

## **Appendix A**

### **Proposed Regulations for At-Berth Ocean-Going Vessels**



## PROPOSED REGULATION ORDER

### OPERATIONAL HOUR LIMITS AND OTHER REQUIREMENTS FOR AUXILIARY DIESEL ENGINES OPERATED ON OCEAN-GOING VESSELS AT-BERTH IN A CALIFORNIA PORT

Adopt new section 2299.3, title 13, chapter 5.1, California Code of Regulations (CCR), to read as follows:

(Note: The entire text of section 2299.3 is new language.):

#### **Section 2299.3. Operational Hour Limits and Other Requirements for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At-Berth in a California Port.**

(a) *Purpose.*

The purpose of this section is to reduce oxides of nitrogen (NOx) and diesel particulate matter (PM) emissions from the operation of auxiliary engines on container ships, passenger ships, and refrigerated cargo ships while these vessels are docked at berth at a California port. This section reduces emissions by limiting the time during which auxiliary diesel engines are operated on the regulated vessels while such vessels are docked at-berth in a California port, as well as by applying other requirements. This section implements provisions of the Goods Movement Emission Reduction Plan, adopted by the Air Resources Board (ARB) in April 2006, to reduce emissions and health risk from ports and the movement of goods in California. This section also helps achieve the goals specified in the California Global Warming Solutions Act of 2006, established under California law by Assembly Bill 32 (Stats. 2006, ch. 488) and set forth in Health and Safety Code § 38500 et seq.

(b) *Applicability and General Exemptions.*

- (1) Except as provided in this subsection (b), this section applies to any person who owns, operates, charters, rents, or leases any U.S. or foreign-flagged container ship, passenger ship, or refrigerated cargo ship that visits a California port. In addition, this section also applies to any person who owns or operates a port or terminal located at a port where container, passenger, or refrigerated cargo vessels visit.
- (2) 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.

- (3) The requirements of this section do not apply to:
  - (A) Ocean-going vessel voyages that are comprised of continuous and expeditious navigation through any of the 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.
  - (B) Auxiliary engines on-board ocean-going vessels owned or operated by any branch of local, state, federal government, or by a foreign government, when such vessels are operated 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.
  - (C) Steamships while berthed at a California port.
  - (D) Auxiliary engines while such engines are operating primarily on liquefied natural gas or compressed natural gas.

(c) *Definitions.*

For purposes of this section, the definitions in Health and Safety Code sections 39010 through 39060 shall apply except as otherwise specified in this section:

- (1) "Alternative Control Technologies" means technologies, techniques, or measures that reduce the emissions of NOx and PM from an auxiliary diesel engine other than shutting down the engine.

- (2) "Auxiliary Engine" means an engine on an ocean-going vessel designed primarily to provide power for uses other than propulsion, except that all diesel-electric engines shall be considered "auxiliary diesel engines" for purposes of this section.
- (3) "Baseline Fleet Emissions" means the total emissions from all vessels in a fleet during all berthing times in a calendar year or other specified time period. For purposes of calculating the baseline fleet emissions, the auxiliary engines on the vessels in the fleet shall be assumed to use marine diesel fuel while at berth.
- (4) "Berthing Time" means the time period that begins when the vessel is first tied to the berth and ends when the vessel is untied from the berth.
- (5) "California Ports" means:
  - (A) The Port of Hueneme, the Port of Los Angeles (POLA) and Port of Long Beach (POLB), the Port of Oakland, the Port of San Diego, and the Port of San Francisco;
  - (B) For purposes of this section, POLA and POLB are treated as one port.
- (6) "Container Vessel" means a self-propelled ocean-going vessel constructed or adapted primarily to carry uniform-sized ocean freight containers.
- (7) "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.
- (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) "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.
- (10) "Distributed Generation" shall have the same meaning as that term is defined in title 17, CCR, section 94202.

- (11) "Docked at the Berth" means the state of being tied to a berth.
- (12) "Emergency Event" means the period of time during which any of the following events occurs; the emergency event begins when such an event begins and ends when the event is over:
  - (A) Any situation arising from a sudden and reasonably unforeseen event beyond the control of the master that threatens the safety of the vessel;
  - (B) The utility serving the port states that electrical power will be temporarily unavailable as a result of equipment failure; or
  - (C) The electrical system at the terminal cannot provide electrical power as a result of equipment failure; or
- (13) "Executive Officer" means the executive officer of the Air Resources Board (ARB), or his or her designee.
- (14) "Fleet" means all container, passenger, and refrigerated cargo (reefer) vessels, visiting a specific California port, which are owned or operated under the direct control of the same person. Direct control includes, but is not limited to, vessels that are operated under a contract, lease, or other arrangement with a third-party for the third-party to operate the vessel. For the purposes of this section, a person shall be deemed to have separate fleets for each California port visited. For example, if a person owns or operates vessels that visit both the Port of Los Angeles and Port of Oakland, that person is deemed to have two fleets, one a "POLA-based fleet" and the other a "Port of Oakland-based fleet."
- (15) "IMO" means the International Maritime Organization.
- (16) "Landlord Port" means a California port that leases the port's real property to a person(s).
- (17) "Master" means the person who operates an ocean-going vessel or is otherwise in charge of the vessel's operations.
- (18) "Ocean-Going Vessel" 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) pursuant to 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 the purposes of this section, “ocean-going vessel” will be used interchangeably with the term “vessel.”

- (19) “Operate” means steering or otherwise running the vessel or its functions while the vessel is underway, moored, anchored, or at berth.
- (20) “Operate an Auxiliary Diesel Engine” means running or idling an auxiliary diesel engine such that it is producing mechanical work or electricity or is otherwise consuming fuel.
- (21) “Own” means having all the incidents of ownership, including the legal title, of a vessel whether or not that person leads, 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.
- (22) “Oxides of Nitrogen” 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) “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).
- (24) “Passenger Vessel” means a self-propelled vessel constructed or adapted primarily to carry people.
- (25) “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.
- (26) “Post-Baseline Fleet Emissions” means the total emissions from all vessels in a fleet after the application of alternative control technologies during all berthing times in a calendar year or other specified time period. For purposes of calculating the baseline fleet emissions, the auxiliary engines on the vessels in the fleet shall be assumed to use marine diesel fuel while at berth.
- (27) “Refrigerated Cargo (or Reefer) Vessel” means a self-propelled vessel constructed or adapted primarily to carry refrigerated cargo. Reefer vessels include vessels where the cargo may be stored in large refrigerated rooms within the vessel or vessels that carry exclusively refrigerated cargo containers.
- (28) “Responsible Official” means the individual(s) with the authority to certify that all vessels in a fleet comply with applicable requirements of this regulation.
- (29) “Shore power” refers to electrical power being provided by either the local utility or by distributed generation.
- (30) “Steamship” means a self-propelled vessel in which the primary propulsion and electrical power are provided by steam boilers.
- (31) “Synchronous Power Transfer” means the synchronized switchover in vessel-based power to shore-based power without a loss in power during such transfer.
- (32) “Terminal” means a facility consisting of wharves, piers, docks and other berthing locations and adjacent storage, which are used primarily for loading and unloading of cargo or material from vessels or the temporary storage of this cargo or material on-site.
- (33) “Terminal Operator” means a person that leases terminal property from a port for the purpose of loading and unloading of cargo or material from vessels or the temporary storage of this cargo or material on-site.
- (34) “Utility” shall have the same meaning and be used interchangeably with the term “Electric Utility” as defined in Public Resources Code section 28105.
- (35) “Verified Emission Control Strategy” means an emission control strategy that has been verified pursuant to the “Verification Procedure



for In-Use Strategies to Control Emissions from Diesel Engines” in title 13, California Code of Regulations, commencing with section 2700, which is incorporated herein by reference.

- (36) “Visit” means the time period that begins when an ocean-going vessel initially ties to a berth (the beginning of the visit) and ends when it casts off the lines (the end of the visit) at a berth in a California port. Separate and sequential visits shall collectively be deemed a single visit when a vessel ties to two or more berths at the same California port and the time interval between leaving one berth and tying to another berth in the same port is less than two hours.

(d) *Vessel In-Use Operational Requirements.*

- (1) Limits on Hours and Other Aspects of Operation for Auxiliary Diesel Engines on Container, Passenger, and Refrigerated Cargo (Reefer) Vessels.
- (A) Except as provided in subsection (d)(2), beginning January 1, 2014, no less than 50 percent of a fleet’s visits to a California port in a calendar quarter, rounded to the nearest whole visit, shall meet the following limits on the number of hours auxiliary diesel engines on such vessels may be operated at berth:
1. Three hours total per visit, provided the visiting vessel uses a synchronous power transfer process to change from vessel-based power to shore-based power; or
  2. Five hours total per visit, provided the visiting vessel does not use a synchronous power transfer process to change from vessel-based power to shore-based power.

For example, if a person’s fleet makes 10 visits to a California port in a calendar quarter, the auxiliary diesel engines on vessels in at least 5 of those visits shall be operated no more than a combined 3 or 5 hours total, depending on whether a synchronous power transfer is used. The 3- and 5-hour limit applies to the combined operating time for all auxiliary diesel engines used in a vessel visit, rather than on a per-engine basis.

- (B) Except as provided in subsection (d)(2), beginning January 1, 2020, no less than 80 percent of a fleet’s visits to a California port in a calendar quarter, rounded to the nearest whole visit, shall meet the following limits on the number of hours auxiliary diesel engines on such vessels may be operated at berth:

1. Three hours total per visit, provided the visiting vessel uses a synchronous power transfer process to change from vessel-based power to shore-based power; or
2. Five hours total per visit, provided the visiting vessel does not use a synchronous power transfer process to change from vessel-based power to shore-based power.

For example, if a person's fleet makes 10 visits to a California port in a calendar quarter, the auxiliary diesel engines on vessels in at least 5 of those visits shall be operated no more than a combined 3 or 5 hours total, depending on whether a synchronous power transfer is used. The 3- and 5-hour limit applies to the combined operating time for all auxiliary diesel engines used in a vessel visit, rather than on a per-engine basis.

- (C) Compliance with the requirements in subsection (d)(1)(A) and (d)(1)(B) shall be determined quarterly for the periods specified as follows:
1. January 1 through March 31, inclusive;
  2. April 1 through June 30, inclusive;
  3. July 1 through September 30, inclusive; and
  4. October 1 through December 31, inclusive.
- (D) Except as otherwise specified in subsection (d)(1)(F), the requirements of subsection (d)(1)(A) and (d)(1)(B) do not apply to:
1. A fleet comprised solely of container or reefer vessels that visits a California port fewer than 25 times total in a calendar year; and
  2. A fleet comprised solely of passenger vessels that visits a California port fewer than 5 times total in a calendar year.
- (E) No person shall sell, supply, offer to supply, or purchase electrical power for use on a vessel during a visit in lieu of using the on-board auxiliary diesel engines, unless such electrical power is either supplied by the local utility or is otherwise generated by equipment that meet the following emission standards:

1. NO<sub>x</sub> emissions no greater than 0.03 gram per kilowatt-hour (g/kW-hr);
2. PM emissions equivalent to the combustion of natural gas with a fuel sulfur content of no more than one grain per 100 standard cubic foot;
3. CO<sub>2</sub> emissions shall be no greater than 500 g/kW-hr; and
4. Ammonia emissions no greater than five parts per million on a dry volume basis (ppmdv), if selective catalytic reduction is used.

(F) Notwithstanding the requirements specified in subsection (d)(1)(A) and (d)(1)(B), any ocean-going vessel equipped to receive shore power that visits a berth equipped to provide compatible shore power shall utilize the shore power during every visit to that berth. This requirement shall not apply under the following circumstances:

1. The master of the vessel reasonably and actually determines that an emergency event, as defined in subsection (c)(12)(A), is in effect and the use of shore power during the emergency event would endanger the vessel's safety. Shore power shall be used for the remainder of the visit once the master determines that the emergency event no longer exists;
2. An emergency event, as defined in subsection (c)(12)(B) or (c)(12)(C), is in effect. Shore power shall be used for the remainder of the visit once the emergency event is no longer in effect; or
3. The California Independent System Operator (CAISO) has declared a Stage 3 emergency and the utility providing electrical power to the port is requesting the terminal where the vessel is located to reduce the use of grid-based electrical power. Shore power shall be used for the remainder of the visit once CAISO declares the Stage 3 emergency is over.

(2) *Emissions Reduction Option.*

The purpose of this provision is to allow any person the option of complying with the requirements of this subsection (d)(2) in lieu of meeting the requirements of subsection (d)(1).

Requirements.

- (A) For fleets visiting terminals that are providing electrical power from the utility's electrical grid, the owner or operator of the fleets shall comply with the following schedule:
1. For the quarter beginning on January 1, 2014, and each subsequent quarter through December 31, 2019, inclusive, the NOx and PM emissions at berth from the fleet's auxiliary engines must be reduced by 50 percent from the baseline fleet emissions.
  2. For the quarter beginning on January 1, 2020, and each subsequent quarter thereafter, the NOx and PM emissions at berth from the fleet's auxiliary engines must be reduced by 80 percent from the baseline fleet emissions.
- (B) For fleets visiting terminals that are providing electrical power from sources that are not part of an utility's electrical grid, or alternative control technologies are used to reduce the emissions of the fleet, the owner or operator of the fleet shall comply with the following schedule:
1. For the quarter beginning on January 1, 2010, and each subsequent quarter through December 31, 2011, inclusive, the NOx and PM emissions at berth from the fleet's auxiliary engines must be reduced by 20 percent from the baseline fleet emissions.
  2. For the quarter beginning on January 1, 2012, and each subsequent quarter through December 31, 2013, inclusive, the NOx and PM emissions at berth from the fleet's auxiliary engines must be reduced by 40 percent from the baseline fleet emissions.
  3. For the quarter beginning on January 1, 2014, and each subsequent quarter through December 31, 2015, inclusive, the NOx and PM emissions at berth from the fleet's auxiliary engines must be reduced by 60 percent from the baseline fleet emissions.
  4. For the quarter beginning on January 1, 2016, and each subsequent quarter thereafter, the NOx and PM emissions from the fleet's auxiliary engines must be reduced by 80 percent from the baseline fleet emissions.

- (C) For fleets visiting terminals that are using a combination of electrical power from the utility grid and electrical power from sources that are not part of an utility's electrical grid, or alternative control technologies, the following schedule applies:
1. For the quarter beginning on January 1, 2012, and each subsequent quarter through December 31, 2013, inclusive, the NOx and PM emissions at berth from the fleet's auxiliary engines must be reduced by 20 percent from the baseline fleet emissions.
  2. For the quarter beginning on January 1, 2014, and each subsequent quarter through December 31, 2019, inclusive, the NOx and PM emissions from the fleet's auxiliary engines must be reduced by 50 percent from the baseline fleet emissions.
  3. For the quarter beginning on January 1, 2020, and each subsequent quarter thereafter, the NOx and PM emissions from the fleet's auxiliary engines must be reduced by 80 percent from the baseline fleet emissions.
- (D) Compliance with the requirements of subsection (d)(2)(A), (d)(2)(B), and (d)(2)(C) shall be determined quarterly for the periods specified as follows:
1. January 1 through March 31, inclusive;
  2. April 1 through June 30, inclusive;
  3. July 1 through September 30, inclusive; and
  4. October 1 through December 31, inclusive.
- (E) No person shall sell, supply, offer to supply, or purchase electrical power for use on a vessel during a visit in lieu of using the on-board auxiliary diesel engines, unless such electrical power is either be supplied by the local utility or is otherwise generated by equipment that meet the following emission:
1. NOx Emissions.
    - a. Up to and including December 31, 2013, the NOx emissions shall be no greater than 2 g/kW-hr at any time; and

- b. Beginning January 1, 2014, the NOx emissions shall be no greater than 0.2 g/kW-hr at any time;
  - 2. PM emissions shall be no greater than the PM emissions from combustion of natural gas with a fuel sulfur content of no more than one grain per 100 standard cubic foot;
  - 3. CO<sub>2</sub> emissions shall be no greater than 500 g/kW-hr; and
  - 4. Ammonia emissions shall be no greater than five ppmv if selective catalytic reduction is used.
- (e) *Exemptions to the Three-Hour or Five-Hour Limited Auxiliary Engine Operation Requirement in Subsection (d)(1)(A)(1), (d)(1)(A)(2), (d)(1)(B)(1) and (d)(1)(B)(2).*

(1) Emergency Event.

All of the following requirements apply to claimed exemptions based on emergency events:

- (A) If the master of the vessel reasonably and actually determines that an emergency event, as defined subsection (c)(12), occurs during the vessel's visit to a California port, the master of the vessel may operate the vessel's auxiliary engines during the emergency event;
  - (B) The master shall not operate the vessel's auxiliary engines for more than one hour beyond the time when the master receives notification that the emergency event is over, determines that the emergency event is over, or should have known the emergency event is over; and
  - (C) The provisions of paragraph (B) above notwithstanding, the master may continue to operate the auxiliary engines for no more than five hours if the master receives notification that the emergency event is over, determines that the emergency event is over, or should have known the emergency event is over and the vessel is scheduled to leave port within five hours.
- (2) Delays Caused By U.S. Coast Guard or Department of Homeland Security Inspections.

The Executive Officer may extend the three-hour/five-hour operational requirement in subsection (d)(1)(A) and (d)(1)(B) if the following criteria are met:

- (A) The initial inspection and clearance of the vessel by the Department of Homeland Security exceeds one hour. The time extension granted shall be commensurate with the excess time necessary for inspection and clearance; or
- (B) After the auxiliary engines have been put back into service pending departure from the berth, the scheduled departure of the vessel has been delayed by the United States (U.S.) Coast Guard or the Department of Homeland Security.

(f) *Calculations for Emissions Reduction Option in Subsection (d)(2).*

- (1) For the purposes of subsection (d)(2)(A), (d)(2)(B), and (d)(2)(C), the percent emission reduction shall be calculated as follows:

$$\text{Percent Reduction} = (\text{BFE} - \text{PBFE}) / \text{BFE}$$

Where,

The baseline fleet and post-baseline fleet emissions are calculated as follows:

- (A) Baseline Fleet Emissions (BFE).

The baseline fleet emissions of NO<sub>x</sub> and PM shall be calculated using the following formula:

$$\text{Baseline Fleet Emissions} = \sum (\text{emission rate} \times \text{average berthing time} \times \text{power requirement} \times \text{visits})$$

Where:

“Emission rate” for each auxiliary engine is determined pursuant to subsection (f)(2);

“Average berthing time” for each vessel is determined for the applicable period specified in subsection (d)(2)(D);

“Power requirements” means the electrical power requirement for each vessel as determined pursuant to subsection (f)(3);

“Visits” means the total number of visits by the vessel during the applicable period specified in subsection (d)(2)(D); and

“ $\Sigma$ ” means the summation over the entire fleet subject to the emission reduction option.

(B) Post-Baseline Fleet Emissions (PBFEE).

The post-baseline fleet emissions of NO<sub>x</sub> and PM shall be calculated using the following formula:

Post-Baseline Fleet Emissions =  $\Sigma$  (emission rate x average berthing time x power requirement x visits x control factor)

Where:

“Emission rate” for each auxiliary engine is determined pursuant to subsection (f)(2);

“Average berthing time” for each vessel is determined for the applicable period specified in subsection (d)(2)(D);

“Power requirements” means the electrical power requirement for each vessel as determined pursuant to subsection (f)(3);

“Visits” means the total number of visits by the vessel during the applicable period specified in subsection (d)(2)(D);

“Control factor” means the applicable control factor specified in subsection (f)(4); and

“ $\Sigma$ ” means the summation over the entire fleet subject to the emission reduction option.

(2) A person complying with the requirements of subsection (d)(2) may choose any of the following emissions rates for use in the calculations specified in subsection (f)(1)(A) and (f)(1)(B):

(A) Results from emission measurements for similar auxiliary diesel engines that are used to satisfy a marine engine standard, including U.S. Environmental Protection Agency (EPA) emission standards for marine engines (40 CFR Part 94), and the International Convention for the Prevention of Pollution from



Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78), both of which are incorporated herein by reference;

(B) Emission measurements approved by the Executive Officer and using the test methods specified in subsection (f)(4)(B)(3); or

(C) In lieu of test data measured pursuant to paragraph (A) or (B) above, the following emission rates may be used as default values:

1. 13.9 g/kW-hr for NO<sub>x</sub>.
2. 0.38 g/kW-hr for PM if 0.11 to 0.5 percent sulfur marine gas oil is used as a fuel.
3. 0.25 g/kW-hr for PM if 0.10 or less sulfur content marine gas oil is used as a fuel.

(3) Power Requirements.

(A) The following values in Table 1 may be used as default values for power requirements:

Table 1.

Ship Category	Ship Size / Type	Default Power Requirement (kW)
Container Vessel	<1000 TEU	1,000
	1,000-1,999 TEU	1,300
	2,000-2,999 TEU	1,600
	3,000-3,999 TEU	1,900
	4,000-4,999 TEU	2,200
	5,000-5,999 TEU	2,300
	6,000-6,999 TEU	2,500
	7,000-7,999 TEU	2,900
	8,000-9,999 TEU	3,300
	10,000-12,000 TEU	3,700
Passenger Vessel		No Default Value – Use Actual Load
Reefer	Break Bulk	1,300
	Fully Containerized	3,300

TEU = twenty-foot equivalent unit.  
kW = kilowatt

- (B) In lieu of the default values above, the fleet operator may, with adequate supporting documentation, use the following:
  - 1. The actual shore power usage, on a monthly basis, rounded to the nearest whole kW-hrs, of the vessels in the fleet utilizing shore power, or
  - 2. The actual on-board power usage, on a monthly basis, rounded to the nearest whole kW-hrs, of the vessels in the fleet utilizing alternative control technologies.
  
- (4) Control Factors.
  - (A) The emissions from vessels using grid power in lieu of the vessel's auxiliary engines when the vessels are at berth are presumed to be reduced by 90 percent.
  
  - (B) No control efficiencies for alternative control technologies shall be used to comply with the requirements of this provision unless the control efficiencies are calculated or measured as follows:
    - 1. The control efficiencies shall be based on an emission test protocol that is approved by the Executive Officer prior to conducting the emission measurements;
    - 2. The results of the emission measurements conducted pursuant to paragraph 1 above are approved by the Executive Officer; and
    - 3. Emission measurements are conducted using the following test methods:
      - a. NO<sub>x</sub> and CO<sub>2</sub> shall be measured using California Air Resources Board (CARB) Test Method 100, dated July 1997, which is incorporated herein by reference, or equivalent district-approved test method;
      - b. Diesel PM shall be measured using ISO 8178 Test Procedures: ISO 8178-1: 1996(E) ("ISO 8178 Part 1"); ISO 8178-2:1996(E) ("ISO 8178 Part 2"); and ISO 8178-4: 1996(E) ("ISO 8178 Part 4"), all of which are incorporated herein by reference; and
      - c. Ammonia slip shall be measured using the Bay Area Air Quality Management District Source Test Procedure

ST-1B, Ammonia Integrated Sampling, dated January 1982, which is incorporated herein by reference, or other equivalent district approved test method.

d. The sulfur content of fuels shall be determined pursuant to International Standard ISO 8754 (as adopted in 2003), which is incorporated herein by reference.

(C) Results from emission measurements from a verified emission control strategy may be used in conjunction with engine emission information.

(D) The Executive Officer may request periodic emission testing or other types of monitoring to verify the proper operation of alternative control technologies or to verify the emission rate of an auxiliary engine.

1. At a minimum, emission control technologies shall be tested as follows and the results of such testing provided to the Executive Officer within 30 days of the testing:

a. Shore-based systems shall be tested annually to demonstrate the overall percentage of emission reduction being achieved.

b. Catalyst based air pollution control systems installed on vessels shall be tested after every 1,000 hours of operation to determine the overall percentage of emission reduction being achieved.

c. If Selective Catalytic Reduction (SCR) is used as a control technology, the emissions of ammonia shall also be measured at the same time the NO<sub>x</sub> emissions are being measured.

2. The Executive Officer may modify the testing frequency as he/she deems appropriate.

(g) *Terminal Plan Requirements.*

(1) A terminal that receives more than 50 vessel visits in 2008 shall submit a plan for the Executive Officer's approval that discusses how the terminal will accommodate the vessels that will visit the terminal who are subject to subsection (d)(1) and (d)(2). The terminal shall submit the plan and subsequent updates to the plan according to the schedule below (Table 2). The plan updates shall address any contingencies

that may be necessary for the vessels to meet the requirements of subsection (d)(1) and (d)(2) by the applicable dates.

Table 2.

Vessel Compliance Option	Initial Terminal Plan Due Date	Subsequent Terminal Plan Updates
Grid-Based Shore Power: (d)(1) and (d)(2)(A)	July 1, 2009	July 1, 2013 July 1, 2019
Alternative Control Technologies to Grid-Based Shore Power: (d)(2)(B)	July 1, 2009	July 1, 2011 July 1, 2013 July 1, 2015
Combination of Grid-Based Shore Power and Alternative Control Technologies: (d)(2)(C)	July 1, 2009	July 1, 2011 July 1, 2013 July 1, 2015 July 1, 2019

(2) Plan Requirements for Grid-Based Shore Power.

(A) Specify the schedule for implementing infrastructure modifications, including the following:

1. Utility infrastructure improvements, if any, outside the port boundary;
2. Improvements to port infrastructure; and
3. Major infrastructure improvements to terminal.

(B) Identification of existing berths to be modified or new berths to be constructed that will satisfy the requirements of subsection (d)(1).

(3) Plan Requirements for Alternative Control Technologies.

(A) Description of the approach that will be used to reduce in-berth vessel emissions, including whether the approach is a vessel-based approach or shore-based approach;

(B) Identification and description of equipment;

(C) Berth(s) where the equipment will be used;

- (D) Specific vessels affected by the technology; and
  - (E) Estimate of the expected reductions in NO<sub>x</sub> and PM emissions from vessels using the technology, including documentation supporting the anticipated reductions.
- (4) Plan Requirements for a Combination of Grid-Based Shore Power and Alternative Control Technologies.
- (A) Identification of which berths will implement grid-based shore power and which berths will implement alternative control technologies
  - (B) For berths implementing shore-based grid power, the plan must contain the information specified in subsection (g)(2).
  - (C) For berths implementing alternative control technologies, the plan shall contain the information specified in subsection (g)(3).
- (5) A port may submit terminal plans required under subsection (g)(1) on behalf of the terminals located at that port.
- (h) *Reporting and Recordkeeping Requirements.*
- (1) Reporting and Recordkeeping Requirements for Persons that Comply with Subsection (d)(1).
- (A) The Responsible Official shall provide the following reports to the Executive Officer:
    - 1. A vessel fleet plan, due to the Executive Officer by July 1, 2013, and an updated plan by July 1, 2019, which includes a listing of the vessels that would be affected by the requirements specified in subsection (d)(1) and the description of the ability of each vessel to use shore power.
- The vessel fleet plan shall list the vessels that are able to shut down the vessel's auxiliary engines and use shore power, along with the related information as follows:
- a. Name of the vessel, Lloyd's number for the vessel, and vessel category (container, passenger, or reefer); and
  - b. The port(s) each vessel(s) is expected to visit.

2. An annual statement of compliance pursuant to subsection (d)(1) and (d)(2).
  - a. The initial annual statement of compliance is due to the Executive Officer by March 1, 2015. This statement is for the 2014 calendar year. Thereafter, the annual statement is due to the Executive Officer by March 1 of each year, certifying compliance with the requirements for the previous calendar year.
  - b. The annual statement of compliance shall include the following:
    - i. A statement signed by the Responsible Official that the requirements specified in subsection (d)(1) or (d)(2) have been met.
    - ii. Visit-related information for all vessels within a fleet that visited a California port. The list shall include the following information for each vessel:
      - I. Current name of the vessel;
      - II. Lloyd's number for the vessel;
      - III. Vessel type (cargo, passenger, reefer); and
      - IV. Visits, by port and terminal, where the auxiliary engines were shut down;
    - iii. The information submitted pursuant to paragraph 2.b.ii above shall be reported for the following periods:
      - I. January 1 through March 31, inclusive;
      - II. April 1 through June 30, inclusive;
      - III. July 1 through September 30, inclusive; and
      - IV. October 1 through December 31, inclusive.

(B) Recordkeeping.

1. The following records shall be kept at a central location by the vessel operator. This information shall be supplied to the Executive Officer within 30 days of a request from ARB inspectors or staff.
  - a. A logbook that records, for each visit, the dates, times, and other information as specified below:

- i. When the vessel initially tied to the berth and when the vessel cast-off the tie lines;
      - ii. When the Department of Homeland Security released the vessel;
      - iii. When the auxiliary engines were initially shut down and subsequently restarted;
      - iv. Whether departure from the berth was delayed by the U.S. Coast Guard or other federal agency and identification of the agency that caused the delay;
      - v. If an emergency event occurred, a description of that emergency event;
      - vi. If the vessel could not use shore power as a result of the CAISO declaring a stage 3 emergency, and
      - vii. If a vessel could not use shore power as a result of equipment failure aboard the vessel
    - b. Copies of all current U.S. Department of Homeland Security Bureau of Customs and Border Protection "Vessel Entrance or Clearance Statement" documents (CBP Form 1300, version 02/02), which is incorporated herein by reference, if the vessel operator or owner is claiming an exemption pursuant to subsection (e)(2)(A) or (e)(2)(B).
  2. All records required pursuant to this provision shall be retained for a minimum of five years.
- (2) Reporting and Recordkeeping Requirements for Persons Opting to Comply with the Emissions Reduction Option in Subsection (d)(2).
- (A) The Responsible Official shall provide the following reports to the Executive Officer:
1. A vessel fleet plan, due to the Executive Officer by the dates shown in Table 3 below:

Table 3.

Compliance Option	Initial Vessel Fleet Plan	Subsequent Submittal Due Dates
Grid-Based Shore Power: (d)(2)(A)	July 1, 2013	July 1, 2019
Alternative Control Technologies to Grid-Based Shore Power: (d)(2)(B)	July 1, 2009	July 1, 2011 July 1, 2013 July 1, 2015
Combination of Grid-Based Shore Power and Alternative Control Technologies: (d)(2)(C)	July 1, 2011	July 1, 2013 July 1, 2019

The vessel fleet plan shall include the following items:

- a. List of the vessels included in the company's fleet; Lloyd's number for each vessel, vessel category (cargo, passenger, reefer), average number of reefer containers carried by the vessel over the calendar year (container vessels only), and power requirement for each vessel (passenger and reefer vessels); and
  - b. Identify the potential alternative control techniques that may be used to achieve the requirements specified in subsection (d)(2). For each control technique, specify the following:
    - i. The vessels that would be affected by the technique;
    - ii. The status of implementation of the alternative control technique; and
    - iii. The basis used in determining the expected emission reduction, including submittal of any emission testing or other documentation.
2. An annual statement of compliance.
- a. The initial annual statement of compliance is due to the Executive Officer by the dates in Table 4 below:



Table 4.

Compliance Option	Initial Submittal of Annual Statement of Compliance
Grid-Based Shore Power: (d)(2)(A)	March 1, 2015
Alternative Control Technologies to Grid-Based Shore Power: (d)(2)(B)	March 1, 2011
Combination of Grid-Based Shore Power and Alternative Control technologies: (d)(2)(C)	March 1, 2013

Thereafter, the annual compliance statement is due to the Executive Officer by March 1 of each year, certifying compliance with the requirements for the previous year.

- b. The following items, applicable to the calendar year in question, should be included with the statement of compliance:
  - i. A statement signed by the Responsible Official indicating that the NO<sub>x</sub> and PM emission reductions specified by (d)(2) have been achieved;
  - ii. The calculated NO<sub>x</sub> and PM baseline and post-baseline emissions for each fleet, on a quarterly basis, as specified in (d)(2)(D). Include each vessel's contribution to the fleet's baseline and post-baseline emissions; and
  - iii. Description of the technique(s) used, including alternative controls technology (or technologies), achievable emission reductions, and supporting documentation (e.g., source test results or verification documentation). For subsequent statements of compliance, the supporting documents can be referenced.

(B) Recordkeeping.

- 1. The following records shall be kept at a central location by the master and the fleet vessel operator. This information shall be

supplied to the Executive Officer within 30 days of a request from ARB staff.

For each calendar year of vessel activity, a quarterly summary of emissions that demonstrates compliance with the applicable emission reduction (2010, 2012, 2014, or 2016), which includes the following:

- a. The fleet's baseline and post-baseline levels for NOx and PM emissions; and
  - b. Each vessel's contribution to fleet's baseline and post-baseline NOx and PM emissions, including the following information:
    - i. Name of each vessel;
    - ii. Lloyd's number for each vessel;
    - iii. Fuel type and average sulfur content of fuel for each vessel;
    - iv. NOx and PM emissions for each vessel;
    - v. Average hotelling time for each vessel;
    - vi. Power requirements for each vessel while at berth;
    - vii. For container vessels, the number of reefer containers imported and exported for each container vessel;
    - viii. Total visits to each California port made by the vessel;
    - ix. Technology used to reduce emissions and associated control factor used; and
    - x. Any equipment failure aboard a vessel that prevented the vessel from using the emissions reduction technology
2. Records made pursuant to paragraph (2)(B) above shall be kept for a minimum of five years.

(3) Reporting and Recordkeeping Requirements for Ports and Terminals.

(A) Affected ports shall provide wharfinger information to the Executive Officer annually, beginning with the wharfinger information for calendar year 2010.

1. This information shall be provided to the Executive Officer no later than April 1 of the following year.
2. At a minimum, the wharfinger information shall include for each vessel visiting the port:
  - a. Name of the vessel;
  - b. Vessel type;
  - c. Company operating the vessel;
  - d. Lloyd's number for each vessel;
  - e. Berth used by the vessel; and
  - f. Date(s) and time the vessel was initially tied to the berth and subsequently released from the berth.

(B) The terminal operator shall keep the following records. These records shall be supplied to the Executive Officer within 30 days of a request from ARB staff:

1. Electricity usage for shore power:
  - a. Monthly utility billing statements that separately identify electricity supplied for shore power;
  - b. Episodes of electrical service interruption by local utility company, as confirmed and documented by local utility company; and
  - c. For distributed generation, monthly records that contain the following:
    - i. Names of vessels serviced;
    - ii. Location of vessels serviced, by berth;
    - iii. Date and time of use; and
    - iv. Power, in megawatts, supplied to the vessels.

2. Date, time, and description of equipment failure that affected the ability of vessels to turn off their auxiliary engines or use alternative control technologies to reduce emissions pursuant to (d)(2).
  3. Record of each vessel that did not operate its auxiliary engines while the vessel was docked at the terminal:
    - a. Name of vessel; and
    - b. Date and time each vessel was initially tied to the terminal.
  4. Records made pursuant to paragraph (3)(B) above shall be kept for five years.
- (4) Electronic submittals of records and other information required under this section may be approved by the Executive Officer upon request, provided such electronic submittals use digital signatures that meet the requirements specified in Government Code section 16.5. Notwithstanding the approved submittal of electronic records, the Executive Officer may request the submittal of a hard copy of any electronic submittal.

(i) *Violations.*

- (1) Except as otherwise specified in this subsection, any person who is subject to this section and commits a violation of any provision, prohibition, limit, standard, criteria, or requirement in this section is subject to the penalties, injunctive relief, and other remedies specified in Health and Safety Code section 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) Except as otherwise specified in this subsection, any failure to meet any provision, prohibition, limit, standard, criteria, or requirement in this section, including but not limited to the applicable emission limits for supplied shore power and hours of engine operation limits, shall constitute a single, separate violation of this section for each hour that a person operates the auxiliary diesel engine until such provision, prohibition, limit, standard, criteria, or requirement has been met.
- (3) A violation of the recordkeeping and reporting requirements in this section shall constitute a single, separate violation of this section for

each day that the applicable recordkeeping or reporting requirement has not been met.

(j) *Severability.*

If any subsection, paragraph, subparagraph, sentence, clause, phrase, or portion of this regulation is, for any reason, held invalid, unconstitutional, or unenforceable by any court of competent jurisdiction, such portion shall be deemed as a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of the regulation.

NOTE: Authority cited: Sections 38560, 38560.5, 39600, 39601, 41511, 43013, and 43018, Health and Safety Code. Reference: Sections 38560, 38560.5, 39000, 39001, 39515, 39516, 41510, 41511, 43013, and 43018, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange Country Air Pollution Control District*, (1975) 14 Cal.3d 411, 121 Cal.Rptr. 249.



## PROPOSED REGULATION ORDER

### AIRBORNE TOXIC CONTROL MEASURE FOR AUXILIARY DIESEL ENGINES OPERATED ON OCEAN-GOING VESSELS AT-BERTH IN A CALIFORNIA PORT

Adopt new section 93118.3, title 17, chapter 1, subchapter 7.5, California Code of Regulations (CCR), to read as follows:

(Note: The entire text of section 93118.3 is new language.):

#### **Section 93118.3. Airborne Toxic Control Measure for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At-Berth in a California Port.**

(a) *Purpose.*

The purpose of this section is to reduce oxides of nitrogen (NO<sub>x</sub>) and diesel particulate matter (PM) emissions from the operation of auxiliary engines on container ships, passenger ships, and refrigerated cargo ships while these vessels are docked at berth at a California port. This section reduces emissions by limiting the time during which auxiliary diesel engines are operated on the regulated vessels while such vessels are docked at-berth in a California port, as well as by applying other requirements. This section implements provisions of the Goods Movement Emission Reduction Plan, adopted by the Air Resources Board (ARB) in April 2006, to reduce emissions and health risk from ports and the movement of goods in California. This section also helps achieve the goals specified in the California Global Warming Solutions Act of 2006, established under California law by Assembly Bill 32 (Stats. 2006, ch. 488) and set forth in Health and Safety Code § 38500 et seq.

(b) *Applicability and General Exemptions.*

- (1) Except as provided in this subsection (b), this section applies to any person who owns, operates, charters, rents, or leases any U.S. or foreign-flagged container ship, passenger ship, or refrigerated cargo ship that visits a California port. In addition, this section also applies to any person who owns or operates a port or terminal located at a port where container, passenger, or refrigerated cargo vessels visit.
- (2) 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.

- (3) The requirements of this section do not apply to:
- (A) Ocean-going vessel voyages that are comprised of continuous and expeditious navigation through any of the 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.
  - (B) Auxiliary engines on-board ocean-going vessels owned or operated by any branch of local, state, federal government, or by a foreign government, when such vessels are operated 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.
  - (C) Steamships while berthed at a California port.
  - (D) Auxiliary engines while such engines are operating primarily on liquefied natural gas or compressed natural gas.

(c) *Definitions.*

For purposes of this section, the definitions in Health and Safety Code sections 39010 through 39060 shall apply except as otherwise specified in this section:

- (1) “Alternative Control Technologies” means technologies, techniques, or measures that reduce the emissions of NO<sub>x</sub> and PM from an auxiliary diesel engine other than shutting down the engine.



- (2) "Auxiliary Engine" means an engine on an ocean-going vessel designed primarily to provide power for uses other than propulsion, except that all diesel-electric engines shall be considered "auxiliary diesel engines" for purposes of this section.
- (3) "Baseline Fleet Emissions" means the total emissions from all vessels in a fleet during all berthing times in a calendar year or other specified time period. For purposes of calculating the baseline fleet emissions, the auxiliary engines on the vessels in the fleet shall be assumed to use marine diesel fuel while at berth.
- (4) "Berthing Time" means the time period that begins when the vessel is first tied to the berth and ends when the vessel is untied from the berth.
- (5) "California Ports" means:
  - (A) The Port of Hueneme, the Port of Los Angeles (POLA) and Port of Long Beach (POLB), the Port of Oakland, the Port of San Diego, and the Port of San Francisco;
  - (B) For purposes of this section, POLA and POLB are treated as one port.
- (6) "Container Vessel" means a self-propelled ocean-going vessel constructed or adapted primarily to carry uniform-sized ocean freight containers.
- (7) "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.
- (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) "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.
- (10) "Distributed Generation" shall have the same meaning as that term is defined in title 17, CCR, section 94202.

- (11) "Docked at the Berth" means the state of being tied to a berth.
- (12) "Emergency Event" means the period of time during which any of the following events occurs; the emergency event begins when such an event begins and ends when the event is over:
  - (A) Any situation arising from a sudden and reasonably unforeseen event beyond the control of the master that threatens the safety of the vessel;
  - (B) The utility serving the port states that electrical power will be temporarily unavailable as a result of equipment failure; or
  - (C) The electrical system at the terminal cannot provide electrical power as a result of equipment failure; or
- (13) "Executive Officer" means the executive officer of the Air Resources Board (ARB), or his or her designee.
- (14) "Fleet" means all container, passenger, and refrigerated cargo (reefer) vessels, visiting a specific California port, which are owned or operated under the direct control of the same person. Direct control includes, but is not limited to, vessels that are operated under a contract, lease, or other arrangement with a third-party for the third-party to operate the vessel. For the purposes of this section, a person shall be deemed to have separate fleets for each California port visited. For example, if a person owns or operates vessels that visit both the Port of Los Angeles and Port of Oakland, that person is deemed to have two fleets, one a "POLA-based fleet" and the other a "Port of Oakland-based fleet."
- (15) "IMO" means the International Maritime Organization.
- (16) "Landlord Port" means a California port that leases the port's real property to a person(s).
- (17) "Master" means the person who operates an ocean-going vessel or is otherwise in charge of the vessel's operations.
- (18) "Ocean-Going Vessel" 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) pursuant to 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 the purposes of this section, “ocean-going vessel” will be used interchangeably with the term “vessel.”

- (19) “Operate” means steering or otherwise running the vessel or its functions while the vessel is underway, moored, anchored, or at berth.
- (20) “Operate an Auxiliary Diesel Engine” means running or idling an auxiliary diesel engine such that it is producing mechanical work or electricity or is otherwise consuming fuel.
- (21) “Own” means having all the incidents of ownership, including the legal title, of a vessel whether or not that person leads, 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.
- (22) “Oxides of Nitrogen” 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) “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).
- (24) “Passenger Vessel” means a self-propelled vessel constructed or adapted primarily to carry people.
- (25) “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.
- (26) “Post-Baseline Fleet Emissions” means the total emissions from all vessels in a fleet after the application of alternative control technologies during all berthing times in a calendar year or other specified time period. For purposes of calculating the baseline fleet emissions, the auxiliary engines on the vessels in the fleet shall be assumed to use marine diesel fuel while at berth.
- (27) “Refrigerated Cargo (or Reefer) Vessel” means a self-propelled vessel constructed or adapted primarily to carry refrigerated cargo. Reefer vessels include vessels where the cargo may be stored in large refrigerated rooms within the vessel or vessels that carry exclusively refrigerated cargo containers.
- (28) “Responsible Official” means the individual(s) with the authority to certify that all vessels in a fleet comply with applicable requirements of this regulation.
- (29) “Shore power” refers to electrical power being provided by either the local utility or by distributed generation.
- (30) “Steamship” means a self-propelled vessel in which the primary propulsion and electrical power are provided by steam boilers.
- (31) “Synchronous Power Transfer” means the synchronized switchover in vessel-based power to shore-based power without a loss in power during such transfer.
- (32) “Terminal” means a facility consisting of wharves, piers, docks and other berthing locations and adjacent storage, which are used primarily for loading and unloading of cargo or material from vessels or the temporary storage of this cargo or material on-site.
- (33) “Terminal Operator” means a person that leases terminal property from a port for the purpose of loading and unloading of cargo or material from vessels or the temporary storage of this cargo or material on-site.
- (34) “Utility” shall have the same meaning and be used interchangeably with the term “Electric Utility” as defined in Public Resources Code section 28105.
- (35) “Verified Emission Control Strategy” means an emission control strategy that has been verified pursuant to the “Verification Procedure

for In-Use Strategies to Control Emissions from Diesel Engines” in title 13, California Code of Regulations, commencing with section 2700, which is incorporated herein by reference.

- (36) “Visit” means the time period that begins when an ocean-going vessel initially ties to a berth (the beginning of the visit) and ends when it casts off the lines (the end of the visit) at a berth in a California port. Separate and sequential visits shall collectively be deemed a single visit when a vessel ties to two or more berths at the same California port and the time interval between leaving one berth and tying to another berth in the same port is less than two hours.

(d) *Vessel In-Use Operational Requirements.*

- (3) Limits on Hours and Other Aspects of Operation for Auxiliary Diesel Engines on Container, Passenger, and Refrigerated Cargo (Reefer) Vessels.
- (A) Except as provided in subsection (d)(2), beginning January 1, 2014, no less than 50 percent of a fleet’s visits to a California port in a calendar quarter, rounded to the nearest whole visit, shall meet the following limits on the number of hours auxiliary diesel engines on such vessels may be operated at berth:
1. Three hours total per visit, provided the visiting vessel uses a synchronous power transfer process to change from vessel-based power to shore-based power; or
  2. Five hours total per visit, provided the visiting vessel does not use a synchronous power transfer process to change from vessel-based power to shore-based power.

For example, if a person’s fleet makes 10 visits to a California port in a calendar quarter, the auxiliary diesel engines on vessels in at least 5 of those visits shall be operated no more than a combined 3 or 5 hours total, depending on whether a synchronous power transfer is used. The 3- and 5-hour limit applies to the combined operating time for all auxiliary diesel engines used in a vessel visit, rather than on a per-engine basis.

- (B) Except as provided in subsection (d)(2), beginning January 1, 2020, no less than 80 percent of a fleet’s visits to a California port in a calendar quarter, rounded to the nearest whole visit, shall meet the following limits on the number of hours auxiliary diesel engines on such vessels may be operated at berth:

1. Three hours total per visit, provided the visiting vessel uses a synchronous power transfer process to change from vessel-based power to shore-based power; or
2. Five hours total per visit, provided the visiting vessel does not use a synchronous power transfer process to change from vessel-based power to shore-based power.

For example, if a person's fleet makes 10 visits to a California port in a calendar quarter, the auxiliary diesel engines on vessels in at least 5 of those visits shall be operated no more than a combined 3 or 5 hours total, depending on whether a synchronous power transfer is used. The 3- and 5-hour limit applies to the combined operating time for all auxiliary diesel engines used in a vessel visit, rather than on a per-engine basis.

- (C) Compliance with the requirements in subsection (d)(1)(A) and (d)(1)(B) shall be determined quarterly for the periods specified as follows:
1. January 1 through March 31, inclusive;
  2. April 1 through June 30, inclusive;
  3. July 1 through September 30, inclusive; and
  4. October 1 through December 31, inclusive.
- (D) Except as otherwise specified in subsection (d)(1)(F), the requirements of subsection (d)(1)(A) and (d)(1)(B) do not apply to:
1. A fleet comprised solely of container or reefer vessels that visits a California port fewer than 25 times total in a calendar year; and
  2. A fleet comprised solely of passenger vessels that visits a California port fewer than 5 times total in a calendar year.
- (E) No person shall sell, supply, offer to supply, or purchase electrical power for use on a vessel during a visit in lieu of using the on-board auxiliary diesel engines, unless such electrical power is either supplied by the local utility or is otherwise generated by equipment that meet the following emission standards:

1. NO<sub>x</sub> emissions no greater than 0.03 gram per kilowatt-hour (g/kW-hr);
2. PM emissions equivalent to the combustion of natural gas with a fuel sulfur content of no more than one grain per 100 standard cubic foot;
3. CO<sub>2</sub> emissions shall be no greater than 500 g/kW-hr; and
4. Ammonia emissions no greater than five parts per million on a dry volume basis (ppmdv), if selective catalytic reduction is used.

(F) Notwithstanding the requirements specified in subsection (d)(1)(A) and (d)(1)(B), any ocean-going vessel equipped to receive shore power that visits a berth equipped to provide compatible shore power shall utilize the shore power during every visit to that berth. This requirement shall not apply under the following circumstances:

1. The master of the vessel reasonably and actually determines that an emergency event, as defined in subsection (c)(12)(A), is in effect and the use of shore power during the emergency event would endanger the vessel's safety. Shore power shall be used for the remainder of the visit once the master determines that the emergency event no longer exists;
2. An emergency event, as defined in subsection (c)(12)(B) or (c)(12)(C), is in effect. Shore power shall be used for the remainder of the visit once the emergency event is no longer in effect; or
3. The California Independent System Operator (CAISO) has declared a Stage 3 emergency and the utility providing electrical power to the port is requesting the terminal where the vessel is located to reduce the use of grid-based electrical power. Shore power shall be used for the remainder of the visit once CAISO declares the Stage 3 emergency is over.

(4) *Emissions Reduction Option.*

The purpose of this provision is to allow any person the option of complying with the requirements of this subsection (d)(2) in lieu of meeting the requirements of subsection (d)(1).

Requirements.

- (A) For fleets visiting terminals that are providing electrical power from the utility's electrical grid, the owner or operator of the fleets shall comply with the following schedule:
1. For the quarter beginning on January 1, 2014, and each subsequent quarter through December 31, 2019, inclusive, the NOx and PM emissions at berth from the fleet's auxiliary engines must be reduced by 50 percent from the baseline fleet emissions.
  2. For the quarter beginning on January 1, 2020, and each subsequent quarter thereafter, the NOx and PM emissions at berth from the fleet's auxiliary engines must be reduced by 80 percent from the baseline fleet emissions.
- (B) For fleets visiting terminals that are providing electrical power from sources that are not part of an utility's electrical grid, or alternative control technologies are used to reduce the emissions of the fleet, the owner or operator of the fleet shall comply with the following schedule:
1. For the quarter beginning on January 1, 2010, and each subsequent quarter through December 31, 2011, inclusive, the NOx and PM emissions at berth from the fleet's auxiliary engines must be reduced by 20 percent from the baseline fleet emissions.
  2. For the quarter beginning on January 1, 2012, and each subsequent quarter through December 31, 2013, inclusive, the NOx and PM emissions at berth from the fleet's auxiliary engines must be reduced by 40 percent from the baseline fleet emissions.
  3. For the quarter beginning on January 1, 2014, and each subsequent quarter through December 31, 2015, inclusive, the NOx and PM emissions at berth from the fleet's auxiliary engines must be reduced by 60 percent from the baseline fleet emissions.
  4. For the quarter beginning on January 1, 2016, and each subsequent quarter thereafter, the NOx and PM emissions from the fleet's auxiliary engines must be reduced by 80 percent from the baseline fleet emissions.



- (C) For fleets visiting terminals that are using a combination of electrical power from the utility grid and electrical power from sources that are not part of an utility's electrical grid, or alternative control technologies, the following schedule applies:
1. For the quarter beginning on January 1, 2012, and each subsequent quarter through December 31, 2013, inclusive, the NOx and PM emissions at berth from the fleet's auxiliary engines must be reduced by 20 percent from the baseline fleet emissions.
  2. For the quarter beginning on January 1, 2014, and each subsequent quarter through December 31, 2019, inclusive, the NOx and PM emissions from the fleet's auxiliary engines must be reduced by 50 percent from the baseline fleet emissions.
  3. For the quarter beginning on January 1, 2020, and each subsequent quarter thereafter, the NOx and PM emissions from the fleet's auxiliary engines must be reduced by 80 percent from the baseline fleet emissions.
- (D) Compliance with the requirements of subsection (d)(2)(A), (d)(2)(B), and (d)(2)(C) shall be determined quarterly for the periods specified as follows:
1. January 1 through March 31, inclusive;
  2. April 1 through June 30, inclusive;
  3. July 1 through September 30, inclusive; and
  4. October 1 through December 31, inclusive.
- (E) No person shall sell, supply, offer to supply, or purchase electrical power for use on a vessel during a visit in lieu of using the on-board auxiliary diesel engines, unless such electrical power is either be supplied by the local utility or is otherwise generated by equipment that meet the following emission:
1. NOx Emissions.
    - a. Up to and including December 31, 2013, the NOx emissions shall be no greater than 2 g/kW-hr at any time; and

- b. Beginning January 1, 2014, the NOx emissions shall be no greater than 0.2 g/kW-hr at any time;
  - 2. PM emissions shall be no greater than the PM emissions from combustion of natural gas with a fuel sulfur content of no more than one grain per 100 standard cubic foot;
  - 3. CO<sub>2</sub> emissions shall be no greater than 500 g/kW-hr; and
  - 4. Ammonia emissions shall be no greater than five ppmv if selective catalytic reduction is used.
- (e) *Exemptions to the Three-Hour or Five-Hour Limited Auxiliary Engine Operation Requirement in Subsection (d)(1)(A)(1), (d)(1)(A)(2), (d)(1)(B)(1) and (d)(1)(B)(2).*

(1) Emergency Event.

All of the following requirements apply to claimed exemptions based on emergency events:

- (A) If the master of the vessel reasonably and actually determines that an emergency event, as defined subsection (c)(12), occurs during the vessel's visit to a California port, the master of the vessel may operate the vessel's auxiliary engines during the emergency event;
  - (B) The master shall not operate the vessel's auxiliary engines for more than one hour beyond the time when the master receives notification that the emergency event is over, determines that the emergency event is over, or should have known the emergency event is over; and
  - (C) The provisions of paragraph (B) above notwithstanding, the master may continue to operate the auxiliary engines for no more than five hours if the master receives notification that the emergency event is over, determines that the emergency event is over, or should have known the emergency event is over and the vessel is scheduled to leave port within five hours.
- (2) Delays Caused By U.S. Coast Guard or Department of Homeland Security Inspections.

The Executive Officer may extend the three-hour/five-hour operational requirement in subsection (d)(1)(A) and (d)(1)(B) if the following criteria are met:

- (A) The initial inspection and clearance of the vessel by the Department of Homeland Security exceeds one hour. The time extension granted shall be commensurate with the excess time necessary for inspection and clearance; or
- (B) After the auxiliary engines have been put back into service pending departure from the berth, the scheduled departure of the vessel has been delayed by the United States (U.S.) Coast Guard or the Department of Homeland Security.

(f) *Calculations for Emissions Reduction Option in Subsection (d)(2).*

- (1) For the purposes of subsection (d)(2)(A), (d)(2)(B), and (d)(2)(C), the percent emission reduction shall be calculated as follows:

$$\text{Percent Reduction} = (\text{BFE} - \text{PBE}) / \text{BFE}$$

Where,

The baseline fleet and post-baseline fleet emissions are calculated as follows:

- (A) Baseline Fleet Emissions (BFE).

The baseline fleet emissions of NO<sub>x</sub> and PM shall be calculated using the following formula:

$$\text{Baseline Fleet Emissions} = \sum (\text{emission rate} \times \text{average berthing time} \times \text{power requirement} \times \text{visits})$$

Where:

“Emission rate” for each auxiliary engine is determined pursuant to subsection (f)(2);

“Average berthing time” for each vessel is determined for the applicable period specified in subsection (d)(2)(D);

“Power requirements” means the electrical power requirement for each vessel as determined pursuant to subsection (f)(3);

“Visits” means the total number of visits by the vessel during the applicable period specified in subsection (d)(2)(D); and

“ $\Sigma$ ” means the summation over the entire fleet subject to the emission reduction option.

(B) Post-Baseline Fleet Emissions (PBFE).

The post-baseline fleet emissions of NO<sub>x</sub> and PM shall be calculated using the following formula:

Post-Baseline Fleet Emissions =  $\Sigma$  (emission rate x average berthing time x power requirement x visits x control factor)

Where:

“Emission rate” for each auxiliary engine is determined pursuant to subsection (f)(2);

“Average berthing time” for each vessel is determined for the applicable period specified in subsection (d)(2)(D);

“Power requirements” means the electrical power requirement for each vessel as determined pursuant to subsection (f)(3);

“Visits” means the total number of visits by the vessel during the applicable period specified in subsection (d)(2)(D);

“Control factor” means the applicable control factor specified in subsection (f)(4); and

“ $\Sigma$ ” means the summation over the entire fleet subject to the emission reduction option.

(2) A person complying with the requirements of subsection (d)(2) may choose any of the following emissions rates for use in the calculations specified in subsection (f)(1)(A) and (f)(1)(B):

(A) Results from emission measurements for similar auxiliary diesel engines that are used to satisfy a marine engine standard, including U.S. Environmental Protection Agency (EPA) emission standards for marine engines (40 CFR Part 94), and the International Convention for the Prevention of Pollution from



- (B) In lieu of the default values above, the fleet operator may, with adequate supporting documentation, use the following:
  - 1. The actual shore power usage, on a monthly basis, rounded to the nearest whole kW-hrs, of the vessels in the fleet utilizing shore power, or
  - 2. The actual on-board power usage, on a monthly basis, rounded to the nearest whole kW-hrs, of the vessels in the fleet utilizing alternative control technologies.
  
- (4) Control Factors.
  - (A) The emissions from vessels using grid power in lieu of the vessel's auxiliary engines when the vessels are at berth are presumed to be reduced by 90 percent.
  
  - (B) No control efficiencies for alternative control technologies shall be used to comply with the requirements of this provision unless the control efficiencies are calculated or measured as follows:
    - 1. The control efficiencies shall be based on an emission test protocol that is approved by the Executive Officer prior to conducting the emission measurements;
  
    - 2. The results of the emission measurements conducted pursuant to paragraph 1 above are approved by the Executive Officer; and
  
    - 3. Emission measurements are conducted using the following test methods:
      - a. NO<sub>x</sub> and CO<sub>2</sub> shall be measured using California Air Resources Board (CARB) Test Method 100, dated July 1997, which is incorporated herein by reference, or equivalent district-approved test method;
  
      - b. Diesel PM shall be measured using ISO 8178 Test Procedures: ISO 8178-1: 1996(E) ("ISO 8178 Part 1"); ISO 8178-2:1996(E) ("ISO 8178 Part 2"); and ISO 8178-4: 1996(E) ("ISO 8178 Part 4"), all of which are incorporated herein by reference; and
  
      - c. Ammonia slip shall be measured using the Bay Area Air Quality Management District Source Test Procedure ST-1B, Ammonia Integrated Sampling, dated

January 1982, which is incorporated herein by reference, or other equivalent district approved test method.

- d. The sulfur content of fuels shall be determined pursuant to International Standard ISO 8754 (as adopted in 2003), which is incorporated herein by reference.
- (C) Results from emission measurements from a verified emission control strategy may be used in conjunction with engine emission information.
- (D) The Executive Officer may request periodic emission testing or other types of monitoring to verify the proper operation of alternative control technologies or to verify the emission rate of an auxiliary engine.
- 1 At a minimum, emission control technologies shall be tested as follows and the results of such testing provided to the Executive Officer within 30 days of the testing:
    - a. Shore-based systems shall be tested annually to demonstrate the overall percentage of emission reduction being achieved.
    - b. Catalyst based air pollution control systems installed on vessels shall be tested after every 1,000 hours of operation to determine the overall percentage of emission reduction being achieved.
    - c. If Selective Catalytic Reduction (SCR) is used as a control technology, the emissions of ammonia shall also be measured at the same time the NOx emissions are being measured.
  - 2. The Executive Officer may modify the testing frequency as he/she deems appropriate.
- (g) *Terminal Plan Requirements.*
- (1) A terminal that receives more than 50 vessel visits in 2008 shall submit a plan for the Executive Officer's approval that discusses how the terminal will accommodate the vessels that will visit the terminal who are subject to subsection (d)(1) and (d)(2). The terminal shall submit the plan and subsequent updates to the plan according to the schedule below (Table 2). The plan updates shall address any contingencies

that may be necessary for the vessels to meet the requirements of subsection (d)(1) and (d)(2) by the applicable dates.

Table 2.

Vessel Compliance Option	Initial Terminal Plan Due Date	Subsequent Terminal Plan Updates
Grid-Based Shore Power: (d)(1) and (d)(2)(A)	July 1, 2009	July 1, 2013 July 1, 2019
Alternative Control Technologies to Grid-Based Shore Power: (d)(2)(B)	July 1, 2009	July 1, 2011 July 1, 2013 July 1, 2015
Combination of Grid-Based Shore Power and Alternative Control Technologies: (d)(2)(C)	July 1, 2009	July 1, 2011 July 1, 2013 July 1, 2015 July 1, 2019

(2) Plan Requirements for Grid-Based Shore Power.

(A) Specify the schedule for implementing infrastructure modifications, including the following:

1. Utility infrastructure improvements, if any, outside the port boundary;
2. Improvements to port infrastructure; and
3. Major infrastructure improvements to terminal.

(B) Identification of existing berths to be modified or new berths to be constructed that will satisfy the requirements of subsection (d)(1).

(3) Plan Requirements for Alternative Control Technologies.

(A) Description of the approach that will be used to reduce in-berth vessel emissions, including whether the approach is a vessel-based approach or shore-based approach;

(B) Identification and description of equipment;

(C) Berth(s) where the equipment will be used;



- (D) Specific vessels affected by the technology; and
  - (E) Estimate of the expected reductions in NO<sub>x</sub> and PM emissions from vessels using the technology, including documentation supporting the anticipated reductions.
- (4) Plan Requirements for a Combination of Grid-Based Shore Power and Alternative Control Technologies.
- (A) Identification of which berths will implement grid-based shore power and which berths will implement alternative control technologies
  - (B) For berths implementing shore-based grid power, the plan must contain the information specified in subsection (g)(2).
  - (C) For berths implementing alternative control technologies, the plan shall contain the information specified in subsection (g)(3).
- (5) A port may submit terminal plans required under subsection (g)(1) on behalf of the terminals located at that port.
- (h) *Reporting and Recordkeeping Requirements.*
- (1) Reporting and Recordkeeping Requirements for Persons that Comply with Subsection (d)(1).
- (A) The Responsible Official shall provide the following reports to the Executive Officer:
    1. A vessel fleet plan, due to the Executive Officer by July 1, 2013, and an updated plan by July 1, 2019, which includes a listing of the vessels that would be affected by the requirements specified in subsection (d)(1) and the description of the ability of each vessel to use shore power.

The vessel fleet plan shall list the vessels that are able to shut down the vessel's auxiliary engines and use shore power, along with the related information as follows:

    - a. Name of the vessel, Lloyd's number for the vessel, and vessel category (container, passenger, or reefer); and
    - b. The port(s) each vessel(s) is expected to visit.

2. An annual statement of compliance pursuant to subsection (d)(1) and (d)(2).
  - a. The initial annual statement of compliance is due to the Executive Officer by March 1, 2015. This statement is for the 2014 calendar year. Thereafter, the annual statement is due to the Executive Officer by March 1 of each year, certifying compliance with the requirements for the previous calendar year.
  - b. The annual statement of compliance shall include the following:
    - i. A statement signed by the Responsible Official that the requirements specified in subsection (d)(1) or (d)(2) have been met.
    - ii. Visit-related information for all vessels within a fleet that visited a California port. The list shall include the following information for each vessel:
      - I. Current name of the vessel;
      - II. Lloyd's number for the vessel;
      - III. Vessel type (cargo, passenger, reefer); and
      - IV. Visits, by port and terminal, where the auxiliary engines were shut down;
    - iii. The information submitted pursuant to paragraph 2.b.ii above shall be reported for the following periods:
      - I. January 1 through March 31, inclusive;
      - II. April 1 through June 30, inclusive;
      - III. July 1 through September 30, inclusive; and
      - IV. October 1 through December 31, inclusive.

(B) Recordkeeping.

1. The following records shall be kept at a central location by the vessel operator. This information shall be supplied to the Executive Officer within 30 days of a request from ARB inspectors or staff.
  - a. A logbook that records, for each visit, the dates, times, and other information as specified below:

- i. When the vessel initially tied to the berth and when the vessel cast-off the tie lines;
      - ii. When the Department of Homeland Security released the vessel;
      - iii. When the auxiliary engines were initially shut down and subsequently restarted;
      - iv. Whether departure from the berth was delayed by the U.S. Coast Guard or other federal agency and identification of the agency that caused the delay;
      - v. If an emergency event occurred, a description of that emergency event;
      - vi. If the vessel could not use shore power as a result of the CAISO declaring a stage 3 emergency, and
      - vii. If a vessel could not use shore power as a result of equipment failure aboard the vessel.
    - b. Copies of all current U.S. Department of Homeland Security Bureau of Customs and Border Protection "Vessel Entrance or Clearance Statement" documents (CBP Form 1300, version 02/02), which is incorporated herein by reference, if the vessel operator or owner is claiming an exemption pursuant to subsection (e)(2)(A) or (e)(2)(B).
  2. All records required pursuant to this provision shall be retained for a minimum of five years.
- (2) Reporting and Recordkeeping Requirements for Persons Opting to Comply with the Emissions Reduction Option in Subsection (d)(2).
- (A) The Responsible Official shall provide the following reports to the Executive Officer:
1. A vessel fleet plan, due to the Executive Officer by the dates shown in Table 3 below:

Table 3.

Compliance Option	Initial Vessel Fleet Plan	Subsequent Submittal Due Dates
Grid-Based Shore Power: (d)(2)(A)	July 1, 2013	July 1, 2019
Alternative Control Technologies to Grid-Based Shore Power: (d)(2)(B)	July 1, 2009	July 1, 2011 July 1, 2013 July 1, 2015
Combination of Grid-Based Shore Power and Alternative Control Technologies: (d)(2)(C)	July 1, 2011	July 1, 2013 July 1, 2019

The vessel fleet plan shall include the following items:

- a. List of the vessels included in the company's fleet; Lloyd's number for each vessel, vessel category (cargo, passenger, reefer), average number of reefer containers carried by the vessel over the calendar year (container vessels only), and power requirement for each vessel (passenger and reefer vessels); and
  - b. Identify the potential alternative control techniques that may be used to achieve the requirements specified in subsection (d)(2). For each control technique, specify the following:
    - i. The vessels that would be affected by the technique;
    - ii. The status of implementation of the alternative control technique; and
    - iii. The basis used in determining the expected emission reduction, including submittal of any emission testing or other documentation.
2. An annual statement of compliance.
- a. The initial annual statement of compliance is due to the Executive Officer by the dates in Table 4 below:

Table 4.

Compliance Option	Initial Submittal of Annual Statement of Compliance
Grid-Based Shore Power: (d)(2)(A)	March 1, 2015
Alternative Control Technologies to Grid-Based Shore Power: (d)(2)(B)	March 1, 2011
Combination of Grid-Based Shore Power and Alternative Control technologies: (d)(2)(C)	March 1, 2013

Thereafter, the annual compliance statement is due to the Executive Officer by March 1 of each year, certifying compliance with the requirements for the previous year.

- b. The following items, applicable to the calendar year in question, should be included with the statement of compliance:
  - i. A statement signed by the Responsible Official indicating that the NO<sub>x</sub> and PM emission reductions specified by (d)(2) have been achieved;
  - ii. The calculated NO<sub>x</sub> and PM baseline and post-baseline emissions for each fleet, on a quarterly basis, as specified in (d)(2)(D). Include each vessel's contribution to the fleet's baseline and post-baseline emissions; and
  - iii. Description of the technique(s) used, including alternative controls technology (or technologies), achievable emission reductions, and supporting documentation (e.g., source test results or verification documentation). For subsequent statements of compliance, the supporting documents can be referenced.

(B) Recordkeeping.

- 1. The following records shall be kept at a central location by the master and the fleet vessel operator. This information shall be

supplied to the Executive Officer within 30 days of a request from ARB staff.

For each calendar year of vessel activity, a quarterly summary of emissions that demonstrates compliance with the applicable emission reduction (2010, 2012, 2014, or 2016), which includes the following:

- a. The fleet's baseline and post-baseline levels for NOx and PM emissions; and
  - b. Each vessel's contribution to fleet's baseline and post-baseline NOx and PM emissions, including the following information:
    - i. Name of each vessel;
    - ii. Lloyd's number for each vessel;
    - iii. Fuel type and average sulfur content of fuel for each vessel;
    - iv. NOx and PM emissions for each vessel;
    - v. Average hotelling time for each vessel;
    - vi. Power requirements for each vessel while at berth;
    - vii. For container vessels, the number of reefer containers imported and exported for each container vessel;
    - viii. Total visits to each California port made by the vessel;
    - ix. Technology used to reduce emissions and associated control factor used, and
    - x. Any equipment failure aboard a vessel that prevented the vessel from using the emissions reduction technology
2. Records made pursuant to paragraph (2)(B) above shall be kept for a minimum of five years.

(3) Reporting and Recordkeeping Requirements for Ports and Terminals.

(A) Affected ports shall provide wharfinger information to the Executive Officer annually, beginning with the wharfinger information for calendar year 2010.

1. This information shall be provided to the Executive Officer no later than April 1 of the following year.
2. At a minimum, the wharfinger information shall include for each vessel visiting the port:
  - a. Name of the vessel;
  - b. Vessel type;
  - c. Company operating the vessel;
  - d. Lloyd's number for each vessel;
  - e. Berth used by the vessel; and
  - f. Date(s) and time the vessel was initially tied to the berth and subsequently released from the berth.

(B) The terminal operator shall keep the following records. These records shall be supplied to the Executive Officer within 30 days of a request from ARB staff:

1. Electricity usage for shore power:
  - a. Monthly utility billing statements that separately identify electricity supplied for shore power;
  - b. Episodes of electrical service interruption by local utility company, as confirmed and documented by local utility company; and
  - c. For distributed generation, monthly records that contain the following:
    - i. Names of vessels serviced;
    - ii. Location of vessels serviced, by berth;
    - iii. Date and time of use; and
    - iv. Power, in megawatts, supplied to the vessels.

2. Date, time, and description of equipment failure that affected the ability of vessels to turn off their auxiliary engines or use alternative control technologies to reduce emissions pursuant to (d)(2).;
  3. Record of each vessel that did not operate its auxiliary engines while the vessel was docked at the terminal:
    - a. Name of vessel; and
    - b. Date and time each vessel was initially tied to the terminal.
  4. Records made pursuant to paragraph (3)(B) above shall be kept for five years.
- (4) Electronic submittals of records and other information required under this section may be approved by the Executive Officer upon request, provided such electronic submittals use digital signatures that meet the requirements specified in Government Code section 16.5. Notwithstanding the approved submittal of electronic records, the Executive Officer may request the submittal of a hard copy of any electronic submittal.

(i) *Violations.*

- (1) Except as otherwise specified in this subsection, any person who is subject to this section and commits a violation of any provision, prohibition, limit, standard, criteria, or requirement in this section is subject to the penalties, injunctive relief, and other remedies specified in Health and Safety Code section 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) Except as otherwise specified in this subsection, any failure to meet any provision, prohibition, limit, standard, criteria, or requirement in this section, including but not limited to the applicable emission limits for supplied shore power and hours of engine operation limits, shall constitute a single, separate violation of this section for each hour that a person operates the auxiliary diesel engine until such provision, prohibition, limit, standard, criteria, or requirement has been met.
- (3) A violation of the recordkeeping and reporting requirements in this section shall constitute a single, separate violation of this section for



each day that the applicable recordkeeping or reporting requirement has not been met.

(j) *Severability.*

If any subsection, paragraph, subparagraph, sentence, clause, phrase, or portion of this regulation is, for any reason, held invalid, unconstitutional, or unenforceable by any court of competent jurisdiction, such portion shall be deemed as a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of the regulation.

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.