State of California
AIR RESOURCES BOARD

Resolution 07-57

December 6, 2007

Agenda Item No.: 07-12-6

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, in 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 engines on ocean-going vessels 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;

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 Auxiliary Engines on Ocean-Going Vessels While At-Berth at a California Port" (ISOR) and "Technical Support Document: Technical Support for the Proposed Rulemaking – Regulations to Reduce Emissions from Diesel Auxiliary Engines on Ocean-Going Vessels While At-Berth at a California Port" (Technical Support Document), both released on October 19, 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 for which 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 California Global Warming Solutions Act of 2006 (AB 32) 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, on October 25, 2007, pursuant to section 38560.5 of the Health and Safety Code, the Board approved the measure identified as Green Ports (previously described as Port Electrification) as a discrete early action measure to reduce greenhouse gas emissions under the California Global Warming Solution Act of 2006;

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;

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

WHEREAS, in April 2006, the Board adopted the Goods Movement Emission Reduction Plan, which sets forth a framework for action that identifies projects needed to reduce emissions from goods movement-related sources, including those from ocean-going vessels;

WHEREAS, ocean-going 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 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 ocean-going vessels;

WHEREAS, in accordance with the above authority, ARB staff has proposed adoption of a regulation and an essentially identical ATCM for diesel auxiliary engines used on ocean-going vessels while at-berth at a California port (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 extensive sharing of information and discussion of technologies with the public and interested stakeholders, starting with the development and release in March 2006 of the draft report, *Evaluation of Cold-Ironing Ocean-Going Vessels at California Ports;* between January 2007 and November 2007, staff further developed this regulation through a public process by sharing information and discussing concepts and draft versions of the regulation, which were made available to the public for review and comment at five public workgroup meetings and five public workshops;

WHEREAS, the Staff Report identifies and explains the need and appropriate degree of regulation for diesel exhaust PM and other pollutants from diesel auxiliary engines used on ocean-going vessels while at berth;

WHEREAS, the Staff Report discusses and cites ARB's March 2006 analysis of the feasibility and cost-effectiveness of requiring vessels to shut off auxiliary engines while in port and connect to power provided at the berth as a potential emission control measure for diesel auxiliary engines on ocean-going vessels, the results of which are presented in the draft report, *Evaluation of Cold-Ironing Ocean-Going Vessels at California Ports*;

WHEREAS, the conclusions in the *Evaluation of Cold-Ironing Ocean-Going Vessels at California Ports* indicated that the most attractive vessel candidates for shutting down auxiliary diesel engines and connecting to shore power while in port (sometimes referred to as "shore power" or "cold-ironing") are container ships, passenger ships, and refrigerated cargo ships visiting the ports of Los Angeles, Long Beach, Oakland, San Francisco, San Diego and Hueneme;

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;

WHEREAS, the Staff Report discusses the need for and feasibility of regulating emissions from diesel engines on ocean-going vessels operating at berth in California ports, which are well within Regulated California Waters;

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 diesel auxiliary engines on ocean-going vessels while at berth, 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 auxiliary engines used on ocean-going vessels while at berth, using U.S. EPA-approved and ARB-recommended air dispersion models; these evaluations indicate that, for two million people living in communities around California ports, exposure to these emissions can be associated with a potential cancer risk of greater than 10 in a million;

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 auxiliary engines used on ocean-going vessels while at berth; these evaluations indicate that exposure to these emissions can be associated with about 60 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 auxiliary engines used on ocean-going vessels while at berth contribute to levels of ozone and particulate matter that exceed federal and state ambient air quality standards;

WHEREAS, the Staff Report further determines that there would be significant reductions in carbon dioxide, a greenhouse gas, from the implementation of the proposed regulation;

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;

WHEREAS, the proposed regulation, with the modifications described in Attachment B, would result in significant and immediate emission reductions of diesel exhaust PM and NOx by the specified compliance deadlines by requiring that owners or operators of specific categories of ocean-going vessels (container ships, passenger ships, and refrigerated cargo ships) shut down their diesel auxiliary engines for most of their stay at specific California ports (ports of Los Angeles, Long Beach, Oakland, San Diego, San Francisco, and Hueneme) or achieve equivalent emission reductions through the use of alternative emission reduction measures while at those ports;

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, which include California ports, 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 and ports 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 auxiliary engines used on ocean-going vessels while at berth contribute to regional air quality problems and to potential risk of cancer and non-cancer health effects for residents living in communities near California's major ports;

3. Upon implementation, the regulation approved herein would reduce emissions of diesel exhaust PM and NOx from diesel auxiliary engines used on ocean-going vessels while at berth and will reduce emissions of carbon dioxide, a greenhouse gas;

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

6. The regulation approved herein will conform to the requirements of the Goods Movement Emission Reduction Plan;

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 43013(b), the in-use operational requirements and other provisions of the regulation approved herein are necessary, cost-effective, and technologically feasible for diesel auxiliary engines used on ocean-going vessels while at berth within the time provided for compliance;

2. The compliance schedule contained within the regulation approved herein is necessary, cost-effective, and technologically feasible;

3. Without the regulation approved herein, statewide baseline emissions of NOx and diesel exhaust PM from diesel auxiliary engines used on container ships, passenger ships, and refrigerated cargo ships while at berth, are expected to be 26 tons per day (TPD) and 0.47 TPD, respectively, in 2014, and 37.3 TPD and 0.67 TPD, respectively, in 2020;

4. The regulation approved herein would reduce emissions of NOx and diesel exhaust PM emissions statewide by about 13.3 TPD and 0.24 TPD, respectively in 2014, and by 27.8 TPD and 0.5 TPD, respectively in 2020;

5. The regulation approved herein would reduce emissions of carbon dioxide by about 122,000 to 242,000 metric tons in 2020;

6. The reduction of NOx 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 and the secondary formation of PM resulting from the regulation approved herein will likely prevent an estimated 280 premature deaths by 2020, with a total valuation pursuant to standard U.S. EPA methodology of $1.3 billion to $1.9 billion for avoiding both morbidity and various other non-cancer health effects;

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, although the regulation only requires the shutting down of engines along with some reporting provisions, the total cost we expect the affected industry will expend in response to the regulation will be about $1.8 billion over the life of the regulation. These costs, which are not required by the regulation, would result primarily from the expected installation of electrical infrastructure or other alternative equipment, such as distributed generation;

9. With the above considerations, staff estimates the cost-effectiveness of the regulation approved herein to be $12,800 per ton of NOx reduced, which is within the range of other NOx-reduction measures recently adopted by the Board;

10. 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;

11. 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;

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

13. The regulation approved herein poses a minimal risk of innocent noncompliance; does not affect ocean-going vessel operations outside California port boundaries 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 for vessels at berth in a California port; 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 diesel auxiliary engines on ocean-going vessels operating at berth in California ports, 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 2299.3 of chapter 5.1 of division 3, title 13, CCR, and new section 93118.3 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.

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, including, but not limited to, any additional criteria for the terminal plan reporting requirements to be developed in consultation with the ports and terminal operators, 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.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to periodically review the test methods, which are incorporated by reference in the regulation adopted herein, to determine if modifications to the test methods 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 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 2299.3(f), title 13, CCR and section 93118.3(f), title 17, CCR; (b) conduct public hearings; and (c) take other appropriate actions to make such amendments.

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

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 requirements in the adopted regulation, to the extent they are determined to be emission standards or requirements related to the control of emissions, 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

requirements, standards, and accompanying provisions are consistent with the provisions in section 209;

BE IT FURTHER RESOLVED that the Board has determined that authorization to enforce the regulation's in-use operational requirements and other provisions is not required under section 209(e) of the federal Clean Air Act, but if the Executive Officer determines that such authorization is necessary, the Board directs the Executive Officer 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 07-57, as adopted by the Air Resources Board.

Lori Andreoni

Lori Andreoni, Clerk of the Board

Resolution 07-57

December 6, 2007

Identification of Attachment to the Resolution

Attachment A:	The Proposed Regulation Order and Airborne Toxic Control Measure For Reducing Emissions From Diesel Auxiliary Engines On Ocean-Going Vessels While At-Berth At A California Port, as set forth in Appendix A to the Staff Report (released October 2007).
Attachment B:	Staff's Suggested Modifications to the Original Proposal, presented at the December 6, 2007 Board hearing.