State of California
California Environmental Protection Agency
AIR RESOURCES BOARD

PUBLIC HEARING TO CONSIDER REQUIREMENTS TO REDUCE IDLING EMISSIONS FROM NEW AND IN-USE TRUCKS, BEGINNING IN 2008

FINAL STATEMENT OF REASONS

August 2006

State of California
AIR RESOURCES BOARD

Final Statement of Reasons for Rulemaking,
Including Summary of Comments and Agency Response

PUBLIC HEARING TO CONSIDER REQUIREMENTS TO REDUCE IDLING EMISSIONS FROM NEW AND IN-USE TRUCKS, BEGINNING IN 2008

Public Hearing Date: October 20, 2005
Agenda Item No.: 05-10-3

I. General

The Staff Report: Initial Statement of Reasons for Rulemaking ("Staff Report"), entitled "Notice of Public Hearing to Consider Requirements to Reduce Idling Emissions from New and In-use Trucks, Beginning in 2008," released September 1, 2005 is incorporated by reference herein.

This rulemaking by the Air Resources Board (ARB or Board) consists of the three major components:

> The first component primarily requires manufacturers of new California certified 2008 and subsequent model-year diesel engines installed in trucks with a gross vehicle weight rating greater than 14,000 pounds to either incorporate a system that automatically shuts the engine down after five minutes of continuous idling or to certify the engines to an oxides of nitrogen (NOx) idling emission standard of 30 grams per hour. This component of the rulemaking is hereinafter referred to as the "new engine requirements" of this rulemaking.
>
> The second component primarily eliminates an existing exemption for sleeper berth equipped trucks (and therefore requires that they must comply with) the anti-idling requirements of title 13, California Code of Regulations (CCR) section 2485. This component of the rulemaking is hereinafter referred to as the "in-use requirements" of this rulemaking.
>
> The third component of this rulemaking establishes emissions performance requirements for devices that truck operators may elect to utilize to provide power for climate control, engine heating, or electrical power purposes that would otherwise be supplied by idling the vehicle's main engine. This component applies to both the new engine and the in-use requirements

On September 2, 2005, ARB published a notice for an October 20, 2005 public hearing to consider the proposed amendments. A Staff Report: Initial Statement of Reasons (the Staff Report) was also made available for public review and comment

beginning September 2, 2005. The Staff Report provides the rationale for the proposed amendments. The text of the proposed amendments to title 13, California Code of Regulations (CCR) sections 1956.8, 2404, 2424, 2425 and 2485 and the test procedure incorporated by reference therein, "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles" was included as an Appendix to the Staff Report. These documents were also posted on the ARB's Internet site for the rulemaking at: http://www.arb.ca.gov/regact/hdvidle/hdvidle.htm

On October 20, 2005 the Air Resources Board (the "Board" or the "ARB") conducted the public hearing and received oral and written comments. At the conclusion of the hearing, the Board adopted Resolution 05-55, in which it approved the proposed amendments with the following significant modifications:

> (1) modifying the provision (in Title 13, CCR section 1956.8) allowing the new engine shutdown system to be overridden during power take off-mode operations so that the override switch is not required to fail in the "off" position to accommodate safety concerns.
>
> (2) clarify that manufacturers using battery powered auxiliary power systems (APSs), a power inverter/charger for on-shore power, or an electric infrastructure or comparably clean technology need not seek and obtain advance Executive Officer approval before using such systems.

These modifications had been suggested by staff in a two-page document entitled "Staff's Suggested Modifications to Original Proposal" that was distributed at the hearing and was Attachment C to Resolution 05-55. Attachment C showed excerpts of the originally proposed amendments to the regulations and incorporated documents, with the text of all suggested modifications clearly identified. Other modifications were suggested by commenters and approved by the Board during the hearing: (1) technologies utilizing electrical shore power or comparably clean emission technologies would be allowed as options to comply with the in-use idling regulations set forth in section 2485 of title 13, California Code of Regulations, (2) military tactical vehicles would be exempted from the proposed amendments to sections 1956.8, 2404, 2424, 2425 of title 13, California Code of Regulations, and (3) the current exemption applicable to military tactical vehicles in section 2485 of title 13, California Code of Regulations would be clarified to also exempt operational modes such as training, testing, and deployment.

In accordance with section 11346.8 of the Government Code, the Resolution directed the Executive Officer to incorporate the modifications into the proposed regulatory text, with such other conforming modifications and technical amendments as may be appropriate, and to make the modified text available for a supplemental comment period of at least 15 days. She was then directed either to adopt the amendments with such additional modifications as may be appropriate in light of the comments received, or to present the regulations to the Board for further consideration if warranted in light of the comments. The Resolution and its

Attachment C are available at ARB's Internet web page for this rulemaking: http://www.arb.ca.gov/regact/hdvidle/hdvidle.htm

Subsequent to the hearing, staff identified a number of additional, primarily technical modifications that are appropriate to make the amended regulations work as effectively as possible. The most significant of these post-hearing modifications were: (1) allowing the engine shutdown system to be overridden during exhaust emission control device regeneration or maintenance periods, or if servicing or maintenance of the engine requires extended idling, (2) clarifying that the engine shutdown system requirements do not apply to emergency vehicles or to medium-duty vehicles, (3) clarifying in the test procedures portion of the rulemaking that for compliance with the optional NOx idling standard, the average NOx emissions of each mode of the supplemental NOx idling test procedure should not exceed the optional NOx standard, and (4) modifying the definition of auxiliary power system (APS) in the ATCM portion of the rulemaking to extend the availability of compliant APSs as a compliance alternative to buses and other non-truck commercial vehicles. These post-hearing modifications were incorporated into the text of the proposed regulations and incorporated documents, along with the modifications approved by the Board at the hearing.

The text of all the modifications to the originally proposed amendments to the regulations and incorporated documents was made available for a supplemental 15-day comment period by issuance of a "Notice of Public Availability of Modified Text." This Notice, a copy of the Resolution 05-55, and the Attachment C document entitled "Staff's Suggested Modifications to Original Proposal," were mailed on June 28, 2006 to all parties identified in section 44(a), title 1, CCR, and to other persons generally interested in the ARB's rulemaking concerning requirements applicable to heavy-duty diesel engines/vehicles, small off-road engines, and cab comfort devices. The "Notice of Public Availability of Modified Text" listed the ARB internet site from which interested parties could obtain the complete text of the incorporated documents that would be affected by the modifications to the original proposal, with all of the modifications clearly indicated. These documents were also published on ARB's Internet web page for this rulemaking http://www.arb.ca.gov/regact/hdvidle/hdvidle.htm on June 27, 2006. Five written comments were received during the 15-day comment period.

After considering the comments received during the 15-day comment period, the Executive Officer issued Executive Order R-06-003, adopting the amendments to Title 13, CCR and to the incorporated documents.

This Final Statement of Reasons (FSOR) updates the Staff Report by identifying and providing the rationale for the modifications made to the originally proposed regulatory texts, including nonsubstantial modifications and clarifications made after the close of the 15-day comment period. The FSOR also contains a summary of the comments received by the Board on the proposed regulatory amendments and ARB's responses to those comments.

Incorporation of Test Procedures and Federal Regulations. The amended test procedures are incorporated by reference in Title 13, CCR sections 1956.8 and 2485. The test procedures in turn incorporate certification test procedures adopted by United States Environmental Protection Agency (U.S. EPA) and are contained in Title 40, Code of Federal Regulations (CFR), Part 86.

Title 13, CCR sections 1956.8 and 2485 identify the incorporated ARB documents by title and date. The ARB documents are readily available from the ARB upon request and were made available in the context of this rulemaking in the manner specified in Government Code Section 11346.5(b). The CFR is published by the Office of the Federal Register, National Archives and Records Administration, and is therefore reasonably available to the affected public from a commonly known source.

The test procedures are incorporated by reference because it would be impractical to print them in the CCR. Existing ARB administrative practice has been to have the test procedures incorporated by reference rather than printed in the CCR because these procedures are highly technical and complex. They include the "nuts and bolts" engineering protocols and laboratory practices required for certification of regulated engines and equipment, and have a very limited audience. Because ARB has never printed complete test procedures in the CCR, the affected public is accustomed to the incorporation format utilized therein. The ARB's test procedures as a whole are extensive and it would be both cumbersome and expensive to print these lengthy, technically complex procedures with a limited audience in the CCR. Printing portions of the ARB's test procedures that are incorporated by reference would be unnecessarily confusing to the affected public.

The test procedures incorporate portions of the CFR because the ARB requirements are substantially based on the federal regulations. Manufacturers typically certify vehicles and engines to a version of the federal emission standards and test procedures that have been modified by state requirements. Incorporation of the federal regulations by reference makes it easier for manufacturers to know when the two sets of requirements are identical and when they differ. Each of the incorporated CFR provisions is identified by date in ARB's test procedure documents.

Fiscal Impacts. The Board has determined that this regulatory action will not create create costs or savings, as defined in Government Code section 11346.5(a)(6), 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 costs or savings to state or local agencies.

Consideration of Alternatives. The amendments and new regulatory language proposed in this rulemaking were the result of extensive discussions and meetings involving staff and the affected engine, truck, and cab comfort device manufacturers, trucking business associations, and others. In the Staff Report, released and made

available to the public on September 2, 2005, staff evaluated and ultimately rejected four potential alternatives which included: (1) solely relying on educational and incentive programs to encourage sleeper truck owners and operators to *voluntarily* reduce idling and use cab comfort devices, (2) in lieu of engine shutdown systems, require engine manufacturers to either certify engines to a low NOx idle emission standard (30 g/bhp-hr) or to install a compliant APS on all sleeper berth equipped trucks sold in California, and also eliminate the sleeper truck exemption from the in-use idling restriction requirement, (3) require engine shutdown systems and only allow alternative cab comfort devices using zero emitting technologies such as battery electric APSs, fuel cell APSs, thermal storage systems, truck stop electrification, or any other zero emitting technology, and also eliminate the sleeper truck exemption from the in-use idling restriction requirement, and (4) pursue requirements that only regulate new 2008 and subsequent model-year trucks and do not modify the existing exemption for sleeper trucks in the in-use idling restriction requirement.

After the Staff Report was released, the Engine Manufacturers Association (EMA) transmitted a proposal to staff, that new engines in all 50 states would be equipped with a password protected, programmable engine shutdown system that would activate after the engine idled five minutes, but that could also be deactivated by the truck owner or owner-operator. In addition, all sleeper trucks would continue to be exempted from the in-use idling restriction requirement. EMA also suggested that if ARB did not accept the proposal to maintain the exemption of sleeper trucks, ARB should provide another option that phased out that exemption according to date of manufacture, or by using a percentage-of-fleet approach, with continued exemption of 2010 and newer model year trucks. ARB rejected this proposal because it would not be as effective in reducing emissions and in enforcing the idling restriction requirements as the proposed adopted amendments.

For the reasons set forth in the Staff Report, and based on staff's comments and responses at the hearing and in this FSOR, the Board has determined that no alternative considered by the agency or brought to the attention of the agency would be more effective in carrying out the purpose for which the regulatory action was proposed or would be as effective and less burdensome to affected private persons than the action taken by the Board.

II. MODIFICATIONS TO THE ORIGINAL PROPOSAL

A. MODIFICATIONS APPROVED BY THE BOARD AT THE PUBLIC HEARING AND THAT WERE IDENTIFIED IN THE 15-DAY PUBLIC COMMENT PERIOD

As previously discussed, during the October 20, 2005 public hearing, the Board approved the adoption of the originally proposed amendments with several modifications. The modifications approved by the Board and those identified subsequent to the Board hearing were explained in detail in the Notice of Public Availability of Modified Text that was issued for a 15-day public comment period that

began on June 28, 2006, and ended on July 13, 2006. In order to provide a complete FSOR for this rulemaking, these modifications and clarifications are also described below by section number.

1. Modifications to Title 13, CCR, Section 1956.8

Override Switch Setting During Power Take Off Mode

The provision allowing the engine shutdown system to be overridden during power take-off operation was modified to remove the requirement that the override switch be designed to fail in the "off" setting. This change was made to accommodate safety concerns. (Section 1956.8(a)(6)(A)2.a)

Exempting Military Tactical Vehicles, Authorized Emergency Vehicles, and Medium-Duty Vehicles from the Engine Shutdown System Requirement

Paragraph (a)(6)(B) was modified to explicitly exempt military tactical vehicles, authorized emergency vehicles, and medium-duty vehicles from the engine shutdown system requirement. The modifications simply clarify the applicability of the requirement since Title 13, CCR, Section 1905, and California Vehicle Code Section 27156.2 already exempt military tactical vehicles and authorized emergency vehicles, respectively, from any motor vehicle emission control device requirements.

With respect to medium-duty vehicles, staff clearly stated in its presentation to the Board that this requirement only applied to heavy-duty diesel engines installed in vehicles with a gross vehicle weight rating greater than 14,000 pounds. However, this was not explicitly stated in the original proposed regulatory text. The modifications remedy this oversight.

Shutdown System Override for Exhaust Emission Control Device Regeneration

Section 1956.8(a)(6)(A)2.c adds a new provision that allows the engine shutdown system to be overridden during periods when the vehicle's exhaust emission control device (e.g., diesel particulate matter trap) requires regeneration during periods of engine idling and the override is needed to prevent aftertreatment or engine damage. The engine shutdown system may be overridden for no longer than 30 minutes during regeneration periods. Regeneration events requiring longer than 30 minutes are subject to advance Executive Officer approval. This modification also requires that any override system incorporate a light on the vehicle's dashboard to indicate that the exhaust emission control device is regenerating during idling conditions.

Shutdown System Override for Engine Servicing, Maintenance or Diagnosis

Section 1956.8(a)(6)(A)2.d includes a provision allowing the engine shutdown system to be overriden for up to 60 minutes if required for engine servicing, maintenance, or diagnostic routines that require idling the truck engine for more than 5 minutes. This provision requires the engine shutdown system be temporarily deactivated only with the use of a diagnostic scan tool to prevent unauthorized overrides of the shutdown system.

Engine Emissions when Certifying to the Optional Idling Standard[1]

Paragraph (a)(6)(C) was modified to clarify how a manufacturer may determine whether or not emissions of carbon monoxide (CO), non-methane hydrocarbons (NMHC), and particulate matter (PM) are adversely affected when certifying an engine to the optional oxides of nitrogen (NOx) idling standard. The modification states that a manufacturer certifying an engine to the optional NOx standard may compare emissions of CO, NMHC, and PM from the supplemental NOx idling test procedure to corresponding emissions from the idle mode of the supplemental steady state cycle (European Stationary Cycle) and/or idle portions of the transient test cycle (the Federal Test Procedure). With approval from the Executive Officer, a manufacturer may also use other methods of ensuring emissions are not adversely affected in meeting the optional NOx standard. In addition, to avoid confusion with the term “supplemental steady state test cycle” (which refers to the European Stationary Cycle), the term “supplemental steady state test procedure” (which referred to the optional NOx standard certification test cycle) has been changed to “supplemental NOx idling test procedure.”

Incorporate Revisions into Applicable Test Procedure Section

Paragraph (b) specifies by reference the proposed revised test procedures applicable to heavy-duty diesel engines and vehicles. This paragraph was inadvertently left out from the original proposed text of the regulation. The modification remedies this oversight.

Correction of Minor Oversight

Subsequent to the hearing, staff realized it had inadvertently omitted the phrase “reference in subsection (b)” to subparagraph (a)(6)(C) of section 1956.8, which specifies vehicle label specifications incorporated by reference into the engine shutdown system requirements. The modification corrects this oversight.

[1] This modification has itself been revised by nonsubstantive changes subsequent to the close of the 15-day public comment period. The specific nonsubstantive changes are described in detail below in section II.B of this FSOR, but for purposes of this footnote, the most pertinent change is that the 15-day notice referred to reactive organic gas (ROG) emissions but ARB’s exhaust emission standards applicable to heavy-duty diesel engines only specify non-methane hydrocarbon (NMHC) levels, so this modification has been revised accordingly.

2. Modifications to the "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines"

Label Location and Attachment Requirement

Paragraph 35.B.4.3.1 of Part I, Subpart A, was modified to clarify that the vehicle label for an engine certified to the optional NOx idling emission standard or equipped with a certified/verified APS should be affixed on the designated location on the exterior area of the hood.

Label Application

Paragraph 35.B.4.5 of Part I, Subpart A, was modified to add truck manufacturers as possible installers of labels for engines certified to the optional NOx idling standard or for compliant diesel-fueled auxiliary power systems (APS). Originally, the text included only dealers and distributors as potential installers of labels.

Compliance with the Optional NOx Idling Emission Standard

This modification clarifies that to demonstrate compliance with the optional NOx idling emission standard, the calculated average NOx emissions of each mode of the supplemental NOx idling test procedure may not exceed the optional NOx idling standard of 30 grams per hour. (Part II Test Procedures, Subpart N, 86.1360-2007, subsection B.4.2.3)

3. Modifications to Title 13, CCR Section 2485

Exempting Military Tactical Vehicles from In-Use Idling Requirement

Paragraph (d)(2)(K) was modified to clarify that the current exemption of military tactical vehicles from the in-use idling requirement also encompasses operational modes including training, testing, and deployment.

Use of On-Shore Electrical Power or Equivalent Technologies

Paragraph (c)(3)(C) was modified to clarify that technologies utilizing on-shore electrical power or comparably clean emission technologies will be allowed as options to comply with the in-use idling regulations.

Battery Powered APS and Electric Infrastructure Provisions

Paragraph (c)(3)(C) was modified to clarify that a manufacturer using a battery powered APS, fuel cell APS, power inverter/charger for on-shore electrical power, or an electric infrastructure or comparably clean technology is not required to seek and receive advance Executive Officer approval before using such alternative technology. Attachment C to Resolution 05-55 does not explicitly mention fuel cell APSs as an equivalently clean technology, but subsequent to the hearing, staff determined that fuel cell APSs are within the category of comparably clean technologies that should also not require advance Executive Officer approval.

Coordinating Exemption for Aftertreatment System Regeneration or Maintenance Provision with Title 13 CCR Section 1956.8(a)(6)(A)2.c

Paragraph (d)(2)(G) was modified to clarify that idling occurring during the override provisions in Title 13, CCR, Section 1956.8(a)(6)(A)2.c for exhaust aftertreatment system regeneration or maintenance, as indicated by the required dashboard indicator light, is also exempted from the 5 minute in-use idling restriction. This clarification is needed to maintain consistency between the new engine and in-use components of the regulation.

Expanding Definition of APS to Other Classes of Vehicles

The definition for APS was expanded to include vehicles other than sleeper berth equipped trucks that might wish to utilize a compliant APS as an alternative to idling their main engines. The definition of an APS (Section 2485(h)) was therefore amended to allow non-truck commercial vehicles (e.g., buses) to utilize compliant APSs.

B. MODIFICATIONS MADE SUBSEQUENT TO THE 15-DAY PUBLIC COMMENT PERIOD

During the 15-day public comment period, the Engine Manufacturers Association (EMA) submitted comments that specified inadvertent mistakes by staff, and that requested clarification of issues related to the test procedures for the optional NOx idling emission standard. Staff has reviewed and agrees with these comments, and has made changes to accommodate them. Staff has also discovered an oversight in the test procedures for the optional NOx idling emission standard and has modified them to correct the oversight. Each of these modifications constitutes a nonsubstantial change to the regulatory text because, as described in greater detail below, each modification clarifies the requirements or conditions as set forth in the original text (or in the original text as modified in the Notice of Public Availability of Modified Text) and does not materially alter those requirements or conditions.

1. **Substitute NMHC for ROG in Optional NOx Idling Emission Standard Regulation and Test Procedures**

EMA points out that the regulatory text and test procedures relating to the optional NOx idling emission standard use the term reactive organic gases (ROG), but that the regulated species for heavy-duty engines is non-methane hydrocarbons (NMHC). Staff agrees. ARB's heavy-duty diesel engine exhaust emission standards for hydrocarbon emissions only specify non-methane hydrocarbon (NMHC) levels, and this is widely known by the regulated community. The staff has therefore accordingly modified the regulation and test procedures.

a. Title 13, CCR Section 1956.8(a)(6)(C)
Each of the three citations to ROG has been replaced by the term NMHC.

b. California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles Part I.A.11.B.6.3
Each of the three prior citations to ROG has been replaced by the term NMHC.

2. Substitute "or" for "and/or" in the Optional NOx Idling Emission Standard Regulation and Test Procedures

EMA states that the regulation and test procedure requires manufacturers certifying engines to the optional NOx idling emission standard to compare emissions generated during the supplemental NOx idling test procedure to emissions generated during the idle mode of the supplemental steady-state test "and/or" during the idle portions of the transient test cycle. EMA states the usage of the "and/or" term is ambiguous since it can be interpreted either as a conjunctive or a disjunctive term, or both.

Staff's intent in drafting this provision was to allow a manufacturer to choose which test cycle it wanted to use for comparison to the supplemental NOx idling test procedure- either the idle mode of the supplemental steady-state test, the idle portion of the transient test cycle, or another test procedure, subject to advance Executive Officer approval. Staff's understanding is that the term "and/or" is interpreted as a disjunctive term, but is amending the regulation and test procedure by substituting "or" for "and/or" to eliminate any possibility of confusion.

a. Title 13, CCR Section 1956.8(a)(6)(C)
The term "and/or" in the fourth sentence has been replaced by the term "or".

b. California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles Part I.A.11.B.6.3
The term "and/or" in the fourth sentence has been replaced by the term "or".

3. Clarify Engine Torque Tolerances Specified by the Supplemental NOx Idling Test Procedure

EMA states that the supplemental NOx idling test procedure requires a manufacturer to maintain the test engine's torque within +/- 2% of the target load level, that this specification is infeasible at the loads represented by the test modes, and recommends instead that the torque tolerance be set at +/- 2% of the maximum torque of the engine.

Staff intended to specify a torque tolerance consistent with that specified in the U.S. EPA's heavy-duty diesel engine test procedures, which requires that torque be maintained within +/- 2% of maximum torque of the engine *at that test speed.* Staff has accordingly modified the test procedure to expressly reflect its intent.

a. California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles Part II.N.86.1360-2007.B.4.2.2

The last sentence in this section is amended by inserting "of the maximum torque at the test speed." to clarify staff's intent that the torque tolerance is fully consistent that specified in the U.S. EPA's heavy-duty diesel engine test procedures.

4. Clarification that Temperature Stability for Supplemental NOx Idling Test Procedure is Determined by Engine Coolant Temperature

The supplemental NOx idling test procedure specifies that engine emissions must be measured only after temperature stability is attained. The procedure defines temperature stability "as the point at which the engine coolant is within 2% of its mean value for at least 2 minutes." Although it is apparent that it is in fact the temperature of the engine coolant that must be measured to determine temperature stability, the term "temperature" was inadvertently omitted from the test requirements section of the supplemental NOx idling test procedure. Staff is therefore modifying the test procedure to expressly clarify that the engine coolant temperature is the parameter that determines temperature stability, and that the reference to thermostat is to the engine's thermostat.

a. California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles

(i)Part II.N.86.1360-2007.B.4.2.1(a), Part II.N.86.1360-2007.B.4.2.2

Insert the term "temperature" immediately following the term "engine coolant" in the third sentence of Part II.N.86.1360-2007.B.4.2.1.(a), and in the third and sixth sentences of Part II.N.86.1360-2007.B.4.2.2.

(ii) Part II.N.86.1360-2007.B.4.2.1(b)

Insert the term “engine” immediately prior to the term “thermostat.”

III. SUMMARY OF COMMENTS AND AGENCY RESPONSE

The ARB received written and oral comments during the 45-day comment period in response to the September 2, 2005 public hearing notice. Written comments were also received during the 15-day comment period in response to the notice of proposed modified text made available for comment on June 28, 2006. Listed below are persons and organizations that submitted comments.

During the 45-day comment period, the Board received written comments from:

	Name and Affiliation (If Any)	Written Comment Date Received
1	John Goodrich[2]	9/16/2005
2	Larry Green, Sacramento Metropolitan Air Quality Management District (SMAQMD)	9/16/2005
3	John W. Duerr, Detroit Diesel Corporation (DDC)	10/14/2005
4	J. R. Mandel and Timothy French, Engine Manufacturers Association (EMA)	10/14/2005
5	David L. Modisette, California Electric Transportation Coalition (CalETC)	10/14/2005
6	Schuyler Kennedy	10/5/2005
7	Irvin Dawid	10/14/2005
8	Karla Capers	10/7/2005
9	Stan and Jeanie Haye	10/17/2005
10	Arthur Unger	10/17/2005
11	Rex Greer, Pony Pack, Inc.	10/19/2005
12	David A. Piech, International Truck & Engines Corporation (International)	10/19/2005
13	California Trucking Association (CTA)	10/19/2005

[2] Mr. Goodrich’s comment was not specifically directed at the proposed amendments or to the procedures used by ARB in proposing or adopting the proposed amendments. Specifically, Mr. Goodrich’s comment was directed at new diesel passenger cars operating on clean diesel fuel. Because this rulemaking only applies to new and in-use heavy-duty diesel vehicles, the comment is beyond the scope of the rulemaking.

14	Frank Love, Love's Travel Stops & Country Stores (Love's Travel Stops))	10/19/2005
15	Lisa Mullings, NATSO, Inc. (NATSO) [National Trade Association representing truckstops and travel plazas]	10/19/2005
16	Jack P. Broadbent, Bay Area Air Quality Management District (BAAQMD)	10/19/2005
17	David Everhart IdleAire Technologies Corporation (IdleAire)	10/19/2005
18	Rich Wagner & Bob Jorgensen, Cummins, Inc. (Cummins)	10/19/2005
19	Lola Ungar	10/19/2005
20	Marcie Brown	10/19/2005
21	Allen Lilleberg	10/19/2005
22	***One written comment was submitted on behalf of the following organizations and public citizens:*** Don Anair, Union of Concerned Scientists Kathryn Phillips, California Clean Air for Life Campaign Environmental Defense David Lighthall, Ph.D. Relational Culture Institute Karen G. Pierce, Bayview Hunters Point Community Advocates Diane Bailey, Natural Resources Defense Council Bonnie Holmes-Gen, American Lung Association of California Bill Magavern, Sierra Club California Brian Beveridge, West Oakland Environmental Indicators Project David Schonbrunn, Transportation Solutions Defense and Education Fund Teri Shore, Bluewater Network, A division of Friends of the Earth Todd Campbell, Coalition for Clean Air Tiffany Schauer, Our Children's Earth Foundation Anne Kelsey Lamb, Regional Asthma Management & Prevention (RAMP) Initiative	10/19/2006

	Joseph K. Lyou, Ph.D., California Environmental Rights Alliance Martha Dina Arguello, Physicians for Social Responsibility – Los Angeles Luis Cabrales, Residents of Pico Rivera for Environmental Justice Melissa Guerrero South Gate Resident Lynn Devine, (American Lung Association of California) Craig Jones, MD, (University of Southern California Medical Center, Division of Allergy and Immunology), California Asthma Partners Linda Weiner, Bay Area Clean Air Task Force (BACATF) Susan Frank, Kirsch Foundation Harold J. Farber, MD, FAAP, FCCP, Vallejo, CA Carolina Simunovic Fresno Metro Ministry Alise Cappel, Environmental Law Foundation (ELF) Rosenda Mataka, Grayson Neighborhood Council V. John White, Center for Energy Efficiency and Renewable Technologies	
23	Sue Chiang	10/20/2005

At the October 20, 2005, Board meeting, the ARB received the following written or oral comments:

	Name and Affiliation (If Any)	Written Comment (Date Received)	Oral Testimony
1	Dawn Friest Engine Manufacturers Association (EMA)	10/14/2005 (#4 above)	YES
2	Will Schaefer, Robert M. Clarke Truck Manufacturers Association (TMA)	10/20/2005	YES

3	Mike Tunnell American Trucking Association (ATA)	10/20/2005	YES
4	Staci Heaton California Trucking Association (CTA)	10/19/2005 (#13 above)	YES
5	Randal Friedman U.S. Department of Defense (U.S. DOD)	NO	YES
6	Jason Vega California Council for Environmental and Economic Balance (CCEEB)	NO	YES
7	Rolf Lichtner, Webasto Product, North America, Inc	NO	YES
8	David Everhart IdleAire Technologies Corporation (IdleAire)	NO	YES
9	John Fahrenbach IdleAire Technologies Corporation (IdleAire)	NO	YES
10	David Modisette, California Electric Transportation Coalition (CalETC)	10/14/2005 (#5 above)	YES
11	Warner Harris, Coval H2 Partners. LLC	10/20/2005	YES
12	Rex Greer, Pony Pack, Inc.	10/19/2005 (#11 above)	YES
13	Peter Rooney, Pony Pack, Inc.	NO	YES
14	Andrea Samulon, Pacific Institute	NO	YES
15	Diane Bailey, NRDC	10/19/2005 (#22 above)	YES
16	Karen G. Pierce Ditching Dirty Diesel Collaborative	NO	YES
17	Bonnie Holmes-Gen, American Lung Association of California	10/19/2005 (#22 above)	YES
18	Don Anair, Union of Concerned Scientists	10/19/2005 (#22 above)	YES
19	Wayne Lorentzen, California National Guard (CNG)	10/20/2005	YES
20	Bill Magavern, Sierra Club of California	NO	YES

During the 15-day comment period, the ARB received the following written comments:

	Name and Affiliation (If Any)	Written Comment Date Received
1	Theresa Acerro[3]	06/28/2006
2	Gerald Orcholski[4]	07/06/2006
3	Vinu Arumugham	07/09/2006
4	Dawn Friest Engine Manufacturers Association (EMA)	07/13/2006
5	Robert Clarke Truck Manufacturers Association (TMA)[5]	07/13/2006

Set forth below is a summary of each objection or recommendation made regarding the specific regulatory action proposed, together with an explanation of how the proposed action was changed to accommodate each objection or recommendation, or the reasons for making no change. The comments have been grouped by topic whenever possible. Comments not involving objections or recommendations specifically directed toward the rulemaking or to the procedures followed by the ARB in this rulemaking are not included.

Numerous organizations and individual public citizens submitted comments in support of the adoption of the rulemaking, including: the SMAQMD, CalETC, BAAQMD, Union of Concerned Scientists, Environmental Defense, Relational Cultural Institute, Bayview Hunters Point Community Advocates, NRDC, American Lung Association of California , Sierra Club of California , West Oakland Environmental Indicators Project, Transportation Solutions Defense and Education Fund, Bluewater Network, Coalition for Clean Air, Our Children's Earth Foundation, Regional Asthma Management and Prevention Initiative, California Environmental Rights Alliance, Physicians for Social Responsibility – Los Angeles, Residents of

[3] Ms. Acerro's comments were not specifically directed to the modifications described in the Notice of Public Availability of Modified Text issued for a 15-day public comment period beginning on June 28, 2006. Specifically, her comments stated that buses and recreational vehicles should not be exempted from the new engine idle shutdown requirement. Because these comments are not directed to a modification within the scope of the 15-day notice, they are not addressed in this FSOR.

[4] Mr. Orcholski's comment expressed general support for the rulemaking but was not specifically directed to the modifications described in the Notice of Public Availability of Modified Text issued for a 15-day public comment period beginning on June 28, 2006. Because this comment is not directed to a modification within the scope of the 15-day notice, it is not addressed in this FSOR.

[5] TMA's comments were not specifically directed to the modifications described in the Notice of Public Availability of Modified Text issued for a 15-day public comment period beginning on June 28, 2006. Specifically, these comments were: (1) The ARB should reconsider TMA's comments relating to the proposed labeling requirements, (2) the leadtime requirements for the new engine idle shutdown and the in-use idling portion of the rulemaking are inadequate, (3) the definition of "tamper-resistant and nonprogrammable" in 13 CCR section 1956.8(a)(6)(A)(1) is unclear, and (4) the new engine shutdown timer portion of the rulemaking conflict with federal hours of service regulation. Because these comments are not directed to a modification within the scope of the 15-day notice, they are not addressed in this FSOR.

Pico Rivera for Environmental Justice, Melissa Guerrero, a South Gate Resident, California Asthma Partners, Bay Area Clean Air Task Force, Kirsch Foundation, Harold J. Farber, MD, Fresno Metro Ministry, Environmental Law Foundation, Grayson Neighborhood Council, Center for Energy Efficiency and Renewable Technologies, Schuyler Kennedy, Irwin David, Karla Capers, Stan and Jeanie Haye, Arthur Unger, Lola Ungar, Marcie Brown, Ditching Dirty Diesel Collaborative, COVAL Partners, Webasto, Theresa Acerro, Gerald Orcholski, and Vinu Arumugham,. The comments by CalETC supported the regulation with some recommendations. Comments in support of the proposed regulatory actions are not summarized below, unless they are relevant to another comment or response.

The comments summarized below are divided into 12 subsections: (A) General Comments, (B) New Engine Shutdown System Requirements, (C) Optional NOx Idling Emission Standard and Test Procedures, (D) Auxiliary Power System Requirements, (E) Electrical Power Based Alternative Technologies, (F) Compliance Cost, (G) Labeling Requirements, (H) Removal of Sleeper Truck Exemption, (I) Air Quality Benefits, (J) Leadtime and Stability Requirements, (K) Federal Hours-of-Service Requirements, and (L) Commerce Clause Comments

A. GENERAL COMMENTS

1. **Comment**: NATSO opposes the proposed elimination of the exemption for sleeper berth equipped trucks from the anti-idling requirements of title 13, California Code of Regulations (CCR) section 2485. The proposal notes that new technologies are entering the market place, but adopting and implementing these new technologies will require more time than the time frame specified in the rulemaking. Although ARB may wish to accelerate the market adoption of idle reduction technologies through a regulatory initiative, it should allow the marketplace more time to incorporate the new idle reduction technologies to ensure that the economic investments by the trucking and travel plaza industries are protected. **(NATSO)**

Agency Response: ARB disagrees that the time frame for eliminating the sleeper berth exemption is too short, because a number of proven and cost-effective idle reduction technologies is currently available. For example, APSs and truck stop electrification have been available in the market for many years, although their penetration into the market has currently been very limited, despite the fact that some of these devices can pay for themselves through fuel savings in one to two and half years. Also, the regulation will encourage the deployment of truck stop electrification at travel plazas, resulting in economic benefits for truck stop operators because more truck drivers will rest at electrified truck stops, especially those without on-board cab comfort devices. Staff does not believe that providing more time for market forces to respond will benefit trucking businesses or truck stop operators, since the attitude of the trucking industry towards these technologies may remain unchanged in the

absence of a regulation. Furthermore, California has severe air quality problems that preclude it from delaying the implementation of this rulemaking.

2. **Comment**: ARB should acknowledge the significant national efforts already underway to develop a national model idling law, and should work with U.S. EPA and industry workgroups to develop U.S. EPA's model idling law, to ensure that truck stops within its borders are able to operate on a level playing field. **(NATSO)**

   Agency Response: U.S. EPA's model state idling law was developed to serve as a guideline for states or local governments that are considering the adoption of idling restrictions in their jurisdiction. U.S. EPA has expressly stated that it is not promulgating any type of regulation regarding vehicle idling, and that the model law should only be considered informational in nature in the model rule ("Model State Idling Law", EPA420-S-06-001, April 2006, Transportation and Regional Programs Division, Office of Transportation and Air Quality). U.S. EPA's Model State Idling "Law" therefore does not require states to adopt an idling rule or to ensure that their idling restrictions are consistent with the model rule. Staff does not understand how the model law will ensure a level playing field for truck stop operators in California, especially since other states are not obligated to implement it. However, to the extent that the comment is directed to requesting that this rulemaking be consistent with U.S. EPA's model law, this rulemaking is largely consistent with the model law. (See also the Agency Response to Comment 3).

3. **Comment**: More than 30 different idling regulations currently exist in various states, counties, and cities, and these contain different limits and exceptions, making it impossible for drivers to know what restrictions are in place and whether a particular jurisdiction even has a regulation. ATA has been working with U.S. EPA in a national effort to bring consistency to idling regulations. Unfortunately, California's idling regulation is inconsistent with existing idling regulations in other states as well as U.S. EPA's efforts to achieve national uniformity through a model law. National efforts are underway to encourage the use of alternatives to idling. However, California's compliance options to the idling regulation – 30 gram per hour NOx engine and APSs with PM traps – simply do not exist. Thus, California's technology-forcing strategy is inconsistent with national and state efforts to reduce idling. **(ATA)**

   Agency Response: The Agency Response to Comment 2 is incorporated herein. This rulemaking consists of requirements applicable to both new and in-use engines. A comparison of this rulemaking's in-use idling requirements with the requirements in U.S. EPA's Model State Idling Law shows that both are largely consistent with each other. For example, both laws restrict idling of diesel trucks to 5 minutes and both contain mostly identical exemptions. The requirements regarding diesel-fueled APSs installed on 2006 and older trucks are also the same. Although the U.S. EPA model law does not provide any specific recommendation for APSs installed on 2007 and newer model year

trucks, it also takes no position against this rulemaking's requirement for a Level 3 verified PM control device. In fact, the model law discusses California's requirement for an APS with a Level 3 PM control device as an example of a compliance option for APSs applicable for 2007 trucks. Furthermore, as stated in the Staff Report, PM filter manufacturers are developing devices for APSs and staff expects them to be verified in time such that fully packaged APS systems will become available in 2008. Trucking businesses can also utilize other currently available, cost-effective technology options (e.g., battery-based APSs, thermal energy storage systems, truck stop electrification, etc.) to provide power for climate control, engine heating, or electrical power purposes that would otherwise be supplied by idling the vehicle's main engine.

The U.S. EPA model law for states does not contain recommendations regarding idling emission controls for new engines, and therefore can not be compared to California's new engine requirements. This option was included to accommodate engine manufacturers' requests for an option to certify engines to a NOx idling emission standard instead of complying with the engine shutdown system requirement. See the Agency Response to Comment 11 for a discussion on the technical feasibility of the optional NOx idling standard. Also, manufacturers would not have requested this alternative compliance option if they believed it is infeasible for 2008. Although, as stated in the Staff Report, staff did not anticipate that manufacturers would be able to comply with this optional compliance option by the 2008 model year, several engine manufacturers have already informed staff that they intend to introduce engines that comply with the optional NOx idling standard by the 2008 model-year. Also, staff expects other states to modify their idling rules to allow trucks that comply with the optional NOx idling requirements to operate within their state.

4. **Comment**: The in-use idling rule presently exempts military tactical vehicles during training. This exemption should be clarified to specify that it also encompasses operational modes including training, testing, and deployment. **(U.S. DOD, CNG)**

Agency Response: During the public hearing, staff informed the Board that its intent in developing the in-use portion of the rulemaking was consistent with this comment. As directed by the Board, staff has accordingly modified the in-use portion of the rulemaking to clarify that that the current exemption of military tactical vehicles from the in-use idling requirement also encompasses operational modes including training, testing, and deployment.

5. **Comment**: [Received during the 15-day public comment period]. Military vehicles should be exempted from idling limits only during combat. Since military vehicles are operated for a vast majority of their lifetimes in non-combat environments, there is no reason to exempt them from the idling limit. **(Vinu Arumugham)**

Agency Response: No change was made in response to this comment. Military personnel must necessarily operate tactical vehicles during training exercises as well as during actual wartime or emergency situations. Requiring training exercises to be significantly different from actual combat operations would impair the military's combat readiness. Therefore, military vehicles are excluded from compliance with the idling requirements during non-combat operations such as training, deployment, or testing.

6. **Comment**: The ARB should forbid idling and send a $100 check to long-haul truck drivers to pay for half of the trucker's bill for a modest hotel/motel near the truck's route. Paying the trucker's bills requires a big bureaucracy, but such cost is much less than paying for health care for those injured by the PM2.5 emissions from diesel engines. **(Arthur Unger)**

Agency Response: ARB appreciates the comment to the extent that it supports restricting the extended idling of sleeper berth equipped trucks. However, this rulemaking does not include any provision to reimburse truck drivers for lodging costs, and ARB believes such reimbursement is unnecessary, since truck drivers can instead choose to use any of the commercially available cost-effective cab comfort devices to provide for cab comfort. Truck operators can quickly recover the cost of such cab comfort devices through fuel and maintenance savings.

7. **Comment**: We support a rule that does not allow trucks to idle all night, but the rule should also apply to buses, which sometimes sit for hours on end idling. **(Stan and Jeanie Haye)**

Agency Response: As discussed in section IV.A.i. of the Staff Report, the ARB is exempting buses from the new engine requirements of this rulemaking because they have large volumes and window areas that require operating the vehicle's main engine to power air conditioning systems with a high heating and/or cooling capacity.

B. ENGINE SHUTDOWN SYSTEM REQUIREMENTS

8. **Comment**: The statement on page 27 of the Staff Report that the key requirement of the new engine idle shutdown timer proposal can be accomplished with only minor modifications in programming the electronic control module (ECM) software to prevent adjustment and tampering is incorrect. That assessment and the lack of a feasibility analysis appears to trivialize the engineering resources required to address this proposal because requiring the engine shutdown system to be non-programmable and tamper-proof will potentially require hardware changes to the ECM, software changes to the engine calibration, and changes to the electronic service tools used to service the heavy-duty engine. This proposal would seriously overburden the engineering resources dedicated to meeting the 2007 and 2010 heavy-duty

engine emission standards as well as the new challenges of the heavy-duty On-Board Diagnostic regulation recently adopted by ARB. **(Cummins)**

Agency Response: As stated in the Staff Report, the automatic engine shutdown system already exists as a programmable feature in most electronically controlled heavy-duty diesel engines. Requiring the engine shutdown system to be non-programmable and tamper proof may require some software changes to the ECM, but the software changes will not require ECM hardware changes, since most of the software changes will result in the removal of programmable features programmed into the ECM. Staff does not believe that the requirements will require changes to the electronic service tools used to service heavy-duty engines, as existing electronic service tools will still continue to perform all of their designed functions except that the feature allowing the ability to reprogram the engine shutdown system for more than 5 minutes will be removed. Staff therefore believes that the automatic engine shutdown requirement will result in negligible costs and minimal additional workload.

9. **Comment**: [Received during the 15-day public comment period]. EMA supports staff's proposal to provide an idle shutdown override to allow for particulate filter regeneration, but the 30 minute allowance proposed is inadequate. The time required to safely complete regeneration is somewhat indeterminate due to variations in filter soot loading and ambient conditions, but will exceed 30 minutes in most cases. In general, up to 35 minutes may represent minimum in-service regeneration time under ideal conditions (ambient, soot loading, etc.) EMA recognizes that staff's proposal includes an allowance to use regeneration events that are longer than 30 minutes, but this will require special advance approval by the Executive Officer. EMA appreciates this allowance, but believes it is inappropriate to rely on a special approval process to provide flexibility needed for the majority of cases. This simply places an extra and unnecessary administrative burden on engine manufacturers and on ARB certification staff. Accordingly, EMA recommends that staff change the maximum regeneration time from 30 minutes to 60 minutes. **(EMA)**

Agency Response: No change was made in response to this comment. The ARB surveyed engine manufacturers regarding the length of time their systems required to complete stationary regeneration before it specified the engine shutdown override allowance for particulate filter regeneration. Engine manufacturers' responses ranged from 15 minutes to 35 minutes, as the length of time needed to safely complete most stationary regeneration events. Based on this information, staff set the engine shutdown override allowance for stationary regeneration to 30 minutes, which means the engine shutdown system is enabled at the end of the 30 minute period and shuts off the engine after 5 minutes, resulting in a total engine operating period of 35 minutes. However, staff recognizes that some engine designs may require additional regeneration, and the rulemaking therefore allows manufacturers, subject to

advance approval by the Executive Officer, to override the engine shutdown system for longer periods of time. Allowing an engine shutdown override time longer than 30 minutes to accommodate only rare events may allow unnecessary idling and emissions, which reduces the emissions benefit of the rulemaking.

10. **Comment:** We would like to seek clarification that the automatic shut off device would not apply to military tactical vehicles operating in California. **(U.S. DOD, CNG)**

Agency Response: During the public hearing, staff informed the Board that its intent in developing the new engine portion of the rulemaking was consistent with this comment. As directed by the Board, staff has accordingly modified the new engine portion of the rulemaking to clarify that military tactical vehicles are exempted from the engine shutdown system requirement.

C. OPTIONAL NOX IDLING EMISSION STANDARD AND TEST PROCEDURES

11. **Comment**: The alternative NOx idling emission standard (30 g/hr) is not technically feasible because NOx aftertreatment devices are not anticipated to be feasible until 2010, as conceded in the Staff Report (pages 13 and 28). **(EMA, Cummins, DDC)**. This lack of feasibility violates the mandates of Health and Safety Code sections 43013, 43018, 43101, and 42 U.S.C. § 7521(a)(3)(A). [Section 202(a)(2) of the federal Clean Air Act **(DDC)**.] Furthermore, this is not a voluntary or optional standard since it is simply an alternative route to compliance "with an emissions control mandate." **(EMA)**

Agency Response: As explained in the Staff Report, staff proposed the alternative NOx idling emission standard and test procedure to accommodate engine manufacturers' requests for an alternative compliance option to the idling shutdown timer requirement. ARB disagrees that the NOx standard is a mandatory requirement. "Optional" is defined as "involving an option: not compulsory," and "option" is defined as "the power or right to choose" [2a] or "something that may be chosen: as an alternative course of action." [3a] (Webster's 10th Collegiate Dictionary (1995)). This rulemaking will require manufacturers to equip their 2008 and subsequent model-year diesel engines with idle shutdown timers unless they choose to certify those engines to the subject optional NOx idling emission standard. This also explains why ARB disagrees with the commenters' characterization of the optional NOx idling alternative as a "standard", as this option is only an alternative to the installation of a technically feasible automatic idle shutdown device (see Agency Response to Comment 8).

The commenters correctly note that the Staff Report states this option is not anticipated to be widely available until 2010 because "NOx aftertreatment devices are not anticipated to be employed and other engine idling controls/strategies have not been fully demonstrated" (Staff Report, p. 13) and

because it is unlikely that engine manufacturers will equip their engines with NOx aftertreatment devices that are capable of complying with the NOx emission standard before the 2010 model-year (id. at 28). However, ARB disagrees that the NOx idling emission standard is not technically feasible. As discussed in section IV.A.iii. of the staff report (p. 11), several engine manufacturers have indicated that existing NOx aftertreatment devices (such as NOx adsorbers) demonstrate the potential to reduce NOx emissions during idling. Manufacturers have also suggested that other strategies, such as advanced combustion processes, exhaust gas recirculation, operational controls such as cylinder deactivation and/or other idling emission control strategies may be used to meet the optional NOx idling emission standard. The optional NOx idling standard may also be met with engines equipped with NOx catalysts. (Section V.B. of the staff report, p. 27). However, this may require a supplemental heat source to raise the exhaust temperatures to a level that would enable the catalyst to sufficiently reduce NOx emissions, since exhaust temperatures during extended idling are generally lower than the catalyst's light-off temperatures. Furthermore, engine manufacturers would not have requested this option if they believed it is infeasible. In fact, some engine manufacturers have informed staff that they plan to introduce 2008 model-year engines that comply with the optional NOx idling emission standard.

Furthermore, this standard does not violate the cited statues. Health and Safety Code sections 43013 and 43018 authorize ARB to adopt standards and regulations applicable to new and in-use heavy-duty motor vehicles, and section 43101 specifically authorizes ARB to adopt emission standards for new motor vehicles and new motor vehicle engines. The NOx idling emission standard was developed pursuant to the authority of these and other statutory provisions. Section 202(a)(3)(A) of the federal Clean Air Act [42 U.S.C. § 7521(a)(3)] provides that regulations prescribed by *the Administrator of the U.S. EPA* applicable to emissions of oxides of nitrogen "…from classes or categories of heavy-duty vehicles or engines … shall contain standards which reflect the greatest degree of emission reduction achievable through the application of technology which the Administrator determines will be available for the model year in which standards apply, giving appropriate consideration to cost, energy, and safety factors associated with the application of such technology." Section 202(a)(2) of the federal CAA provides that any regulation prescribed *by the Administrator of the U.S. EPA* under section 202(a)(1) of the federal CAA shall take effect "after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period." These provisions are not directly applicable to the NOx idling emission standard because ARB, not the U.S. EPA, is promulgating the NOx idling emission standard. To the extent that the comments imply the rulemaking is inconsistent with section 202(a) of the federal CAA, the Board directed staff that to the extent it is necessary, to either request a waiver or a confirmation that the regulations are within the scope of an existing waiver of federal preemption pursuant to section 209(b) of the CAA.

12. **Comment**: DDC opposes discontinuing the sleeper truck exception, but fully supports the availability of an optional NOx idling standard as an alternative to the mandatory 5 minute idle shutdown requirement and the use of APS and/ or fuel-fired heaters. **(DDC)**.

Agency Response: ARB appreciates DDC's support for the proposed optional NOx idling standard. For a response to the sleeper truck exemption issue, see the Agency Responses to Comments 58 through 60 and 73 and 74.

13. **Comment**: Under the proposal, an APS would be qualified for use if it complies with California off-road and/or federal nonroad emission standards and procedures for its power category and is equipped with a verified Level 3 (85% reduction) strategy for particulate matter (PM) control or has its exhaust routed directly to the vehicle's exhaust system upstream of the particulate filter. California and federal emission off-road / nonroad emission standards for engines in the below 19 kW category are 7.5 g/kWh for NOx+NMHC and 0.80 g/kWh for PM. When equipped with an 85% effective Level 3 PM control, assuming such a control were available, a California compliant off-road engine could emit 7.5 g/kWh of NOx+NMHC and 0.12 g/kWh of PM. Using ARB's assumption of 5 kW of peak power demand, this APS would emit approximately 37.5 g/hr of NOx+NMHC[2] and 0.60 g/hr of PM when operating in-use to provide cab climate control and electrical needs during driver rest periods.

2008 and later heavy-duty engines certified for on-highway use will be equipped with PM filters and will have PM emissions that are near zero and will certainly have idle PM emissions that are well below 0.60 g/hr. Similarly, the NMHC emissions of these engines will be essentially zero. Given the substantial PM and NMHC advantages that the main engines are likely to have relative to qualified APSs, DDC believes that the objective of environmental equivalence between main engine idling and APS usage suggests that the optional NOx idle limit be set no lower than 40 g/hr rather than 30 g/hr as ARB has proposed.[3 4] (**DDC**)

Agency Response: First, staff would like to clarify that the required APS Level 3 PM control or 85 percent PM reduction is relative to the Tier 4 off-road PM standard which is 0.4 gram per horsepower-hour and not 0.8 grams per horsepower-hour as DDC suggests. Second, the APS does not operate at the peak power load of 5 kilowatt at all times, and therefore multiplying the APS standards by 5 kilowatt to determine the gram per hour emission rates grossly overestimates the APS emission rates. A more appropriate load would be to use the annual average power demand of 2.7 kilowatt, as specified in the Staff Report (page 45). Finally, staff does not agree that idling truck engines will have substantial PM and NMHC advantages than qualified APSs. This is because staff estimate that a PM trap equipped on-highway engine to emit 0.16 grams per hour PM (Staff Report page 44) and this is comparable to an APS emission rate of 0.16 grams per hour (estimated assuming an APS with a Level

3 PM control device emitting at the standard of 0.4 grams per horsepower-hour and the average load of 2.7 kilowatt). Staff also believes that the truck engine does not have a significant advantage relative to a qualified APS in terms of NMHC emissions. Staff estimates a 2007 and later engine to emit 8.3 grams per hour of HC while a qualified APS emits approximately 1.0 grams per hour (estimated assuming a 7.5 grams per horsepower-hour NOx+NMHC, a 2.7 kilowatt load, and the NMHC to be 5 percent of the total NOx+NMHC).

13a. **Comment**: (*Footnote 2 of comment 13*) DDC is aware that ARB has estimated the NMHC+NOX emission rate at 15.1 g/hr (ISOR page 46). For several reasons, we believe this estimated value is inappropriate as a basis for establishing the optional NOx idling standard. First, this estimate is based on a survey of certified emission levels for off-road engines in the 5-19 kW rated power range. ARB indicates that the average NOx+NMHC emissions from this survey is 5.6 g/kW-h. The certification standard is 7.5 g/kWh for engines in this power category and under 2485 (c)(3)(A) use of an APS emitting at the level of the off-road standard would be permitted. As such, it is the emission standard and not the average emissions of certified engines that should be the basis of the idle emission standard. (**DDC**)

Agency Response: DDC's statement that ARB used a NOx+NMHC emission rate of 15.1 gram per hour to determine the NOx idling emission standard is incorrect. ARB intends to set the optional NOx idle standard at a level equivalent to real-world, in-use APS NOx emissions, as opposed to the APS NOx certification standard. In the absence of actual in-use emissions test data for APSs, staff analyzed off-road engine certification data for engines in the less than 19 kilowatt power category to estimate the in-use emissions from these engines. Staff's analysis yielded an average in-use APS emission rate of 5.6 grams per kilowatt-hour for NOx+NMHC emissions. Assuming a 5 kilowatt of peak power demand, the APS NOx+NMHC emissions would be 28 grams per hour. Assuming the NOx portion to be 95 percent of the total NOx+NMHC emissions, the APS NOx emissions would be 26 grams per kilowatt hour. However, considering the relative size of the truck engine, staff rounded this number up and set the NOx idling standard at 30 grams per hour. The commenter's use of the APS engine standard to set an equivalent NOx idle standard for the truck engine does not reflect the real-world emissions from APSs. Furthermore, only the NOx component of the emissions should be considered in setting the NOx idling standard, rather than the total emissions of NOx+NMHC, which the commenter used in calculating its proposed NOx idling standard of 37.5 grams per hour.

13b. **Comment**: (*Footnote 2 of comment 13*) Secondly, It is recognized that the certification emission levels used in this analysis are values that are weighted over the certification test cycle. The brake specific emission levels at particular speed and load operating modes can be considerably different than the weighted cycle values. In fact, for load conditions that are below 40% of the rated engine power, the brake specific emissions increase rapidly and may be

50 or 100% greater than the weighted cycle emissions. ARB estimates that in-use the APS power demand would be about 2.7 kW, well below the 5-19 kW power ratings of the engines in the survey. In all probability the brake specific NOx emission of these APS engines under the conditions they are expected to operate in the field will be considerably higher than the 5.6 g/kWh value that ARB used in their analysis. Finally, the 15.1 g/hr NOx emission rate was generated by multiplying the presumed brake specific NOx emission rate of 5.6 g/kWh by the average applied loading of 2.7 kW. As ARB has acknowledged and to be consistent with the way the idle NOx emissions are being quantified for purposes of assessing compliance, the brake specific emissions should be multiplied by the maximum loading of 5 kW and not the average loading of 2.7 kW. While DDC's estimated APS NOx emission rate of 37.5 g/kWh lacks rigor and shares some of the same deficiencies as the ARB analysis, we believe it is a more accurate, though still somewhat conservative assessment of expected in-use emissions of APS engines. (**DDC**)

Agency Response: Staff agrees that brake specific emission levels at particular speed and load operating modes can be different than the weighted cycle values. However, staff is not sure whether loads below 40% of the rated engine power produce emissions levels that are 50 or 100 percent greater than weighted cycle emissions, since DDC did not provide any data or reference to substantiate this claim. Nevertheless, in determining the brake-specific emission levels during engine certification testing, emissions obtained at load operating modes of 50 percent of maximum test torque and lower are weighted more than emissions for load operating modes above 50 percent[6]. DDC may also be correct that a 2.7 kilowatt power demand may produce emissions that are higher than the certification data average emission rate estimate of 5.6 grams per kilowatt hour. However, contrary to DDC's suggestions, staff did not use the 2.7 kilowatt power or the 15.1 grams per hour emission rate to establish the NOx idling emission standard. As explained in the Staff Report (page 45), the APS average power demand for winter conditions is 2.3 kilowatt and for summer conditions 3.1 kilowatt. Staff determined an annual average power demand of 2.7 kilowatt for purposes of estimating emission reductions and not for establishing the optional NOx idling standard. Consistent with what DDC requested, staff used the maximum loading of 5 kilowatt power to establish the optional NOx idling standard. Contrary to what DDC believes, staff believes this is the appropriate analysis to establish the optional NOx idling standard.

13c. **Comment**: (*Footnote 3 of comment 13*) DDC believes that if, as ARB suggests, the intent is to set an optional idle NOx standard that is equivalent to APS NOx emissions, the surest and fairest way to achieve this objective is to require both APSs and main engines to meet a common grams per hour NOx standard when tested under conditions that simulate the expected in-use operation when

[6] For example, the loading (percent of the maximum test load) and the weighting factors (WF) for the 5-modes of the D2 test procedure are: Mode 1 - 100% of test load and the WF is 0.05; Mode 2 - 75% of test load and the WF is 0.25; Mode 3 - 50% of test load and the WF is 0.30; Mode 4 - 25% of test load and the WF is 0.30; and Mode 5 - 10% of the test load and WF is 0.10.

providing power for cab climate control and electrical loads. This standard should be set after a thorough review of the technical capabilities of the two types of engines. (**DDC**)

Agency Response: In determining the optional NOx idling standard, staff used the best available data on APS power requirements for providing cab comfort. This data included average and peak power demands for both winter and summer conditions. Staff believes that these data together with certification test data are good enough to establish the equivalent optional NOx idling standard.

13d. **Comment**: (*Footnote 4 of comment 13*) As proposed I956.8(a)(6)(C) indicates that in order to become certified to the optional NOx idling standard, the NOx standard must be met without increasing the emissions of CO, PM, or ROG. It is not clear how the "baseline" levels of CO, PM and ROG are to be determined when assessing compliance with this provision. More importantly though, because of the well known emission trade-offs that exist for diesel engines, it will be practically impossible to affect a reduction in NOx emissions without negatively impacting the emissions of CO, PM or ROG to some degree. DDC believes that this troublesome provision relating to CO, PM and ROG emissions needs to be removed if the NOx idling standard is to be a credible option. (**DDC**)

Agency Response: Staff agrees that controlling emissions of one pollutant might affect emissions of other pollutants. However, the purpose of this requirement is to prevent manufacturers from using strategies that may significantly increase emissions of PM, CO, and HC, while controlling NOx emissions in order to meet the standard. One way of ensuring that this does not happen is to compare emissions test results of PM, CO, and HC from the NOx idling test procedure with corresponding emissions from the idle mode of the supplemental emission test or idle portions of the transient test procedure.

14. **Comment**: [Received during the 15-day public comment period]. Section 1956.8(a)(6)(C) specifies that a manufacturer certifying to the optional NOx idling standard must not also increase emissions of CO, PM and reactive organic gases (ROG). However, the regulated species for heavy-duty diesel engines is non-methane hydrocarbons (NMHC). (**EMA**)

Agency Response: Staff agrees. ARB's heavy-duty diesel engine exhaust emission standards for hydrocarbon emissions only specify non-methane hydrocarbon (NMHC) levels, and this is widely known by the regulated community. The staff has therefore accordingly modified the regulation and test procedures by substituting NMHC for ROG.

15. **Comment**: [Received during the 15-day public comment period]. The regulation and test procedure requires manufacturers certifying engines to the optional NOx idling emission standard to compare emissions generated during the

supplemental NOx idling test procedure to emissions generated during the idle mode of the supplemental steady-state test "and/or" during the idle portions of the transient test cycle. The usage of the "and/or" term is confusing and ambiguous since it can be interpreted either as a conjunctive or a disjunctive term, or both. **(EMA)**

Agency Response: Staff's intent in drafting this provision was to allow a manufacturer to choose which test cycle it wanted to use for comparison to the supplemental NOx idling test procedure- either the idle mode of the supplemental steady-state test, the idle portion of the transient test cycle, or another test procedure, subject to advance Executive Officer approval. Staff's understanding is that the term "and/or" is interpreted as a disjunctive term, but is amending the regulation and test procedure by substituting "or" for "and/or" to eliminate any possibility of confusion.

16. **Comment**: [Received during the 15-day public comment period]. The steady state and transient tests are designed to provide emission results for gaseous emissions and PM that are weighted over the prescribed test cycle. These tests do not yield emission results that are specific to the idle portions of these tests and therefore the bases for comparison that ARB requires to be used simply do not exist. **(EMA)**

Agency Response: The Agency Response to Comment 15 is incorporated herein. ARB has identified the steady state and the transient certification tests as two tests that manufacturers may elect to utilize to compare emissions generated during these tests against emissions generated during the supplemental NOx idling test, in order to determine that these emissions are not adversely affected. If a manufacturer does not want to measure emissions using the idle portions of either of the specified two certification test procedures, it can use other procedures, subject to advance Executive Officer approval.

17. **Comment**: [Received during the 15-day public comment period]. When an engine is operating on the idle portions of the steady-state and transient certification tests, it is operating at its normal curb idle speed with no external load applied. The supplemental NOx idling test procedure requires the engine to be operated at two specified modes involving the application of external loads, and the second mode requires the engine to be operated at elevated speed. The higher loads and speed of the supplemental NOx idling modes will result in increased grams/hour emissions of CO, HC, and PM and will make it virtually impossible to comply with the "no increase" requirement.

Also, there is no meaningful baseline that can be used to compare with the CO, NMHC and PM emissions from the two modes of the supplemental NOx idling test procedure. As a result ARB must either develop specific grams per hour standards for these constituents over the NOx idling test or remove entirely requirements for these emission constituents. EMA recommends that ARB follow the latter course. **(EMA)**

Agency Response: The Agency Response to Comment 16 is incorporated herein. The "no increase" requirement serves as a stop-gap measure to prevent manufacturers from adversely affecting emissions of CO, NMHC, and PM in order to comply with the optional NOx idling standard. Staff agrees that the higher load and engine speeds of the supplemental NOx idling modes may result in higher gram per hour emissions of NMHC, CO, and PM than those from tests conducted at curb idle and at no load conditions. However, to check if emissions have been adversely affected or to make emissions from the various tests comparable, manufacturers may compare brake-specific emissions (i.e., normalize the gram per hour high load-high speed emissions by the horsepower load and compare them with gram per horsepower-hour emissions of the idle mode of the supplemental steady state test or the transient test). Manufacturers can also use other acceptable methods to demonstrate that CO, NMHC, and PM emissions are not adversely affected in complying with the optional NOx standard.

18. **Comment**: The proposed supplemental NOX idling test procedure is overly burdensome and does not account for differences between sleeper and non-sleeper trucks. An engine manufacturer must determine needed engine loads for all the numerous truck and engine configurations. A manufacturer can estimate a worst case scenario of engine load, but this would require emission reductions, and therefore an emission level lower than that required to meet the optional standard.

Also, the optional standard requires averaging of Mode 1, a "loaded" curb idle, and Mode 2, ramped sleeper mode. However, as specifically noted by ARB, Mode 2 is primarily used for sleeper berth trucks and not the non-sleeper trucks (e.g. medium duty delivery trucks). Therefore, requiring non-sleeper trucks to be tested and meet sleeper truck requirements is arbitrary and overly burdensome. **(International)**

Agency Response: When a manufacturer certifies heavy-duty engines, it does not know what application the engines will be placed in, or whether they will be installed in a sleeper berth equipped truck or not. Some new trucks are being engineered to allow easy conversion into a variety of body styles. For example, day cabs can easily be converted into sleeper trucks and vice versa. For these reasons, all engines are required to meet the same emission standards irrespective of the truck's initial body design or the application that they are going to be installed in.

Staff also wishes to clarify that the regulation does not require averaging of Mode 1 and Mode 2 emissions. As clarified during the 15-day notice, compliance with the optional NOx idling standard, only requires that the average NOx idling emissions of each mode shall not exceed the optional NOx standard of 30 grams per hour.

19. **Comment**: ARB staff has not provided reasonable justification for the proposed idle emission test procedure. The staff's comment that truck operators elevate idle speed to provide more power for cab comfort and accessory devices may be true, but ARB did not provide statistical data/justification to determine if the specified speeds and loads are indicative of in-use extended idle operation. A manufacturer should be allowed to determine the appropriate idle test procedure, which would be indicative of expected speeds and loads for the different heavy-duty diesel engine platforms and applications, and which would result in a more accurate test procedure for evaluating idle emissions. **(Cummins)**

20. **Comment**: The specified test procedure is unnecessarily complex and may not accurately quantify NOx idle emissions during actual extended idle operations. First, the two modes specified in the supplemental NOx idling test procedure may not represent the conditions that a particular engine will operate in during periods of extended idle in actual use. Manufacturers should be permitted, with Executive Officer approval, to specify an alternative mode or set of speed/load modes with appropriate weighting factors which will represent how the engine is expected to operate in-use during extended rest periods. This flexibility will permit a more accurate appraisal of the actual in-use emissions. **(DDC)**

Agency Response to Comments 19 and 20: The Agency Response to Comment 16 is incorporated herein. Based on staff's knowledge and experience, most truck operators do elevate idle speeds during overlay periods to provide more power to operate cab comfort devices and to reduce vibration of the cab. In determining the test speed for mode 2, staff referred to two survey studies that described operator practices of elevating engine speeds during extended rest periods[7] and to engine manufacturers' practice of setting engine electronics in the automatic stop-start system to operate the engine at higher engine speeds during extended idling. In general, the results from the two survey studies indicated that most truck operators idle their engines at 850 rpm or higher. In particular, the study by Irck et al, notes that nearly 50 percent of the drivers operated their engines at 1000 rpm or higher, with 40 percent reporting between 1000 and 1100 rpm. These studies therefore suggest that idling engines within this speed range is a common practice by a substantial proportion of drivers. Engine manufacturers that equip their engines with automatic engine stop-start systems, some of which include the commenters referenced above, also program the engine's electronics to raise the engine speed to 1100 rpm when the system is in the engine run or start mode. Thus, staff's decision to set the test speed for mode 2 be 1100 rpm is based on best available published data and on manufacturers' own practice of programming engine electronics to elevate engine speeds to 1100 rpm during extended idling

[7] (1) Brodrick, Christie-Joy, N. P. Lutsey, Q. A. Keen, D. I. Rubins, J. P. Wallace and H. A. Dwyer, and S. W. Gouse, III. Truck Idling Trends: Results of a Pilot Survey in Northern California, SAE 2001-01-2828
(2) Irck, David and B. Wilson. NOx Emissions and Fuel Consumption of HDDVs during Extended Idle. Presented to the Coordinating Research Council's 12th Annual On-Road Vehicle Emissions Workshop, San Diego, CA, April 15-17, 2002.

operation. Furthermore, the test procedure does provide manufacturers with the flexibility to use alternative test procedures with prior approval from the Executive Officer.

21. **Comment**: The specified test cycle is unnecessarily complicated by requiring the specified torque to be held within +/- 2 percent. In the idle mode test for the supplemental emission test certification testing, the idle torque requirement cannot exceed 5 percent of the peak torque at peak torque speed. That specification is more appropriate than the proposed requirement by the ARB. First, it is assumed that the ARB staff is specifying +/- 2 percent of the engine idle load, and secondly, 2 percent of a light load or near-zero load as will be the case for curb-idle speed mode, is not only impractical but also not achievable as a test specification. **(Cummins)**

22. **Comment**: The test cycle requires torque to be held within 2 percent throughout each test mode. Holding torque within 2 percent of the torque at the specified test modes (40 N-m/ 30ft-lb at mode 2 and approximately zero at mode 1) is beyond the capabilities of laboratory test systems. This specification should be revised to provide an absolute tolerance of 20 N-m/ 15 ft-lb. **(DDC)**

23. **Comment**: [Received during the 15-day public comment period]. The requirement that the specified torque for the NOx idle test modes must be held within +/- 2% of the target load value is unreasonable and infeasible at the loads represented by these test modes. The torque tolerance specification should be modified to allow for a tolerance of +/- 2% of the maximum torque of the engine. **(EMA)**

Agency Response to Comments 21 through 23: Although it is not clearly stated in the test procedure, staff's intent is that the torque must be held within ±2 percent of the maximum torque at that test speed. This tolerance is consistent with other similar test requirements such as the one specified in U.S. EPA's heavy-duty diesel engine test procedures (CFR, Part 86, Subpart N, section 86.1360-2007). Staff has accordingly modified Section 86.1360-2007.B.4.2.2 of the test procedures to clarify this requirement.

24. **Comment**: The engine coolant, oil, and fuel pumps are integral to operation of the engine and need not be separately accounted for in setting loading requirements at each of the test modes. The air compressor does not typically operate during extended idling and therefore should not be accounted for in the test modes. Similarly, the alternator need not be accounted for other than the electrical load specified in mode 2. Since the NOx emissions limit is established by reference to emissions of an APS certified using off-road certification test procedures, and since these procedures do not account for cooling fan load, cooling fan load should also not be accounted for in this testing. In short, the maximum air conditioning compressor load and the

simulated 2 kilowatt electrical load should be the only external loads applied during this testing. **(DDC)**

Agency Response: No change was made in response to this comment. The test procedure requires the engine manufacturer to determine the appropriate test load for the two test speeds, i.e., curb idle speed and 1100 rpm, and also identifies several engine accessories that may operate during engine idling and therefore need to be accounted for in determining the test load. If an accessory is integral to operation of the main engine, the test procedure does not require it to be separately accounted for in determining the test load. However, the total load or power requirement reported to the ARB during engine certification must include the loads contributed by engine accessories that are also integral to the operation of the engine.

Staff does not agree with the statement that the air compressor does not operate during engine idling. The air compressor is connected to the engine through gears or belts. Therefore, whether it is pumping air or not, the air compressor will be driven by the engine at all times, exerting load on the engine. If the air pressure in the reservoir falls below a certain set pressure (approximately 100 psi), then the air compressor is activated and starts pumping pressurized air to the reservoir, exerting a much higher load on the engine. Similarly, the alternator is also connected to the engine through a belt drive. Whether the alternator is charging the battery or not, it also will exert load on the engine as long as the engine is operating. Therefore, the load required to drive the alternator also needs to be accounted for in determining the test load unless it is accounted for in the engine's certification testing.

Furthermore, the test procedure is designed to measure emissions by simulating engine loads and speeds that typically occur during extended idling of a truck, not to mimic the off-road certification test procedure. Extended idle tests of heavy-duty trucks have shown that the cooling fan cycles on and off during idling, increasing NOx emissions substantially when the cooling fan is operating. Therefore, staff does not agree with the suggestion that the cooling fan load should not be accounted for as part of the test load.

25. **Comment**: First, specifying a percentage temperature tolerance without also specifying the temperature scale is ambiguous. The testing requirements specify that the engine must run for 10 minutes and reach temperature stability (defined as the point at which the engine coolant temperature is within 2 percent of its mean value for at least 2 minutes) before emission sampling can begin. The form of this specification is confusing and may be very difficult to comply with. If the "mean value" referenced is intended to be the mean value of the coolant temperature over the prior 2 minutes of running, then the mean value will be continuously changing value. By the time the test operator can determine if the coolant temperature has been within tolerance over the 2 minute period, a new two minute period, mean value and range of coolant temperatures will be underway. Finally, requiring both a 10 minute running time

and a coolant temperature stability requirement is unnecessary. The conditions for entry into emissions sampling at a test mode should be revised to either 10 minutes of operation at the specified engine speed and load or a showing that the engine coolant temperature did not vary by more than 5 degrees C over the sampling period. Test operators choosing the second option could start emissions sampling upon reaching the specified engine speed and load conditions and terminate sampling after an 1800 second sampling period in which the temperature stability conditions are met. **(DDC)**

Agency Response: The method for determining engine coolant temperature stability specified in the proposed test procedure was adopted from the engine testing procedures in Title 40, Code of Federal Regulations, section 1065.530. Staff proposed this method of determining temperature stability to ensure it was consistent with industry-wide, accepted standardized test procedures that manufacturers must utilize when performing engine tests for emission certification purposes. It is also clear from the proposed language that the term "mean value" is intended to refer to the mean value of the coolant temperature measured during the prior 2 minutes of engine operation. If the coolant temperature is stabilized and remains within tolerance over the prior 2 minutes, it is highly likely that the coolant temperature will also remain within tolerance in any consecutive 2 minute periods; otherwise the coolant temperature is not stabilized. Furthermore, the requirement to operate the engine for at least 10 minutes before taking emissions measurements is needed to avoid measuring emissions immediately after a preconditioning run when the NOx aftertreatment device is still hot and will help ensure that emissions are measured under conditions that are approximately similar to those experienced during an extended idle operation mode. Also, the specified percentage temperature tolerance applies to the CFR specified temperature scale used during certification testing. For example, section 1065.20(a)(3) of the CFR specifies degree Celsius (°C) as the unit of measure for temperatures. A manufacturer may also use degree Fahrenheit (°F) as the unit of measure which would result in a temperature tolerance that is slightly greater than that calculated if the unit of measure was in degree Celsius.

26. **Comment**: Paragraph 4.2.3 of 86.1360-2007(B) requires that the average modal emissions in grams per hour be calculated for each regulated pollutant. Requiring the measurement of each regulated pollutant increases the testing burden and serves no useful purpose, given that only NOx limits are being established. This paragraph should be modified to make it clear that only NOx measurements are required. **(DDC)**

Agency Response: The regulation requires that manufacturers electing to certify to the optional NOx idling standard must demonstrate their engines will not also adversely affect emissions of CO, NMHC, and PM. The emissions of each pollutant are therefore required to demonstrate that CO, HC, and PM emissions are not adversely affected.

D. AUXILIARY POWER SYSTEM REQUIREMENTS

27. Comment: The proposed requirement [Title 13, CCR section 2485(c)(3)(A)(1)(i)] that diesel-fueled APSs must be equipped with a verified Level 3 in-use strategy for particulate matter control is an emission standard that is not technically feasible, in violation of state and federal law. (California Health and Safety Code sections 43013, 43018, and 43101, and the federal Clean Air Act sections 213(a) and 209(e)(2)). **(EMA)**

Agency Response: This requirement is not a standard that regulates new motor vehicles or new motor vehicle engines, but rather constitutes a control on existing, in-use nonroad or off-road engines. APSs are classified as nonroad engines because they do not supply power to propel on-road vehicles; instead, they are mounted on trucks and produce the power for heating or air conditioning that would otherwise be supplied by the vehicle's primary engine. To the extent it is necessary, ARB will be filing a request for authorization for this requirement with the Administrator of U.S. EPA pursuant to Clean Air Act section 209(e)(2).

ARB disagrees that this requirement is not technically feasible. During the time that the Tier 4 off-road regulation was being developed, no aftertreatment technology was commercially available for diesel engines in this category. Thus in the staff report, staff could not specifically elaborate on the feasibility of using aftertreatment on these smaller engines. However, there is no inherent PM emission characteristic that would prevent the use of a PM filter system, similar to what will be used on larger diesel engines. The only characteristic of a small diesel engine that is different than a larger engine is the exhaust temperature, which is typically lower in a small engine, requiring the use of an active regeneration strategy of the PM filter for the system to work. It is well understood that the aftertreatment being developed for 2007 on-road heavy-duty diesel engines will also employ this type of strategy to prevent the possibility of PM filter failure under certain low exhaust temperature operation. Thus, the development of on-road diesel PM filters that will be deployed on all trucks beginning in 2007 is similar to the technology needed for small off-road diesel engines, except the size and active regeneration strategies may need some modifications to fit the application.

Moreover, the APS requirement is consistent with and does not violate the cited statues. Health and Safety Code sections 43013 and 43018 authorize ARB to adopt standards and regulations applicable to new and in-use off-road or nonvehicle engine categories, and the APS requirements at issue were developed in part under the authority of these two provisions. Section 43101 authorizes ARB to adopt emission standards for *new motor vehicles*, and is therefore not applicable to this in-use control of existing nonroad engines.

Section 213(a) of the federal Clean Air Act [42 U.S.C. § 7547(a)] is similarly inapplicable to this requirement because it directs *the Administrator of the U.S.*

EPA to perform specific actions pertaining to promulgating regulations applicable to *new* nonroad engines and vehicles. As previously stated, ARB may request an authorization for the APS requirement with the U.S. EPA. Section 209(e)(2) [42 U.S.C. § 7543(e)(2)] specifies the criteria the Administrator of U.S. EPA will utilize in determining whether to grant ARB an authorization; namely, if there is any basis for finding ARB acted arbitrarily and capriciously in determining the APS requirements are at least as stringent as applicable federal standards, whether California does not need its own standards to meet compelling and extraordinary conditions, and whether California's standards are consistent with section 209 of the CAA. The U.S. EPA will therefore be making each of these findings in responding to ARB's request for authorization under CAA section 209(e).

28. **Comment**: To guard against any unintended increase in aggregate emissions from the expected increase in the installation and use of APSs, ARB is proposing a new series of emission standards for the small diesel-fueled off-road engines that power APSs. The off-road engines used in APSs are already subject to a set of extremely stringent Tier 4 emission standards both as adopted by U.S. EPA and then the ARB. ARB's proposal to establish new and different standards for APSs is a breach of faith and contrary to the agreed-upon commitment by ARB to EMA to fully align and harmonize its off-road standards with those adopted by U.S. EPA**. (EMA)**

29. **Comment**: The proposed regulation is flawed in that U.S. EPA and ARB have already laid out the Tier 4 path as the best feasible technology for the immediate future. If adopted as proposed, this regulation reneges on that agreement to harmonize the development and use of Tier 4 engines. **(Pony Pack)**

Agency Response to Comments 28 and 29: The ARB has adopted regulations that harmonize emission standards on a national basis for most on-road and off-road diesel engines. This regulation does not change the Tier 4 off-road emissions standards nor does it require engine manufacturers to install particulate filters on these engines. Therefore, the statements that this rulemaking breaches ARB's agreements in adopting the Tier 4 off-road emission standards are simply not accurate. Catherine Witherspoon, ARB's Executive Officer, explained at the public hearing that before the Board adopted the Tier 4 standards, it adopted a Diesel Risk Reduction Program to reduce diesel particulates from in-use vehicles, and during the same time the Board was considering the Tier 4 off-road standards, it adopted the current idling regulation (in Title 13 CCR section 2485) and split it in two parts. The Board adopted a five-minute limit for general idling and directed staff to return this year with a proposal regulating sleeper cab idling emissions. Therefore, the idea that the Tier 4 rulemaking somehow prevented ARB from regulating all those other activities is simply just accurate. While it was adopting the Tier 4 off-road standards the Board had multiple regulatory efforts underway.

This rulemaking specifies that if an operator of a 2007 or later model year truck wants to operate a diesel-fueled APS in California, he or she must then control the PM emissions from the APS either by using a Level 3 verified PM control strategy or by routing the APS's exhaust into the exhaust system of the main engine. This requirement is designed to prevent excess emissions when a diesel APS is used instead of idling the truck engine, and specifically allows diesel APSs to be used as a compliance option, instead of flatly prohibiting their use. Particulate filter manufacturers are currently developing filters for APSs and staff expects a fully compliant APS to become available in 2008. Finally, see the Agency Response to Comment 27 for a discussion regarding the feasibility of a PM trap for APS applications.

30. **Comment**: A Level 3 verified particulate filter for a diesel APS using a Tier 4 engine is not yet commercially available. We currently know of no such device for this application. A better course of action would be to require the use of an automatic shut-down/restart cycling system of the small engine when used in an APS. **(Pony Pack).**

Agency Response: The Agency Response to Comment 27 is incorporated herein. The regulation contains a provision allowing a manufacturer to use an alternative compliance strategy for APSs, subject to advance approval from the Executive Officer (see Section 2485(c)(3)(A)(2)). For example, Pony Pack may develop a compliance strategy that uses an automatic shut-down/restart cycling system in combination with other strategies, to demonstrate compliance with the diesel APS requirements.

31. **Comment**: The ARB should delay the aftertreatment requirements of small engines to a future time, such as 2011, when the Tier 4 rule requires the next category of engines (above 25 hp) meet exceedingly low PM levels. **(Pony Pack)**

32. **Comment**: It is not clear whether diesel APS manufacturers will be able to introduce products that meet the required Level 3 PM control, and it may therefore be prudent to revisit the implementation date issue at a later date. **(CCEEB).**

33. **Comment**: APS manufacturers might not be able to meet the proposed requirements (develop a Level 3 verified PM control for APSs). **(ATA, TMA)**

Agency Response to Comments 31 through 33: The Agency Response to Comment 27 is incorporated herein. As stated above, staff believes that particulate filters for APSs will become available before the 2008 implementation date, and therefore disagrees that the implementation date of the APS requirements should be extended. However, in the event that no Level 3 technology is available in 2008, truck operators will have other available cab comfort technologies to choose from that already meet the requirements of

this regulation, such as battery electric APS and thermal energy storage systems.

34. **Comment**: Even if a Level 3 PM trap for the small engines powering APSs becomes available, there is not enough time to integrate the device into this application and then conduct enough field testing and design refinement to ensure the APS will perform satisfactorily and reliably. Also, the cost for such systems may increase beyond the $5,000 to $10,000 range, making them that much less attractive to truck buyers and operators. **(TMA)**

Agency Response: It should be noted that the rulemaking requires that a diesel powered APS be equipped with a verified Level 3 in-use strategy for particulate matter. The PM trap must therefore first be verified under ARB's verification procedures. ARB's verification procedures involve a thorough evaluation of the emission reduction capability of a trap and of its durability. The verification process ensures that the emission reductions achieved by the trap are both real and durable, and that production units in the field are achieving emission reductions that are consistent with the verification. It also requires the trap manufacturer to warrant its product that the verified PM trap is free from defects in design, materials, workmanship, and operation of the trap achieves the emission reduction levels it was verified to. Thus, although the commenter is concerned regarding the time needed to conduct field testing and design refinement, most, if not all, of these efforts will have already been conducted by the trap manufacturer.

As stated in the Agency Response to Comments 31through 33, this rulemaking does not mandate usage of a diesel APS. The cost of diesel APSs equipped with Level 3 verified PM devices reflect staff's best estimates, and the bases for staff's cost estimates are fully set forth in sections V and VII of the Staff Report.

35. **Comment:** Allowing the exhaust from diesel-fueled auxiliary power supplies (APSs) to be routed into a truck's diesel particulate matter aftertreatment device might jeopardize "engine warranties, which can be nullified if the engine is modified. It remains to be seen whether engine manufacturers would consider this to be a form of tampering." **(CTA)**

36. **Comment:** Routing the exhaust from a diesel APS into a truck's diesel particulate matter aftertreatment device requires the heavy-duty diesel engine manufacturer's guidance and approval. (**Cummins)**

Agency Response to Comments 35 and 36: Existing statutory and regulatory provisions regarding warranty requirements for medium and heavy-duty vehicles and engines, and on-road aftermarket parts, ensure that routing a diesel-fueled APS's exhaust into a truck's particulate matter aftertreatment device will not jeopardize the truck's engine warranty.

Staff anticipates that two primary scenarios will occur with regards to the integration of APS and truck exhaust systems; an engine or truck manufacturer certifies a fully integrated APS and vehicle exhaust system, or a third party (aftermarket installer) routes the APS exhaust into a previously certified engine exhaust system configuration. Under the first scenario, the certifying entity (engine or truck manufacturer) must warrant the integrated exhaust system pursuant to applicable warranty provisions (Health and Safety Code sections 43205 "Warranty requirements for light and medium duty motor vehicles) or section 43205.5 "Warranty for motor vehicles other than light and medium duty" and title 13, CCR section 2035 *et seq.),* and is therefore responsible for covering the entire integrated system under its warranty.

Under the second scenario, an entity other than the engine manufacturer routes the APS's exhaust stream into the vehicle's particulate matter aftertreatment device. This modification must comply with the provisions of ARB's on-road aftermarket parts regulation (Title 13, CCR section 2220 to 2225), which requires the entity to demonstrate that the modifications will not increase emissions compared to the baseline configuration, adversely affect the durability of the vehicle's emission control system, or affect the proper operation of the vehicle's on-board diagnostic system. If ARB exempts the modification from the prohibitions of Vehicle Code section 27156 and 38391, that modification cannot jeopardize the engine's warranty. Title 13 CCR section 2036(d)(10) [applicable to 1979 and subsequent heavy-duty vehicles and engines] and section 2037(d)(10) [applicable to 1990 and subsequent medium-duty vehicles and engines] provide:

> "Any add-on or modified part exempted by the Air Resources Board from the prohibitions of Vehicle Code section 27156 may be used on a vehicle or engine. Such use, in and of itself, shall not be grounds for disallowing a warranty claim made in accordance with this article. The vehicle or engine manufacturer shall not be liable under this article to warrant failures of warranted parts caused by the use of an add-on or modified part."

This modification does not require the vehicle engine manufacturer's guidance and approval, because such guidance or approval is not a criterion in ARB's determination whether to issue an aftermarket part applicant an exemption from Vehicle Code sections 27156 and 38391.

37. **Comment**: It is not clear how internal combustion APSs will perform in the real world, and if they will be able to maintain their certified emissions level in the future. ARB should establish an in-use testing and inspection program (i.e., "smog check") for such APSs after the implementation date of this regulation and should conduct bench tests and collect real-world data on APSs and main engine idling, including emissions, fuel usage, maintenance costs, and driver comfort. **(CalETC)**

Agency Response: Diesel-fueled APSs are equipped with small off-road engines and are therefore subject to ARB's off-road engine certification process which verifies that the engine complies with the emission standards over its useful life. Also, diesel-fueled APSs, like other diesel off-road engines, will be subject to any future in-use compliance requirements that may be developed to ensure emission standards are complied with in-use. Staff does not believe it is currently necessary to collect other in-use test data or implement a complex smog check program for APSs to ensure proper in-use emissions performance.

38. **Comment**: Both trucking businesses and equipment manufacturers need adequate time to test and evaluate compliance technologies. Ideally, fleets would like two years lead time to test and evaluate new equipment. Since APS manufacturers will have just over two years to develop compliant equipment (if feasible), fleets will not have adequate time to test and prove the reliability of 2007+ trap-equipped APSs in over-the-road application. As a result, fleets are likely to hold onto their existing equipment longer in order to use the current APS technologies they are familiar with. **(ATA)**

Agency Response: The Agency Response to Comment 34 is incorporated herein. Staff does not agree with the commenter's statement that fleets will keep their pre-2007 trucks in order to use the current APS technology because other factors, such as engine mileage, warranty coverage, and operating costs are more likely to influence business decisions whether to retain or replace trucks. As stated in the Agency Response to Comments 31 through 33, this rulemaking does not require the use of a diesel APS, and a truck operator can choose to use any of the many alternative technologies available in the market. If the owner/operator does not want to spend money on these devices, he or she can adjust his schedule and find a truck stop that provides off-board climate control such as that provided by IdleAire Technology.

39. **Comment**: The Board should direct staff to work with engine and emission control manufacturers to develop electronic fuel control and turbocharger systems for the under 25 hp diesel engines used in APSs. **(Pony Pack).**

Agency Response: ARB staff will continue to perform their duties in developing air pollution control programs to protect the public health, and will participate in other activities as directed by the Board. This request to assist manufacturers in developing improved emissions control technologies is beyond the scope of ARB's specified duties.

40. **Comment**: The Board should fund Carl Moyer projects to assist in the development, testing, and eventual certification of aftertreatment technologies for small diesel engines. **(Pony Pack)**

Agency Response: The Carl Moyer Program funds the incremental cost of cleaner-than-required engines, equipment, and other sources of air pollution, but does not provide funds for developing, testing, or certification of emission

control technologies. However, Pony Pack may consider requesting funds through the Innovative Clean Air Technologies Program (ICAT), an ARB program that co-funds the demonstration of innovative technologies that can reduce air pollution. ICAT's purpose is to advance such technologies toward commercial application, thereby reducing emissions and helping the economy of California.

E. ELECTRICAL POWER BASED ALTERNATIVE TECHNOLOGIES

41. **Comment**: Parts of the Staff Report imply that truckers will (or must) decide to use onboard systems (primarily APSs) in response to the sleeper idling prohibition. We request clarification that the rule does not favor APSs or onboard systems over other technologies. Further, to avoid possible confusion, the rule should also clarify that it does not compel the installation of APSs or other onboard systems on heavy-duty trucks. We also request that the rule explicitly provide that on-shore electrical power is an acceptable alternative to idling. **(IdleAire)**

Agency Response: The rule clearly does not compel the installation of any device on heavy trucks. The primary compliance option of this rulemaking is for a trucker to simply manually shut down the truck engine after 5 minutes of idling, but the rulemaking also sets performance requirements for technologies that may be used as alternatives to engine idling. Any technology that meets those requirements can be used, including off-board technologies. Notwithstanding this, staff has modified the regulation to clarify that technologies utilizing on-shore electrical power or comparably clean emission technologies will be allowed as options to comply with the in-use idling regulations.

42. **Comment**: Advance Executive Officer approval should not be required for battery powered APSs, power inverter chargers for on-shore electrical power, and on-shore electrical power, and other zero-emission technologies. **(IdleAire, CalETC)**

Agency Response: As directed by the Board, staff has modified section 2485(c)(3)(C) to clarify that a manufacturer using a battery powered APS, power inverter/charger for on-shore electrical power, or an electric infrastructure or comparably clean technology is not required to seek and receive advance Executive Officer approval before using such alternative technology. Subsequent to the hearing, staff determined that fuel cell APSs are also within the category of comparably clean technologies that should not require advance Executive Officer approval.

43. **Comment**: The rule should encourage the installation and use of electrification equipment where it is available. After the rule's effective date, if electrified parking spaces are available, trucks (including diesel APS equipped trucks and

trucks certified to the proposed optional NOx idling standard) should be required to shutdown and use the electric infrastructure. **(IdleAire).**

Agency Response: No change was made in response to this comment. The rulemaking requires a truck operator to shut down the truck's engine after 5 minutes of idling, but allows engines certified to the optional NOx idling standard and trucks equipped with compliant APSs to continue idling. The rule does not otherwise restrict where trucks complying with the proposed requirements can or can not idle, except that idling is prohibited within 100 feet of a restricted area. The decision to shut down a truck and use an electrified parking space in lieu of the other compliance options specified in the rulemaking must be made by truck stop operators and fleet owners, not ARB.

44. **Comment**: The effective date of the sleeper portion of the rule [in-use portion of the rulemaking] should be deferred until 2009. This would be consistent with an informal consensus reached last year regarding the need for a sufficient amount of time for truck stop electrification to be more widely deployed and for APSs to be more widely available. **(IdleAire)**

45. **Comment**: Implementation of the sleeper truck provisions in January 2008 would force truck owners to purchase diesel APSs, rather than encouraging cleaner and less-costly on-shore electrical power technology. The proposed implementation date does not provide sufficient time for on-shore electrical power to become widely deployed. We therefore recommend that the sleeper truck portion of the rule be deferred until September 2009. **(CalETC).**

Agency Response to Comments 44 and 45: No change was made in response to these comments. Staff is opposed to postponing the in-use portion of this rulemaking until 2009. Staff is also not aware of any informal consensus reached in 2004 regarding the need for a sufficient amount of time for truck stop electrification to be more widely deployed and for APSs to be more widely available. Staff believes that the best way for IdleAire and truck stop electrification businesses to increase their market share is to introduce their product early and to deploy it widely. Even if truck stop electrification businesses install their products early, staff believes there will still be a high dependence on on-board cab comfort devices from truckers who park in areas where IdleAire's product or electrified parking spaces are not available. Therefore, there is a definite limit on how much of the market truck stop electrification may be able to capture. Staff believes that the rulemaking's 2008 implementation date will further encourage the deployment of truck stop electrification and will help expedite the installation of those facilities.

46. **Comment**: The proposal appears to allow battery-based and stop-start systems but the method and requirements for obtaining ARB approval are not clear. We assume that truck OEMs and autonomous system suppliers will be able to seek this approval. **(TMA)**

Agency Response: The Agency Response to Comments 35 and 36 is incorporated herein. The in-use component of this rulemaking allows battery-based and stop-start systems as alternatives to main engine idling. Title 13, CCR section 2485(c)(3)(C), as modified during the 15-day comment period, clearly provides that battery-based systems can be used without obtaining the Executive Officer's prior approval. The same section also applies to automatic stop-start systems, which allows the use of other technologies subject to advance Executive Officer approval, and provided those other technologies are at least as effective in reducing idling emissions as a diesel APS equipped with a Level 3 verified PM device or the optional NOx idling standard. The entity seeking approval depends on whether the systems are installed on a vehicle before the legal or equitable title to the vehicle has been transferred to an ultimate purchaser (truck OEM) or whether they are installed after legal or equitable title has transferred (aftermarket installers).

47. **Comment**: The ARB should seamlessly integrate its regulatory rulemakings with incentive programs (such as Carl Moyer incentive program) so that the Board, industry and other stakeholders can fully understand how they interact. A critical part of this is to clearly define the emissions baselines created by particular regulations so that surplus emissions of NOx, ROG, PM and green house gases (GHG) can be determined and clear for incentive programs. ARB staff should establish a clear and consistent baseline for emissions from truck idling reduction both prior to the implementation date of the proposed regulation, and after. **(CalETC, IdleAire)**

Agency Response: The ARB typically does not integrate two entirely different programs into one rulemaking. The Carl Moyer Program has a much larger scope than this idling rule. Following the adoption of this regulation, the Carl Moyer funding guidelines were modified to define the new emission baselines and what constitutes surplus emissions to reflect the idling regulation. Assuming that there will be a high use of compliant diesel APSs for sleeper trucks, the guidelines establish the emission factors of the diesel APSs with Level 3 verified PM traps as baseline emissions. This means devices such as electric batteries that are cleaner than a compliant diesel APS will be eligible for Carl Moyer funding.

48. **Comment**: ARB should convene a "working group" as soon as possible for interested stakeholders, and other state, federal, and local agencies to discuss how to encourage and facilitate truck stop electrification and other zero-emission idling reduction technologies and infrastructure. **(CalETC)**

Agency Response: The ARB generally sets performance-based standards and therefore does not prefer one technology over another, as long as both technologies can meet the standards. By the same token, ARB cannot convene a "working group" selectively for one technology group in preference over other equally compliant technologies. However, if ARB is invited to join such working groups, it may certainly decide to participate in such groups.

F. COMPLIANCE COSTS

49. **Comment**: The proposed idling requirements are cost prohibitive and will cause financial hardships for businesses forced to comply. The ARB should provide financial assistance for affected businesses to cover the capital costs of compliance with the idling requirements. **(CTA)**

50. **Comment**: The capital cost needed to comply with the idling regulation will create economic hardships for many trucking businesses, especially small business. Financial assistance is needed to help trucking businesses better absorb the added operating costs and to minimize these hardships. **(ATA)**

51. **Comment**: CCEEB fully supports the idea that incentive programs such as Carl Moyer is integrated into rules and other regulations that are adopted. **(CCEEB)**

52. **Comment:** Truck OEMs are offering (or will offer in the near future) auxiliary systems integrated into sleeper berth trucks. This should be incentivized, as California and other state and local governments are doing. **(ATA)**

Agency Response to Comments 49 through 52: The Agency Response to Comment 47 is incorporated herein. The ARB, through its Carl Moyer Program, currently provides financial incentives for the installation of idle reduction devices on long haul trucks, and has recently updated the Carl Moyer Program funding guidelines to reflect the requirements of this rulemaking. It should also be noted that in most cases, the initial capital costs of a compliant APS will be recouped in 2.5 or less, due to the fuel savings resulting from reduced idling. Also see the Agency Response to Comments 53 and 54.

Another program under development that may provide assistance to comply with the regulation is California Assembly Bill 1901. This bill would establish, until January 1, 2012, the Truck Retrofit Revolving Loan Program in the Energy Resources Conservation and Development Commission to help finance the retrofitting of trucks with the U.S. EPA SmartWay Upgrade Kits, including idle reduction technologies, that would be required to have specified emission control devices and may have other specified equipment. The bill has been passed by Assembly Committee on Transportation and by the Assembly Committee on Jobs, Economic Development and the Economy, and is currently before the Appropriations Committee.

53. **Comment**: Many trucking businesses will not be able to afford the added capital costs of alternative idle reduction technologies to comply with the requirements. **(ATA)**

54. **Comment**: Although the number of trucks stops that equip their parking spaces with auxiliary means of providing power to sleeper berth equipped trucks has

been increasing, it should be recognized that there will never be enough of these parking spaces – especially in all the locations where trucks stop. As a result, this rule will effectively require sleeper berth trucks to be equipped with a fully autonomous cab comfort systems. Costs for such systems range from $5,000 to $10,000. This is a significant investment for truck owners, and will closely follow the introduction of 2007 emissions-compliant engines and their own associated costs. Some truck owners will not have the financial capability to purchase fully autonomous systems. **(TMA)**

Agency Response to Comments 53 and 54: Because of the growing demand for cab comfort devices due to idling restrictions and increasing fuel prices, staff now believes that the cost of an APS will be lower than the $5,000 to $10,000 cost estimated in the Staff Report. This means that the pay back period would be much less than the 2.5 year pay back period previously estimated in the Staff Report. Furthermore, there are a number of incentive programs that trucking businesses can use to alleviate the financial burden imposed by this requirement. For incentive programs in California, see the Agency Response to comments 49 through 52. A number of other states also currently provide low interest loan programs or grants for the purchase of idle reduction devices. Refer to the U.S. EPA document "Model State Idling Law"[8] for a summary of federal and state financial assistance programs. Staff believes these financial assistance programs and the expected short pay-back periods will motivate trucking businesses to equip their trucks with on-board cab comfort devices, or utilize truck stops with electrified parking spaces or IdleAire products rather than trying to sleep in their cab under unfavorable conditions. Thus, any safety issues related to sleeping in an uncomfortable environment can be avoided.

G. LABELING REQUIREMENTS

55. **Comment**: The proposed labeling requirements are too much restrictive in terms of detailed design and size of the labels and their proposed location on the vehicle. If labeling becomes necessary, much smaller labels located under and/or behind the driver's side door are more acceptable. **(TMA)**

Agency Response: No change was made in response to this comment. The labels are intended to aid enforcement personnel in clearly and easily identifying diesel engines certified to the optional NOx idling standard and diesel trucks equipped with compliant PM trap equipped APSs. Thus, the labels must be applied to a highly visible location of the truck, and their size and color must allow the label to be readily visible from a distance of 10 to 15 feet. The commenter's proposal that the label be smaller in size and be located under or behind the driver's side door will hinder effective enforcement and reduce the effectiveness of the regulation.

[8] U.S. EPA "Model State Idling Law", EPA420-S-06-001. April 2006. (http://www.epa.gov/smartway/documents/420s06001.pdf)

56. **<u>Comment</u>:** The labeling provisions in the ATCM portion of the rulemaking appear to conflict with "Section 4306 of the recently enacted federal highway bill" (H.R. 3, now P.L. 109-59), which bars states from requiring any form of identification to be displayed in or on a commercial motor vehicle, apart from several enumerated exceptions, none of which apply to the [proposed] emissions label." **(ATA)**

<u>Agency Response</u>: As demonstrated below, the cited provision of the federal highway bill only pertains to state labeling requirements directly related to the registration of trucks and does not preempt the proposed labeling provisions in the ATCM portion of the rulemaking.

Section 4306 (Title 49, U.S.C. section 14506) was enacted as a component of the "Unified Carrier Registration Act of 2005" set forth in Subtitle C of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users' or `SAFETEA-LU', (Pub. L. No. 109-59 (August 10, 2005) 119 Stat. 1144). *See* sections 4301 to 4308, (Pub. L. No. 109-59 (August 10, 2005) 119 Stat. 1144). The Unified Carrier Registration Act replaced the prior federal statutory scheme applicable to commercial motor vehicle registration, the "Single State Registration System" (SSRS), *Mid-Con Freight Systems, Inc. v. Michigan Public Service Com'n* (2005) 125 S.Ct. 2427, 2430, Section 4305, Pub. L. No. 109-59 (August 10, 2005) 119 Stat. 1144).

In a case involving a preemption clause within the SSRS, the United States Supreme Court held the clause did not preempt a state law imposing a fee on trucks. *Mid-Con Freight Systems* (2005) 125 S.Ct. 2427, 2346. The Court rejected arguments that the clause should be interpreted broadly to preempt all individualized state registration requirements affecting a carrier, or state registration requirements imposed on carriers because of their operation in interstate commerce, and instead found that the clause (49 U.S.C. § 14504(b)) only preempted state requirements concerning the specific subject matter regulated by the federal statute - SSRS registration. *Id.* at 2432. The Court reasoned that neither the text, the statute's basic purposes or its historical context required reading the clause broadly to impliedly pre-empt other non-SSRS related state rules. *Id.* at 2434.

Shortly after the *Mid-Con Freight Systems* case was decided, the Unified Carrier Registration Act of 2005 was enacted to supersede the SSRS (section 4304, Pub. L. No. 109-59 (August 10, 2005) 119 Stat. 1144) and to serve as a "comprehensive foundation for registration, insurance and safety information." 65 Fed. Reg. 35287, 35288 (June 2, 200). It is readily apparent from the text and purpose of the current Act that its scope is still strictly limited to motor vehicle registration requirements and its provisions regarding labeling only preempt inconsistent state laws concerning the specific subject matter regulated by the federal statute – vehicle registration.

First, the text of section 4306 (Title 49, U.S.C. section 14506) of the "SAFETEA-LU", (Pub.L.No. 109-59 (August 10, 2005) 119 Stat. 1144), itself indicates that its preemptive scope is limited.

Sec. 14506. Identification of vehicles

`(a) Restriction on Requirements- No State, political subdivision of a State, interstate agency, or other political agency of 2 or more States may enact or enforce any law, rule, regulation standard, or other provision having the force and effect of law that requires a motor carrier, motor private carrier, freight forwarder, or leasing company to display any form of identification on or in a commercial motor vehicle (as defined in section 14504a), other than forms of identification required by the Secretary of Transportation under section 390.21 of title 49, Code of Federal Regulations.
`(b) Exception- Notwithstanding subsection (a), a State may continue to require display of credentials that are required--

`(1) under the International Registration Plan under section 31704;
`(2) under the International Fuel Tax Agreement under section 31705;
`(3) under a State law regarding motor vehicle license plates or other displays that the Secretary determines are appropriate;
`(4) in connection with Federal requirements for hazardous materials transportation under section 5103; or
`(5) in connection with the Federal vehicle inspection standards under section 31136.'.

(b) Clerical Amendment- The analysis for such chapter is amended by inserting after the item relating to section 14505 the following:

Section 4305 is entitled "Registration of Motor Carriers by States," and itself contains a preemption clause (Title 49, U.S.C. § 14504a(c)) that lists the same subject areas at issue in the *Mid-Con Freight Systems* case: state registration, registration of proof of financial responsibility, registration of an agent for service of process, registration of proof of insurance.

Second, section 4302 of the same legislation (set out in a note to Title 49, U.S.C. section 13902) also limits the preemptive scope of the Unified Carrier Registration Act:

SEC. 4302. RELATIONSHIP TO OTHER LAWS.

Except as provided in section 14504 of title 49, United States Code, and sections 14504a and 14506 of Title 49, United States Code, as added by this subtitle, this subtitle is not intended to prohibit any State or any political subdivision of any State from enacting, imposing, or enforcing any law or regulation with respect to a motor carrier, motor private carrier, broker, freight forwarder, or leasing company that is not otherwise prohibited by law.

While sections 4302, 4305 and section 4306(b) do not explicitly exempt state health and safety laws from section 4306(a), neither do they explicitly include them within the preemptive reach of 4306(a). This is also true of Title 49 U.S.C. § 14504(b) and (c) at issue in the *Mid-Con Freight Systems* case. In that case, the U.S. Supreme court stated, "[s]imilarly, we see no language elsewhere in the statute suggesting that the term 'State registration requirement' refers to *any* kind of State Registration whatsoever that might affect interstate carriers. And even the Government concedes that certain registration obligations- those in 'traditional areas of state regulation' –are beyond the pre-emptive reach of the statute." *Mid-Con Freight Systems* at 2433. As discussed in section of this FSOR (agency responses to comments 73 through 75), preventing air pollution is and has been a traditional local safety concern, *Huron Portland Cement Co. v. Detroit* (1960) 362 U.S. 440, 445-446, and the U.S. Supreme Court also recognizes that the Federal Motor Carrier Safety Administration has no statutory authority "to impose or enforce emissions controls or to establish environmental requirements unrelated to motor carrier safety." *Dept. of Transp. v. Public Citizen* (2004) 541 U.S. 752, 759.

Finally, the forms of identification required by the Secretary of Transportation under section 390.21 of Title 49, Code of Federal Regulations only specify the "legal name or single trade name of the motor carrier," 49 CFR 390.21(b)(1), a "motor carrier identification number," 49 CFR 390.21(b)(2), and the name of the operating carrier, 49 CFR 390.21(b)(3). ***49 CFR 390.21(b)(4) states "Other identifying information may be displayed on the vehicle if it is not inconsistent with the information required by this paragraph."*** *See also* discussion in 65 Fed. Reg. 35827, 35290-291 (June 2, 2000). "Concerning the questions raised by the NYSMTA about a local jurisdiction's requirement for listing a full street address, and the Missouri DMCSR's question about a State's requirement for the display of a GVW or GVWR on intrastate-only CMVs, any other identifying information may continue to be displayed, as long as it is not inconsistent with other § 390.21 requirements."

All of the above mentioned considerations support the ARB's determination that the labeling provisions of the ATCM portion of the rulemaking are not preempted by Title 49, U.S.C. section 14506.

H. REMOVAL OF SLEEPER TRUCK EXEMPTION

57. **Comment**: There are areas of the United States where it is hazardous to shut down the engine during winter, where temperatures can sharply drop in minutes, and a trucker cannot start the engine, which requires a specialist to heat the fuel tanks and engine block at the trucker's expense over 12 to 36 hours before the engine can start. A policy of limited idle time must be tempered with common sense. **(Allen Lilleberg)**

Agency Response: Recognizing the health and safety issues facing drivers during severe weather conditions, ARB has included in the rulemaking an exemption to allow the main engine to idle continuously during extreme weather conditions. For engines equipped with an engine shutdown system, the engine shutdown system can also be overridden to warm up the engine if the engine coolant temperature is below 60°F. Also, a truck operator may equip his truck with an on-board device that will provide cab comfort and engine heating during extreme weather conditions.

58. **Comment**: Truck stops and travel plazas contribute significantly to California's economy. ARB's idling restriction proposal on sleeper berth trucks will place these important businesses at a competitive disadvantage with truck stop operators in neighboring states that exempt sleeper berth equipped trucks from idling restrictions. The ARB's actions to limit idling to 5 minutes will force truck operators to limit their time in California in order to avoid the added costs of purchasing on-board cab comfort devices. Therefore, ARB should reconsider its proposal to limit idling of sleeper berth trucks to 5 minutes in the state of California. **(Love's Travel Stops, NATSO)**

Agency Response: Staff believes that trucking businesses, faced with increasing diesel fuel prices and idling restrictions, will be motivated to install on-board cab comfort devices or use truck stops equipped with plug-in capabilities rather than rush to neighboring states solely because they can idle the truck engine for cab comfort. Using cab comfort devices instead of idling the main engine will help truck operators save fuel costs and will provide them a better rest environment. Also, communities are increasingly realizing the harmful effects of diesel emissions and noise nuisance resulting from the extended idling of diesel trucks, which has resulted in a nationwide increase in state and local rules to limit truck idling. Thus, to also attain air quality standards and reduce fossil fuel consumption, staff expects that in the near future neighboring states or their local governments will adopt regulations to control extended idling of diesel trucks[9]. Staff therefore does not expect that California's idling requirements will place California's truck stop operators at a competitive disadvantage with truck stop operators in neighboring states. In fact, staff believes that the rule will provide truck stop operators an additional revenue source if they choose to install alternative off-board cab comfort systems.

59. **Comment**: The ARB has not allowed sufficient time for market forces to take effect. Many fleets will initially purchase a few alternative idling devices and then increase their purchases as they prove to themselves that those devices positively affect their operating costs and profitability. Since demand for alternative technologies is up due to increased fuel prices and incentives are

[9] Two of California's state neighbors, Arizona and Nevada, have adopted regulations that limit idling of diesel trucks, although sleeper trucks are exempted during federally mandated rest hours. The idling restrictions are contained in "Arizona Revised Statutes, Section 11-876", for Arizona, and in "Nevada Administrative Code, Section NAC 445B.576", for Nevada.

proving effective, we strongly encourage ARB to reconsider implementing this proposal. Alternatively, if ARB does proceed, that the sleeper berth exemption should be phased out over time, allowing the much lower emitting newer model year vehicles a longer exemption period beyond the 2008 effective date in the proposal. **(TMA)**

Agency Response: No change was made in response to this comment. If demand for alternative technologies is increasing due to increased fuel prices and incentives are proving effective, then this complements the effectiveness of the idling regulation. Phasing-out the sleeper berth exemption over time is not acceptable for two reasons. First, the new model year vehicles may be certified to low exhaust emission standards, yet may emit high levels of NOx emissions during idle modes. This is because the very low exhaust temperatures that exist during extended idling operations render the NOx catalysts ineffective. Second, since many sleeper trucks are based out-of-state, the proposed phase-out exemption would be difficult to implement and enforce. ARB does not accept the continued exemption of sleeper trucks nor does it agree with the proposal to phase-out the exemption. In addition, sleeper trucks' contribution to NOx+ROG emissions is significant. ARB estimates that in 2010, extended idling emissions of NOx+ROG from sleeper trucks will be approximately 22 tons per day and 36 tons per day for trucks registered in California and out-of-state, respectively.

60. **Comment**: The proposed engine shutdown system does not allow a driver to disengage the shut off system in case of an emergency situation necessitating the use of a heater or air conditioner. Since the proposed low NOx idle engine option is infeasible by 2008 and will not be available for purchase, truck owners will be forced to purchase trucks equipped with the shut off devices to comply with the idling requirements, endangering the health of drivers and risking public safety.

Drivers of non-sleeper trucks generally will not be equipped with APS units, and the proposed regulation will prevent them from overriding the shutdown system in an emergency situation. Sleeper trucks will be discouraged from using shore power or other alternative technologies, because drivers will not be able to plan emergency situations without the use of APS and truck owners will not want to incur the costs of using both idle reduction technologies. CTA recommends that the ARB continue the existing exemption for trucks with sleeper berths. **(CTA)**

61. **Comment**: ARB's requirement for a non-programmable, tamper resistant 5-minute shutdown system will, in effect, eliminate current exceptions for safety or health emergencies and for adverse weather conditions unless frequent actions are taken by the driver or another party (in case a driver is not able to respond). By eliminating these exceptions for trucks sold in California beginning in 2008, drivers of these trucks may be subject to adverse impacts should emergencies arise. It does not appear ARB has given any

consideration to how these types of situations can be avoided to ensure driver safety. **(ATA)**

Agency Response to Comments 60 and 61: Whether during an emergency situation or not, an operator of a sleeper or non-sleeper truck equipped with the engine shutdown system would be able to continuously idle the truck engine by depressing one of the foot pedals every 5 or 15 minutes, depending on whether the parking brake is engaged or not. If the truck is a sleeper truck, the truck owner may purchase the truck wired with a factory installed shore power plug-in unit and an on-board cab comfort device such as an APS, or may purchase the truck with an APS that is also wired to provide shore power electricity. This would enable the operator of the sleeper truck to rest in the sleeper berth comfortably anywhere, whether he/she is stopped on the roadside due to severe weather condition or parked at a truck stop with electrified parking spaces.

If the truck is a non-sleeper truck, the truck is not expected to have an APS as the truck operator is not expected to sleep in the truck. However, the operator will still be able to operate the truck engine continuously at idle by pressing one of the pedals to override the engine shutdown system. The owner of the non-sleeper truck may also consider purchasing a truck that is certified to the low NOx idling standard since some manufacturers intend to make such trucks available for 2008 (see the Agency Response to Comment 3). Finally, implementation of the rule cannot be delayed since idling sleeper trucks contribute significantly to the air quality problem of the state (see the Agency Response to Comment 59).

I. AIR QUALITY BENEFITS

62. **Comment**: The ARB has grossly overestimated the NOx reductions from implementation of the proposed rule. ARB used questionable and nonsensical high NOx idle emission rates. First, the various estimates for idle emission rates are based on idle emission data taken from trucks primarily during the period 1991 through 2003, with a significant portion of idle measurements between 1995 to 2002. As ARB is clearly aware, NOx emissions during this time period may be suspect. See Agenda Item 00-12-5. Therefore, use of these idle emissions is inappropriate for estimating idle emissions, especially after October, 2002. **(International)**

Agency Response: The commenter does not specify why the idling NOx emissions during the period from 1991 to 2003 are suspect, nor is it clear how agenda item 00-12-5 (Amendments to Adopt Not-To-Exceed and Euro III European Stationary Cycle Emission Test Procedures for the 2005 and Subsequent Model Year Heavy-Duty Diesel Engines) relates to the statement that NOx emissions during this time period “may be suspect.” Staff cannot respond to an assertion that is not substantiated or clearly described. Nevertheless, staff will comment on the NOx idling emission rates used to

quantify the reductions. The idling NOx emission rates used in this regulation were derived from test data obtained from two sources: (1) the Coordinating Research Council E55/E59 Heavy-Duty Diesel Testing Project (CRC E55/E59), and (2) the joint U.S. EPA and Oak Ridge National Laboratory (ORNL) idle test program. These are peer-reviewed, published reports and are referenced in the Staff Report. Idle tests in the CRC E55/E59 program were conducted at curb idle without any loading, while the U.S. EPA/ORNL tests were conducted at different idle speeds (ranging between 600 rpm to 1200 rpm), different ambient conditions to simulate winter and summer conditions, and under different loading conditions (including no load, heating, and air conditioning load). These reports contain the best publicly available data and supported staff's estimates of idle emission rates and emission reductions associated with the rulemaking. Also see the Agency Response to Comment 59.

63. **Comment**: The use of such a high nonsensical idle emission rate fails to account for the significant emission reductions necessary to meet the new low emission standards in 2007 and even lower standards in 2010. The idle emission point within the 13-mode supplemental steady-state represents 15 percent of the weighted composite. Contrary to ARB's estimates, International's own data suggests that, as standards decrease, idle emissions are also decreasing. Using data from a model year 2007 medium-duty development engine and ARB's idle emission estimate of 115.3 grams per hour, the ARB idle estimate contributes 0.14 grams per brake horsepower hour to the total emissions. Such an idle emission rate, which represents 13 percent and 70 percent of the NOx standard in 2007 and 2010, respectively, would make it virtually impossible to meet the 2010 standard at an average idle emission level of 115.3 grams per hour. Therefore, the estimated emission reductions benefits are arbitrary and significantly overestimated. **(International)**

Agency Response: The commenter has not provided data supporting its statement that its data indicates that NOx idling emissions decrease with a decrease in standards. The commenter also fails to provide specific information regarding how it arrived at the conclusion that an idling NOx emission rate of 115.3 grams per hour would contribute 0.14 grams per brake horsepower-hour. Without any data to substantiate these statements, staff is unable to adequately respond to this comment. Also, the NOx emission standards are in grams per horsepower-hour. It is understood that the idle emission contribution to the total emissions in the transient and steady state tests is very small because the engine load, and thus work, is very low. The commenter's analysis of idle emissions at the 115.3 grams per hour rate does not make sense, since the certification emission test results are on a gram per horsepower-hour basis, not a gram per hour basis. Staff therefore disagrees with the assertion that the estimated emission reductions are arbitrary and significantly overestimated.

64. **Comment**: Trucking companies will keep their older trucks longer to avoid purchasing trucks with a combined APS/ PM aftertreatment system, which has not yet undergone thorough testing and will add a significant cost to new truck purchases in 2008. Instead, pre-2007 trucks will be kept on the road longer so that trucking companies can use existing, proven APS technologies. This will counteract much of the expected PM benefits from the 2007 engine standards. **(CTA, ATA).**

Agency Response: Staff disagrees with this assessment. Other factors such as engine mileage, warranty coverage and operating costs are more likely to influence business decisions whether to retain or replace trucks. Even if trucking companies want to avoid purchasing trucks with a combined APS/PM aftertreatment system, there are a number of other alternative technologies, such as battery based APSs, thermal energy storage, and others they can purchase with a new truck. Furthermore, staff believes that trucking businesses will not avoid purchasing new trucks with integrated APS/PM aftertreatment systems because such systems will be verified and warranted for their useful lives by the manufacturer, and offer substantial operating savings.

65. **Comment**: The idling regulation allows APSs to vent their exhaust emissions through the truck's main engine PM aftertreatment exhaust system. Exhaust emissions from the main engine are held to strict federal compliance standards which include minimum requirements for durability and effectiveness. As the peer-reviewed science behind the venting of APS emissions through the main engine exhaust system appears to be lacking, the impact of this venting on federally certified main engine exhaust systems, as well as their effectiveness of these systems during APS use is uncertain. **(ATA)**

Agency Response: The Agency Response to Comments 35 and 36 is incorporated herein. Assuming for purposes of this response that in the absence of the idling regulation, a truck operator of a 2007 truck would idle the engine for extended periods of time to provide cab comfort. Staff estimates the engine-out PM emissions during idling of a PM trap equipped 2007 truck to be approximately 1.6 grams per hour. It is expected that the truck's main PM trap would be designed to safely reduce engine-out PM emissions with minimum back pressure build-up during this extended idling period. It is also assumed that in the presence of an idling restriction, the truck operator would use a diesel-fueled APS to provide cab comfort. The PM emission rate of a Tier 4 APS engine emitting at the standard and providing an average of 3 kilowatt power is estimated to be 1.2 grams per hour. If the APS exhaust is routed through the truck's main PM trap, the performance of the main PM trap is not expected to change, since the APS engine PM emission rate is almost equal or even less than the truck engine-out PM emission rate. The commenter's concern that the effectiveness of integrating engine/APS exhaust systems is uncertain is simply unsubstantiated.

66. **Comment**: As documented by the empirical observations contained in the "Weekend Ozone Effect" (Journal of Air and Waste Management Association, 2003, 53 (7) 802-815), decreases in NOx emissions, mostly from fewer truck emissions, was the largest single contributor to elevated weekend ozone in the South Coast Air Basin. Decreases in NOx emissions did not reduce ambient levels of particulate-phase nitrate either. Consequently, emission reductions associated with the idling regulation have the potential to increase ozone formation. **(ATA)**

Agency Response: The ozone weekend effect is not a reliable indicator that NOx control is counter-productive for reducing ambient ozone levels. The ARB conducted studies on the Ozone Weekend Effect[10] and came to the conclusion that the weekend effect is not a real-world test of California's NOx control program. California's ozone control program has been effective all days of the week, although at a slightly slower rate on weekends than weekdays. NOx reduction may be one possible explanation for the weekend effect. However, the ARB's studies concluded that it may not be the primary cause in some areas and other processes may have significant roles. Plausible causes for the weekend effect include NOx reduction, different timing of emissions including NOx, different amounts and impacts of pollutants that persist overnight aloft, different amounts of light-absorbing particulate matter in the air, ozone quenching by nitric oxide emissions, or some combination of these five factors. Significant uncertainties remain as to the causes of the ozone weekend effect and to the relevance of those causes on a long-term control strategy. Therefore, the conclusion that emission reductions associated with the idling regulation will have the potential to increase ozone formation is unsubstantiated.

NOx is a key precursor not only of ozone, but also PM and other compounds with health and environmental concerns. These include nitrogen dioxide (NO_2), nitric acid (HNO_3), nitrous acid, peroxyacetylnitrate (PAN), nitro-polycyclic aromatic hydrocarbons (nitro-PAHs), regional haze, and nitrate deposition with subsequent fertilization and eutrophication of soils and surface waters. Many studies indicate that PM, in particular, but also NO_2, HNO_3, and other nitrogen containing pollutants have adverse health impacts, sometimes even greater than ozone episodes. Therefore, NOx control is also important for the large health benefits from reductions in other NOx-related pollutants. NOx reductions are also needed in ozone non-attainment regions that are not always HC-limited.

67. **Comment**: The ARB disregards advances in NOx adsorber technologies and in advanced engine controls that will also control NOx and system regeneration, and the resulting thermal loading on catalysts. Overall, NOx emissions for short duration idle periods will be zero or low for non-sleeper

[10] The Ozone Weekend Effect in California – Staff Report, Technical Support Document, and Appendices; ARB, Research and Planning and Technical Support Division, June 3, 2003. http://www.arb.ca.gov/aqd/weekendeffect/weekendeffect.htm

trucks. Since ARB's own data shows that non-sleeper trucks and medium duty trucks idle for minimal time during the day and that these vehicles will emit virtually no NOx during these short periods (<15 minutes), ARB should exempt these vehicles from this regulation. **(International).**

Agency Response: Staff did not disregard the effects of advanced engine controls and thermal loading on catalysts, including NOx adsorber technologies, in controlling NOx emissions. Staff considered the effect of catalyst thermal loading on NOx emissions during idling and determined that catalysts remain hot and control NOx emissions during the first 5 minutes of idling following an end of a trip. However, after the first 5 minutes, the catalyst cools down to below its light-off temperature, during which time period it is no longer effective in controlling NOx emissions. A non-sleeper truck idles an average of 41 minutes per day, while a medium-duty truck idles an average of 17 minutes per day, indicating a significant portion of the idling is not controlled by the NOx catalyst. Furthermore, not all idling events start at the end of a trip when NOx catalysts are still above their light-off temperatures and capable of reducing emissions. Some operators start the engine "cold" and keep the engine idling for extended periods of time, either to warm up the engine or to sleep in their cab. Therefore, the effect of catalyst thermal loading is negligible in controlling cold start idling NOx emissions and the commenter's conclusions and request to exempt non-sleeper and medium-duty trucks is unacceptable.

68. **Comment**: The proposal fails to adequately address the PM emission reduction necessary to meet the 2007 and later requirements with the low NOx emissions and idling periods of non-sleeper trucks. The current proposal assumes a PM idle emission rate of 0.16 grams per hour for 2007 and later engines, while the in-use idling ATCM rulemaking (agenda item 04-7-3) was based upon an estimated PM emission rate of 2.77 grams per hour. The in-use idling ATCM reviewed the risks associated with PM idle emission levels of 2.77 grams per hour and 0.3 grams per hour, and found that the risks associated with PM levels of 0.3 grams per hour were significantly lower than that associated with PM levels of 2.77 grams per hour. At an emission level of 0.16 grams per hour, this risk would again be significantly reduced. Since non-sleeper trucks idle for a much shorter period of time with little or no NOx emissions and ARB's estimate of 0.16 grams per hour is approximately 50 percent of that reviewed, but not used as a basis by the in-use idling ATCM rule, ARB's failure to adequately and appropriately eliminate (or alternatively reduce) the idling restriction for DPF equipped trucks is arbitrary and capricious. **(International)**

Agency Response: No change was made in response to this comment. The risk associated with a PM level of 0.16 grams per hour is clearly less than that associated with a PM level of 0.3 grams per hour or 2.77 grams per hour. However, this does not mean that such risk is negligible or non-existent. Diesel particulate matter has been identified as a toxic air contaminant for which there is *no safe threshold level of exposure*. In addition to the health risks posed by

diesel PM, idling trucks also emit significant NOx emissions and other toxics regardless of whether the truck is equipped with a filter or not. NOx is one of the two primary contributors to the formation of ozone and contributes to serious public health issues. Thus, ARB's action to restrict idling of filter equipped trucks is an appropriate measure that is designed to protect the public's health and it disagrees with the commenter's statement that ARB failed to adequately and appropriately exempt filter equipped trucks from the idling restriction or reduce their idling restrictions.

69. **Comment**: ARB staff assumes that all sleeper trucks will comply with the proposed regulations beginning in 2008 by purchasing and installing a diesel APS, with Level 3 PM control for 2007 and later trucks, at a cost of $10,000 each. But truck stop electrification, or other zero emission technologies, would provide even greater emissions reductions, at a lower cost to the truck owner. **(CalETC)**

Agency Response: In estimating the emission benefits of this rulemaking resulting from the idling restrictions applicable 2008 and newer sleeper trucks, staff assumed these trucks will use a diesel APS with a level 3 PM control strategy. Staff's assumption does not mean that all of these trucks will necessarily comply by purchasing diesel APSs. The purpose of this assumption was only to determine emissions benefits under the worst case scenario that assumes full compliance using diesel APSs. However, staff agrees that it if a truck uses a zero emission technology, then the benefits would be greater.

J. LEADTIME AND STABILITY REQUIREMENTS

70. **Comment**: The new engine idling shutdown timer requirement is a new motor vehicle emission standard subject to the federal preemption and waiver provisions of the federal Clean Air Act (CAA). Section 202(a)(3)(C) of the CAA specifies that no new emission standard may take effect earlier than 4 model years after it is promulgated ("lead-time" requirement), or before the prior emission standard has been in effect for at least 3 model years ("stability" requirement). This requirement does not comply with either the lead-time or stability requirements. It violates the lead-time criteria because it takes effect in the 2008 model year, less than two model years from its date of adoption. In addition, heavy-duty on-highway engines will be subject to new emission control requirements applicable to 2007 through 2010 model year engines. Therefore, the CAA's stability requirement prevents ARB from imposing any new emission control requirements until 2013. **(EMA, CTA, Cummins)**

Agency Response: The ARB has not yet conclusively determined whether the new engine idling shutdown timer requirement constitutes a standard relating to the control of emissions from new motor vehicle engines, which requires issuance of a new waiver from section 209(a) of the CAA, an amendment within the scope of an existing waiver, or an in-use operational control. This

requirement can be characterized as an in-use operational control not subject to preemption as a standard under Clean Air Act section 209(a) because it essentially implements through a mechanical means controlling in-use idling of on-road diesel trucks. Clean Air Act section 209(d) provides that California and other states are not precluded from controlling, regulating or restricting the "use, operation, or movement of registered or licensed motor vehicles." As the Clean Air Act expressly allows states to impose the categories of controls specified in section 209(d), waiver of preemption is not at issue and the lead-time and stability provisions of Clean Air Act section 209(a)(3)(C), which apply to standards adopted by U.S. EPA, do not apply to this requirement.

However, for the purpose of responding to these comments ARB is assuming this requirement is a new motor vehicle engine emission standard. Based on this assumption, even if a new waiver from section 209(a) of the CAA is required, the lead-time and stability provisions of section 202(a)(3)(C) of the CAA do not apply to the new engine requirement. Section 202(a)(3)(C) only applies to standards "promulgated or revised under this paragraph [section 202(a) of the CAA]," that is, to standards promulgated by the Administrator of the U.S. EPA. Since ARB adopted the new engine requirement pursuant to authority of California state law and the waiver provisions of section 209(b) of the CAA, the lead-time and stability requirements are simply inapplicable. Moreover, the Board directed staff that to the extent it is necessary, to either request a waiver or a confirmation that the regulations are within the scope of an existing waiver of federal preemption pursuant to section 209(b) of the CAA.

Also, since 1970, U.S. EPA has typically applied a "2-pronged" test of whether California standards are consistent with CAA section 202(a) as required by section 209(b)(1)(C). The standards must be: (1) technologically feasible in the lead time provided considering the cost of compliance, and (2) compatible with the federal test procedures so that a single vehicle could be subjected to both tests. No more should be required. This is in accord with the legislative history of section 209. When the California waiver provisions and the "consistent with section 202(a)" language were first placed in the CAA in 1965, section 202(a) consisted of just one sentence requiring adequate lead time in consideration of technological feasibility and economic costs. In the 1977 CAA amendments, Congress amended section 209 "to afford California the broadest possible discretion in selecting the best means to protect the health of its citizens and the public welfare." (H. R. Rep. No. 294, 95th Cong., 1st Sess. 301 (1977), reprinted in 4 Leg. Hist. at 2768.) At the same time, Congress expanded section 202(a) to add several directives to U.S. EPA regarding its adoption of emission standards, including the 4-year lead time requirement for heavy-duty vehicles. Given Congress's expressed intent to *strengthen* the waiver provisions, it is unlikely Congress intended to apply the specific 4-year requirement to California.

Moreover, the Board directed staff, to the extent it is necessary, to either request a waiver or a confirmation that the regulations are within the scope of

an existing waiver of federal preemption pursuant to section 209(b) of the Clean Air Act.

Finally, ARB believes that the commentators are misreading section 202(a)(3)(C)'s stability requirement. That section simply states that any standard promulgated under 202(a) shall apply "for a period of no less than 3 model years," and does not support an interpretation that limits the U.S. EPA's authority to regulate heavy-duty vehicles or engines to once every three model years.

71. **Comment**: The alternative NOx idling emission standard violates the lead-time and stability provisions of the federal CAA. **(Cummins)**

Agency Response: Please see the Agency Response to Comment 70.

72. **Comment:** The provision in the ATCM portion of the regulation allowing the use of diesel-fueled APSs retrofitted with a verified Level 3 in-use strategy for particulate matter fails to provide the lead-time required in the federal CAA sections 213(b) [42 USC 7547(b)] and 209(e)(2) [42 USC § 7543(e)(2)]. **(EMA)**

Agency Response: Section 213(b) of the federal CAA provides "[s]tandards under this section shall take effect at the earliest possible date considering the lead time necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period and energy and safety." However, this section only applies to new nonroad engine and vehicle emission standards promulgated by the Administrator of the U.S. EPA, see e.g., §§ 213(a)(1)-(5), and not to the ATCM portion of the idling regulation that was promulgated under authority of state law and possibly the waiver provisions of the CAA section 209(e)(2).

Section 209(e)(2) provides that the Administrator of the U.S. EPA shall authorize California to adopt and enforce standards and other requirements relating to the control of emissions from nonroad engines or vehicles unless he finds, among other things, that those standards and accompanying enforcement procedures are not consistent with section 209. Staff anticipated that the ATCM portion of the idling regulation might require an authorization from U.S. EPA under section 209(e), and therefore included language in Resolution 05-55 that "to the extent necessary, the Board directs the Air Resources Board staff to file a request for authorization … pursuant to Clean Air Act section 209(e)(2)." Accordingly, if ARB submits an authorization, the Administrator of the U.S. EPA will determine, among other issues, whether the option regarding the use of diesel-fueled APSs equipped with level 3 PM traps is consistent with section 209 of the CAA, which in turn involves a determination whether sufficient lead time exists to permit the development of technology necessary to meet the standards and other requirements, giving appropriate consideration to the cost of compliance in the time frame provided. Also, U.S. EPA regulations specifically allow California to adopt nonroad

regulations prior to receiving authorization from U.S. EPA. *59 Fed. Reg. 36969, 36981-983. (July 20, 1994).*

K. FEDERAL HOURS OF SERVICE COMMENTS

73. Comment: The current idling ATCM exempts sleeper-berth equipped trucks from the five minute idling limit so that these trucks can power heaters, air conditioners or ancillary equipment. Eliminating this exemption will endanger the health and safety of sleeper-berth truck drivers because APSs equipped with Level 3 verified particulate matter systems are not feasible by the 2008 timeframe of the regulation and because it is unlikely that all sleeper cab trucks entering California can or will be equipped with APSs or other climate control technologies by 2008. Consequently, sleeper-berth truck drivers will be forced to sleep and rest in uncomfortable cabs, which will adversely affect their health and safety, and ultimately the public's safety as well. **(EMA, DDC)**

74. Comment: Federal regulations prescribe the maximum number of hours that drivers may operate trucks (hours of service or HOS) in a given time period. The HOS regulations include provisions allowing drivers to obtain mandatory hours of rest by sleeping in sleeper berth equipped trucks.

Because trip planning is an inexact science, drivers cannot ensure they will always have ready access to hotels, electrification facilities or truck stops. In addition, some businesses will not be able to afford the regulation's primary compliance option (APS + particulate trap) which ARB staff estimated will cost $5,000-$10,000 per truck. Those businesses need to decide whether to either discontinue doing business in California or "operate in the state without operating the main engine." Truck drivers who shut down their vehicles while resting are likely to experience less than desirable sleeping operations, which will not allow them to obtain the adequate rest envisioned by the federal HOS regulation. **(ATA, TMA, CTA, DDC)**

Agency Response to Comments 73 and 74: The Agency Response to Comment 27 is incorporated herein.

The Federal Motor Carrier Safety Administration (FMCSA) promulgates regulations limiting the number of hours that drivers may operate commercial motor vehicles. These regulations are commonly referred to as the "Hours of Service" (HOS) rules. The HOS rule was last revised on August 25, 2005, and became effective on October 1, 2005. *See 70 Fed. Reg. 49978 (Aug. 25, 2005)*. As explained in the Executive Summary portion of the HOS rule:

> "Today's rule requires all drivers of property-carrying commercial vehicles (CMV's) in interstate commerce to take at least 10 consecutive hours off duty before driving, limits driving time to 11 consecutive hours within a 14-hour, non-extendable window after

> coming on duty, and prohibits driving after the driver has been on duty 60 hours in 7 consecutive days or 70 hours in 8 consecutive days. Drivers may restart the 60-or 70-hour ”clock” by taking 34 consecutive hours off-duty.” *70 Fed.Reg. 49980 (Aug. 25, 2005).*

The HOS rule contains provisions allowing drivers of sleeper berth equipped trucks to accumulate rest periods in the sleeper berths. 49 CFR 395.1(g). Drivers that elect to use this provision must spend at least 8 consecutive hours in the sleeper berth and 2 consecutive hours either in the sleeper berth, off-duty, or any combination of the two options.

The comments imply that the proposal to eliminate the current idling exemption for sleeper-berth equipped trucks will impair the rest periods of those drivers of trucks not equipped with APSs, by prohibiting them from idling the main engine for cab climate purposes. The comments therefore necessarily imply that the idling regulation conflicts with (and is preempted by the federal HOS rule).

The idling regulation is not inconsistent with the federal HOS rule and is therefore not preempted. In deciding whether a state law conflicts with, and is therefore preempted by a federal law, a court will first determine whether the state law is expressly preempted. If it is not, the inquiry then turns to whether Congress implicitly intended to preempt the state law or if the state law is preempted because it actually conflicts with the federal law. *Chevron U.S.A., Inc. v. Hammond* (1984) 726 F.2d 483, 486. In this case, the federal HOS rule contains no language stating that state idling reduction laws are preempted, so the idling regulation is not explicitly preempted, and the question then turns to whether the regulation actually conflicts with a valid federal law.

The idling regulation does not actually conflict with federal law

An actual conflict exists if compliance with both federal and state standards is a physical impossibility *Florida Lime & Avocado Growers, Inc. v. Paul* (1963) 373 U.S. 132, 142-143, or if the state law stands as an obstacle to accomplishment and execution of the full purposes and objectives of Congress. *Hines v. Davidowitz* (1941) 312 U.S. 52, 67. A truck operator can clearly physically comply with both the proposed idling regulation and the federal HOS rule. For instance, drivers of sleeper berth equipped vehicles can shut off the main engine before resting 8 consecutive hours in the sleeper berth, or can start a compliant APS equipped with a verified level 3 PM trap to power cab climate accessories before occupying the sleeper berth. Furthermore, both the federal HOS rule and the idling regulation can be enforced “without impairing the federal superintendence of the field,” *Chevron U.S.A., Inc.* (1984) 726 F.2d 483, 497. The HOS rule is intended to enhance commercial motor vehicle safety by preventing driver fatigue, and the idling regulation is designed to limit the emissions of air pollutants and toxic air contaminants from in-use sleeper trucks and new heavy-duty diesel vehicles. In light of the fact that the federal and state laws regulate entirely separate fields – the safe operation of commercial

motor vehicles and limiting air pollutant emissions generated from the idling of those vehicles, it is unlikely that Congress intended that the HOS rule preempt a state environmental regulation such as this idling regulation.

The idling regulation is not implicitly preempted by the federal HOS rule

Finally, the idling regulation is not implicitly preempted by federal statutes authorizing the HOS rule – the Motor Carrier Act of 1935 and the Motor Carrier Safety Act of 1984. 70 Fed. Reg. 49979 (Aug. 25, 2005). A federal court deciding an implied preemption issue starts with the assumption that the state law is not preempted unless that was "the clear and manifest purpose of Congress." *Rice v. Santa Fe Elevator Corp.* (1947) 331 U.S. 218, 230. Such intent is not likely to be found here. First, the HOS rule and the idling regulation regulate entirely different fields, motor vehicle safety and motor vehicle and nonroad exhaust emissions, respectively. Second, a state's enactment of an environmental regulation, such as the idling regulation at issue, is accorded an enhanced presumption of non-preemption. *Chevron U.S.A., Inc.* 726 F.2d 483, 488. Third, a provision in the federal motor vehicle statute, 49 U.S.C. 30103(b) only specifically prohibits states from prescribing *motor vehicle safety standards* that are inconsistent with standards in effect under [Chapter 301, Subtitle VI, Title 49, United States Code]. These considerations therefore do not establish a pervasive federal regulatory scheme giving rise to an inference that Congress left no room for states to supplement it, or regulate the field of state environmental protection where the federal interest is so dominant that as to preclude state enforcement, especially in light of the sections 209(a) and (e) of the federal CAA waiving federal preemption for California's new motor vehicle and nonroad sources, respectively.

Finally, several of the comments are premised on the assumption that many truckers cannot afford APSs, which appears unlikely given their short projected payback periods. As more fully explained in the staff report, staff projects the cost of installing a compliant APS can be recouped within 2.1 years from the savings in fuel costs. Staff therefore anticipates that the vast majority of sleeper-berth equipped trucks will either be equipped with an APS or will utilize another approved idling compliance option (e.g., truck stop electrification).

L. <u>COMMERCE CLAUSE COMMENTS</u>

75. Comment: The regulation violates the Commerce Clause of the United States Constitution. **(ATA, CTA)**

Agency Response: As explained below, neither the new engine idling shutdown timer nor the in-use ATCM component of the idling regulation violates the federal Commerce Clause.

Article I, §8, cl. 3 of the United States Constitution states that the Congress has the power "[t]o regulate Commerce … among the several States." Courts have

long recognized that this affirmative grant of power also includes an implicit or "dormant" limitation on the authority of states to affect interstate commerce. *Healy v. Beer Institute* (1989) 491 U.S. 324, 326 fn 1.

The threshold issue to be resolved in a Commerce Clause challenge to a state law is whether Congress has exempted that law from Commerce Clause scrutiny. In this case, Congress' enactment of the federal Clean Air Act (CAA) provisions allowing only California to adopt and enforce new vehicle emission standards in § 209(b), and new and in-use nonroad engine standards and emission-related requirements in § 209(e)(2)(A) of the federal CAA, clearly evidence its intent to exempt California's on and off-road vehicle and engine standards and emission-related requirements from Commerce Clause restrictions. The legislative history of the federal Clean Air Act indicates that Congress was fully aware that allowing states to establish their own motor vehicle emission standards would disrupt interstate commerce, and it therefore preempted the states from establishing their own motor vehicle emission standards. However, Congress specifically exempted only California from the federal CAA section 209(a) preemption. "Rather than being faced with 51 different standards, as they had feared, or with only one, as they had sought, manufacturers must cope with two regulatory schemes under the legislative compromise embodied in § 209(a)." *Engine Mfrs Ass'n v. U.S.E.P.A.* (1996) 88 F.3d 1075, 1079. See also *Motor and Equipment Mfrs. Ass'n, Inc. v. E.P.A.* (1979) 1095, 1108 – 1111. Congress determined that authorizing California to establish separate and more stringent standards than those applicable to the rest of the nation would not unduly disrupt interstate commerce. Instead of a Commerce Clause review, Congress enacted in section 209(b) of the federal CAA a procedure requiring the Administrator of the U.S. EPA to review California's regulations and to authorize it to adopt and enforce its unique emission standards and other requirements. *People ex rel. State Air Resources Bd. v. Wilmshurst* (1999) 68 Cal.App.4th 1332, 1345, *Jordan v. Department of Motor Vehicles* (1999) 75 Cal.App.4th 449, 463.

In the 1990 amendments to the federal Clean Air Act, Congress authorized the U.S. EPA to regulate nonroad sources of emissions. As with motor vehicles, Congress preempted all states but California from regulating nonroad sources. California is authorized to adopt and enforce both new and in-use nonroad emission standards and emission-related requirements, subject to the review of the Administrator of the U.S. EPA in § 209(e)(2)(A) of the federal CAA. In fact, the Court of Appeals for the D.C. Circuit has held that only California is authorized to adopt in-use requirements for nonroad sources. *Engine Mfrs Ass'n v. U.S.E.P.A.* (1996) 88 F.3d 1075. Other states that elect to regulate nonroad sources may only adopt regulations identical to those adopted by California, § 209(e)(2)(B) of the federal CAA. Therefore, both the text and history of the motor vehicle and nonroad preemption and waiver provisions of the federal Clean Air Act evidence Congress' intent to exempt the requirements at issue from Commerce Clause scrutiny. In addition, even if a court were to hold that a waiver of preemption does not preclude it from determining if a state

law unpermissibly violates the Commerce Clause, as demonstrated in the Agency Responses to Comments 75a through 77a below, this rulemaking does not violate the federal Commerce Clause.

75a. Comment: In determining whether a particular state law violates the federal Commerce Clause, a court follows a two step analysis. First, the court determines if the law discriminates against interstate commerce. If the law does, the state must demonstrate that the law "serves a legitimate public purpose" and that this purpose could not be served by less discriminatory means.

The ATCM portion of the idling regulation violates the Commerce Clause of the United States Constitution. In analyzing whether a flat state tax discriminates against interstate commerce, courts examine the tax's effect in relation to the level of the taxpayer's in-state activity. *American Trucking Association, Inc. v. Scheiner*, (1987) 483 U.S. 266. In *Scheiner*, the Court held a flat state tax that cost out-of-state trucks five times more per mile than in-state trucks was invalid because it discriminated in effect against interstate commerce. The ATCM portion of the idling regulation can be construed as a tax on trucks operated in California. ARB staff estimates that an APS will cost $5,000-$10,000 per truck (staff report, p. 38). The effective cost of the APS on a California activity basis (per-mile, per-hour of operation, etc.) will likely be much higher for non-California based truck fleets than California based truck fleets. Therefore, the regulation can be analogized to a flat, annual state tax that the U.S. Supreme Court held violated the federal commerce clause because it discriminated in practical effect against interstate motor carriers. **(ATA)**

Agency Response: The commenter's analysis is flawed. Analogizing the ATCM portion of the idling regulation to a flat annual state tax is inappropriate because the regulation cannot reasonably be characterized as a tax, and because such assertion entirely disregards the local health and welfare aspect of the idling regulation. Furthermore, the ATCM portion of the rulemaking does not impose burdens on interstate commerce that are qualitatively or quantitatively different than those imposed on intrastate commerce.

Merriam Webster's Collegiate Dictionary, 10th edition, (1995) defines tax as "a charge usually of money imposed by authority on persons or property for public purposes," or "a sum levied on members of an organization to defray expenses," and these definitions are consistent with those widely applied by courts in cases analyzing if state taxes of motor carriers violate the federal Commerce Clause. "The word 'tax' is used herein in the generic sense in which it has come to be applied to most payments exacted by a state from particular industries as a condition to their existence. It includes fees required for licenses, permits, and registrations." *State Taxation of Motor Carriers as Affected by Commerce Clause*, 17 A.L.R.2d 421. Here, it is undisputed that the ATCM portion of this rulemaking does not impose any fee or payment as a condition of compliance - a truck operator needs only to manually shut off the

main truck engine after five minutes of idling. Furthermore, the provision regarding APSs merely provides an option that companies may elect to utilize. The decision to buy and install an APS is a business decision that each entity subject to this regulation will need to make for each truck that operates in this State, and the fiscal consequences for each company will obviously depend on each of those decisions. It is highly unlikely that every trucking company subject to this regulation will buy the same make and model of APS for each of its trucks, and the capital costs will therefore not be uniform or flat for each entity. The attempt to analogize this regulation to a flat state tax therefore stretches too far. Moreover, the analogy also disregards the fact that staff estimated this regulation will result in a net cost savings, even for those truck operators installing compliant APSs. Finally, the commenter's assertion that out-of-state operators' relative cost for an APS will be greater than California- based vehicles is mere speculation, without any supporting evidence. In fact, it is more likely that California-based sleeper trucks operate outside the State more frequently than non-California based sleepers, and that their APS costs on a "California activity basis" are therefore higher than the APS costs for non-Calfornia based sleepers on a California activity basis.

This comment also disregards the fact that this regulation is enacted by California under its police power to protect the health and welfare of its citizens. As demonstrated below in the Agency Reply to Comment 76, this regulation will likely be found by a court to be a facially neutral regulation that does not unduly burden interstate commerce, and will therefore be upheld against a federal Commerce Clause challenge. Also, to the extent this comment maintains this regulation violates the Commerce Clause because it discriminates in effect against interstate commerce (by imposing disproportionate costs on interstate commerce compared to intrastate commerce), courts will likely reject this contention and instead find this regulation imposes burdens on interstate commerce equivalent to those imposed on intrastate commerce, and therefore uphold it against the Commerce Clause challenge (see Agency Response to Comment 76).

Finally, to the extent this comment alleges this facially neutral regulation discriminates in effect against interstate commerce (and would therefore be subject to review by a court under a strict scrutiny standard of review), several courts appear to follow a two step analysis in which only facially discriminatory laws are subjected to a strict scrutiny standard of review, and evenhanded laws are evaluated under a balancing test described below in the Agency Response to Comment 76. *National Elec. Mfrs. Ass'n v. Sorrell* (2001) 272 F.3d 104, *National Solid Waste Management Ass'n v. Pine Belt Regional Solid Waste Management Authority* (2004) 389 F.3d 491.

76. Comment: If a state law is not found to discriminate against interstate commerce, a court will utilize a balancing test enunciated in *Pike v. Bruce Church* (1970) 397 U.S. 137, 142 to determine whether a nondiscriminatory

state regulation violates the federal Commerce Clause. The *Pike* test weighs the local benefits of a state regulation against the burdens it imposes on interstate commerce.

The ATCM portion of the regulation violates the *Pike* test because it imposes excessive costs on interstate sleeper trucks that have very infrequent and limited operations in California, compared to other sleeper trucks. For this category of interstate sleeper trucks, California would obtain minimal benefits and yet the trucks would incur exorbitant costs. "For example, for a truck that operates only a few hours per year in the State, the per-pound cost of emission reduction would be astronomical for that truck. This type of per-activity analysis in tax cases is consistent with well-accepted apportionment requirements." **(ATA)**

Agency Response: As noted by the comment, if a court determines that a state law does not discriminate against interstate commerce or directly regulates commerce outside of the state's boundaries, it then balances the law's local benefits against its burdens on interstate commerce to determine if the law violates the federal Commerce Clause. *Pike v. Bruce Church* 397 U.S. 137, 142. Under this test the state law will be upheld unless it imposes a burden on interstate commerce that is clearly excessive in relation to the putative local benefits. "If a legitimate local purpose is found, then the question becomes one of degree. And the extent of the burden that will be tolerated will of course depend on the nature of the local interest involved, and on whether it could be promoted as well with a lesser impact on interstate activities." *Ibid.* Furthermore, courts will accord a greater presumption of validity to a state's laws in the field of safety. *Pike* 397 U.S. 137, 143, *Bibb v. Navajo Freight Lines, Inc.* (1959) 359 U.S. 520.

Courts recognize that preventing air pollution is and has been a traditional local safety concern. *Huron Portland Cement Co. v. Detroit* (1960) 362 U.S. 440, 445-446. This recognition is also expressed in the federal Clean Air Act section 101(a)(3), where the U.S. Congress declared that states and local governments are primarily responsible for preventing air pollution, and in California Health and Safety Code sections 39000 and 39001, where the California legislature declared a strong public interest in controlling air pollution to protect the "health, safety, welfare, and sense of well-being" of Californians. In regards to the ATCM portion of the idling regulation, the California legislature declared in California Health and Safety Code section 39650 that toxic air contaminants can endanger the public health, safety, and welfare, and should therefore be controlled to prevent harm to the public health. Pursuant to this directive the ARB identified diesel exhaust particulate matter as a toxic air contaminant in August 1998, and approved a comprehensive Diesel Risk Reduction Plan in September 2000 to significantly reduce emissions from new and in-use diesel fueled engines and vehicles. Idling emissions from diesel-fueled heavy-duty motor vehicles are identified as sources of diesel exhaust particulate matter in the Diesel Risk Reduction Plan and this regulation is therefore an important

component of ARB's plan to reduce emissions of an identified toxic air contaminant. These considerations establish that the ATCM portion of this regulation serves the legitimate public purpose of protecting the health and welfare of California's residents, which purpose "clearly falls within the exercise of even the most traditional concept of what is compendiously known as the police power." *Huron Portland Cement Co.* (1960) 362 U.S. 440, 442.

If a court determines that the justifications for a state safety based regulation are not illusory, as it would likely find in this case, it will accord the regulation significant deference. *Raymond Motor Transportation v. Rice* (1978) 434 U.S. 429, 449 (Blackmun, J., concurrence). The court will then assess the regulation's burden on interstate commerce. As set forth at length in the staff report, the ATCM portion of the idling regulation requires all diesel-fueled commercial motor vehicles to limit idling of the primary diesel engine to five minutes at any location. Trucks that utilize APSs complying with specified emissions limits are exempted from the five minute idling limit, as are trucks electing to use other technologies such as on-shore electrical power or technologies producing minimal or no emissions. These requirements apply to both California-based and non-California based trucks that operate in the State.

The regulation therefore does not unduly burden interstate commerce, because all truck operators can comply merely by manually shutting off their truck engines. This compliance option does not require any additional equipment or incur any additional costs, other than those associated with carriers having to notify their truck operators of the idling limits. Those trucking companies that elect to install a compliant APS are estimated to incur a one time cost of no more than $10,500, but that cost will be significantly offset by the savings resulting from the reduced fuel consumption and maintenance requirements. In fact, staff estimates a payback period of 2.1 years for an APS plus particulate matter trap, and also anticipates a net cost savings over the useful life of the truck. *See* section VII, staff report. Furthermore, installing a compliant APS is only one of a range of options available to truck operators. These considerations demonstrate that this regulation does not impose a burden on interstate commerce that clearly exceeds its benefits of protecting the health and welfare of California's residents from exposures to an identified toxic air contaminant, and would therefore likely not be found to unconstitutionally burden interstate commerce under the *Pike* balancing test.

This conclusion also necessarily follows because a state law violates the *Pike* balancing test only if it imposes a burden on interstate commerce that is "qualitatively or quantitatively different from that imposed on intrastate commerce." *National Elec. Mfrs. Ass'n v. Sorrell* (2001) 272 F.3d 104, 109, *National Solid Waste Management Ass'n v. Pine Belt Regional Solid Waste Management Authority* (2004) 389 F.3d 491, 502. As discussed above, the ATCM portion of the regulation requires that both California-based and non-California based trucks operating in the State idle no longer than five minutes at any location, which applies equally to interstate and intrastate trucks. The

comment attempts to create a distinction in regulatory burdens by stating that interstate sleeper trucks "that have very infrequent and limited operations in California" will have to pay "equivalent compliance costs" to an unnamed comparison category (which we necessarily assume are California-based sleeper trucks, as the existing in-use ATCM already regulates all non-sleeper trucks; see section IX.A of the staff report), while providing minimal emission benefits (which we also assume are in comparison to California-based sleeper trucks). This argument errs in two respects. First, it disregards staff's estimates that in the year 2010 and 2020, emissions from out-of-state registered sleeper trucks *exceed* those from California registered sleeper trucks. *See* section IX.A of the staff report and specifically tables 6 and 7. Second, its attempt to again analogize the regulation to the imposition of a state tax is inappropriate as explained in the Agency Response to Comment 75a. Finally, the ATCM portion of the regulation likely imposes *higher* regulatory burdens on California based sleeper trucks than on out-of-state registered sleeper trucks, since the California based trucks will likely be operated in California only a fraction of the time compared to their out-of-state counterparts. Accordingly, because the regulation does not impose a larger burden on interstate commerce than it does on interstate commerce, it will not violate the *Pike* balancing test.

76a. Comment: Trucking companies cannot limit specific routes to specific trucks and only allot routes to those specific trucks that are equipped to operate in California. Because out-of-state trucks outnumber California-based trucks by a 3-1 margin, any emission benefits from regulating out-of-state trucks are outweighed by the $9.2 billion financial burden the regulation imposes on out-of-state trucks. [Calculated by estimating an average cost of $7500 per APS times 1.23 million out-of-state based trucks]. The ATCM portion of the regulation therefore "imposes a significant cost on interstate carriers and dictate[s] equipment purchases" outside of California, which regulates interstate commerce in violation of the federal Commerce Clause. **(CTA)**

Agency Response: The Agency Response to comment 76 is incorporated herein. The ARB does not believe that the ATCM portion of the rulemaking will impose a significant financial burden on out-of-state trucking fleets. The comment presumes that every out-of-state truck in the nation's fleet must install a compliant APS because it may have to drive into California sometime in the future. This assumption disregards the fact that trucking fleets utilize advanced technologies, such as global positioning systems, to track the locations of individual trucks on a real-time basis. Trucking fleets are therefore aware of the location of each of their vehicles, and can easily direct only compliant trucks into California. Furthermore, many trucks may never enter California because of its geographic location.

77. Comment: State regulations that directly regulate interstate commerce or that impermissibly regulate activity occurring wholly outside of the regulating state violates the federal Commerce Clause. *Healy v. Beer Institute*, 491 U.S. 324,

332 (1989), *Brown-Forman Distillers Corporation v. New York State Liquor Authority* (1986) 476 U.S. 573, *Southern Pacific Co. v. Arizona* 325 U.S. 761 (1945). The portion of the idling regulation that requires new 2008 and subsequent heavy-duty diesel trucks certified for sale in California to be equipped with a shutdown timer violates the Commerce Clause because it effectively controls truck operations beyond California's borders. This requirement prohibits sleeper trucks sold in California from operating the main engine for cab comfort even though other states allow such operation to comply with Federal Hours-of-Service requirements. "In this instance, a state regulation mandating unique equipment effectively mandates its use in other states as well." (**ATA)**

77a. Comment: The ATCM portion of the regulation "dictate[s] equipment purchases" outside of California, in violation of the federal Commerce Clause. **(CTA)**

Agency Response to Comments 77 and 77a: If a court finds that Congress has not exempted a state law from Commerce Clause scrutiny, it then determines whether the law discriminates against interstate commerce or directly regulates commerce outside of the state's boundaries. Such laws are virtually per se invalid. *Brown-Forman Distillers Corp. v. New York State Liquor Authority* (1986) 476 U.S. 573, 579. In *Brown-Forman Distillers Corporation v. New York State Liquor Authority* (1986) 476 U.S. 573, and in *Healy v. Beer Institute* (1989) 491 U.S. 324, the U.S. Supreme Court found that two price affirmation statutes (for liquor and beer, respectively) violated the Commerce Clause because they effectively regulated out-of-state commerce by controlling the prices and marketing practices in other states. For instance, the challenged New York statute in *Brown-Forman* effectively forced sellers to forego promotional allowances in other states (in which the allowances were legal) or would force other states to alter their own regulatory schemes to allow the sellers to lower their New York prices.

In *Southern Pac. Co. v. Sullivan* (1945) 325 U.S. 761, the Supreme Court held that an Arizona law limiting the number of railroad cars in trains within the State violated the Commerce Clause. The Court determined that the law was ineffective as a safety measure because the record indicated the law *increased* the number of train-related accidents. *Southern Pac. Co.* (1945) 325 U.S. 761, 775-779. The Court also found that the law substantially impeded interstate commerce because its practical effect was to regulate train operations beyond Arizona's borders (by requiring trains to break up or reassemble railroad cars before entering and after leaving the State). The Court was especially concerned that if Arizona could regulate train lengths, so could other states, which would seriously impede interstate commerce. *Id.* at 775.

The reasoning cited in the above mentioned cases is inapposite to the new engine shutdown timer and the ATCM portion of the rulemaking. First, as explained in the Agency Response to comment 75, Congress has likely

exempted these requirements from Commerce Clause scrutiny by its enactment of the federal CAA provisions allowing only California to adopt and enforce new vehicle emission standards in § 209(b) and in-use requirements for nonroad sources in § 209(e)(2)(A).

Second, ARB disagrees that the reasoning in the *Brown-Forman, Healy,* and *Southern Pac. Co.* cases supports a finding that either the new engine shutdown timer requirement or the ATCM portion of the rulemaking directly regulates commerce occurring entirely beyond California's borders. Unlike the price affirmation statutes in *Brown-Foreman* and *Healy*, the idling shutdown timer requirement does not have a practical effect of regulating commercial activity beyond California's borders, since it only applies to new 2008 and subsequent model heavy-duty diesel engines certified for sale and use in California. Therefore, businesses such as trucking fleets that do not register their trucks in California need not purchase California certified engines equipped with the idling shutdown timers. Furthermore, at this time the U.S. EPA has not expressed an interest in adopting new engine idle shut down timer requirements. However, if and when it does, ARB will work closely with U.S. EPA to harmonize the requirements to the greatest extent possible. Also, because the federal Clean Air Act preempts all states except California from adopting and enforcing in-use requirements for nonroad sources (unless other states elect to adopt regulations that are *identical* to those adopted by California), the idling requirements avoid the possibility that other states might adopt possibly inconsistent requirements, which concerned the *Southern Pac. Co.* court.

Both the new engine shutdown timer and the ATCM requirement are analogous to the statute at issue in *National Elec. Mfrs. Ass'n v. Sorrell* (2001) 272 F.3d 104. In that case, Vermont law required manufacturers of mercury-containing lamps to label them in order to inform consumers that the lamps contain mercury and should be disposed of in an appropriate manner. 272 F.3d 104, 107. Lamp manufacturers argued that because of their manufacturing and distribution systems, the law violated the Commerce Clause because it would, in practical effect, require them to also label lamps sold in every other state. The Court of Appeals for the Second District disagreed, and upheld the law, reasoning that the statute was indifferent to whether lamps sold elsewhere were labeled or not. "To the extent the statute may be said to 'require' labels on lamps sold outside Vermont, then, it is only because the manufacturers are unwilling to modify their production and distribution systems to differentiate between Vermont-bound and non-Vermont-bound lamps." *Id.* at 110. In this case, each of the idling requirements is also indifferent to whether engines sold outside of California are equipped with the shutdown timer devices, or if trucks outside of California are equipped with an APS. Therefore, under the reasoning of the *Elec. Mfrs. Ass'n* case, these requirements do not violate the Commerce Clause.

The comment that the new engine shutdown timer requirement prohibits sleeper trucks in California from operating the main engine for cab comfort in order to comply with the federal Hours of Service regulations is addressed in the Agency Response to Comments 73 and 74.