

State of California
AIR RESOURCES BOARD

Resolution 07-19

July 26, 2007

Agenda Item No.: 07-5-6

WHEREAS, section 39002 of the Health and Safety Code provides that the control of air pollution from vehicular sources, except as otherwise provided in Division 26 of the Health and Safety Code, shall be the responsibility of the Air Resources Board (ARB or Board);

WHEREAS, sections 39600 and 39601 of the Health and Safety Code authorize the Board to adopt standards, rules and regulations and to do such acts as may be necessary for the proper execution of the powers and duties granted to, and imposed upon, the Board by law;

WHEREAS, sections 39515 and 39516 of the Health and Safety Code provide that the Board may delegate any duty to the Executive Officer which the Board deems appropriate and that any power, duty, purpose, function, or jurisdiction which the Board may lawfully delegate shall be conclusively presumed to have been delegated to the Executive Officer unless the Board has expressly reserved such authority onto itself;

WHEREAS, section 41511 of the Health and Safety Code provides that for the purpose of carrying out its duties, ARB may adopt rules and regulations to require the owner or the operator of any pollution emission source to take such action as ARB may determine to be reasonable for the determination of the amount of emissions from such source;

WHEREAS, under section 39650 of the Health and Safety Code, the Legislature finds and declares that it is the public policy of the State that emissions of toxic air contaminants should be controlled to levels that prevent harm to the public health;

WHEREAS, pursuant to section 39662(b) of the Health and Safety Code, on August 27, 1998, the Board identified particulate matter (PM) emissions from diesel fueled engines (diesel PM) as a toxic air contaminant pursuant to article 3 (commencing with section 39650), chapter 3.5, part 2, division 26 of the Health and Safety Code;

WHEREAS, pursuant to section 39669.5(a) of the Health and Safety Code, the Office of Environmental Health Hazard Assessment has listed diesel PM and other compounds associated with diesel exhaust as possibly causing infants and children to be especially susceptible to illness;

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WHEREAS, in identifying diesel PM matter as a toxic air contaminant, the Board determined, pursuant to section 39662(c) of the Health and Safety Code, that there is not sufficient scientific evidence to support identification of a threshold level below which no significant adverse health effects are anticipated; this is codified in title 17, California Code of Regulations (CCR), section 93000;

WHEREAS, pursuant to section 39665 of the Health and Safety Code, ARB staff prepared a comprehensive risk reduction plan (Diesel Risk Reduction Plan) to significantly reduce PM emissions from diesel-fueled engines and vehicles, which the Board approved on September 28, 2000;

WHEREAS, sections 39658, 39665, 39666, and 39667 of the Health and Safety Code authorize the Board to establish airborne toxic control measures (ATCM) for substances identified as toxic air contaminants in accordance with specified criteria;

WHEREAS, in fulfilling the requirements of the aforementioned sections set forth in the paragraph immediately above, and specifically section 39667 of the Health and Safety Code, the Board is required to consider adoption of an ATCM revising emission standards for vehicular sources to achieve the maximum possible reduction in public exposure based on its prior determination not to specify a threshold exposure level for diesel PM under section 39662 of the Health and Safety Code;

WHEREAS, an ATCM for a vehicular source, developed pursuant to section 39667 of the Health and Safety Code, is required to be based on application or utilization of the best available control technologies (BACT) or more effective control methods, unless the Board determines, based on an assessment of risk, that an alternative level of emission reduction is adequate or necessary to prevent an endangerment of public health;

WHEREAS, sections 39674, 39675, 42410, 43016, 43017, and 43023 of the Health and Safety Code authorize the Board to request that state and local prosecutors seek criminal prosecution, civil and administrative penalties, and injunctive relief for violations of adopted ARB regulations and ATCMs;

WHEREAS, in section 43000 of the Health and Safety Code, the Legislature has declared that the emissions of air pollutants, including oxides of nitrogen (NOx) and PM, from motor vehicles are the primary cause of air pollution in many parts of the State; also, the State has the responsibility to establish uniform procedures for compliance with standards which control or eliminate those air pollutants, vehicle emission standards apply to new and used motor vehicles equipped with motor vehicle pollution control devices;

WHEREAS, sections 43013(a) of the Health and Safety Code authorize the Board to adopt motor vehicle emission and in-use performance standards, which it finds to be necessary, cost-effective, and technologically feasible;

WHEREAS, section 43013(b) of the Health and Safety Code authorizes ARB, consistent with 43013(a), to adopt emission standards and regulations for light-, medium-, and heavy-duty vehicles and off-road engine categories;

WHEREAS, section 43018 of the Health and Safety Code further directs the Board to endeavor to achieve the maximum degree of emission reductions possible from vehicular and other mobile sources to accomplish the attainment of State ambient air quality standards by the earliest practicable date and to adopt standards and regulations that will result in the most cost-effective combination of control measures on all classes of motor vehicles;

WHEREAS, pursuant to definitions of vehicular source, motor vehicle, and vehicle respectively set forth in sections 39060, 39040, and 39059 of the Health and Safety Code in-use off-road diesel vehicles are vehicular sources that fall exclusively within the jurisdiction of ARB;

WHEREAS, under the federal Clean Air Act (CAA), the United States Environmental Protection Agency (U.S. EPA) has established National Ambient Air Quality Standards (standards or NAAQS) for pollutants considered harmful to public health, including fine particulate matter (PM_{2.5}) and ozone, and states that exceed the NAAQS are required by federal law to develop State Implementation Plans describing how they will attain the standards by certain deadlines;

WHEREAS, many areas of California, including the South Coast and San Joaquin Valley air basins, are in non-attainment for ozone, for which NO_x is a precursor, and both the South Coast and San Joaquin Valley Air Basins are in non-attainment for PM_{2.5}, for which NO_x and diesel PM are significant contributors;

WHEREAS, the federal CAA requires the South Coast and San Joaquin Valley air basins to attain the PM_{2.5} NAAQS by 2015 and U.S. EPA requires that all necessary emission reductions be achieved by 2014 and the same air basins, having the most severe ozone concentrations are expected to have until 2023 to attain the federal ozone standard;

WHEREAS, the ozone and PM_{2.5} SIPs are due to U.S. EPA by June 2007 and April 2008, respectively, and air quality modeling indicates that significant reductions of both NO_x and diesel PM are crucial to meeting the two standards;

WHEREAS, ARB staff met and worked with affected private industry, federal, state, and local public agencies, and the public in developing these regulations, holding numerous meetings with individual affected stakeholders, thirteen public workshops, eight public workgroup meetings, and sending out over 688,000 mailings;

WHEREAS, with the information and comments received from such meetings, ARB staff prepared a report, entitled "Staff Report: Initial Statement of Reasons for Proposed Rulemaking – Regulation for In-Use Off-Road Diesel Vehicles," released April 6, 2007

(ISOR) and an associated technical support document, entitled "Technical Support Document – Proposed Regulation for In-Use Off-Road Diesel Vehicles," also released April 6, 2007 (TSD);

WHEREAS, the ISOR and TSD identified and explained the need and appropriate degree of regulation for diesel PM that was earlier addressed in the Diesel Risk Reduction Plan required by Health and Safety Code section 39665(a) and addressed the need for further NOx reductions from in-use off-road diesel vehicles;

WHEREAS, the ISOR and TSD discussed, to the extent data were reasonably available, the factors specified in Health and Safety Code section 39665(b) in adopting the Diesel Risk Reduction Plan, including: estimates of emissions, exposure, and potential health effects due to the operation of diesel-fueled engines associated with in-use off-road diesel vehicles, feasible control options, potential environmental impacts, cost of compliance for all owners and/or operators of in-use off-road diesel vehicles, and cost impacts for ARB implementation of the proposed regulation;

WHEREAS, the ISOR presented staff's proposal that the Board adopt the proposed Regulation for In-Use Off-Road Diesel Vehicles, title 13, CCR, section 2449, as set forth in Attachment A to the ISOR, as modified by staff in its suggested changes to the initially proposed regulation, as set forth in Attachment B, which was presented to the Board at this hearing, both of which are attached hereto as Attachments A and B;

WHEREAS, staff concluded that the proposed regulation would reduce diesel PM and NOx emissions and associated cancer, premature mortality, and other adverse health effects statewide and significantly reduce such emissions and adverse health effects in California, and would prevent approximately 4,000 premature deaths;

WHEREAS, the emission reductions from the proposed regulation would be expected to provide a benefit of \$18 to \$26 billion in avoided premature death and health costs between 2009 and 2030;

WHEREAS, staff estimated the overall cost effectiveness associated with compliance with the proposed regulation to be approximately \$41 per pound of diesel PM reduced and \$2.30 per pound of NOx reduced;

WHEREAS, ARB has adopted emission standards for new off-road diesel engines, title 13, California Code of Regulations (CCR), section 2423, in December 2000 (Tiers 2 and 3) and October 2004 (Tier 4), which harmonized with emission standards adopted by U.S. for federal nonroad diesel engines;

WHEREAS, in March 2003, ARB adopted Verification Procedure Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines, title 13, CCR, section 2700-2710, and subsequently amended it in October 2004 and February 2007;

WHEREAS, in accordance with the authority set forth above, staff evaluated various control options, including:

Reliance on existing new engine standards and voluntary programs with no additional control of in-use off-road diesel vehicles;

Requiring fleets to install PM retrofits on all vehicles or replace them with new vehicles under a certain phase-in schedule;

Requiring that fleets meet a PM fleet average emission rate, but not a NOx fleet average emission rate;

Requiring fleets to meet stricter or less strict fleet average emission targets than those proposed; and

Requiring fleets to turn over a greater or lesser annual percentage or retrofit a greater or lesser annual percentage if meeting the BACT requirements in lieu of the fleet average targets than proposed.

WHEREAS, staff determined that the regulation would impose a non-reimbursable mandate on local governments, which comprise approximately three percent of California's in-use fleet;

WHEREAS, the California Environmental Quality Act (CEQA), section 21080.5 of the Public Resources Code and Board regulations at title 17, CCR, section 60006 require that no project that may have significant adverse environmental impacts be adopted as originally proposed if feasible alternatives or mitigation measures are available to reduce or eliminate such impacts;

WHEREAS, a public hearing and other administrative proceedings have been held in accordance with the provisions of chapter 3.5 (commencing with section 11340), part 1, division 3, title 2 of the Government Code;

WHEREAS, after consideration of the ISOR, written comments, and public testimony it has received, the Board finds regarding the proposed adoption of section 2449 of title 13, CCR, that:

In-use off-road diesel vehicles that operate in the State – whether based in California or not – are significant contributors of diesel PM and NOx emissions, which California must reduce to achieve attainment of ozone and PM2.5 NAAQS and to reduce the health risks associated with such pollutants;

The proposed regulation is both technologically feasible and cost-effective, providing owners of in-use off-road diesel fleets with flexibility by allowing them to choose among several compliance options to control emissions, reduce public exposure, and protect public health and safety;

The proposed regulation would achieve the necessary emission reductions in a cost-effective manner while providing fleet owners with reasonable compliance flexibility by, among other things:

On or after March 1, 2010, requiring owners of large in-use off-road diesel fleets to either meet the separate fleet average emission targets for NOx and diesel PM, or, alternatively, meet BACT requirements that include annual fixed percentage turnover (8 percent of a fleet's total maximum power annually through March 1, 2015 and 10 percent thereafter) for fleets that do not meet the NOx standard and annual fixed percentage retrofitting (20 percent of a fleet's total maximum power annually with the highest level of verified diesel emission control system (VDECS) available) for fleets that do not meet the diesel PM standard;

On or after March 1, 2013, allowing owners of medium in-use off-road diesel fleets to either meet the separate fleet average emission targets for NOx and diesel PM, or, alternatively, meet BACT requirements that include annual fixed percentage turnover (as stated above) for fleets that do not meet the NOx standard and annual fixed percentage retrofitting (as stated above) for fleets that do not meet the diesel PM standard;

On or after March 1, 2015, allowing owners of small in-use off-road diesel vehicle fleets to either meet the fleet average emission target for diesel PM, or, alternatively for fleets that do not meet the diesel PM standard, annually retrofit a fixed percentage (as stated above);

Prohibiting all fleets from adding vehicles with the dirtiest engines to their fleets beginning March 1, 2009, and prohibiting fleets that do not meet the fleet average targets from adding additional vehicles to the fleet that would further increase emissions above the fleet average targets;

Requiring after March 1, 2020 for large and medium fleets and March 1, 2025, for small fleets, that no vehicle may be added to a fleet unless it is a Tier 3 or interim or final Tier 4 engine with an original engine manufacturer (OEM) diesel particulate filter or a Level 3 VDECS installed within three months of acquisition;

Requiring, with limited exceptions, that no in-use off-road vehicles be allowed to idle for more than five consecutive minutes;

Allowing fleet owners to calculate the annual fleet averages for NOx and diesel PM using electric and alternative fueled vehicles and stationary and portable systems that replace diesel vehicles in the fleet;

Providing fleet owners with early BACT turnover and retrofit credits for early compliance and carryover credits for exceeding compliance schedules for a specific year;

Exempting the following vehicles from compliance with the BACT turnover requirements: vehicles less than 10 years old, specialty vehicles that meet specified criteria, vehicles retrofitted in the last six years with a Level 2 or 3 VDECS that was the highest level of VDECS available at the time of retrofit, vehicles with a interim or final Tier 4 engine, and (through March 1, 2013) all vehicles equipped with a Tier 1 or higher engines;

Exempting engines from compliance with the BACT retrofit requirements if they are less than five years old, no highest level of VDECS is available, they have been previously retrofitted with a Level 2 or 3 VDECS that was the highest level of VDECS available at the time of retrofit, or they were equipped with an OEM diesel particulate filter at the time the vehicle was purchased new;

Exempting from the fleet average and BACT requirements all vehicles used for emergency operations, vehicles that have been designated as low-use, dedicated snow removal vehicles, and vehicles used more than 50 percent of the time in agricultural operations;

Providing for compliance extensions in some circumstances, for example, if a fleet owner wants to use experimental diesel emission control strategies, or if he encounters unavailability of equipment, including VDECS and Tier 4 engines because of manufacturing delays;

To ensure expeditious implementation, compliance, and enforcement, requiring all fleet owners that operate in-use off-road diesel vehicles in California to:

Have a unique equipment identification number permanently affixed on the outside of each affected vehicle; and

Maintain records and report annually specified information to ARB;

The proposed regulation would reduce exposure to potential diesel PM and NOx emissions and associated cancer and other adverse health effects in all nearby communities where in-use off-road diesel vehicles operate;

The economic impacts of the proposed regulation have been analyzed as required by California law, and the conclusions and supporting documentation for this analysis are set forth in the ISOR and TSD;

The benefits of the proposed regulation to public health and the environment justify the costs of compliance, implementation, and enforcement; and

No alternatives considered or that have otherwise been identified and brought to the attention of ARB would be more effective carrying out the purpose for which the regulation is proposed, or would be as effective and less burdensome to the affected private businesses and public agencies than the proposed regulation;

WHEREAS, the Board further finds, in accordance with Health and Safety Code section 39650(e), that while absolute and undisputed scientific evidence may not be available to determine the exact risk from diesel PM from diesel-fueled engines associated with in-use off-road diesel vehicles, it is necessary to take action to protect public health and that the maximum feasible emission reductions permitted by law should be obtained;

WHEREAS, pursuant to Health and Safety Code section 39667, the Board further finds that the proposed in-use emission standards approved herein are based on utilization of BACT identified within the time scheduled for compliance;

WHEREAS, pursuant to section 43013(a) and (b) of the Health and Safety Code, the Board further finds that the in-use emission standards approved herein are necessary, cost-effective, and technologically feasible within the time provided for compliance;

WHEREAS, the Board further finds based on its independent judgment and analysis of the entire record before it that:

With respect to the requirements of CEQA, the proposed regulation will not have a significant adverse effect on the environment, but will result in the reduction of diesel PM and NOx; and

Having determined that the proposed regulation will not adversely affect the environment, but rather provide environmental benefits that are achieved both statewide and locally, the proposed regulation should not adversely impact any community in the State, especially low-income or minority communities; and

WHEREAS, section 209(e)(2) of the CAA requires that California request authorization from U.S. EPA prior to enforcing emission standards or other requirements relating to the control of emissions from new and in-use nonroad engines (of which off-road diesel engines are a subpart) not otherwise preempted by section 209(a) or (e)(1).

NOW, THEREFORE, BE IT RESOLVED that the Board hereby approves for adoption new sections 2449 et seq. of article 4.8, chapter 9, division 3, title 13, CCR, as set forth in Attachment A hereto, with the modifications set forth in Attachment B and the following additional modifications:

Divide the regulation presently set forth in section 2449, title 13, CCR into two separate sections: one covering the requirements for compliance with diesel PM limits and one for compliance with NOx limits;

Add a new section using incentive-based funding, consistent with the approach taken in Attachment C hereto – made available by staff at the hearing – that would allow any air quality management district and air pollution control district to achieve additional NOx reductions from in-use off-road heavy-duty diesel vehicles operating within its air basin by opting to follow the requirements of the section and providing incentive funding to fleets that would be required to apply for funds and, if received, use the funds to achieve real, calculable, and enforceable surplus NOx emission reductions;

Modify the definition of Non-Profit Training Center to refer to 26 U.S.C. subsections 501(a) and (c)(3), (5) and (6); and

Modify the regulations to provide that, on or after March 1, 2009, a fleet that permanently retires a Tier 0 vehicle from service within California may count that vehicle in meeting both the diesel PM BACT requirements and the NOx BACT requirements to achieve equivalent emission reductions relative to the retrofit requirements.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to incorporate into the proposed regulations the modifications approved herein, with such other conforming modifications as may be appropriate, and then to adopt the new regulations, after making the modified regulatory language available for public comment for a period of 15 days, provided that the Executive Officer shall consider such written comments regarding the modifications as may be submitted during this period, shall make further modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if the Executive Officer determines that this is warranted.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to present reports to the Board as follows:

By January 2009, provide a technology update report on the status of diesel emission control strategies that have been verified by ARB and are available for installation to comply with the March 1, 2010 compliance date; the report shall include an update on the number of devices that have been verified, the cost of those devices, and information on the ARB/South Coast Air Quality Management District/Mobile Source Air Pollution Reduction Review Committee Off-Road Diesel Retrofit Showcase;

By December 2010, provide a status report on compliance with and enforcement of the March 1, 2010 compliance date for large fleets; the report shall include an

analysis of the effect of the flexibility provisions of the regulations and the regulation's economic impacts; and

By December 2013 and 2017, provide updates on compliance and enforcement that respectively cover the period March 1, 2010 through March 1, 2013 and March 1, 2013 through March 1, 2017, and updates on engine technology, including engine and vehicle manufacturer progress in having compliant Tier 4 engines and vehicles in the California market in the later years of regulatory implementation.

BE IT FURTHER RESOLVED that the Board hereby determines, in accordance with CAA section 209(e)(2), that to the extent the regulations approved herein affect nonroad vehicles or nonroad engines as defined in CAA section 216(10) and (11), the emission standards and other requirements related to the control of emissions in the regulations approved herein are, in the aggregate, at least as protective of public health and welfare as applicable federal standards, California needs its nonroad emission standards to meet compelling and extraordinary conditions, and the standards and accompanying enforcement procedures approved herein are consistent with CAA section 209.

BE IT FURTHER RESOLVED that the Board, pursuant to CAA section 209(e)(2) and the determinations set forth in the preceding paragraph, directs the Executive Officer to request that U.S. EPA grant California authorization to enforce the adopted regulations or confirm that all or parts of the adopted regulations fall within the scope of a previously granted authorization.

I hereby certify that the above is a true and correct copy of Resolution 07-19, as adopted by the Air Resources Board.

/s/

Lori Andreoni, Clerk of the Board

Resolution 07-19

July 26, 2007

Identification of Attachments to the Board Resolution

- Attachment A:** Proposed Regulation for In-use Off-road Diesel Vehicles (division 3, chapter 9, article 4.8, section 2449, title 13, California Code of Regulations) as set forth in Appendix A to the Initial Statement of Reasons, released April 6, 2007.
- Attachment B:** Staff's Suggested Modifications to the Original Proposal distributed at the July 26, 2007 hearing.
- Attachment C:** Proposed Language to Be Added to New Article 4.8 – Requirement for Largest Fleets to Achieve Additional Reductions of Oxides of Nitrogen Under the Solicitation for Applications Program (ARB, 7/25/07), distributed by staff at the July 26, 2007 hearing.

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