

State of California  
AIR RESOURCES BOARD

Resolution 07-47

November 15, 2007

Agenda Item No.: 07-10-6

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WHEREAS, sections 39600 and 39601 of the Health and Safety Code authorize the Air Resources Board (ARB or 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, Health and Safety Code section 43013(b) authorizes the Board to adopt standards and regulations for off-road and nonvehicular engine categories, including marine vessels such as commercial harbor craft, to the extent permitted by federal law;

WHEREAS, section 43018(a) and (d)(3) of the Health and Safety Code direct the Board to endeavor to achieve the maximum degree of emission reduction possible from vehicular and other mobile sources, including marine vessels, in order to accomplish the attainment of the state ambient air quality standards at the earliest practicable date;

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 which prevent harm to the public health;

WHEREAS, on August 27, 1998, the Board identified particulate matter from diesel-fueled engines (diesel exhaust PM) as a toxic air contaminant pursuant to article 3 (commencing with section 39660), chapter 3.5, part 2, division 26 of the Health and Safety Code;

WHEREAS, ARB staff, in consultation with the Office of Environmental Health Hazard Assessment, has concluded that the particulate matter emissions from diesel engines [on commercial harbor craft](#) using diesel fuel constitute diesel exhaust PM;

WHEREAS, in identifying diesel exhaust PM as a toxic air contaminant, the Board determined that there is not sufficient scientific evidence to support identification of a threshold level for diesel exhaust PM 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 39669.5(a) of the Health and Safety Code, the Office of Environmental Health Hazard Assessment listed diesel exhaust PM as possibly causing infants and children to be especially susceptible to illness;

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WHEREAS, pursuant to section 39665 of the Health and Safety Code, ARB staff prepared a comprehensive risk reduction plan to significantly reduce diesel exhaust PM emissions from diesel-fueled engines and vehicles, including marine vessels, which the Board approved on September 28, 2000;

WHEREAS, the “Staff Report: Initial Statement of Reasons for the Proposed Rulemaking – Regulations to Reduce Emissions from Diesel Engines on Commercial Harbor Craft Operated Within California Waters and 24 Nautical Miles of the California Baseline” (Staff Report) and “Technical Support Document: Technical Support for the Proposed Rulemaking – Regulations to Reduce Emissions from Diesel Engines on Commercial Harbor Craft Operated Within California Waters and 24 Nautical Miles of the California Baseline” ([Technical Support Document](#)), both released on September 7, 2007 [collectively referred to hereinafter as “Staff Report”](#)), along with the report “Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles,” adopted by the Board on September 28, 2000, constitute the reports required under Health and Safety Code section 39665;

WHEREAS, sections 39658, 39665, and 39666 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, for toxic air contaminants that the Board has not specified a threshold exposure level, section 39666 of the Health and Safety Code requires the development of ATCMs designed to reduce emissions of toxic air contaminants from nonvehicular sources to the lowest level achievable through the application of best available control technology (BACT) or a more effective control method, considering factors specified in section 39665, unless the Board determines, based on an assessment of risk, that an alternative level of emissions reduction is adequate or necessary to prevent an endangerment of public health;

WHEREAS, pursuant to section 38500 et seq. of the Health and Safety Code, the Global Warming Solutions Act of 2006 requires ARB staff to adopt regulations and other requirements that would reduce by 2020 statewide greenhouse gas emissions to the equivalent of 1990 levels;

WHEREAS, in January 2005, a Goods Movement Cabinet [Workgroup](#), created by Governor Schwarzenegger and led by the California Environmental Protection Agency and the Business, Transportation and Housing Agency, established a policy for goods movement and ports to improve and expand California’s goods movement industry and infrastructure while improving air quality and protecting public health;

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WHEREAS, the Goods Movement Cabinet [Workgroup](#), in collaboration with the logistics industry, local and regional governments, neighboring communities, business, labor, environmental groups, and other interested stakeholders created a two-phased Goods Movement Action Plan, which outlines a comprehensive strategy to address the

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economic and environmental issues associated with moving goods via the state’s highways, railways, and ports;

WHEREAS, in 2006, the Board adopted the Goods Movement Emission Reduction Plan, the final phase of which, completed in 2007, includes a framework for action, which identifies projects needed to reduce emission from goods movement-related sources, including those from commercial harbor craft engines;

WHEREAS, commercial harbor craft vessels are nonvehicular sources of substantial amounts of diesel exhaust PM, criteria pollutants (e.g., nitrogen dioxide), and precursors of criteria pollutants (e.g., oxides of nitrogen (NOx));

WHEREAS, ARB staff has determined that the current United States Environmental Protection Agency (U.S. EPA) emission standards do not sufficiently reduce emissions of diesel exhaust PM and other criteria pollutants and precursors from in-use commercial harbor craft vessels;

WHEREAS, in accordance with the above authority, ARB staff has proposed adoption of a regulation and an essentially identical ATCM for commercial harbor craft diesel engines (collectively referred to hereinafter as the “regulation”), set forth in Attachment A of the Staff Report and Attachment A hereto; this proposed regulation was developed through the sharing of information and discussions of concepts and draft versions that were made available to the public for review and comment at 12 public workshops and 3 community outreach meetings held between March 2004 and June 2007;

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WHEREAS, the regulation relies, in part, on the adoption by U.S. EPA of Marine Engine Tier 3 and Tier 4 standards, as set forth in “Control of Emissions of Air Pollution from Locomotive Engines and Marine Compression-Ignition Engines Less Than 30 Liters Per Cylinder” (72 Federal Register 15937 et seq. (April 3, 2007));

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WHEREAS, the Staff Report identifies and explains the need and appropriate degree of regulation for diesel exhaust PM and other pollutants from commercial harbor craft;

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WHEREAS, the Staff Report identifies Regulated California Waters as a region of water including all California internal waters, estuarine waters, ports, and coastal waters generally within 24 nautical miles of California’s coast, which is a subset of the California Coastal Waters (title 17, CCR, section 70500(b)(1)). The Board has previously determined, through extensive studies of meteorological, wind, and atmospheric conditions, that emissions of air pollutants within the California Coastal Waters are likely to be transported to coastal communities and have adverse impacts on human health and welfare and the environment;

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WHEREAS, the Staff Report discusses the need for and feasibility of regulating emissions from diesel engines on commercial harbor craft operating within Regulated California Waters;

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WHEREAS, the Staff Report further discusses, to the extent data could reasonably be made available, the factors specified in Health and Safety Code sections 39665(b), 43013, and 43018, including, but not limited to the estimates of emissions; exposure; potential cancer risk associated with the operation of commercial harbor craft engines in Regulated California Waters; feasible control options; potential environmental impacts; and the necessity, cost-effectiveness, and technological feasibility of the proposed regulation;

WHEREAS, the Staff Report further discusses risk evaluations ARB staff performed of exposure to diesel exhaust PM emissions from diesel engines operated on commercial harbor craft, using U.S. EPA-approved and ARB-recommended air dispersion models, and these evaluations indicate potential cancer risks for off-site receptor locations near California's major ports up to levels exceeding 200 chances in a million;

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WHEREAS, in addition to discussing the potential cancer risks due to exposure to diesel exhaust PM emission, the Staff Report discusses non-cancer risk evaluations ARB staff performed of exposure to diesel exhaust PM emissions from diesel engines operated on commercial harbor craft, and these evaluations indicate that exposure to these emissions can be associated with about 90 premature deaths per year in addition to numerous other non-cancer health impacts;

WHEREAS, in addition to discussing the effects of exposure to diesel exhaust PM, the Staff Report further determines that the emissions from diesel engines operated on commercial harbor craft contribute to levels of ozone and particulate matter that exceed federal and state ambient air quality standards;

WHEREAS, in accordance with Health and Safety Code section 39665(c), the Staff Report and relevant comments received during public consultation with the air pollution control and air quality management districts (districts), affected sources, and the public were made available for public review and comment at least 45 days prior to the public hearing to consider the proposed regulation;

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WHEREAS, the proposed regulation, [with the modifications described in Attachment B and Attachment C](#), would result in significant [and immediate](#) emission reductions of diesel exhaust PM and NOx after the specified compliance deadlines by requiring that diesel engines operating on commercial harbor craft within Regulated California Waters meet [fuel use requirements and](#) emission limitations that can be achieved through the replacement of existing engines with new clean engines, by demonstrating that existing engines meet the emission limitations, or by implementing equally effective emission control strategies;

WHEREAS, the Board has considered the impact of the proposed regulation on the economy of the State and the potential for adverse economic impacts on California business enterprises and individuals;

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, pursuant to the requirements of CEQA and the Board's regulations, the Board finds that:

1. The Regulated California Waters feature meteorological, wind, and atmospheric conditions peculiar to the local waters of California, and such conditions make it likely that emissions of diesel exhaust PM and NOx occurring within these waters are transported to coastal communities and adversely affect human health and welfare and the environment in such communities, thereby calling for special precautions to reduce these emissions;
2. The emissions from diesel engines used on commercial harbor craft also contribute to regional air quality problems and to potential risk of cancer and noncancer health effects for residents living in communities near California's major ports as well as further inland;
3. Upon implementation, the regulation approved herein would reduce emissions of diesel exhaust PM and NOx from diesel engines used on commercial harbor craft [operated within Regulated California Waters](#);
4. The regulation approved herein will be consistent with ARB's environmental justice policy by reducing the health risks from diesel exhaust PM in all communities near major California ports as well as further inland, including those with low-income and minority populations regardless of location;
5. [While some actions required by the regulation approved herein could result in slightly increased carbon dioxide emissions, other actions required by the regulation will offset this effect, meaning that overall the regulation will not increase emissions of greenhouse gases](#);
6. The regulation approved herein will not have a significant adverse impact on the environment, but will instead result in significant environmental benefits; and
7. The regulation approved herein will conform to the requirements of the Goods Movement Emission Reduction Plan.

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WHEREAS, the Board further finds, based on its independent judgment and analysis of the entire record before it, including the Staff Report, written comments and public testimony it has received, that:

1. In accordance with Health and Safety Code section 39666(c), the regulation approved herein has been designed, in consideration of the factors specified in Health and Safety Code section 39665(b), to reduce emissions of diesel exhaust PM to the lowest level achievable through the application of BACT;
2. In accordance with Health and Safety Code section 43013(b), the in-use emission limits and other requirements of the regulation approved herein are necessary, cost-effective, and technologically feasible for diesel engines on commercial harbor craft within the time provided for compliance;
3. The use of BACT with propulsion engines on new ferries is necessary, cost-effective, and technologically feasible;
4. The compliance schedule contained within the regulation approved herein is necessary, cost-effective, and technologically feasible;
5. Without the regulation approved herein, statewide baseline emissions of diesel exhaust PM and NOx from diesel engines used on commercial harbor craft within Regulated California Waters are expected to be 2.3 tons per day (tpd) and 54 tpd, respectively, in 2015, and 1.7 tpd and 41 tpd, respectively, in 2020;
6. The regulation approved herein would reduce emissions of diesel exhaust PM and NOx emissions statewide by about 0.7 tpd and 13 tpd, respectively in 2015, and by 0.7 tpd and 10 tpd, respectively in 2020;
7. Without the regulation approved herein with the accelerated in-use engine compliance schedule for the South Coast Air Quality Management District (SCAQMD), baseline emissions of diesel exhaust PM and NOx from diesel engines used on commercial harbor craft within Regulated California Waters within the SCAQMD are expected to be 0.63 tpd and 14.4 tpd, respectively, in 2014;
8. The regulation approved herein with the accelerated in-use engine compliance schedule for the SCAQMD would reduce emissions of diesel exhaust PM and NOx emissions by about 0.2 tpd and 4 tpd, respectively in 2014 within the SCAQMD;
9. The reduction of NOx emissions resulting from the regulation approved herein would also reduce the formation of secondarily-formed PM in the atmosphere;
10. The reduction in ambient diesel exhaust PM levels resulting from the regulation approved herein will likely prevent an estimated 310 premature deaths by 2025, with a total valuation pursuant to standard U.S. EPA methodology of \$1.3 billion to

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\$2 billion for avoiding both morbidity, as well as other various non-cancer health effects;

11. The added costs of the regulation approved herein have been analyzed as required by California law, and the analysis of these impacts, as set forth in the Staff Report, indicates that a total added cost incurred for all companies operating commercial harbor craft will be about \$140 million over the life of the regulation;

12. The staff's economic impact analysis shows that affected businesses will be able to absorb the costs of the proposed regulation with no significant statewide adverse impacts on their profitability, based on the projected change in return on owner's equity (ROE), which ranged from a decrease of 0.5 percent for a typical tow company, to a decline of about 3.5 percent for a ferry, excursion or tugboat company. A change in ROE greater than 10 percent would indicate a potential for significant adverse economic effects;

13. The staff estimates the cost-effectiveness of the regulation approved herein at \$29 per pound of diesel exhaust PM reduced, which is within the range of other measures recently adopted by the Board;

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

15. The reporting requirements applicable to businesses in the regulation approved herein are necessary for the health, safety, and welfare of the people of the State;

16. The benefits of the regulation approved herein to public health and welfare and the environment substantially outweigh the costs of compliance, implementation, and enforcement;

17. The regulation approved herein poses a minimal risk of innocent noncompliance and does not affect commercial harbor craft operations outside the 24 nautical mile zone (Regulated California Waters) within which California is properly asserting jurisdiction;

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 exhaust PM from diesel engines on commercial harbor craft operating within the Regulated California Waters, it is necessary to take action to protect public health and that the maximum feasible emission reductions permitted by law should be obtained;

WHEREAS, section 209(e)(2) of the federal Clean Air Act (CAA) requires that California seek authorization from U.S. EPA prior to enforcing emission standards or other

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15. . There are no feasible mitigation measures or alternatives that would further reduce any potential adverse environmental impacts, while at the same time ensuring that the long-term benefits of the program would be achieved;¶

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requirements relating to the control of emissions from new and in-use nonroad engines (of which diesel marine engines are a subpart) not otherwise preempted by section 209 (e)(1); and

WHEREAS, under the CAA, U.S. EPA does not have authority to establish emission standards for in-use nonroad equipment.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby approves for adoption new section 2299.5 of chapter 5.1 of division 3, title 13, CCR, and new section 93118.5 of subchapter 7.5, chapter 1, division 3, title 17, CCR, as set forth in Attachment A hereto, [with the modifications shown in Attachment B and Attachment C hereto](#).

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to adopt the approved regulation with [such additional](#) conforming modifications as may be appropriate, after making the modified regulatory language [and any additional documents and information](#) available for public comment for a period of at least 15 days, provided that the Executive Officer shall consider [any](#) written comments regarding the modifications [and any additional documents and information](#) as may be submitted during this period, shall make further modifications as may be appropriate in light of the comments received or as necessary to ensure consistency with the modifications approved by the Board, and shall bring any proposed changes to the Board for further consideration if the Executive Officer determines that this is warranted.

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BE IT FURTHER RESOLVED that the Board directs the Executive Officer to periodically review the test methods ("test methods") and the California baseline ("baseline") as shown in nautical charts published by the National Oceanic and Atmospheric Administration ("NOAA charts") to determine if modifications to the test methods or definition of baseline incorporated by reference in the regulation adopted herein are warranted.

BE IT FURTHER RESOLVED that, pursuant to sections 39515, 39516, 39600, and 39601 of the Health and Safety Code, if modifications to the test methods or definition of baseline are warranted, the Board expressly delegates to the Executive Officer the authority to: (a) adopt regulatory amendments to the test methods, set forth in [title 13, CCR, section 2299.5\(j\)](#) and [title 17, CCR, section 93118.5\(j\)](#) and to the definition of baseline, set forth in [title 13, CCR, section 2299.5\(d\)\(10\)](#), and [title 17, CCR, section 93118.5\(d\)\(10\)](#); (b) conduct public hearings; and (c) take other appropriate actions to make such amendments.

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BE IT FURTHER RESOLVED that the Board directs the Executive Officer to develop guidance, as part of a public process, to assist vessel owners or operators who choose to comply with the regulation under the Alternative Control of Emissions process in [title 17, CCR, section 93118.5\(f\)](#) and [title 13, CCR, section 2299.5\(f\)](#).

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BE IT FURTHER RESOLVED that the Board directs the Executive Officer to report to the Board approximately two years after the January 1, 2009, implementation of the



regulation on any issues related to the application of BACT on propulsion engines of new ferries.

BE IT FURTHER RESOLVED that the Board directs the staff to work with the local air district when making a BACT determination on a new ferry within that district.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to conduct outreach efforts as soon as possible with the affected industry to ensure that vessel operators are aware of the requirements of the regulation.

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BE IT FURTHER RESOLVED that the Board directs the staff to propose amendments to the regulation for the Board's consideration if U.S. EPA adopts Marine Engine Tier 3 and Tier 4 standards that are different than those as set forth in "Control of Emissions of Air Pollution from Locomotive Engines and Marine Compression-Ignition Engines Less Than 30 Liters Per Cylinder" (72 Federal Register 15937 et seq. (April 3, 2007)).

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BE IT FURTHER RESOLVED that the Board directs the staff to monitor the implementation of the regulation and to propose amendments to the regulation for the Board's consideration when warranted to resolve any implementation problems that may arise.

BE IT FURTHER RESOLVED that the Board hereby determines, in accordance with section 209(e)(2) of the CAA, that to the extent the regulation approved herein affects 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 regulation 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.

I hereby certify that the above is a true and correct copy of Resolution 07-47, as adopted by the Air Resources Board.

/s/

Lori Andreoni, Clerk of the Board

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Amy Whiting, Clerk of the Board

Resolution 07-47

October 26, 2007

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Identification of Attachment to the Resolution

Attachment A: The Proposed Regulation Order and Airborne Toxic Control Measure for Diesel Engines on Commercial Harbor Craft Operated within California Waters and 24 Nautical Miles of the California Baseline, as set forth in Appendix A to the Staff Report (released September 2007).

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Attachment B: Staff's Suggested Modifications to the Original Proposal, presented at the October 26, 2007 Board hearing.

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Attachment C: Staff's Suggested Modifications to the Original Proposal, in Addition to the Suggested Modifications in Attachment B, presented at the November 15, 2007 Board hearing.

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