

State of California
AIR RESOURCES BOARD

Resolution 05-63

December 8, 2005

Agenda Item No: 05-12-5

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 ocean-going vessels 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 auxiliary and diesel-electric engines, operated on ocean-going vessels using marine distillate fuels and heavy fuel oils, 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, 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;

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 Proposed Rulemaking – Proposed Regulation for Auxiliary Diesel Engines and Diesel-Electric Engines Operated on Ocean-Going Vessels Within California Waters and 24 Nautical Miles of the California Baseline,” released on October 21, 2005 (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, marine vessels are nonvehicular sources of substantial amounts of diesel exhaust PM, criteria pollutants (e.g., nitrogen dioxide and sulfur dioxide), and precursors of criteria pollutants (e.g., oxides of nitrogen (NO_x) and oxides of sulfur (SO_x));

WHEREAS, ARB staff has determined that the current International Maritime Organization and U.S. Environmental Protection Agency (U.S. EPA) standards do not sufficiently reduce emissions of diesel exhaust PM and other criteria pollutants and precursors from in-use marine vessels, both U.S. and foreign-flagged, that visit California ports;

WHEREAS, in accordance with the above authority, ARB staff has proposed adoption of a regulation and an essentially identical ATCM for ocean-going vessel auxiliary diesel engines and diesel-electric engines (collectively referred to 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 17 public meetings held between December 2001 and October 2005;

WHEREAS, the Staff Report identifies and explains the need and appropriate degree of regulation for diesel exhaust PM and other pollutants from ocean-going vessels;

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 ocean-going vessel engines in the waters off California's coastline; feasible control options; potential environmental impacts; and the necessity, cost-effectiveness, technological feasibility of the proposed regulation;

WHEREAS, the Staff Report identifies the California Coastal Waters, a region ranging from about 27 to 102 miles off California's coast, within which the Board has determined, through extensive studies of meteorological, wind, and atmospheric conditions, that emissions of air pollutants are likely to be transported to coastal communities and have adverse effects on human health and welfare and the environment;

WHEREAS, the Staff Report further discusses the need for and feasibility of regulating emissions from auxiliary and diesel-electric engines on ocean-going vessels operating within the region of water that is generally 24 nautical miles of California's coast, which is a subset of the California Coastal Waters;

WHEREAS, the Staff Report further discusses risk evaluations ARB staff performed of exposure to diesel exhaust PM emissions from auxiliary diesel engines and diesel-electric engines operated on ocean-going vessels, 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;

WHEREAS, in addition to discussing the effects of exposure to diesel exhaust PM, the Staff Report further determines that the emissions from auxiliary diesel engines and diesel-electric engines operated on ocean-going vessels 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 45 days prior to the public hearing to consider the proposed regulation;

WHEREAS, the proposed regulation, with the modifications described in Attachment B, would result in significant and immediate emission reductions of diesel exhaust PM, NO_x, and SO_x after the specified compliance deadlines by requiring that auxiliary diesel engines and diesel-electric engines operating on ocean-going vessels within 24 nautical miles of the California coastline meet emission limitations that can be achieved through

the use of cleaner marine distillate fuels 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 California Coastal 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, NO_x, and SO_x 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 auxiliary diesel engines and diesel-electric engines used on ocean-going vessels 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 and shipping lanes;
3. While regulatory authority exists to control diesel exhaust PM, NO_x, SO_x and other air pollutants to the outer boundaries of the California Coastal Waters, it is necessary and appropriate to limit the applicability of the proposed regulation to waters within 24 nautical miles of the State coastline to achieve a reasonable balance of achieving the greatest amount of emission reductions and the highest degree of protection of human health and the environment while minimizing the costs of the proposed regulation;
4. Upon implementation, the regulation approved herein would immediately and dramatically reduce emissions of diesel exhaust PM, NO_x, and SO_x from diesel auxiliary engines and diesel-electric engines used on ocean-going vessels;
5. 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 and shipping lanes, including those with low-income and minority populations regardless of location; and

6. The regulation approved herein will not have a significant adverse impact on the environment, but will instead result in significant environmental benefits.

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 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 auxiliary engines and diesel-electric engines used on ocean-going vessels within the time provided for compliance;
3. Without the regulation approved herein, baseline emissions of diesel exhaust PM, NOx, and SOx from diesel auxiliary engines and diesel-electric engines used on ocean-going vessels within 24 nautical miles of the California coastline are expected to be 4.7 tons per day (TPD), 52 TPD, and 34 TPD, respectively, in 2010, and 8.7 TPD, 95 TPD, 64 TPD, respectively, in 2020;
4. The regulation approved herein would reduce emissions of diesel exhaust PM, NOx, and SOx emissions by about 3.7 TPD, 2.3 TPD, and 32 TPD, respectively in 2010, and by 7 TPD, 4.4 TPD, and 61 TPD, respectively in 2020;
5. The reduction of NOx and SOx emissions resulting from the regulation approved herein would also reduce the formation of secondarily-formed PM in the atmosphere;
7. The reduction in ambient diesel exhaust PM levels resulting from the regulation approved herein will likely prevent an estimated 520 premature deaths by 2020, with a total valuation per U.S. EPA methodology of \$3 billion to \$4 billion;
8. 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 typical company operating cargo vessels will incur added annual fuel costs of about \$20,000, with a range from about \$3,500 to \$1 million, and a typical passenger cruise ship operator will incur added annual fuel costs of about \$2 million; most companies will not need to modify their vessels to comply with the regulation approved herein, but for vessels that require modifications, the capital costs are estimated to be between \$100,000 and \$500,000 per vessel;

9. The staff's economic impacts 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 0.01 percent to a 0.6 percent decrease in ROE – a change in ROE greater than 10 percent would indicate a potential for significant adverse economic impacts;
10. The staff estimates the cost-effectiveness of the regulation approved herein at \$26-\$27 per pound of diesel exhaust PM reduced, which is within the range of other measures recently adopted by the Board;
11. 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;
12. 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;
13. 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;
14. The benefits of the regulation approved herein to public health and welfare and the environment substantially outweigh the costs of compliance, implementation, and enforcement;
15. The regulation approved herein poses a minimal risk of innocent noncompliance; does not affect ocean-going vessel operations outside the 24 nautical mile zone within which California is properly asserting jurisdiction; does not require adjustment of systemic aspects of the regulated vessels; and does not impose a substantial burden on vessel operations within the regulated waters; and

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 auxiliary diesel engines and diesel-electric engines on ocean-going vessels operating within 24 nautical miles of the California coastline, it is necessary to take action to protect public health and that the maximum feasible emission reductions permitted by law should be obtained.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby approves for adoption new section 2299.1 of chapter 5.1 of division 3, title 13, CCR, and new section 93118 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 hereto and the following additional modifications:

1. Modify section 93118(g), title 17, CCR and section 2299.1(g), title 13, CCR to:
(a) require that the alternative compliance plan (ACP) process include provisions for public comment on all elements of any proposed ACP request submitted to the Executive Officer for approval; (b) ensure that at least equivalent reductions in diesel PM, NOx and SOx emissions will be achieved from the vessel or vessels under an ACP; (c) ensure that in achieving the overall emission reductions required under the ACP, surplus emission reductions achieved at one port will not result in a significant deficit in emission reductions at other ports relative to the emission reductions achieved through direct compliance with the emission limits; (d) require that the Executive Officer address all relevant comments received in deciding whether to grant an ACP; and (e) require that the Executive Officer issue a written decision on any requested ACP that is available to the public.
2. If the Executive Officer deems it appropriate after further evaluation, implement the U.S. Maritime Administration (MARAD) recommendation of exempting MARAD or public vessels that may be turned over to the military for control during federal emergencies.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to adopt the approved regulation with the modifications approved by the Board in the previous paragraph, and such other conforming modifications as may be appropriate, after making the modified regulatory language available for public comment for a period of at least 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 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.

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 section 2299.1(i), title 13, CCR and section 93118(i), title 17, CCR, and to the definition of baseline, set forth in section 2299.1(d)(3), title 13, CCR, and section 93118(d)(3),

title 17, CCR; (b) conduct public hearings; and (c) take other appropriate actions to make such amendments.

BE IT FURTHER RESOLVED that the Board hereby urges the districts to support a single statewide regulation for diesel auxiliary and diesel-electric engines on ocean-going vessels.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to enforce the approved regulation on a statewide basis, precluding the need for enforcement by individual districts and ensuring uniform implementation of the regulation.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to report to the Board on the appropriateness of terminating or modifying the approved regulation if the Executive Officer determines that (1) the International Maritime Organization or U.S. EPA have adopted regulations that will achieve equivalent or greater emission reductions from ocean-going vessels in California compared to the emission reductions resulting from this regulation, or (2) an equally effective and enforceable emission reduction program has been established through a state level comprehensive maritime emission reduction agreement.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to initiate meetings with representatives of the Department of Fish and Game's Office of Spill Prevention and Response (OSPR) and the San Francisco Harbor Safety Committee (SFHSC) to discuss and address, to the extent feasible, any concerns OSPR and SFHSC may have with regard to the approved regulation, and report back to the Board as soon as possible on the results of such meetings and whether any further modifications need to be made to the approved regulation.

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 ACP process in section 93118(g), title 17, CCR and section 2299.1(g), title 13, CCR, and report back to the Board in approximately six months on the status of the development of the ACP guidance and semi-annually on the number of ACP applications that have been received and how those applications have been handled.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to report back to the Board approximately six months after the January 1, 2007 implementation of the regulation on any issues related to safety, noncompliance fees, the ACP, enforcement, shoreside power (also referred to as "cold ironing"), and the sulfur content of fuels used by vessels relative to ARB staff's expectation that the fuel sulfur will average 0.5 percent or less.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to reevaluate, on or before July 1, 2008, the feasibility of the emission limits based on using marine gas oil with no greater than 0.1 percent sulfur by weight in auxiliary diesel engines, and

to propose appropriate changes to the Board prior to January 1, 2009, if the Executive Officer determines that modifications to the regulation are necessary.

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 all vessel operators, including operators of foreign-flagged vessels, are aware of the requirements of the regulation before they travel to California ports.

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 that pursuant to section 209(e)(2) of the federal Clean Air Act, the emission standards and other requirements related to the control of emissions adopted as part of the regulation are, in the aggregate, at least as protective of public health and welfare as applicable federal standards, that California needs the adopted standards to meet compelling and extraordinary conditions, and that the adopted standards and accompanying provisions are consistent with the provisions of section 209;

BE IT FURTHER RESOLVED that the Board has determined that authorization to enforce the regulation's in-use requirements is not required under section 209(e) of the federal Clean Air Act, but the Board nevertheless directs ARB staff to file a request for authorization from the United States Environmental Protection Agency pursuant to the determination set forth above and pursuant to section 209(e)(2) of the federal Clean Air Act.

I hereby certify that the above is a true and correct copy of Resolution 05-63, as adopted by the Air Resources Board.

Lori Andreoni, Clerk of the Board

Resolution 05-63

December 8, 2005

Identification of Attachment to the Resolution

- Attachment A: The Proposed Regulation and Airborne Toxic Control Measure for Auxiliary Diesel Engines and Diesel-Electric Engines Operated on Ocean-Going Vessels within California Waters and 24 Nautical Miles of the California Baseline, as set forth in Appendix A to the Staff Report (released October 2005).
- Attachment B: Staff's Suggested Modifications to the Original Proposal, presented at the December 8, 2005 Board hearing.