaluated the potential for environmental tobacco smoke exposure in California (Part A of the ETS report). ARB staff considered the estimated emissions inventory and ambient concentrations. The SRP approved ARB staff's exposure assessment at its June 24, 2005, meeting.

A. Description of ETS

ETS is a complex mixture of thousands of gases and fine particulate matter emitted by the burning of tobacco products and from smoke exhaled by the smoker. Other minor contributors to ETS are from the smoke that escapes while the smoker inhales and some vapor-phase related compounds that diffuse from the wrapper of the tobacco product. The composition will vary depending on heat of combustion, tobacco content and additives present, and type of filter material used.

Researchers distinguish cigarette smoke as being comprised of two main components: mainstream and sidestream smoke. Mainstream smoke is material that is drawn through the mouthpiece of a burning cigarette while sidestream smoke is material that is emitted from a smoldering cigarette between puffs. ETS is a combination of exhaled mainstream smoke, sidestream smoke, and compounds that diffuse through the cigarette paper.

Many of the substances found in ETS have known adverse health effects. Tables 1 and 2 list some of the gas phase and particulate matter components found in ETS with notable health effects.

Table 1. Gas Phase Components in ETS with Known Health Effects

Constituent	Non-Cancer Health Effects	Constituent	Non-Cancer Health Effects
1,3-Butadiene	irritant, neurological effects	Hydrazine	hepatotoxic, dermatitis
Acetaldehyde	irritant, dermatitis	Methanol	neurotoxicant, irritant
Acetone	irritant, dizziness	Methyl chloride	CNS depressant, fatigue
Acetonitrile	irritant, cause vomiting	N-Nitrosodiethylamine	
Acrolein	irritant, pulmonary edema	N-Nitrosodimethylamine	causes liver damage
Benzene	CNS depressant, nausea	N-Nitrosopyrrolidine	
Carbon monoxide	headache, dizziness	Pyridine	irritant, dizziness
Carbonyl sulfide	irritant, CNS depressant	Styrene	CNS depressant, irritant
Ethyl benzene	irritant, CNS depressant	Toluene	CNS depressant, irritant
Formaldehyde	irritant, induce asthma		

Table 2. Particulate Matter Components in ETS with Known Health Effects

Constituent	Non-Cancer Health Effects	Constituent	Non-Cancer Health Effects
2-Naphthylamine	irritant, dizziness	Dibenzo[a,l]pyrene	
2-Toluidine	CNS depressant	Hydroquinone	CNS excitation, tinnitus
4-Aminobiphenyl	hematuria, lethargy	Lead	affects CNS, depression
Aniline	methemoglobinemia	N'-Nitrosonornicotine	
Arsenic (inorganic)	hemolysis, neuropathy	Nickel	immune alterations, irritant
Benz[a]anthracene		Nicotine	
Benzo[a]pyrene	dermatitis, irritant	N-Nitrosodiethanolamine	
Cadmium	bronchiolitis, irritant	NNK	
Catechol	methemoglobinemia	Phenol	cardiac arrthythmias
Chromium VI	renal toxicity, hemolysis	Quinoline	irritant, nausea, coma
Dibenzo[a,i]pyrene			

Typical ETS particles range from 0.01 to about 1 micrometer (µm). Freshly produced ETS undergoes complex atmospheric changes such as coagulation, evaporation, dilution, and condensation. However, ETS fine particles essentially remain below 1 µm in size.

B. ETS Emissions and Smoking Trends

ETS emission estimations were determined through cigarette sales in California, smoking prevalence, and emission factors. ETS emissions were characterized using the most commonly measured components of ETS, such as nicotine, respirable suspended particulates (RSP), and carbon monoxide (CO). In 2002, over 420 billion cigarettes, 6.3 billion large and small cigars, and 9.3 million pounds of smoking tobacco (pipe and "roll your own" cigarettes) were consumed nationwide. However, cigarettes comprised 85% of tobacco products and are the main contributor to ETS.

Total statewide ETS emissions for nicotine, RSP, and CO were estimated from cigarettes and cigars for 2002 (Table 3).

Table 3. 2002 California Statewide ETS Emissions (Tons/Year)

	Cigarettes	Cigars	Total
Nicotine	36	4	40
RSP	335	30	365
CO	1475	432	1907

The amount of ETS emitted into the outdoor environment depends in large part on the smoking public's behavior. Outdoor ETS emissions include direct emissions from outdoor smoking, plus ETS emissions generated indoors which eventually ventilate outside. In California, with the enactment of Assembly Bill 13 (AB 13) in 1998, the majority of all workplaces and other public venues, such as bars and restaurants, prohibit indoor smoking. Furthermore, according to the 2002 California Adult Tobacco Survey, half of California smoker residences have indoor smoking bans. Therefore, we assume that most physical smoking occurs outdoors. For ETS generated indoors, building ventilation studies show that 50 – 80% of ETS (including ETS constituents) is exchanged with outdoor air over a given time period. From all of the available information, ARB staff estimates that at least 80% of total ETS emissions (including those directly emitted outdoors and emissions ventilated from indoors) are emitted to the outdoor environment.

The California Department of Health Services (CDHS) conducts surveys regarding smoking and tobacco use through the implementation of Proposition 99, the Tobacco Tax and Health Protection Act of 1988, and other California laws which reauthorized provisions of Proposition 99. Researchers have measured data on smoking prevalence, attitudes, behaviors, and exposure for years through the use of detailed questionnaire surveys. Data is compiled for various subpopulations according to age, ethnicity, educational background, and several other categories. The CDHS gathers important information about smoking behavior through the California Tobacco Surveys (CTS) and the California Student Tobacco Surveys (CSTS). The CTS are random-participation telephone surveys targeting various groups, including adolescents (12 – 17 years) and adults (18+ years). The CSTS is an in-school student survey of tobacco use which collects data from both middle (grades 6 – 8) and high school (grades 9 – 12) students.

The most recent CTS and CSTS surveys show that both the adult (2002 data) and adolescent (2001 data) smoking prevalence is about 16%. Below is Table 4 of some survey categories for smoking prevalence.

Table 4. Current Adult and Adolescent Smoking Prevalence (%)

Category	Adult	Adolescent
Male	19.5	16.2
Female	13.0	15.7
African-American	19.0	8.2
Asian/PI	12.1	13.6
Hispanic	13.4	14.0
Caucasian	17.3	19.9
Overall	**16.2**	**16.0**

In 2002, California had a low smoking adult prevalence (16.2%) rate compared to the overall United States (U.S.) prevalence (23.0%). In fact, the U.S. per capita cigarette consumption (74.6 packs per fiscal year) is over twice as high as California's (35.8 packs per fiscal year). This explains why California only contributed a small percentage (≈ 6.0%) of the total ETS emissions.

C. Exposure to ETS

An individual's exposure is dependent on the air concentration of a pollutant in a given environment, and the time they spend in that environment. An individual's total daily exposure is the sum of the many exposures they experience across their 24-hour day, including both indoor and outdoor environments. Thus, exposure may be heavily influenced by an individual's activity patterns if they routinely visit a location where smoking occurs, or if they live in a smoking household.

Smoking behavior and other factors that change smoking patterns such as smoking regulations and smoking customs may affect present and future exposure patterns. Information from several smoking behavior related surveys indicate that many of California's adults, adolescents, and children are exposed to ETS during some time of the day. According to earlier studies before AB 13, 56% of adults (over age 18), 64% of adolescents (12-17 years), and 38% of children (0-11 years), reported exposure to ETS during their daily activity. Since the enactment of AB 13 in 1998, actual incidence is assumed to be lower today due to decreases in workplace smoking and public locations such as restaurants, bars, and gaming clubs. However, up to 20% of adolescents may still be exposed to ETS in their homes.

Tobacco smoke is a complex mixture and cannot be measured directly. Due to the complex nature of ETS, it is necessary to select a surrogate measure of exposure that is representative of ETS as a whole. Several components of ETS have been studied as markers for ETS. Nicotine has been most widely studied as a potential marker because its source is primarily tobacco smoke. Nicotine has been used as a pesticide, but only in very limited locations and applications. Sampling and analysis methods are well documented for nicotine, as demonstrated by several authors. Other ETS markers that have been studied include: solanesol, 3-ethenylpyridine (3-EP), carbon monoxide,

iso- and anteisoalkanes (C_{29}-C_{34}), polycyclic aromatic hydrocarbons, fluorescing particulate matter, respirable suspended particles (RSP), and ultraviolet particulate matter.

In order to provide current outdoor ETS measurements, ARB conducted ambient air monitoring at outdoor smoking areas for nicotine. Different locations in California were selected to measure air concentrations of nicotine. Monitoring was conducted during 2003 at outdoor smoking areas at the following five locations: an airport, junior college campus, public building, office complex, and amusement park. At each of the study sites, sampling was conducted for nicotine over a three-day time period during typical business hours (between 8:00 a.m. and 5:00 p.m.). Two of the days were devoted to 8-hour samples; six 1-hour samples were collected on one of the sampling days. The results of the monitoring study show a wide range of exposures depending on the locations and number of cigarettes smoked. Mean 8-hour concentrations ranged from 0.013 (local government center) to 3.1 micrograms per cubic meter ($\mu g/m^3$) (amusement park). Mean 8-hour background concentrations ranged from 0.009 (junior college) to 0.12 $\mu g/m^3$ (amusement park). Mean background 1-hour concentrations ranged from less than the estimated quantitation limit or EQL (0.029 $\mu g/m^3$ for 1-hour) (junior college and local government center) to 0.17 $\mu g/m^3$ (amusement park). Overall, the results indicate that concentrations of nicotine corresponded to the number of smokers in the smoking areas, the size of the smoking area, and meteorological conditions.

Other studies have also determined outdoor air concentrations of ETS either by direct measurements or modeled outdoor air concentrations of ETS constituents. One study estimated concentrations of fine smoke particles in the Los Angeles air using tobacco-specific iso- and anteisoalkanes. Using the measurements from these marker compounds, the annual average ambient fine (less than 2.5 microns) ETS particles in the Los Angeles air was estimated to range from 0.28 to 0.36 $\mu g/m^3$. The levels were based on annual measurement data from 1982. Another study used personal badge monitors to measure personal nicotine levels. This study reported a 7-day median nicotine concentration in the outdoor environment of 0.025 $\mu g/m^3$, based on those study participants who reported no indoor exposure. Another study used a chemical mass balance receptor model based on organic compounds to estimate source contributions to fine particle mass concentrations in the Los Angeles air. The modeled annual average concentration for the Los Angeles air was estimated to be 0.21 $\mu g/m^3$ fine ETS particulate matter in 1982.

Californians who neither smoke nor associate with many smokers will have limited ETS exposure. In this case, individuals will likely experience the majority of their lifetime ETS exposure from background levels of ETS which result from occasional or steady state near-source emissions. Since most Californians live and work in urban areas, ARB staff has estimated an outdoor annual average ambient ETS particle concentration for the Los Angeles air for 2003. The staff used two Los Angeles studies as a basis for this estimate. The staff applied an adjustment factor to the 1982 fine particle estimates presented in the two Los Angeles studies to reflect reductions in cigarette sales and cigarette emission rates that have occurred since 1982. The results show that

estimated annual average fine ETS particle concentrations in Los Angeles in 2003 likely decreased to between 0.06 to 0.10 μg/m^3.

Several studies have estimated ETS levels in different indoor environments using nicotine and RSP, and other markers for ETS exposure. Current typical indoor concentrations of nicotine in California are estimated to range from near zero to about 6.0 μg/m^3 in the home environment. Because of California's workplace smoking ban, California office buildings will generally have very low smoking concentrations. However, certain workplaces, such as the small (but documented) percentage of free-standing bars that still do not comply with California's workplace smoking ban, would likely have higher levels of ETS. Based on measurements from several studies, average nicotine levels could be as high as 76.0 μg/m^3 for bars and bingo parlors where smoking still occurs.

RSP concentrations in certain entertainment venues (such as casinos and bingo parlors) are estimated to range from less than 15 μg/m^3, where smoking is prohibited, up to 350 μg/m^3, where smoking is allowed. In the home environment, short-term peak RSP levels have been found up to 300 μg/m^3, where just one cigarette was smoked. Likewise, in-vehicle ETS RSP concentrations are estimated to range from about 90 μg/m^3 to well over 1,000 μg/m^3, depending on ventilation and position of windows.

A scenario-based approach was used to characterize the range of the public's nicotine exposure to ETS in this report. The scenario-based exposure method uses the results from ARB's ETS air monitoring study, available indoor ETS concentration data, and scenario-based activity patterns to estimate exposures under different conditions. Since ETS emissions and exposure are very localized, and because only very limited data on outdoor ETS levels are available, we believe the scenario-based approach provides better and more informative estimates of public exposure to ETS. The results show a wide range of possible population subgroup daily exposures. For individuals living in non-smoking homes and having only brief encounters with ETS, their average 24-hour nicotine exposure concentrations are low, and are estimated to be less than 0.01 μg/m^3. For those living in homes with indoor smokers and experiencing in-vehicle exposures, their average nicotine exposure concentration to which they are exposed to over 24-hours can range up to 7.4 μg/m^3. Such exposures are especially of concern for developing young children because they are likely to recur daily and may result in serious health consequences.

This approach differs from previous TAC exposure assessments, which were based on California population-weighted exposures to outdoor average ambient concentrations. That approach was appropriate for TACs emitted from area-wide or region-wide sources such as motor vehicles and industrial plants. However, cigars and cigarettes, the primary source of ETS, are smaller sources that emit pollutants near people and thereby exposures to ETS are very localized.

The primary and often the only exposure for individuals that do not spend time near smokers occurs outdoors in locations over which the individual typically has little control.

For non-smokers whose work or other activities bring them into regular contact with elevated ETS concentrations during most of the day, nearly all of their exposure can be attributable to proximity to outdoor smoking.

V. HEALTH EFFECTS OF ENVIRONMENTAL TOBACCO SMOKE EXPOSURE

ETS exposure is causally associated with a number of health effects, including effects on infants and children. ETS has a number of serious impacts on children's health including sudden infant death syndrome (SIDS), induction and exacerbation of asthma, increased respiratory tract infections, and increased middle ear infections. ETS also causes developmental toxicity resulting in low birth weight, and impaired lung function growth, predisposition to SIDS (to the extent that this is a developmental effect), and other developmental impacts.

Listed in Table 5 are the developmental, respiratory, carcinogenic, and cardiovascular effects for which there is sufficient evidence of a causal relationship, including fatal outcomes such as SIDS, heart disease mortality, and lung cancer death, as well as serious chronic diseases, such as childhood asthma. There are a number of effects for which evidence is suggestive of a causal association, but further research is needed for confirmation, including spontaneous abortion, decreased lung function growth, cervical cancer, and chronic respiratory symptoms in adults. Finally, it is not possible to judge, on the basis of the current evidence, the impact of ETS on a number of endpoints, including congenital malformations, adverse male reproductive effects, and rare childhood cancers.

Many Californians are exposed to ETS, and the number of people adversely affected may be correspondingly large. Table 6 presents morbidity and mortality estimates for health effects causally associated with ETS exposure. For lung cancer, where certain California-specific data are unavailable, estimates are derived from figures published for the U.S. population, assuming that the number affected in California would be 12% of the total. The estimates for cardiovascular disease, middle ear infection, asthma episodes, SIDS, pre-term delivery, and low birth weight were derived using information on prevalence of ETS exposure in California and the U.S.

Relative risk (RR) estimates associated with some of these endpoints are small, but because the diseases are common and ETS exposure is frequent and widespread, the overall impact can be quite large. The relative risk is a measure of the relation between exposure to a substance and the incidence of a disease. A relative risk of 1.0 indicates no relationship. For ETS, a relative risk estimate of 1.2-1.7 for heart disease mortality in nonsmokers is supported by the collective evidence; this corresponds to approximately 1,700-5,500 deaths annually in California. The relative risk estimate of 1.38 associated with low birth weight implies that ETS may impact fetal growth of 1,600 newborns in California. It is estimated that at least 31,000 children in California experience one or more ETS-related asthma episodes (new onset or exacerbation) each year. Large impacts are also associated with relative risks for respiratory effects in children such as middle ear infection (RR $\approx$ 1.62) (about 50,000 children annually), and lower respiratory

infection in young children (RR ≈ 1.5 to 2) (18,000 to 36,000 children annually). ETS exposure is implicated in 21 SIDS deaths per year in California (RR ≈ 3.5). About 400 to 1,100 lung cancer deaths in California are ETS-related. For nasal sinus cancers, observed relative risks have ranged from 1.7 to 3.0. This is as high as or higher than the relative risks observed for lung cancer. Finally, for breast cancer, when evaluating younger, primarily premenopausal women at diagnosis, a pooled risk estimate of 1.68 is derived in the meta-analysis, and when restricted to the studies with better exposure assessment, an estimate of 2.20 is obtained (see Table 5). These estimates of association could represent a significant number of cases as this is a relatively common cancer in women. Adding the mid-point of the ranges for lung cancer deaths and heart disease deaths, and including the SIDS point estimate, one can attribute about 50,000 deaths per year in the U.S. and 4,000 deaths per year in California from ETS-associated disease. This does not include the estimates for other ETS-associated cancer deaths.

Table 5. Health Effects Associated with Exposure to Environmental Tobacco Smoke

Effects Causally Associated with ETS Exposure

Developmental Effects
Fetal growth: Low birth weight and decrease in birth weight
Sudden Infant Death Syndrome (SIDS)
Pre-term Delivery

Respiratory Effects
Acute lower respiratory tract infections in children
(*e.g.*, bronchitis and pneumonia)
Asthma induction and exacerbation in children and adults
Chronic respiratory symptoms in children
Eye and nasal irritation in adults
Middle ear infections in children

Carcinogenic Effects
Lung cancer
Nasal sinus cancer
Breast cancer in younger, primarily premenopausal women

Cardiovascular Effects
Heart disease mortality
Acute and chronic coronary heart disease morbidity
Altered vascular properties

Effects with Suggestive Evidence of a Causal Association with ETS Exposure

Reproductive and Developmental Effects
Spontaneous abortion, Intrauterine Growth Retardation
Adverse impact on cognition and behavior
Allergic sensitization
Decreased pulmonary function growth
Adverse effects on fertility or fecundability

Cardiovascular and Hematological Effects
Elevated risk of stroke in adults

Respiratory Effects
Exacerbation of cystic fibrosis
Chronic respiratory symptoms in adults

Carcinogenic Effects
Cervical cancer
Brain cancer and lymphomas in children
Nasopharyngeal cancer
All cancers – adult and child

Table 6. Attributable Risks Associated with ETS

	Conclusion OEHHA 1997	Conclusion OEHHA 1997	Conclusion Update	Conclusion Update
Outcome	**Annual Excess # in CA**	**Annual Excess # in US**	**Annual Excess # in CA**	**Annual Excess # in US**
Pregnancy: Low birth weight Pre-term delivery	1,200-2,200	9,700-18,600	1,600 [1] 4,700 [1]	24,500 [2] 71,900 [2]
Asthma (in children):				
# Episodes [3]			31,000 [4]	202,300 [5]
# New cases	960-3120	8,000-26,000	N/A	N/A
#Exacerbations	48,000-120,000	400,000-1,000,000		
Lower respiratory illness	18,000-36,000	150,000-300,000	N/A	N/A
Otitis media visits	78,600-188,700	700,000-1,600,000	50,200	790,000 [6]
SIDS	120	1,900-2,700	21 [7]	430 [8]
Cardiac death (Ischemic heart disease death)	4,200-7,440	35,000-62,000	3,600 (range: 1,700-5,500) [9]	46,000 (range: 22,700-69,600) [10]
Lung cancer death	360	3000	400 [11]	3400
Breast cancer – diagnosis in younger, primarily premenopausal women			All studies: OR 1.68 (95% CI 1.31-2.15) [12] Best studies: OR 2.20 (95% CI 1.69-2.87) Approximate 68-120% increased risk	

1 Based on California Dept Health Services (CDHS, 2000a), Table 2-6, Number and percent of live births with selected medical characteristics by race/ethnic group of mother, California 2000, and Gilpin *et al.* (2001).

2 Based on CDC (2002b) National Vital Statistics Report. Vol 51(2) 2002. Births: Final data for 2001, and on adult females reporting exposure to ETS in NHANES III for 1995 (Pirkle *et al.*, 1996).

3 The data to distinguish number of new cases from number of exacerbations were not available for the updated calculations; thus, OEHHA considered that these estimates were best described as number of episodes.

4 Based on number of asthma attacks or episodes in previous 12 months for 0-17 year olds. Calculated from California Health Interview Survey for 2001.

5 Based on number of asthma attacks or episodes in previous 12 months for 0-14 year olds in Mannino *et al.* (2002b).CDC-MMWR 51(SS01)).

6 Based on Freid *et al.* (1998) National Center for Health Statistics Series 13 No. 137. Ambulatory Health Care Visits by Children: Principal Diagnosis and Place of Visit for yrs 1993-1995.

7 Based on California Dept Health Services (CDHS, 2000b), Table 4-10 for yr 2000 Leading causes of Infant death by race/ethnic group of child, *California 2000*.

8 Based on CDC (2002a) National Center for Health Statistics (2002). www.cdc.gov/nchs/fastats/infort.htm for yr 2000.

9 Based on California Dept Health Services (CDHS, 2000c), Table 5-7, Deaths, death rates, and age-adjusted death rates for leading causes by sex, California, 1999- 2000.

10 Based on Anderson and Arias (2003). National Vital Statistics Report. Vol 51(9) Table 2 for yr 2000 Ischemic heart diseases including AMI.

11 Assuming California exposure and death rates are similar to national rates and California population is 12% of national population.

12 OEHHA is unable at this time to calculate an attributable risk as it is not possible to account accurately for the portion attributable to other known risk factors. The OR for all studies is based on our meta-analysis of all studies with risk estimates for younger primarily premenopausal women. The OR for best studies is based on the OR for studies which evaluated younger primarily premenopausal women and which did a better job of ascertaining exposure – see Part B Section 7.4.1.3.2 and Table 7.4.1l.

N/A = data not available.

Citations for documents cited in above table appear in Part B Chapter 1 references.

A. Developmental Toxicity – Perinatal Manifestations of Prenatal ETS Exposure

ETS causes developmental toxicity. ETS exposure adversely affects fetal growth, with elevated risks of low birth weight or "small for gestational age" observed in numerous epidemiological studies. The primary effect observed, reduction in mean birth weight, is small in magnitude. But if the distribution of birth weight is shifted lower with ETS exposure, as it appears to be with active smoking, infants who are already compromised may be pushed into even higher risk categories. Low birth weight is associated with many well-recognized problems for infants, and is strongly associated with perinatal mortality. ETS is also associated with pre-term delivery. Premature babies are also at higher risk for a number of health problems.

The impact of ETS on perinatal manifestations of development other than fetal growth and pre-term delivery is less clear. The few studies examining the association between ETS and perinatal death are relatively non-informative. Studies on spontaneous abortion are suggestive of a role for ETS, but further work is needed. Although epidemiological studies suggest an association of severe congenital malformations with paternal smoking, the findings are complicated by the use of paternal smoking status as a surrogate for ETS exposure, since a direct effect of active smoking on sperm cannot be ruled out. In general, the defects implicated differed across the studies, with the most consistent association seen for neural tube defects.

B. Developmental Toxicity – Postnatal Manifestations of Pre- and/or Post-natal ETS Exposure

Numerous studies have demonstrated an increased risk of sudden infant death syndrome, or "SIDS", in infants of mothers who smoke. Until recently, it has not been possible to separate the effects of postnatal ETS exposure from those of prenatal exposure to maternal active smoking. Recent epidemiological studies now have demonstrated that postnatal ETS exposure is an independent risk factor for SIDS, and many of these studies demonstrated a dose-response gradient.

Although definitive conclusions regarding causality cannot yet be made on the basis of available epidemiological studies of cognition and behavior, there is suggestive evidence that ETS exposure may pose a hazard for neuropsychological development. With respect to physical development, while small but consistent effects of active maternal smoking during pregnancy have been observed on height growth, there is no evidence that postnatal ETS exposure has a significant impact on growth in otherwise healthy children. As discussed in greater detail below, developmental effects of ETS exposure on the respiratory system include childhood asthma induction and possibly adverse effects on lung growth and development.

C. Female and Male Reproductive Toxicity

Active smoking by women has been found to be associated with decreased fertility in a number of studies, and active tobacco smoking appears to be anti-estrogenic. The

epidemiological data on ETS exposure, though not conclusive, are suggestive of adverse effects on fecundability and fertility, and possibly on menstrual cycle disorders, although not many studies are available on this endpoint. Although associations have been seen epidemiologically between active smoking and sperm parameters, conclusions cannot be made regarding ETS exposure and male reproduction, as there is very limited information available on this topic.

D. Respiratory Effects

ETS exposure produces a variety of acute effects involving the upper and lower respiratory tract. In children, ETS exposure can exacerbate asthma, and increases the risk of lower respiratory tract illness, and acute and chronic middle ear infection. Eye and nasal irritation are the most commonly reported symptoms among adult nonsmokers exposed to ETS. Odor annoyance has been demonstrated in several studies.

Regarding chronic health effects, there is compelling evidence that ETS is a risk factor for induction of new cases of asthma (in children and adolescents/adults) as well as for increasing the severity of disease among children and adults with established asthma. In addition, chronic respiratory symptoms in children, such as cough, phlegm, and wheezing, are associated with parental smoking. While the results from all studies are not wholly consistent, there is evidence that childhood exposure to ETS affects lung growth and development, as measured by small, but statistically significant decrements in pulmonary function tests; associated reductions may persist into adulthood. The effect of chronic ETS exposure on pulmonary function in otherwise healthy adults is likely to be small, and unlikely by itself to result in clinically significant chronic disease. However, in combination with other insults (*e.g.*, prior smoking history, exposure to occupational irritants or ambient air pollutants), ETS exposure could contribute to chronic respiratory impairment in adults. In addition, regular ETS exposure in adults has been reported to increase the risk of occurrence of a variety of lower respiratory symptoms.

Children are especially sensitive to the respiratory effects of ETS exposure. Children with cystic fibrosis are likely to be more sensitive than healthy individuals. Several studies of patients with cystic fibrosis, a disease characterized by recurrent and chronic pulmonary infections, suggest that ETS can exacerbate the condition. Several studies have shown an increased risk of atopy (a predisposition to develop IgE antibodies against common allergens, which can then be manifested as a variety of allergic conditions) in children of smoking mothers, though the evidence regarding this issue is mixed.

E. Carcinogenic Effects

The role of ETS in the etiology of cancers in nonsmokers was explored, because active smoking, has been recognized as an established cause of cancers in a number of organs including: lung, larynx, oral cavity, naso-, oro-,and hypo-pharynx, nasal cavity and sinuses, esophagus, kidney, urinary bladder and ureter, uterine cervix, pancreas,

liver, bone marrow (myeloid leukemia), and stomach (IARC, 2004). Also, ETS contains a number of constituents that have been identified as carcinogens in animals and humans.

Reviews published in the 1986 *Report of the Surgeon General* (U.S. DHHS, 1986), by the National Research Council (NRC, 1986g), and by the United States Environmental Protection Agency (U.S. EPA) (1992i), as well as the original OEHHA report (Cal/EPA, 1997) concluded that ETS exposure causes lung cancer. Since the previous OEHHA review (Cal/EPA, 1997), numerous epidemiological studies and several meta-analyses have examined the association between passive smoking and lung cancer. The population-based studies were designed to and have successfully addressed many of the weaknesses for which the previous studies on ETS and lung cancer have been criticized. Results from these studies are compatible with the causal association between ETS exposure and lung cancer already reported by the U.S. EPA, Surgeon General, and National Research Council. The studies examining the effect of ETS exposure on nasal sinus cancers consistently (though not uniformly) show statistically significant associations, presenting strong evidence that ETS exposure increases the risk of nasal sinus cancers in non-smoking adults. Finally, studies suggest an association between ETS exposure and elevated risks of nasopharyngeal cancers.

Many population-based case-control studies (as well as three cohort studies), controlling for several important reproductive, dietary, and other potential confounding factors, have identified elevated breast cancer risks for residential and occupational exposure overall or in individual strata. Higher risks were noted in several studies for breast cancer diagnosed in women under age fifty (primarily premenopausal), or with long duration or high intensity exposure. The toxicological data on carcinogenicity of tobacco smoke constituents strongly support that the risk associated with ETS exposure is highly plausible. Overall, the weight of evidence (including toxicology of ETS constituents, epidemiological studies, and breast biology) is consistent with a causal association between ETS exposure and breast cancer in younger, primarily premenopausal women. In contrast to the findings in younger women, in studies which reported statistics for women diagnosed with breast cancer after menopause, risk estimates cluster around a null association (see Figure 7.4.4). There are, however, elevated risk estimates in some studies for postmenopausal women either overall or in specific strata. The evidence to date for older/postmenopausal women is, therefore, considered inconclusive. Further research indicating a positive association would be necessary prior to altering this finding.

The epidemiological and biochemical evidence suggest that exposure to ETS may increase the risk of cervical cancer. Positive associations were observed in three of four case-control studies and a statistically nonsignificant positive association was observed in the only cohort study conducted. A new population-based cross-sectional study found statistically significant elevated risks for cervical cancer. Findings of DNA adducts in the cervical epithelium as well as nicotine and cotinine in the cervical mucus of ETS-exposed nonsmokers supports biological plausibility.

In adults, the epidemiological evidence for an association between ETS exposure and risk of brain tumor remains weak and inadequately researched. More recent studies have focused on the potential association between ETS and childhood brain tumors. In children, recent studies or others not previously reviewed by OEHHA, provide no substantial evidence for an association between maternal smoking and childhood brain tumors, with risk estimates generally near the null. Several studies indicated a slightly stronger association with paternal smoking and brain cancer, although the association is still somewhat weak. Overall, the generally positive, but inconsistent, associations reported between paternal smoking and childhood brain tumors, in combination with biological plausibility, provide suggestive evidence of an association between ETS and brain cancer in children. Similarly, suggestive evidence of an association between exposure to ETS and childhood cancer is noted for lymphomas and acute lymphocytic leukemia (children of paternal smokers). These observed associations may reflect an effect of pre-conceptional paternal smoking on sperm, rather than an effect of ETS exposure.

For other cancer sites in adults, there has been limited ETS-related epidemiological research in general. The evidence to date regarding the relationship between ETS exposure and the risk of occurrence of cancer in sites other than lung, nasal cavity, breast, and possibly brain and lymphoma and leukemia, is inconclusive. A review of the available literature clearly indicates the need for more research. For example, although compounds established as important in the etiology of stomach cancer are present in tobacco smoke, only a single well designed population based study provided minimal evidence that ETS exposure may increase the risk of stomach cancer, particularly cancer of the cardia. In biochemical studies of nonsmokers, higher levels of hemoglobin adducts of the established bladder carcinogen, 4-aminobiphenyl, have been found in those exposed to ETS. However, no significant increases in bladder cancer were seen in the two case-control studies and one cohort study conducted to date, although both studies were limited in their ability to detect an effect.

The epidemiological data are insufficient to assess potential associations between ETS exposure and rare childhood cancers. Some studies found small increased risks in children in relation to parental smoking for neuroblastoma, Wilm's tumor, bone and soft-tissue sarcomas, but not for germ cell tumors. Studies to date on these rare cancers have been limited in their power to detect effects. The impact of ETS exposure on childhood cancer would benefit from far greater attention than it has received to date.

F. Cardiovascular Effects

The epidemiological data, from prospective and case-control studies conducted in diverse populations, in males and females, and in western and eastern countries, support a conclusion that there is a causal association between ETS exposure from spousal smoking and coronary heart disease (CHD) mortality in nonsmokers. To the extent possible, estimates of risk were determined with adjustment for demographic factors, and often for other factors related to heart disease, such as blood pressure, serum cholesterol level, and obesity index. Risks associated with ETS exposure were almost always strengthened by adjustment for other confounders. The association

between CHD and risk is stronger for mortality than for non-fatal outcomes, including angina. It is also evident that these effects exacerbate or are exacerbated by underlying conditions, and individuals with other chronic conditions such as diabetes, vascular disease, or hypertension comprise a susceptible population at even greater risk from ETS exposure.

Data from clinical and animal studies suggest various mechanisms by which ETS causes heart disease. In a number of studies in which nonsmokers were exposed to ETS, carotid wall thickening, lesion formation, aortic distensibility and reactivity, and compromise of endothelial function were similar to, but less extensive than those experienced by active smokers. Other effects observed include impaired exercise performance, altered lipoprotein profiles, enhanced platelet aggregation, and increased endothelial cell counts. These findings may account for both the short- and long-term effects of ETS exposure on the heart. The data reviewed also suggests that the effects of ETS may also contribute to stroke, the etiology of which includes atherosclerosis of the carotid and large arteries of the brain, and degeneration of intracerebral arteries.

VI. EVALUATION OF THE NEED FOR CONTROL OF OUTDOOR ETS EMISSIONS

Following Board adoption to formally identify environmental tobacco smoke as a TAC, the Health and Safety Code section 39665(a) requires staff to prepare a report on the need of control (the "needs assessment") for ETS.

ARB regulatory authority is generally limited to outdoor exposures and most public places already have laws and/or local ordinances restricting smoking activity. However, a review of the existing laws and input from stakeholders will be important as the needs assessment is developed.

Furthermore, in its findings, the SRP recommended that ETS be added to the list of TACs that may disproportionately impact children, pursuant to Health and Safety Code section 39669.5(c). See Appendix II for the SRP findings. If ETS is added to this list, ARB is required to prepare a report on the need for ETS regulation within three years. ARB is further required to adopt within that same three-year timeframe, as appropriate, any new control measures to reduce exposure to protect public health, particularly infants and children.

VII. ENVIRONMENTAL IMPACT ASSESSMENT

The identification of ETS as a TAC is not expected to result in any adverse impact on the environment. The Board's identification of ETS as a TAC and the subsequent analysis of the need to further control outdoor emissions may result in the adoption of control measures pursuant to Health and Safety Code sections 39665 and 39666. When considering the adoption of control measures, ARB will consider all potential impacts of the measures on human health, as well as the potential benefits to public health by reducing ETS emissions. Therefore, the identification of ETS as a TAC may ultimately result in control measures that will result in environmental benefits. Adverse

environmental impacts identified with respect to specific control measures will be included in the consideration of such control measures pursuant to Health and Safety Code sections 39665 and 39666. Furthermore, ARB is committed to integrating environmental justice in all of its activities. Environmental justice is defined as the "fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." Any proposed airborne toxic control measure (ATCM) for ETS must reduce health risks in all communities, including low-income and minority communities. Environmental justice will be fully assessed if, and when, an ATCM for ETS is proposed.

VIII. ECONOMIC IMPACT ASSESSMENT

The identification of ETS as a TAC will not directly have any economic impact on sources of ETS because the act of identifying a TAC does not mandate any specific risk management action. This proposed action would not require any private person or business to incur any cost in reasonable compliance with the proposed action. Once a substance is identified, ARB will assess the need and appropriate degree of control for that substance. Potential control measures will be assessed and developed in a public forum, in which the impact of these measures on businesses would be fully assessed.

IX. STAFF RECOMMENDATION AND PLAIN ENGLISH SUMMARY OF THE PROPOSED REGULATION

Based on the information available on ETS-induced non-cancer and cancer health effects and the results of the risk assessment, and the findings of the SRP, we conclude that ETS meets the definition of a TAC which is an air pollutant "which may cause or contribute to an increase in mortality and serious illness, or which may pose a present or potential hazard to human health" (Health and Safety Code section 39655). Therefore, staff recommends that the Board adopt the proposed regulation shown in Appendix I identifying ETS as a TAC with no identified level of exposure below which no health effects are anticipated.

APPENDIX I

PROPOSED REGULATION ORDER

PROPOSED REGULATION ORDER

Amend titles 17 and 26, California Code of Regulations, section 93000 to read as follows:

93000. Substances Identified as Toxic Air Contaminants.
Each substance identified in this section has been determined by the State Board to be a toxic air contaminant as defined in Health and Safety Code section 39655. If the State Board has found there to be a threshold exposure level below which no significant adverse health effects are anticipated from exposure to the identified substance, that level is specified as the threshold determination. If the Board has found there to be no threshold exposure level below which no significant adverse health effects are anticipated from exposure to the identified substance, a determination of "no threshold" is specified. If the Board has found that there is not sufficient available scientific evidence to support the identification of a threshold exposure level, the "Threshold" column specifies "None identified."

Substance	Threshold Determination
Benzene (C_6H_6)	None identified
Ethylene Dibromide ($BrCH_2CH_2Br$; 1,2-dibromoethane)	None identified
Ethylene Dichloride ($ClCH_2CH_2Cl$; 1,2-dichloroethane)	None identified
Hexavalent chromium [Cr(VI)]	None identified
Asbestos [asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite) cummingtonite-grunerite (amosite), tremolite, actinolite, and anthophyllite]	None identified
Dibenzo-p-dioxins and Dibenzofurans chlorinated in the 2,3,7 and 8 positions and containing 4,5,6, or 7 chlorine atoms	None identified
Cadmium (metallic cadmium and cadmium compounds)	None identified
Carbon Tetrachloride (CCl_4; tetrachloromethane)	None identified
Ethylene Oxide (1,2-epoxyethane)	None identified

Methylene Chloride (CH_2Cl_2; Dichloromethane)	None identified
Trichloroethylene (CCl_2CHCl; Trichloroethene)	None identified
Chloroform ($CHCl_3$)	None identified
Vinyl chloride (C_2H_3Cl; Chloroethylene)	None identified
Inorganic Arsenic	None identified
Nickel (metallic nickel and inorganic nickel compounds)	None identified
Perchloroethylene (C_2Cl_4; Tetrachloroethylene)	None identified
Formaldehyde (HCHO)	None identified
1,3-Butadiene (C_4H_6)	None identified
Inorganic Lead	None identified
Particulate Emissions from Diesel-Fueled Engines	None identified
Environmental Tobacco Smoke	None identified

NOTE

Authority cited: Sections 39600, 39601, 39662, Health and Safety Code.
Reference: Sections 39650, 39660, 39661, and 39662, Health and Safety Code.

APPENDIX II

FINDINGS OF THE SCIENTIFIC REVIEW PANEL

UNIVERSITY OF CALIFORNIA, LOS ANGELES • SCHOOL OF PUBLIC HEALTH
650 CHARLES E. YOUNG DRIVE SOUTH, LOS ANGELES, CALIFORNIA 90095-1772
TELEPHONE 310-206-6920 • FAX 310-206-9903
DIRECTOR: JOHN R. FROINES, PHD.

September 12, 2005

Barbara Riordan
Interim Chairman
Air Resources Board
1001 I street
P.O. Box 2815
Sacramento, California 95812

Dear Mrs. Riordan:

I am pleased to transmit to you the Scientific Review Panel on Toxic Air Contaminants' Findings (enclosed) for the report *Proposed Identification of Environmental Tobacco Smoke as a Toxic Air Contaminant* as adopted by the Panel at its June 24, 2005 meeting.

The Panel reviewed the scientific data on which the report is based, the scientific procedures and methods used to support the data, and the conclusions and assessments on which the report is based, as required by state law. Public comments and responses to those comments were also reviewed. It is the Panel's conclusion that environmental tobacco smoke should be listed as a toxic air contaminant, and that the report, with the revisions requested by the Panel, is based on sound scientific knowledge. The Panel further recommends that, should the Air Resources Board list environmental tobacco smoke as a toxic air contaminant, it also be added by the Office of Environmental Health Hazard Assessment to the list of toxic air contaminants that may disproportionately impact children.

On behalf of the Panel, let me also take this opportunity to thank the staffs of the Air Resources Board and the Office of Environmental Health Hazard Assessment for their prodigious efforts in completing this report. We appreciate that this was an enormous undertaking that took several years. The final report enumerates the serious health consequences of exposure to environmental tobacco smoke, and provides a clear rationale of the urgency and necessity to reduce public exposures wherever possible.

We ask that the Panel's findings and this letter be made a part of the final report.

Sincerely,

John R. Froines, Ph.D.
Chairman
Scientific Review Panel

cc: Scientific Review Panel members

Joan E. Denton, Ph.D., Director
Office of Environmental Health Hazard Assessment

Jim Behrmann
Liaison, Scientific Review Panel

Enclosure

Findings of the Scientific Review Panel on Proposed Identification of Environmental Tobacco Smoke as a Toxic Air Contaminant as adopted at the Panel's June 24, 2005 Meeting

The Scientific Review Panel on Toxic Air Contaminants (Panel) reviewed the report, *Proposed Identification of Environmental Tobacco Smoke as a Toxic Air Contaminant,* prepared by the Office of Environmental Health Hazard Assessment (OEHHA) and the California Air Resources Board (ARB) of the California Environmental Protection Agency (Cal/EPA). This report, a comprehensive update of an earlier report first released in 1997 (Cal/EPA, 1997) and later published by the U.S. National Cancer Institute (NCI, 1999), describes the public's exposure to environmental tobacco smoke (ETS) and its adverse effects on our health. The new research published since the 1997 report confirms and strengthens the conclusions of the original 1997 report and allows several new conclusions to be drawn.

The Children's Environmental Health Protection Act of 1999 amended the toxic air contaminant statute to explicitly require consideration of any evidence on special susceptibilities of infants and children to the effects of candidate toxic air contaminants. The updated report fulfills this requirement.

An initial draft of this updated report was released for public comment on December 17, 2003. A public workshop was held in March 2004 and the comment period was extended to March 29, 2004. A revised report was submitted to the Panel on October 12, 2004 for review as required by state law. The Panel discussed the report during its meetings on November 30, 2004, January 6, 2005, March 14, 2005, and June 24, 2005. Based on these discussions, the Panel's review of the report and information submitted through the public comment process, the Panel makes the following findings pursuant to Health and Safety Code section 39661:

1. Environmental tobacco smoke (ETS) is a significant source of exposure to compounds already identified as toxic air contaminants. Despite increasing restrictions on smoking and increased public awareness of health impacts, ETS exposure continues to be a major public health concern. For example, annual ETS emissions in California are estimated to include approximately 40 tons of nicotine, 365 tons of suspended particles, and 1900 tons of carbon monoxide.

2. To obtain data on current levels of ETS in ambient air where people spend part of their day, the ARB monitored nicotine concentrations at several outdoor smoking areas in California using nicotine, one commonly used surrogate for ETS. Results showed a range of ambient nicotine concentrations from 0.01 – 5 $\mu g/m^3$ Overall, the study found that concentrations of nicotine correspond to the number of smokers in the smoking areas. Other factors such as the size of the smoking area and wind speed had less of an effect.

3. Exposure to ETS varies widely among individuals and depends on their individual circumstances. Thus, Californians who live in nonsmoking homes and have only brief encounters with ETS are likely to be exposed to less than 0.1 ug/m3 (24-hour time-weighted average nicotine air concentrations), while those who live with smokers and are exposed only in their homes may be exposed to 10 – 100 times as much ETS. Exposure to ETS in vehicles may be much higher, and can lead to even higher 24-hour average exposures. Workplaces, casinos, and bars where smoking still occurs can have high ETS concentrations.

4. Children who live with smokers may be exposed to high levels of ETS in their homes, and even higher levels in vehicles. Although ETS exposures of Californian adults have declined substantially in the past decade, the exposures of children who live with smokers have not been reduced nearly as much.

5. The 1997 report concluded that ETS is causally associated with the following adverse developmental outcomes or other childhood adverse health effects: low birthweight, SIDS, acute lower respiratory tract infections, asthma induction and exacerbation, other chronic respiratory symptoms, and middle ear infections. The scientific evidence published since the 1997 report continues to support, and in many cases strengthen, these conclusions (see Table 1).

6. The 1997 report concluded that ETS is causally associated with the following adverse health effects in adults: eye and nasal irritation, lung and nasal sinus cancer, and heart disease. The current document continues to support and in many cases strengthen these conclusions.

7. There has been substantial new research published on ETS and breast cancer since the 1997 report. Human epidemiological studies, supported by the fact that at least 20 of the chemical constituents of ETS are mammary carcinogens, provide evidence consistent with a causal association between ETS exposure and breast cancer in younger primarily premenopausal women.

8. There is little, if any, evidence of an increase in breast cancer risk in older primarily postmenopausal women.

9. Based on evidence published since the 1997 report, the association between ETS exposure and pre-term delivery has been raised from suggestive to conclusive, adding an additional conclusive adverse health effect among children.

10. Based on evidence published since the 1997 report, the association between ETS exposure and asthma induction and exacerbation in adults, has been raised from suggestive to conclusive.

11. Based on evidence published since the 1997 report, the association between ETS exposure and impaired vascular and platelet function has been raised from suggestive to conclusive.

12. The 1997 report concluded that there is suggestive evidence that ETS is causally associated with the following adverse developmental outcomes or other childhood adverse health effects: spontaneous abortion, intrauterine growth retardation, adverse effects on cognition and behavior, exacerbation of cystic fibrosis, decreased pulmonary function, and decreased exercise tolerance. These conclusions are still supported by recent studies. Published information since the 1997 report provides suggestive evidence of a causal association between ETS and an additional health endpoint: allergic sensitization in children.

13. The 1997 report concluded that there is suggestive evidence that ETS is causally associated with the following adverse health effects in adults: chronic respiratory symptoms and cervical cancer. These conclusions are still supported by recent studies. Evidence published since the 1997 report provides additional suggestive evidence of a causal association between ETS and the following additional adult health endpoints: adverse effects on fertility or fecundity, elevated risk of stroke, chronic respiratory symptoms, and nasopharyngeal cancers.

14. The range of risks associated with ETS exposure are presented in the document for: low birth weight; pre-term delivery; episodes of asthma in children; otitis media in children; sudden infant death syndrome; ischemic heart disease deaths; and lung cancer deaths.

15. Because of the convincing evidence of childhood exposure to ETS, which may be higher under certain scenarios, and because of the conclusive evidence of an association with illnesses, which are either exclusively an issue for children or are more common among children, either conclusively or suggestively, the Panel concludes that exposure to ETS "may cause infants and children to be especially susceptible to illness" as defined by the Children's Environmental Health Protection Act of 1999.

After careful review of the June 2005 draft of the report *Proposed Identification of Environmental Tobacco Smoke as a Toxic Air Contaminant,* and the scientific procedures, data, conclusions, assessments and methods used in its preparation, the Panel finds that the report is based on sound scientific knowledge, methods and practices and represents a complete and balanced assessment of our current scientific understanding. Based on the available evidence, we conclude ETS is a toxic air contaminant.

The Panel recommends that the ARB take the necessary steps to list ETS as a toxic air contaminant. The Panel further recommends to OEHHA that ETS, once listed, be added to the list of toxic air contaminants that may disproportionately impact children (pursuant to Health and Safety Code section 39669.5(c)).

I certify that the above is a true and correct copy of the findings adopted by the Scientific Review Panel on June 24, 2005.

John R. Froines, Ph.D.
Chairman, Scientific Review Panel

References cited:

Cal/EPA (1997). Health Effects of Exposure to Environmental Tobacco Smoke. Final Report. California Environmental Protection Agency. Office of Environmental Health Hazard Assessment. September 1997.

National Cancer Institute (NCI) (1999). Health Effects of Exposure to Environmental Tobacco Smoke: The Report of the California Environmental Protection Agency. Smoking and Tobacco Control Monograph no.10. Bethesda, MD. U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute, NIH Pub. No.99-4645.

TABLE 1

HEALTH EFFECTS CAUSALLY ASSOCIATED* WITH EXPOSURE TO ENVIRONMENTAL TOBACCO SMOKE

Developmental Effects
Fetal Growth: Low birth weight and decrease in birth weight
Sudden Infant Death Syndrome (SIDS)
Pre-term delivery

Respiratory Effects
Acute lower respiratory tract infections in children
(*e.g.*, bronchitis and pneumonia)
Asthma induction and exacerbation in children
Asthma induction and exacerbation in adults
Chronic respiratory symptoms in children
Eye and nasal irritation in adults
Middle ear infections in children

Carcinogenic Effects
Lung cancer
Nasal sinus cancer
Breast cancer in younger (primarily pre-menopausal) women

Cardiovascular Effects
Heart disease mortality
Acute and chronic coronary heart disease morbidity
Altered vascular properties

* Conclusive evidence that *italicized health outcomes* are causally associated with ETS exposure was added in this 2005 report update. Other outcomes were found to be causally associated in both the 1997 and 2005 reports.

APPENDIX III

PROPOSED IDENTIFICATION OF ENVIRONMENTAL TOBACCO SMOKE AS A TOXIC AIR CONTAMINANT

AS APPROVED BY THE SCIENTIFIC REVIEW PANEL ON JUNE 24, 2005

Under Separate Cover:

Executive Summary
Part A – Exposure Assessment
Part B – Health Effects
Part C – Public Comments and ARB/OEHHA Staff Responses

TITLE 13. CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC HEARING TO CONSIDER AMENDMENTS TO THE HEAVY-DUTY VEHICLE SMOKE INSPECTION PROGRAM (IMPLEMENTATION OF ASSEMBLY BILL 1009, PAVLEY 2004, CHAPTER 873)

The Air Resources Board (the Board or ARB) will conduct a public hearing at the time and place noted below to consider amendments to the Heavy-Duty Vehicle Inspection Program. This notice summarizes the staff proposal.

DATE: January 26, 2006

TIME: 9:00 a.m.

PLACE: California Environmental Protection Agency
Air Resources Board
Byron Sher Auditorium
1001 I Street
Sacramento, CA 95812

This item will be considered at a two-day meeting of the Board, which will commence at 9:00 a.m., January 26, 2006, and may continue at 8:30 a.m., January 27, 2006. This item may not be considered until January 27, 2006. Please consult the agenda for the meeting, which will be available at least 10 days before January 26, 2006, to determine the day on which this item will be considered.

If you have a disability-related accommodation need, please go to http://www.arb.ca.gov/html/ada/ada.htm for assistance or contact the ADA Coordinator at (916) 323-4916. If you are a person who needs assistance in a language other than English, please contact the Bilingual Coordinator at (916) 324-5049. TTY/TDD/Speech-to-Speech users may dial 7-1-1 for the California Relay Service.

INFORMATIVE DIGEST OF PROPOSED ACTION AND POLICY STATEMENT OVERVIEW

Sections Affected: Proposed amendments to title 13, California Code of Regulations, sections 2180, 2180.1, 2181, 2182, 2183, 2184, 2185, 2186, 2187, and 2188. Proposed adoption to title 13, California Code of Regulations, section 2189: Heavy-Duty Smoke Emissions Test and Heavy-Duty Vehicle Emissions Control System Inspections.

Background: On September 29, 2004, Assembly Bill 1009 (AB1009) was signed into law, amending Health and Safety Code Section 43701. The amendments require ARB to develop and implement, in consultation with the California Highway Patrol, regulations to ensure that heavy-duty commercial vehicles (HDCVs) operating in California are equipped with engines that, at the time of manufacture, met standards that were at least as stringent as emission standards promulgated by the United States

Environmental Protection Agency (U. S. EPA). In adopting AB 1009, the Legislature found that heavy-duty vehicles equipped with engines emitting greater levels of oxides of nitrogen (NOx) and particulate matter (PM) than those designed to meet standards adopted by the U. S. EPA contribute to higher levels of ozone and PM, and pose a threat to public health in California.

ARB staff's proposal is designed to meet the requirements of the legislation. In developing its proposal, ARB staff met with stakeholders from companies that operate HDCVs in California, representatives from manufacturer-authorized HDCV service providers, representatives from the California Highway Patrol, and other interested parties at public workshops held on May 16, 2005, and June 17, 2005.

Background: In response to environmental concerns and public health impacts from the operation of in-use heavy-duty diesel-powered vehicles, the legislature in 1988 directed the ARB to design and enforce a heavy-duty vehicle smoke enforcement program. The regulations governing this program, the Heavy Duty Vehicle Inspection Program (HDVIP), were adopted by the ARB in 1990, and the program became operative in November 1991. Under the HDVIP, in-use heavy-duty diesel and gasoline-powered trucks are tested for excessive smoke and are inspected for tampered emission control systems. Intrastate, interstate, and international vehicles are all subject to these inspections that are conducted in cooperation with the California Highway Patrol (CHP) at CHP weigh stations and at random roadside locations. Owners of vehicles failing prescribed test procedures are issued citations that require prompt vehicle repairs and carry civil penalties ranging from $300 to $1800 per violation. The HDVIP program regulations were updated in December 1997, in order to incorporate new Society of Automotive Engineers (SAE) J1667 test procedures and other program protocols. In 2004, the HDVIP regulations were amended to inspect and assess penalties for scan tool evaluation violations under title 13, CCR, section 2011.

Staff's Proposal: The ARB staff's proposal would apply to all 1977 and later model year diesel-powered HDCVs operating in California with a gross vehicle weight rating (GVWR) greater than 10,000 pounds. Presently, under the HDVIP regulations, staff inspects vehicles for missing emission control labels (ECL) but has not been, in general, assessing penalties for missing ECLs. Under the staff's proposal, the ARB would amend its current HDVIP smoke inspection procedure to require, one year after the amendments become effective, a mandatory penalty of $300 for a missing ECL. If a citation is issued for a missing ECL within the first twelve months from the effective date of the regulations, the civil penalty would be waived provided the owner/operator, within 45 days of the date of the citation, obtains a replacement ECL that is affixed to the engine by an authorized engine repair/service facility.

The proposal would require that ECLs be affixed to the engine so that ARB will be able to determine, pursuant to the mandate of AB 1009, whether the vehicle has been manufactured to meet at least U. S. certification standards. For HDCVs with an affixed label, but which are not equipped with engines that met U.S. certification standards at

the time of manufacture, the owner or operator of the vehicle would receive an additional citation also mandating a civil penalty of $300.

It would be presumed at the time of inspection that an HDCV without a label affixed to it does not at least meet federal certification standards. Therefore, the owner would be cited for both violations identified above. However, the penalty for operating in California with a non-compliant engine would be waived provided the owner/operator, within 45 days of the date of the citation, obtains a replacement ECL that indicates the engine was in fact certified to meet at least U.S. EPA standards applicable at the time of manufacturer. As discussed above, the penalty for operating with a missing ECL would not be waived beyond the twelve month period following the effective date of the regulation. ARB enforcement staff would cite HDCVs that do not meet the ECL and certification requirements each time they are found to be operating illegally in California.

In addition to adding specific language regarding penalties under AB 1009, amendments to the civil penalty section set forth at section 2185 of the HDVIP are being proposed to provide additional clarity. The staff determined that the incorporation of the proposal contained herein necessitated modifications to improve the overall flow of the regulatory text.

COMPARABLE FEDERAL REGULATIONS

There are no comparable federal regulations at this time. Federal regulations for heavy-duty engines are limited to establishing emission standards for NOx, PM, hydrocarbons (HC), and carbon monoxide (CO). The regulations also require that all new heavy-duty engines have an ECL affixed. U. S. EPA's authority to adopt emission standards for "new engines" is authorized under section 202(b) of the federal Clean Air Act. While states are generally preempted from adopting their own emission standards for motor vehicles, California has uniquely set its own emission standards under the preemption waiver provisions of section 209(b) of the Act.

The proposed amended regulations apply to the operation of in-use vehicles in California. This is authorized under CAA section 209(d), which provides that any state or political subdivision may control, regulate, or restrict the use, operation, or movement of registered or licensed motor vehicles.

AVAILABILITY OF DOCUMENTS AND AGENCY CONTACT PERSONS

The Board staff has prepared a Staff Report: Initial Statement of Reasons (ISOR) for the proposed regulatory action, which includes a summary of the economic and environmental impacts of the proposal. The report is entitled: "Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider Amendments to The Heavy-Duty Vehicle Smoke Inspection Program (Implementation Of Assembly Bill 1009, Pavley 2004, Chapter 873)".

Copies of the ISOR and the full text of the proposed regulatory language, in underline and strikeout format to allow for comparison with the existing regulations, may be accessed on the ARB's web site listed below, or may be obtained from the Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, 1st Floor, Sacramento, CA 95814, (916) 322-2990 at least 45 days prior to the scheduled hearing on January 26, 2006.

Upon its completion, the Final Statement of Reasons (FSOR) will be available and copies may be requested from the agency contact persons in this notice, or may be accessed on the ARB's web site listed below.

Inquiries concerning the substance of the proposed regulation may be directed to the designated agency contact persons, Mr. Tullie Flower, Air Resources Engineer, at (916) 322-5848, or Mr. Donald Chernich, Manager, Heavy-Duty Diesel Inspection/Maintenance Development Section, at (916) 322-7620.

Further, the agency representative and designated back-up contact persons to who nonsubstantive inquiries concerning the proposed administrative action may be directed are Artavia Edwards, Manager, Board Administration & Regulatory Coordination Unit, (916) 322-6070, or Alexa Malik, Regulations Coordinator, (916) 322-4011. The Board has compiled a record for this rulemaking action, which includes all the information upon which the proposal is based. This material is available for inspection upon request to the contact persons.

This notice, the ISOR and all subsequent regulatory documents, including the FSOR, when completed, are available on the ARB Internet site for this rulemaking at http://www.arb.ca.gov/regact/hdvip2006/hdvip2006.htm

COSTS TO PUBLIC AGENCIES AND TO BUSINESSES AND PERSONS AFFECTED

The determinations of the Board's Executive Officer concerning the costs or savings necessarily incurred by public agencies and private persons and businesses in reasonable compliance with the proposed regulations are presented below.

Pursuant to Government Code sections 11346.5(a)(5) and 11346.5(a)(6), the Executive Officer has determined that the proposed regulatory action will not create costs or savings to any state agency or in federal funding to the state, costs or mandate to any local agency or school district whether or not reimbursable by the state pursuant to part 7 (commencing with section 17500), division 4, title 2 of the Government Code, or other nondiscretionary cost or savings to state or local agencies.

In developing this regulatory proposal, the ARB staff evaluated the potential economic impacts on representative private persons or businesses. The Executive Officer has determined that certain private persons and businesses will incur costs to comply with the staff's proposal.

Those impacted are companies that operate HDCVs in California, including out-of-state and out-of-country businesses. Such companies would incur costs under the proposal if they currently operate HDCVs in California equipped with engines that do not meet or exceed U.S. certification standards at the time of manufacture, or for any HDCV that is missing its engine ECL. The costs would cover replacement of HDCVs that fail to at least meet U.S. certification standards for the year of manufacture of the engine, and necessary replacement of missing or illegible engine ECLs. Based on data collected from HDCVs at roadside locations, the staff has estimated total compliance costs in the 2006 calendar year to be approximately $20 million for the estimated 400,000 diesel-powered HDCVs that operate in California.

The Executive Officer has made an initial determination that the proposed regulatory action will not have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states, or on representative private persons.

In accordance with Government Code sections 11346.3, the Executive Officer has determined that the proposed regulatory action will not affect the creation or elimination of jobs within the State of California, the creation of new businesses or elimination of existing businesses within the State of California, or the expansion of businesses currently doing business within the State of California. A detailed assessment of the economic impacts of the proposed regulatory action can be found in the ISOR.

The Executive Officer has also determined, pursuant to title 1, CCR, section 4, that the proposed regulatory action will affect small businesses that operate diesel-powered HDCVs within California. Staff was unable to determine the number or percentage of total businesses impacted that are small businesses.

Before taking final action on the proposed regulatory action, the Board must determine that no reasonable alternative considered by the board or that has otherwise been identified and brought to the attention of the board would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.

SUBMITTAL OF COMMENTS

The public may present comments relating to this matter orally or in writing at the hearing, and in writing or by e-mail before the hearing. To be considered by the Board, written submissions not physically submitted at the hearing must be received no later than 12:00 noon, January 25, 2006, and addressed to the following:

Postal mail is to be sent to:

Clerk of the Board
Air Resources Board
1001 I Street, 23rd Floor
Sacramento, CA 95814

Electronic mail is to be sent to: hdvip2006@listserv.arb.ca.gov and received at the ARB no later than 12:00 noon, January 25, 2006.

Facsimile transmissions are to be transmitted to the Clerk of the Board at (916) 322-3928 and received at the ARB no later than 12:00 noon, January 25, 2006.

The Board requests but does not require that 30 copies of any written statement be submitted and that all written statements be filed at least 10 days prior to the hearing so that ARB staff and Board Members have time to fully consider each comment. The board encourages members of the public to bring to the attention of staff in advance of the hearing any suggestions for modification of the proposed regulatory action.

STATUTORY AUTHORITY AND REFERENCES

This regulatory action is proposed under that authority granted in Health and Safety Code, sections 39600, 39601, 43013, 43016, 43018, 43701, and 44011.6.

This action is proposed to implement, interpret and make specific sections 39002, 39003, 39010, 39033, 43000, 43013, 43016, 43018, 43701, and 44011.6 Health and Safety Code, and sections 260, 305, 410, 505, and 545 Vehicle Code.

HEARING PROCEDURES

The public hearing will be conducted in accordance with the California Administrative Procedure Act, title 2, division 3, part 1, chapter 3.5 (commencing with section 11340) of the Government Code.

Following the public hearing, the Board may adopt the regulatory language as originally proposed, or with non substantial or grammatical modifications. The Board may also adopt the proposed regulatory language with other modifications if the text as modified is sufficiently related to the originally proposed text that the public was adequately placed on notice that the regulatory language as modified could result from the proposed regulatory action; in such event the full regulatory text, with the modifications clearly indicated, will be made available to the public, for written comment, at least 15 days before it is adopted.

The public may request a copy of the modified regulatory text from the ARB's Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, 1st Floor, Sacramento, CA 95814, (916) 322-2990.

CALIFORNIA AIR RESOURCES BOARD

Catherine Witherspoon
Executive Officer

Date: November 29, 2005

State of California
AIR RESOURCES BOARD

ERRATA

TITLE 13. CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC HEARING TO CONSIDER AMENDMENTS TO THE HEAVY-DUTY VEHICLE SMOKE INSPECTION PROGRAM (IMPLEMENTATION OF ASSEMBLY BILL 1009, PAVLEY 2004, CHAPTER 873)

By notice dated November 29, 2005, and published in the December 9, 2005, California Regulatory Notice Register, Register No. 49-Z, the Air Resources Board (the Board or ARB) inadvertently noticed that it would consider amendments to the Heavy-Duty Vehicle Inspection Program that would apply to all 1977 and later model year diesel-powered heavy-duty commercial vehicles (HDCV) with a vehicle weight rating (GVWR) greater than 10,000 pounds. (See page 2 of Notice.)

PLEASE BE ADVISED that the proposed amendments are not limited to "1977 and later model year" HDCVs, but apply to "1974 and later year model year" HDCVs.

The complete text of the notice and the Initial Statement of Reasons is available on the ARB Internet site for this rulemaking at
http://www.arb.ca.gov/regact/hdvip2006/hdvip2006.htm

Any questions regarding these corrections should be directed to, Mr. Tullie Flower, Air Resources Engineer, at (916) 322-5848, or Mr. Donald Chernich, Manager, Heavy-Duty Diesel Inspection/Maintenance Development Section, at (916) 322-7620.

CALIFORNIA AIR RESOURCES BOARD

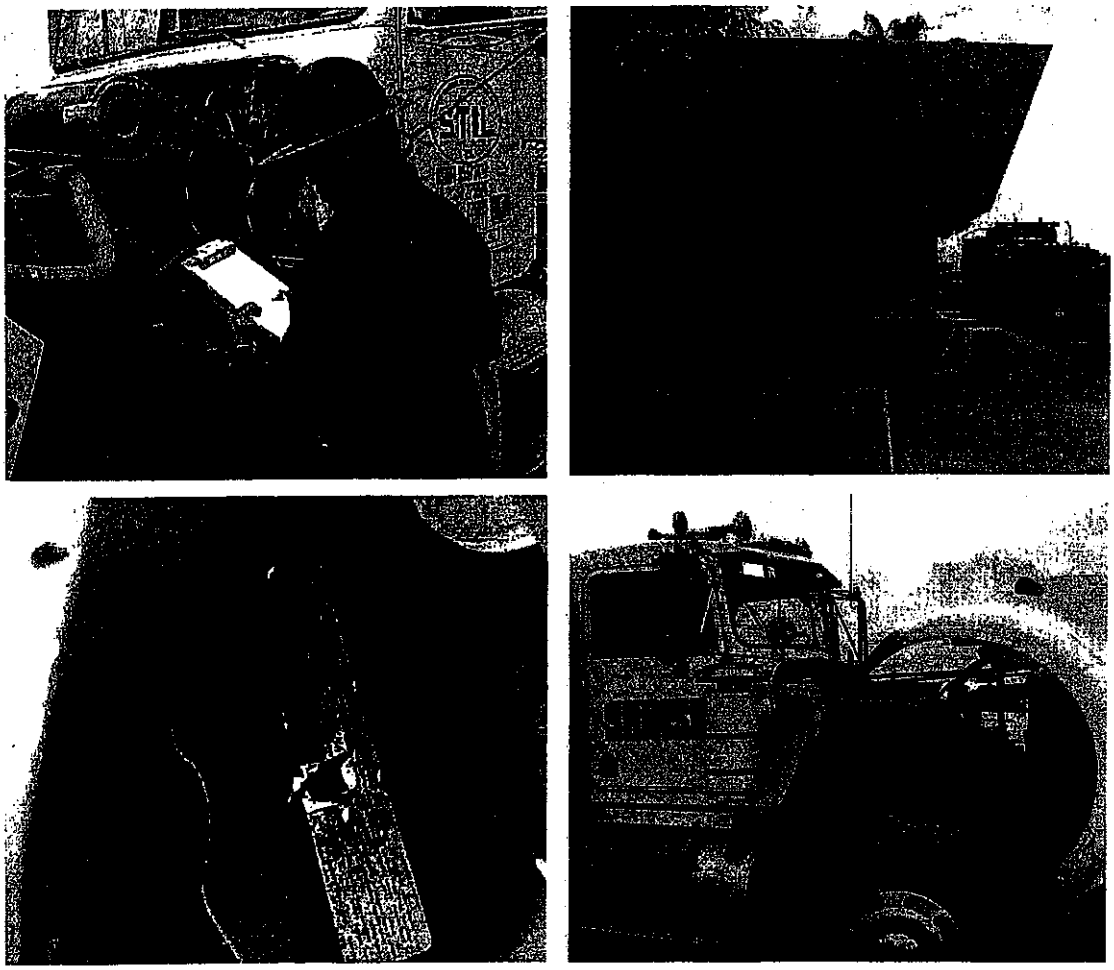
Catherine Witherspoon
Executive officer

Date: December 7, 2005

California Environmental Protection Agency

Air Resources Board

STAFF REPORT: INITIAL STATEMENT OF REASONS FOR PROPOSED RULEMAKING, PUBLIC HEARING TO CONSIDER AMENDMENTS TO THE HEAVY-DUTY VEHICLE SMOKE INSPECTION PROGRAM (IMPLEMENTATION OF ASSEMBLY BILL 1009, PAVLEY 2004, CHAPTER 873)



Release Date: December 9, 2005

AIR RESOURCES BOARD

STAFF REPORT: INITIAL STATEMENT OF REASONS
FOR PROPOSED RULEMAKING

PUBLIC HEARING TO CONSIDER AMENDMENTS TO THE HEAVY DUTY VEHICLE SMOKE INSPECTION PROGRAM (IMPLEMENTATION OF ASSEMBLY BILL 1009, PAVLEY 2004, CHAPTER 873)

Date of Release: December 9, 2005
Scheduled for Consideration: January 26, 2006

This report has been reviewed by the staff of the California Air Resources Board and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Air Resources Board, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

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EXECUTIVE SUMMARY

Assembly Bill 1009, Pavley was signed into law on September 29, 2004. The bill requires operators of heavy-duty commercial vehicles (HDCVs) to carry evidence that their engines meet emission standards at least as stringent as those promulgated by the U.S. Environmental Protection Agency for their year of manufacture. The purpose of the bill is to eliminate excess emissions in California by making it illegal for vehicles that do not meet federal standards to enter or operate in the State. The statute requires the ARB, in consultation with the California Highway Patrol (CHP), to adopt and implement regulations that will achieve this result. This report presents the Air Resources Board staff's proposal to comply with AB 1009's requirements.

Staff is proposing to expand ARB's existing Heavy-Duty Vehicle Inspection Program smoke inspection procedure to include verification of engine certification. Currently, ARB inspects vehicles for missing emission control labels, but does not generally assess penalties for tampered (e.g., missing or permanently obscured) labels. This proposal adds a $300 penalty for missing labels. That penalty would be waived for citations issued within the first twelve months of the regulation's effective date if the vehicle owner obtains a replacement label from a manufacturer authorized engine repair/service facility within 45 days of the citation date. After the 12 month grace period, no additional waivers would be available.

The proposal requires that labels be affixed to the engine so that ARB staff can determine whether the vehicle was manufactured to meet U.S. standards or better. Engines that do not meet those standards would be subject to an additional civil penalty of $300. The regulation presumes that vehicles without engine labels do not meet the federal certification standards. Such vehicles would be cited twice: once for the missing label and once for a non-compliant engine. The latter penalty would be waived if the engine in fact meets the standards and the vehicle owner gets a proper label within 45 days of the citation date. Unlike the tampered label waiver, which expires in 12 months, the waiver for not being in compliance with the required emission standards would be ongoing in cases where proof of compliance can be provided after the citation is issued.

If this regulation is approved by the Board, ARB enforcement staff will cite heavy duty commercial vehicles that do not meet the labeling and certification requirements each time they are found to be operating illegally in California.

Approximately one percent of the 400,000 heavy duty commercial vehicles operating in California have engines that do not meet at least federal emission certification standards. Staff estimates that these engines will account for 2.9 tons per day of excess oxides of nitrogen (NOx) and 0.12 tons per day of particulate matter (PM) in calendar year 2006. Implementing the proposed regulation will eventually eliminate those excess emissions, as drivers of foreign vehicles become aware of their provisions. The regulation will also prevent future excess emissions from foreign vehicles as trade expands and border crossing restrictions are removed per the North

American Free Trade Agreement (NAFTA).

If vehicle owners comply with the regulation by replacing their non-compliant engines, staff estimates that the fleet-wide compliance cost would reach approximately $20 million. The cost effectiveness of that compliance path is $1.09 per pound for NOx and PM reduced for 2004 and newer vehicles and $10.62 per pound for NOx and PM reduced, for pre-1993 model year vehicles. However, another compliance option is to use only federally certified vehicles for cross-border trips which would reduce these costs significantly.

The proposed amendments also include minor clarifying changes to the civil penalty schedule in section 2185, Title 13 of the California Code of Regulations for ARB's existing Heavy Duty Vehicle Inspection Program.

State of California
AIR RESOURCES BOARD

Staff Report: Initial Statement of Reasons for Proposed Rulemaking

I. Introduction

Assembly Bill 1009 was signed into law on September 29, 2004, as urgency legislation. This bill requires the Air Resources Board, in consultation with the California Highway Patrol (CHP), to develop protocols to ensure that heavy duty commercial vehicles (HDCVs) over 10,000 pounds gross vehicle weight operating in California meet U.S. EPA standards for the applicable model year of engine manufacture. The purpose of the bill is to prevent higher emitting vehicles from entering or operating in the State, thereby reducing excess oxides of nitrogen (NOx) and particulate matter (PM) emissions and preventing increases of such emissions in the future.

To accomplish this goal, staff is proposing to add vehicle certification status to ARB's existing program for inspecting heavy-duty vehicles. The amended regulation prohibits operation in California of vehicles whose engines do not meet federal emission standards for the year of manufacture of the engine. New monetary penalties are also proposed to enforce the amended regulation.

II. Background

A. Contribution of On-Road Heavy-Duty Commercial Vehicles to Air Pollution

Heavy duty diesel commercial vehicles are a major contributor to statewide NOx and PM emissions[1]. Although these vehicles are only two percent of the on-road vehicle fleet, staff estimates they contribute 30 percent of the NOx and 65 percent of the PM from all on-road vehicles. These emissions pose significant environmental, public health, and economic impacts. Public health impacts associated with diesel emissions include an increased likelihood of contracting various respiratory diseases, cancers, and premature death. NOx emissions are a key component to the formation of ozone in the atmosphere.

Excessive emissions from visibly smoking vehicles have been the number-one source of complaints from the public regarding air pollution. Research performed by the University of California (Howitt and Goodman) estimated damage to crops in California at $50 million to $333 million per year as a result of diesel emissions.[2]

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[1] Particulate matter is generally classified as "PM-10", or particles with diameters of 10 microns or less, and "PM-2.5" that, similarly, consist of particles of 2.5 microns or less. Studies show that diesel exhaust primarily consists of PM-2.5.

[2] R.E. Howitt and C. Goodman, The Economic Assessment of California Field Crop Losses Due To Air Pollution, Final Report, Contract # A5-105-32, California Air Resources Board, Sacramento, June (1989).

B. Current Status of International Trucking Provisions

In 1982, the U.S. Congress established a moratorium on operating Mexican domiciled vehicles beyond established border commercial zones.[3] These border zones typically extend for 5 to 20 miles inside of the U.S. border, but can extend further. Within the border zone, Mexican domiciled vehicles can either unload goods transported from Mexico to U.S. based carriers that distribute the goods beyond the zone, or they can pick up goods to be delivered within Mexico. Enforcement of the border commercial zones within California is carried out by the California Highway Patrol.

In November of 2002, President Bush determined that Mexican domiciled vehicles should be eligible to provide cross-border truck services beyond the border commercial zones pursuant to the North American Free Trade Agreement.[4] In response to the President's determination, the U.S. Department of Transportation's Federal Motor Carrier Safety Administration (FMCSA) developed a safety-based registration process to qualify Mexican domiciled vehicles for full cross-border access. Implementation of the registration process has been delayed by legal action concerning whether the federal government was required to conduct a full environmental impact study under the National Environmental Policy Act. On June 7, 2004, the U.S. Supreme Court concluded that FMCSA was not required to conduct the environmental impact study.[5] Although the FMCSA has not yet promulgated final federal regulations that would allow full cross-border access for Mexican domiciled vehicles, the agency is accepting applications and could begin issuing permits at essentially any time upon receiving such direction.

Currently, approximately 3,500 Mexican commercial vehicles cross into California each day (about 3,000 at Otay Mesa and 500 at Calexico/Mexicali) for operation within the border commercial zone along the California / Mexico border.[6] Predictions have been made that if cross-border travel restrictions are eased, the number of these crossings could increase by a factor of five or more. Additionally, increased crossings at the California/Arizona border on Interstate 8 and Interstate 10 are anticipated as Mexican HDCVs from the Nogales region and beyond come west to use the Ports of Los Angeles and Long Beach.[7]

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[3] Canadian HDCVs were also initially included in the moratorium; however, Congress immediately lifted the moratorium for these vehicles based on a bilateral cross-border access agreement. www.fmcsa.dot.gov/cross-border/whnaftafactsheet.htm

[4] White House memo: "Determination Under the Interstate Commerce Commission Termination Act of 1995", November 27, 2002. www.fmcsa.dot.gov/cross-border/whmemo.htm

[5] Department of Transportation v. Public Citizen. Docket 03-358. June 7, 2004.

[6] "Commercial Inspection Facility Traffic Counts," California Highway Patrol, 1997 through 2004

[7] "Technical Memorandum No. 5 Freight Movement Issue Prepared for The National I- Freight Corridor Study", Wilbur Smith Associates Team, February 2003, p. 5-79.

C. Fleet Characterization Surveys

Staff conducted surveys in July and August, 2005, of randomly selected vehicles at the Mexican border and at other locations in Southern California to determine the makeup of the California HDCV fleet. The results are summarized in Table 1.

Table 1: HDCV Survey Results

Survey Location	Total Vehicles	U.S. Cert. Confirmed	Non-U.S. Cert Confirmed		Engine Label Replacement Needed		Gas Powered HDCVs	
			Number	% of all confirmed certs.	Number	Percent	Number	Percent
Otay Mesa	135	75	1	1.3%	60	44%	8	6%
Tecate	39	10	1	9.1%	11	28%	6	15%
Calexico	137	63	3	4.6%	26	19%	9	7%
Castaic	207	114	0	0.0%	74	36%	8	4%
San Onofre	247	165	1	0.6%	60	24%	30	12%
Totals	**765**	**427**	**6**	**1.4%**	**231**	**31%**	**61**	**8%**

The results indicate that a little over one percent of the HDCVs for which certification status could be determined have engines that do not meet U.S. standards. Because the survey focused on Southern California and the border in particular, staff believes the statewide percentage is somewhat lower, and therefore assumed one percent for its emission benefit analyses (Section V, subsection A.). To minimize the delay that HDCV operators experienced during the survey, ARB inspectors released some vehicles for which the emission-control label was difficult to access without collecting its data. The results indicate that the operators of approximately 30 percent of HDCVs operating in California would need to obtain replacement labels in order to provide ARB inspectors with evidence of the certification status of their engines.

D. North American Emission Standards

The U.S. Environmental Protection Agency established emission certification standards for heavy-duty diesel engines beginning with the 1974 model year, one year after ARB standards were established.[8] At times throughout the 1980's, ARB standards were more stringent than federal requirements. However, the emission standards of the two agencies have been aligned since 1990 in recognition of the interstate nature of heavy-duty truck travel. Vehicles imported into Canada throughout this timeframe have been certified to U.S. standards even though Canada did not officially adopt U.S. standards for these on-road vehicles until 1999.

[8] Although emission standards were established for the 1973 model year, the ARB exempted manufacturers from its certification requirements for that year under Resolution 73-8, February 21, 1973.

The Mexican government did not establish its own standards until the 1993 model year. HDCVs imported prior to that time were not required to meet U.S. emission standards. As shown in Table 2, the standards established by Mexico for model years 1993 through the 2003 are identical to U.S. standards. However, beginning with the 2004 model year, U.S. and Canadian emission standards became more stringent again than vehicles manufactured for use in Mexico. The newer U.S. and Canadian emission standards require new emission controls such as exhaust gas recirculation to reduce NOx emissions. By the 2010 model year, both NOx and PM emissions from heavy-duty diesel engines certified for use in the U.S. and Canada will be cut by 90 percent with the use of aftertreatment technologies. Mexico has yet to adopt these more stringent emission standards. Its requirements currently remain unchanged from the 2003 model year, and manufacturers continue to import HDCV engines into Mexico meeting these standards.

Table 2:
Comparison of U.S. and Mexico Heavy-Duty Diesel Engine Emission Standards
(in grams per brake-horsepower-hour)

	Hydrocarbons (HC)		Carbon Monoxide (CO)		Nitrogen Oxides (NOx)		Particulate Matter (PM)	
Year	U.S.	Mexico	U.S.	Mexico	U.S.	Mexico	U.S.	Mexico
1974-78	-	-	40.0	-	16[9]	-	-	-
1979-83	1.5	-	25.0	-	10	-	-	-
1984-87	1.3	-	15.5	-	10.7[10]	-	-	-
1988-89	1.3	-	15.5	-	10.7	-	0.6	-
1990	1.3	-	15.5	-	6.0	-	0.6	-
1991-92	1.3	-	15.5	-	5.0	-	0.25	-
1993	1.3	1.3	15.5	15.5	5.0	5.0	0.25	0.25
1994-97	1.3	1.3	15.5	15.5	5.0	5.0	0.1	0.1
1998-2003	1.3	1.3	15.5	15.5	4.0	4.0	0.1	0.1
2004-06	0.5	1.3	15.5	15.5	~2.0[11]	4.0	0.1	0.1
2007+	0.14	1.3	15.5	15.5	0.2[12]	4.0	0.01	0.1

[9] Steady state HC plus NOx standard
[10] A transient test procedure for measuring emissions was established beginning with the 1984 model year.
[11] Standard is 2.5 or 2.4 g/bhp-hr HC +NOx.
[12] 50 percent of the engines must meet this standards; 100 percent by 2010.

E. Heavy-Duty Vehicle Inspection Program (HDVIP)

ARB operates its HDVIP to curb excess smoke emissions from heavy-duty vehicles caused by poor maintenance and tampering of the engine's emissions controls. Roadside smoke inspections were required by 1988 legislation (SB 1997, Presley) and the program was implemented in November 1991. Vehicle inspections take place at border crossings, CHP weight enforcement facilities, and at random roadside locations. Separate smoke opacity standards are applicable to 1990 and older HDCVs (55 percent opacity), and for 1991 and newer HDCVs (40 percent opacity).

Commercial vehicles determined to have excessive smoke emissions are subject to civil penalties. Additional legislation (SB 270, Peace) in 1998 augmented the program's enforcement presence by authorizing full time enforcement at the Otay Mesa and Calexico border crossings, and provided funding for inspection site improvements at both locations. As of June 2005, the HDVIP's enforcement infrastructure consisted of eleven inspection teams operating throughout the state. Since the program's inception, significant reductions in the number of smoking vehicles operating in the state have been recorded, and the failure rate has steadily declined from approximately 34 percent to the current failure rate of less than 10 percent. [13]

HDVIP inspectors already look for and examine the engine's emission control label as part of the smoke test procedure. The information on the label is used to determine the appropriate smoke opacity levels for the inspection. Operators of vehicles with missing or damaged labels may be given written notification that the label must be replaced; however, a citation is not issued. Instead, the inspectors presume for subsequent inspections that the engine is to be subject to the more stringent opacity standard for 1991 and newer HDCVs, unless the label is replaced to indicate otherwise.[14]

III. Summary of the Regulatory Proposal

The staff's proposal is designed to meet the statutory requirements of AB 1009 through amendments to ARB's existing HDVIP regulations. The proposed amendments would require HDCV operators to provide evidence when the vehicle is inspected under the HDVIP program of the emission standards the vehicle's engine was certified to meet at the time of manufacture.

A. Applicability

The proposed amendments would apply to 1974 and later model year diesel-powered HDCVs with a gross vehicle weight rating of 10,000 pounds or more. The 1974 model year marks the first year in which HDCV certification was required under federal

[13] P.E. Jacobs, D. J. Chernich, "California's Revised Heavy Duty Vehicle Smoke and Tampering Inspection Program", Society of Automotive Engineers, Technical Paper No. 981951, August 1998.
[14] Title 13, California Code of Regulations, Section 2182(c)..

regulations. Although the language of AB 1009 does not exclude gasoline-powered HDCVs, the staff believes their inclusion would result in substantially higher compliance costs for which there would be little associated emission benefits. The staff's conclusion was reached for the following reasons:

- The legislative findings that the statute is based on are clearly focused on diesel engines, including the associated cancer risks of diesel particulate matter, and the ozone implications of NOx emissions from diesel engines. The findings make no specific mention of gasoline-powered HDCVs. Gasoline powered HDCVs generally emit very little PM relative to diesel-powered HDCVs. NOx emissions are also lower in gasoline-powered HDCVs. Based on staff estimates, the NOx and PM emission benefits from gasoline vehicles under the regulation would be less than 5 percent of the expected benefits for diesel HDCVs, and gasoline HDCV inclusion would increase compliance costs by more than 20 percent.

- Gasoline-powered HDCVs are not generally used for long distance moving of freight, primarily because of their relatively poor fuel economy. Most freight is transported by diesel vehicles with gross vehicle weight ratings of more than 60,000 pounds. Only 23 of the 311 (7 percent) HDCVs surveyed by ARB staff at the U.S./Mexico border were gasoline powered.

- Heavy-duty gasoline-engine manufacturers have indicated that replacement labels for gasoline-powered HDCVs are generally not available for engines more than 10 years old. The cost, therefore, for the manufacturers to provide HDCV operators with evidence of the engine's certification status would be expected to be significantly higher than for diesel-powered engines.

B. Requirement that HDCVs have Labels that Indicate that Engines Meet Emission Standards at Least as Stringent as U.S. Emission Standards

Under the staff's proposal, ARB inspectors will check the engine's label for compliance. Compliance would be determined by the year that the engine was certified, and by whether or not the engine certification is at least equivalent to U.S. EPA emission certification standards. Owners that are operating in-use HDCVs that are missing their ECL, or have engines that do not meet standards at least as stringent as federally promulgated certification standards would be considered noncompliant.

C. Non-Compliance Penalties

Owners of HDCVs determined to be out of compliance with the proposed amendments would be issued a Citation and assessed a $300 penalty for each violation (proposed section 2185 (a)(3) and (4)). During the first year after the amendments become effective, an HDCV owner who has been cited for a tampered engine ECL would be able to avoid the civil penalty under ARB staff's proposal by providing proof, within 45-days of receiving the citation, that the ECL has been replaced. A new ECL would be obtained by presenting the vehicle for inspection to an authorized dealer of the engine

manufacturer. The dealer would then directly contact the engine manufacturer to obtain a replacement ECL. Upon receipt, the authorized dealer would affix the new ECL to the engine. The owner would then be required to submit proof of the correction to the ARB (section 2186(a)(3).

The ECL is necessary to determine whether or not the engine was designed to at least meet U.S. EPA promulgated emission-certification standards. Under the proposed amendments, an HDCV engine with an affixed ECL indicating that the vehicle does not meet U.S. EPA emission standards for the year of manufacture of the engine would be in violation of the regulation and assessed a $300, nonwaivable penalty. Additionally, the proposed amendments would presume that an HDCV engine with a tampered ECL does not at least meet applicable federal emission standards for the year of manufacture of the engine, and would also be subject to a violation for not having an ECL affixed to the engine. However, the violation for operating a non-compliant engine in California would be waived upon the owner, within 45 days, having an emission label affixed to the engine that shows that the HDCV engine actually does meet the proposed emission-standard requirements. In contrast to the violation for a tampered ECL, which will only be waived during the first year after the amendments become effective, the ability to obtain a penalty waiver from violation of the emission-standard requirements by demonstrating the engine meets at least U.S. standards would be ongoing.

D. Citation Appeals

As with other violations issued under the ARB's HDVIP program, HDCV operators wishing to contest a violation based on operation of a non-compliant HDCV, or for not having proof of the engine's certification status, can request an administrative hearing to contest the citation (See title 13, CCR, section 2188 and title 17, CCR, sections 60075.1 et seq.).

IV. Issues Regarding the Proposal

Through the following questions and answers, potential issues and concerns regarding the staff's proposal are identified and addressed.

Q: What is the practical impact of the proposal on Canadian and Mexican HDCVs operating in California?

A: Canada has historically imported heavy-duty vehicles built to U.S. standards. Therefore, the proposed regulation should not impact the operation of Canadian HDCVs within California. However, operators of Canadian vehicles with missing labels would be required to obtain a replacement label from an authorized dealer.

Mexico applied U.S. standards between the 1993 and 2003 model years, so vehicle engines manufactured during this period would be unaffected. However, Mexican HDCV engines were not required to meet emission standards prior to model year 1993, and Mexico's emission standards are less stringent than those

for U.S. engines for 2004 and newer model years. Therefore, HDCVs equipped with engines built to meet emission requirements for Mexico between model years 1974 and 1992, or model years 2004 and newer, would no longer be legal for use on California highways.

Q: Why are 2003 Mexican certified engines allowed to operate in California, but 2004 and newer engines are not, even though they meet the same standards?

A: The existing alignment of U.S. and Mexico emission standards ended with the 2003 model year. As illustrated previously in Table 2, allowable NOx emissions for U.S. certified engines have been cut in half beginning with the 2004 model year. In other words, a 2004 Mexican certified engine emits twice the NOx emissions of a 2004 HDCV certified to U.S. EPA standards. An even greater disparity for PM and NOx emissions will occur by the 2010 model year when U.S. emission standards will be 90 percent lower than present Mexican emission standards. While there is little doubt that 2004 Mexican certified HDCVs would be as clean or cleaner on average than 2003 or older HDCVs, the staff believes permitting continued operation of 2004 and later Mexican certified HDCVs could create an ongoing economic incentive that would encourage Mexican-based trucking companies to purchase and use Mexican-certified HDCVs over engines certified to meet at least federal emission standards. The emission control technologies used on 2004 U.S. certified engines modestly increase HDCV prices. Differential engine costs will increase further as U.S. emission standards increase in stringency in 2007 and 2010.

Q. 2007 and later model year U.S. engines will require the use of Ultra Low Sulfur Diesel (ULSD) fuel. If operators of Mexican domiciled HDCVs purchase U.S. certified engines to permit operation in California, how will they fuel the engines within Mexico?

A. Representatives from the U.S. EPA and Mexico's Ministry of Environment and Natural Resources (SEMARNAT), met October 19, 2005 in Mexico, and jointly announced that Mexico plans to aggressively reduce sulfur levels in gasoline and diesel fuel beginning in 2006.[15] Preparations are currently underway by Mexico to establish the availability of ULSD within its borders through both importation of the fuel in the short term, and through changes to fuel refining within Mexico for the longer term.[16] Therefore, the staff expects that ULSD fuel will be available within Mexico for use in 2007 and later engines.

[15] http://usinfo.state.gov/gi/Archive/2005/Oct/24-774920.html
[16] Sandra Dibble, "*Cleaner low-sulfur diesel to be introduced by 2007*", THE SAN DIEGO UNION-TRIBUNE, October 22, 2005.

Q. Will HDCV operators have any trouble in obtaining replacement ECLs?

A. Manufacturers of heavy-duty engines have indicated to ARB staff that affected HDCV operators will be able to obtain replacement ECLs from manufacturer authorized service providers.

Q. How will you make sure that the correct replacement labels are issued to HDCV operators?

A. The general business practice of the heavy-duty engine manufacturers is to issue a replacement label only to an authorized service provider based on the engine serial number supplied by the provider. The service provider is also responsible for installing the new label. In order further minimize mislabeling or fraud, the ARB staff plans to work with heavy-duty engine manufacturers to develop a serial number database that can be used to verify the accuracy of the ECL.

Q. Is the proposed regulation lawful under the North American Free Trade Agreement (NAFTA) and the Foreign Commerce Clause of the U.S. Constitution?[17]

A. Article 3, section 3.5 of the California Constitution provides:

> An administrative agency, including an administrative agency created by the Constitution or an initiative statute, has no power:
>
> (a) To declare a statute unenforceable, or refuse to enforce a statute, on the basis of it being unconstitutional unless an appellate court has made a determination that such statute is unconstitutional;
>
> (b) To declare a statute unconstitutional;
>
> (c) To declare a statute unenforceable, or to refuse to enforce a statute on the basis that federal law or federal regulations prohibit the enforcement of such statute unless an appellate court has made a determination that the enforcement of such statute is prohibited by federal law or federal regulations.

In enacting AB 1009, the Legislature directed ARB to adopt a regulation meeting the purpose and intent of the statute "[t] o the extent permissible under federal

[17] U.S. Const. Art. I, sec. 8, cl. 3.

Law . . . ."[18] To that end, in carrying out its duties under the Constitution, ARB staff crafted the proposed regulation that applies to all vehicles operating in California, whether domiciled in California, other states, or foreign countries. By drafting the proposed amendments in this way, ARB captured the intent of the Legislature's directive to achieve immediate emission reductions from HDCVs, without being discriminatory.[19] ARB's attorneys believe that the proposed regulation is consistent with NAFTA and the Foreign Commerce Clause of the U.S. Constitution.

A. NAFTA

Under Part Three, Chapter 9 of NAFTA, the United States, Mexico, and Canada (the Parties) agreed that "[e]ach Party shall seek, through appropriate measures, to ensure observance of Articles 904 through 908 *by state* or provincial governments. . . ." (Emphasis added.)[20] Under Article 904:

> 1. Each Party may, in accordance with this Agreement, adopt, maintain or apply any standard-related measure [SRM], including any such measure relating to safety, the protection of human, animal or plant life or health, the environment or consumers, and any measure to ensure its enforcement or implementation. Such measures include those to prohibit the importation . . . provision of a service by a service provider of another Party that *fails to comply with the applicable requirements of those measures or to complete the Party's approval procedures.* (Emphasis added.)
>
> 2. Notwithstanding any other provision of this Chapter, each Party may, in pursuing its legitimate objectives of safety or the protection of human, animal or plant life or health, the environment or consumers, establish the levels of protection that it considers appropriate in accordance with Article 907(2).
>
> 3. Each Party shall, in respect of its [SRMs], accord to goods and service providers of another Party:
>
> (a) national treatment in accordance with Article 301 (Market Access)[21] or Article 1202 (Cross –Border Trade in Services;[22] and

[18] Stats 2004, ch 873, sec 2 (AB1009)
[19] *Id.*
[20] *NAFTA, Part Three – Technical Barrriers to Trade, Chapter Nine – Standards-Related Measures, Article 902.* Chapter Nine is attached in full hereto as Attachment B. See http://www.mac.doc.gov/nafta/naftatext.html.
[21] *Id., Article 301: National Treatment,* provides in relevant part:

(b) treatment no less favorable than that it accords to like goods, or in like circumstances to service providers, or any other country.

4. No Party may prepare, adopt, maintain or apply any [SRMs] with a view to or with the effect of creating an unnecessary obstacle to trade between the Parties. An unnecessary obstacle to trade shall not be deemed to created where:

(a) the demonstrable purpose of the measure is to achieve a legitimate objective; and

(b) the measure does not operate to exclude goods or another Party that meet the legitimate objectives. [23]

Article 907(2) provides:

2. Where pursuant to Article 904(2) a Party establishes a level of protection that it considers appropriate and conducts an assessment of risk, *it should avoid arbitrary or unjustifiable* distinctions between similar goods or services in the level of protection it considers appropriate, where the distinctions:

(c) result in arbitrary or unjustifiable discrimination against goods or service provides of another Party;

(d) constitute a disguised restriction on trade between the Parties; or

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"[N]ational treatment shall mean, with respect to a state or province, treatment no less favorable than the most favorable treatment accorded by such state or province to any like, directly competitive or substitutable goods, as the case may be, of the Party of which it forms a part."

[22] *Id., Article 1202: National Treatment provides:*

1. Each Party shall accord to service providers of another Party treatment no less favorable than that it accords, in like circumstances, to its own service providers.

2. The treatment accorded by a Party under paragraph 1 means, with respect to a state or province, treatment no less favorable than the most favorable treatment accorded, in like circumstances, by that state or province to service providers of the Party of which it forms a part.

[23] *Id., Article 904,: Basic Rights and Obligations*

> (e) discriminate between similar goods or services for the same use under the same conditions that pose the same level of risk and provide similar benefits.[24]

By its terms, NAFTA does not per se prohibit individual state regulations.[25] The purposes and intent of AB 1009 and the proposed regulation are not to discriminate against any Party to NAFTA. Rather the expressed purpose is to ensure that California continues to meet its ambient air quality goals set forth in the federal Clean Air Act (CAA)[26] and U.S. EPA regulations[27] and by the California Legislature in the Health and Safety Code.[28] California is confronted with some of the worst air quality in the nation. Moreover, diesel PM emissions have been designated as toxic air contaminants by ARB, and, as such, ARB has been directed by the Legislature to take all actions necessary to address the toxic air contaminant.[29] The proposed regulation is just one of many measures adopted by ARB to address statewide issues regarding ozone and PM attainment.

Consistent with Article 904(3) and (4), the proposed regulation does not establish discriminatory SRMs. The provisions of the regulation would apply standards no less favorable to Canadian and Mexican owners of HDCVs than it provides to owners of HDCVs domiciled in the United States. The proposed regulation further does not establish an SRM that creates an unnecessary obstacle to trade between the parties. As set forth in Article 904(4), an SRM shall not be considered an unnecessary obstacle to trade when "the demonstrable purpose of the measure is to achieve a legitimate objective," (i.e., attainment of ambient clean air standards), and, "does not operate to exclude goods of another Party that meet that legitimate objective." As provided in the proposed regulation, HDCVs equipped with engines that meet the nondiscriminatory U.S. certification standards, which U.S. EPA has determined necessary to address the nation's ambient air quality, will not be prohibited from operating within California. The same requirements are expected of all HDCVs that operate in the state.

B. Foreign Commerce Clause

The Commerce Clause grants Congress the power "[t]o regulate Commerce with foreign Nations, and among the several States. . . ." The Supreme Court has recognized that the Commerce Clause in addition to granting Congress an affirmative grant of authority "also encompasses an implicit or 'dormant' limitation on the authority of the States to enact legislation affecting interstate

[24] *Id.,Article 907: Assessment of Risk.*
[25] *Id., Article 904(3).*
[26] CAA sections 108 and 109, 42 USCA sections 7408 and 7409.
[27] 40 CFR section 50.10.
[28] Health and Safety Code section 39606.
[29] See Health and Safety Code sections 39650 et seq.

commerce."[30] The Supreme Court has applied a similar analysis to state regulation affecting foreign commerce, even where Congress has not acted.[31] The responsibility for interpreting this implied limitation has been left largely to the courts. The Supreme Court has interpreted the limitation on the states to mean that the "states cannot impede substantially the free flow of commerce from state to state [or foreign commerce], or regulate those phases of national commerce which, because of need of national uniformity, demand that their regulation, if any, be prescribed by a single authority."[32] However, the Court has allowed the states to regulate matters of local state concern, even though such regulations may have an effect on interstate commerce.[33]

The Supreme Court has used what has been characterized as a two-tiered approach to determine whether state statutes and regulations violate the Commerce Clause.[34] Under this approach, the Court will look to see if a state statute or regulation directly regulates or discriminates against interstate commerce, or its effect is to favor in-state economic interests over out-of-state interests.[35] If so, the Court has reviewed such laws with rigorous scrutiny. In cases of discrimination and economic favoritism or instate interest, the Court has generally struck down the laws, unless the state could both demonstrate that the subject law "serves a legitimate purpose and that the purpose could not be served as well by available nondiscriminatory means."[36] When, however, a state statute or regulation is neutral on its face, has only indirect or incidental effects on interstate commerce, and regulates evenhandedly, it is analyzed under a second test, which balances the state's legitimate interests in adopting the regulation against the burden that the regulation may have on interstate commerce.[37]

Here, as explained earlier, the proposed amendments do not discriminate against commerce coming into California from other states or nations. The regulation would require all HDCVs operating in the state to meet minimum-emission requirements (i.e., that engines be designed to at least meet U.S. EPA promulgated standards for the year that the engines were manufactured) that would be applied to California-domiciled as well as to foreign-domiciled vehicles. To the extent that one could argue that the proposal might discriminatorily affect Mexican domiciled vehicles more than trucks from California, other states, or Canada, the effect would be incidental. As discussed above, ARB surveys and anecdotal testimony at an ARB workshop indicate that only approximately one

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[30] *Healy v. The Beer Institute* (1989) 491 U.S. 324, 326, fn.1. [Citations omitted.]
[31] *Barclays Bank PLC v. Franchise Tax Bd. of California* (1994) 512 U.S. 298, 311.
[32] *Southern Pac. Co. v. State of Arizona* (1945) 325 U.S. 761, 767; *Barclays Bank* 512 U.S. at 311, citing *Southern Pac. Co.*
[33] *Southern Pac. Co.*, 325 U.S. 770.
[34] *Brown-Foreman Distillers Corporation v, New York State Liquor Authority* (1986) 476 U.S. 573, 578.
[35] *Id.*
[36] *Maine v. Taylor* (1986) 477 U.S. 131, 137.
[37] *Pike v. Bruce Church, Inc.* (1970) 397 U.S. 137.

percent of vehicles that presently cross the border from Mexico into the border-commercial zones do not meet at least U.S. EPA emission standards. This could only be described as an incidental effect.

On the other hand, if, after the border zones are fully opened under NAFTA, a greater number of Mexican vehicles were found to be excluded from entry into the U.S. because they do not at least meet federal standards, California will be able to show that the proposed regulation serves a legitimate purpose that could not be served as well by nondiscriminatory means.[38] This analysis is similar to that applied under NAFTA.[39] Indeed one could argue that the dormant Commerce Clause does not apply here since Congress adopted NAFTA under its Commerce Clause authority.[40] As previously discussed, NAFTA expressly provides that it is not discriminatory or an unnecessary obstacle to free trade if a SRM is expressly designed to achieve a legitimate objective such as protecting the environment or human, animal or plant life or health. [41]

In determining whether the proposed regulation is nondiscriminatory, under a foreign Commerce Clause challenge -- if it is indeed applicable -- courts would look to see whether the purpose of the proposed regulation is legitimate and whether the burden on interstate commerce imposed by the regulation would clearly exceed the local benefits.[42] Balancing the local interest in regulation against the burden on interstate commerce is considered on a case-by-case basis, and the more legitimate the public interest, the greater the interference must be to overcome it.[43] Indeed, the Supreme Court has found that there is a strong presumption of validity of local safety regulations when challenged.[44]

In evaluating a state's interests, the Court has recognized that a state's interest is never greater than in matters of traditional local concern.[45] Air pollution prevention is undoubtedly a traditional local safety concern.[46] In adopting the CAA, Congress expressly found that air pollution poses a significant danger to public health and welfare and that "air pollution prevention is primarily a responsibility of the states and local governments."[47]

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[38] *Maine v. Taylor* 477 U.S. at 137.
[39] *NAFTA, Article 904(4).*
[40] *North American Free Trade Agreement Implementation Act*, sections 2-533, 19 U.S.C.A. sections 3301-3473.
[41] *NAFTA, Article 904(1) and (4).*
[42] *Pike*, 397 U.S. at 142.)
[43] See *Raymond Motor Transportation v. Rice,* (1978) 434 U.S. 429, 439.)
[44] See *Bibb v. Navajo Freight Lines, Inc.* (1959) 359 U.S. 520.); see also *Huron Portland Cement Co. v. Detroit* (1960) 362 U.S. 440, 443 ["Constitution when conferring upon Congress the regulation of commerce . . . never intended to cut the States off from legislating on all subjects relating to the health, life, and safety of their citizens."]
[45] *Hunt v. Washington Apple Advertising Comm'n* (1977) 432 U.S. 333, 350.
[46] See *Huron Cement Co.,* 362 U.S. at 445-446.
[47] CAA section 101(a)(1) and (2).

The California Legislature has similarly found that a strong public interest exists in the control of air pollution for the purpose of protecting the health and welfare of its citizens.[48] More specifically, with respect to the proposed regulation, the Legislature has found that toxic air contaminants pose a grave danger to the citizens of the state and that emissions of such contaminants need to be controlled.[49]

In an effort to address this problem, in August 1998, the ARB identified diesel PM as a toxic air contaminant and approved a comprehensive Diesel Risk Reduction Plan in September 2000, to reduce diesel PM emissions from new and existing diesel-fueled engines and vehicles. The proposed regulation specifically targets diesel PM from HDCVs that do not at least meet federal emission standards in order to reduce diesel PM emissions in the State.

Thus, an undeniable strong public interest exists for the adoption of the proposed regulation. Since the regulation has strong support and is not illusory, significant deference should be accorded to the State's policy determination.[50] Weighed against this strong local public interest are the burdens that would be imposed on foreign commerce by implementation of the regulation. The burdens, which, on average, would amount to several thousand dollars (see next section), would not outweigh the presumed local health and welfare benefits of the regulation. Although these costs are not insignificant, they are costs that for most will not be repeated. They thus should not impose an excessive burden on foreign commerce that outweighs the health and safety benefits of the regulation.

In foreign commerce clause cases, the Supreme Court has also looked at the question of whether a state law prevents the United States from speaking with one voice in international trade.[51] But, in *Barclays Bank* -- a leading case interpreting the Foreign Commerce Clause -- the Court, while recognizing the importance of the federal government's ability to speak with one voice on foreign affairs, made clear that it did not intend to say that Congress occupied the field and is the only party that may act, or that the states may never act in a particular area.[52]

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[48] Health and Safety Code sections 39000 and 39001.

[49] Health and Safety Code section 39650.

[50] See *Ramond*, 434 U.S. at 448 (Blackmun, J., concurrence); cf. *Kassel v, Consolidated Freightways Corp.* (1980) 450 U.S. 662, at 670-671 ["if safety justifications are not illusory, the Court will not second-guess legislative judgment about their importance in comparison with related burdens on interstate commerce"].

[51] *Barclays Bank*, 512 U.S. at 329; see *Japan Line, Ltd. v. County of Los Angeles*, 441 U.S. 434, 449.

[52] *Barclays Bank*, 512 U.S. at 329; *Wardair Canada Inc. v. Florida Department of Revenue*, (1986) 477 U.S. 1, 12-13 (1986) ["[W]e never suggested in [*Japan Line*] or in any other [case] that the Foreign Commerce Clause *insists* that the Federal Government speak with any particular voice." 477 U.S. at 12-13.]

Here, this is really a non-issue since Congress, in implementing NAFTA, recognized that there might indeed be a need for the states to adopt and implement and environmental and public safety laws and regulations.[53] The question, as stated previously, is whether the state is acting to achieve a legitimate objective. Here, there is no dispute that the California legislature, in enacting AB 1009, and ARB, in proposing the immediate amendments, is acting to achieve such an objective.

V. ENVIRONMENTAL AND ECONOMIC IMPACTS

The staff has estimated both the emission benefits and costs associated with the proposed requirements for calendar year 2006. If adopted by the Board, the staff expects the regulation to become effective and implemented within the year. The proposed regulatory modifications would eliminate excess emissions from diesel-powered HDCVs operating in California that are equipped with engines meeting emission standards less stringent than the corresponding U.S. standards. Also, as discussed in the previous section, the proposal would prevent further excess emissions from HDCVs meeting emission standards that are not at least as stringent as U.S. standards in light of the growing disparity between U.S. and non-U.S. standards for heavy-duty on-road vehicles, and the possibility of increased usage of non-compliant engines in California.

A. Air Quality Benefits

Emission reductions were estimated for calendar year 2006 using ARB's EMFAC 2002 emissions inventory model in combination with the U.S. EPA's MOBILE5- Mexico model. The impacts were assessed statewide and for the South Coast Air Basin. Staff determined the emissions impacts by comparing baseline emissions to increased emissions levels that would result from the substitution of a portion of the federally-compliant HDCV fleet with a fleet comprised of HDCVs that do not at least meet U.S. standards. Non-U.S. certified engine emissions were determined through adjustments to the emission rates and model year travel fractions used to estimate emissions from U.S. certified engines.

ARB staff relied on previous studies and modeling work to make the necessary adjustments for estimating emission rates from HDCVs meeting Mexican emission requirements.[54] These studies established a methodology for cross-mapping U.S. and Mexico truck engine model years based on emission control technology equivalence, allowing Mexican vehicle emission rates to be estimated based on emission rates already established for older U.S. certified engines. The emission rates are model year

[53] *NAFTA, Part Three, Article 904.*

[54], J.Lyons et al.,"Critical Review of 'Safety Oversight for Mexico-Domiciled Commercial Motor Carriers, Final Programmatic Environmental Assessment, Prepared by John A Volpe Transportation Systems Center, January 2002," Report No. SR02-04-01, Sierra Research, Inc., April 2002, p.17.

specific and were converted to grams per mile based on yearly Vehicle Miles Traveled (VMT) data contained in EMFAC.

Up through the 1992 model year, prior to the establishment of emission standards in Mexico, the cross mapping is based on estimated time lags in the introduction of emission controls on Mexican engines relative to U.S. engines. For model years 1993 through 2002, when Mexican and U.S. emission standards were aligned, the same emission rates are used for both U.S. and Mexican HDCVs. Although emission standard alignment also exists for the 2003 model year, EMFAC 2002 models the benefits of the early introduction of cleaner HDCVs in California under a settlement agreement with several engine manufacturers. Therefore, 2003 through 2006 Mexican HDCV emission rates are mapped back to the 2002 model year for U.S. HDCVs. The actual model-year cross mapping used in the staff's emissions estimate is shown in Table 3.

Table 3:

Emissions Equivalency Between Mexican – and U.S.- Domiciled Heavy-Duty Diesel Vehicles as a Function of Model Year

Mexican Truck Model Year(s)	Equivalent U.S. Truck Model Year(s) for Emissions
1974	1971
1975-1976	1973
1977-1978	1975
1979-1980	1977
1981-1982	1979
1983	1980
1984-1985	1981
1986	1982
1987-1988	1983
1989-1990	1986
1991	1988
1992	1989
1993-2002	1993-2002
2003	2002
2004-2006	2002

Travel fractions (i.e., the distribution of fleet vehicle miles traveled as a function of model year) for Mexican vehicles were adjusted to be consistent with the travel fractions developed for a version of the federal EPA MOBILE5 model known as MOBILE5-Mexico. These travel fractions are shown in Figure 1 along with the corresponding travel fractions from EMFAC 2002 for U.S. certified engines. A comparison of the fractions indicates that a greater percentage of total vehicle miles are traveled by relatively older vehicles in Mexico. The staff believes the difference in travel fractions is

the result of a greater reliance on used vehicles in Mexico, many of which are likely purchased from the U.S. The staff's analysis assumes that the MOBILE5-Mexico travel fractions are also representative of the usage patterns of Mexican domiciled trucks used on California roads.

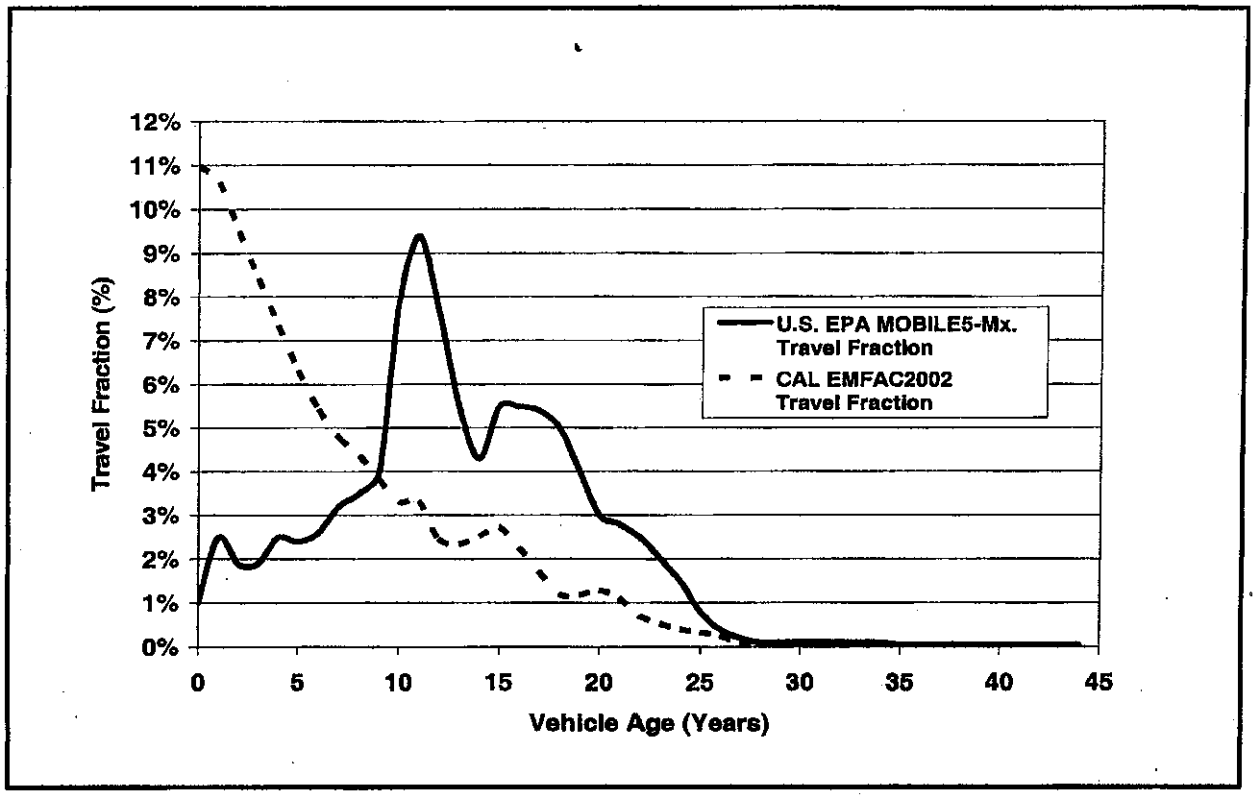

Figure 1: Comparison of the HDCV travel fractions from the MOBILE5- Mexico and the California EMFAC2002 emission model.

The emissions reductions calculated for the staff's proposal for the calendar year 2006 are shown in Table 4. The analysis is based on ARB staff's estimate that one percent of current HDCV truck traffic is conducted by HDCVs not meeting standards required for U.S. certified vehicles, and assumes that this will not change in the future. The results indicate that the staff's proposal would result in the reduction of 2.9 and 0.12 tons per day of NOx and PM, respectively, statewide. In the South Coast Air Basin, emissions would be reduced by 1.1 and 0.04 tons per day for NOx and PM, respectively.

Table 4:
2006 Estimated Emissions Impact on Criteria Pollutants, Statewide and South Coast Air Basin for 1 percent Displacement of Vehicle Miles Traveled
Tons-Per-Day (tpd)

Location	NOx (tpd)	PM (tpd)
Statewide	2.9	0.12
South Coast Air Basin	1.1	0.04

As discussed previously, the use of HDCVs with engines that do not meet the requirements for U.S. certified engines could increase dramatically when federal restrictions on the extent to which such vehicles can travel within the U.S. are eased. While ARB staff has not made a specific prediction of how travel patterns may change as a result from such action, the analysis can be easily scaled to determine the impact of assumed scenarios. This can be accomplished by multiplying the emission reduction figures in Table 4 by the assumed percentage of U.S. truck travel that would be replaced by HDCVs with engines not meeting at least U.S. standards. For example, based on a hypothetical estimate of a 20 percent displacement rate, increases of 58.0 (2.9 times 20) and 2.40 (0.12 times 20) tons per day of NOx and PM would be added to the statewide inventory in calendar year 2006.

B. Costs

The staff has determined that two types of compliance costs would be incurred under the proposed requirements. The first cost will be borne by the owners of HDCVs that operate in California with engines not designed to meet federal emission standards for the year of manufacture. Because use of these HDCVs would be prohibited in California, vehicle operators will be faced with the options shown in Table 5 and their associated costs.

Table 5:
Compliance Options and Costs for Owners of Vehicles Equipped with non-U.S Compliant Engines

Option	Estimated Cost
Use truck for out-of-state business	None
Replace Vehicle with U.S. Certified Equivalent	*Differential Costs* Up to $1,500 for Pre-1993 Model Years[55] Up to $4,500 for Post-2004 Model Years[56]
Repower with U.S. Compliant Engine	Approximately $15,000

ARB staff based its cost estimate on the option of replacing vehicles with U.S. certified equivalents. Staff recognizes that the option of simply moving the trucks out of state may be a reasonable option only for larger fleets for which a significant portion of their business entails travel outside of California. The staff also believes that the more expensive option of repowering a noncompliant truck would probably only be chosen if the engine was otherwise in need of being replaced.

The staff estimates that the differential replacement cost for a 2004 through 2006 model year truck will be approximately $4500, and the cost differential replacement for a 1992

[55] Based on no differential in truck costs, an estimated $20,000 truck value, and a tax rate of 7.75%
[56] Based on a $600 differential truck cost, an estimated $50,000 truck value, and a tax rate of 7.75%.

or older truck will be approximately $1500. These costs take into consideration the incremental cost of the replacement truck, taxes, and registration fees, minus business tax benefits.

The second circumstance would require HDCV owners to incur compliance costs to replace missing ECLs in order to demonstrate that an HDCV engine meets at least U.S. certification standards. Replacement ECLs can be ordered from the engine manufacturer through an authorized dealership. The cost for ECL replacement can vary depending on the amount of labor the dealership needs to invest in inspecting the engine to determine its certification status. In circumstances where the certification status of the engine is easily determined by the dealership through available documentation or dealer records, the staff estimates the cost will be about $30 or less. In cases where a physical inspection of the engine is required to determine its certification configuration, the staff estimates that the ECL replacement cost could be as high as $150. For the purpose of this analysis, the staff used an estimate of $100 per ECL replacement as an average cost. ARB's roadside surveys indicate that approximately 30 percent of inspected HDCVs would need a replacement ECL because the original is missing or is no longer legible. Owners of the remaining 70 percent of HDCVs operating in California would not incur any costs to comply with the proposed requirements.

The resulting estimated one time statewide costs for compliance are summarized in Table 6 below.

Table 6:
Overall Compliance Costs

Diesel Engine Weight Category (lbs)	2006 Population			Label Costs	Vehicle Replacement Costs	
	All 1974+	1974-1993	2004-2006		1974-1993	2004-2006
> 33,000	183,750	64,061	28,264	$5,484,802	$2,882,745	$1,271,880
14,001-33,000	182,454	44,818	32,823	$5,450,328	$2,016,810	$1,477,035
10,001-14,000	36,736	8,651	6,729	$1,097,466	$389,295	$302,805
Subtotals	402,940	117,530	67,816	$12,032,596	$5,288,850	$3,051,720

TOTAL COST $20,373,166

C. Costs to State Agencies

The staff estimates three additional ARB staff would be necessary to implement the proposed revisions to the inspection procedure. The additional staff would be needed to handle expected increases in inspection times and the number of citations issued. Otherwise, the staff expects compliance costs to state agencies to be near zero. Staff presumes that only compliant and labeled HDCVs are being operated by state

agencies, therefore no increased costs are expected. The proposal would not require record keeping and, therefore, has no associated costs.

D. Cost Effectiveness

The ARB also evaluated the cost effectiveness associated with the option of replacing trucks with engines not certified to at least federal emission standards. Per vehicle lifetime emission benefits were calculated by taking the difference in Mexican versus U.S. truck emission rates for each affected model year under the proposal and multiplying them by miles traveled over the expected life of the engine. For 2004 through 2006 engines, the expected life is 20 years. For 1974 through 1992 engines, the expected life is 10 years. The number of miles traveled was determined by finding the average yearly vehicle miles traveled (VMT) over the expected life period. For example, miles traveled for 2006 vehicles were determined by averaging the yearly VMT for 2006 and 1986 trucks.

Once the lifetime emissions benefit value was determined for each model year, the average benefit for 2004 through 2006 trucks and for 1992 and older trucks was calculated separately. This yields average lifetime benefit numbers for the two timeframes (1974 through 1992, and 2004 and later) for each heavy-duty truck category (HHDT down to LDT2).

From these values, a composite lifetime emission value was calculated to yield a single benefit number for the two timeframes. The components of the composite value were calculated by weighting the lifetime number for each truck category by the population fraction for that category compared to the overall population from the timeframe. The composite value is the sum of the category components.

In addition to the HDCV replacement costs discussed previously, ECL replacement costs for engines meeting federal certification standards were also included in the cost effectiveness calculation. Because emission benefits are only associated with the replacement of trucks (i.e., U.S. certified trucks that only receive a replacement ECL do not provide emission benefits), the costs were transferred to the population of trucks that would be replaced under the regulation. This was done by dividing the total estimated cost of replacement ECLs for the California fleet by the number of trucks expected to be replaced (1 percent of the population of 2004 and newer, and 1992 and older trucks). The result is a dollar value that is added to the truck replacement value for each timeframe. The final cost effectiveness value for each timeframe is then simply the per truck cost divided by the composite lifetime benefit number.

Based on the calculations, the cost effectiveness is estimated to be $1.09 per pound for the combined NOx and PM for post-2004 HDCVs, and $10.62 for pre-1993 HDCVs. The cost effectiveness of the proposed regulation is much better for 2004 and newer HDCVs for three reasons. First, the average gram per mile difference in U.S. certified versus Mexican certified vehicles is greater for the 2004 through 2006 HDCVs.

Secondly, EMFAC predicts that newer HDCVs travel farther per year on a per vehicle basis than do older vehicles and, lastly, the analysis assumes a 20 year life for 2004 through 2006 HDCVs and a 10 year remaining life for 1992 and older HDCVs.

E. Economic Impact on the Economy of the State

The regulation will affect all businesses that own or lease diesel powered on-road trucks that weigh more than 10,000 pounds, including small businesses. As of June 2005, the CHP's "Biennial Inspection of Terminals" document lists 37,615 fleets in California. The economic impact to any individual company will depend on the number of HDCVs used by the company that do not at least meet U.S. certification standards, and the percentage of HDCVs that will require an engine label replacement. Overall, the staff expects that many California businesses that operate HDCVs will incur no expenses at all under the staff's proposal, while others will incur the relatively minor compliance costs identified in previous section IV, Subsection B of this report. Staff does not expect that these costs will significantly affect the ability of California businesses to compete with other states by making it more costly to produce goods or services. On average, compliance costs for the regulation are approximately $50 per vehicle; therefore, the staff does not expect that compliance costs will be passed on to consumers. The regulation will impact all diesel powered HDCVs operating within the state regardless of their state or country of origin.

VI. Alternatives Considered

AB 1009 contains specific directives regarding the control of emissions within California from HDCVs equipped with engines that do not at least meet applicable U.S. standards for the year of manufacture of the engine, constraining possible alternatives to the staff's proposal. However, the staff considered two alternatives concerning how the program should be implemented. These alternatives included a registration-based program, and a strategy to actively turn around noncompliant vehicles at the border.

A. Registration Based Program

The California Department of Motor Vehicles (DMV) currently has a policy of ensuring that engines used in HDCVs at least meet U.S. certification standards when the vehicle owners apply for permanent importation. However, for out-of-state and out-of-country HDCVs, AB 1009 does not direct or authorize DMV to deny the registration for operation on California highways based on engine certification status. DMV staff does not believe such authority exists in other state laws.

B. Denial of Entry into California

The second alternative that staff considered was the denial of entry into California of vehicles equipped with engines that do not meet at least federal certification standards. In concept, inspection staff would be stationed at ports of entry and would inspect

vehicles entering California. Vehicles determined to have non-conforming engines would be prevented from entry.

Under the existing HDVIP regulations, ARB has the authority to request CHP to place a vehicle out of service under California Vehicle Code 27159. However, this authority is limited to circumstances involving smoke opacity violations for which the required fines have not been paid. Staff determined that additional statutory authority would be necessary to deny HDCV entry into California for purposes of this alternative.

VII. Summary and Conclusions

The staff's proposal would effectively implement the requirements of AB 1009 to eliminate excess emissions from California operation of HDCVs that use engines meeting emission standards less stringent than those set for U.S. trucks. By relying on the emission control labels that were installed on engines at the time of manufacture for evidence of the HDCV certification status, the staff's proposal will minimize the compliance costs that will be incurred by HDCV operators. The proposal will also minimize costs to the state by incorporating the certification status inspection into ARB's existing program for roadside testing of HDCV smoke emissions.

IX. References

1. California Air Resources Board and Environmental Analysis, Inc., *"Regulatory Amendments to California's Heavy Duty Vehicle inspection Program and Periodic Smoke Inspection Program – Technical Support Document"*, October 1997, pp ES-1.

2. R.E. Howitt and C. Goodman, *"The Economic Assessment of California Field Crop Losses Due To Air Pollution - Final Report"*, Contract # A5-1-5-32, California Air Resources Board, Sacramento, June 1989.

3. United States Department of Transportation, Federal Motor Carrier Safety Administration, *"The Motor Carrier Moratorium, Mexico, and NAFTA"*, http://www.fmcsa.dot.gov/cross-border/whnaftafactsheet.htm.

4. United States Department of Transportation, Federal Motor Carrier Safety Administration, Office of the Press Secretary For Immediate Release November 27, 2002, *"MEMORANDUM FOR THE SECRETARY OF TRANSPORTATION, SUBJECT: Determination Under the Interstate Commerce Commission Termination Act of 1995"*, http://www.fmcsa.dot.gov/cross-border/whmemo.htm.

5. Sierra Research, Inc., *"Critical Review of "Safety Oversight for Mexico-Domiciled Commercial Motor Carriers, Final Programmatic Environmental Assessment,"*

Prepared by John Volpe Transportation Systems Center January 2002", Report No. SR02-04-01, April 16, 2002.

6. California Highway Patrol *"Commercial Inspection Facility Traffic Counts - Otay Mesa and Calexico"*, 1996 through 2004.

7. Wilbur Smith Associates Team, *"Technical Memorandum No. 5 Freight Movement Issue Prepared for The National I-10 Freight Corridor Study"*, February 2003, pp 5-79.

8. California Air Resources Board, Resolution 73-8, February 21, 1973.

9. P.E. Jacobs, D. J. Chernich, *"California's Revised Heavy Duty Vehicle Smoke and Tampering Inspection Program"*, Society of Automotive Engineers, Technical Paper No. 981951, August 1998.

10. United Stated Department of State, International Information Programs, *"U.S., Mexico Announce Air Quality Environmental Successes"*, October 25, 2005, http://usinfo.state.gov/gi/Archive/2005/Oct/24-774920.html.

11. *North American Free Trade Agreement (NAFTA), Part Three – Technical Barriers to Trade, Chapter Nine – Standards-Related Measures, Article 902.*, http://www.mac.doc.gov/nafta/chapter9.htm.

12. *North American Free Trade Agreement (NAFTA), Part Two - Trade in Goods, Chapter Three - National Treatment and Market Access for Goods,* Article 301., http://www. mac.doc.gov/nafta/chapter3.htm.

13. *North American Free Trade Agreement (NAFTA),* Chapter Twelve - Cross-Border Trade in Services, Article 1202., http://www. mac.doc.gov/nafta/chapter12.htm.

14. *North American Free Trade Agreement (NAFTA), Part Three – Technical Barriers to Trade, Chapter Nine – Standards-Related Measures, Article 904.*, http://www.mac.doc.gov/nafta/chapter9.htm.

15. *North American Free Trade Agreement (NAFTA), Part Three – Technical Barriers to Trade, Chapter Nine – Standards-Related Measures, Article 907.*, http://www.mac.doc.gov/nafta/chapter9.htm.

16. *North American Free Trade Agreement (NAFTA), Part Three – Technical Barriers to Trade, Chapter Nine – Standards-Related Measures, Article 904(4).*, http://www.mac.doc.gov/nafta/chapter9.htm.

17. *North American Free Trade Agreement (NAFTA), Part Three – Technical Barriers to Trade, Chapter Nine – Standards-Related Measures, Article 904(1 and (4).*, http://www.mac.doc.gov/nafta/chapter9.htm.

18. California Air Resources Board, *"ARB Seeks to Reduce Diesel Pollution by 75 Percent"*, News Release 99-36, October 6, 1999.

19. California Air Resources Board, *"State Air Resources Board Sets Smog Check Style Anti-Soot Tests for Big Rig Diesels"*, News Release 90-19, Nov, 11, 1990.

20. M. A. Delucchi, et al, *"The Cost of Crop Damage Caused by Ozone Air Pollution From Motor Vehicles – Report 12"*, Institute of Transportation Studies, University of California, Davis, Report No. UCD-ITS-1996-3(12), December 1998, pp 9.

21. California Air Resources Board, Enforcement Division, *"3rd Quarter 2005 Status Report, Mobile Source Enforcement Branch"*, September 2005, pp 2.

22. United States Department of Transportation, Bureau of Transportation Statistics, *"Border Crossing US-Mexico Border Crossing Data (1993-2003)"*, http://www.bts.gov/programs/international/border_crossing_entry_data/us_mexico/index.html.

23. DieselNet.com, *"Mexico: On-road vehicle and engines emission standards"*, http://www.dieselnet.com/standards/mx/index.html.

24. California Department of Transportation, Traffic and Vehicle Data Systems Unit, (2004), http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/.

25. California Air Resources Board, excerpt from EMFAC emission factor inventory model, version 2.2 April 23, 2003, for calendar year 2006.

26. NewsBlaze, *"Mexico Air Quality, Environmental Improvement Plan"*, October 2005, http://newsblaze.com/story/20051024223723nnnn.nb/newsblaze/TOPSTORY/Top-Story.html

27. Procuraduria Federal de Protection Ambiente, Estados Unidos Mexicanos, *"NORMA OFICIAL MEXICANA NOM-076-ECOL-1995, QUE ESTABLECE LOS NIVELES MAXIMOS PERMISIBLES DE EMISION DE HIDROCARBUROS NO QUEMADOS, MONOXIDO DE CARBONO Y OXIDOS DE NITROGENO PROVENIENTES DEL ESCAPE, ASI COMO DE HIDROCARBUROS EVAPORATIVOS PROVENIENTES DEL SISTEMA DE COMBUSTIBLE, QUE USAN GASOLINA, GAS LICUADO DE PETROLEO, GAS NATURAL Y OTROS COMBUTIBLES ALTERNOS Y QUE SE UTILIZARAN PARA LA PROPULSION DE VEHICULOS AUTOMOTORES, CON PESO BRUTO VEHICLULAR MAYOR DE 3,857 KILOGRAMOS NUEVOS EN PLANTA."*, Publicada en el D.O.F. de fecha 26 de diciembre de 1995.

28. United States Environmental Protection Agency, Air and Radiation, "Emission Standards Guide for Heavy-Duty and Nonroad Engines", EPA420-F-97-014, September 1997.

APPENDIX A:
AB 1009 Legislation

Assembly Bill No. 1009

CHAPTER 873

An act to amend Section 43701 of the Health and Safety Code, relating to air pollution, and declaring the urgency thereof, to take effect immediately.

[Approved by Governor September 29, 2004. Filed with Secretary of State September 29, 2004.]

LEGISLATIVE COUNSEL'S DIGEST

AB 1009, Pavley. Air pollution: heavy-duty vehicles: emissions.

(1) Existing law requires the State Air Resources Board to adopt regulations requiring owners or operators of heavy-duty diesel motor vehicles to perform regular inspections of their vehicles for excessive emissions of smoke, and to adopt regulations requiring those heavy-duty diesel motor vehicles to utilize emission control equipment and alternative fuels. Existing federal law requires heavy-duty engines to meet emissions standards specified for the model-year of the vehicle.

This bill would, to the extent permissible under federal law, commencing January 1, 2006, require the owner or operator of any commercial motor truck, as defined, that enters into the state for purposes of operating in the state to maintain, and provide upon demand to enforcement authorities, evidence demonstrating that its engine met the federal emission standards applicable to commercial heavy-duty engines for that engine's model-year at the time it was manufactured.

The bill would require, not later than January 1, 2006, the state board, in consultation with the California Highway Patrol, to develop, adopt, and implement regulations establishing an inspection protocol for determining whether the engines in motor trucks subject to the requirements of the bill met those applicable federal emission standards.

(2) This bill would declare that it is to take effect immediately as an urgency statute.

The people of the State of California do enact as follows:

SECTION 1. The Legislature hereby finds and declares all of the following:

(a) Exhaust fumes from diesel-fueled engines are known to cause cancer.

(b) A study conducted by the South Coast Air Quality Management District in 2000 entitled the "Multiple Air Toxics Exposure Study II"

or "MATES II" determined that 70 percent of the cancer risk from air pollution in the South Coast Air Basin is attributable to diesel engine exhaust. The State Air Resources Board has made the same finding relative to the entire State of California.

(c) Diesel engines account for more than 70 percent of particulate matter (PM) pollution from all onroad sources in California.

(d) Diesel PM has been linked to asthma and other respiratory diseases, and premature death.

(e) Diesel exhaust is also a significant source of emissions of oxides of nitrogen (NO_x), which combine with sunlight to create ground level ozone, or smog.

(f) Exposure to smog has recently been connected with decreased lung function growth in California children.

(g) Many regions of California are not in attainment with federal ambient air quality standards for ozone and PM, including, but not limited to, those regions that include the South Coast Air Basin and San Joaquin Air Basins, which have the worst air quality in the nation. Further, many of these regions are in danger of failing to meet the federal ambient air quality standards by the dates required by the federal Clean Air Act. If these regions fail to reach attainment by the applicable deadlines, their residents will continue to be exposed to severe health risks, and the regions risk the loss of billions of dollars in federal transportation funds and other potential sanctions.

(h) Heavy-duty vehicles equipped with engines that emit greater levels of NO_x and PM than the federal emissions standards that were applicable at the time they were manufactured contribute to ozone and PM levels, and pose a threat to public health in California.

SEC. 2. Section 43701 of the Health and Safety Code is amended to read:

43701. (a) Not later than July 15, 1992, the state board, in consultation with the bureau and the review committee established pursuant to subdivision (a) of Section 44021, shall, after a public hearing, adopt regulations that require that owners or operators of heavy-duty diesel motor vehicles perform regular inspections of their vehicles for excessive emissions of smoke. The inspection procedure, the frequency of inspections, the emission standards for smoke, and the actions the vehicle owner or operator is required to take to remedy excessive smoke emissions shall be specified by the state board. Those standards shall be developed in consultation with interested parties. The smoke standards adopted under this subdivision shall not be more stringent than those adopted under Chapter 5 (commencing with Section 44000).

(b) Not later than December 15, 1993, the state board shall, in consultation with the State Energy Resources Conservation and Development Commission, and after a public hearing, adopt regulations that require that heavy-duty diesel motor vehicles subject to subdivision (a) utilize emission control equipment and alternative fuels. The state board shall consider, but not be limited to, the use of cleaner burning diesel fuel, or other methods which will reduce gaseous and smoke emissions to the greatest extent feasible, taking into consideration the cost of compliance. The regulations shall provide that any significant modification of the engine necessary to meet these requirements shall be made during a regularly scheduled major maintenance or overhaul of the vehicle's engine. If the state board requires the use of alternative fuels, it shall do so only to the extent those fuels are available.

(c) The state board shall adopt emissions standards and procedures for the qualification of any equipment used to meet the requirements of subdivision (b), and only qualified equipment shall be used.

(d) To the extent permissible under federal law, commencing January 1, 2006, the owner or operator of any commercial motor truck, as defined in Section 410 of the Vehicle Code, with a gross vehicle weight rating (GVWR) greater than 10,000 pounds that enters the state for the purposes of operating in the state shall maintain, and provide upon demand to enforcement authorities, evidence demonstrating that its engine met the federal emission standards applicable to commercial heavy-duty engines for that engine's model-year at the time it was manufactured, pursuant to the protocol and regulations developed and implemented pursuant to subdivision (e).

(e) The state board, not later than January 1, 2006, in consultation with the California Highway Patrol, shall develop, adopt, and implement regulations establishing an inspection protocol for determining whether the engine of a truck subject to the requirements of subdivision (d) met the federal emission standard applicable to heavy-duty engines for that engine's model-year at the time it was manufactured.

SEC. 3. This act is an urgency statute necessary for the immediate preservation of the public peace, health, or safety within the meaning of Article IV of the Constitution and shall go into immediate effect. The facts constituting the necessity are:

In order to protect the health and safety of the residents of California from the increased emissions from heavy-duty trucks domiciled in Mexico, it is necessary that this bill take effect immediately.

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APPENDIX B:
NAFTA Provisions

Office of NAFTA and Inter-American Affairs

International Trade Administration · Market Access and Compliance

PART THREE: Technical Barriers to Trade

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Chapter Nine: Standards-Related Measures

Article 901	Article 902	Article 903	Article 904	Article 905	Article 906
Article 907	Article 908	Article 909	Article 910	Article 911	Article 912
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Annex 913.5.a-3	Annex 913.5.a-4				

Article 901:Scope and Coverage

1. This Chapter applies to standards-related measures of a Party, other than those covered by Section B of Chapter Seven (Sanitary and Phytosanitary Measures), that may, directly or indirectly, affect trade in goods or services between the Parties, and to measures of the Parties relating to such measures.
2. Technical specifications prepared by governmental bodies for production or consumption requirements of such bodies shall be governed exclusively by Chapter Ten (Government Procurement).

Article 902:Extent of Obligations

1. Article 105 (Extent of Obligations) does not apply to this Chapter.
2. Each Party shall seek, through appropriate measures, to ensure observance of Articles 904 through 908 by state or provincial governments and by non-governmental standardizing bodies in its territory.

Article 903:Affirmation of Agreement on Technical Barriers to Trade and Other Agreements

Further to Article 103 (Relation to Other Agreements), the Parties affirm with respect to each other their existing rights and obligations relating to standards-related measures under the GATT Agreement on Technical Barriers to Trade and all other international agreements, including environmental and conservation agreements, to which those Parties are party.

Article 904:Basic Rights and Obligations

Right to Take Standards-Related Measures

1. Each Party may, in accordance with this Agreement, adopt, maintain or apply any standards-related measure, including any such measure relating to safety, the protection of human, animal or plant life or health, the environment or consumers, and any measure to ensure its enforcement or implementation. Such measures include those to prohibit the importation of a good of another Party or the provision of a service by a service provider of another Party that fails to comply with the applicable requirements of those measures or to complete the Party's approval procedures.

Right to Establish Level of Protection

2. Notwithstanding any other provision of this Chapter, each Party may, in pursuing its legitimate objectives of safety or the protection of human, animal or plant life or health, the environment or consumers, establish the levels of protection that it considers appropriate in accordance with Article 907(2).

Non-Discriminatory Treatment

3. Each Party shall, in respect of its standards-related measures, accord to goods and service providers of another Party:

   (a)national treatment in accordance with Article 301 (Market Access) or Article 1202 (Cross-Border Trade in Services); and

   (b)treatment no less favorable than that it accords to like goods, or in like circumstances to service providers, of any other country.

Unnecessary Obstacles

4. No Party may prepare, adopt, maintain or apply any standards-related measure with a view to or with the effect of creating an unnecessary obstacle to trade between the Parties. An unnecessary obstacle to trade shall not be deemed to be created where:

   (a)the demonstrable purpose of the measure is to achieve a legitimate objective; and

   (b)the measure does not operate to exclude goods of another Party that meet that legitimate objective.

Article 905:Use of International Standards

1. Each Party shall use, as a basis for its standards-related measures, relevant international standards or international standards whose completion is imminent, except where such standards would be an ineffective or inappropriate means to fulfill its legitimate objectives, for example because of fundamental climatic, geographical, technological or infrastructural factors, scientific justification or the level of protection

that the Party considers appropriate.

2. A Party's standards-related measure that conforms to an international standard shall be presumed to be consistent with Article 904(3) and (4).
3. Nothing in paragraph 1 shall be construed to prevent a Party, in pursuing its legitimate objectives, from adopting, maintaining or applying any standards-related measure that results in a higher level of protection than would be achieved if the measure were based on the relevant international standard.

Article 906:Compatibility and Equivalence

1. Recognizing the crucial role of standards-related measures in achieving legitimate objectives, the Parties shall, in accordance with this Chapter, work jointly to enhance the level of safety and of protection of human, animal and plant life and health, the environment and consumers.
2. Without reducing the level of safety or of protection of human, animal or plant life or health, the environment or consumers, without prejudice to the rights of any Party under this Chapter, and taking into account international standardization activities, the Parties shall, to the greatest extent practicable, make compatible their respective standards-related measures, so as to facilitate trade in a good or service between the Parties.
3. Further to Articles 902 and 905, a Party shall, on request of another Party, seek, through appropriate measures, to promote the compatibility of a specific standard or conformity assessment procedure that is maintained in its territory with the standards or conformity assessment procedures maintained in the territory of the other Party.
4. Each importing Party shall treat a technical regulation adopted or maintained by an exporting Party as equivalent to its own where the exporting Party, in cooperation with the importing Party, demonstrates to the satisfaction of the importing Party that its technical regulation adequately fulfills the importing Party's legitimate objectives.
5. The importing Party shall provide to the exporting Party, on request, its reasons in writing for not treating a technical regulation as equivalent under paragraph 4.
6. Each Party shall, wherever possible, accept the results of a conformity assessment procedure conducted in the territory of another Party, provided that it is satisfied that the procedure offers an assurance, equivalent to that provided by a procedure it conducts or a procedure conducted in its territory the results of which it accepts, that the relevant good or service complies with the applicable technical regulation or standard adopted or maintained in the Party's territory.
7. Prior to accepting the results of a conformity assessment procedure pursuant to paragraph 6, and to enhance confidence in the continued reliability of each other's conformity assessment results, the Parties may consult on such matters as the technical competence of the conformity assessment bodies involved, including verified compliance with relevant international standards through such means as accreditation.

Article 907:Assessment of Risk

1. A Party may, in pursuing its legitimate objectives, conduct an assessment of risk. In conducting an assessment, a Party may take into account, among other factors relating to a good or service:

   (a)available scientific evidence or technical information;

   (b)intended end uses;

   (c)processes or production, operating, inspection, sampling or testing methods; or

   (d)environmental conditions.

2. Where pursuant to Article 904(2) a Party establishes a level of protection that it considers appropriate and conducts an assessment of risk, it should avoid arbitrary or unjustifiable distinctions between similar goods or services in the level of protection it considers appropriate, where the distinctions:

   (a)result in arbitrary or unjustifiable discrimination against goods or service providers of another Party;

   (b)constitute a disguised restriction on trade between the Parties; or

   (c)discriminate between similar goods or services for the same use under the same conditions that pose the same level of risk and provide similar benefits.

3. Where a Party conducting an assessment of risk determines that available scientific evidence or other information is insufficient to complete the assessment, it may adopt a provisional technical regulation on the basis of available relevant information. The Party shall, within a reasonable period after information sufficient to complete the assessment of risk is presented to it, complete its assessment, review and, where appropriate, revise the provisional technical regulation in the light of that assessment.

Article 908:Conformity Assessment

1. The Parties shall, further to Article 906 and recognizing the existence of substantial differences in the structure, organization and operation of conformity assessment procedures in their respective territories, make compatible those procedures to the greatest extent practicable.
2. Recognizing that it should be to the mutual advantage of the Parties concerned and except as set out in Annex 908.2, each Party shall accredit, approve, license or otherwise recognize conformity assessment bodies in the territory of another Party on terms no less favorable than those accorded to conformity assessment bodies in its territory.
3. Each Party shall, with respect to its conformity assessment procedures:

   (a)not adopt or maintain any such procedure that is stricter, nor apply the procedure

more strictly, than necessary to give it confidence that a good or a service conforms with an applicable technical regulation or standard, taking into account the risks that non-conformity would create;

(b)initiate and complete the procedure as expeditiously as possible;

(c)in accordance with Article 904(3), undertake processing of applications in non-discriminatory order;

(d)publish the normal processing period for each such procedure or communicate the anticipated processing period to an applicant on request;

(e)ensure that the competent body

(i) on receipt of an application, promptly examines the completeness of the documentation and informs the applicant in a precise and complete manner of any deficiency,

(ii) transmits to the applicant as soon as possible the results of the conformity assessment procedure in a form that is precise and complete so that the applicant may take any necessary corrective action,

(iii)where the application is deficient, proceeds as far as practicable with the procedure where the applicant so requests, and

(iv) informs the applicant, on request, of the status of the application and the reasons for any delay;

(f)limit the information the applicant is required to supply to that necessary to conduct the procedure and to determine appropriate fees;

(g)accord confidential or proprietary information arising from, or supplied in connection with, the conduct of the procedure for a good of another Party or for a service provided by a person of another Party

(i) the same treatment as that for a good of the Party or a service provided by a person of the Party, and

(ii) in any event, treatment that protects an applicant's legitimate commercial interests to the extent provided under the Party's law;

(h)ensure that any fee it imposes for conducting the procedure is no higher for a good of another Party or a service provider of another Party than is equitable in relation to any such fee imposed for its like goods or service providers or for like goods or service providers of any other country, taking into account communication, transportation and other related costs;

(i)ensure that the location of facilities at which a conformity assessment procedure is conducted does not cause unnecessary inconvenience to an applicant or its agent;

(j)limit the procedure, for a good or service modified subsequent to a determination

that the good or service conforms to the applicable technical regulation or standard, to that necessary to determine that the good or service continues to conform to the technical regulation or standard; and .

(k)limit any requirement regarding samples of a good to that which is reasonable, and ensure that the selection of samples does not cause unnecessary inconvenience to an applicant or its agent.

4. Each Party shall apply, with such modifications as may be necessary, the relevant provisions of paragraph 3 to its approval procedures.
5. Each Party shall, on request of another Party, take such reasonable measures as may be available to it to facilitate access in its territory for conformity assessment activities.
6. Each Party shall give sympathetic consideration to a request by another Party to negotiate agreements for the mutual recognition of the results of that other Party's conformity assessment procedures.

Article 909:Notification, Publication, and Provision of Information

1. Further to Articles 1802 (Publication) and 1803 (Notification and Provision of Information), each Party proposing to adopt or modify a technical regulation shall:

   (a)at least 60 days prior to the adoption or modification of the measure, other than a law, publish a notice and notify in writing the other Parties of the proposed measure in such a manner as to enable interested persons to become acquainted with the proposed measure, except that in the case of any such measure relating to perishable goods, each Party shall, to the greatest extent practicable, publish the notice and provide the notification at least 30 days prior to the adoption or modification of the measure, but no later than when notification is provided to domestic producers;

   (b)identify in the notice and notification the good or service to which the measure would apply, and shall provide a brief description of the objective of, and reasons for the measure;

   (c)provide a copy of the proposed measure to any Party or interested person that so requests, and shall, wherever possible, identify any provision that deviates in substance from relevant international standards; and

   (d)without discrimination, allow other Parties and interested persons to make comments in writing and shall, on request, discuss the comments and take the comments and the results of the discussions into account.

2. Each Party proposing to adopt or modify a standard or any conformity assessment procedure not otherwise considered to be a technical regulation shall, where an international standard relevant to the proposed measure does not exist or such measure is not substantially the same as an international standard, and where the

measure may have a significant effect on the trade of the other Parties:

(a)at an early appropriate stage, publish a notice and provide a notification of the type required in paragraph 1(a) and (b); and

(b)observe paragraph 1(c) and (d).

3. Each Party shall seek, through appropriate measures, to ensure, with respect to a technical regulation of a state or provincial government other than a local government:

(a)that, at an early appropriate stage, a notice and notification of the type required under paragraph 1(a) and (b) are made prior to their adoption; and

(b)observance of paragraph 1(c) and (d).

4. Where a Party considers it necessary to address an urgent problem relating to safety or to protection of human, animal or plant life or health, the environment or consumers, it may omit any step set out in paragraph 1 or 3, provided that on adoption of a standards-related measure it shall:

(a)immediately provide to the other Parties a notification of the type required under paragraph 1(b), including a brief description of the urgent problem;

(b)provide a copy of the measure to any Party or interested person that so requests; and

(c)without discrimination, allow other Parties and interested persons to make comments in writing, and shall, on request, discuss the comments and take the comments and the results of the discussions into account.

5. Each Party shall, except where necessary to address an urgent problem referred to in paragraph 4, allow a reasonable period between the publication of a standards-related measure and the date that it becomes effective to allow time for interested persons to adapt to the measure.
6. Where a Party allows non-governmental persons in its territory to be present during the process of development of standards-related measures, it shall also allow non-governmental persons from the territories of the other Parties to be present.
7. Each Party shall notify the other Parties of the development of, amendment to, or change in the application of its standards-related measures no later than the time at which it notifies non-governmental persons in general or the relevant sector in its territory.
8. Each Party shall seek, through appropriate measures, to ensure the observance of paragraphs 6 and 7 by a state or provincial government, and by non-governmental standardizing bodies in its territory.
9. Each Party shall designate by January 1, 1994 a government authority responsible for the implementation at the federal level of the notification provisions of this Article, and shall notify the other Parties thereof. Where a Party designates two or more government authorities for that purpose, it shall provide to the other Parties complete and unambiguous information on the scope of responsibility of each such authority.

Article 910:Inquiry Points

1. Each Party shall ensure that there is an inquiry point that is able to answer all reasonable inquiries from other Parties and interested persons, and to provide relevant documents regarding:

   (a)any standards-related measure proposed, adopted or maintained in its territory at the federal, state or provincial government level;

   (b)the membership and participation of the Party, or its relevant federal, state or provincial government authorities, in international and regional standardizing bodies and conformity assessment systems, and in bilateral and multilateral arrangements regarding standards-related measures, and the provisions of those systems and arrangements;

   (c)the location of notices published pursuant to Article 909, or where the information can be obtained;

   (d)the location of the inquiry points referred to in paragraph 3; and

   (e)the Party's procedures for assessment of risk, and factors it considers in conducting the assessment and in establishing, pursuant to Article 904(2), the levels of protection that it considers appropriate.

2. Where a Party designates more than one inquiry point, it shall:

   (a)provide to the other Parties complete and unambiguous information on the scope of responsibility of each inquiry point; and

   (b)ensure that any inquiry addressed to an incorrect inquiry point is promptly conveyed to the correct inquiry point.

3. Each Party shall take such reasonable measures as may be available to it to ensure that there is at least one inquiry point that is able to answer all reasonable inquiries from other Parties and interested persons and to provide relevant documents or information as to where they can be obtained regarding:

   (a)any standard or conformity assessment procedure proposed, adopted or maintained by non-governmental standardizing bodies in its territory; and

   (b)the membership and participation of relevant non-governmental bodies in its territory in international and regional standardizing bodies and conformity assessment systems.

4. Each Party shall ensure that where copies of documents are requested by another Party or by interested persons in accordance with this Chapter, they are supplied at the same price, apart from the actual cost of delivery, as the price for domestic

purchase.

Article 911:Technical Cooperation

1. Each Party shall, on request of another Party:

   (a)provide to that Party technical advice, information and assistance on mutually agreed terms and conditions to enhance that Party's standards-related measures, and related activities, processes and systems;

   (b)provide to that Party information on its technical cooperation programs regarding standards-related measures relating to specific areas of interest; and

   (c)consult with that Party during the development of, or prior to the adoption or change in the application of, any standards-related measure.

2. Each Party shall encourage standardizing bodies in its territory to cooperate with the standardizing bodies in the territories of the other Parties in their participation, as appropriate, in standardizing activities, such as through membership in international standardizing bodies.

Article 912:Limitations on the Provision of Information

Nothing in this Chapter shall be construed to require a Party to:

(a)communicate, publish texts, or provide particulars or copies of documents other than in an official language of the Party; or

(b)furnish any information the disclosure of which would impede law enforcement or otherwise be contrary to the public interest, or would prejudice the legitimate commercial interests of particular enterprises.

Article 913:Committee on Standards-Related Measures

1. The Parties hereby establish a Committee on Standards-Related Measures, comprising representatives of each Party.
2. The Committee's functions shall include:

   (a)monitoring the implementation and administration of this Chapter, including the progress of the subcommittees and working groups established under paragraph 4, and the operation of the inquiry points established under Article 910;

   (b)facilitating the process by which the Parties make compatible their

standards-related measures;

(c)providing a forum for the Parties to consult on issues relating to standards-related measures, *including the provision of technical advice and recommendations under* Article 914;

(d)enhancing cooperation on the development, application and enforcement of standards-related measures; and

(e)considering non-governmental, regional and multilateral developments regarding standards-related measures, including under the GATT.

3. The Committee shall:

(a)meet on request of any Party and, unless the Parties otherwise agree, at least once each year; and

(b)report annually to the Commission on the implementation of this Chapter.

4. The Committee may, as it considers appropriate, establish and determine the scope and mandate of subcommittees or working groups, comprising representatives of each Party. Each subcommittee or working group may:

(a)as it considers necessary or desirable, include or consult with

(i) representatives of non-governmental bodies, including standardizing bodies,

(ii) scientists, and

(iii)technical experts; and

(b)determine its work program, taking into account relevant international activities.

5. Further to paragraph 4, the Committee shall establish:

(a)the following subcommittees

(i) Land Transportation Standards Subcommittee, in accordance with Annex 913.5.a-1,

(ii) Telecommunications Standards Subcommittee, in accordance with Annex 913.5.a-2,

(iii)Automotive Standards Council, in accordance with Annex 913.5.a-3, and

(iv) Subcommittee on Labelling of Textile and Apparel Goods, in accordance with Annex 913.5.a-4; and

(b)such other subcommittees or working groups as it considers appropriate to

address any topic, including:

(i) identification and nomenclature for goods subject to standards-related measures,

(ii) quality and identity standards and technical regulations,

(iii)packaging, labelling and presentation of consumer information, including languages, measurement systems, ingredients, sizes, terminology, symbols and related matters,

(iv) product approval and post-market surveillance programs,

(v) principles for the accreditation and recognition of conformity assessment bodies, procedures and systems,

(vi) development and implementation of a uniform chemical hazard classification and communication system,

(vii)enforcement programs, including training and inspections by regulatory, analytical and enforcement personnel,

(viii)promotion and implementation of good laboratory practices,

(ix) promotion and implementation of good manufacturing practices,

(x) criteria for assessment of potential environmental hazards of goods,

(xi) methodologies for assessment of risk,

(xii)guidelines for testing of chemicals, including industrial and agricultural chemicals, pharmaceuticals and biologicals,

(xiii)methods by which consumer protection, including matters relating to consumer redress, can be facilitated, and

(xiv)extension of the application of this Chapter to other services.

6. Each Party shall, on request of another Party, take such reasonable measures as may be available to it to provide for the participation in the activities of the Committee, where and as appropriate, of representatives of state or provincial governments.
7. A Party requesting technical advice, information or assistance pursuant to Article 911 shall notify the Committee which shall facilitate any such request.

Article 914:Technical Consultations

1. Where a Party requests consultations regarding the application of this Chapter to a

standards-related measure, and so notifies the Committee, the Committee may facilitate the consultations, if it does not consider the matter itself, by referring the matter for non-binding technical advice or recommendations to a subcommittee or working group, including an ad hoc subcommittee or working group, or to another forum.

2. The Committee should consider any matter referred to it under paragraph 1 as expeditiously as possible and promptly forward to the Parties any technical advice or recommendations that it develops or receives concerning the matter. The Parties involved shall provide a written response to the Committee concerning the technical advice or recommendations within such time as the Committee may request.
3. Where the involved Parties have had recourse to consultations facilitated by the Committee under paragraph 1, the consultations shall, on the agreement of the Parties involved, constitute consultations under Article 2006 (Consultations).
4. The Parties confirm that a Party asserting that a standards-related measure of another Party is inconsistent with this Chapter shall have the burden of establishing the inconsistency.

Article 915: Definitions

1. For purposes of this Chapter:

approval procedure means any registration, notification or other mandatory administrative procedure for granting permission for a good or service to be produced, marketed or used for a stated purpose or under stated conditions;

assessment of risk means evaluation of the potential for adverse effects;

conformity assessment procedure means any procedure used, directly or indirectly, to determine that a technical regulation or standard is fulfilled, including sampling, testing, inspection, evaluation, verification, monitoring, auditing, assurance of conformity, accreditation, registration or approval used for such a purpose, but does not mean an approval procedure;

international standard means a standards-related measure, or other guide or recommendation, adopted by an international standardizing body and made available to the public;

international standardizing body means a standardizing body whose membership is open to the relevant bodies of at least all the parties to the GATT Agreement on Technical Barriers to Trade, including the International Organization for Standardization (ISO), the International Electrotechnical Commission (IEC), Codex Alimentarius Commission, the World Health Organization (WHO), the Food and Agriculture Organization (FAO), the International Telecommunication Union (ITU); or any other body that the Parties designate;

land transportation service means a transportation service provided by means of motor carrier or rail;

legitimate objective includes an objective such as:

(a)safety,

(b)protection of human, animal or plant life or health, the environment or consumers, including matters relating to quality and identifiability of goods or services, and

(c)sustainable development,

considering, among other things, where appropriate, fundamental climatic or other geographical factors, technological or infrastructural factors, or scientific justification but does not include the protection of domestic production;

make compatible means bring different standards-related measures of the same scope approved by different standardizing bodies to a level such that they are either identical, equivalent or have the effect of permitting goods or services to be used in place of one another or fulfill the same purpose;

services means land transportation services and telecommunications services;

standard means a document, approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for goods or related processes and production methods, or for services or related operating methods, with which compliance is not mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a good, process, or production or operating method;

standardizing body means a body having recognized activities in standardization;

standards-related measure means a standard, technical regulation or conformity assessment procedure;

technical regulation means a document which lays down goods characteristics or their related processes and production methods, or services characteristics or their related operating methods, including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a good, process, or production or operating method; and

telecommunications service means a service provided by means of the transmission and reception of signals by any electromagnetic means, but does not mean the cable, broadcast or other electromagnetic distribution of radio or television programming to the public generally.

2. Except as they are otherwise defined in this Agreement, other terms in this Chapter shall be interpreted in accordance with their ordinary meaning in context and in the light of the objectives of this Agreement, and where appropriate by reference to the terms presented in the sixth edition of the ISO/IEC Guide 2: 1991, General Terms

and Their Definitions Concerning Standardization and Related Activities.

Annex 908.2

Transitional Rules for Conformity Assessment Procedures

1. Except in respect of governmental conformity assessment bodies, Article 908(2) shall impose no obligation and confer no right on Mexico until four years after the date of entry into force of this Agreement.
2. Where a Party charges a reasonable fee, limited in amount to the approximate cost of the service rendered, to accredit, approve, license or otherwise recognize a conformity assessment body in the territory of another Party, it need not, prior to December 31, 1998 or such earlier date as the Parties may agree, charge such a fee to a conformity assessment body in its territory.

Annex 913.5.a-1

Land Transportation Standards Subcommittee

1. The Land Transportation Standards Subcommittee, established under Article 913(5)(a)(i), shall comprise representatives of each Party.
2. The Subcommittee shall implement the following work program for making compatible the Parties' relevant standards-related measures for:

(a)bus and truck operations

(i) no later than one and one-half years after the date of entry into force of this Agreement, for non-medical standards-related measures respecting drivers, including measures relating to the age of and language used by drivers,

(ii) no later than two and one-half years after the date of entry into force of this Agreement, for medical standards-related measures respecting drivers,

(iii)no later than three years after the date of entry into force of this Agreement, for standards-related measures respecting vehicles, including measures relating to weights and dimensions, tires, brakes, parts and accessories, securement of cargo, maintenance and repair, inspections, and emissions and environmental pollution levels not covered by the Automotive Standards Council's work program established under Annex 913.5.a-3,

(iv) no later than three years after the date of entry into force of this Agreement, for standards-related measures respecting each Party's

supervision of motor carriers' safety compliance, and

(v) no later than three years after the date of entry into force of this Agreement, for standards-related measures respecting road signs;

(b)rail operations

(i) no later than one year after the date of entry into force of this Agreement, for standards-related measures respecting operating personnel that are relevant to cross-border operations, and

(ii) no later than one year after the date of entry into force of this Agreement, for standards-related measures respecting locomotives and other rail equipment; and

(c)transportation of dangerous goods, no later than six years after the date of entry into force of this Agreement, using as their basis the United Nations Recommendations on the Transport of Dangerous Goods, or such other standards as the Parties may agree.

3. The Subcommittee may address other related standards-related measures as it considers appropriate.

Annex 913.5.a-2

Telecommunications Standards Subcommittee

1. The Telecommunications Standards Subcommittee, established under Article 913(5)(a)(ii), shall comprise representatives of each Party.
2. The Subcommittee shall, within six months of the date of entry into force of this Agreement, develop a work program, including a timetable, for making compatible, to the greatest extent practicable, the standards-related measures of the Parties for authorized equipment as defined in Chapter Thirteen (Telecommunications).
3. The Subcommittee may address other appropriate standards-related matters respecting telecommunications equipment or services and such other matters as it considers appropriate.
4. The Subcommittee shall take into account relevant work carried out by the Parties in other forums, and that of non-governmental standardizing bodies.

Annex 913.5.a-3

Automotive Standards Council

1. The Automotive Standards Council, established under Article 913.5(a)(iii), shall comprise representatives of each Party.

2. The purpose of the Council shall be, to the extent practicable, to facilitate the attainment of compatibility among, and review the implementation of, national standards-related measures of the Parties that apply to automotive goods, and to address other related matters.
3. To facilitate its objectives, the Council may establish subgroups, consultation procedures and other appropriate operational mechanisms. On the agreement of the Parties, the Council may include state and provincial government or private sector representatives in its subgroups.
4. Any recommendation of the Council shall require agreement of the Parties. Where the adoption of a law is not required for a Party, the Council's recommendations shall be implemented by the Party within a reasonable time in accordance with the legal and procedural requirements and international obligations of the Party. Where the adoption of a law is required for a Party, the Party shall use its best efforts to secure the adoption of the law and shall implement any such law within a reasonable time.
5. Recognizing the existing disparity in standards-related measures of the Parties, the Council shall develop a work program for making compatible the national standards-related measures that apply to automotive goods and other related matters based on the following criteria:

   (a)the impact on industry integration;

   (b)the extent of the barriers to trade;

   (c)the level of trade affected; and

   (d)the extent of the disparity.

In developing its work program, the Council may address other related matters, including emissions from on-road and non-road mobile sources.

6. Each Party shall take such reasonable measures as may be available to it to promote the objectives of this Annex with respect to standards-related measures that are maintained by state and provincial government authorities and private sector organizations. The Council shall make every effort to assist these entities with such activities, especially the identification of priorities and the establishment of work schedules.

Annex 913.5.a-4

Subcommittee on Labelling of Textile and Apparel Goods

1. The Subcommittee on Labelling of Textile and Apparel Goods, established under Article 913(5)(a)(iv), shall comprise representatives of each Party.
2. The Subcommittee shall include, and consult with, technical experts as well as a broadly representative group from the manufacturing and retailing sectors in the territory of each Party.
3. The Subcommittee shall develop and pursue a work program on the harmonization of

labelling requirements to facilitate trade in textile and apparel goods between the Parties through the adoption of uniform labelling provisions. The work program should include the following matters:

(a)pictograms and symbols to replace, where possible, required written information, as well as other methods to reduce the need for labels on textile and apparel goods in multiple languages;

(b)care instructions for textile and apparel goods;

(c)fiber content information for textile and apparel goods;

(d)uniform methods acceptable for the attachment of required information to textile and apparel goods; and

(e)use in the territory of the other Parties of each Party's national registration numbers for manufacturers or importers of textile and apparel goods.

APPENDIX C:
PROPOSED REGULATION ORDER

APPENDIX C
PROPOSED REGULATION ORDER

Amend Heavy-Duty Diesel Smoke Emission Testing, and Heavy-Duty Vehicle Emission Control System Inspections Sections 2180-2189, title 13, California Code of Regulations, to read as set forth in the following sections:

Section 2180	Applicability *(Proposed Amendments)*
Section 2180.1	Definitions *(Proposed Amendments)*
Section 2181	Responsibilities of the Driver and Inspector During the Inspection Procedure *(Proposed Amendments)*
Section 2182	Heavy-Duty Vehicle Smoke Opacity Standards and Test Procedures; Excessive Smoke *(Proposed Amendments)*
Section 2183	Inspection of the Emission Control System on a Heavy Duty Vehicle *(Proposed Amendments)*
Section 2184	Refusal to Submit to Inspection Procedure *(Proposed Amendments)*
Section 2185	Civil Penalty Schedule *(Proposed Amendments)*
Section 2186	Demonstration of Correction and Post-Repair Test or Inspection *(Proposed Amendments)*
Section 2187	Vehicles Removed from Service *(Proposed Amendments)*
Section 2188	Contesting a Citation *(Proposed Amendments)*
Section 2189	Severability of Provisions. *(Add Section)*

Format: The following proposed changes follow the editing format of ~~strikethrough~~ (for text deletions) and <u>underline</u> (for new proposed text).

§ 2180. Applicability

Unless otherwise noted, t~~T~~his chapter applies to all diesel-powered and gasoline powered heavy-duty vehicles, including pre-1974 model-year vehicles, operating in the State of California.

NOTE: Authority Cited: Sections 39600, 39601, 43013, 43701, and 44011.6, Health and Safety Code. Reference: Sections 39002, 39003, 39010, 39033, 43000, 43013, 43018, 43701, and 44011.6, Health and Safety Code. Section 505, Vehicle Code.

§ 2180.1. Definitions

(a) The definitions of this section supplement and are governed by the definitions set forth in Chapter 2 (commencing with section 39010), Part 1, Division 26 of the Health and Safety Code. The following definitions shall govern the provisions of this chapter.

(1) "Authorized dealer" means a group of independent service and repair facilities that are recognized by the motor vehicle or engine manufacturer as being capable of performing repairs to factory specifications; including warranty repair work.

(~~1~~2) "ARB post-repair inspection" means a repeat emission control system inspection, conducted by the Air Resources Board at an Air Resources Board-specified site, for the purpose of clearing a ~~c~~Citation issued under section 2185(a)(2)(C).

(~~2~~3) "ARB post-repair test" means a repeat test, conducted by the Air Resources Board at an Air Resources Board-specified site, for the purpose of clearing a ~~c~~Citation issued under section 2185(a)(2)(C).

(~~3~~4) "Basic penalty" means the civil penalty of ($500) for a test procedure or emission control system inspection violation that is to be deposited in the Vehicle Inspection and Repair Fund.

(45) "Citation" means a legal notice issued by the Air Resources Board to the owner of a heavy-duty vehicle requiring the owner to repair the vehicle and to pay a civil penalty.

(6) "Day" means calendar day.

(~~5~~7) "Defective" means a condition in which an emission control system or an emission control system component is malfunctioning due to age, wear, malmaintenance, or design defects.

(~~6~~8) "Demonstration of correction" means the documents identified in section 2186.

(~~7~~9) "Driver" has the same meaning as defined in California Vehicle Code section 305.

(~~8~~10) "Emission control label" or "ECL" means the label required by the "California Motor Vehicle Emission Control Label Specifications", incorporated by reference in 13 CCR, section 1965, or Title 40, Code of Federal Regulations (~~40~~ CFR), ~~section 86.085-35 or 40 CFR~~ Part 86, Subpart A.

(~~9~~11) "Emission control system" means the pollution control components on an engine at the time its engine family is certified, including, but not limited to, the emission control label.

(~~10~~12) "Executive Officer" means the Executive Officer of the Air Resources Board or his or her designee.

(13) "Federal emission standards" means the emission standards adopted by the U.S. Environmental Protection Agency, pursuant to Title 42 United States Code, section 7521(a), that are required to be met for the certification of heavy-duty vehicles or engines.

(~~11~~14) "Fleet" means two (2) or more heavy-duty vehicles.

(15) "Heavy-duty commercial vehicle" means a "motor truck" designed, used, or maintained primarily for the transportation of property, as defined in section 410 of the Vehicle Code, and having a gross vehicle weight rating (GVWR) greater than 10,000 pounds.

(~~12~~16) "Heavy-duty vehicle" means a motor vehicle having a manufacturer's maximum gross vehicle weight rating (GVWR) greater than 6,000 pounds, except passenger cars.

(~~13~~17) "Inspection procedure" means the test procedure specified in section 2182 and the emission control system inspection specified in section 2183.

(~~14~~18) "Inspection site" means an area including a random roadside location, a weigh station, or a fleet facility used for conducting the heavy-duty vehicle test procedure, emission control system inspection, or both.

(~~15~~19) "Inspector" means an Air Resources Board employee with the duty of enforcing Health and Safety Code sections 43701(a) and 44011.6, and ~~T~~title 13, CCR sections 2180 through 2194.

(~~16~~20) "Issuance" means the act of mailing or personally delivering a ~~c~~Citation to the owner.

(~~17~~21) "Minimum penalty" means the ($300) penalty that is to be deposited in the Diesel Emission Reduction Fund pursuant to Health and Safety Code section 44011.6(l).

(~~18~~22) "Notice of Violation" means a legal notice issued to the owner of a heavy-duty vehicle powered by a pre-1991 model-year diesel engine with a measured smoke opacity exceeding 55 percent but not exceeding 69 percent, requiring the owner to repair the vehicle and submit a demonstration of correction.

(~~19~~23) "Officer" means a uniformed member of the Department of the California Highway Patrol.

(~~20~~24) "Opacity" means the percentage of light obstructed from passage through an exhaust smoke plume.

(~~21~~25) "Owner" means either (A) the person registered as the owner of a vehicle by the California Department of Motor Vehicles (DMV), or its equivalent in another state, province, or country; or (B) a person shown by the registered owner to be legally responsible for the vehicle's maintenance. The person identified as the owner on the registration document carried on the vehicle at the time a ~~c~~Citation is issued shall be deemed the owner unless that person demonstrates that another person is the owner of the vehicle.

(~~22~~26) "Removal from service" means the towing and storage of a vehicle under the auspices of the Department of the California Highway Patrol.

(~~23~~27) "Repair facility" means any place where heavy-duty vehicles are repaired, rebuilt, reconditioned, or in any way maintained for the public at a charge, and fleet maintenance facilities.

(~~24~~28) "SAE J1667" means Society of Automotive Engineers (SAE) Recommended Practice SAE J1667 "Snap-Acceleration Smoke Test Procedure for Heavy-Duty Diesel Powered Vehicles," as issued February 1996 ("1996-02"), which is incorporated herein by reference.

(~~25~~29) "Scan tool evaluation" means using an electronic device to determine if a Low NOx Rebuild Kit, as defined in section 2011(b)(4), is installed.

(~~26~~30) "Schoolbus" means the same as defined in California Vehicle Code section 545.

(~~27~~31) "Smokemeter" means a detection device used to measure the opacity for smoke in percent opacity.

(2832) "Tampered" means missing, modified, or disconnected~~.~~, or, as it applies to emission control labels, permanently obscured.

(33) "Test procedures," for the purpose of chapter 3.5, means the test procedures set forth in SAE J1667.

(2~~9~~34) "Uncleared ~~c~~Citation" means a ~~c~~Citation for which demonstration of correction and, if required, payment of any civil penalty, has not been made.

NOTE: Authority Cited: Sections 39600, 39601, 43013, 43701, and 44011.6, Health and Safety Code. Reference: Sections 39002, 39003, 39010, 39033, 43000, 43013, 43018, 43701, and 44011.6, Health and Safety Code. Section 410 and 505, Vehicle Code Title 42 United States Code, section 7521(a); title 40, Code of Federal Regulations Part 86, Subpart A.

§ 2181. Responsibilities of the Driver and Inspector During the Inspection Procedure.

(a) Driver of heavy-duty diesel-powered vehicle. The driver of a heavy-duty diesel-powered vehicle selected to undergo the inspection procedure shall do all of the following:

(1) Drive the vehicle to the inspection site upon direction of an officer.

(2) Show proof of driver's license and vehicle registration to the inspector or officer upon request.

(3) Perform the test procedure upon request by an inspector.

(4) Open the vehicle door so that the inspector can observe the driver depress the accelerator pedal.

(5) Permit an emission control system inspection and open the hood of the vehicle upon the request of the inspector.

(6) Permit a scan tool evaluation upon request of the inspector.

(7) As applicable, s~~S~~ign the e~~C~~itation or, N~~n~~otice of v~~V~~iolation to acknowledge its receipt and sign the smoke test report to acknowledge performance of the test procedure.

(b) Driver of heavy-duty gasoline-powered vehicle. The driver of a heavy-duty gasoline-powered vehicle selected to undergo the inspection shall:

(1) Drive the vehicle to the inspection site upon direction of an officer.

(2) Show proof of driver's license and vehicle registration to the inspector or officer upon request.

(3) Permit an emission control system inspection and open the hood of the vehicle upon request of the inspector.

(4) As applicable, s~~S~~ign the e~~C~~itation or, Notice of Violation to acknowledge its receipt.

(c) Inspector. The inspector in performing the inspection procedures shall do all of the following:

(1) Advise the driver that refusal to submit to the inspection procedure is a violation of these regulations.

(2) Obtain engine identification information from the vehicle when tested pursuant to section 2182 to determine which opacity standard specified in section 2182 applies.

(3) Except as otherwise provided in section 2181(c)(4), issue a ~~copy of the~~ e~~C~~itation to the driver of a vehicle that fails the test procedure or the emission control system inspection.

(4) Issue a ~~copy of the n~~Notice of v~~V~~iolation to the driver of a heavy-duty vehicle powered by a pre-1991 model-year diesel engine with a measured smoke opacity exceeding 55 percent but not exceeding 69 percent, except

where a ~~n~~Notice of ~~v~~Violation or ~~c~~Citation has been issued for the vehicle in the preceding 12 months.

(5) Issue a ~~warning~~Citation to the owner of a ~~heavy-duty~~ diesel-powered heavy-duty commercial vehicle missing its emission control label, which requires a civil penalty and correction ~~that the label must be replaced and the engine number identification must be provided to the ARB~~ within ~~30~~ 45 days of ~~written notification~~ receipt of the Citation ~~by~~ from the ARB~~,~~. For all other diesel-powered heavy-duty vehicles, issue a warning to the owner that the label must be replaced and the engine number identification must be provided to the ARB within 45 days of written notification from the ARB, or it will be conclusively presumed in any subsequent smoke opacity test where the emission control label remains missing that the vehicle is subject to the 40 percent smoke opacity standard in section 2182(a)(1), unless at the time of the subsequent test it is plainly evident from a visual inspection that the vehicle is powered by a pre-1991 model-year engine.

(6) Issue a ~~copy of the c~~Citation to the driver of a 1993-1998 heavy-duty diesel-powered vehicle with a Low NOx Rebuild Engine upon determining by scan tool evaluation a violation of section 2011 (c)(1), title 13, California Code of Regulations.

NOTE: Authority Cited: Sections 39600, 39601, 43013, 43701, and 44011.6, Health and Safety Code. Reference: Sections 39002, 39003, 39010, 39033, 43000, 43013, 43018, 43701, and 44011.6, Health and Safety Code. Section 260 and 305, Vehicle Code.

§ 2182. Heavy-Duty Diesel Vehicle Smoke Opacity Standards and Test Procedures;
Excessive Smoke

(a) ***Standards***

(1) No heavy-duty vehicle powered by a 1991 or subsequent model-year diesel engine operating on the highways within the State of California shall exceed 40 percent smoke opacity when tested in accordance with this section unless its engine is exempted under subsection (c) or (d) below.

(2) No heavy-duty vehicle powered by a pre-1991 model-year diesel engine, operating on the highways within the State of California, shall exceed 55 percent smoke opacity when tested in accordance with this section unless its engine is exempted under subsection (c) or (d) below.

(b) ***Exemptions***

(1) The Executive Officer shall exempt from subsections (a)(1) and (2) any engine family that is shown by the engine manufacturer to the satisfaction of the Executive Officer to exhibit smoke opacity greater than 40 percent or 55 percent respectively when in good operating condition and adjusted to the manufacturer's specifications. Such engine family(s) must comply with any technologically appropriate less stringent opacity standard identified by the Executive Officer based on a review of the data obtained from engines in good operating condition and adjusted to manufacturer's specifications.

(2) The Executive Officer shall exempt from subsections (a)(1) and (2) any 1991 and earlier model-year heavy-duty diesel engines that are equipped with carryover add-on aftermarket turbocharger kits approved by the ARB, and are shown by the kit or engine manufacturer to the satisfaction of the Executive Officer to exhibit smoke opacity greater than 40 percent or 55 percent respectively when in good operating condition and adjusted to the manufacturer's specifications. Such engines must comply with any technologically appropriate less stringent opacity standard identified by the Executive Officer based on a review of the data obtained from engines in good operating condition and adjusted to manufacturer's specifications.

(3) Exemptions previously issued and in effect on January 1, 1996 shall remain in effect under the amendments to this section adopted on March 2, 1998 and effective on May 4, 1998.

(4) A manufacturer seeking an exemption under subsection (b) shall provide the ARB with the engine emissions data needed to exempt the engine family and determine technologically appropriate less stringent opacity standards.

(c) ***Effect of missing emission control label on applicable standard.*** When the owner of a heavy-duty diesel-powered vehicle receives a Citation or written notification from the ARB that the emission control label was missing during an inspection, the owner must replace the emission control label and provide the engine number identification to the ARB within ~~30~~ 45 days of receipt of the notification in addition to paying applicable penalties under section 2185(a)(3). If the owner fails to comply with this requirement, it will be conclusively presumed in any subsequent smoke opacity test where the emission control label remains missing that the vehicle is subject to the 40 percent smoke opacity standard in section 2182(a)(1), unless at the time of the subsequent test it is plainly evident from a visual inspection that the vehicle is powered by a pre-1991 model-year engine.

(d) ***Excessive smoke.*** A heavy-duty vehicle has excessive smoke if it fails to comply with the smoke opacity standard applicable under this section 2182.

~~(e) ***Test Procedures.*** For purposes of this chapter 3.5, smoke opacity shall be determined in accordance with SAE J1667.~~

NOTE: Authority Cited: Sections 39600, 39601, 43013, 43701, and 44011.6, Health and Safety Code. Reference: Sections 39002, 39003, 39010, 39033, 43000, 43013, 43018, 43701, and 44011.6, Health and Safety Code.

§ 2183. Inspection of the Emission Control System on a Heavy-Duty Vehicle

(a) ***Heavy-duty diesel-powered vehicles.*** ~~The~~ No heavy-duty diesel-powered vehicle shall operate in California with tampered or defective emission control components. The ARB shall conduct a visual inspection of heavy-duty diesel-powered vehicles to determine whether emission control components have been tampered with or are defective. The inspection shall ~~subject to tampered or defective conditions~~ include, but ~~are~~ is not limited to, the following:

(1) The engine governor.

(2) Any seals and/or covers protecting the air-fuel ratio adjustments.

(3) Any fuel injection pump seal and covers.

(4) The air cleaner and flow restriction indicator.

(5) The exhaust gas recirculation valve.

(6) The particulate matter trap system or catalytic converter system, including pipes and valves.

(7) Related hoses, connectors, brackets, and hardware for these components.

(8) Engine computer controls, related sensors, and actuators.

(9) Emission control label (ECL).

(10) Any other emissions-related components for a particular vehicle/engine as determined from the manufacturer's specifications, emission control label, certification data, or published vehicle parts manuals.

(b) ***Heavy-duty gasoline-powered vehicles.*** ~~The~~ No heavy-duty gasoline-powered vehicle shall operate in California with tampered or defective emission control components. The ARB shall a conduct a visual inspection of heavy-duty gasoline-powered vehicles to determine whether emission control components have been tampered with or are defective. The inspection shall ~~subject to tampered or defective conditions~~ include, but ~~are~~ is not limited to, the following:

(1) The air injection system.

(2) The positive crankcase ventilation system.

(3) The exhaust gas recirculation system.

(4) The catalytic converter, including pipes and valves.

(5) The evaporative emission control system.

(6) Related hoses, connectors, brackets, and hardware for these components.

(7) Engine computer controls, related sensors, and actuators.

(8) On-Board Diagnostic (OBD) systems for 1994 and subsequent model year vehicles, if so equipped.

(9) ~~Emission control label~~ECL.

(10) Any other emissions-related component for a particular vehicle/engine as determined from the manufacturer's specifications, emission control label, certification data, or published vehicle parts manuals.

(c) No 1974 or newer diesel powered heavy-duty commercial vehicle shall operate in California without evidence that, at the time of manufacture, the installed engine met emission standards at least as stringent as applicable federal emission standards for the model year of the engine. The ARB shall base its determination on whether an engine meets the above requirements by inspecting the ECL affixed to vehicle's engine.

NOTE: Authority Cited: Sections 39600, 39601, 43013, 43701, and 44011.6, Health and Safety Code. Reference: Sections 39002, 39003, 39010, 39033, 43000, 43013, 43018, 43701, and 44011.6, Health and Safety Code.

§ 2184. Refusal to Submit to Inspection Procedure.

The refusal by an owner or driver of a vehicle to submit to the scan tool evaluation defined in section 2180.1, the test procedure in section 2182, or to the emission control system inspection in section 2183 constitutes a failure of the evaluation, test procedure, or inspection, respectively, unless the driver is cited by the California Highway Patrol for a violation of California Vehicle Code section 2813.

NOTE: Authority Cited: Sections 39600, 39601, 43013, 43701, and 44011.6, Health and Safety Code. Reference: Sections 39002, 39003, 39010, 39033, 43000, 43013, 43018, 43701, and 44011.6, Health and Safety Code. Sections 305, 505, and 2813, Vehicle Code.

§ 2185. Civil Penalty Schedule.

(a) The owner of a heavy-duty vehicle that fails the scan tool evaluation, the test procedure, or the emission controls system inspection, including by refusal to submit, is subject to the following penalty schedule:

(1) Scan Tool Evaluation Violation Penalties

(A) The owner of a vehicle that is cited for a violation of section 2011(c)(1), and for which demonstration of correction is provided and payment is made within 45 days from personal or certified mail receipt of the ~~c~~Citation, shall pay a civil penalty of $300. Schoolbuses registered in California are exempt from the $300 civil penalty for the first violation only.

(B) The owner of a vehicle who violates section 2011(c)(5) shall pay a civil penalty of $500 in addition to the civil penalty for the violation of section 2011(c)(1).

(C) The owner of a vehicle cited for a violation of section 2184 for refusing to submit to a scan tool evaluation shall be subject to a civil penalty of $500.

(2) Heavy-Duty Vehicle ~~Tampering and~~ Opacity and Tampering ~~Violation~~ Penalties for Violating Sections 2182 and 2183(a) and (b), Except for Violations Involving a Tampered ECL.

(A) Except as provided below, ~~The~~ the owner of a heavy-duty vehicle, ~~other than a schoolbus~~, that is cited for the first time pursuant to section 2182 or 2183 (a) and (b), other than for a tampered ECL,

and for which demonstration of correction is provided and payment is made within 45 days from personal or certified mail receipt of the ~~c~~Citation, shall pay the minimum penalty of $300. An owner who fails to correct the vehicle or pay the minimum penalty within 45 days of receipt of the Citation shall be assessed a penalty of $800.

~~(B) The owner of a vehicle that is cited for the first time pursuant to section 2184 for a refusal not pertaining to a scan tool evaluation, or that is cited for the first time pursuant to section 2182 or 2183 and for which demonstration of correction is not provided within 45 days from personal mail or certified mail receipt of the citation shall provide demonstration of correction and pay the minimum penalty of $300 and the basic penalty of $500 for a total of $800. Schoolbuses are exempt from the $300 minimum penalty for the first violation only.~~

(B) The above penalty shall not apply to the first Citation received by an owner of a schoolbus, but the owner shall be subject to the penalty provisions of paragraphs (A) and (C) below respectively for second and any subsequent violations.

(C) The owner of a vehicle that is cited pursuant to section 2182 or 2183(a) and (b), other than for a tampered ECL, cited a second time within a 12 month~~s~~ period ~~from the issuance of the most recent citation for that~~ for the same vehicle shall within 45 days from personal or certified mail receipt of the current ~~c~~Citation provide demonstration of correction and pay the penalty of $1,500 and the minimum penalty of $300 for a total of $1,800.

(D) The owner of a heavy-duty vehicle that violates section 2184 by refusing to submit to an inspection conducted under sections 2182 or 2183(a) and (b), including inspections for a tampered ECL, shall be assessed a penalty of $800 for a first time violation. Subsequent violations of section 2184 for refusing to submit to an inspection under 2182 shall be subject to a penalty of $1800.

(3)~~(D)~~ Penalties for a Tampered ECL under section 2183.

(A) An owner of any heavy-duty vehicle shall receive a Citation each time that ARB finds that the vehicle has a tampered ECL. For the first year following the effective date of the amended regulation, [date to be inserted], if the owner demonstrates to ARB that a new label has been affixed to the vehicle's engine within 45-days of receipt of the Citation pursuant to section 2186(d) below, no penalty shall be assessed. An owner of a heavy-duty vehicle who has

been issued a Citation for a tampered ECL label and who has failed to have a replacement label affixed to the engine within 45-days of service of the Citation as set forth in section 2186(a)(3) below shall be subject to a $300 penalty.

(B) After the first year from the effective date of the amended regulation, [date to be inserted], the owner shall receive a citation, which may not be waived, assessing the owner a $300 penalty.

(4) Penalties for Violations of Section 2183(c). The owner of a heavy-duty commercial vehicle that is cited for a violation of section 2183(c) shall be subject to the following penalties:

(A) The owner shall be subject to a penalty of $300 for each violation.

(B) For the purposes of section 2185(a)(4), it shall be presumed that a heavy-duty commercial vehicle with a tampered ECL is not in compliance with section 2183(c) and is subject to a $300 penalty for each violation in addition to the penalties provided for under section 2185(a)(3). If the owner demonstrates to ARB that a new ECL has been affixed to the vehicle's engine within 45-days of receipt of the Citation, pursuant to section 2186(a)(3) below, and the ECL demonstrates that the vehicle's engine was designed to at least meet U.S. EPA promulgated emission standards for the year of the engine's manufacture, the penalty for violation of section 2183(c) shall be waived.

(b) (1) No ~~c~~Citation shall be issued to the owner of a heavy-duty vehicle powered by a pre-1991 model-year diesel engine on the basis of a measured smoke opacity exceeding 55 percent but not exceeding 69 percent, unless:

(A) the owner fails to provide a demonstration of correction within 45 days from personal or certified mail receipt of the ~~n~~Notice of ~~v~~Violation, or

(B) a ~~n~~Notice of ~~v~~Violation or ~~c~~Citation has been issued for the vehicle in the preceding 12 months.

(2) The owner of a heavy-duty vehicle that is the subject of a ~~n~~Notice of ~~v~~Violation and for which demonstration of correction is provided within 45 days from personal or certified mail receipt of the ~~n~~Notice of ~~v~~Violation shall not be subject to a penalty for the violation.

(3) The owner of a heavy-duty vehicle that is initially subject to a ~~n~~Notice of ~~v~~Violation, but is cited after a demonstration of correction is not provided within 45 days from personal or certified mail receipt of a ~~n~~Notice of ~~v~~Violation, shall be subject to the penalty in section 2185(a)(2)(B).

(4) (A) Where a heavy-duty vehicle with a pre-1991 engine inspected in accordance with section 2181 has a measured opacity exceeding 55 percent but not exceeding 69 percent within 12 months of issuance of a ~~n~~Notice of ~~v~~Violation for which a demonstration of correction was timely provided within the applicable 45-day period, a ~~c~~Citation shall be issued and the owner shall be subject to the penalty in section 2185(a)(2)(B).

(B) Where a heavy-duty vehicle with a pre-1991 engine inspected in accordance with section 2181 has a measured opacity exceeding 55 percent but not exceeding 69 percent within 12 months of issuance of a ~~n~~Notice of ~~v~~Violation for which a demonstration of correction was not timely provided within the applicable 45-day period, a ~~c~~Citation shall be issued and the owner shall be subject to the penalty in section 2185(a)(2)(~~C~~D).

(c) If a heavy-duty vehicle fails the test procedure or an emission control system inspection one year or more after the date of its most recent failure, the owner of that vehicle shall be subject to the penalty schedule in section 2185(a)(2)(A) and (a)(2)(~~B~~C).

(d) When a heavy-duty vehicle is cited after a bona fide change of ownership between non-related persons or entities, the new owner shall not be subject to the penalty schedule in section 2185(a)(2)(A) and (~~B~~C) if the only ~~c~~Citations issued for the vehicle within the previous 12 months were issued prior to the change of ownership to the new owner.

(e) An owner who has been cited twice or more ~~tampered emission controls~~ under 2182 and 2183(a) and (b), other than for a tampered ECL, within 12 months of the most recently issued citation under the aforementioned subsections ~~for~~ on the same vehicle shall be subject to the penalty in section 2185(a)(2)(C), notwithstanding section 2185(c).

NOTE: Authority Cited: Sections 39600, 39601, 43013, 43016, 43701 and 44011.6, Health and Safety Code. Reference: Sections 39002, 39003, 39010, 39033, 43000, 43013, 43016, 43018, 43701, and 44011.6, Health and Safety Code. Sections 305, 505, and 545, Vehicle Code.

§ 2186. Demonstration of Correction and Post-Repair Test or Inspection.

(a) Demonstration of Correction. The owner must demonstrate correction of the vehicle by submitting to the Air Resources Board documents demonstrating compliance with (1) or (2) or (3):

(1) Where repairs are made at a repair facility, a repair receipt or a completed work order which contains the following information:

(A) Name, address, and phone number of the facility;

(B) Name of mechanic;

(C) Date of the repair;

(D) Description of component replacement(s), repair(s), and/or adjustment(s); and

(E) Itemized list of replaced component(s), including description of part, part number, and cost;

(2) Where the owner makes his or her own repairs outside of a repair facility,

(A) An itemized receipt for the parts used in the repair, and

(B) A statement identifying the date and nature of the repairs made;

(3) The owner of the heavy-duty vehicle who has received a Citation for a tampered ECL shall:

(A) Have the engine manufacturer through its authorized dealer, affix an emission control label identical to the label that was installed on the engine at the time of its original manufacturer;

(B) Provide written verification from the heavy-duty vehicle/engine manufacturer or its authorized dealer that the label has been replaced. The written verification must include identification of the engine serial number.

(b) Statement of Correction. The owner must also submit to the Air Resources Board documents demonstrating compliance with (1) or (2) or (3):

(1) Where the ~~c~~Citation or ~~n~~Notice of ~~v~~Violation was based on a failure to meet the opacity standard applicable under section 2182, a smoke test report from a subsequent test showing that the repaired vehicle passed the applicable section 2182 standard along with a statement to that effect made under penalty of perjury by the person who conducted the subsequent test;

(2) Where the ~~c~~Citation or Notice of Violation was based on a failure to pass an emission control system inspection as specified in section 2183, a statement by a person, under penalty of perjury, that the person has reinspected any components identified in the ~~c~~Citation or Notice of Violation as defective or tampered and has determined that these components are correct, are installed, and are in good working order; or

(3) Where the ~~c~~Citation was based on a violation of the Low NOx Rebuild Kit installation requirement as specified in section 2011(c), a statement by a person, under penalty of perjury, that the person has conducted a scan tool evaluation and has determined that the Low NOx Rebuild Kit has been installed.

(c) The Air Resources Board shall require an ARB post-repair test or an ARB post-repair inspection whenever:

(1) a submitted repair receipt or work order does not comply with (a) above;

(2) a repair receipt, ~~or~~ work order or authorized dealer verification appears to be falsified; or

(3) a second and subsequent failures of the test procedure or an emission control system inspection on the vehicle occur within a one-year period.

NOTE: Authority Cited: Sections 39600, 39601, 43013, 43701, 44011.6, Health and Safety Code. Reference: Sections 39002, 39003, 39010, 39033, 43000, 43013, 43018, 43701, and 44011.6, Health and Safety Code. Section 505, Vehicle Code.

§ 2187. Vehicles Removed from Service.

(a) Vehicles are subject to removal from service by the Department of the California Highway Patrol if requested by the Air Resources Board inspector, and if one or more uncleared ~~c~~Citations issued under section 2182 exist at the time of inspection.

(b) Upon payment by ~~cashier's~~ bank check, ~~or~~ money order, or credit card of all unpaid penalties for a vehicle that has been removed from service, the Air Resources Board shall provide the owner, or designee, a release form for presentation to the Department of the California Highway Patrol.

(c) The release of the vehicle shall be subject to the condition that it be repaired and post-repair tested or inspected within 15 days.

NOTE: Authority Cited: Sections 39600, 39601, 43013, 44011.6, Health and Safety Code. Reference: Sections 39002, 39003, 39010, 39033, 43000, 43013, 43018, and 44011.6, Health and Safety Code.

Amend section 2188, title 13, California Code of Regulations to read as follows:

§ 2188. Contesting a Citation.

The owner of a vehicle cited under these regulations may request a hearing pursuant to sections 60075.1 et seq., ~~T~~title 17, California Code of Regulations.

NOTE: Authority Cited: Sections 39600, 39601, 43013, 44011.6, Health and Safety Code. Reference: Sections 39002, 39003, 39010, 39033, 43000, 43013, 43018, 43701, and 44011.6, Health and Safety Code.

§ 2189. Severability of Provisions.

If any subsection, paragraph, subparagraph, sentence, clause, phrase, or portion of this regulations is, for any reason, held invalid, unconstitutional, or unenforceable by any court or competent jurisdiction, such portion shall be deemed as a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of the regulation.

NOTE: Authority Cited: Sections 39600, 39601, 43013, 44011.6, Health and Safety Code. Reference: Sections 39002, 39003, 39010, 39033, 43000, 43013, 43018, 43701,and 44011.6, Health and Safety Code.