

## **Appendix A**

### **Proposed Regulations for Fuel Sulfur and Other Operational Requirements for Ocean-Going Vessels Within California Waters and 24 Nautical Miles of the California Baseline**

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## PROPOSED REGULATION ORDER

### FUEL SULFUR AND OTHER OPERATIONAL REQUIREMENTS FOR OCEAN-GOING VESSELS WITHIN CALIFORNIA WATERS AND 24 NAUTICAL MILES OF THE CALIFORNIA BASELINE

Adopt new section 2299.2, title 13, California Code of Regulations (CCR), to read as follows:

(Note: The entire text of section 2299.2 is new language.):

#### **13 CCR section 2299.2. Fuel Sulfur and Other Operational Requirements for Ocean-going Vessels within California Waters and 24 Nautical Miles of the California Baseline.**

##### **(a) Purpose**

The purpose of this section is to require the use of low sulfur marine distillate fuels in order to reduce emissions of particulate matter (PM), diesel particulate matter, nitrogen oxides, and sulfur oxides from the use of auxiliary diesel and diesel-electric engines, main propulsion diesel engines, and auxiliary boilers on ocean-going vessels within any of the waters subject to this regulation (“Regulated California Waters”).

##### **(b) Applicability**

- (1) Except as provided in subsection (c), this section applies to any person who owns, operates, charters, rents, or leases any ocean-going vessel that operates in any of the Regulated California Waters, which include all of the following:
  - (A) all California internal waters;
  - (B) all California estuarine waters;
  - (C) all California ports, roadsteads, and terminal facilities (collectively “ports”);
  - (D) all waters within 3 nautical miles of the California baseline, starting at the California-Oregon border and ending at the California-Mexico border at the Pacific Ocean, inclusive;
  - (E) all waters within 12 nautical miles of the California baseline, starting at the California-Oregon border and ending at the California-Mexico border at the Pacific Ocean, inclusive;
  - (F) all waters within 24 nautical miles of the California baseline, starting at the California-Oregon border to 34.43 degrees North, 121.12 degrees West, inclusive; and
  - (G) all waters within the area, not including islands, between the California baseline and a line starting at 34.43 degrees North, 121.12 degrees West; thence to 33.50 degrees North, 118.58 degrees West; thence to 32.65

degrees North, 117.81 degrees West, and ending at the California-Mexico border at the Pacific Ocean, inclusive.

- (2) Except as provided in subsection (c), this section applies to tanker and non-tanker ocean-going vessels that are flagged in, registered in, entitled to fly the flag of, or otherwise operating under the authority of the United States (“U.S.-flagged”) or any other country (“foreign-flagged”).
- (3) Nothing in this section shall be construed to amend, repeal, modify, or change in any way any applicable U.S. Coast Guard requirements. Any person subject to this section shall be responsible for ensuring compliance with both U.S. Coast Guard regulations and the requirements of this section, including but not limited to, obtaining any necessary approvals, exemptions, or orders from the U.S. Coast Guard.

**(c) Exemptions**

- (1) The requirements of this section do not apply to ocean-going vessel voyages that are comprised of continuous and expeditious navigation through any Regulated California Waters for the purpose of traversing such bodies of water without entering California internal or estuarine waters or calling at a port, roadstead, or terminal facility. “Continuous and expeditious navigation” includes stopping and anchoring only to the extent such stopping and anchoring are required by the U.S. Coast Guard; rendered necessary by force majeure or distress; or made for the purpose of rendering assistance to persons, ships, or aircraft in danger or distress. This exemption does not apply to the passage of an ocean-going vessel that engages in any of the prejudicial activities specified in United Nations Convention on the Law of the Seas (UNCLOS) 1982, Article 19, subpart 2. Further, notwithstanding any Coast Guard mandated stops or stops due to force majeure or the rendering of assistance, this exemption does not apply to a vessel that was otherwise scheduled or intended to enter California internal or estuarine waters or call at a port, roadstead or terminal facility.
- (2) The requirements of this section do not apply to emergency generators.
- (3) The requirements of this section do not apply to auxiliary engines, main engines or auxiliary boilers onboard ocean-going vessels owned or operated by any branch of local, state, or federal government, or by a foreign government, when such vessels are operated within Regulated California Waters on government non-commercial service. However, such vessels are encouraged to act in a manner consistent, so far as is reasonable and practicable, with this section.
- (4) The requirements of this section do not apply to auxiliary engines, main engines, and auxiliary boilers while such engines and boilers are operating on alternative fuel in Regulated California Waters.

- (5) The requirements of this section, including the payment of Noncompliance Fees as provided in subsection (h), do not apply if the master reasonably and actually determines that compliance with this section would endanger the safety of the vessel, its crew, its cargo or its passengers because of severe weather conditions, equipment failure, fuel contamination, or other extraordinary reasons beyond the master's reasonable control. This exemption applies only as long as and to the extent necessary to secure the safety of the vessel, its crew, its cargo, or its passengers and provided that;
- (A) the master takes all reasonable precautions after the conditions necessitating the exemption have ended to avoid or minimize repeated claims of exemption under this subsection;
  - (B) the master notifies the Executive Officer of a safety exemption claim within 24 hours after the end of each such episode (i.e., the period of time during which the emergency conditions exist that necessitate the safety exemption claim, as provided in paragraph (5) above); and
  - (C) the master submits to the Executive Officer, within 4 working days after the notification in paragraph (B) above, all documentation necessary to establish the conditions necessitating the safety exemption and the date(s), local time, and position of the vessel (longitude and latitude) in Regulated California Waters at the beginning and end of the time period during which a safety exemption is claimed under this subsection. All documentation required under this paragraph shall be provided in English.
- (7) Temporary Experimental or Research Exemption. As provided in this paragraph, the requirements of this section do not apply to vessels that have been granted a temporary experimental exemption by the Executive Officer for the duration of the approved exemption. A temporary experimental exemption may be granted by the Executive Officer for experimental purposes for up to three years with one extension for up to two additional years. The exemption will be limited in duration as specified by the Executive Officer in the Executive Order granting such an exemption or extension. All documentation and information submitted in support of an application for a temporary experimental exemption or extension shall be deemed non-confidential and available for public review under the Public Records Act.
- (A) Pursuant to this paragraph, a person may operate an auxiliary engine, main engine or auxiliary boiler with fuel that does not meet the provisions of (e)(1), provided the person meets all of the following requirements:
    - 1. the person obtains written approval for this exemption or extension, in the form of an Executive Order from the Executive Officer, before the vessel enters Regulated California Waters;

2. the person or master of the vessel takes all measures available to minimize emissions of diesel PM, NOx, and SOx to the extent feasible during the period in which the temporary experimental exemption is in effect;
3. the request for an exemption or extension is provided in writing, submitted to the Executive Officer at least 30 days before the vessel enters Regulated California Waters, and contains the following:
  - a. specifications for the non-compliant fuel that the person is proposing to use pursuant to this paragraph, including but not limited to, sulfur content (expressed to the nearest tenth weight percent); whether the fuel meets ASTM specifications for MDO, MGO, or some other fuel (identify which ASTM specifications the fuel meets, if any); and
  - b. a clear and convincing demonstration that the use of the proposed non-compliant fuel will generate data as part of research that advances the state of knowledge of exhaust control technology or characterization of emissions. For purposes of this paragraph, the Executive Officer's determination that the person has provided a "clear and convincing demonstration" shall be based on whether the person's use of the proposed noncompliant fuel is an express part of a formal, executed research contract or project; a doctoral dissertation; or a master's thesis. A demonstration of the "state of knowledge" includes specific citations to scientific, academic, industry or regulatory literature existing or in progress at the time of the request;
  - c. identification of the purpose, goals, and objectives of the project, measures taken to minimize emission of air contaminants, and testing procedures and testing schedules;

(B) A person with an exemption granted pursuant to this provision shall:

1. bring the vessel into full compliance with the requirements of this section, including subsection (e)(1), prior to the expiration of the temporary experimental exemption as specified; and
2. provide a progress report annually from the date of the executive order, to the Executive Officer providing interim test data or other interim results, description of vessel modifications or retrofitting done as part of the projects or other information generated from the date of the prior progress report.
3. provide all official test data and all other results, data, or other information generated during the exemption period to the Executive Officer, in writing and final form, no more than 90 days after the expiration of the temporary experimental exemption or extension.

- (C) No modifications to the terms and conditions of an approved temporary experimental exemption shall be valid unless in writing and agreed to by both the Executive Officer and the person. Any variance, deviance, or nonconformance with the terms and conditions of an approved temporary experimental exemption or extension shall be deemed a separate violation of this section.

**(d) Definitions**

For purposes of this section, the following definitions apply:

- (1) "Alternative fuel" means natural gas, propane, ethanol, methanol, hydrogen, electricity, or fuel cells. Alternative fuel also means any mixture that only contains these fuels.
- (2) "ASTM" means ASTM International.
- (3) "Auxiliary boiler" means any fuel-fired combustion equipment designed primarily to produce steam for uses other than propulsion, including, but not limited to, heating of residual fuel and liquid cargo, heating of water for crew and passengers, powering steam turbine discharge pumps, freshwater generation, and space heating of cabins. Exhaust gas economizers that exclusively use diesel engine exhaust as a heat source to produce steam are not auxiliary boilers.
- (4) "Auxiliary engine" means a diesel engine on an ocean-going vessel designed primarily to provide power for uses other than propulsion or emergencies, except that all diesel-electric engines shall be considered "auxiliary diesel engines" for purposes of this section.
- (5) "Baseline" means the mean lower low water line along the California coast, as shown on the following National Oceanic and Atmospheric Administration (NOAA) Nautical Charts as authored by the NOAA Office of Coast Survey, which are incorporated herein by reference:
  - (A) Chart 18600, Trinidad Head to Cape Blanco (January 2002);
  - (B) Chart 18620, Point Arena to Trinidad Head (June 2002);
  - (C) Chart 18640, San Francisco to Point Arena (August 2005);
  - (D) Chart 18680, Point Sur to San Francisco (June 2005);
  - (E) Chart 18700, Point Conception to Point Sur (July 2003);
  - (F) Chart 18720, Point Dume to Purisima Point (January 2005); and
  - (G) Chart 18740, San Diego to Santa Rosa Island (April 2005).

- (6) “Diesel Engine” means an internal combustion, compression-ignition (CI) engine with operating characteristics significantly similar to the theoretical diesel combustion cycle. The regulation of power by controlling fuel supply in lieu of a throttle is indicative of a compression ignition engine.
- (7) “Diesel Particulate Matter” means the particles found in the exhaust of diesel engines, which may agglomerate and adsorb other species to form structures of complex physical and chemical properties.
- (8) “Diesel-electric engine” means a diesel engine connected to a generator that is used as a source of electricity for propulsion or other uses.
- (9) “Emergency Generator” means a diesel-electric engine operated only during emergencies or to perform maintenance and testing necessary to ensure readiness for emergencies.
- (10) “Essential Modification” means any hardware or equipment modification to the vessel that is necessary to comply with this regulation. Modifications that are made for convenience or automation of fuel switching are not considered essential. Additional tankage is considered essential only if existing and available distillate tankage is less than the capacity required for a complete voyage within the Regulated California Waters.
- (11) “Estuarine Waters” means an arm of the sea or ocean that extends inland to meet the mouth of a river.
- (12) “Executive Officer” means the executive officer of the Air Resources Board (ARB), or his or her designee.
- (13) “Hydrocarbon (HC)” means the sum of all hydrocarbon air pollutants.
- (14) “Internal Waters” means any navigable river or waterway within the State of California.
- (15) “IMO” means the International Maritime Organization.
- (16) “ISO” means the International Organization for Standardization.
- (17) “Main Engine” means a diesel engine on an ocean-going vessel designed primarily to provide propulsion, except that diesel-electric engines shall not be considered “main engines” for purposes of this section.
- (18) “Marine Diesel Oil (MDO)” means any fuel that meets all the specifications for DMB grades as defined in Table I of International Standard ISO 8217, as revised in 2005, which is incorporated herein by reference.



- (19) "Marine Gas Oil (MGO)" means any fuel that meets all the specifications for DMX or DMA grades as defined in Table I of International Standard ISO 8217, as revised in 2005, which is incorporated herein by reference.
- (20) "Master" means the person who operates a vessel or is otherwise in charge of the vessel's operations.
- (21) "Military Vessel" means any ship, boat, watercraft, or other contrivance used for any purpose on water, and owned or operated by the armed services.
- (22) "Nitrogen Oxides (NOx)" means compounds of nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), and other oxides of nitrogen, which are typically created during combustion processes and are major contributors to smog formation and acid deposition.
- (23) "Non-Methane Hydrocarbons (NMHC)" means the sum of all hydrocarbon air pollutants except methane.
- (24) "Ocean-going Vessel (OGV)" means a commercial, government, or military vessel meeting any one of the following criteria:
  - (A) a vessel greater than or equal to 400 feet in length overall (LOA) as defined in 50 CFR § 679.2, as adopted June 19, 1996;
  - (B) a vessel greater than or equal to 10,000 gross tons (GT ITC) per the convention measurement (international system) as defined in 46 CFR 69.51-.61, as adopted September 12, 1989; or
  - (C) a vessel propelled by a marine compression ignition engine with a per-cylinder displacement of greater than or equal to 30 liters.

For purposes of this section, "ocean-going vessel" does not include tugboats, towboats, or pushboats.

- (25) "Operate" means steering or otherwise running the vessel or its functions while the vessel is underway, moored, anchored, or at dock.
- (26) "Own" means having all the incidents of ownership, including the legal title, of a vessel whether or not that person lends, rents, or pledges the vessel; having or being entitled to the possession of a vessel as the purchaser under a conditional sale contract; or being the mortgagor of a vessel.
- (27) "Particulate Matter" means any airborne finely divided material, except uncombined water, which exists as a liquid or solid at standard conditions (e.g., dust, smoke, mist, fumes or smog).
- (28) "Person" includes all of the following:

- (A) any person, firm, association, organization, partnership, business trust, corporation, limited liability company, or company;
  - (B) any state or local governmental agency or public district, or any officer or employee thereof;
  - (C) the United States or its agencies, to the extent authorized by federal law.
- (29) “Port Visit” means any of the following:
- (A) each separate and distinct entry of a vessel into a port, roadstead, or terminal facility (collectively “port”) in Regulated California Waters that results in the vessel stopping, docking, mooring, or otherwise dropping anchor (collectively “stopping”) at the port. The “port visit” continues if the vessel moves to a different berth within the same port, but the “port visit” ends when the vessel leaves for or is otherwise moved to another port within the same bay or any other port;
  - (B) except as provided in paragraph (C) below, each separate and distinct entry of a vessel into an offshore location in Regulated California Waters away from a port that results in the vessel stopping at that offshore location (e.g., Catalina Island or off Monterey). The “port visit” ends when the vessel leaves for or is otherwise moved to a port or another offshore location; or
  - (C) each separate and distinct entry of a vessel into an offshore location in Regulated California Waters away from a port that results in the vessel stopping, followed by entry into that port, shall constitute one “port visit”, provided the offshore stop was conducted solely because the port could not accept the vessel as scheduled due to reasons beyond the reasonable control of the vessel operator or master.
- (30) “Regulated California Waters” means all of the following
- (A) all California internal waters;
  - (B) all California estuarine waters;
  - (C) all California ports, roadsteads, and terminal facilities (collectively “ports”);
  - (D) all waters within 3 nautical miles of the California baseline, starting at the California-Oregon border and ending at the California-Mexico border at the Pacific Ocean, inclusive;
  - (E) all waters within 12 nautical miles of the California baseline, starting at the California-Oregon border and ending at the California-Mexico border at the Pacific Ocean, inclusive;
  - (F) all waters within 24 nautical miles of the California baseline, starting at the California-Oregon border to 34.43 degrees North, 121.12 degrees West, inclusive; and

- (G) all waters within the area, not including any islands, between the California baseline and a line starting at 34.43 degrees North, 121.12 degrees West; thence to 33.50 degrees North, 118.58 degrees West; thence to 32.65 degrees North, 117.81 degrees West; and ending at the California-Mexico border at the Pacific Ocean, inclusive.
- (31) “Roadstead” means any facility that is used for the loading, unloading, and anchoring of ships.
- (32) “Steamship” means a self-propelled vessel in which the primary propulsion and electrical power are provided by steam boilers.
- (33) “Slow Speed Engine” means an engine with a rated speed of 150 revolutions per minute or less.
- (34) “Sulfur Oxides” means compounds of sulfur dioxide (SO<sub>2</sub>), and other oxides of sulfur, which are typically created during combustion of sulfur containing fuels.
- (35) “Tanker” means a self-propelled vessel constructed or adapted primarily to carry, or that carries, oil or hazardous material in bulk as cargo or cargo residue.
- (36) “Two-stroke Engine” means an internal combustion engine which operates on a two stroke cycle where the cycle of operation completes in one revolution of the crankshaft.
- (37) “Vessel” means any tugboat, tanker, freighter, passenger ship, barge, or other boat, ship, or watercraft, except those used primarily for recreation and any of the following:
- (A) a seaplane on the water;
  - (B) a watercraft specifically designed to operate on a permanently fixed course, the movement of which is restricted to a fixed track or arm to which the watercraft is attached or by which the watercraft is controlled.
- (38) “Voyage” means each separate and distinct journey that begins when a vessel reaches Regulated California Waters from a point beyond Regulated California Waters, includes at least one port visit, and ends when the vessel departs from Regulated California Waters.

**(e) Operational Requirements**

- (1) Fuel Sulfur Content Limits
- (A) Auxiliary Diesel Engines
    - i. Except as provided in subsections (c) and (h), upon the effective date of this regulation as approved by the Office of Administrative Law, a person subject to this section shall operate any auxiliary

diesel engine, while the vessel is operating in Regulated California Waters, with either marine gas oil (MGO), with a maximum of 1.5 percent sulfur by weight, or marine diesel oil (MDO), with a maximum of 0.5 percent sulfur by weight, rounded as specified in subsection (i)(3);

- ii. Except as provided in subsections (c) and (h), beginning January 1, 2012, a person subject to this section shall operate any auxiliary diesel engine, while the vessel is operating in Regulated California Waters, with marine gas oil (MGO) with a maximum of 0.1% sulfur by weight or marine diesel oil (MDO) with a maximum of 0.1% sulfur by weight, rounded as specified in subsection (i)(3).

(B) Main Engines and Auxiliary Boilers

- i. Except as provided in subsections (c) and (h), beginning July 1, 2009, a person subject to this section shall operate any main engine or auxiliary boiler, while the vessel is operating in Regulated California Waters, with either marine gas oil (MGO), with a maximum of 1.5 percent sulfur by weight, or marine diesel oil (MDO), with a maximum of 0.5 percent sulfur by weight, rounded as specified in subsection (i)(3);
- ii. Except as provided in subsections (c) and (h), beginning January 1, 2012, a person subject to this section shall operate any main engine or auxiliary boiler, while the vessel is operating in Regulated California Waters, with marine gas oil (MGO) with a maximum of 0.1% sulfur by weight or marine diesel oil (MDO) with a maximum of 0.1% sulfur by weight, rounded as specified in subsection (i)(3).

(2) Recordkeeping, Reporting, and Monitoring Requirements.

(A) Recordkeeping

Upon the effective date of this regulation, any person subject to this section shall retain and maintain records in English that contain the following information for at least three years following the date when the records were made:

1. The date, local time, and position (longitude and latitude) of the vessel for each entry into Regulated California Waters from waters outside Regulated California Waters, and each departure from Regulated California Waters to waters outside Regulated California Waters, excluding any voyages exempted from the requirements of this section under subsection (c)(1), (c)(2), (c)(4), and (c)(5);

2. The date, local time, and position (longitude and latitude) of the vessel at the initiation and completion of any fuel switching procedures used to comply with subsection (e)(1) prior to entry into Regulated California Waters from waters outside Regulated California Waters;
3. The date, local time, and position (longitude and latitude) of the vessel at the initiation and completion of any fuel switching procedures within Regulated California Waters; completion of fuel switching procedures occurs the moment all engines subject to this section have completely transitioned from operation on one fuel to another fuel;
4. The type of fuel used (e.g., marine gas oil, marine diesel oil or heavy fuel oil) in each auxiliary engine, main engine, and auxiliary boiler operated in Regulated California Waters; and
5. The types, amounts, and the actual percent by weight sulfur content of all fuels purchased for use on the vessel, as reported by the fuel supplier or a fuel testing firm.

(B) Documentation of Fuel Switch Over Procedures

Any person subject to this section that complies with the fuel sulfur content limits by switching fuels shall retain and maintain records in English on-board ship that contain the following information for auxiliary engines, main engines and auxiliary boilers:

1. A fuel system diagram that shows all storage, service, and mixing tanks, fuel handling, pumping, and processing equipment, valves, and associated piping. The diagram or other documentation shall list the fuel tank capacities and locations, and the nominal fuel consumption rate of the machinery at rated power;
2. Description of the fuel switch over procedure with detailed instructions and clear identification of responsibilities; and
3. The make, model, rated power, and serial numbers of all main engines, and auxiliary engines and make, model, rated output, and serial numbers of all auxiliary boilers subject to subsection (e)(1).

(C) Reporting and Monitoring

1. Any person subject to this section shall provide in writing the information specified in subsection (e)(2)(A) and (e)(2)(B) and to the Executive Officer upon request, either within 24 hours or by a later date approved by the Executive Officer. To the extent the person already collects the information specified in subsections (e)(2)(A) and (e)(2)(B) in English to

comply with other regulatory requirements or standard practices, the person may provide the requested information in a format consistent with those other regulatory requirements or standard practices.

2. Any person subject to this section shall provide to the Executive Officer upon request additional information the Executive Officer determines to be necessary to determine compliance with this section.
3. Any person subject to this section shall provide to the Executive Officer access to the vessel for the purpose of determining compliance with the this section, including but not limited to, access to and review of records and information required under subsections (e)(2)(A) and (e)(2)(B), and for the purpose of collecting fuel samples for testing and analysis.

**(f) Violations**

- (1) Any person who is subject to this section and commits a violation of any provision, standard, criteria or requirement in this section is subject to the penalties, injunctive relief, and other remedies specified in Health and Safety Code, sections 39674-39675 and 42400 et seq.; other applicable sections in the Health and Safety Code; and other applicable provisions as provided under California law for each violation. Nothing in this section shall be construed to limit or otherwise affect any applicable penalties or other remedies available under Federal law.
- (2) Any failure to meet any provision, standard, criteria or requirement in this section, including but not limited to the applicable fuel sulfur content limits; recordkeeping requirements; and Noncompliance Fee provision shall constitute a single, separate violation of this section for each hour that a person operates an ocean-going vessel in Regulated California Waters until such provision, standard, criteria or requirement has been met.
- (3) Any person who is subject to this section is liable for meeting the requirements of this section, notwithstanding any contractual arrangement that person may have with any third-parties.

**(g) Noncompliance for Vessels Based on the Need for Essential Modifications**

If a person cannot meet the requirements of subsection (e)(1) without essential vessel modifications, the Executive Officer may grant the person an exemption in whole or in part to subsection (e)(1). This provision terminates on December 31, 2014. For this provision to apply, the person shall meet all of the following criteria:

- (1) Notification Requirements

Before the person's vessel enters Regulated California Waters from waters outside Regulated California Waters, the Executive Officer must receive notice that the person will not meet the requirements of subsection (e)(1) while operating within Regulated California Waters, but the person will instead meet the requirements of this subsection (g). If the Executive Officer has not received such notice and the person enters Regulated California Waters, the person will be in violation of this section.

(2) **Demonstration of Need**

At least 45 days prior to entering Regulated California Waters, the person shall provide, in writing, the Executive Officer an Essential Modification Report attested to under the penalty of perjury by the Chief Engineer of the person's vessel. The Executive Officer has 30 days to act on the Essential Modification Report. Additional information may be provided by the applicant or requested by the Executive officer after submittal of the original Essential Modification Report. The Executive Officer will have an additional 15 days to review the additional submittal and act on the amended Essential Modification Report. The Essential Modification Report shall contain the following;

- (A) identifies the specific essential vessel modifications ("essential modifications") required for the main engines, auxiliary engines or auxiliary boilers to meet the requirements of subsection (e)(1);
- (B) demonstrates to the satisfaction of the Executive Officer that modifications to the vessel are necessary to meet the requirements of subsection (e)(1);
- (C) identifies the extent, with respect to trip distance or regulated equipment type, in which the vessel can meet the requirements of (e)(1) without essential vessel modifications where feasible and safe for each of the auxiliary engines, main engines, and auxiliary boilers;

(3) While the vessel is operating in Regulated California Waters, a person subject to this section shall:

- (A) operate any main engine meeting the requirements of (e)(1) to the maximum extent feasible and safe as determined in (g)(2)(C) and
- (B) operate any auxiliary boiler meeting the requirements of (e)(1) to the maximum extent feasible and safe as determined in (g)(2)(C) and
- (C) operate any auxiliary engine meeting the requirements of (e)(1) to the maximum extent feasible and safe as determined in (g)(2)(C) .

**(h) Noncompliance Fee in Lieu of Meeting Subsection (e)(1)**

The Executive Officer may permit a person (“person”) to pay noncompliance fees (“fees”) in lieu of meeting the requirements of subsection (e)(1). Payment of the fees notwithstanding, all other provisions of this section shall continue to apply. No person shall be permitted to pay the fees unless the person meets the notification requirements in subsection (h)(1) and the requirements in either subsections (h)(2), (h)(3), or (h)(4), as specified below:

(1) Notification Requirements

Before the person’s vessel enters Regulated California Waters from waters outside Regulated California Waters, the Executive Officer must receive notice that the person will not meet the requirements of subsection (e)(1) while operating within Regulated California Waters, but the person will instead meet the requirements of this subsection (h). If the Executive Officer has not received such notice and the person enters Regulated California Waters, the person will be in violation of this section and will not be permitted to pay the fees in lieu of meeting the requirements of subsection (e)(1).

(2) Noncompliance for Reasons Beyond a Person’s Reasonable Control

Any person wishing to pay the fees under this subsection (h)(2) shall meet the following criteria:

(A) Demonstration of Need

The person shall, through adequate documentation, demonstrate to the Executive Officer’s satisfaction that the person’s noncompliance with the requirements of subsection (e)(1) is beyond the person’s reasonable control. For the purposes of this paragraph, “beyond the person’s reasonable control” applies only when one or more of the following sets of circumstances (1, 2, or 3) applies:

1. Unplanned Redirection

This provision applies only when all of the following criteria are met:

- a. after leaving the last port of call, the person’s vessel was redirected from his/her original, officially logged, non-California destination to a California port, roadstead, or terminal facility (collectively “port”); and
- b. the vessel does not contain a quantity of fuel sufficient for the auxiliary engines, main engines, and auxiliary boilers to meet the requirements of subsection (e)(1).

2. Inadequate Fuel Supply



This provision applies only when all of the following criteria are met:

- a. the person made good faith efforts to acquire a quantity of fuel sufficient for the auxiliary engines, main engines, and auxiliary boilers to meet the requirements of subsection (e)(1); and
- b. the person was unable to acquire fuel sufficient for auxiliary engines, main engines, and auxiliary boilers to meet the requirements of subsection (e)(1).

### 3. Inadvertent Purchase of Defective Fuel

This provision applies only when all of the following criteria are met:

- a. based on the fuel supplier's certification of the fuel specifications, the person reasonably believed, and relied on such belief, that the fuel the person purchased on the route from the vessel's home port to California would enable the auxiliary engines, main engines, and auxiliary boilers to meet the requirements of subsection (e)(1);
- b. the person determined that the auxiliary engines, main engines, and auxiliary boilers in fact will not meet the requirements of subsection (e)(1) using any of the fuel purchased under paragraph 3.a; and
- c. the vessel is already on its way to California, and there are no other ports of call on the vessel's route where fuel can be purchased sufficient to meet the requirements of subsection (e)(1).

### (B) Payment of Fees

Upon meeting the requirements of paragraph (A) in this subsection (h)(2), the person shall pay the fees for every port visit, as specified in subsection (h)(5) below.

### (C) Executive Officer Review

For the purposes of verifying the demonstration of need as specified in paragraph (A) above, the Executive Officer may consider and rely on any facts or circumstances the Executive Officer believes are appropriate, including but not limited to: the fuel supplier's ability or failure to provide adequate fuel ordered by the person; any material misrepresentation by the fuel supplier concerning the fuel specifications; the reasonableness of the person's reliance on fuel suppliers with a history of supplying fuel inadequate for meeting the requirements of subsection (e)(1); and force majeure.

(3) Noncompliance for Vessels to Be Taken Out of Service for Modifications

If a person cannot meet the requirements of subsection (e)(1) without vessel modifications, and elects not to comply under section (g), and such modifications cannot be completed prior to the effective date of subsection (e)(1), the Executive Officer may permit the person to pay the fees as specified in this subsection. The vessel must be scheduled to complete the necessary modifications (e.g. during a dry dock operation) as soon as possible, but no later than December 31, 2014. For this provision to apply, the person shall meet all of the following criteria:

(A) Demonstration of Need

The person shall provide the Executive Officer a Compliance Report, signed by the Chief Engineer of the person's vessel, which:

1. identifies the specific vessel modifications ("modifications") (e.g., installation of additional fuel tanks, fuel cooling systems) the person plans to use for meeting the requirements of subsection (e)(1);
2. identifies the specific date by which the modifications will be completed (i.e., while the vessel is in dry dock); and
3. demonstrates to the satisfaction of the Executive Officer that the modifications will be made at the earliest possible date (e.g., the vessel has been scheduled for the earliest available dry dock appointment).

(B) Payment of Fees

Upon meeting the requirements of paragraph (A) in this subsection (h)(3), the person shall pay the fees for every port visit, as specified in subsection (h)(5) below.

(C) Proof of Modifications Actually Performed

Within ten (10) business days after the scheduled or actual completion of the modifications, whichever occurs first, the person shall provide written certification to the Executive Officer that the modifications specified under this subsection (h)(3) have been completed. If the modifications have not been completed, the person shall certify which modifications have been completed, which have not, and the anticipated completion date for the remaining modifications. The notification requirement specified in this paragraph, the notification requirements in subsection (h)(1) above, and the fee provisions in subsection (h)(5) below shall apply until all the modifications have been completed.

(4) Noncompliance Based on Infrequent Visits and Need for Vessel Modifications

If a person cannot meet the requirements of subsection (e)(1) without modifications for the vessel at issue, and elects not to comply under section (g), and that vessel will make no more than two California voyages per calendar year, and no more than 4 California voyages after the effective date of the regulation, during the life of the vessel, the Executive Officer may permit the person to pay the fees as specified in this subsection. This provision terminates on December 31, 2014.

(A) Demonstration of Need

The person shall demonstrate to the satisfaction of the Executive Officer that modifications to the vessel are necessary to meet the requirements of subsection (e)(1), and that the vessel shall meet the visitation limits specified in this subsection (h)(4).

(B) Payment of Fees

Upon meeting the requirements of paragraph (A) above, the person shall pay the fees for every port visit as specified in subsection (h)(5) below.

(5) Calculation and Payment of Fees

For each port visit, the person who elects to pay the fees pursuant to this subsection (h) shall pay the applicable fees shown in Table 1 prior to leaving the California port or by a later date approved by the Executive Officer. The person shall deposit the fees in the port's Noncompliance Fee Settlement and Air Quality Mitigation Fund. If no such port fund exists, the person shall deposit the fees into the California Air Pollution Control Fund, as directed by the Executive Officer. Port visits shall be cumulative for all non-compliant port visits over the life of the vessel. For the purposes of this paragraph, any port visit where the non-compliance fee is waived shall not be included in the cumulative total.

(A) Noncompliance Fee Schedule

Table 1: Noncompliance Fee Schedule, Per Vessel

Visit	Fee
1 <sup>st</sup> Port Visited	\$45,500
2 <sup>nd</sup> Port Visited	\$91,000
3 <sup>rd</sup> Port Visited	\$136,500
4 <sup>th</sup> Port Visited	\$182,000
5 <sup>th</sup> or more Port Visited	\$227,500

- (B) The fees shown in Table 1 shall be assessed by the Executive Officer at the time of the port visit.
- (C) For subsection (h)(2), beginning January 1, 2012, the fee will be waived once per vessel during each calendar year until December 31, 2014, when all of the following are met:
1. a person acquires fuel and meets the requirements of subsection (e)(1) prior to leaving the first port visited during the voyage and meets the requirements of (e)(1) for the remainder of the voyage; and
  2. during any non-compliant portion of the voyage, a person operates any auxiliary engine, main engine, and auxiliary boiler with either marine gas oil (MGO), with a maximum of 1.5 percent sulfur by weight, or marine diesel oil (MDO), with a maximum of 0.5 percent sulfur by weight, rounded as specified in subsection (i)(3).
- (D) The Executive Officer may enter into enforceable agreements with each port that will receive the fees. The agreements shall require that the fees be used by the ports only to fund projects that will substantially reduce emissions of diesel PM, NO<sub>x</sub>, and SO<sub>x</sub> from on-site sources, sources within 2 miles of port boundaries, or ocean-going vessels operated within the Regulated California Waters, except that the fees shall not be used to fund projects on vessels from which noncompliance fees were paid. Fees intended for ports that do not have such agreements at the time the fees are paid shall be deposited into the California Air Pollution Control Fund.
- (E) If for any reason the person is not notified by the Executive Officer of the assessed fee by the end of the port visit, the person shall nevertheless be responsible for payment of the appropriate fee as specified in this subsection (h) prior to leaving the California port or by a later date approved by the Executive Officer.

**(i) Test Methods**

The following test methods or alternative test methods that are demonstrated to the written satisfaction of the Executive Officer to be equally or more accurate, shall be used to determine compliance with this section:

- (1) Test methods used to determine whether fuels meets the requirements of marine gas oil (DMA or DMX) or marine diesel oil (DMB), as specified in subsection (e)(1), shall be the methods specified in International Standard ISO 8217 (as revised in 2005), which is incorporated herein by reference.
- (2) The sulfur content of fuels shall be determined pursuant to International Standard ISO 8754 (as adopted in 2003), which is incorporated herein by reference.
- (3) For purposes of determining compliance with the specifications in (e)(1)(A), an observed value or a calculated value shall be rounded “to the nearest unit” in the last right-hand digit used in expressing the specification limit, in accordance with the rounding method of ASTM E 29-93a Standard Practice for Using Significant Digits in Test Data to Determine Conformance Specifications (published May 1993), which is incorporated herein by reference.

**(j) Sunset, Baseline, and Test Method Review**

- (1) If the Executive Officer determines that the International Maritime Organization or the United States Environmental Protection Agency have adopted regulations that will achieve equivalent benefits compared to the regulation, the Executive Officer shall propose to the Board for its consideration the termination of the requirements of this section or other modifications to the section as deemed appropriate by the Executive Officer. In developing the proposal for Board consideration, the Executive Officer shall take into consideration the expected emission reductions, potential risks, air quality goals, enforceability, and benefits of national or international uniformity.
- (2) The Executive Officer shall periodically review the California baseline determinations by the National Oceanic and Atmospheric Administration (NOAA) to determine if updates to the baseline maps incorporated by reference in this section are necessary. If modifications to the baseline maps are determined to be necessary, the Executive Officer shall conduct a public hearing as soon as practicable to amend this section accordingly.
- (3) The Executive Officer shall periodically review the test methods incorporated by reference in this section to determine if updates to the referenced methods are necessary. If updates to the test methods are determined to be necessary, the Executive Officer shall conduct a public hearing as soon as practicable to amend this section accordingly.

**(k) Severability**

Each part of this section shall be deemed severable, and in the event that any part of this section is held to be invalid, the remainder of this section shall continue in full force and effect.

NOTE: Authority cited: Sections 39600, 39601, 41510, 41511, 43013, and 43018, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3rd 411, 121 Cal.Rptr. 249 (1975). Reference: Sections 39000, 39001, 39002, 39003, 39500, 39515, 39516, 41510, 41511, 43013, 43016, and 43018, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3rd 411, 121 Cal.Rptr. 249 (1975).

## PROPOSED REGULATION ORDER

### AIRBORNE TOXIC CONTROL MEASURE FOR FUEL SULFUR AND OTHER OPERATIONAL REQUIREMENTS FOR OCEAN-GOING VESSELS WITHIN CALIFORNIA WATERS AND 24 NAUTICAL MILES OF THE CALIFORNIA BASELINE

Adopt new section 93118.2, title 17, California Code of Regulations (CCR), to read as follows:

(Note: The entire text of section 93118.2 is new language.):

#### **17 CCR section 93118.2. Airborne Toxic Control Measure for Fuel Sulfur and Other Operational Requirements for Ocean-going Vessels within California Waters and 24 Nautical Miles of the California Baseline.**

##### **(a) Purpose**

The purpose of this section is to require the use of low sulfur marine distillate fuels in order to reduce emissions of particulate matter (PM), diesel particulate matter, nitrogen oxides, and sulfur oxides from the use of auxiliary diesel and diesel-electric engines, main propulsion diesel engines, and auxiliary boilers on ocean-going vessels within any of the waters subject to this regulation (“Regulated California Waters”).

##### **(b) Applicability**

- (1) Except as provided in subsection (c), this section applies to any person who owns, operates, charters, rents, or leases any ocean-going vessel that operates in any of the Regulated California Waters, which include all of the following:
  - (A) all California internal waters;
  - (B) all California estuarine waters;
  - (C) all California ports, roadsteads, and terminal facilities (collectively “ports”);
  - (D) all waters within 3 nautical miles of the California baseline, starting at the California-Oregon border and ending at the California-Mexico border at the Pacific Ocean, inclusive;
  - (E) all waters within 12 nautical miles of the California baseline, starting at the California-Oregon border and ending at the California-Mexico border at the Pacific Ocean, inclusive;
  - (F) all waters within 24 nautical miles of the California baseline, starting at the California-Oregon border to 34.43 degrees North, 121.12 degrees West, inclusive; and
  - (G) all waters within the area, not including islands, between the California baseline and a line starting at 34.43 degrees North, 121.12 degrees West;

thence to 33.50 degrees North, 118.58 degrees West; thence to 32.65 degrees North, 117.81 degrees West, and ending at the California-Mexico border at the Pacific Ocean, inclusive.

- (2) Except as provided in subsection (c), this section applies to tanker and non-tanker ocean-going vessels that are flagged in, registered in, entitled to fly the flag of, or otherwise operating under the authority of the United States (“U.S.-flagged”) or any other country (“foreign-flagged”).
- (3) Nothing in this section shall be construed to amend, repeal, modify, or change in any way any applicable U.S. Coast Guard requirements. Any person subject to this section shall be responsible for ensuring compliance with both U.S. Coast Guard regulations and the requirements of this section, including but not limited to, obtaining any necessary approvals, exemptions, or orders from the U.S. Coast Guard.

**(c) Exemptions**

- (1) The requirements of this section do not apply to ocean-going vessel voyages that are comprised of continuous and expeditious navigation through any Regulated California Waters for the purpose of traversing such bodies of water without entering California internal or estuarine waters or calling at a port, roadstead, or terminal facility. “Continuous and expeditious navigation” includes stopping and anchoring only to the extent such stopping and anchoring are required by the U.S. Coast Guard; rendered necessary by force majeure or distress; or made for the purpose of rendering assistance to persons, ships, or aircraft in danger or distress. This exemption does not apply to the passage of an ocean-going vessel that engages in any of the prejudicial activities specified in United Nations Convention on the Law of the Seas (UNCLOS) 1982, Article 19, subpart 2. Further, notwithstanding any Coast Guard mandated stops or stops due to force majeure or the rendering of assistance, this exemption does not apply to a vessel that was otherwise scheduled or intended to enter California internal or estuarine waters or call at a port, roadstead or terminal facility.
- (2) The requirements of this section do not apply to emergency generators.
- (3) The requirements of this section do not apply to auxiliary engines, main engines or auxiliary boilers onboard ocean-going vessels owned or operated by any branch of local, state, or federal government, or by a foreign government, when such vessels are operated within Regulated California Waters on government non-commercial service. However, such vessels are encouraged to act in a manner consistent, so far as is reasonable and practicable, with this section.
- (4) The requirements of this section do not apply to auxiliary engines, main engines, and auxiliary boilers while such engines and boilers are operating on alternative fuel in Regulated California Waters.



- (5) The requirements of this section, including the payment of Noncompliance Fees as provided in subsection (h), do not apply if the master reasonably and actually determines that compliance with this section would endanger the safety of the vessel, its crew, its cargo or its passengers because of severe weather conditions, equipment failure, fuel contamination, or other extraordinary reasons beyond the master's reasonable control. This exemption applies only as long as and to the extent necessary to secure the safety of the vessel, its crew, its cargo, or its passengers and provided that:
- (A) the master takes all reasonable precautions after the conditions necessitating the exemption have ended to avoid or minimize repeated claims of exemption under this subsection;
  - (B) the master notifies the Executive Officer of a safety exemption claim within 24 hours after the end of each such episode (i.e., the period of time during which the emergency conditions exist that necessitate the safety exemption claim, as provided in paragraph (5) above); and
  - (C) the master submits to the Executive Officer, within 4 working days after the notification in paragraph (B) above, all documentation necessary to establish the conditions necessitating the safety exemption and the date(s), local time, and position of the vessel (longitude and latitude) in Regulated California Waters at the beginning and end of the time period during which a safety exemption is claimed under this subsection. All documentation required under this paragraph shall be provided in English.
- (7) Temporary Experimental or Research Exemption. As provided in this paragraph, the requirements of this section do not apply to vessels that have been granted a temporary experimental exemption by the Executive Officer for the duration of the approved exemption. A temporary experimental exemption may be granted by the Executive Officer for experimental purposes for up to three years with one extension for up to two additional years. The exemption will be limited in duration as specified by the Executive Officer in the Executive Order granting such an exemption or extension. All documentation and information submitted in support of an application for a temporary experimental exemption or extension shall be deemed non-confidential and available for public review under the Public Records Act.
- (A) Pursuant to this paragraph, a person may operate an auxiliary engine, main engine or auxiliary boiler with fuel that does not meet the provisions of (e)(1), provided the person meets all of the following requirements:
    1. the person obtains written approval for this exemption or extension, in the form of an Executive Order from the Executive Officer, before the vessel enters Regulated California Waters;

2. the person or master of the vessel takes all measures available to minimize emissions of diesel PM, NO<sub>x</sub>, and SO<sub>x</sub> to the extent feasible during the period in which the temporary experimental exemption is in effect;
3. the request for an exemption or extension is provided in writing, submitted to the Executive Officer at least 30 days before the vessel enters Regulated California Waters, and contains the following:
  - a. specifications for the non-compliant fuel that the person is proposing to use pursuant to this paragraph, including but not limited to, sulfur content (expressed to the nearest tenth weight percent); whether the fuel meets ASTM specifications for MDO, MGO, or some other fuel (identify which ASTM specifications the fuel meets, if any); and
  - b. a clear and convincing demonstration that the use of the proposed non-compliant fuel will generate data as part of research that advances the state of knowledge of exhaust control technology or characterization of emissions. For purposes of this paragraph, the Executive Officer's determination that the person has provided a "clear and convincing demonstration" shall be based on whether the person's use of the proposed noncompliant fuel is an express part of a formal, executed research contract or project; a doctoral dissertation; or a master's thesis. A demonstration of the "state of knowledge" includes specific citations to scientific, academic, industry or regulatory literature existing or in progress at the time of the request;
  - c. identification of the purpose, goals, and objectives of the project, measures taken to minimize emission of air contaminants, and testing procedures and testing schedules;

(B) A person with an exemption granted pursuant to this provision shall:

1. bring the vessel into full compliance with the requirements of this section, including subsection (e)(1), prior to the expiration of the temporary experimental exemption as specified; and
2. provide a progress report annually from the date of the executive order, to the Executive Officer providing interim test data or other interim results, description of vessel modifications or retrofitting done as part of the projects or other information generated from the date of the prior progress report.
3. provide all official test data and all other results, data, or other information generated during the exemption period to the Executive Officer, in writing and final form, no more than 90 days after the expiration of the temporary experimental exemption or extension.

- (C) No modifications to the terms and conditions of an approved temporary experimental exemption shall be valid unless in writing and agreed to by both the Executive Officer and the person. Any variance, deviance, or nonconformance with the terms and conditions of an approved temporary experimental exemption or extension shall be deemed a separate violation of this section.

**(d) Definitions**

For purposes of this section, the following definitions apply:

- (1) "Alternative fuel" means natural gas, propane, ethanol, methanol, hydrogen, electricity, or fuel cells. Alternative fuel also means any mixture that only contains these fuels.
- (2) "ASTM" means ASTM International.
- (3) "Auxiliary boiler" means any fuel-fired combustion equipment designed primarily to produce steam for uses other than propulsion, including, but not limited to, heating of residual fuel and liquid cargo, heating of water for crew and passengers, powering steam turbine discharge pumps, freshwater generation, and space heating of cabins. Exhaust gas economizers that exclusively use diesel engine exhaust as a heat source to produce steam are not auxiliary boilers.
- (4) "Auxiliary engine" means a diesel engine on an ocean-going vessel designed primarily to provide power for uses other than propulsion or emergencies, except that all diesel-electric engines shall be considered "auxiliary diesel engines" for purposes of this section.
- (5) "Baseline" means the mean lower low water line along the California coast, as shown on the following National Oceanic and Atmospheric Administration (NOAA) Nautical Charts as authored by the NOAA Office of Coast Survey, which are incorporated herein by reference:
  - (A) Chart 18600, Trinidad Head to Cape Blanco (January 2002);
  - (B) Chart 18620, Point Arena to Trinidad Head (June 2002);
  - (C) Chart 18640, San Francisco to Point Arena (August 2005);
  - (D) Chart 18680, Point Sur to San Francisco (June 2005);
  - (E) Chart 18700, Point Conception to Point Sur (July 2003);
  - (F) Chart 18720, Point Dume to Purisima Point (January 2005); and
  - (G) Chart 18740, San Diego to Santa Rosa Island (April 2005).

- (6) “Diesel Engine” means an internal combustion, compression-ignition (CI) engine with operating characteristics significantly similar to the theoretical diesel combustion cycle. The regulation of power by controlling fuel supply in lieu of a throttle is indicative of a compression ignition engine.
- (7) “Diesel Particulate Matter” means the particles found in the exhaust of diesel engines, which may agglomerate and adsorb other species to form structures of complex physical and chemical properties.
- (8) “Diesel-electric engine” means a diesel engine connected to a generator that is used as a source of electricity for propulsion or other uses.
- (9) “Emergency Generator” means a diesel-electric engine operated only during emergencies or to perform maintenance and testing necessary to ensure readiness for emergencies.
- (10) “Essential Modification” means any hardware or equipment modification to the vessel that is necessary to comply with this regulation. Modifications that are made for convenience or automation of fuel switching are not considered essential. Additional tankage is considered essential only if existing and available distillate tankage is less than the capacity required for a complete voyage within the Regulated California Waters.
- (11) “Estuarine Waters” means an arm of the sea or ocean that extends inland to meet the mouth of a river.
- (12) “Executive Officer” means the executive officer of the Air Resources Board (ARB), or his or her designee.
- (13) “Hydrocarbon (HC)” means the sum of all hydrocarbon air pollutants.
- (14) “Internal Waters” means any navigable river or waterway within the State of California.
- (15) “IMO” means the International Maritime Organization.
- (16) “ISO” means the International Organization for Standardization.
- (17) “Main Engine” means a diesel engine on an ocean-going vessel designed primarily to provide propulsion, except that diesel-electric engines shall not be considered “main engines” for purposes of this section.
- (18) “Marine Diesel Oil (MDO)” means any fuel that meets all the specifications for DMB grades as defined in Table I of International Standard ISO 8217, as revised in 2005, which is incorporated herein by reference.

- (19) "Marine Gas Oil (MGO)" means any fuel that meets all the specifications for DMX or DMA grades as defined in Table I of International Standard ISO 8217, as revised in 2005, which is incorporated herein by reference.
- (20) "Master" means the person who operates a vessel or is otherwise in charge of the vessel's operations.
- (21) "Military Vessel" means any ship, boat, watercraft, or other contrivance used for any purpose on water, and owned or operated by the armed services.
- (22) "Nitrogen Oxides (NO<sub>x</sub>)" means compounds of nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), and other oxides of nitrogen, which are typically created during combustion processes and are major contributors to smog formation and acid deposition.
- (23) "Non-Methane Hydrocarbons (NMHC)" means the sum of all hydrocarbon air pollutants except methane.
- (24) "Ocean-going Vessel (OGV)" means a commercial, government, or military vessel meeting any one of the following criteria:
  - (A) a vessel greater than or equal to 400 feet in length overall (LOA) as defined in 50 CFR § 679.2, as adopted June 19, 1996;
  - (B) a vessel greater than or equal to 10,000 gross tons (GT ITC) per the convention measurement (international system) as defined in 46 CFR 69.51-.61, as adopted September 12, 1989; or
  - (C) a vessel propelled by a marine compression ignition engine with a per-cylinder displacement of greater than or equal to 30 liters.

For purposes of this section, "ocean-going vessel" does not include tugboats, towboats, or pushboats.

- (25) "Operate" means steering or otherwise running the vessel or its functions while the vessel is underway, moored, anchored, or at dock.
- (26) "Own" means having all the incidents of ownership, including the legal title, of a vessel whether or not that person lends, rents, or pledges the vessel; having or being entitled to the possession of a vessel as the purchaser under a conditional sale contract; or being the mortgagor of a vessel.
- (27) "Particulate Matter" means any airborne finely divided material, except uncombined water, which exists as a liquid or solid at standard conditions (e.g., dust, smoke, mist, fumes or smog).
- (28) "Person" includes all of the following:

- (A) any person, firm, association, organization, partnership, business trust, corporation, limited liability company, or company;
  - (B) any state or local governmental agency or public district, or any officer or employee thereof;
  - (C) the United States or its agencies, to the extent authorized by federal law.
- (29) “Port Visit” means any of the following:
- (A) each separate and distinct entry of a vessel into a port, roadstead, or terminal facility (collectively “port”) in Regulated California Waters that results in the vessel stopping, docking, mooring, or otherwise dropping anchor (collectively “stopping”) at the port. The “port visit” continues if the vessel moves to a different berth within the same port, but the “port visit” ends when the vessel leaves for or is otherwise moved to another port within the same bay or any other port;
  - (B) except as provided in paragraph (C) below, each separate and distinct entry of a vessel into an offshore location in Regulated California Waters away from a port that results in the vessel stopping at that offshore location (e.g., Catalina Island or off Monterey). The “port visit” ends when the vessel leaves for or is otherwise moved to a port or another offshore location; or
  - (C) each separate and distinct entry of a vessel into an offshore location in Regulated California Waters away from a port that results in the vessel stopping, followed by entry into that port, shall constitute one “port visit”, provided the offshore stop was conducted solely because the port could not accept the vessel as scheduled due to reasons beyond the reasonable control of the vessel operator or master.
- (30) “Regulated California Waters” means all of the following
- (A) all California internal waters;
  - (B) all California estuarine waters;
  - (C) all California ports, roadsteads, and terminal facilities (collectively “ports”);
  - (D) all waters within 3 nautical miles of the California baseline, starting at the California-Oregon border and ending at the California-Mexico border at the Pacific Ocean, inclusive;
  - (E) all waters within 12 nautical miles of the California baseline, starting at the California-Oregon border and ending at the California-Mexico border at the Pacific Ocean, inclusive;
  - (F) all waters within 24 nautical miles of the California baseline, starting at the California-Oregon border to 34.43 degrees North, 121.12 degrees West, inclusive; and

- (G) all waters within the area, not including any islands, between the California baseline and a line starting at 34.43 degrees North, 121.12 degrees West; thence to 33.50 degrees North, 118.58 degrees West; thence to 32.65 degrees North, 117.81 degrees West; and ending at the California-Mexico border at the Pacific Ocean, inclusive.
- (31) “Roadstead” means any facility that is used for the loading, unloading, and anchoring of ships.
- (32) “Steamship” means a self-propelled vessel in which the primary propulsion and electrical power are provided by steam boilers.
- (33) “Slow Speed Engine” means an engine with a rated speed of 150 revolutions per minute or less.
- (34) “Sulfur Oxides” means compounds of sulfur dioxide (SO<sub>2</sub>), and other oxides of sulfur, which are typically created during combustion of sulfur containing fuels.
- (35) “Tanker” means a self-propelled vessel constructed or adapted primarily to carry, or that carries, oil or hazardous material in bulk as cargo or cargo residue.
- (36) “Two-stroke Engine” means an internal combustion engine which operates on a two stroke cycle where the cycle of operation completes in one revolution of the crankshaft.
- (37) “Vessel” means any tugboat, tanker, freighter, passenger ship, barge, or other boat, ship, or watercraft, except those used primarily for recreation and any of the following:
- (A) a seaplane on the water;
  - (B) a watercraft specifically designed to operate on a permanently fixed course, the movement of which is restricted to a fixed track or arm to which the watercraft is attached or by which the watercraft is controlled.
- (38) “Voyage” means each separate and distinct journey that begins when a vessel reaches Regulated California Waters from a point beyond Regulated California Waters, includes at least one port visit, and ends when the vessel departs from Regulated California Waters.

**(e) Operational Requirements**

- (1) Fuel Sulfur Content Limits
- (A) Auxiliary Diesel Engines
    - i. Except as provided in subsections (c) and (h), upon the effective date of this regulation as approved by the Office of Administrative Law, a person subject to this section shall operate any auxiliary

diesel engine, while the vessel is operating in Regulated California Waters, with either marine gas oil (MGO), with a maximum of 1.5 percent sulfur by weight, or marine diesel oil (MDO), with a maximum of 0.5 percent sulfur by weight, rounded as specified in subsection (i)(3);

- ii. Except as provided in subsections (c) and (h), beginning January 1, 2012, a person subject to this section shall operate any auxiliary diesel engine, while the vessel is operating in Regulated California Waters, with marine gas oil (MGO) with a maximum of 0.1% sulfur by weight or marine diesel oil (MDO) with a maximum of 0.1% sulfur by weight, rounded as specified in subsection (i)(3).

(B) Main Engines and Auxiliary Boilers

- i. Except as provided in subsections (c) and (h), beginning July 1, 2009, a person subject to this section shall operate any main engine or auxiliary boiler, while the vessel is operating in Regulated California Waters, with either marine gas oil (MGO), with a maximum of 1.5 percent sulfur by weight, or marine diesel oil (MDO), with a maximum of 0.5 percent sulfur by weight, rounded as specified in subsection (i)(3);
- ii. Except as provided in subsections (c) and (h), beginning January 1, 2012, a person subject to this section shall operate any main engine or auxiliary boiler, while the vessel is operating in Regulated California Waters, with marine gas oil (MGO) with a maximum of 0.1% sulfur by weight or marine diesel oil (MDO) with a maximum of 0.1% sulfur by weight, rounded as specified in subsection (i)(3).

(2) Recordkeeping, Reporting, and Monitoring Requirements.

(A) Recordkeeping

Upon the effective date of this regulation, any person subject to this section shall retain and maintain records in English that contain the following information for at least three years following the date when the records were made:

1. The date, local time, and position (longitude and latitude) of the vessel for each entry into Regulated California Waters from waters outside Regulated California Waters, and each departure from Regulated California Waters to waters outside Regulated California Waters, excluding any voyages exempted from the requirements of this section under subsection (c)(1), (c)(2), (c)(4), and (c)(5);



2. The date, local time, and position (longitude and latitude) of the vessel at the initiation and completion of any fuel switching procedures used to comply with subsection (e)(1) prior to entry into Regulated California Waters from waters outside Regulated California Waters;
3. The date, local time, and position (longitude and latitude) of the vessel at the initiation and completion of any fuel switching procedures within Regulated California Waters; completion of fuel switching procedures occurs the moment all engines subject to this section have completely transitioned from operation on one fuel to another fuel;
4. The type of fuel used (e.g., marine gas oil, marine diesel oil or heavy fuel oil) in each auxiliary engine, main engine, and auxiliary boiler operated in Regulated California Waters; and
5. The types, amounts, and the actual percent by weight sulfur content of all fuels purchased for use on the vessel, as reported by the fuel supplier or a fuel testing firm.

(B) Documentation of Fuel Switch Over Procedures

Any person subject to this section that complies with the fuel sulfur content limits by switching fuels shall retain and maintain records in English on-board ship that contain the following information for auxiliary engines, main engines and auxiliary boilers:

1. A fuel system diagram that shows all storage, service, and mixing tanks, fuel handling, pumping, and processing equipment, valves, and associated piping. The diagram or other documentation shall list the fuel tank capacities and locations, and the nominal fuel consumption rate of the machinery at rated power;
2. Description of the fuel switch over procedure with detailed instructions and clear identification of responsibilities; and
3. The make, model, rated power, and serial numbers of all main engines, and auxiliary engines and make, model, rated output, and serial numbers of all auxiliary boilers subject to subsection (e)(1).

(C) Reporting and Monitoring

1. Any person subject to this section shall provide in writing the information specified in subsection (e)(2)(A) and (e)(2)(B) and to the Executive Officer upon request, either within 24 hours or by a later date approved by the Executive Officer. To the extent the person already collects the information specified in subsections (e)(2)(A) and (e)(2)(B) in English to

comply with other regulatory requirements or standard practices, the person may provide the requested information in a format consistent with those other regulatory requirements or standard practices.

2. Any person subject to this section shall provide to the Executive Officer upon request additional information the Executive Officer determines to be necessary to determine compliance with this section.
3. Any person subject to this section shall provide to the Executive Officer access to the vessel for the purpose of determining compliance with the this section, including but not limited to, access to and review of records and information required under subsections (e)(2)(A) and (e)(2)(B), and for the purpose of collecting fuel samples for testing and analysis.

**(f) Violations**

- (1) Any person who is subject to this section and commits a violation of any provision, standard, criteria or requirement in this section is subject to the penalties, injunctive relief, and other remedies specified in Health and Safety Code, sections 39674-39675 and 42400 et seq.; other applicable sections in the Health and Safety Code; and other applicable provisions as provided under California law for each violation. Nothing in this section shall be construed to limit or otherwise affect any applicable penalties or other remedies available under Federal law.
- (2) Any failure to meet any provision, standard, criteria or requirement in this section, including but not limited to the applicable fuel sulfur content limits; recordkeeping requirements; and Noncompliance Fee provision shall constitute a single, separate violation of this section for each hour that a person operates an ocean-going vessel in Regulated California Waters until such provision, standard, criteria or requirement has been met.
- (3) Any person who is subject to this section is liable for meeting the requirements of this section, notwithstanding any contractual arrangement that person may have with any third-parties.

**(g) Noncompliance for Vessels Based on the Need for Essential Modifications**

If a person cannot meet the requirements of subsection (e)(1) without essential vessel modifications, the Executive Officer may grant the person an exemption in whole or in part to subsection (e)(1). This provision terminates on December 31, 2014. For this provision to apply, the person shall meet all of the following criteria:

- (1) Notification Requirements

Before the person's vessel enters Regulated California Waters from waters outside Regulated California Waters, the Executive Officer must receive notice that the person will not meet the requirements of subsection (e)(1) while operating within Regulated California Waters, but the person will instead meet the requirements of this subsection (g). If the Executive Officer has not received such notice and the person enters Regulated California Waters, the person will be in violation of this section.

(2) **Demonstration of Need**

At least 45 days prior to entering Regulated California Waters, the person shall provide, in writing, the Executive Officer an Essential Modification Report attested to under the penalty of perjury by the Chief Engineer of the person's vessel. The Executive Officer has 30 days to act on the Essential Modification Report. Additional information may be provided by the applicant or requested by the Executive officer after submittal of the original Essential Modification Report. The Executive Officer will have an additional 15 days to review the additional submittal and act on the amended Essential Modification Report. The Essential Modification Report shall contain the following;

- (A) identifies the specific essential vessel modifications ("essential modifications") required for the main engines, auxiliary engines or auxiliary boilers to meet the requirements of subsection (e)(1);
- (B) demonstrates to the satisfaction of the Executive Officer that modifications to the vessel are necessary to meet the requirements of subsection (e)(1);
- (C) identifies the extent, with respect to trip distance or regulated equipment type, in which the vessel can meet the requirements of (e)(1) without essential vessel modifications where feasible and safe for each of the auxiliary engines, main engines, and auxiliary boilers;

(3) While the vessel is operating in Regulated California Waters, a person subject to this section shall:

- (A) operate any main engine meeting the requirements of (e)(1) to the maximum extent feasible and safe as determined in (g)(2)(C) and
- (B) operate any auxiliary boiler meeting the requirements of (e)(1) to the maximum extent feasible and safe as determined in (g)(2)(C) and
- (C) operate any auxiliary engine meeting the requirements of (e)(1) to the maximum extent feasible and safe as determined in (g)(2)(C) .

**(h) Noncompliance Fee in Lieu of Meeting Subsection (e)(1)**

The Executive Officer may permit a person (“person”) to pay noncompliance fees (“fees”) in lieu of meeting the requirements of subsection (e)(1). Payment of the fees notwithstanding, all other provisions of this section shall continue to apply. No person shall be permitted to pay the fees unless the person meets the notification requirements in subsection (h)(1) and the requirements in either subsections (h)(2), (h)(3), or (h)(4), as specified below:

(1) Notification Requirements

Before the person’s vessel enters Regulated California Waters from waters outside Regulated California Waters, the Executive Officer must receive notice that the person will not meet the requirements of subsection (e)(1) while operating within Regulated California Waters, but the person will instead meet the requirements of this subsection (h). If the Executive Officer has not received such notice and the person enters Regulated California Waters, the person will be in violation of this section and will not be permitted to pay the fees in lieu of meeting the requirements of subsection (e)(1).

(2) Noncompliance for Reasons Beyond a Person’s Reasonable Control

Any person wishing to pay the fees under this subsection (h)(2) shall meet the following criteria:

(A) Demonstration of Need

The person shall, through adequate documentation, demonstrate to the Executive Officer’s satisfaction that the person’s noncompliance with the requirements of subsection (e)(1) is beyond the person’s reasonable control. For the purposes of this paragraph, “beyond the person’s reasonable control” applies only when one or more of the following sets of circumstances (1, 2, or 3) applies:

1. Unplanned Redirection

This provision applies only when all of the following criteria are met:

- a. after leaving the last port of call, the person’s vessel was redirected from his/her original, officially logged, non-California destination to a California port, roadstead, or terminal facility (collectively “port”); and
- b. the vessel does not contain a quantity of fuel sufficient for the auxiliary engines, main engines, and auxiliary boilers to meet the requirements of subsection (e)(1).

2. Inadequate Fuel Supply

This provision applies only when all of the following criteria are met:

- a. the person made good faith efforts to acquire a quantity of fuel sufficient for the auxiliary engines, main engines, and auxiliary boilers to meet the requirements of subsection (e)(1); and
- b. the person was unable to acquire fuel sufficient for auxiliary engines, main engines, and auxiliary boilers to meet the requirements of subsection (e)(1).

### 3. Inadvertent Purchase of Defective Fuel

This provision applies only when all of the following criteria are met:

- a. based on the fuel supplier's certification of the fuel specifications, the person reasonably believed, and relied on such belief, that the fuel the person purchased on the route from the vessel's home port to California would enable the auxiliary engines, main engines, and auxiliary boilers to meet the requirements of subsection (e)(1);
- b. the person determined that the auxiliary engines, main engines, and auxiliary boilers in fact will not meet the requirements of subsection (e)(1) using any of the fuel purchased under paragraph 3.a; and
- c. the vessel is already on its way to California, and there are no other ports of call on the vessel's route where fuel can be purchased sufficient to meet the requirements of subsection (e)(1).

### (B) Payment of Fees

Upon meeting the requirements of paragraph (A) in this subsection (h)(2), the person shall pay the fees for every port visit, as specified in subsection (h)(5) below.

### (C) Executive Officer Review

For the purposes of verifying the demonstration of need as specified in paragraph (A) above, the Executive Officer may consider and rely on any facts or circumstances the Executive Officer believes are appropriate, including but not limited to: the fuel supplier's ability or failure to provide adequate fuel ordered by the person; any material misrepresentation by the fuel supplier concerning the fuel specifications; the reasonableness of the person's reliance on fuel suppliers with a history of supplying fuel inadequate for meeting the requirements of subsection (e)(1); and force majeure.

(3) Noncompliance for Vessels to Be Taken Out of Service for Modifications

If a person cannot meet the requirements of subsection (e)(1) without vessel modifications, and elects not to comply under section (g), and such modifications cannot be completed prior to the effective date of subsection (e)(1), the Executive Officer may permit the person to pay the fees as specified in this subsection. The vessel must be scheduled to complete the necessary modifications (e.g. during a dry dock operation) as soon as possible, but no later than December 31, 2014. For this provision to apply, the person shall meet all of the following criteria:

(A) Demonstration of Need

The person shall provide the Executive Officer a Compliance Report, signed by the Chief Engineer of the person's vessel, which:

1. identifies the specific vessel modifications ("modifications") (e.g., installation of additional fuel tanks, fuel cooling systems) the person plans to use for meeting the requirements of subsection (e)(1);
2. identifies the specific date by which the modifications will be completed (i.e., while the vessel is in dry dock); and
3. demonstrates to the satisfaction of the Executive Officer that the modifications will be made at the earliest possible date (e.g., the vessel has been scheduled for the earliest available dry dock appointment).

(B) Payment of Fees

Upon meeting the requirements of paragraph (A) in this subsection (h)(3), the person shall pay the fees for every port visit, as specified in subsection (h)(5) below.

(C) Proof of Modifications Actually Performed

Within ten (10) business days after the scheduled or actual completion of the modifications, whichever occurs first, the person shall provide written certification to the Executive Officer that the modifications specified under this subsection (h)(3) have been completed. If the modifications have not been completed, the person shall certify which modifications have been completed, which have not, and the anticipated completion date for the remaining modifications. The notification requirement specified in this paragraph, the notification requirements in subsection (h)(1) above, and the fee provisions in subsection (h)(5) below shall apply until all the modifications have been completed.

(4) Noncompliance Based on Infrequent Visits and Need for Vessel Modifications

If a person cannot meet the requirements of subsection (e)(1) without modifications for the vessel at issue, and elects not to comply under section (g), and that vessel will make no more than two California voyages per calendar year, and no more than 4 California voyages after the effective date of the regulation, during the life of the vessel, the Executive Officer may permit the person to pay the fees as specified in this subsection. This provision terminates on December 31, 2014.

(A) Demonstration of Need

The person shall demonstrate to the satisfaction of the Executive Officer that modifications to the vessel are necessary to meet the requirements of subsection (e)(1), and that the vessel shall meet the visitation limits specified in this subsection (h)(4).

(B) Payment of Fees

Upon meeting the requirements of paragraph (A) above, the person shall pay the fees for every port visit as specified in subsection (h)(5) below.

(5) Calculation and Payment of Fees

For each port visit, the person who elects to pay the fees pursuant to this subsection (h) shall pay the applicable fees shown in Table 1 prior to leaving the California port or by a later date approved by the Executive Officer. The person shall deposit the fees in the port's Noncompliance Fee Settlement and Air Quality Mitigation Fund. If no such port fund exists, the person shall deposit the fees into the California Air Pollution Control Fund, as directed by the Executive Officer. Port visits shall be cumulative for all non-compliant port visits over the life of the vessel. For the purposes of this paragraph, any port visit where the non-compliance fee is waived shall not be included in the cumulative total.

(A) Noncompliance Fee Schedule

Table 1: Noncompliance Fee Schedule, Per Vessel

Visit	Fee
1 <sup>st</sup> Port Visited	\$45,500
2 <sup>nd</sup> Port Visited	\$91,000
3 <sup>rd</sup> Port Visited	\$136,500
4 <sup>th</sup> Port Visited	\$182,000
5 <sup>th</sup> or more Port Visited	\$227,500

- (B) The fees shown in Table 1 shall be assessed by the Executive Officer at the time of the port visit.
- (C) For subsection (h)(2), beginning January 1, 2012, the fee will be waived once per vessel during each calendar year until December 31, 2014, when all of the following are met:
1. a person acquires fuel and meets the requirements of subsection (e)(1) prior to leaving the first port visited during the voyage and meets the requirements of (e)(1) for the remainder of the voyage; and
  2. during any non-compliant portion of the voyage, a person operates any auxiliary engine, main engine, and auxiliary boiler with either marine gas oil (MGO), with a maximum of 1.5 percent sulfur by weight, or marine diesel oil (MDO), with a maximum of 0.5 percent sulfur by weight, rounded as specified in subsection (i)(3).
- (D) The Executive Officer may enter into enforceable agreements with each port that will receive the fees. The agreements shall require that the fees be used by the ports only to fund projects that will substantially reduce emissions of diesel PM, NO<sub>x</sub>, and SO<sub>x</sub> from on-site sources, sources within 2 miles of port boundaries, or ocean-going vessels operated within the Regulated California Waters, except that the fees shall not be used to fund projects on vessels from which noncompliance fees were paid. Fees intended for ports that do not have such agreements at the time the fees are paid shall be deposited into the California Air Pollution Control Fund.
- (E) If for any reason the person is not notified by the Executive Officer of the assessed fee by the end of the port visit, the person shall nevertheless be responsible for payment of the appropriate fee as specified in this subsection (h) prior to leaving the California port or by a later date approved by the Executive Officer.



**(i) Test Methods**

The following test methods or alternative test methods that are demonstrated to the written satisfaction of the Executive Officer to be equally or more accurate, shall be used to determine compliance with this section:

- (1) Test methods used to determine whether fuels meets the requirements of marine gas oil (DMA or DMX) or marine diesel oil (DMB), as specified in subsection (e)(1), shall be the methods specified in International Standard ISO 8217 (as revised in 2005), which is incorporated herein by reference.
- (2) The sulfur content of fuels shall be determined pursuant to International Standard ISO 8754 (as adopted in 2003), which is incorporated herein by reference.
- (3) For purposes of determining compliance with the specifications in (e)(1)(A), an observed value or a calculated value shall be rounded "to the nearest unit" in the last right-hand digit used in expressing the specification limit, in accordance with the rounding method of ASTM E 29-93a Standard Practice for Using Significant Digits in Test Data to Determine Conformance Specifications (published May 1993), which is incorporated herein by reference.

**(j) Sunset, Baseline, and Test Method Review**

- (1) If the Executive Officer determines that the International Maritime Organization or the United States Environmental Protection Agency have adopted regulations that will achieve equivalent benefits compared to the regulation, the Executive Officer shall propose to the Board for its consideration the termination of the requirements of this section or other modifications to the section as deemed appropriate by the Executive Officer. In developing the proposal for Board consideration, the Executive Officer shall take into consideration the expected emission reductions, potential risks, air quality goals, enforceability, and benefits of national or international uniformity.
- (2) The Executive Officer shall periodically review the California baseline determinations by the National Oceanic and Atmospheric Administration (NOAA) to determine if updates to the baseline maps incorporated by reference in this section are necessary. If modifications to the baseline maps are determined to be necessary, the Executive Officer shall conduct a public hearing as soon as practicable to amend this section accordingly.
- (3) The Executive Officer shall periodically review the test methods incorporated by reference in this section to determine if updates to the referenced methods are necessary. If updates to the test methods are determined to be necessary, the Executive Officer shall conduct a public hearing as soon as practicable to amend this section accordingly.

**(k) Severability**

Each part of this section shall be deemed severable, and in the event that any part of this section is held to be invalid, the remainder of this section shall continue in full force and effect.

End references.

NOTE: Authority cited: Sections 39600, 39601, 39650, 39658, 39659, 39666, and 41511, Health and Safety Code. Reference: Sections 39650, 39658, 39659, 39666, 41510, and 41511, Health and Safety Code.