

DRAFT
At-Berth Ocean-Going
Vessels and Tugboat Regulation

7/12/07

(a) Purpose

The purpose of this regulation is to reduce oxides of nitrogen and diesel particulate matter emissions from the operation of auxiliary engines on ocean-going vessels and harbor craft when the ocean-going vessel or harbor craft is tied to a berth at a California port.

(b) Applicability

(1) Except as provided below and in subsection (d), this section applies to any person who owns, operates, charters, rents, or leases any ocean-going vessel that visits a California port.

(2) Exemptions

The requirements of this section do not apply to 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) Definitions

(1) “Alternative Controls Technologies” refers to technologies that reduce the emissions of NO_x and PM.

(2) “Auxiliary Engine” means an engine on a 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 regulation.

(3) “Berthing Times” refers to the time period when the vessel is first tied to the berth and when the vessel is untied from the berth.

- (4) "California Ports"
 - (A) For the purposes of subsection (d)(1), ports refer to the Port of Hueneme, Port of Los Angeles and Port of Long Beach, Port of Oakland, Port of San Diego, and Port of San Francisco.
 - (B) For the purposes of subsection (d)(2), ports refers to the ports located at Benicia, Hueneme, Humboldt, Long Beach, Los Angeles, Martinez, Oakland, Redwood City, Richmond, Sacramento, San Diego, San Francisco, and Stockton.
 - (C) For the purposes of this regulation, POLA and POLB are treated as one port.
- (5) "Container Vessel" means a self-propelled vessel constructed or adapted primarily to carry uniform-sized ocean freight containers.
- (6) "Diesel-Electric Engine" means a diesel engine connected to a generator that is used as a source of electricity for propulsion or other uses.
- (7) "Diesel Particulate Matter" means the particles found in the exhaust of diesel engines, which may agglomerate and adsorb other species to form structures of complex physical and chemical properties.
- (8) "Dry Bulk Carrier Vessel" means a self-propelled vessel constructed or adapted primarily to carry loose dry cargo such as cement, grains, or scrap metal.
- (9) "Emergency Event" refers to the follow events:
 - (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 indicates that electrical power will be temporarily unavailable as a result of equipment failure; or
 - (C) the California Independent System Operator has declared a stage 3 emergency and the utility, providing electrical power to the port, is required to reduce the amount of electrical power to the port.

- (10) "Executive Officer" refers to the executive officer of the Air Resources Board (ARB), or his or her designee.
- (11) "Fleet" refers to vessels visiting California ports owned and/or operated under the direct control of a person or company. Direct control includes, but is not limited to, vessels which are operated under a contract, lease, or other arrangement with a third-party for the third-part to operate the vessel.
- (12) "General Cargo Vessel" means a self-propelled vessel constructed or adapted primarily to carry palletized cargo or material not typically containerized because of its weight or size, such as steel rolls or large pipes.
- (13) "Initially Tied to a Berth" refers to a vessel initially being tied to a berth and after the vessel has been cleared by the Department of Homeland Security.
- (14) "IMO" means the International Maritime Organization.
- (15) "Master" means the person who operates a vessel or is otherwise in charge of the vessel's operations.
- (16) "Ocean-Going Vessel" means a commercial, government, or military vessel meeting any one of the following criteria:
 - (A) A vessel with a "registry" (foreign trade) endorsement on its United States Coast Guard certificate of documentation, or a vessel that is registered under the flag of a country other than the United States;
 - (B) 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;
 - (C) 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
 - (D) 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 referred to as "vessel."

- (17) "Operate" means steering or otherwise running the vessel or its functions while the vessel is underway, moored, anchored, or at dock.
- (18) "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.
- (19) "Owner/Operator" means a person or company that has direct control over a vessel's operation whether or not they actually own the vessel. If such an owner/operator does not actually own the vessel, they are commonly referred to as a "disponent owner," or "owner pro hac vice" (owner for this particular occasion).
- (20) "Oxides of Nitrogen" means compounds of nitric oxide (NO), nitrogen dioxide (NO₂), and other oxides of nitrogen, which are typically created during combustion processes and are major contributors to smog formation and acid deposition.
- (21) "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).
- (22) "Passenger Vessel" means a self-propelled vessel constructed or adapted primarily to carry people.
- (23) "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.
- (24) "Refrigerated Cargo (or Reefer) Vessel" means a self-propelled vessel constructed or adapted primarily to carry mainly 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.

- (25) “Responsible Official” refers to an individual employed by the company with the authority to certify that all vessels in a fleet comply with applicable requirements of this regulation.
- (26) “Tanker” means a self-propelled vessel constructed or adapted primarily to carry oil or liquid material in bulk as cargo, such as crude oil.
- (27) “Terminal” means a facility consisting of wharves, piers, docks and other berthing locations and adjacent storage which main purpose is the loading and unloading of cargo or material from vessels.
- (28) “Terminal Operator” means the company that provides contracted stevedoring and terminal services at the terminal. The company typically leases the terminal property from the port, the owner of the property.
- (29) “Twenty-foot equivalent units (TEU)” means the TEU capacity listed in Lloyd’s Register of Ships.
- (30) “Utility” refers to companies and municipal organizations that provide electrical power.
- (31) “Vehicle Carrier or Ro-Ro (Roll-on Roll-off) Vessel” means a self-propelled vessel constructed or adapted primarily to transport motor vehicles or any other rolling stock.
- (32) “Verified Emission Control Strategy” refers to an emission control strategy designed primarily for the reduction of diesel PM emissions which 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, and incorporated by reference.
- (33) “Visit” refers to a vessel tying to a berth at a California port. Visits where a vessel ties to two or more berths at the same port, and the time interval between leaving one berth and tying to another berth is less than two hours is considered a single visit to a California port.

(d) Requirements

(1) Container, Passenger, and Refrigerated Cargo (or Reefer) Vessels

(A) Limited auxiliary engine operation

1. Except as provided in (d)(1)(B), beginning January 1, 2015, no person shall operate any auxiliary diesel engine after one hour of the vessel being initially tied up to a berth at a California port for the following vessels. These engines can be operated again one hour prior to the vessel leaving port.

a. Container vessels

i. Vessels with TEU capacity greater than 4,000 and making 5 or more visits in a calendar year to the same California port.

ii. Vessels with TEU capacity 4,000 or less and making 12 or more visits in a calendar year to the same California port.

b. Passenger vessels making 10 or more visits in a calendar year to the same California port.

c. Reefer vessels making 10 or more visits in a calendar year to the same California port.

2. Except as provided in (d)(1)(B), beginning January 1, 2020, no person shall operate any auxiliary diesel engine after one hour of the vessel being tied up to a berth for the following vessels. These engines can be operated again one hour prior to the vessel leaving port.

a. Container vessels making 4 or more visits in a calendar year to the same California port.

b. Passenger vessels making 3 or more visits in a calendar year to the same California port.

c. Reefer vessels making 5 or more visits in a calendar year to the same California port and averaging 40 hours or more per visit on an annual basis.

3. Except as provided for below, the vessels affected by these requirements will be based upon the vessel activity for the previous calendar year.
 - a. The fleet owner/operator may revise which vessels are affected by these requirements. A revised list of affected vessels shall be submitted for the approval of the Executive Officer.
 - i. The list shall identify the replacement vessels and the vessels from the previous calendar year that will not be expected to visit California ports.
 - ii. For the replacement vessels, the following information should be provided for each vessel: the port(s) the vessel will be visiting, the name of the vessel, the type of vessel, and for container vessels, the TEU capacity of the vessel.
 - iii. At a minimum, the revised list of affected vessels must make the same number of visits to each California port as the vessels identified based upon the previous calendar year of vessel activity.
 - b. Instead of using the previous calendar year vessel activity, the fleet owner/operator may submit to the Executive Officer a vessel visitation schedule for the current year if the schedule is available three months prior to the beginning of the year and the schedule provides dates for vessel visits, or dates of departure, for the entire calendar year.
4. The requirements of this subsection do not apply to container vessels that routinely have berthing times of 10 hours or less for all visits to California ports.
5. The emissions from the source of electrical power used by the vessel in lieu of operating the vessel's auxiliary engines shall not exceed the emissions of the local utility system that would provide power to the port, in terms of lb/MW-hr on an annual basis.

6. Emergency Event

- a. If the master of the vessel determines that an emergency event 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. When the master is informed or determines that the emergency event no longer exists, the master shall not operate the vessel's auxiliary engines for more than one hour after such notification or determination.
- c. If the master receives notification or determines that the emergency event no longer exists and the vessel is scheduled to leave port within five hours, the auxiliary engines can continue to be operated.

(B) Fleet Emissions

The purpose of this section is to allow any person the option of complying with the requirements of this subsection, (d)(1)(B), in lieu of the requirements of subsection (d)(1)(A).

1. The NO_x and PM emissions for the fleet's auxiliary engines must be equal to or less than the fleet's emissions if the applicable vessels in the fleet satisfies the requirements of (d)(1)(A).
 - a. No vessel shall be included in more than one fleet.
 - b. For container and reefer vessels, both the hotelling load and the average reefer load must be included as the electrical power being provided by the vessel's auxiliary engines.
2. The following emissions rates shall be used to determine the fleet's emissions and compliance with (d)(1)(B):
 - a. Results from emission measurements used to satisfy a marine engine standard, including US EPA emission standards for marine engines, and MARPOL 73/78;

- b. In lieu of approved test data for a marine engine, the following emission rates can be used as default values:
 - i. 13.9 g/kw-hr for NOx.
 - ii. 0.38 g/kw-hr for PM if 0.5 percent sulfur, or lower sulfur content, marine gas oil is used as a fuel.
 - iii. 0.25 g/kw-hr for PM if 0.1 percent sulfur, or lower sulfur content, marine gas oil is used as a fuel.
 - c. Vessels meeting the requirements of (d)(1)(A) are assumed to have the auxiliary engine emissions reduced by 90 percent;
 - d. Results from emission measurements from a verified emission control strategy may be used in conjunction with engine emission information; and
 - e. Results of emission measurements approved by the Executive Officer. Emission measurements must be conducted with the test methods identified in (d)(1)(B)(3).
3. 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. The following tests methods shall be used, as appropriate, to demonstrate compliance:
- a. NOx shall be measured with California Air Resources Board (CARB) Test Method 100, dated July 1997, or equivalent district-approved test method;
 - b. Diesel PM shall be measured with 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 "); and

- c. Ammonia slip shall be measured with the Bay Area Air Quality Management District Source Test Procedure ST-1B, Ammonia Integrated Sampling, dated January 1982, or other equivalent district approved test method.
- 4. The following incentive may be used to revise the fleet's overall emissions:
 - a. With the approval of the Executive Officer, early emission reductions, or reductions that can be achieved prior to January 1, 2012, shall receive additional credit toward satisfying the requirements of this section:
 - i. For the 2015 requirements, the early reductions will be counted at 1.5 times the actual reduction.
 - ii. For the 2020 requirements, the early reductions will be counted at 1.25 times the actual reduction.
 - iii. Companies that used the early emissions reduction option shall comply with the original 2020 requirements by 2025.
 - b. Applications for early emission reduction credit shall be submitted to the Executive Officer by January 1, 2011, and must be approved by the Executive Officer prior to January 1, 2012. The application shall contain, at a minimum, the following information:
 - i. Description of the proposal, including the location of the project (identify the port and terminal), technique(s) used to reduce NOx and/or PM emissions, discussion on the permanence of the proposed reductions, and a list of the vessel(s) affected by the project;
 - ii. Estimate of reductions over a ten year period and supporting engineering calculations quantifying the early emission reductions; and

- iii. Documentation supporting the emission reductions proposed by the project, including emission testing;
- c. The Executive Officer shall approve early emission reduction that satisfy all of the following:
 - i. The project must generate emission reductions for ten consecutive years at California ports. The early emission reduction credit shall be based on the lowest amount of emission reduction, on an annual basis, expected to be generated over this time period.
 - ii. The project must be undertaken by the company under a voluntary basis. Projects that were implemented as a result of complying with existing or future regulatory requirements or litigation are not eligible for early emissions reduction.
 - iii. The proposed project's reductions were not banked as an emission reduction credit or a mobile emissions reduction credit with a local air district.
- d. After the early reduction credit has been granted, the Executive Officer can reduce the amount of the early emission reduction credit or eliminate the credit if a status report, filed pursuant to (e)(2)(A)3., indicates that the early emission reduction is less than originally approved or the reduction no longer exists.

(C) Terminal and Port Requirements

1. By January 2, 2010, terminals that receive more than **xx** vessel visits in a calendar year shall submit a plan for the Executive Officer's approval, which discusses how the facility will be modified such that adequate power is available for vessels that are subject to (d)(1)(A).

2. The plan shall contain the following information:
 - a. Identification of berths that will be modified to allow for the use of shore power by January 1, 2015, and January 1, 2020;
 - b. Plan elements for shore power infrastructure:
 - i. Identification of utility improvements occurring outside of port property, including:
 1. Description of current utility equipment serving the port, including utility lines and substations.
 2. Description of necessary revisions, including:
 - a. Revisions to an existing substation or addition of new substation (show location(s) on map); and
 - b. Addition of transmission or distribution lines (show location of lines on map and provide total distance), and associated number of circuits.
 - ii. Identification of utility improvements occurring within port property, including revisions to an existing substation or addition of new substation;
 - iii. Description of revisions to the berth to allow for the use of shore power, including:
 1. Number of shore power outlet(s) and associated equipment; and
 2. Distribution lines (show location on map and provide total distance).

- c. Plan elements for non-shore power application
 - i. Description of the approach that will be used to reduce in-berth vessel emissions;
 - ii. Identification and description of equipment;
 - iii. Berth(s) where the equipment will be used;
 - iv. Specific vessels the technology will be used for (for example, vessels that are tied up to the berth for more than 20 hours per visit); and
 - v. Estimate of the expected reductions in NOx and PM emissions from vessels using the technology, including documentation supporting the anticipated reductions.
- d. Schedule for implementing improvements from initial conception of project until completion of shore side elements.

- 3. The terminal operator can delegate the requirements of (d)(1)(C) to the port where the terminal is located.

(2) Dry Bulk Vessels, General Cargo Vessels, Tankers, and Vehicle Carrier Vessels

- (A) Terminals that receive more than **xx** vessel visits in a calendar year from dry bulk, general cargo, tankers or vehicle carrier vessels must satisfy the following requirements:
 - 1. By 2015, the NOx and diesel PM emissions emitted at the berth must be reduced by 25%.
 - 2. By 2020, the NOx and diesel PM emissions emitted at the berth must be reduced by 50%.
 - 3. The baseline for 2015 and 2020 used to determine the reductions shall include the following:
 - a. Auxiliary engines on vessels will be using 0.5 percent or lower sulfur marine gas oil, as required by Section

2299.1 of the California Code of Regulations, Title 13;
and

- b. Growth (or reduction) in shipping activities shall also be applied to vessel operating data for 2009 to estimate shipping activity for 2015 and 2020.

(B) Plan to Reduce Emissions at the Terminal

1. By March 1, 2010, terminals subject to (d)(2)(A) shall submit a plan for the Executive Officer's approval which describes how the facility's emissions will achieve the applicable reductions in (d)(2)(A)1 or (d)(2)(A)2.
2. The plan shall contain the following information:
 - a. General description of the facility, including the types of vessels that typically visit the terminal, frequency of vessel visits, average and range (shortest and longest) of berthing times, and the typical utilization of the berths at the terminal.
 - b. Vessel operating activity and future projections
 - i. The type and number of vessels visiting the terminal for the calendar year 2009;
 - ii. The total vessel visits to the terminal for each year, 2004 through 2009 inclusive;
 - iii. The anticipated growth in vessel traffic between 2010 and 2015; and
 - iv. The anticipated growth in vessel traffic between 2015 and 2020.
 - c. Emission Reduction Techniques
 - i. Description of the alternative control technologies that will be used to reduce emissions and how the technology will be used to reduce emissions from vessels;
 - ii. The berth(s) the alternative control technologies at which they will be used;

- iii. If the alternative control technology to be used is vessel-based, a list of the vessels that will be equipped with the technology; and
 - iv. Documentation of the expected efficiencies of the alternative control technologies.
 - d. Calculations demonstrating that the expected emissions reductions in 2015 and 2020 will be achieved.
 - i. Emission reductions beyond those achieved by using marine gas oil as the fuel for the auxiliary engine and have not been required for another regulation can be used toward satisfying the 2015 and 2020 emission reduction goals.
 - ii. To the extent that existing regulations allow, any reductions from boilers can also be used toward satisfying the 2015 and 2020 emission reduction goals.
 - 3. The terminal operator can delegate the requirements of this subsection to the port where the terminal is located.
- (3) No person shall operate an auxiliary diesel engine within one hour after the vessel is initially tied up to a berth at a California port if the vessel is equipped to use shore power and the berth is equipped to provide shore power.
- (4) Circumvention

Operation of a vessel to circumvent the requirements of this subsection is deemed a violation of this regulation.

(e) Reporting and Recordkeeping Requirements

(1) Reporting Requirements for Operators of Vessels Subject to the Limited Auxiliary Engine Operation

(A). The Responsible Official shall provide the following reports to the Executive Officer:

1. A status report, due to the Executive Officer by March 1, 2014, regarding the vessels that would be affected by the requirements of (d)(1)(A) and the ability of that vessel to use shore power. The report should contain the following items:
 - a. If no vessels are affected, the report should indicate no vessels satisfy the criteria of (d)(1)(A); or
 - b. List of vessels that would be subject to the criteria of (d)(1)(A), based upon the vessel activity for the 2013 calendar year. The list should have the following information:
 - i. Name of the vessel, Lloyd's number for the vessel, vessel category, and for container vessels, the size of the vessel, in terms of TEU capacity; and
 - ii. The port(s) each vessel(s) visited that satisfied the port visit criteria.
2. An annual statement of compliance
 - a. The initial annual statement of compliance is due to the Executive Officer by March 1, 2016. This statement is for the 2015 calendar year. 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 calendar year.
 - b. The annual statement of compliance shall include the following:

- i. A statement signed by the Responsible Official that the requirements of (d)(1)(A) are being satisfied.
 - ii. A summary of vessel activity for the applicable calendar year, including identifying, at a minimum, each vessel subject to these requirements, Lloyd's number for each vessel, the vessel type (container, passenger, or reefer vessel), the number of visits made by each vessel to each California port, and for container vessels (for compliance statements for the years 2015 to 2019), the size of the vessel in TEU capacity;
 - iii. If the fleet operator elects not to use the previous year's vessel operating data, an analysis shall be provided demonstrating that the revised vessel list, per (d)(1)(A)3.a., results in the same number of total visits subject to (d)(1)(A) as if the prior year's vessel operating data were used.
 - iv. A listing of incidents where the auxiliary diesel engines on a vessel operated more than one hour after the vessel initially tied up to a berth at a California port. For each incident, at a minimum, the following information should be included: the affected vessel, date(s) the vessel visited a California port, the name of the port visited, and an explanation or description of incident. All emergency events need to be included as part of this report;
- c. If no vessels are subject to the criteria of (d)(1)(A), an annual compliance statement must still be filed with the Executive Officer indicating no vessels are subject to the requirements of the regulation.

(B) Recordkeeping

1. The following records shall be kept at a central location by the terminal operator. This information shall be

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

- a. A logbook which records the following dates and times:
 - i. Date and time each vessel initially tied to berth;
 - ii. Date and time the Department of Homeland Security released the vessel; and
 - iii. When the vessel is tied up to the berth, date and times the auxiliary engine(s) was turned off and turned on.
- b. Copies of United States Customs form 1300.

2. Records shall be kept for five years.

(2) Reporting Requirements for Operators of Vessels Subject to the Limited Auxiliary Engine Operation, but Instead Opting to Comply with the Fleet Emissions Option

(A) The Responsible Official shall provide the following reports to the Executive Officer:

1. A status report, due to the Executive Officer by March 1, 2014, that includes the following items:
 - a. List of the vessels included in the company's fleet; Lloyd's number for each vessel, vessel category, average number of reefer containers carried by the vessel over the calendar year (container vessels only), and identifying whether the vessel would be subject to (d)(1)(A); and
 - b. For each vessel in the fleet, information on the auxiliary engines, including the maximum KW rating of each engine; and
 - c. Identify the potential alternative control techniques that may be used to achieve the requirements of

(d)(2)(B) for each vessel, including the expected emissions reductions (e.g., percent emissions of each pollutant is reduced), status of implementation of the alternative control technique, and basis of expected reduction; and

- d. Estimate of the fleet's annual emissions for NO_x and PM for the following scenarios:
 - i. If the vessels in the fleet satisfied the requirements of (d)(1)(A); and
 - ii. After implementation of alternative control techniques, including a summary of the emissions for each vessel (auxiliary engines only) that are part of the fleet.

2. An annual statement of compliance

- a. The initial annual statement of compliance is due to the Executive Officer by March 1, 2016. This statement is for the 2015 calendar year. 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 calendar 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_x and PM emissions of the fleet are the same or less than the emissions of the fleet if the fleet complied with (d)(1)(A);
 - ii. A list of vessels in the fleet, including the name of the vessel and the Lloyd's number for each vessel. For each vessel in the fleet, provide information on the TEU capacity of the vessel (container vessels only), the average number of reefer containers carried by the vessel over the calendar year (container vessels only); for the auxiliary

engines, the make, model, year of manufacture, maximum kw rating, emission rates of NOx and PM, in g/Kw-hr, and alternative control technique(s) implemented to reduce NOx and PM emissions, if applicable;

- iii. For the list of vessels developed for (e)(2)(A)2.b.ii above, identify the vessels that would be subject to (d)(1)(A);
- iv. Description of the alternative controls technology (or technologies) used, achievable emission reduction, and supporting documentation (e.g., source test results or verification documentation). For subsequent statements of compliance, the supporting documents can be referenced; and
- v. A list of equipment malfunctions which affected the emissions of NOx or PM from the vessel when the vessel is tied up to the berth. This listing should include the following information: the name of the vessel where the malfunction occurred, the date(s) when the malfunction occurred, the name of the port where the incident occurred, an explanation for the equipment failure, and the effort to repair the faulty equipment.

3. Early Reduction Reporting Requirements

- a. Status reports shall be submitted to the Executive Officer on March 1 for each of the following years:
 - i. 2014
 - ii. 2016
 - iii. 2018
 - iv. 2020
 - v. 2022

- b. The status report shall include the following:
 - i. Discussion on whether the reductions outlined in the plan are being achieved;
 - ii. Discussion of actual growth rates in shipping activity versus the shipping activity growth identified in plan; and
 - iii. Discussion of alternative control technology implementation compared to implementation schedule identified in plan.

(B) Recordkeeping

- 1. The following records shall be kept at a central location by the terminal. This information shall be supplied to the Executive Officer within 30 days of a request from ARB staff
 - a. For each calendar year of vessel activity, a monthly summary of emissions which demonstrates compliance with the applicable emission standard (2015 or 2020), which includes the following:
 - 1. The fleet's NOx and PM emissions assuming compliance with (d)(1)(A); and
 - 2. The fleet's NOx and PM emissions based upon use of alternative control technologies
 - b. Detailed summary listing NOx and PM emissions for each vessel. The summary shall include the NOx and PM emissions for each visit, the berthing time, and the auxiliary engine power load;
 - c. In determining (e)(2)(B)1.a., and (e)(2)(B)1.b. above, use appropriate emission factors and control factors, as described in section (d)(1)(B)2; and

d. Records of number of reefer containers imported and exported for each container vessel on an annual basis.

2. Records shall be kept for five years.

(C) Compliance shall be determined on a two month rolling average.

(3) Reporting Requirements for Terminal and Port Requirements

(A) Terminals subject to the provisions of (d)(1)(C) must provide a report on the status of providing electrical shore infrastructure at the port

1. Status reports shall be submitted to the Executive Officer on March 1 for each of the following years:

- a. 2010;
- b. 2013;
- c. 2015;
- d. 2017; and
- e. 2020.

2. The status report shall contain the following:

- a. The berths at each terminal implemented with shore power capability;
- b. The berths at each terminal which were identified in the plan to be equipped with shore power capability, but were not so equipped at the time the status report is due to the Executive Officer; and
- c. If berths were identified for (e)(3)(A)2.b., a discussion of why the berth was not equipped with shore power capability.

3. The terminal operator can delegate the requirements of this subsection to the port where the terminal is located.

- (B) Affected ports shall provide wharfinger information to the Executive Officer annually, beginning with the wharfinger information for the calendar year 2013. This information shall be provided to the Executive Officer no later than April 1 of the following year. At a minimum, the wharfinger information shall include for each vessel visiting the port, the name of the vessel, the vessel type, the company operating the vessel, the Lloyds number for each vessel, the berth used by the vessel, and the date(s) and time the vessel was initially tied to the berth and subsequently released from the berth.
- (4) Reporting Requirements for Dry Bulk Vessels, General Cargo Vessels, Tankers, and Vehicle Carrier Vessels
- (A) Status Reports
 - 1. The terminal operator affected by the requirements of (d)(2) shall submit status reports for the progress of implementing the emission reduction plan to the Executive Officer on March 1 for each of the following years:
 - a. 2012;
 - b. 2015;
 - c. 2017; and
 - d. 2020
 - 2. The status report shall contain the following:
 - a. The type and number of vessels visiting the terminal for the calendar year prior to the year the status report is due;
 - b. NO_x and PM emission estimates
 - a. For all vessels visiting the terminal assuming that no alternative control technology is used to reduce the emissions from the vessel; and

- b. For all vessels based upon the alternative control technology implemented for the calendar year prior to the year the status report is due.
- c. The percent reduction is based upon the following:

$$\frac{[(\text{Vessel emissions with no controls}) - (\text{Vessel emissions with controls})]}{(\text{Vessel emissions with no controls})}$$

- 3. If status reports indicate that the emissions reductions specified in the plan are not achieved, then the terminal operator shall submit a revised plan for the Executive Officer's approval that achieve the emission reductions specified in the original plan.

(B) Recordkeeping

- 1. The following records shall be kept at a central location by the terminal. This information shall be supplied to the Executive Officer within 30 days of a request from ARB staff.
 - a. The vessels that used the control technology;
 - b. If vessel-based control technologies are used, identify the control technologies used and which vessels are using the technologies; and
 - c. The emission reduction being achieved by the technology.
- 2. Records shall be kept for five years.

- (C) The terminal operator can delegate the requirements of this subsection to the port where the terminal is located.

(5) Utility Reporting Requirements

- (A) The utility shall provide to the Executive Officer the annual power usage, on a month-by-month basis, for each terminal equipped with shore power. This information shall be provided to the Executive Officer no later than April 1 of the following

year, beginning in 2016 for power usage for the calendar year 2015.

- (B) The utility shall report all periods when electrical power was not provided to the port, including the date and time period for each incident, and the cause of the electrical power outage.