

California Environmental Protection Agency



Air Resources Board

Final Statement of Reasons for Rulemaking
Including Summary of Comments and Agency Responses

**PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE
REGULATIONS "FUEL SULFUR AND OTHER OPERATIONAL
REQUIREMENTS FOR OCEAN-GOING VESSELS WITHIN CALIFORNIA
WATERS AND 24 NAUTICAL MILES OF THE CALIFORNIA BASELINE**

Public Hearing Date: June 23, 2011
Agenda Item No.: 11-4-5

TABLE OF CONTENTS

<u>Contents</u>	<u>Page</u>
I. General.....	1
II. Modifications Made to the Original Proposal	5
III. Summary of Comments and Agency Responses to the Amendments	5
A. Legal Authority.....	8
B. International and Federal Regulations	9
C. Phase 2 Implementation Date.....	12
D. Miscellaneous Comments.....	14
IV. Summary of Public Comments and Agency Responses – Notice of Modified Text.....	19
V. Non Substantive Changes Made to the Rulemaking Record.....	27

State of California
AIR RESOURCES BOARD

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

**PROPOSED AMENDMENTS TO THE REGULATIONS “FUEL SULFUR
AND OTHER OPERATIONAL REQUIREMENTS FOR OCEAN-GOING
VESSELS WITHIN CALIFORNIA WATERS AND 24 NAUTICAL MILES OF
THE CALIFORNIA BASELINE**

Public Hearing Date: June 23, 2011
Agenda Item No.: 11-4-5

I. GENERAL

In this rulemaking, the Air Resources Board (ARB or Board) adopted amendments to the Regulations “Fuel Sulfur and Other Operational Requirements for Ocean-Going Vessels within California Waters and 24 Nautical Miles of the California Baseline.”¹ The Staff Report: Initial Statement of Reasons for Rulemaking (“Staff Report”), entitled “Proposed Amendments to the Regulations for Fuel Sulfur and Other Operational Requirements for Ocean-Going Vessels Within California Waters and 24 Nautical Miles of the California Baseline” released April 4, 2011, contained a description of the rationale for the proposed amendments and is incorporated by reference herein. On April 4, 2011, all references relied upon and identified in the Staff Report were made available to the public. An email message announcing and linking to the Public Hearing Notice and Related Materials posting was transmitted to parties that have subscribed to “Maritime” and “Board” list serves for notification of postings pertaining to marine vessels.

The primary purpose of the amendments to the OGV Clean Fuel Regulation is to adjust the offshore regulatory boundary for the clean fuel zone² in Southern California to lessen the potential for ocean-going vessels (OGVs or vessels) to interfere with operations at the United States Navy’s Point Mugu Sea Range and to reestablish the anticipated emission reductions from the regulation. In addition, the amendments help facilitate a successful transition to very low sulfur fuels by aligning implementation dates more closely with recently approved federal requirements.

¹ Two essentially identical regulations were amended that reflect the authorities granted to the ARB in the California Health and Safety Code to regulate sources of toxic air contaminants and to regulate marine vessel emissions. Throughout this report the regulations are collectively referred to as “the OGV Clean Fuel Regulation” or “the regulation.”

² The clean fuel zone or regulatory zone refers to a region offshore the California coastline wherein OGV are required to use cleaner fuels.

The amendments include extending the clean fuel zone further off shore and aligning it more closely in Southern California with the “Contiguous Zone,” which is 24 nm from the California Baseline (shoreline), which includes offshore islands. In addition, the amendments to the clean fuel zone include a small region (“window”) within the 24 nm boundary off Point Conception where the vessels are exempted from the clean fuel requirements. This exemption window is provided to encourage vessels to travel in the established shipping lanes in the Santa Barbara Channel when headed to or from the ports of Los Angeles and Long Beach (POLA and POLB). This proposed change in the clean fuel zone lessens the economic incentive for OGVs to transit through the Point Mugu Sea Range instead of the Santa Barbara Channel and helps to reestablish the emission reductions from the regulation. No changes are proposed to the clean fuel zone in Northern California. To facilitate a more successful transition to the 0.1 percent (%) sulfur fuel, the Phase 2 implementation date is extended from January 1, 2012 to January 1, 2014.

Minor amendments are included to modify the “noncompliance fee provision,” which in limited specified situations allows the payment of fees in lieu of direct compliance with the rule through the use of cleaner fuels. The amendments include adjusting the fee schedule specified in the regulation, reducing the fees by half for vessel operators that purchase and use complying fuels after arriving to a port on noncomplying fuel, and proposing that offshore anchorages made in conjunction with a port visit not be counted as a separate “port visit.”

The OGV Clean Fuel Regulation is also amended to include a March 2007 update to the National Oceanic and Atmospheric Administration (NOAA) nautical chart 18740 covering California’s coastline from San Diego to Santa Rosa Island. This chart is used to help define the clean fuel zone, also referred to as California Regulated Waters. In addition, the definition of the fuels required under the OGV Clean Fuel Regulations is amended to reflect recent changes in how these fuels are specified under international standards.

At the June 23, 2011 hearing, the Board received written and oral comments. At the conclusion of the hearing, the Board adopted Resolution 11-25, in which it approved the originally proposed amendments to the regulation with modifications presented by ARB staff at the hearing. The Board directed the Executive Officer to incorporate the modifications into the proposed regulatory text and to make such modifications available for a supplemental comment period of at least 15 days in accordance with section 11346.8 of the Government Code. The Executive Officer was then directed either to adopt the regulation with such additional modifications as he determined to be appropriate or to present proposed changes to the Board for further consideration if he determined further Board consideration was warranted.

The modified text of the regulation was made available for a supplemental 15-day comment period by issuance of a “Notice of Public Availability of Modified Text and Availability of Additional Documents” (“15-day Notice”). The 15-day Notice, a copy of Resolution 11-25, and the document entitled “Modified Regulation Order” were provided

on July 25, 2011, to all parties identified in section 44(a), title 1, CCR, and to other persons generally interested in the ARB's rulemaking concerning ocean-going vessels. These documents were also published on July 25, 2011, on ARB's internet site. An email message announcing and linking to the 15-day Notice posting was transmitted to parties that have subscribed to "Maritime" and "OGV11" list serves for notification of postings pertaining to marine vessels.

The 15-day Notice gave the name, telephone, and fax number of the ARB contact person from whom interested parties could obtain the complete texts of the additional documents relied upon and the modifications to the original proposal, with all of the modifications clearly indicated. The deadline for submittal of comments on the suggested modifications was August 9, 2011.

The 15-day notice included amended fuel requirements to better coordinate with the fuel requirements in the North American Emission Control Area (North American ECA) approved by the International Maritime Organization. Specifically, the "Phase 1" sulfur (S) content limit for marine gas oil was reduced from 1.5% to 1% beginning on August 1, 2012. This modification is consistent with the 1% sulfur limit for marine fuels required under the North American ECA, starting August 1, 2012.

After considering the comments received during the supplemental 15-day comment period, the Executive Officer issued Executive Order R-11-012, adopting the amendments to section 2299.2 in title 13, CCR, and section 93118.2, title 17, CCR. The Executive Officer also adopted findings under the California Environmental Quality Act.

This Final Statement of Reasons (FSOR) updates the Staff Report by identifying and providing the rationale for the modifications made to the originally proposed amended regulatory text and updating information in the Staff Report. The FSOR also summarizes written and oral comments the Board received on the proposed regulatory text during the formal rulemaking process and provides the ARB staffs' responses to those comments.

Documents Incorporated by Reference. The following documents are incorporated by reference in the regulation: (1) International Standard ISO 8217, "Specification of Marine Fuels Requirements for Marine Residual Fuels," (as revised June 15, 2010); and (2) the National Oceanic and Atmospheric Administration (NOAA) Chart 18740, San Diego to Santa Rosa Island (March 2007). Each of these documents was listed in the 45-day Notice and included in the amended regulation as proposed.

The two documents listed above consist of the following: (1) 2010 version of an international standard specifying the range of allowable properties for various marine fuels, including the fuels specified in the regulations; (2) a nautical chart defining sections of the California baseline (i.e., coastline). Each instance of incorporation identifies the incorporated document by title and date. The documents are readily available from the ARB upon request and were made available in the context of this

rulemaking in the manner specified in Government Code section 11346.5(b). Also, the referenced ISO document is published by the International Organization for Standardization, a well-established and prominent organization. Similarly, the nautical chart is available from the National Oceanic and Atmospheric Administration, a U.S. federal agency. Therefore, both of the incorporated documents are reasonably available to the affected public from commonly known sources.

Fiscal Impacts. The Executive Officer has determined that this regulatory action will not impose a mandate upon any local agencies or school districts, whether or not it is reimbursable by the State pursuant to Part 7 (commencing with section 17500), division 4, title 2 of the Government Code. Except as discussed below, the Executive Officer has also determined that this regulatory action will not result in costs or savings, as defined in Government Code section 11346.5(a)(5) and 11346.5(a)(6), to any state agency, or in federal funding to the state, or create other nondiscretionary cost or savings imposed on local agencies.

The estimated total costs associated with the proposed amendments are approximately \$10 million annually in 2012 and 2013, and \$47 million in 2014. These estimated annual costs represent the net additional costs associated with the proposed amendments over and above compliance with the current regulation.

The average cost-effectiveness of the proposed amendments (over and above the cost of the original rulemaking) is estimated to be about \$16 per pound of diesel PM reduced over the three year life of the regulation assuming all of the regulatory costs are assigned to the diesel PM reductions. This compares favorably to other regulations the Board has adopted previously, as well as to the original regulation.

The Executive Officer does not expect any fiscal costs on local agencies since local agencies do not operate ocean-going vessels as defined in these regulations.

Consideration of Alternatives. The amendments proposed in this rulemaking were the subject of discussions involving ARB staff, the affected owners and operators of ocean-going vessels that visit California ports, and other interested parties. A discussion of alternatives to the initial regulatory proposal is found in Chapter III of the Staff Report. Specifically, the following alternative approaches were discussed: (1) Do nothing and (2) Suspend the original regulation and rely on U.S. Environmental Protection Agency (U.S. EPA) and International Maritime Organization (IMO) regulation. For the reasons set forth in Chapter III of the Staff Report, in staff's comments and responses at the hearings, and in this FSOR, the Board has determined that none of the alternatives considered by the agency or that have otherwise been identified and brought to the attention of the agency would be more effective in carrying out the purpose for which the regulatory action was proposed or would be as effective and less burdensome to affected private persons than the action taken by the Board.

II. MODIFICATIONS MADE TO THE ORIGINAL PROPOSAL

At the June 23, 2011 hearing, the Board approved the amendments to the OGV Clean Fuel Regulation with modifications and authorized the Executive Officer to make such additional modifications that he determined to be appropriate. All modifications made to the text of the regulation after publication of the 45-day Notice were circulated with the 15-day Notice for public comments. The following is a description of the modifications and clarifications, by section number.

Operational Requirements (subsections 2299.2[e] and 93118.2[e]): The requirements in subsection (e)(1)(A) and (B) were modified to incorporate a 1.0% sulfur by weight limit for marine gas oil that will become effective August 1, 2012.

Noncompliance Fee in Lieu of Meeting subsection (e)(1). (subsections 2299.2[h] and 93118.2[h]): The requirements in subsection (h)(5)(C) were modified to incorporate a 1.0% sulfur by weight limit for marine gas oil that will become effective August 1, 2012.

III. SUMMARY OF COMMENTS AND AGENCY RESPONSES TO THE ORIGINAL PROPOSAL

The Board received both written and oral comments during the formal 45-day rulemaking comment period which began with the notice publication on May 4, 2011 and ended with the Board hearing on June 23, 2011.

We received written and/or oral comments in support of the regulation or the rulemaking process from the following persons:

Michael Villegas, Ventura County Air Pollution (Written and Oral)
Barry Wallerstein, South Coast Air Quality Management District (Written)
Henry Hogo, South Coast Air Quality Management District (Oral)
C.L. Stathos, Department of the Navy (Written)
Randal Friedman, Department of the Navy (Written and Oral)
Kathy Long, County of Ventura/Regional Defense Partnership 21 (Written and Oral)
Jonathan Sharkey, Port Hueneme Councilmember (Oral)

The comments provided in support of the regulation amendments are not separately summarized and responded to in this FSOR.

Written and/or oral comments were also provided by the persons identified below. Following the list is a summary of each objection or recommendation made regarding the proposed action, together with an explanation of how the proposed action has been changed to accommodate the objection or recommendation or the reasons for making no change. The comments have been grouped by topic whenever possible.

**Comments Received During the 45-day Comment Period
(Excluding Statements in Support of the Regulation)**

Abbreviation	Commenter
ALA	Bonnie Holmes-Gen American Lung Association Oral Testimony: June 23, 2011
CCA	Candace Kim Coalition for Clean Air and Others Written Testimony: June 17, 2011
CCA1	Martin Schlageter Coalition for Clean Air and Others Written testimony: June 17, 2011
CCA2	Martin Schlageter Coalition for Clean Air and Others Oral Testimony: June 23, 2011 Written testimony: June 23, 2011
CHEVRON	Dan Krokosky Chevron Shipping Company LLC Oral Testimony: June 23, 2011
HANJIN	Henry Pak Hanjin Shipping Written Testimony: June 20, 2011 Oral Testimony: June 23, 2011
NAVY	C.L. Stathos Department of the Navy Written Testimony: June 14, 2011
NAVY1	Randall Freidman Department of the Navy Oral Testimony: June 23, 2011
NRDC	Diane Bailey Natural Resources Defense Council Oral Testimony: June 23, 2011

Comments Continued

Abbreviation	Commenter
NRDC1	Cooper Hanning Natural Resources Defense Council Oral Testimony: June 23, 2011
PMSA	T.L. Garrett Vice President Pacific Merchant Shipping Association Written Testimony: June 22, 2011 ³
SCAQMD	Barry Wallerstein South Coast Air Quality Management District Written Testimony: June 17, 2011

³PMSA submitted a letter on June 22, 2011 (letter was dated July 22, 2011) which contains comments on the proposed amendments and those comments, along with the agency responses, are included in this FSOR. Attached to the June 22, 2011 letter were two letters dated July 23, 2008 and March 23, 2009. These letters were not directed to this current rulemaking but were comments directed to a prior rulemaking approved by OAL and filed with the Secretary of State on May 29, 2009 and were submitted by PMSA during the 45 day and 15 day comment periods for the prior Rulemaking. Those letters, along with the agency responses, can be found in the FSOR for the original rulemaking (Final Statement of Reasons for Rulemaking, Including Summary of Comments and Agency Responses, Public Hearing to Consider Adopting Regulations on Fuel Sulfur and Other Operational Requirements for Ocean-Going Vessels Within California Waters and 24 Nautical Miles of the California Baseline, 2009) which is available at: <http://www.arb.ca.gov/regact/2008/fuelogv08/fuelogv08.htm>.

A. Legal Authority

1. Comment: This regulation and these amendments are preempted by the Dormant Commerce Clause and the Submerged Lands Act. The state of California lacks authority to impose any regulatory requirements on vessels in territorial and international waters beyond the California three mile limit without specific Congressional consent. The ISOR also assumes that California has the authority to regulate the use of low-sulfur fuel on foreign flagged vessels in international water that are involved in international trade with the United States. Not only does the analysis presented in Section IV fail to assess the entire benefits of the Emission Control Area (ECA) since that analysis is limited to 100 nm, not the 200 nm of the ECA, it is fundamentally flawed in that it assumes that California has authority beyond the traditional three-mile limit. We have reviewed CARB's legal opinion and respectfully disagree with its conclusions. Through our review of the issues, it is clear that the authority to regulate beyond the state's three mile limit is restricted to the federal government. (PMSA)

Agency Response: The issue of authority has been addressed in the Staff Report and the staff report for the original rulemaking, titled Initial Statement of Reasons for Proposed Rulemaking, Fuel Sulfur and Other Operational Requirements for Ocean-Going Vessels Within California Waters and 24 Nautical Miles of the California Baseline, June 2008 ("2008 OGV Staff Report"). Under State and federal law, ARB can regulate both criteria pollutants and toxic diesel PM emissions from marine vessels. Health and Safety Code (H&S) sections 43013 and 43018 authorize ARB to regulate marine vessels to the extent such regulation is not preempted by federal law. Also, H&S section 39666 requires ARB to regulate emissions of toxic air contaminants (TAC) from nonvehicular sources, which include ocean-going vessels.

The OGV Clean Fuel Regulation and the proposed amendments are neither preempted under federal law, nor does it violate the dormant Commerce Clause of the U.S. Constitution. Federal authorization under section 209(e) of the Clean Air Act (CAA) is required for regulating new nonroad engines and for requiring retrofits on existing engines. OGV engines, by definition, fall within the category of nonroad engines. However, no federal authorization is required for implementing in-use operational requirements on existing marine vessels and their engines. The OGV Clean Fuel Regulation is an in-use operational requirement, rather than an emissions standard, because it does not apply a numerical emissions limit to be met (e.g., 10 grams NO_x per brake horsepower-hour), does not require retrofits, and does not mandate design changes to the vessel. Rather, the regulation only requires that specified fuels be used on OGV engines and auxiliary boilers operating in Regulated California Waters. The proposed amendments to the OGV Clean Fuel Regulation do not change this aspect of the regulation.

Further, the Submerged Lands Act (SLA) does not preempt the OGV Clean Fuel Regulation or the proposed amendments. The SLA is a grant of lands to the states; it is

not a limitation on states' power. See *Pacific Merchant Shipping Ass'n v. Goldstene*, 639 F.3d 1154 (9th Cir. 2011).

2. Comment: Although PMSA has repeatedly requested that CARB provide an assessment of the impacts or benefits of implementing and enforcing the regulation at the 3 nm or even the 12 nm distances, CARB has failed to do so. PMSA believes that the Board must be informed of the impacts and benefits of the proposed regulation at those distances in order to reach a fully informed decision on the proposed regulation in the event that the jurisdictional distance is indeed limited to 3 nm. By only providing the analysis to 24 nm the Board fails to justify the extension of the jurisdictional limits beyond 3nm. In limiting the analysis to 24 nm the Board has no way of evaluating the disproportionate benefits nearer to shore and within California ports adjacent to the most impacted communities. In order to reach a fully informed decision on the proposed regulation the Board should delay approval until staff has completed a thorough analysis on implementing the regulation at 3 nm. (PMSA)

Agency Response: ARB staff conducted extensive analyses and modeling in the 2008 rulemaking for the original regulation (as discussed in detail in the 2008 OGV Staff Report Chapter IV and Appendices E1 and E2) demonstrating that the emissions from OGVs within the clean fuel zone which extends approximately 24 nm offshore will impact onshore air quality and that it is important to reduce these emissions. The Staff Report for the proposed amendments demonstrates that these air quality benefits will be maintained with the amended regulation, and that the regulation is cost-effective and technologically feasible. Implementing a regulation with boundaries closer to shore would result in substantially lower emission reductions and less onshore air quality benefits, while also introducing potential safety concerns associated with fuel switching closer to shore, as discussed in the staff report for the 2005 rulemaking on the similar fuel regulation for auxiliary engines on oceangoing vessels, titled 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, October 2005, Chapter VI, pages VI-12-13 ("2005 Auxiliary Engine Staff Report").

B. International and Federal Regulations

1. Comment: Not only does the analysis presented in Section IV fail to assess the entire benefits of the Emission Control Area (ECA) since that analysis is limited to 100 nm, not the 200 nm of the ECA, it is fundamentally flawed in that it assumes that California has authority beyond the traditional three-mile limit.

Finally, staff has failed to acknowledge that the approved Emission Control Area (ECA), extending 200 nm offshore, is far more likely to achieve the desired emission reductions and stabilize vessel routes than these amendments.

Beyond the legal issues PMSA believes that the analysis in the ISOR is both

incomplete and inaccurate in assessing the impacts and the benefits of the proposed regulation. The ISOR fails to fully assess the benefits of current federal and international regulations that have been approved since the current regulation was approved in July 2008. Finally, the ISOR fails to inform the Board of the impacts and benefits of the regulation if the jurisdiction of the regulation is limited to three-miles from the California coast. (PMSA)

Agency Response: As discussed in Chapter III of the Staff Report, relying on the North American ECA alone prior to 2015 would result in substantial increases in particulate matter (PM) and sulfur oxide (SOx) emissions. The commenter's primary point, that ARB should rely on the North American ECA rather than this regulation, is reiterating a comment raised during the 2008 rulemaking for the adoption of the OGV Clean Fuel Regulation, rather than focusing on the amendments to the regulation addressed in this rulemaking. Our analysis of the emissions impacts for the amendments is based on the current State Implementation Plan (SIP) inventory that extends to 100 nm because only emission reductions that occur within that zone are currently credible under U.S. EPA regulations. As discussed on pages ES-7 and ES-8 of the Staff Report and graphically depicted in Figure ES-3 on page ES-8, the OGV Clean Fuel Regulation achieves significantly more emission benefits than the ECA Phase 1 requirements. This is because the Phase 1 ECA requirements do not mandate the use of the cleaner marine distillate fuels.

The analysis of the emissions and public health benefits within the South Coast Air Basin in Appendix C is illustrative of the difference between the impacts of the North American ECA and the amended OGV Clean Fuel Regulation. The South Coast Ozone Study domain used in the modeling does extend out to about 200 nm in one of the more critical regions in the waters off Southern California where a majority of the shipping activity occurs. Comparing the emissions between Scenarios MS1A (North American ECA only with 1% sulfur fuel) and MS4ws (Amended ARB rule, No North American ECA) show the dramatic difference in emissions. For example, as shown in Table C-3, SOx emissions are estimated at roughly 36 tons per day under Scenario MS1A, versus about 11 tons per day under Scenario MS4ws. As is shown in Table C-4, the amended OGV Clean Fuel Regulation will also provide significant public health benefits prior to 2015 that are above and beyond what would be provided if only the North American ECA was implemented (710 annual cardiopulmonary mortalities avoided vs. 360). Regarding the commenter's point that the North American ECA is more likely to "stabilize vessel routes," we believe the rule amendments will accomplish this goal by removing the economic incentive to using alternatives to the established shipping lanes (see Chapter IV of the Staff Report).

Finally, the responses to the previous two comments address the commenter's incorrect assertion that California lacks authority to regulate OGV emission beyond three miles.

2. Comment: At the very least CARB should revise the analysis to include the availability and operational limitations of multiple fuel types and switches and consider the "sunset" of the amended regulation if equivalence is shown with the

first phase of the CARB regulation.

We strongly urge CARB to complete this analysis and to provide for an early “sunset” of the amended regulation based on confirmation of the ECA providing equivalent emission reductions. (PMSA)

Agency Response: In response to current requirements such as the North Sea and Baltic Sea ECAs and OGV Clean Fuel Regulation, vessel operators have demonstrated that it is technically feasible to switch between different fuel types and it is a viable operating practice used to lower fuel costs. To comply with cleaner fuel requirements, vessels typically operate on less expensive, high sulfur fuel oil outside the clean fuel zone and then switch to cleaner fuel as required in the clean fuel zone. Based on current operational practices, ARB staff believes that vessel operators will continue to fuel switch to meet the requirements of the North American ECA and the OGV Clean Fuel Regulation.

During the first phase of the North American ECA (August 1, 2012 to January 1, 2015), the North American ECA requirement limiting the fuel sulfur content to 1% allows for using either heavy fuel oil or distillate fuel, typically marine gas oil (MGO) or marine diesel oil (MDO). However, the California OGV Clean Fuel Regulation includes both a limit on sulfur content and a requirement to use marine distillate. Recent evaluation of the sulfur levels of MGO and MDO being used to comply with the OGV Clean Fuel Regulation Phase 1 requirement shows that the average sulfur level of the fuel is about 0.3%, which is significantly lower than a 1% limit. Therefore, while the North American ECA 1% sulfur limit will provide some additional incremental benefit for California, it will not be equivalent to the benefits gained from using the cleaner distillate MGO and MDO fuel. ARB staffs’ emissions analysis, as shown in Figure ES-8 in the Staff Report, indicates that equivalent emissions reductions will only be realized from the stricter 0.1% sulfur North American ECA requirement on January 1, 2015, since the requirement of 0.1% sulfur, in practice, eliminates the use of heavy fuel oil, because it is not available at this restrictive sulfur content.

3. Comment: The need for uniform and consistent regulation is also why PMSA joined with the World Shipping Council (WSC), the American Association of Port Authorities (AAPA), the West Coast Diesel Collaborative (WCDC), and others, in endorsing the proposed amendments to Annex VI that were approved in October 2008. These amendments, when fully implemented, exceed the emission reductions of the current regulation and the proposed amendments. This is because the Annex VI amendments also includes emission standards for engines, worldwide limits on marine fuel sulfur, and extended jurisdictional boundaries 200 nm from the west coast of the United States and Canada. Even without consideration of these additional benefits, the second phase of the Annex VI will trigger the sunset provision of the proposed regulation when it is implemented in 2015. In conclusion, PMSA strongly supports an international approach to addressing the emission issues associated with international shipping throughout the world. We believe that the international approach is

critical to maintaining competitive parity of California ports with all other North American Ports of Entry. (PMSA)

Agency Response: ARB staff supports international regulations to address vessel emissions and we agree that it would be preferable to adopt regulations for ocean-going vessels on an international basis provided the emission reductions are timely and are of sufficient stringency to meet California's air quality needs. ARB staff supports the approved amendments to IMO Annex VI and the Emissions Control Area (ECA) around much of North America. We agree that a North American ECA could provide benefits that meet or exceed the OGV Clean Fuel Regulation on or after January 1, 2015. In fact, to help California transition to national or international controls, there is a provision in the regulation to sunset the OGV Clean Fuel Regulation if the IMO or the U.S. EPA adopts controls that will achieve equivalent benefits from ocean-going vessels emission reductions in California. That said, it is imperative that we not forego needed emission reductions in the 2009-2015 timeframe from ocean-going vessels. These reductions are critical to our ability to fulfill federal SIP obligations and to protect the public health of California citizens. Given the significant adverse health effects from ocean-going vessels that visit California ports while burning heavy fuel oil, as detailed in the Staff Report, we believe it is critical to implement the regulation rather than wait until 2015 to achieve equivalent benefits.

C. Phase 2 Implementation Date

1. Comment: As stated in the Staff Report, 90% of the emission benefits of this regulation result from the implementation of the first phase of the regulation (page ES-9). The relatively minor benefits of the second phase of the regulation, coupled with the current decline in vessel calls due to the economic downturn, results in the conclusion that the "two-year delay will not impact the significant reductions achieved with Phase 1 fuels". In addition, PMSA disagrees with the statement that the delay in the second phase will somehow help ensure the success of the first phase of the ECA and the transition to the second phase. The ECA is a regulatory requirement that will occur regardless of the CARB regulation. Therefore, the only possible justification for the second phase of the CARB regulation in 2014 is to ensure meeting the SIP requirement in the South Coast Air Basin by April 5, 2015 (pages ES-14 & 15). It is hard to envision how the additional 10% reduction provided by this single regulation in 2014 will assure attainment of the PM 2.5 standard in the South Coast Air Basin given the complexity of emission sources, economic, and meteorological conditions. (PMSA)

Agency Response: When ARB adopted its 2007 State Strategy as a PM2.5 SIP revision, the State of California made a legal commitment, required by the Clean Air Act and enforceable in federal court, to reduce emissions to the levels necessary for PM2.5 attainment in 2014. To date, the South Coast is 94% of the way towards achieving the 2014 emissions levels identified in the PM2.5 SIP. To meet this commitment, ships operating within 24 nm of the California Coastline and visiting California ports must, in

2014, use less polluting marine distillate fuel for their main engines, auxiliary engines, and boilers instead of heavy fuel oil. Although the International Maritime Organization's fuel sulfur requirements for the North American Emission Control Area will match ARB's proposed Phase 2 standards and extend out to 200 nm from the California Coastline by 2015, ARB still has an obligation to meet the overall emissions targets specified in the SIP by the required January 1, 2014 deadline.

If the Board delays implementation of Phase 2 to 2015, ARB would not have the emission reductions necessary in 2014 to support the SIP attainment demonstration. Since U.S. EPA is currently under a consent decree for final action on the PM_{2.5} SIP by September 2011, a delay in the implementation of Phase 2 would result in U.S. EPA finding the SIP deficient and disapproving the SIP. This in turn would lead to federal penalties including the delay of federal air quality and transportation funding in the South Coast Air Basin, more stringent controls for industrial sources, and ultimately a federally imposed plan.

2. Comment: We have seen that Phase 2 implementation date (0.1% sulfur distillate fuel beginning January 1, 2012) would be extended to January 1, 2014 by two years by the ARB proposal. Although this proposal is very good for the shipping industry, the implementation date of the California Fuel Regulation is really required to be in conformity with the implementation date (January 1, 2015) of US Federal Regulation and EU SECA Regulation for full compliances by shipping industry and a successful transition to very low sulfur. (HANJIN)

Agency Response: ARB staff agrees that direct harmonization with the second phase of the North American ECA (0.1% sulfur) would be achieved with a January 1, 2015 OGV Clean Fuel Regulation Phase 2 implementation date. However, the reductions gained by Phase 2 are needed in the 2014 calendar year. As discussed in the Staff Report (ES-14) and in comment (III)(C)(1) above, Phase 2 provides critical emission reductions needed by the South Coast Air Quality Management District (SCAQMD) to fulfill the SIP obligations and attain the PM_{2.5} standard in the South Coast Air Basin. The additional reductions gained by the Phase 2 implementation are a component of the overall reductions needed to meet the federal ambient air quality standard for PM_{2.5}; reductions which must be in place by January 1, 2014.

3. Comment: While we understand that loss of propulsion (LOP) has been raised as a serious concern, we are concerned that ARB does not have a suitably detailed and proactive plan to address any potential LOP matters that could in any way be related to the switch to 0.1% low sulfur fuel. We ask ARB to develop a detailed plan to work with vessel operators and the U.S. Coast Guard to address any legitimate LOP risks, so that the Phase 2 transitions to 0.1% low sulfur fuel is not delayed beyond 2014. (CCA/CCA1)

In light of the proposed delay, we would encourage the Air Board to do everything possible to work with the Coast Guard to address these loss of

propulsion issues as soon as possible to make sure we can get back on track.
(ALA)

Agency Response: We agree that there is a need to continue to investigate LOPs. We have an on-going process in place to work with industry, the U.S. Coast Guard, the Office of Spill Prevention and Response, Harbor Safety Committees, and others to address any operational issues that are identified. We intend to continue to use this process to address loss of propulsion issues over the next two years to help ensure the transition to 0.1% sulfur fuel is successful. ARB staff believes the amendments to extend Phase 1 for two years and better align with the North American ECA provide the best path to implementing the cleanest marine distillate requirements, 0.1% sulfur, in California and bridging to federal requirements under the North American ECA.

D. Miscellaneous Comments

1. Comment: The amendments to the regulation fail to demonstrate how the objective of returning vessels to the Santa Barbara Channel will be achieved. CARB also fails to demonstrate how the extension of the regulatory boundaries beyond the Channel Islands will result in vessels returning to use the traffic separation scheme in the Santa Barbara Channel or what health benefits will accrue to the State's population as a result of this extension.

The premise of the amendments to the current regulation is that extension of the jurisdiction 24 nm beyond the Channel Island will compel vessels to return to the vessel traffic separation scheme within the Santa Barbara Channel. This is based largely on the observed routing of vessels that has occurred subsequent to the original regulation going into effect in July 2009. In our conversations with ship operators PMSA has found that there are several reasons for this rerouting including the cost of fuel, need to maintain schedule, and maintenance concerns associated with the extended use of distillate fuels within Regulated California Waters. All of these concerns share a common goal to minimize the amount of time that the vessel must operate on the regulated distillate fuel. Just as the original regulation resulted in the rerouting of vessels to achieve that goal it is entirely possible that some portion of the vessels will again reroute to minimize the amount of time they are subject to the amended boundaries. As we have commented previously, a likely scenario would be for some vessels to take a diagonal route, directly through the Naval Test Range, to minimize the distance of operation subject to the amended regulation. Without any analysis of this alternative vessel routing we do not believe that staff has provided your Board with all the potential impacts of these proposed amendments necessary for them to make a truly informed decision. We suggest that staff conduct an analysis of vessel further rerouting to minimize time subject to the amended regulation using percentages up to the current levels before approving these amendments.
(PMSA)

Agency Response: Under the current OGV Clean Fuel Regulation (without the proposed amendments), there is a fuel cost benefit of about 20% when traveling through an “outer route” through the Point Mugu Sea Range compared to traveling through the Santa Barbara Channel (“the channel route”) as shown in Table II-2 of the Staff Report. However, the outer route is longer in distance and travel time, compared to the channel route. As presented in Chapter II of the Staff Report, staff estimated the route costs, transit distances and transit times for five possible re-routing scenarios under the amended zone scenario, four of which transverse through the Point Mugu Sea Range. We disagree with the commenter’s statement that to minimize the cost of fuel, maintain schedule and to address maintenance concerns, the vessel must minimize operation on distillate fuel. Under the amended clean fuel zone, the fuel costs for the channel route are the lowest of the five routes evaluated, although the vessel would operate on distillate fuel for a longer segment. In addition to the lowest fuel cost, the channel route is also shorter in distance and travel time. With the amendments to the clean fuel zone, we believe that the combined benefits of lower fuel costs, distance and travel time for the channel route will encourage vessel operators to resume using the channel route.

2. Comment: Considering fuel supplier’s comments and my company’s experiences, there is no fuel supplier and port facility that can supply the 0.1% sulfur distillate fuel in the regions of Eastern Asia and America at this moment. In this regard, be advised that sufficient market survey and technical verifications should take precedence in order to confirm the possibility and availability of the low sulfur fuel in those regions in 2014. In addition, we need to ensure that there is sufficient infrastructure to supply low sulfur fuel without difficulties. (HANJIN)

Agency Response: In the 2008 OGV Staff Report for the original rulemaking and the Staff Report for the proposed amendments, fuel availability analyses were done to evaluate the availability of 0.1 % sulfur marine distillate to meet the Phase 2 requirement. In the 2008 original rulemaking, findings indicated that in 2014, about 1.2 million tons per year will be required to meet the demands generated from the rule. This represents only about 8% of global market and 16% of U.S. market for 0.1% sulfur marine distillate fuels. In addition, since very low sulfur marine distillate fuel is very similar to on-road diesel and can be obtained from the on-road diesel fuel supply, this demand only represents 0.3% of the U.S. distillate production (2008 OGV Staff Report). As reported in the Staff Report for the amendments, ARB staff evaluated fuel sulfur information obtained from about 450 ARB inspection records from a 19 month period from July 2009 through January 2011. Of the 444 fuel samples analyzed, 40% of all the samples were below 0.1% sulfur even though the inspection period was within the Phase 1 sulfur limit of 1.5%. This data indicates that the 0.1% sulfur fuel is currently widely available and the infrastructure is presently in use to supply the cleaner Phase 2 fuel.

3. Comment: ARB should maintain the current noncompliance fee schedule except for instances of ships that arrive without the clean fuel but make every effort to take on the required clean fuel at the first California port of call.

The proposed reductions to the noncompliance fee schedule unnecessarily weaken a policy that works well as an incentive to comply with the OGV regulation. The first 22 months of regulation, ship operators paid the noncompliance fee instead of using cleaner fuels only five times. Such infrequent use demonstrates that the policy is effective and that changes are unnecessary. (CCA/CCA1)

Agency Response: ARB staff believes that the infrequent use of the noncompliance fee provision is a result of the highly restricted range of circumstances where the provision is allowed to be used, not the amount of the fee. For example, the provision is limited to situations that are outside the master's control such as unplanned redirection and purchase of defective fuel. The fee for a one-port visit has not been adjusted. Adjustments have only been made to multiple port visits. ARB staff believes that the adjustments made for multiple port visits are reasonable and the use of the non-compliance fee provision will remain low due to the restrictions for use that are currently in place.

4. Comment: Although traffic in California ports decreased during the recent recession, throughput levels are clearly on the rise. Container traffic in the ports of Los Angeles and Long Beach has nearly recovered to 2007 levels. Nearly 14.1 million twenty-foot equivalent units (TEUs) passed through San Pedro Bay ports in 2010, which is a 19% increase over 2009 and significantly higher than the 12.8 million TEU estimate from the Staff Report. We believe this unexpectedly quick recovery will have significant health impacts. (CCA/CCA1)

Agency Response: Due to the unpredictable economic recovery rate from the recent economic downturn, ARB staff developed two economic recovery scenarios. The faster recovery scenario assumed the economy would rebound and return to previously forecasted activity in 2017. The second slower recovery scenario assumed previous economic levels would not be reached until 2023 or later. Staff considered the possibility of assuming the slower recovery scenario, but determined that would be inappropriate given the recent increase in TEU throughput. The slower recovery scenario was designed to be a worst-case estimate of longer term emissions growth trends. Rather than rely on either the slower or faster recovery scenarios, staff assumed a middle case between the two forecasts. The growth assumptions are the same as used for the on-road and off-road rule – the medium recovery scenario. This tracks very well with the most recent data that ARB's Planning and Technical Support Division has on container traffic at California ports.

5. Comment: Speeding ships waste fuel, endanger marine life, are a major source of global warming pollution, and emit toxic air pollutants that are harmful to human health. At a 2009 workshop for the vessel speed reduction (VSR) regulation, a preliminary review of emissions reductions showed that 1,500 tons of CO₂, 5.2 tons of particulate matter, 40 tons of NO_x, and 43 tons of SO_x would be eliminated per day if ships complied with a mandatory speed limit of 12 knots within 40 nm of shore. We are concerned that regulatory activities for VSR are

delayed and urge you to bring a regulation including a mandatory enforceable speed limit for OGVs this year. (CCA/CCA1/ALA)

We also encourage the Board to consider additional regulations such as vessel speed reductions, which can reduce pollution in our communities and protect residents' health while decreasing California's greenhouse gas emissions. (NRDC/NRDC1)

I urge you to establish a mandatory rule to reduce oceangoing vessels speeds as soon as possible. ARB has delayed this rule for too long.

There is strong evidence that a robust requirement will protect coastal communities and reduce toxic air pollution and greenhouse gas emissions contributing to the climate crisis. Moreover, case studies demonstrate that mandatory ship speed limits are more effective than voluntary ones in saving whales from being fatally struck by speeding ships.

I have already submitted to the clerk a petition of more than 450 signatures that we've gathered over the past month out of interest in this speed limits issue. (CCA2)

I would just strongly urge you that in any consideration of this (VSR), please remember that if you only do this in the Santa Barbara Channel, we'll be right back here with the same problem. Anything to do with regulation of shipping needs to be done globally and consistently and take full accounting of the economics of shipping, the time, and the value; and needs to not create any sort of incentive that would make transit through our sea range more attractive than staying in the Santa Barbara Channel where they belong. (NAVY1)

Agency Response: The ports of Los Angeles and Long Beach have very successful voluntary VSR programs in place. As was discussed at the June 23, 2011 Board meeting, ARB staff continues to evaluate VSR options and is currently preparing a technical report regarding VSR that will investigate different approaches for VSR programs and the impacts. ARB staff agrees with the commenter that a VSR program that impacts the Santa Barbara Channel may have the unintended consequence of sending ships back into the Point Mugu Sea Range to avoid reduced speed requirements in the Santa Barbara Channel. This too, will be evaluated in the technical report. The petition submitted by Coalition for Clean Air on June 24, 2011 was responded to under a separate letter. A copy of the letter is included in the rulemaking package.

6. Comment: It's also unlikely that anybody's going to sell the 1% fuel. We'd also like you guys to take a strong look at this idea of viscosity of fuel. This is a very important safety aspect and one that not all shipping companies have the expertise that we do in order to ensure they have the right viscosity. This could lead to a lot of problems with reliability of the ship, especially when you're maneuvering the ship. One of the dangers is the ship will not start. And of course the starting and stopping of the ship is what gives the ship its brakes. So

again we'd really like to see a good look at this viscosity issue. I think you have an opportunity to set a viscosity. You set the sulfur level. You could also set a viscosity—a safe viscosity level. (CHEVRON)

Agency Response: We disagree with the statement indicating that 1% sulfur heavy fuel will not be available to comply with the first phase of the North American ECA. The statement suggests that distillate fuel, with its correspondingly lower viscosity, will have to be used instead of 1% sulfur heavy fuel to comply. In developing costs estimates, as shown in Table V-1 in Chapter V of the Staff Report, ARB staff identified two regions, Rotterdam and Singapore, where 1% sulfur heavy fuel is available in response to the current ECA requirements in the North Sea and Baltic Sea. Furthermore, we believe that 1% sulfur heavy fuel oil will become more widely available in response market demands due to the 1% sulfur limit beginning August 1, 2012 for the North American ECA. ARB staff does agree that under California's requirement to use cleaner distillate fuel in both phases, and the 2015 North American ECA 0.1% sulfur limit, fuel viscosity is a key fuel property and proper on-board management of fuel viscosity is a very important parameter. We do not believe that specifying a minimum fuel viscosity in the regulation is a viable approach since vessel design and operation is vessel specific and may require individualized fuel viscosity requirements and operational procedures to best manage on-board fuel viscosity. However, in the amendments, we have addressed fuel viscosity in two ways. First, by delaying the OGV Clean Fuel Regulation's Phase 2 implementation date we believe that shippers may be able to more easily locate fuels with higher viscosity levels during the extension of the Phase 1 requirements. Second, a new distillate fuel type, "DMZ", has been added to the definition of MGO, which has a higher minimum viscosity of 3 cSt at 40°C, but is otherwise identical to the specifications for MGO which is also referred to as "DMA" grade. We believe that these amendments will provide additional flexibility for shippers to manage on-board fuel viscosity.

7. Comment: To overcome some of the shortfall in that one year is—use this idea of virtual arrival, where you actually don't let any of the ships in to wait around the port. We found this to be very effective in just our own energy efficiency program. And by actually timing the ship's arrival all in so that the berths are open, you can save a lot of energy and fuel on that. (CHEVRON)

Agency Response: ARB staff would like to thank the commenter for the support of and encouragement for virtual arrival strategies to reduce greenhouse gases and other emissions that result from vessels transiting at full speed and then sitting idle while waiting for berthing slots. We believe that this type of strategy could be a valuable component of overall port operational strategies to lower emissions. Because vessel virtual arrival programs impact port operations, terminal operations and vessel traffic management, ARB staff believe that this type of program is best implemented by the Ports, in coordination with industry and other key vessel management, traffic and safety organizations.

8. Comment: Relative to the CARB staff proposed delay of the use of a 0.1% sulfur content marine fuel from 2012 to 2014, we understand the concerns and issues associated with the availability and use of the lower sulfur content fuel. As such, we urge CARB to closely monitor the availability of the 0.1% fuel and encourage the use of such fuel as early as possible, but no later than 2014. (SCAQMD)

Agency Response: As noted in the Staff Report, ARB staff believes that while there is sufficient global availability of the 0.1% sulfur fuels, there may be isolated situations regionally where the 0.1% sulfur fuel may not be provided in 2012. By delaying the Phase 2 implementation to January 1, 2014, any isolated fuel sulfur issue should further decline as supply increases due to crude supply, refining capacity, fueling infrastructures improvements, and demands of the North American ECA requirements in 2015. ARB staff intends to continue to monitor the availability of fuels needed to comply with the OGV Clean Fuel Regulation by tracking the fuel sulfur contents of fuels collected by ARB enforcement personal from vessels that visit California ports.

9. Comment: We ask for ARB's continued commitment to work with all stake holders, for example the Ports of Los Angeles and Long Beach, to take all feasible measures to further support the return of shipping to the Santa Barbara Ship Channel. (NAVY)

Agency Response: Consistent with the Board's direction noted in Resolution 11-25, ARB staff will continue to monitor the implementation of the regulation, including any changes in vessel traffic through the United States Navy Point Mugu Sea Range and the Santa Barbara Channel and work with stakeholders to propose amendments for the Board's consideration when warranted to resolve any implementation issues that may arise.

10. Comment: We request that ARB not incorporate VSR in this current regulatory revision. (NAVY)

Agency Response: We agree with the commenter and in this rulemaking are not incorporating amendments to the OGV Clean Fuel Regulation to require VSR. Additional discussion addressing VSR can be found in comment (III)(D)(5) above.

IV. SUMMARY OF PUBLIC COMMENTS AND AGENCY RESPONSES – NOTICE OF MODIFIED TEXT

Three written responses were received in response to the 15-day notice of modifications to the proposed amendments. Many of the comments received did not specifically address the proposed modifications. However, ARB staff decided to nonetheless respond to these comments. A summary of all the comments received during the supplemental comment period, and ARB's responses, are provided below.

Comments Received during the 15-day Comment Period

Abbreviation	Commenter
APL1	Robert Clark Director, Environmental Affairs American President Lines Written Testimony: August 5, 2011
MAERSK1	B. Lee Kindberg Director, Environment Maersk Incorporated Written Testimony: August 9, 2011
PMSA2	T.L. Garrett Vice President Pacific Merchant Shipping Association Written Testimony: August 9, 2011 ⁴

⁴ PMSA submitted a letter on August 9, 2011 for the 15-day comment period. Attached to the August 9, 2011 letter were three additional letters. The attached letter, dated July 22, 2011, was previously submitted for the 45-day period. Those comments along with the agency responses are included in Section III of this FSOR. Also attached to the August 9, 2011 letter were two letters dated July 23, 2008 and March 23, 2009. These letters were not directed to this current rulemaking but were comments directed to a prior rulemaking approved by OAL and filed with the Secretary of State on May 29, 2009 and were submitted by PMSA during the 45 day and 15 day comment periods for the prior Rulemaking. Those letters, along with the agency responses, can be found in the FSOR for the original rulemaking (Final Statement of Reasons for Rulemaking, Including Summary of Comments and Agency Responses, Public Hearing to Consider Adopting Regulations on Fuel Sulfur and Other Operational Requirements for Ocean-Going Vessels Within California Waters and 24 Nautical Miles of the California Baseline, 2009) which is available at: <http://www.arb.ca.gov/regact/2008/fuelogv08/fuelogv08.htm>.

1. Comment: Our experience clearly demonstrates that simplicity and alignment with international standards are highly desirable for achieving the best results and avoiding confusion on requirements. Simplicity and clarity of fuel requirements are especially helpful during vessel redeployments and ensuring that first-time callers have the right fuels and know when and where to use them.

Thus we strongly support the plan to better align the timing of the lower sulfur phase of the California OGV fuel rule with the upcoming North American ECA. We hope that future studies will allow even more alignment, moving the 0.1%S fuel requirement to January 2015 (aligned with the ECA) rather than 2014, as currently approved.

Until the OGV fuel rule and the ECA requirements are fully aligned, vessels visiting California must carry 3 different fuels (Ocean, ECA & CA), increasing costs and reducing tankage available for each grade. Thus having a single fuel standard that aligns with the international standards and the North American ECA is highly preferable. Ideally, the CARB OGV and ECA requirements for 0.1% sulfur fuel would become effective on the same date -- January 1, 2015. (MAERSK1)

Agency Response: As stated earlier, ARB staff supports international regulations to address vessel emissions problems and agrees that it would be preferable to adopt regulations for OGVs on an international basis provided the emission reductions are timely and are of sufficient stringency to meet California's air quality needs. As currently defined, the North American ECA will not meet our air quality needs until the 0.1% sulfur fuel requirement is implemented in 2015. Until that time, implementation of the OGV Clean Fuel Regulation's 0.1% sulfur fuel Phase 2 fuel requirements in 2014 is necessary to fulfill federal SIP obligations and to protect the public health of California citizens. The additional reductions gained by the Phase 2 implementation are a component of the overall reductions needed to meet the federal ambient air quality standard for PM_{2.5}; reductions which must be in place by January 1, 2014. As such, it is not possible to meet our air quality needs if the OGV Clean Fuel Regulation's Phase 2 and the North American ECA requirements for 0.1% sulfur fuel became effective on the same date.

2. For future evaluations, we also note that the emissions reductions achieved by the OGV Fuel program are probably better than has been calculated. Our understanding is that the emissions inventories include only the reductions due to low sulfur fuel use within the 24 nm zone. This does not take credit for the reductions outside the zone and during the transitions. This transition lasts from 45 min to several hours, and must be completed before entering the 24 nm zone, and initiated only after leaving the zone. (MAERSK1)

Agency Response: We agree that our emission reduction estimates are somewhat conservative because they do not account for the transitions from heavy fuel oil to complying distillate fuel when approaching the clean fuel zone, as well as the fuel transition that begins upon departure from the clean fuel zone. At this point in time, we

do not believe it is appropriate to take credit for these additional emission reductions because we are not able to quantify the benefits. However, this is a refinement to our emissions estimates that we will consider for the future, as suggested by the commenter, if sufficient data is available.

3. The ARB Proposed Amendments take a step toward regulatory consistency by postponing until to 2014 the date at which the percent sulfur required will decrease. While we welcome this postponement, particularly for reasons relating to loss of propulsion as outline below, it leaves a one year gap of inconsistent regulations for vessels calling at California ports. We strongly encourage ARB to make the postponement date 2015 in order to align with the ECA's percent sulfur reduction date. (APL1)

Agency Response: Implementation of the 0.1% sulfur fuel Phase 2 fuel requirement in 2014 is necessary to fulfill federal SIP obligations and to protect the public health of California citizens. The additional reductions gained by the Phase 2 implementation are a component of the overall reductions needed to meet the federal ambient air quality standard for PM_{2.5}; reductions which must be in place by January 1, 2014. As such, it is not possible to meet our air quality needs if the OGV Clean Fuel Regulation and North American ECA requirements for 0.1% sulfur fuel became effective on the same date.

4. Comment: With regards to loss of propulsion (LOP) associated with fuel oil switching, APL's U.S.-flag division, APL Maritime (AML) conducted an analysis of the LOP marine casualty reports made to the U.S. Coast Guard for vessels calling California ports in 2010. As you are aware, a vessel's loss of propulsion dramatically increases the risk to the environment and APL is committed to striving to eliminate such risk. The LOP analysis was conducted in conjunction with underway audits aboard AML vessels operating from California ports in response to the ARB zone requirements. Recommendations were developed from this analysis and used in discussions with the various regulatory bodies concerning the issue of fuel oil switching, including the U.S. Coast Guard Sector San Francisco "Loss of Propulsion/ Marine Engineers" meeting on March 16, 2011 in Oakland. AML found enough subjective evidence in their analysis to believe LOP marine casualties reported by large ocean going vessels was directly related to fuel oil switching and contributed to stalling, loss of fuel oil pressure, and clogging of fuel lines and filters all of which resulted in the reportable marine casualty. To that end, APL strongly recommends that ARB postpone until 2015 the implementation of more stringent sulfur criteria in order for vessel owners and operators to be fully prepared for all possible contingencies when fuel oil switching. (APL1)

Agency Response: We do not believe that it is appropriate to further delay the implementation of the 0.1% sulfur Phase 2 fuel from 2014 to 2015. The commenter suggests this postponement "in order for vessel owners and operators to be fully

prepared for all possible contingencies when fuel oil switching.” However, a large percentage of vessel operators are already using fuel that meets the 0.1% sulfur level. This is demonstrated by fuel testing conducted by ARB Inspectors, as shown in Table VI-3 of the 2008 OGV Staff Report. In addition, the delay from 2012 to 2014 should provide more than enough time for vessel operators not already using Phase 2 compliant fuel to prepare for the use of the lower sulfur fuel. Finally, the emission reductions from the Implementation of the 0.1% sulfur fuel Phase 2 fuel requirement in 2014 are necessary to fulfill federal SIP obligations and to protect the public health of California citizens.

Regarding the commenter’s discussion of loss-of-propulsion (LOP) incidents, the number of vessels that have experienced LOPs that could be attributed to fuel switching is very low, and in all cases the operational difficulties have been well managed. As discussed in Chapter I of the Staff Report, for the period from July, 2009 to February, 2011, there were 37 LOP incidents attributable to fuel switching (and 71 LOP incidents attributable to other causes) out of about 18,000 vessel visits to California ports. During much of this time, the total monthly number of LOP incidents was similar to the rate prior to the regulation. Nevertheless, ARB staff, the U.S. Coast Guard, Ship Class Societies and others are working to provide information to vessel operators to assist them in preparing to use the lower sulfur fuels required under the OGV Clean Fuel Regulation (and soon to be implemented under the North American ECA) and to avoid LOP incidents. As part of these efforts, the ARB funded a report by the California Maritime Academy to discuss the root causes of LOP incidents, identify “lessons learned” by vessel operators, and to make recommendations vessel operators to avoid LOPs.

5. Comment: In our previous comments, and here again, we are compelled to point out that these regulations contain the same fundamental problems concerning the state’s authority to regulate the activities of vessels both U.S.-flagged and foreign-flagged, engaged in international trade and interstate commerce, operating in international waters. While the currently proposed amendments to the regulation make some minor adjustments towards consistency with international treaties and adopted federal legislation and regulations, it remains inconsistent with, and contradictory to, existing statutes, court decisions and other provisions of law. It exceeds the rulemaking authority of the Board, and, in light of the totality of the record, it has been demonstrated that the current record is inadequate in terms of technical, safety and legal issues. The current regulation and these amendments fail to take into account supporting evidence that would fairly detract from the agency’s current conclusions. These concerns are the basis of our current challenge to “The Proposed Regulations on Fuel Sulfur and Other Operational Requirements for Ocean-Going Vessels within California Waters and 24 Nautical Miles of the California Baseline” that was approved by the Board on July 24, 2008, and to our previous challenge to the “Ocean-Going Vessel Auxiliary Diesel Engine Regulation” that was approved by the CARB Board in December of 2005. (PMSA2)

Agency Response: The issue of authority has been addressed in the 2008 OGV Staff Report, the Staff Report for proposed amendments and in comment (III)(A)(1) above, but ARB will briefly respond. The 15-day change, which only includes a change in Phase 1 MGO sulfur limit, does not impact the issue of ARB's authority to regulate emissions from ocean-going vessels that impact the public health of California citizens. Under State and federal law, ARB can regulate both criteria pollutants and toxic diesel PM emissions from marine vessels. Health and Safety Code (H&S) sections 43013 and 43018 authorize ARB to regulate marine vessels to the extent such regulation is not preempted by federal law. Also, H&S section 39666 requires ARB to regulate emissions of toxic air contaminants (TAC) from nonvehicular sources, which include ocean-going vessels.

Furthermore, we are unaware of any record that supports the commenter's statement that "the current record is inadequate in terms of technical, safety and legal issues". The proposed regulation is neither preempted under federal law, nor does it violate the dormant Commerce Clause of the U.S. Constitution and is consistent with existing statutes and recent court decisions concerning PMSA's legal challenge. Furthermore, since both the OGV Clean Fuel Regulation and the North American ECA rely on the use of cleaner fuels, the technical and safety issues are similar. PMSA has indicated that they are in support of the ECA, with its similar fuel requirements, yet inconsistently indicate that the record for the ARB rule is inadequate in terms of safety and technical issues.

6. Comment: While we understand that we are supposed to limit our comments to only those issues that are the subject to the 15 Day Notice, specifically the amendment contained in Attachment B, we feel compelled to remind CARB staff that many of our previous comments have not been addressed. These include the failure of CARB to assess the full benefits of the approved North American Emission Control Area (ECA), failure to provide for comparison the emission benefits of regulation with the California's three mile limit, unsupported assumptions of attaining the PM 2.5 federal Clean Air Act National Ambient Air Quality Standard (NAAQS) for the South Coast Air Basin by 2015, and wishful expectations that by further extending California's jurisdictional authority the vessel traffic will revert to prior behavior and alleviate the Navy's concerns regards potential disruption of their operations. (PMSA2)

Agency Response: The issues presented in this comment submitted for 15-day changes are a restatement of comments submitted by PMSA for the 45 day comment period for this rulemaking. Discussions concerning the assessment of the full benefit of the approved North American ECA and comparisons of benefits within a three mile limit can be found in comment (III)(B)(1) above; PM2.5 NAAQS for the South Coast Air Basin can be found in (III)(C)(1); and the Navy's concerns regarding potential disruptions of their operations can be found in (III)(D)(1).

7. Comment: CARB staff is proposing in this 15-Day package an additional amendment to those submitted at the June 23, 2011 Board hearing. This

amendment on the surface appears to be a common sense move towards improving consistency between the CARB regulation and the approved ECA beginning in August 2012. However, this amendment does nothing to provide consistency with the ECA. Primarily because compliance with the ECA 1.0% sulfur limit will occur with or without this amendment. With this modification CARB still asserts that it can regulate all fuels in use out to 24 nm from the Channel Islands in southern California, and 24 nm from the California Coast north of Point Conception. In August 2012 the North American ECA goes into effect requiring all vessels within 200 nm of the west coast of the U.S. and Canada must use a fuel with a maximum sulfur content of 1.0%. While, the ECA does not specify the type of fuel, only the sulfur content, clearly MGO at 1.0% sulfur is already included in the ECA requirements and does not need this amendment to establish the sulfur content limit. With this new amendment CARB is simply asserting an additional and duplicative authority to enforce the sulfur content of MGO beginning in August 2012. This duplicative authority will do nothing to improve air quality but further increase the burdens on the vessel owners/operators to require additional testing of MGO fuels, requires additional record keeping, and subjects the vessel owner/operator to additional penalties and fines imposed by CARB. (PMSA2)

Agency Response: To align the OGV Clean Fuel Regulation's Phase 1 fuel requirements with the North American ECA's August 2012 fuel sulfur requirement, ARB staff proposed a 15-day change to incorporate 1.0% fuel sulfur limit for the Phase 1 marine gas oil beginning August 1, 2012 to coincide with the North American ECA implementation date. This modification will ensure that there is no conflict between the Phase 1 sulfur limits of the North American ECA and those in the OGV Clean Fuel Regulation. As reported at the June 2011 Board hearing, since the vast majority of fuel used to comply with California's Phase 1 requirement is below 1 % sulfur, ARB staff believes that this change will not impose any additional testing needs or record keeping requirements above those currently used to comply with California's OGV Clean Fuel Regulation.

8. Comment: The amended regulation does nothing to address inconsistencies between the CARB regulation and ECA requirements for marine diesel oil (MDO) at 0.5% maximum sulfur content, and the outright ban of residual fuels. The implementation of the final phase of the CARB regulation beginning on January 1, 2014, is inconsistent with the final phase of the ECA beginning on January 1, 2015. Although the ISOR states that 90% of the benefits of the CARB regulation results from the first phase, somehow the additional 10% from the second phase is critical for the South Coast Air Basin (SCAB) to achieve the PM 2.5 National Ambient Air Quality Standard (NAAQS). However, no analysis is provided to demonstrate why this early implementation of the 0.1% sulfur content, one year in advance of the ECA, is necessary for either the 2015 attainment date of the NAAQS in the SCAB or for public health in other parts of California that are not subject to the PM 2.5 attainment date of the SCAB. (PMSA2)

Agency Response: The amendments to the regulation are not designed to make the OGV Clean Fuel Regulation identical to the North American ECA. The requirement to

use distillate fuels (rather than residual fuels) and the 0.5% sulfur limit for MDO both reduce emissions of diesel particulate matter beyond what the North American ECA will achieve prior to 2015. If the regulation were identical to the North American ECA, California citizens would be exposed to significant increases in PM and SO_x levels, and associated health risks. However, as discussed in the Staff Report, some of the amendments do make the regulation more consistent with the North American ECA. Specifically, changing the sulfur limit for MGO from 1.5% sulfur to 1% sulfur on August 1, 2012, is consistent with the 1% sulfur North American ECA limit that will be implemented on the same date. This change avoids a situation where a vessel operator could use a fuel that is compliant with the California regulation, but not the North American ECA. In addition, delaying the implementation of the Phase 2 (0.1% sulfur fuel) from 2012 to 2014 moves the requirement closer to the 2015 start date in the North American ECA. Regarding the 2014 start date for the Phase 2 fuel, the additional reductions gained by the Phase 2 implementation are a component of the overall reductions needed by 2014 to meet the federal ambient air quality standard for PM_{2.5}. These reductions are also needed to reduce the public's exposure to diesel PM emissions, as demonstrated at length in the 2008 OGV Staff Report (Chapter IV, Chapter VII, and Appendices E1, E2, and E3).

9. Comment: With these considerations in mind, PMSA suggests that CARB Staff does an evaluation of the need to have a duplicative regulatory requirement to the ECA from August 2012 to January 1, 2014. Considering the similarities in fuel sulfur content, the extended range of the ECA, and the limited sources of fuels to comply, it seems highly likely that the CARB regulation provides no air quality benefit during this interim period. Therefore, it appears likely that the regulation should be suspended upon implementation of the ECA in August 2012 unless and until CARB can demonstrate significant air quality benefits beyond those provide by the ECA. Further, CARB should suspend the 2014 implementation date of the final phase of the regulation until it can clearly demonstrate that it is necessary for the PM 2.5 SCAB attainment date in 2015, but is also of significant public health benefit for the rest of California. (PMSA2)

Agency Response: ARB staff performed an analysis comparing the statewide emission reductions and associated reductions in health risk between the OGV Clean Fuel Regulation and the North American ECA in the 2008 OGV Staff Report (Chapter V). In addition, ARB staff conducted another similar analysis covering the South Coast Air Basin, shown in Appendix C of the current Staff Report. Both analyses demonstrate that the California OGV Clean Fuel Regulation would achieve substantially greater emission reductions than the North American ECA. This comment, which is a restatement of a comment submitted during the 45-day period, is discussed fully in (III)(B)(1) above.

V. NON SUBSTANTIVE CHANGES MADE TO THE RULEMAKING RECORD

There were title and date errors in the references various appendices to the Staff Report. ARB staff notes the following corrections to the references, and the corrections are as follows:

1. Appendix C Attachment C-1, reference #1
“Main Speciation Profiles” was corrected to “Speciation Profiles Used in ARB Modeling”;
Reference 1 was available as part of the rulemaking record at the time of publication.
2. Appendix D, reference #2 (CARB, 2005b)
“Oceangoing Vessel Survey” was corrected to “Oceangoing Ship Survey”;
(CARB, 2005b) was available as part of the rulemaking record at the time of publication.
3. Appendix D, reference #3 (CARB, 2006)
“October, 2006” was corrected to “October, 2005”;
(CARB, 2006) was available as part of the rulemaking record at the time of publication.
4. Appendix D, reference #5 (CARB, 2007b)
“California Air Resources Board, Ocean-Going Vessel PM Emission Factors for Heavy Fuel Oil White Paper, March, 2007” was corrected to
“California Air Resources Board, A Critical Review of Ocean-Going Vessel Particulate Matter Emission Factors”;
(CARB, 2007b) was available as part of the rulemaking record at the time of publication.
5. Appendix D, reference #10 (IVL, 2002)
“February 2002” was corrected to “February 2004”;
(IVL, 2002) was available as part of the rulemaking record at the time of publication.
6. Appendix D, reference #20 (USACE, 2007)
“US Army Corps of Engineers Navigation Data Center, Foreign Traffic Vessel Entrances and Clearance, various years. 1997-2005 available at <http://www.iwr.usace.army.mil/ndc/data/dataclen.htm>” was corrected to
“US Army Corps of Engineers Navigation Data Center, National Waterway Network. Available at <http://www.ndc.iwr.usace.army.mil/data/datanwn.htm>”
(USACE, 2007) was available as part of the rulemaking record at the time of publication.