Updated Informative Digest

Proposed Amendments to the Commercial Harbor Craft Regulation

Sections Affected:

Proposed amendments to section 2299.5, California Code of Regulations, title 13, and section 93118.5, California Code of Regulations, title 17.

Documents Incorporated by Reference (Cal. Code Regs., title 1, § 20, subd. (c)(3)):

The following documents would be incorporated in the regulation by reference:

- 46 Code of Federal Regulations (CFR) Part 67.7 as last amended on September 25, 2009, and 46 CFR 67.9 as published on November 15, 1993, incorporated in section 93118.5(c) Exemptions.
- 46 (CFR) Subchapter U, as it existed on April 27, 2010, incorporated in subsection (d) Definitions, (e) Fuel Use and Engine Emission Requirements, and (q) Methods to Demonstrate Compliance with Engine and Fuel Standards.
- International Organization for Standardization (ISO) 22241, as it existed in February 2019, incorporated in subsection (d) Definitions.
- 40 CFR section 1068.120(j), as it existed on September 28, 2022, incorporated by reference in subsection (e)(8)(A)3.e.
- 40 CFR section 1042.835(d), as last amended on June 30, 2008, incorporated by reference in subsection (e)(8)(A)3.e.
- 40 CFR section 1042.840(n), as amended on October 25, 2016, incorporated by reference in subsection (e)(8)(A)3.e.
- Society of Automotive Engineers (SAE) J1667 Recommended Practice, as it existed in February 1996, incorporated in subsection (k) Opacity Testing and Emission Control Repair Requirements.
- 40 CFR, Chapter I, subchapter C, Part 60 Appendix A-4, as it existed on September 26, 2022, incorporated by reference in subsection (k)(4)(B).

Background and Effect of the Proposed Regulatory Action:

Commercial Harbor Craft ("CHC" or "harbor craft") are a vital part of California's economy, and are essential for moving cargo and providing services to Ocean-Going Vessels (OGV) and various seaports, harbors, and marinas throughout California. While these vessels are reliable and operationally efficient, many of them are powered by and utilize diesel engines that emit significant amounts of air pollutants, including diesel particulate matter (DPM), fine particulate matter (PM2.5), oxides of nitrogen (NOx), oxides of sulfur (SOx), reactive organic gases (ROG), and greenhouse gases (GHG). Communities located near California's seaports,

marinas, harbors, coastal waters, and internal waters throughout the State continue to be impacted by emissions generated from approximately 3,159 CHC operating near California seaports and marine terminals.

In 2008, the Board adopted the initial Airborne Toxic Control Measure for Diesel Engines on Commercial Harbor Craft ("Original Regulation") to reduce emissions of DPM, NOx, and ROG from diesel engines used in CHC. The Board subsequently amended the Original Regulation in 2010 to expand the applicability of the Original Regulation to additional categories of CHC, including crew and supply, barge, and dredge vessels. Both the Original Regulation and its subsequent amendment have resulted in substantial reductions of the air pollutants emitted by CHC, but the current regulation will be fully implemented by the end of 2022 and California needs to ensure additional emissions reductions are achieved from CHC.

Communities located near California's seaport complexes bear a disproportionate health burden due to their proximity to the emissions generated from freight activity associated with the seaports, including CHC operating in and around seaports and harbors. The DPM emitted by CHC continues to impact nearby communities, including communities located in regions of the State that are in nonattainment with national ambient air quality standards (NAAQS) for ozone and PM2.5. DPM is a toxic air contaminant that can substantially increase the risk of developing cancer and other health problems such as increased respiratory illnesses, risk of heart disease, and premature death. DPM emissions from CHC engines are projected to become even more significant due to the continued operation of CHC while emissions from other mobile sources are decreasing due to more stringent regulations and cleaner technologies. The emissions from CHC impose uncompensated health and environmental costs to the nearby communities and must be reduced to the greatest possible extent.

In addition, as mentioned above, California is facing challenges in attaining compliance with NAAQS for ozone and PM2.5 throughout many regions of the State. Two areas of the State in particular face the most critical air quality challenges – the South Coast Air Basin and the San Joaquin Valley Air Basin. The South Coast Air Basin has the highest ozone levels in the nation, while the San Joaquin Valley Air Basin has the greatest PM2.5 challenge. To meet the 2023 and 2031 NAAQS for ozone, the South Coast Air Basin will require an approximate 70 percent NOx reduction from current levels by 2023 and an overall 80 percent NOx reduction by 2031. Because NOx is a precursor to both ozone and to secondary PM2.5 formation, reductions in NOx emissions will also provide benefits for meeting the PM2.5 standards. CHC emit both NOx and PM2.5, and such emissions affect five air basins or counties in California that have not attained compliance with the NAAQS for ozone and PM2.5. CHC are also a source of NOx emissions in the South Coast Basin in 2023, so achieving reductions in NOx and PM emissions from CHC will assist California in attaining ambient air quality standards.

CHCs also emit GHGs that contribute to anthropogenic climate change and black carbon (BC), or soot, which is classified as a short-lived climate pollutant (SLCP). SLCPs are powerful climate forcers that can have an immediate and significant impact on climate change, compared to longer-lived GHGs such as CO2. California Health and Safety Code section 39730 authorizes and directs the California Air Resources Board (CARB) to develop a comprehensive strategy to reduce emissions of SLCPs, and Health and Safety Code section 39730.5 directs CARB to approve and to implement that strategy.

In response to Assembly Bill (AB) 617 (Garcia, Chapter 136, Statutes of 2017), CARB created the Community Air Protection Program (CAPP) to address the environmental and health inequities from air pollution experienced by certain disadvantaged communities (DAC) in the State. The CAPP Blueprint contains a list of statewide actions that should be undertaken to achieve reductions in these disproportionally burdened communities.[1] Many CHC operate in or adjacent to DACs, and emission reductions from these vessels will directly benefit these communities experiencing cumulative exposure burden.

Additionally, Governor Newsom's Executive Order N-79-20 directed CARB and other State agencies to transition off-road vehicles and equipment to 100 percent zero-emission by 2035 where feasible. To address this, staff proposes provisions to accelerate deployment of Zero-Emission and Advanced Technologies (ZEAT) to CHC, which includes requiring all short-run ferries to switch to zero-emissions propulsion and auxiliary power systems, and for new excursion vessels to be equipped with zero-emission capable hybrid systems. There are other use cases of CHC operations that can be transitioned to zero-emission over the coming decade. Therefore, in response to Executive Order N-79-20, CARB staff has proposed amendments that creates compliance flexibility for introducing zero-emission technology into the marine market.

CARB may also consider other changes to the sections affected, as listed on the first page of this notice, or other sections within the scope of this notice, during the course of this rulemaking process.

Objectives and Benefits of the Proposed Regulatory Action:

The Proposed Amendments would establish more stringent requirements for in-use and new CHC, expand the regulatory requirements to vessel categories that were previously exempt from in-use vessel requirements, and apply reporting, infrastructure, and other requirements to facilities, such as seaports, terminals, marinas, and harbors that conduct business with CHC. The Proposed Amendments would further reduce emissions from CHC by establishing requirements that specified categories of CHC must deploy zero emitting technologies. The Proposed Amendments are expected to reduce emissions of PM2.5, DPM, NOx, ROG, and GHGs.

Staff estimated that from 2023 through 2038, the Proposed Amendments would reduce cumulative statewide emissions by approximately 1,610 tons of PM2.5, 1,680 tons of DPM, 34,340 tons of NOx, 2,460 tons of ROG, and 415,060 metric tons (MT) of GHG, relative to baseline conditions.

The Proposed Amendments are expected to improve California residents' health benefits, especially those in communities located near California's seaports and marine terminals. Many of these communities are disadvantaged and bear a disproportionate health burden due to their close proximity to emissions from CHC (at dock, and in transit) and other emission sources such as trucks, locomotives, and terminal equipment serving the seaports.

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[1] CARB, Community Air Protection Blueprint, October 2018, last accessed July 6, 2021, *https://ww2.arb.ca.gov/sites/default/files/2020-03/final_community_air_protection_blueprint_october_2018_acc.pdf*.

These improvements in health benefits are anticipated to include reductions of 531 premature deaths reduced, 73 hospital admissions for cardiovascular illness, 88 hospital admissions for respiratory illness and 236 emergency room visits. The total statewide valuation due to avoided health outcomes between 2023 and 2038 totaled $5.25 billion.

Additionally, potential cancer risks are expected to decrease as exposure to DPM is reduced. In addition to regional and local air quality benefits, passengers onboard vessels would have the potential for substantially less exposure to air pollutants, such as DPM and NOx.

In 2038 without the Proposed amendments, in the San Francisco Bay Area Air Basin, about seven million people, including 0.5 million people who live in DACs, are estimated to be exposed to a potential cancer risk of greater than 1 chance per million from exposure to DPM. Under the Proposed Amendments compared to a baseline of the Current Regulation in 2038:

- the population weighted-average cancer risk would be reduced from 12 chances per million to 1 chance per million;
- the population exposure to a potential cancer risk level of greater than 50 chances per million would be eliminated; and,
- the population that would be exposed to a potential cancer risk greater than 1 chance per million would reduce to 2 million.

In 2038 without the Proposed Amendments, in the South Coast Air Basin, about 15 million people, including 6 million people who live in DACs, are estimated to be exposed to a potential cancer risk of greater than one chance per million from exposure to DPM. Under the Proposed Amendments compared to a baseline of the Current Regulation in 2038:

- the population weighted-average cancer risk would be reduced from 10 chances per million to 1 chance per million;
- the population exposure to a potential cancer risk level of greater than 100 chances per million would be eliminated; and,
- the population that would be exposed to a potential cancer risk greater than 1 chance per million would reduce to 5 million.

In addition, the Proposed Amendments will assist California in attaining the NAAQS set by the U.S. Environmental Protection Agency (U.S. EPA) for ozone and PM2.5. Most of the emission reductions expected from the adoption of the Proposed Amendments will occur in areas with significant challenges with air quality, and reductions will assist the State to attain the NAAQS.

The following is a summary of the key provisions introduced in the Proposed Amendments.

1. In-Use and New-Build Vessel Emissions Performance Standards

Staff proposes more stringent engine emissions performance standards for NOx and particulate matter (PM). Vessel owners and operators would need to meet performance standards between 2023 and 2032 according to a schedule based on vessel category and engine model year. To meet the required emissions performance standards, vessel owners and operators could choose to repower and retrofit engines on in-use vessels or obtain a

new-build vessel. For engines rated less than or equal to 600 kilowatts (kW), the Proposed Amendments would require a performance standard equivalent to Tier 3 marine engine plus a diesel particulate filter (DPF), or Tier 4 marine or off-road engine plus a DPF if there is an available engine model certified to the Tier 4 marine or off-road engine standards by the compliance date of the engine. Engines rated greater than 600 kW would need to meet a performance standard equivalent to a Tier 4 marine or off-road engine plus a DPF. Staff is proposing a performance standard that is more stringent than the U.S. EPA standards for marine Tier 3 and marine Tier 4 engines. It is important to note that in the Proposed Amendments to the CHC Regulation, CARB is not proposing new emission standards for marine engine manufacturers selling engines in California.

2. Expanded Vessel Categories

Subjecting additional CHC vessel categories to in-use requirements would achieve additional emission reductions that are needed in the areas where CHC operate. Staff is proposing to add the following vessel categories to the in-use requirements of the Proposed Amendments: commercial passenger fishing vessels (CPFV), commercial fishing vessels, all tank barges, pilot vessels, and workboats. Including these categories will regulate 2,095 more vessels out of the approximately 3,159 CHC that are estimated to operate in Regulated California Waters (RCW) in 2023.

3. Mandates for Zero-Emission and Advanced Technologies (ZEAT)

The Proposed Amendments include ZEAT mandates where technology is more feasible: new excursion vessels would need to be zero-emission capable by 2025, and new and in-use short-run ferries to be zero-emission by 2026. In addition, CARB staff is proposing a regulatory incentive framework that would encourage adoption as ZEAT technology advancements are made in the marine sector. If a vessel owner or operator adopts ZEAT early or where not otherwise required, additional compliance time could be granted to other engines or vessels within the fleet.

4. Renewable Diesel

The Proposed Amendments would require vessels to use 99 percent or higher renewable diesel (R99) when operating in California beginning on January 1, 2023. Renewable diesel is a drop-in fuel that is already being used widely in diesel engines across the State, including those in the marine sector. The use of renewable diesel will achieve immediate NOx and PM emission reductions, resulting in health benefits for workers and residents. Additionally, substituting fossil diesel with renewable diesel will reduce the State's GHG emissions and help California achieve its climate targets.

5. Low-Use Compliance Pathway

The Current Regulation provides a low-use compliance pathway that exempts engines from in-use requirements if engine hours do not exceed an annual threshold of 80 hours for dredges and barges, and 300 hours for all other regulated in-use vessel categories. The Proposed Amendments would change this pathway to reflect the distinctions between engine tiers, in order to provide flexibility to stakeholders who have already upgraded to cleaner engines, while continuing to remove engines with the lowest emissions performance

standards. Pre-Tier 1, Tier 1, Tier 2 and Tier 3 or 4 engines will be exempted from in-use requirements if they operate below a threshold of 80, 300, 400, and 700 hours, respectively. If vessels operate in Disadvantaged Communities, the annual threshold is halved (to 40, 150, 200, and 350 hours, respectively) to ensure that emission reductions are prioritized in these areas.

6. Proposed Compliance Extensions

Staff is proposing several compliance extensions in the Proposed Amendments to allow for more time for compliance in cases of scheduling, feasibility, or infrastructure challenges. Because some in-use vessels will need to be replaced to accommodate Tier 4 engines, DPF aftertreatment, or both Tier 4 engines and DPF aftertreatment, the Proposed Amendments establish an extension that would allow operators to receive 6 additional years of compliance time if they cannot not afford a replacement by compliance dates. Staff has proposed a total of 8 years of extensions for passenger carrying vessels, including ferries, CPFVs, and excursion vessels that have engines with a first compliance deadline on or before December 31, 2024. Staff has also proposed an additional one-time, ten-year extension through 2034 for CPFVs that have replaced all onboard engines to meet Tier 3 or newer standards by the end of 2024. These extensions are in response to staff review and analysis of the impacts of the global situation that began in 2020 that may continue to impact these three categories of passenger vessels.

7. Alternative Control of Emissions

Staff is also proposing to modify the preexisting Alternative Control of Emissions (ACE) provision. The ACE currently allows and would continue to allow vessel owners and operators to comply with the Proposed Amendments through an alternative means other than directly complying with the calendar year schedule for engine or vessel compliance. Under an ACE, an applicant would be able to comply by receiving approval from the Executive Officer (EO) to pursue an alternative that includes, but is not limited to, any combination of engine modifications, exhaust treatment control, engine repowers, use of alternative fuels or additives, fleet averaging, or any other measures that, when implemented, will sufficiently reduce emissions equivalent to the emissions performance standards identified in the Proposed Amendments.

8. Facility Owner and Operator Responsibilities

Staff also proposes adding new requirements on facility owners and operators that conduct business with CHC. Facilities would be required to report information about vessels that use those facilities, which will improve data quality and compliance. Facilities owners and operators would be required to install and maintain infrastructure to support shore power that enables harbor craft auxiliary engines to operate using electricity while at dock. Facility owners and operators would be jointly responsible for assuring infrastructure is available to support ZEAT vessels, and would be required to assist vessel owners and operators as needed for the permitting, construction, installation, and maintenance of such infrastructure.

9. Administrative changes

CARB staff is proposing additional administrative changes to the program, including the addition of opacity testing, addition of vessel labeling requirements, and collection of new compliance fees.

CARB staff is proposing that all main propulsion diesel engines operating on harbor craft be required to perform opacity testing and meet applicable opacity limits whenever the test procedure is administered. If a main engine fails an opacity test, the owner or operator has 30 calendar days to repair the engine, retest, and retain records of the passed opacity test, or the engine must be taken out of service. If an auxiliary engine fails an opacity test, the owner or operator has 30 calendar days to repair the engine and notify CARB.

To increase reporting compliance, CARB Unique Vessel Identifiers (UVI) would be issued under the Proposed Amendments. All CHC would need to have their identifier affixed to the vessel by January 1, 2024.

CARB staff developed a draft fee schedule based on costs of personnel, equipment, and administration for implementation and enforcement equaling $2.1 million per year (includes currently budgeted and future personnel costs). Fees are assessed based on the number of main engines and number of vessels. Fees are not assessed for auxiliary engines operating on harbor craft.

Description of Regulatory Action

On September 21, 2021, CARB released the Notice of Public Hearing (45-Day Notice) and Staff Report: Initial Statement of Reasons for Rulemaking (Staff Report), titled "Public Hearing to Consider Proposed Amendments to the Commercial Harbor Craft Regulation," for public review, and made all supporting references available to the public. On October 1, 2021 CARB staff issued errata document which extended the 45-Day comment period from November 8, 2021, until November 15, 2021. CARB received written comments from 3,264 commenters during the 45-Day Notice comment period.

On November 19, 2021, CARB held its first public hearing to consider approving the Proposed Amendments. The Board received 16 additional written, and 95 oral comments from the public. After considering staff's presentation of the Proposed Amendments and all public comments received, Board members highlighted the need for emission reductions from CHC to meet air quality goals and protect public health. Additionally, the Board directed staff to further evaluate the proposal with respect to four areas to maximize the penetration of zero-emission and cleaner combustion technologies in the marine sector while minimizing the economic impact on CHC owners and operators, especially to small businesses and fleets owning a small number of vessels.

The Board directed CARB staff to explore these areas:

- Existing and future incentive funding programs available to CHC owners within the State;
- Pathways to streamline and lower the cost of receiving compliance extensions when installing Tier 4 engines or DPF aftertreatment is not technically and financially feasible;

- Committing to an ongoing Technology Review covering the status of zero-emission technology readiness for the marine sector,; and
- Considering a future zero-emission contingency measure that could be included as part of a future State Implementation Plan action to require more aggressive zero-emission technology mandates.

To respond to the Board's direction, CARB staff carefully reviewed the public comments, followed up with operators who submitted information into the rulemaking record, and hosted a public webinar on January 12, 2022, to receive input on staff's proposed response to Board direction.

In total since the November 19 hearing and the release of this notice, CARB staff:

- Reviewed over 3,280 written comments submitted on the docket;
- Evaluated over three hours of verbal testimony from the November 19 hearing;
- Held over 30 individual meetings with stakeholders to continue understanding operations;
- Presented to local air district board members to communicate the requirements of the Proposed Amendments, and discuss the intersection of regulatory requirements and incentive funding programs guidelines;
- Traveled in-person to meet with the Environmental Health Coalition, an environmental justice organization in San Diego, and multiple vessel operators in the CPFV, excursion, ferry, and other vessel categories to better understand operations;
- Dialoged with over 80 other stakeholders by phone and email discussing the impacts of the proposal;
- Hosted and considered feedback from a four and one-half hour public webinar on January 12, 2022; and
- Reevaluated how the California Maritime Academy (CMA) study could satisfy feasibility evaluations that are required to be performed by a third-party naval architect if vessel owners are requesting an extension as set forth by subsection (e)(12)(E)(3) for a vessel constructed with a wood or fiberglass hull.

The written responses to the Draft Environmental Analysis (EA) and the Final EA were posted for public review on March 14, 2022. On March 24, 2022, the Final EA, Response to Comments, Proposed Resolution 22-6, and recommended changes to the Proposed Amendments were presented at the second Board Hearing. At that hearing, the Board adopted Resolution 22-6.

Resolution 22-6 approved written responses to the Draft EA, certified the Final EA, and directed the Executive Officer to make the modified regulatory language and any additional conforming modifications available for public comment, with any additional supporting documents and information, for a period of at least 15 days as required by Government Code section 11346.8. The Board further directed the Executive Officer to consider written comments submitted during the public review period and make any further modifications that are appropriate available for public comment for at least 15 days. The Executive Officer was given authority to both (1) either approve or disapprove proposed changes in regulatory language under Government Code section 11346.8(c), and (2) conduct any appropriate further environmental review associated with such changes, consistent with the Board's Certified Regulatory Program regulations, at California Code of Regulations, title 17, sections 60000-60008, for those sufficiently related substantial modifications.

On May 19, 2022, a Notice of Public Availability of Modified Text and Availability of Additional Documents and Information and Proposed 15-Day Modifications to the Proposed Regulation Order were posted for a public review and comment period through June 3, 2022. The proposed 15-day changes provided an additional extension pathway option for a one-time, ten-year extension through 2034 for CPFVs that have replaced all onboard engines to meet Tier 3 or newer standards by the end of 2024. In addition, the 15-day changes clarified intended interpretation of requirements in areas where provisions were identified as potentially unclear. Staff determined that the 15-day changes did not change implementation of the Proposed Amendments in any way that affects the conclusions of the Final EA certified by the Board on March 24, 2022, therefore no additional environmental analysis was required.

On July 21, 2022, CARB submitted the Final Statement of Reasons (FSOR) for the rulemaking action entitled "Public Hearing to Consider the Proposed Amendments to the Commercial Harbor Craft Regulation" and all other rulemaking documents for the Proposed Amendments to the Office of Administrative Law (OAL) for its review and approval. On September 1, 2022, OAL issued a "Notice of Disapproval of Regulatory Action" for the Proposed Amendments for failure to comply with the "Clarity" standard of the Administrative Procedure Act. (Gov. Code, §. 11349(c)), which was further explained in OAL's "Decision of Disapproval of Regulatory Action" issued on September 8, 2022.

On October 10, 2022, a Second Notice of Public Availability of Modified Text and Availability of Additional Documents and Information and Proposed Second 15-Day Modifications to the Proposed Regulation Order were posted for a public review and comment period through October 25, 2022. The proposed Second 15-Day Modifications addressed the concerns noted by OAL in its Decision of Disapproval of Regulatory Action and provided greater clarity and enforceability to the Proposed Amendments, and were made accessible to all stakeholders and interested parties. CARB received ten written comments during the second 15-day public comment period. Staff determined that the second 15-day changes did not change implementation of the Proposed Amendments in any way that affects the conclusions of the Final EA certified by the Board on March 24, 2022, therefore no additional environmental analysis was required.

Comparable Federal Regulations:

The U.S. EPA has promulgated Tier 3 and Tier 4 emissions standards for new marine and off-road (nonroad) engines, but has not promulgated federal standards for addressing emission reductions from in-use commercial harbor craft engines. Under federal Clean Air Act (CAA) section 213, U.S. EPA is without authority to adopt in-use standards for off-road (nonroad) engines, including off-road engines used in CHC. Consequently, the Proposed Amendments do not conflict with or duplicate any federal regulations.

California is the only governmental entity in the United States authorized by the CAA, in the first instance, to adopt emission requirements for in-use off-road engines. (See Engine Manufacturers Association v. U.S. EPA 88 F3d. 1075 (D.C. Cir. 1996). Section 209(e)(1) of the CAA preempts states, including California, from adopting requirements for new off-road engines less than 175 horsepower that are used in farm or construction equipment, and new engines used in new locomotives and locomotive engines. However, the proposed amendments address off-road engines used in marine vessels, rather than those used in farm or construction equipment, or locomotives.

An Evaluation of Inconsistency or Incompatibility with Existing State Regulations (Gov. Code, § 11346.5, subd. (a)(3)(D)):

During the process of developing the proposed regulatory action, CARB conducted a search of any similar regulations on this topic and concluded these regulations are neither inconsistent nor incompatible with existing State regulations.