WSPA

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May 1, 2020

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California Air Resources Board
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sent via e-mail to: http://www.arb.ca.gov/lispub/comm/bclist.php

Re: WSPA Comments on "15-Day Changes" to CARB Proposed Control Measure for Ocean-Going Vessels at Berth

To the Clerk of the Board:

This letter supplements comments previously submitted by the Western States Petroleum Association (WSPA) on the California Air Resources Board's (CARB) Proposed Control Measure for Ocean-Going Vessels at Berth (Proposed Regulation), originally released October 15, 2019, and on the "15-Day Changes" to this original text, which were released March 26, 2020. WSPA is a non-profit trade association representing companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas and other energy supplies in California and four other western states.

WSPA is providing these comments as part of a continuing effort to provide feedback on the At Berth Regulations. We incorporate our previous comments submitted on February 15, March 29, May 30, June 14, August 15, December 3, 2019 and March 6, 2020 by reference herein.

March 6, 2020 WSPA Comment Letter

Please note that the comments that we submitted on March 6, 2020, in order to allow additional time for CARB staff to review and consider them, are submitted again as an attachment hereto for inclusion in the administrative record (*see* Tab 1). These comments outlined in specific detail a proposal to allow an alternative compliance option that would meet the same emission reduction goals in lieu of the control requirements in the Proposed Regulation, as well as proposed language to allow a feasibility study to be conducted. We are providing those comments again in response to the statement by CARB Chair Mary Nichols at the December 5, 2019 hearing on the Proposed Regulation that written comments submitted after December 19, 2019 but before the notice of 15-Day Changes will not be considered as part of the "official record." CARB December 5, 2019 Hearing Transcript ("Transcript"), Tab 2, at 150:12-14.

I. Summary of Concerns

- The 15-Day Changes completely ignore the COVID-19 pandemic and fail to account for any impacts to CARB staff's original baseline emissions or economic assumptions.

- CARB staff provide no basis for accelerating the already-unrealistic deadlines for tanker compliance by two years in the 15-Day Changes, which would create serious safety risks for tanker terminals. The 15-Day Changes also fail to address the need for a feasibility study as articulated in WSPA's March 6, 2020 letter.

- The proposed "Innovative Concepts" provisions in the 15-Day Changes are ***not*** the compliance alternative WSPA requested. WSPA was clear in its March 6, 2020 letter to CARB and in discussions with CARB staff that stakeholders need a viable compliance alternative ***in lieu of*** a requirement to install and operate at berth capture and control equipment, not a temporary ***additional*** obligation to the still-infeasible capture and control requirement. The "Innovative Concepts" provisions contain several significant limiting conditions, which strongly disincentivize funding by stranding investment and creating significant compliance risks. By structuring the "Innovative Concepts" provisions in this way, CARB essentially conveys that the only acceptable compliance option is control of at berth emissions.

- The 15-Day Changes do not address the comprehensive regulatory language revisions recommended by WSPA in its March 6, 2020 letter.

II. Overview

For the past year and a half, WSPA has repeatedly communicated and submitted in writing to CARB staff critical safety and feasibility concerns with the Proposed Regulation. For a technology to be considered proven, all engineering and process safety considerations need to be evaluated and determined feasible. The technologies identified in this rulemaking to support the expected reductions must be evaluated and deemed feasible prior to setting or accelerating any compliance date. Comments from WSPA and others have shown that the types of emissions capture and control equipment that would be required by the current Proposed Regulation have not been proven safe and feasible in real-world operations with tankers at marine terminals. These comments also have explained in detail that no proven and currently available technology exists to allow terminals to meet the proposed emissions standards by the 2027 or 2029 deadlines contained in the original Proposed Regulation.

In response to these comments, CARB staff are proposing to ***accelerate*** each of these deadlines, requiring compliance two years sooner than the deadlines CARB staff themselves had proposed and argued in favor of just four months ago. The sole reason given for advancing the deadlines is that the CARB Governing Board directed CARB staff to do so. CARB staff have pointed to no evidence in the administrative record to justify the acceleration, nor have CARB staff explained how they believe the regulated community could possibly meet the new deadlines. CARB staff also have offered no response to the undisputed information in the record showing that the lack of proven safe and feasible capture and control systems for tanker terminal visits would make implementation impossible by the **original** 2027/2029 compliance dates, let alone the **accelerated** 2025/2027 deadlines.

For that reason, the 15-Day Changes now would place tanker vessel operators and marine terminal operators in an even more dangerous position by effectively requiring them to put untested equipment and processes into operation before crucial feasibility and safety studies can be completed. Indeed, the 15-Day Changes systematically ignore all of the identified risks associated with applying unproven technologies to oil tankers by requiring Terminal and Port plans to be submitted prior to CARB's Interim Assessment. Accordingly, WSPA is compelled to respond by reiterating and supplementing our concerns arising from the infeasibility of timely compliance with the Proposed Regulation, now rendered even more infeasible by the 15-Day Changes which advance the deadlines and reduce time already insufficient for adequate feasibility and safety studies. As such, these comments (including our March 6, 2020 comments attached hereto for the record) cannot be dismissed as unrelated to the 15-Day Changes.

Pointing out the intractable feasibility concerns with the original Proposed Regulation, WSPA and other stakeholders urged CARB staff to at least allow for a viable alternative compliance path to the Regulation's capture and control requirements, permitting regulated parties to secure emissions reductions from other sources rather than through attempting to adopt unproven and potentially unsafe capture and control measures for tankers at berth. The 15-Day Changes do not provide the alternative compliance path we requested. Instead, the 15-Day Changes would adopt a limited "Innovative Concepts" provision that fails to provide a true "in lieu of" alternative to mandated implementation of (yet-unproven) at berth capture and control measures. The proposed "Innovative Concepts" would offer only a temporary substitute for at berth capture and control requirements, would set narrow locational constraints on potentially valid projects, would be subject to revocation and/or refusal to renew at CARB's unreviewable discretion, and would result in imposing unreasonable additional burdens on the regulated community. Indeed, because the 15-Day Changes would provide no relief ***at all*** from the parallel deadlines to install at berth capture and control as a CARB-approved emission control strategy (CAECS), CARB's refusal to renew an "Innovative Concept" would create a compliance trap for tanker terminals, leaving them with even fewer years to meet the already-infeasible 2029/2027 deadlines.

III. The 15-Day Changes Completely Ignore Impacts From the COVID-19 Pandemic

As an initial matter, the 15-Day Changes make no mention at all of the COVID-19 pandemic that has impacted California and the nation. Aside from providing 20 additional days for public review and comment, CARB staff propose no alteration of the At Berth Regulation or this rulemaking to account for the unprecedented social and economic disruptions caused by the pandemic.

Numerous stakeholders have joined WSPA in urging CARB to postpone this and other non-essential rulemakings in light of the worldwide disruptions caused by COVID-19. *See* Tab 3 (Letter dated March 20, 2020 from California Association of Port Authorities, Cruise Lines International Association, Pacific Merchant Shipping Association, WSPA and World Shipping Council); Tab 4 (Letter dated March 24, 2020 from International Longshoreman and Warehouse Union and California Association of Port Authorities); Tab 5 (Letter dated April 15, 2020 from California Chamber of Commerce, local chambers of commerce and other organizations to Governor Newsom); Tab 6 (Letter dated April 10, 2020 from the California Manufacturers Association and other organizations, including WSPA, to Governor Newsom); Tab 7 (Letter dated April 21, 2020 from state legislators to CARB Chair Nichols).

COVID-19 has caused a worldwide collapse of economic activity not seen since the Great Depression. The Centers for Disease Control and most leading national health organizations now estimate that social distancing restrictions will need to continue throughout the summer of 2020, even in a best-case scenario. The Federal Reserve expects year-over-year gross domestic product to plummet by 30% in the second quarter 2020. Unemployment throughout the United States is forecasted to spike by the middle of 2020, with over 26 million new unemployment claims in the last five weeks ending on April 23. Over the three weeks prior to April 23, California processed about 3.4 million unemployment claims. These claims represent about 17% of the U.S. and California workforce, respectively. *See* Letter from Brad Williams (Capitol Matrix Consulting), April 27, 2020 ("CMC Analysis") (attached at Tab 8), pp. 3-4.

As one of the global hotspots for the pandemic, California continues to undergo mass quarantines, travel bans, a statewide stay-at-home order, and the virtual halting of the fifth largest economy in the world. Governor Gavin Newsom declared a State of Emergency in California on March 4, 2020 and has since issued nearly two dozen Executive Orders waiving or altering statutory and

regulatory requirements to account for statewide response to the COVID-19 pandemic. Stakeholders affected by the Proposed Regulation are and must be focused on business continuity and the health and well-being of thousands of California citizens in their employ.

Port and terminal activities have been significantly disrupted by the pandemic, with numerous vessel visits rescheduled or cancelled, personnel availability severely restricted, capital infrastructure construction activities delayed or scrapped, and company resources redirected to emergency response and support of efforts designed to slow the spread of the coronavirus (*See* Tab 4).

In short, "every key economic assumption in the CARB estimate of the proposed regulation has been dramatically affected by the COVID-19 pandemic." CMC Analysis (Tab 8), p. 3.

Aside from providing a few weeks of additional public comment on the 15-Day Changes, CARB staff have made ***no alterations whatsoever*** to this rulemaking schedule or the Proposed Regulation itself in light of the devastating impacts of the COVID-19 crisis. Instead, CARB staff propose to tighten the compliance deadlines by two years. Even attempting to meet the new deadlines (which we believe are ultimately infeasible) would require immediate investment of resources and personnel that, as a practical matter, are unavailable in the middle of the pandemic. This is unacceptable at a time of unprecedented upheaval in California.

Attached to this comment letter is an independent analysis by Capitol Matrix Consulting (CMC) describing the unprecedented global economic impacts of COVID-19, and illustrating why CARB staff's emission projections, the Standardized Regulatory Impact Assessment ("SRIA") and the updated analysis of cost impacts in the 15-Day Changes are now outdated. The analysis concludes that "[t]he COVID-19 virus has fundamentally altered the economic landscape. The Department of Finance May 2019 economic forecast and the EIA fuel price projections, and other inputs used by CARB to develop the benefits, costs, and economic impacts of the proposed regulation are no longer credible." CMC Analysis (Tab 8), p. 6. As of April 10, the Department of Finance (DOF) has indicated a dramatic shift in its forecast, and now anticipates the California unemployment rate could peak at a rate higher than the Great Recession of 2008, and that economic softness could persist into 2020-21 and beyond depending on the pace of recovery to local, state, and national economies. *Id.*, p. 4. In an April 10 letter addressed to the state Legislature, DOF referenced a multi-year recession alternative included in its January budget and indicated that actual increases in unemployment would be much larger. *Id.* Thus, because of the pandemic, "[f]uel prices, economic output, jobs, international trade and waterborne port activity will all be sharply lower than anticipated in any economic forecast made prior to March of this year. Given the emerging expectation that recovery from the historic COVID-19-related downturn will be slow. . . we expect the economic measures will remain below the levels assumed in the CARB projections for several years to come." *Id*., p. 3. This new post-COVID-19 reality will have significant impacts on baseline emissions, estimated emissions reductions, predicted health cost savings, specific economic impacts to California ports and terminals, and the more general impacts to California's economy and the citizens who rely on it. *Id*. CARB staff should have assessed all of these post-COVID assumptions before releasing the 15-Changes. Its failure to do so is a violation of California law.

CARB staff's forecasted tanker vessel activity in the 15-Day Changes continues to be based on two sources: the 2016 Mercator report developed for the Ports of Los Angeles and Long Beach ("Ports") to assess economic outlook considering global and domestic economic factors along with competition from other port regions; and the Federal Highway Administration's Freight

Analysis Framework for Northern California ports. Both reports assume static increases in potential GDP starting in the year 2020, and do not assume any shocks to the economy. This assumed GDP growth is then used to estimate future vessel visits and vessel emissions growth. CARB staff have relied on these two reports to generate forecasts for vessel emissions through 2040 to determine the Proposed Regulation's value, currently estimated by CARB staff to be about $2.4 billion by 2040. Without revisiting expected economic and vessel activity in these regions in the wake of the COVID-19 crisis, these numbers will bear little relation to reality. California's economic activity has been affected dramatically by COVID-19 in 2020, and likely will feel effects into the next few years. For that reason, the outdated estimates being used by CARB staff now significantly overstate the At Berth Regulation's value and its potential emissions savings, while understating or completely ignoring negative impacts on the very communities the Regulation seeks to protect.

CARB staff's failure to take into account the impacts of COVID-19 in proposing the 15-Day Changes violates several requirements of California law. First, CARB staff have not discussed or even acknowledged the potential effects of the pandemic and the resulting economic freefall on stakeholders' ability to comply with the Proposed Regulation by its now-accelerated deadlines. Shipping commerce and vessel traffic have been substantially impacted by the virtual collapse of economic activity in California, and likely will feel effects from the pandemic well into 2021. The entire economic baselines of the shipping and petroleum industries are now radically different than the scenarios assumed by the SRIA released by CARB staff in August 2019 and the updated analysis of impacts on costs in Attachment B to the 15-Day Changes. California law and regulations mandate that CARB staff reassess the impacts of the Proposed Regulation in a revised SRIA, in light of these new economic realities facing the regulated industries and the California families who rely on them.

Second, CARB staff are obligated by law to reassess the impacts the pandemic may have on regulated parties to allocate sufficient resources to timely plan, construct and commission the substantial infrastructure that would be required by the Proposed Regulation. The 15-Day Changes' acceleration of compliance deadlines, discussed further below, reduces the already insufficient time for marine terminal owners and operators to safely complete all of the steps necessary to design and build control and capture facilities – even though no such real-world systems to date have been designed or demonstrated to safely work with tankers. For most California marine terminals, the ability to mobilize personnel and resources to launch major capital projects will be constrained for a considerable time. As of this date, most employees of regulated companies are still subject to stay-at-home orders, and they and their companies will be addressing the fallout of the COVID-19 crisis for months to come. CARB staff have addressed none of these concerns in the 15-Day Changes, as they are required to do under California statutes.

IV. The Accelerated Deadlines for Tankers Proposed in the 15-Day Changes are Not Feasible and Ignore the Evidence in the Record

One of the most significant provisions of the proposed 15-Day Changes involves the acceleration of implementation dates for ro-ro and tanker vessels. The 15-Day Changes propose to advance the compliance start dates for tanker vessel controls from 2027 to 2025 for vessels visiting the Ports, and from 2029 to 2027 for all remaining tanker vessels visiting California terminals. Also, updates to terminal plans for tankers now would be required in 2026 instead of 2028, and CARB's interim evaluation of tanker technology would be accelerated from June 2023 to December 2022. CARB staff cites to no evidence to support any of these accelerated deadlines in the 15-Day

Changes. The deadlines in the original Proposed Regulation were already infeasibly short, and the 15-Day Changes severely exacerbate the problem. Contrary to CARB staff's assertions, the accelerated deadlines will not result in "more emissions reductions in earlier years" and will not result in the health benefits claimed by CARB staff (*see* Notice, Attachment D), since these reductions cannot be achieved by tanker terminals by the original deadlines, let alone ones that are two years earlier.

A. The 15-Changes Fail to Address the Need for a Feasibility Study, and Would Result in Serious Safety Risks at California Marine Terminals

As noted above, WSPA and other stakeholders have provided numerous comments to CARB staff (most recently in a comment letter submitted on March 6, 2020) documenting that the types of capture and control systems intended for compliance with the Proposed Regulation have not been shown to be safe or feasible for use on tankers calling on marine terminals. For this reason, WSPA and others have explained to CARB staff that there is no evidence today that such control systems could be safely implemented for tanker terminals by the original 2029/2027 deadlines contained in the Proposed Regulation, and have repeatedly called for completion of a feasibility study before any capture and control requirements are imposed on marine terminals serving tankers.[1] These points have been substantiated time and again in the administrative record.

Ignoring the record evidence, CARB staff now propose not only to retain the requirements for marine terminals to adopt yet-unproven control systems for tanker visits, but to ***accelerate*** the deadline for implementation by two years for such visits. CARB staff have cited no evidence in the record to support this acceleration.

In fact, the record evidence strongly supports the conclusion that the original 2029/2027 implementation deadlines were unrealistic, and that now-***accelerated*** 2027/2025 deadlines would be dangerous. As the diagram in Tab 9 illustrates, oil tankers differ from container ships in several important ways, including in the fact that safety considerations are critical on a tanker given its flammable and potentially explosive cargo. *See* Tab 9 ("Stack Capture is not ready for pilot testing on tankers"). Attempting to design and construct marine terminal capture and control for oil tankers without first conducting a feasibility study would put human lives at serious risk. As WSPA and others have commented, no feasible oil tanker capture and control technology exists today. Because they carry flammable and potentially explosive cargo, tankers are subject to extremely rigorous international and industry safety guidelines, such as the International Safety Guide for Oil Tankers and Terminals ("ISGOTT"). These guidelines ensure that oil tankers all over the world can dock at terminals safely and efficiently, following uniform and expert-reviewed procedures that help to minimize the risk of sparks or other ignition sources, such as static electricity. Barges and other vessels are not permitted to approach alongside a tanker. Measures must be taken during loading and unloading to ensure that the hull does not generate a static charge due to lack of grounding. Also, California law requires oil tankers during all times of loading and unloading to maintain the ability to break away from the dock quickly (i.e., within 30 minutes) in an emergency.

In addition, during loading and unloading of oil, vessel operators must take special precautions to ensure the remaining empty cargo space does not develop an explosive atmosphere. Vessel operators must continuously fill this space with inert gas – typically, a mixture of carbon monoxide

[1] Further, WSPA has commented that if any technology is deemed to be too risky or unsafe for a port or terminal or vessel operator, that technology should be eliminated as a compliance option, and CARB should provide a sufficient amount of time for a port or terminal or vessel operator to develop a new plan without any form of penalty.

and carbon dioxide taken from the tanker boilers' exhaust gas – to ensure oxygen content remains between 3.5 to 4% and an explosive atmosphere is avoided. As loading or unloading continues, the operation of the boiler must be finely tuned to inject the precise amount of water, run the pumps at the precise rate, and fire the boiler as fast as needed to maintain the safe inert gas mix in the cargo spaces.

Failure to follow stringent safety measures in handling empty cargo space at berth can lead to catastrophic results:

- On the night of December 17, 1976, the oil tanker SS Sansinena docked in Los Angeles Harbor and unloaded some 20 million gallons of crude oil from its vessel tanks. The vessel vented its cargo tanks to the atmosphere, as was allowed at that time. The breeze was insufficient to disperse the crude oil vapors, and an ignition source on the vessel ignited them. This caused a massive explosion, killing nine people, breaking the SS Sansinena in two, and flinging pieces of the ship's deck 200 feet onshore. *See* Tom Guldner, *A crude oil tanker exploded – Why is that unusual?* (Oct. 12, 2018), https://iffmag.mdmpublishing.com/a-crude-oil-tanker-exploded-why-is-that-unusual/ (attached at Tab 10). This incident helped prompt significant changes in the rules for oil tankers at berth, including the development of strict requirements for the management of oil vapors on tankers during and following loading and unloading.

- On June 12, 2003, the tanker Chassiron suffered an explosion and fire shortly after an unloading and loading stop in Bayonne, France, killing the ship's pumpsman and ripping the deck of entire vessel open from bridgehouse to manifold. The explosion was attributed to the formation of an explosive atmosphere in the tanks, ignited by static electricity or some other mechanical form of ignition. *See* "Technical Report of the Inquiry Into the Explosion On Board the Oil Tanker Chassiron" (excerpts), pp. 4, 63-65 (http://www.bea-mer.developpement-durable.gouv.fr/IMG/pdf/RET_CHASSIRON_En_Site.pdf) (attached at Tab 11).

- On January 15, 2012, the oil tanker Doola 3 exploded shortly after offloading its cargo in South Korea, killing 11 members of the 16-member crew. The likely cause of the explosion was determined to be ignition of tank vapors by buildup of static electricity on the vessel. *See* "Industry supports calls for IGS on small tankers," Riviera Newsletters (Apr. 11, 2017) (https://www.rivieramm.com/opinion/opinion/industry-supports-calls-for-igs-on-small-tankers-29052) (attached at Tab 12).

No international or industry group has done a feasibility study to assess whether a shore-based capture and control system could be designed and implemented for oil tankers in a manner that would not compromise integrated safety systems, ship designs and procedures necessary to avoid the types of serious consequences discussed above. The location of the scrubber equipment on or near the vessel would have to either be explosion-proof or located outside of any hazardous classified areas – too far of a distance for an articulating arm – all while keeping exhaust vapors in the vapor phase and at levels needed for the proper function of the scrubbing equipment. This will present challenges for the hundreds of different vessel layouts visiting California's terminals.

Even assuming that an appropriate shore-based capture and control system could be designed and constructed, no group has assessed whether and what changes might be required on the oil tankers themselves to safely accommodate such systems. Oil tankers can have four, five or more

separate stacks for their various boilers and generators. No feasible interface has yet been developed to connect to those stacks and capture of emissions would have impacts on the mix of inert gases necessary to prevent an explosive atmosphere in the tankers' cargo spaces. Therefore, on-vessel changes would need to be researched, developed and implemented internationally to ensure that tankers operating throughout the world could safely connect to and operate with any such shore-based systems. CARB has no evidence to date that such shore-based technologies are safe or feasible, no international standard exists to design them, no guidance exists on how they could be safely operated, and no assessment has been made of the on-vessel changes that likely would be required.

Even presuming for sake of argument that some standards for shore-based capture and control for oil tankers could ***eventually*** be developed, CARB staff have provided no evidence that they could be implemented by the deadlines proposed in the 15-Day Changes. Industry typically requires five or more years to research any new safety procedure and rewrite the ISGOTT guidelines to implement it. Newly-required systems often are then phased in over a period of years to ensure smooth implementation. Oil tanker operators would then need to design the proposed on-vessel changes, and marine terminal operators would have to design the proposed shore-based system. The California Environmental Quality Act ("CEQA") and other state and local permitting reviews would need to be completed for the terminal, which can take several years. Once a terminal project is permitted, construction could take another 5-10 years, based on industry experience with other major infrastructure changes at California marine terminals. Thus, even assuming that a shore-based oil tanker capture and control system were feasible today (which it is not), that system would have no chance of being ready and permitted for operation before 2032, or potentially years later. Under the proposed 15-Day Changes, terminals could reach their implementation deadlines before the projects are even finished with ***permitting***.

Given these realities, oil tankers likely would not be in a position to safely accommodate shore-based capture and control for more than a decade. Thus, the proposed 15-Day Changes would only result in oil tankers finding terminals outside California where they would not be subject to capture and control requirements. Staff have not analyzed the economic impacts of that diverted vessel traffic to California's economy using the original 2029/2027 deadlines, and they certainly have not addressed the additional impacts that would result from moving that deadline up two years. Oil tanker vessel operators and terminals should not be asked to jeopardize the industry's safety standards to meet unrealistic regulatory deadlines for a technology that does not yet exist.

B. <u>CARB's Governing Board Directed Staff to Investigate the Feasibility of Accelerated Compliance Dates, Not Simply Impose Them</u>

The only explanation CARB staff offer for the acceleration is to concede that "[t]his change is proposed in direct response to CARB Board's request at its December 5, 2019 Governing Board hearing to accelerate implementation dates in order to achieve earlier public health benefits from the regulation." *See* Notice of Public Availability of Modified Text and Availability of Additional Documents and Information on Proposed Regulation ("15-Day Notice"), p. 7.

CARB staff appear to mischaracterize what the Board said in the December 5, 2019 Governing Board hearing. In that hearing, no member of the Board actually requested that CARB staff "accelerate implementation dates" for marine terminals hosting tankers, nor did the Board's final Resolution 19-28 from the hearing instruct CARB staff to substitute accelerated deadlines in the Proposed Regulation (the Resolution says nothing regarding any changes to the proposed compliance dates). In testimony during the hearing, some Board members did call for

accelerating the time for the interim "technology review" to determine whether the proposed requirements could be feasibly met for tankers:

Thus, at most, the Board instructed CARB staff to (1) investigate how to prioritize the "technology review" needed to assess feasibility for tankers, (2) investigate and explain ***whether*** accelerating deadlines would be a possibility, and (3) to reassess whether the existing deadlines could be realistically achieved. At no point did the Board "request [CARB staff] . . . to accelerate implementation dates," but to analyze whether such acceleration could be justified and would be feasible.

C. Information Recently Added to the Administrative Record Does Not Support Accelerated Compliance Dates

Some Board members' belief that accelerated deadlines may be possible could be attributable, at least in part, to inaccurate statements made by CARB staff and others at the December 5, 2019 Governing Board hearing on the Proposed Regulation. At that hearing, CARB staff erroneously represented to the Board that no operational and safety considerations needed to be addressed with regard to a safe tanker/shore interface and standardized operational procedures for control equipment involving a tanker and an emission capture system. We highlight three examples of such statements below and include other examples in an attachment to this letter (*see* Tab 13).

- At the December 5, 2019 Governing Board hearing, CARB staff asserted that a feasibility study was completed for tankers, that this feasibility study is fulfilled by the 2018 Technical Assessment and staff report, and that any remaining feasibility study is site-specific. However, the two documents CARB staff refer to do not reference any example of stack capture being safely and successfully applied to tankers, nor any analysis of how stack capture can be re-designed to operate safely on tankers. In fact, in these documents CARB staff have conceded that more tests and safety studies need to be performed *before* attempting to use stack capture on tanker vessels, regardless of site or location. In CARB staff's own words:

    - "Although these shore-based and barge-based emission control systems are effective at reducing PM and NOX emissions on container vessels, **more testing is needed on other vessel types, including tankers**, auto carriers, general cargo and bulk cargo." CARB Draft Technology Assessment: Ocean-Going Vessels, May 2018, p. 72 (emphasis added);

    - "**Regardless of location, safety studies need to be performed to ensure all safety considerations are met**, given that the tanker vessels carry explosive cargos." CARB Staff Report: Initial Statement of Reasons (Oct. 15, 2019), p. III-22 (emphasis added); *see also* ISOR, Appendix B (Cost Analysis) to Appendix C-1 (SRIA), p. 38 (identifying feasibility study costs for tanker terminal capture and control projects among the costs required for implementing land-based capture and control systems).

- Also, at the December 5, 2019 Governing Board hearing, CARB staff alleged that "technology manufacturers have assured CARB staff that there are engineering solutions for both ro-ro and tanker vessels." Transcript, Tab 2, at 26:10-12. While technology providers may have assured CARB staff that capture and control has proven feasible on vessels other than tankers, or that engineering solutions to enable controls on tankers

might be developed at some future date, they have not stated that these solutions ***currently*** exist. In fact, on April 16, 2019 during a CARB At Berth Regulation Working Session, a lead technology provider (Advanced Environmental Group (AEG)) stated in a presentation that the land-based system faces a number of design challenges when applied to any tanker vessel, including safety (a higher hazard level, need for safety standards and procedures, emergency protocols) and ability to design and operate a larger and more complex configuration.

- In the December 5 hearing, CARB staff suggested that shore power is widely used and claimed at various points that shore power is feasible and "demonstrated to be effective for tankers." Transcript, Tab 2, p. 37:8-9. This simply does not square with real-world practice or with the significant weight of evidence in the record. Use of shore power for tankers still faces substantial technological and investment hurdles, making meaningful reductions of at berth emissions by shore power infeasible for tankers by either the originally proposed or the accelerated compliance deadlines. Currently, there is no international engineering standard for shore power connections to tankers, nor is there any requirement for tanker vessels to be fitted with a shore power connection. Development of such a standard and retrofitting of vessels to meet that standard would take time and occur on a schedule beyond CARB's authority to mandate.[2] Tankers not equipped with shore power would be unavailable for charter to California. At terminals like Chevron's Richmond Long Wharf ("RLW"), for example, the infrastructure needs are substantial because existing electrical infrastructure cannot handle the additional load and existing terminal facilities cannot support the additional weight and footprint of shore power equipment. Implementation of shore power will be further complicated by "grid-neutral" requirements (discussed further below), given that the power to supply some terminals is a combination of grid and on-site cogeneration electricity.

CARB staff also received an October 14, 2019 letter from AEG and an October 21, 2019 letter from EnviroCare International and heard a December 5, 2019 presentation from the Coalition for a Safe Environment, discussing the state of marine control and capture technology. None of these communications support the accelerated compliance dates proposed in the 15-Day Changes:

- EnviroCare's letter discusses the feasibility to control SOx and PM from vessel exhaust gas but does not address the feasibility of capturing exhaust gases, which is a critical safety issue for oil tankers (as discussed above). Also, the EnviroCare system is not designed to remove nitrogen oxides (NOx), which is the target pollutant of the At Berth Regulation, and has conceded that "the technical challenge is to cost effectively transport the gases from the ship funnel to the emission control equipment." In contrast, WSPA has provided robust comments on the safety and feasibility concerns in attempting to capture exhaust gases from tanker vessels, and the timeframes that would be necessary to conduct a feasibility study to analyze those concerns. EnviroCare's letter does not add evidence to the record addressing these safety and feasibility concerns, and certainly

[2] Not only is there no standardization in the electricity voltage or distribution frequency between foreign vessels and United States standards, but vessels themselves are each unique and would require extensive retrofitting to add a number of new points of potential sparking (e.g., routing cables throughout the ship, mounting a switchgear and cable reels to the deck, etc.) CARB staff have provided no feasible path for tanker vessels to install this equipment in accordance with current ISGOTT safety guidelines designed to prevent fire and explosion.

does not support an acceleration of the compliance deadlines as proposed in the 15-Day Changes.

- AEG's letter speculates that any challenges for implementation of capture and control for tankers can be overcome, but does not offer any specific technical review, feasibility study or other empirical evidence to support that speculation. AEG's letter supplies no information on necessary modifications to vessel equipment to accommodate capture and control, nor does it discuss the feasibility or safety of modifying a marine terminal structure to accommodate the Ship Emissions Control Technologies (SECT) system. In fact, AEG expressed concerns about the SECT system being able to handle changes in flow rates during tanker loading and unloading, and about its current inability to accommodate tanker spark arrestor designs with existing technology. AEG also stated that vessel-specific coupling devices would need to be created for each individual ship, spark arrestor and stack diameter, but has not proposed how this could be done by the now-accelerated deadlines in the 15-Day Changes (for reference, approximately 200 unique vessels call on RLW in a three-year period).

- The Coalition for a Safe Environment's December 5, 2019 presentation focuses on the barge-based only Advanced Maritime Emissions Control System (AMECS) which has been utilized for container ship applications in POLA/POLB. The Coalition has not presented any evidence that AMECS has been designed and applied to tankers, which would require a system significantly larger than the current AMECS system. Further, during CARB staff's At Berth Working Session on April 15, 2019, the AMECS representative indicated their significant concerns with the interface with tankers from design (scale-up), timing, operability, and safety standpoints. Additional inaccuracies in the Coalition presentation are detailed in Tab 14 to this letter.

In any event, CARB staff have admitted that these accelerated deadlines will "result[] in higher costs for vessel and terminal operators" (Notice, App. B, p. B-1), but have not demonstrated that these new deadlines can be safely or feasibly achieved by tanker terminals by 2029/2027, let alone by two years sooner. These substantial changes also will require an updated SRIA and health risk assessment. Adopting the 15-Day Changes without a proper determination of feasibility, safe operation and cost-effectiveness before any requirements or deadlines are imposed on regulated parties would violate the California Health & Safety Code. Moreover, the accelerated deadlines proposed in the 15-Day Changes cannot legally be justified as "technology-forcing" regulations, since CARB staff have provided no evidence in the administrative record indicating that at berth capture and control for tankers is reasonably anticipated to exist, or likely to become feasible or cost-effective, by the compliance deadlines. CARB bears the burden of establishing that a proposed regulation can be feasibly and cost-effectively implemented in the timeframes required by the regulation. CARB has failed to meet its burden here, and the available evidence WSPA and others have provided indicates a lack of any evidence that capture, and control can be safely and feasibly implemented for tankers in the timeframes required. We again strongly urge CARB to conduct a feasibility study for tankers, as described in our March 6th letter, and publish its analysis and findings in a report before any terminal plan deadlines are enforced.

D. <u>The Draft EA Must Be Revised and Recirculated to Analyze the Environmental Consequences of Accelerated Compliance Deadlines As Required By CEQA</u>

Regarding CEQA compliance, the 15-Day Notice asserts that the proposed revisions to the regulatory text "do not change implementation of the regulation in any way that affects the

conclusions of the Draft Environmental Analysis … so no additional environmental analysis or recirculation of the analysis is required"; and that accelerating the implementation deadlines for tanker vessels "would not change the nature or extent of physical changes to the environment; it would simply result in them occurring … two years sooner." Notice, pp. 33-34.

However, the cursory and conclusory "Environmental Analysis" included in the Notice, consisting of little more than two pages (*id*., pp. 33-35), provides no support for these claims. Instead, CARB staff ignore potentially significant impacts on the physical environment associated with the accelerated compliance deadlines in the revised proposal. The Draft Environmental Analysis ("Draft EA") must be revised and recirculated to disclose and allow additional public comment on the substantially more severe environmental impacts that may result from the regulatory revision. *See also* Chevron's comments on the 15-Day Changes submitted on April 30, 2020, which address CEQA issues associated with the 15-Day Changes in greater detail. WSPA concurs with and incorporates Chevron's comments by reference.[3]

- First, as discussed above, the 15-Day Changes increase the risk of a hazardous incident such as a fire or explosion from early deployment of untested technology. The impacts on human health and safety resulting from such a hazardous incident are literally a matter of life and death. A hazardous incident also poses the threat of an oil spill, which could significantly impact the aquatic environment and the species who use or interact with that environment. As explained in WSPA's December 3, 2019 comments on the Draft EA, the document failed to disclose, let alone analyze, the serious health and safety and environmental risks associated with requiring emissions capture systems on tanker vessels. While such systems have been tested on container ships, they have not been designed, tested and proven safe for use on tankers. The "Environmental Analysis" in the 15-Day Notice fails to consider or even mention the potential for accelerated compliance deadlines for tanker vessels to exacerbate the risk of significant hazard impacts.

  As discussed at length in our prior comments, including those on the Draft EA, tanker vessels are different from container vessels and pose unique safety considerations due to larger boilers and the need to handle flammable cargoes. Numerous important safety systems are required for proper handling of these flammable cargoes to prevent a hazardous incident from occurring. One such system is the use of inert gas to reduce the oxygen content in the tanker vessel's cargo hold in order to ensure that flammable vapors

[3] The 15-Day Notice (p. 37) also references three additional documents newly added to the administrative record which "helped inform staff's opinion that there are technology solutions already available for improving shore power connections and also on-board solutions to reducing emissions from vessels at berth." The Draft EA finds that land-based capture and control systems constitute the reasonably foreseeable means of compliance for tanker vessels (Draft EA, pp. 9-10, 22). In these comments and in WSPA's previous comments, we have relied on those statements in the Draft EA, and we assume that this remains the case. Accordingly, the three additional documents on shore power and "on-board solutions" appear to be irrelevant to the feasibility of compliance for tanker vessels. If CARB staff wish to change the reasonably foreseeable means of compliance for tanker vessels – which provide the basis for environmental analysis of the Proposed Regulation (*see* CEQA Guidelines Section 15187) – the Draft EA would need to be revised to consider a different set of potentially significant impacts (including those associated with increased electrical power demand at terminals, new safety concerns raised by potential sparking sources from new wiring infrastructure on vessels, and new environmental and safety impacts from requiring different types of construction in different locations), and recirculated for additional public comment before it can be finalized.

are not ignited. The Proposed Regulation would require modifications to inert gas safety systems and other vital safety systems used at tanker terminals. However, currently there is no technology that has been shown to be safe and feasible for the stack capture and control for tanker vessels that would be needed for compliance with the regulation. The accelerated 2027 deadline introduced in the 15-Day Changes renders this problem even more acute. By increasing the likelihood that the compliance date will arrive before technical solutions are available to ensure that the new regulatory requirements will not compromise vitally needed safety systems, the 15-Day Changes increase the risk of hazardous incidents with potentially more severe impacts to human health and safety, both at the facility and in the surrounding community. Moreover, the increased risk of hazardous incidents also has the potential to harm wetlands and other sensitive habitats in the vicinity of tanker terminals, resulting in more severe impacts to biological resources.

- Second, CARB staff have not adequately evaluated impacts to biological resources, wetlands and other sensitive habitats resulting from the suite of construction projects along the shorelines that would be required to comply the Proposed Regulation, which would need to be accomplished within the accelerated deadlines of the proposed 15-Day Changes. In particular, CARB staff have not evaluated the impacts or feasibility of forcing regulated facilities to conduct construction activities rapidly to meet the advanced deadlines, while at the same time adhering to seasonal work windows designed to protect fish species. WSPA's December 2019 comments explained the deficiencies in the biological analysis in the Draft EA, and the proposed 15-Day Changes would make these deficiencies worse, by intensifying the impacts on a variety of special-status aquatic and shoreline species that CARB staff have yet to evaluate.

- Third, CARB staff have not evaluated cumulative impacts, including impacts to biological resources and other CEQA impact categories, in light of its proposed 15-Day Changes. The Notice contains one paragraph that purports to assess cumulative impacts, but this inadequate discussion does not in fact address cumulative impacts as defined by CEQA; that is, environmental impacts of other past, present and reasonably foreseeable future projects together with those of the proposed project (CEQA Guidelines 15355). Rather, the Notice states: "CARB staff do not anticipate this change [acceleration of the compliance deadlines] to have a large potential to cause cumulative impacts from other marine-related construction associated with this regulation, as no other compliance dates for ocean-going vessels or their related terminals are scheduled to go into effect during the new implementation years" and because "no significant construction is anticipated for ro-ro terminals." Notice, p. 34 (emphasis added). While this text at least claims to address the prospect of overlapping construction by multiple operators subject to the Proposed Regulation, it entirely disregards cumulative development that is not "associated with this regulation"—namely, past, present and reasonably foreseeable future residential, commercial, and industrial development along the shoreline and maritime projects occurring in bays and waterways. See also the discussion above of hazard impacts including risks to human life and past incidents.

  The altered deadlines of the 15-Day Changes not only compress and potentially intensify the severity of impacts from construction activities at facilities subject to the Proposed Regulation, but would also affect the interaction with impacts of other past, present and reasonably foreseeable cumulative projects in the shortened compliance timeframe. *See, e.g.*, Chevron's April 30 comments for some examples of specific cumulative projects which should be considered in such analysis.) As such, CARB staff's cursory statement

fails to provide the cumulative impacts analysis required by CEQA, instead improperly limiting its assessment to impacts that would occur only under CARB's own rule.

- Finally, the bullets above are only examples of project-level and cumulative impacts that can be expected to become substantially more severe as a result of the accelerated deadlines. Rather than a dismissive and unsupported blanket assertion that the compressed implementation schedule "would not change the nature or extent of physical changes to the environment; it would simply result in them occurring … two years sooner" (Notice, pp. 33-34), CARB should re-examine each of the impacts determined to be potentially significant in the Draft EA in light of the 15-Day Changes.

CARB staff must revise and recirculate the Draft EA to evaluate the heightened hazards and impacts to biological resources resulting from the Proposed Regulation and the 15-Day Changes accelerating the already-unrealistic compliance deadlines, and to conduct a proper project-specific and cumulative analysis of all categories of impacts caused by construction activities associated with the Proposed Regulation together with impacts on the same resources from construction of other, unrelated cumulative projects. These are serious omissions of crucial impact analyses required by CEQA, which must be disclosed in a recirculated Draft EA and on which stakeholders are entitled to comment, before CARB may adopt the Proposed Regulation.

V. The "Innovative Concepts" Provisions in the 15-Day Changes Do Not Provide a Compliance Alternative to Regulated Parties

Another major change proposed in the 15-Day Changes would allow the use of certain "Innovative Concepts" to meet compliance obligations. CARB staff present the "Innovative Concepts" provisions as "an alternative compliance pathway," and claim that the new provisions are proposed "in response to numerous comments received by industry members and ports." Notice, pp. 4, 20. **WSPA did not request these "Innovative Concepts" provisions.** WSPA was very clear in its March 6, 2020 letter to CARB about the changes that would be needed to implement a compliance alternative in lieu of at berth capture and control. The proposed "Innovative Concepts" provisions bear no resemblance to WSPA's proposed alternative compliance option.

As CARB staff have conceded, the provisions in question would not actually provide a functional "alternative" to compliance with at berth control and capture requirements. Rather, as envisioned by CARB staff, most or all regulated parties seeking to use the "Innovative Concepts" provisions will find themselves forced into compliance with the default at berth control requirements anyway, typically after only six years. *See* Notice of 15-Day Changes, Attachment B, Summary of Proposed 15-Day Changes and Impacts on Costs: Control Measure for Ocean-Going Vessels At Berth, p. B-3 ("staff assume a six-year period for use of an Innovative Concept in the cost analysis"). But even this CARB assessment of a six-year usage period is overly optimistic. The "Innovative Concepts" provisions contain several significant limiting conditions, which strongly disincentivize funding by stranding investment and creating significant compliance risks. By structuring the "Innovative Concepts" provisions in this way, CARB essentially conveys that the only acceptable compliance option is control of at berth emissions.

Regulated parties would need to repeatedly apply for and receive CARB approval to use an "Innovative Concept" for limited three-year terms, would need to prove that the proposed reductions will be in excess of future "business-as-usual" emissions, and would be subject to denial of renewal if CARB or an approved local AB 617 community emissions reduction plan later mandates the reduction. According to the Notice (p. 21), "[T]he three year time period is expected

to be long enough to allow the applicant a window of certainty for compliance with the rule but short enough to ensure that an innovative concept is still achieving early or excess emissions reductions." On the contrary, the 15-Day Changes provide no such "window of certainty", since approval of an Innovative Concept may be revoked with no more than a 30-day notice, or may even become ineffective without revocation and on no notice, at any time. *See* 15-Day Changes, Proposed Sections 93130.17(f) and (g).

The "Innovative Concepts" provisions in the 15-Day Changes would require participating marine terminals, by December 1, 2021, to submit an application for approval of a proposed emission reduction as an "Innovative Concept." The proposed reduction must meet a host of requirements. The proposal would need to reduce annual oxides of nitrogen (NOx), fine particulate matter (PM2.5) and reactive organic gases ("ROG") emissions by an amount at least equal to the level that would have been achieved by implementing the Proposed Regulation's at berth capture and control requirements. These reductions may only occur at the marine terminal or "within adjacent communities," or overwater within three nautical miles of the terminal. They must be in excess of any reductions already required by any legal requirement or emission reduction strategy identified in any AB 617 Community Emission Reduction Plan, and they must also "exceed any reductions that would otherwise occur in a conservative business-as-usual scenario" (defined as those conditions reasonably expected to occur in the future in the relevant area without the "Innovative Concept" emission reduction, accounting not only for current laws and regulations but also "current economic and technological trends."). *See* Notice, Attachment A, at A-57 (proposed 17 C.C.R. 93130.17(a)). As to this last requirement, the 15-Day Changes are silent as to how "business-as-usual" conditions would be determined to set a realistic baseline emissions inventory.

Far from being a true "alternative" to main-line compliance, as CARB staff conceded at the December hearing, the "Innovative Concepts" provisions would only provide a temporary delay of the inevitable need to install capture and control at marine terminals. Any "Innovative Concept" would only be approvable for maximum three-year terms, and CARB could revoke or decline to renew approval (in its unreviewable discretion) if the emission reduction at issue were to become mandated by regulation or by any CARB-approved AB 617 Community Emission Reduction Plan, or if CARB were to decide that the "business-as-usual" trend eventually would have resulted in the reduction anyway.[4] *See id.* If an "Innovative Concept" were to be revoked or renewal denied, a regulated marine terminal could be in imminent or immediate noncompliance, with no identifiable feasible path to compliance for tanker vessels. This would result in a continuously moving compliance target that will inevitably end in noncompliance. Once an "Innovative Concept" approval is revoked or renewal is denied, the terminal will have to identify and develop new "Innovative Concept" projects to avoid being required to install infeasible capture and control equipment. Even if a new "Innovative Concept" were identified, the 15-Day Changes provide no defined period of time to design, permit and implement it. Eventually, the pool of reasonably available reductions that could qualify as an "Innovative Concept" will be exhausted, leaving the terminal unable to avoid noncompliance. Ironically, the proposed "Innovative Concept" provisions would actually ***stifle*** innovation, as few terminals would commit the engineering, permitting,

[4] CARB staff's "Summary of Proposed 15-Day Changes and Impacts on Costs" also assumes that the average approved "Innovative Concept" would only remain in place for six years, as CARB staff expect future regulations to require many of the types of reductions regulated facilities would seek to use as an "Innovative Concept." *See* Notice, Att. B, p. B-3.

construction timelines, capital and manpower needed to develop an "Innovative Concept" if it eventually will become a stranded investment.

With any proposed "Innovative Concept" emissions reductions limited to maximum three-year terms, and subject to revocation or non-renewal at any time if and when CARB, any other government agency, or an AB 617 community decides to simply require them (as CARB expects is likely to happen), regulated marine terminals could not rely on an "Innovative Concept" as a true "alternative" to compliance with at berth capture and control requirements. While CARB staff assume that terminals would make use of the "Innovative Concept" provisions, as proposed, those provisions offer little incentive for companies to make significant investments in emissions reductions that would provide, at best, only temporary relief from the primary at berth capture and control requirements.

The "Innovative Concept" provisions also suffer from several other deficiencies that limit their usefulness to regulated parties and disincentivize their use:

- Regulated parties should not be immediately disqualified from using an "Innovative Concept" and required to provide new reductions if the "Innovative Concept" becomes regulated. This contradicts the principle under California law that emission reduction credits must be real, permanent, quantifiable, enforceable and surplus at the time they are initially generated, based on the laws and regulations then in effect. *See* Cal. Health & Safety Code 39607.5; 17 C.C.R. 91501(i). Emissions credits are not retroactively disqualified, or new reductions required, if some of those credited reductions become regulated at some point in the future. Indeed, the 15-Day Changes would not retroactively require new reductions from regulated sources if future federal regulations achieve the emissions savings of the At Berth Regulation. Moreover, any other at berth CARB Approved Emission Control Strategy (CAECS) would involve a one-time operator investment resulting in a certain and creditable emissions reduction at the terminal or port. We would urge CARB staff to remove this unnecessary disparity between the CAECS compliance option and the proposed "Innovative Concept" provisions, and at least harmonize the "Innovative Concept" provisions to allow a more certain and permanent alternative to compliance with capture and control. At the very least, CARB staff should ensure that "Innovative Concept" reductions that were not already legally required at the time of their approval do not lose their "Innovative Concept" status if they later become legally required.

- The proposed "Innovative Concepts" language in the 15-Day Changes also would create a fundamental unfairness to regulated parties funding early and ongoing emissions reductions (e.g., funding early replacement of tugboat engines) by ultimately crediting the future-regulated source with the benefit of those reductions, rather than the regulated party who originally paid for the reduction. It is beyond question that early funding of emissions reductions not currently required by law reduces the future emissions baseline, which then allows less burden to be placed on other sources in the inventory for reductions. This conflicts with the way CARB has addressed early reductions in other contexts such as AB 32, where early reductions were immediately credited to the party funding them regardless of whether those reductions eventually became required by law.

- The 15-Day Changes would require emissions reductions from an "Innovative Concept" to be annually reported and compared to reductions that would be achieved from controlling at berth emissions through capture and control. This essentially imposes an

ever-changing annual mass emission reduction requirement, based on terminal activity (and requires a difficult assessment of what "business-as-usual" activity would have been without the "Innovative Concept"). In contrast, a CAECS does not need to meet an annual mass reduction requirement, but simply requires the source to achieve a control requirement that is independent of source activity. An "Innovative Concept" should be held to the same CAECS standard and only require implementing a control requirement that is independent of source activity, rather than being held to a changing annual mass emissions target.

- Permanent reductions should not require a reapplication for qualification every three years, given that the annual verification process will already confirm that those reductions are real, permanent, quantifiable, enforceable and surplus.

- Limiting the location of "Innovative Concept" emissions reductions only to "adjacent" communities may have unintended consequences. Neither "adjacent" nor "community" are defined in the Proposed Regulation, so it is unclear how close an area would need to be in order to be deemed "adjacent," and where the boundaries of that area would end. Reductions in an "adjacent" nearby community impacted by terminal-area emissions, but that is not immediately bordering the port or terminal, could be needlessly excluded (even if they benefit that area). Also, a nearby AB 617 community may not be sure how to account for emissions reductions from "Innovative Concept" projects, and whether such reductions would need to be required by its Community Emissions Reduction Plan. WSPA recommends changing this criterion to "within five miles of the terminal or port," in order to eliminate the ambiguous term "adjacent community" and strike a reasonable balance between distance from the terminal/port and a large enough area from which emissions reductions could still benefit communities affected by terminal/port-area emissions.

- Limiting qualifying reductions from tankers to distances no greater than 3 nautical miles from a port or terminal is unnecessary and conflicts with the benefits accounted for within the much larger area defined by CARB's Fuel Sulfur And Other Operational Requirements For Ocean Going Vessels Within California Waters And 24 Nautical Miles of the California Baseline (13 Cal. Code Regs. § 2299.2) (Fuel Sulfur Regulation). The air basins defined in the Fuel Sulfur Regulation are nearly identical to those designated in the Health Risk Assessment (HRA) for the Proposed Regulation.[5] CARB staff should allow PM, NOx and ROG reductions in the wider area defined by the Fuel Sulfur Regulation to also qualify for credit as an "Innovative Concept."

- The inability to obtain approval for an alternative reduction funded partially with public incentives does not make practical sense. CARB directed staff to craft an Innovative Concept option that "meets or exceeds" reductions from compliance with the Proposed Regulation. Under that rationale, even if a regulated facility decides to apply public incentive funds to partially fund an Innovative Concept, those emissions reductions should be credited if they would not have happened but for the offer of coverage as an "Innovative Concept," and exceed the reductions that would have been achieved through complying with the capture and control requirements of the Proposed Regulation.

- The 15-Day Changes would require that reductions from an "Innovative Concept" be calculated using the actual data evidencing that reduction (i.e., a "business-as usual"

[5] https://ww3.arb.ca.gov/regact/2008/fuelogv08/appe2fuel.pdf

emission baseline minus the actual emissions under the "Innovative Concept"). But the proposed regulatory language would then compare those "Innovative Concept" reductions to at berth emissions derived from default emission factors. This is an unnecessary disparity in emissions estimation methods and using default emission factors to estimate at berth emissions does not account for voluntary upgrades to vessel emission sources. To remedy this disparity, the proposed section 93130.17(d)(1)(B) should allow the option to calculate at berth emission reductions using best available information rather than mandating use of emission factors.

- The proposed December 2021 deadline for any "Innovative Concept" to be included in Port/Terminal Plans is too soon for regulated parties to have any meaningful plan for such proposed reductions ready, given the uncertainties listed above. It is also inconsistent with language in the Notice specifying that "[a]pplications for innovative concepts are due on or before terminal plan and port plan due dates," given that proposed Section 93130.14(a)(2) provides that final revised terminal plan submittals are not even due until 2024 for ports and 2026 for all other tanker terminals. The 2021 "Innovative Concept" deadline should be changed to match the deadlines for revised terminal plans in Section 93130.14(a)(2).

- The "Innovative Concept" provisions also should clearly provide that port and terminal operators with an approved terminal plan containing an "Innovative Concept" or other CAECS should be entitled to rely on that approved "Innovative Concept" or CAECS completely for compliance with the Proposed Regulation, and not ***also*** be required to rely on another compliance option (such as the remediation fund option) during the time that the "Innovative Concept" is being constructed and implemented. Failing to clarify these risks unfairly penalizing entities that receive approval for and commit in good faith to a valid CAECS or "Innovative Concept," either of which could take upwards of a decade to complete

- WSPA recommends CARB staff further revise the "Innovative Concepts" in the 15-Day Changes to reflect the proposal in WSPA's March 6, 2020 comment letter, specifically the key provisions addressing how reductions from an "Innovative Concept" are determined to be equivalent, where they can occur, and which regulations they need to be in excess of.

    - WSPA's proposal for a one-time demonstration of equivalent reductions between an "Innovative Concept" and CAECS using a 2016 baseline year is superior to the proposed 15-Day Changes language because:

        - The proposal uses ARB's 2016 baseline (or an alternative subject to ARB approval), which was the foundation for determining an acceptable amount of annual reductions from the Proposed Regulation.

        - By having a one-time equivalency comparison, the regulated community would be afforded compliance certainty to incentivize investment.

        - By having an ongoing annual demonstration that emission reduction measures are in place and properly operating, there would be assurance that emission reductions are occurring.

- Like CAECS, WSPA's proposed language imposes a compliance requirement on an "Innovative Concept" that is independent of source activity, ensuring that an "Innovative Concept" is not chasing a changing annual mass emissions target.

- WSPA's proposal to allow calculation of uncontrolled at berth emissions using best available information avoids the inaccuracy of the default emissions factors mandated by proposed Section 93130.5(d)(1)-(2) in cases where vessel operators have voluntarily upgraded ship engines to cleaner engines.

- WSPA's proposal to at least allow reductions from Innovative Concepts to occur within five miles of the port/terminal and within California waters, if not within 24 nautical miles as discussed above, is superior to the language proposed in the 15-Day Changes. A five-mile limit strikes a balance between distance from the terminal/port and a large enough area from which to achieve emissions reduction. A fixed distance also recognizes that air quality benefits can change with meteorology and are not bound by "community" or city boundaries.

- WSPA's proposal to require reductions from "Innovative Concepts" to be specifically in excess of United States law and regulations is superior to the language proposed in the 15-Day Changes. Operators in California are presumed to be familiar with United States federal and state laws and regulations, but are not always versed in the international regulations that may apply at various ports of all throughout the world (especially if the vessels do not normally call on those ports). In setting the emission reduction requirements for CAECS, CARB staff have not disallowed emissions reductions that might be required by international regulations; it is sufficient if such reductions are not already required under United States federal or state laws or regulations.

VI. The Amended "Interim Evaluation" Provisions Still Do Not Provide Any Relief for Regulated Parties and Do Not Meet CARB's Obligation to Prove Feasibility Before Imposing Regulatory Requirements

The 15-Day Changes also propose amendments to the requirement that CARB staff conduct an "interim evaluation" of new control technologies, accelerating the deadline for that evaluation by six months to December 1, 2022 and specifically requiring review of "the information provided by the port and terminal plans" and "other public information provided to CARB including terminal specific engineering evaluations, logistical considerations, public engagement, and independent studies that inform the implementation timeline." *See* Notice, Att. A, p. A-46 (proposed 17 C.C.R. 93130.14(d).

Even as amended, however, the "interim evaluation" provision is no substitute for conducting a proper feasibility study before mandating a control strategy, not after. These amendments do nothing to relieve facility operators of the Proposed Regulation's infeasible emissions reduction requirements, and they still do not require CARB to conduct the feasibility study necessary to assess the safety and feasibility of installing the very capture and control systems required by the Proposed Regulation. In our March 6, 2020 comment letter to the Board, WSPA reinforced the need for a proper feasibility study for stack capture and control systems on tankers, and proposed redlines that described the minimum elements that should be required as a part of any proposed

"interim evaluation." Still, with or without an "interim evaluation" ***after*** adoption of the Proposed Regulation, a feasibility study is still needed ***before*** any regulation is adopted, and likely would take approximately three years. With the now-accelerated deadline of December 2022 for an interim evaluation, there is no way that interim evaluation could possibly be informed by a full and complete feasibility study or could itself seriously evaluate potential technological feasibility concerns created by the Proposed Regulation.[6]

Indeed, some Board members have made clear that they do not view the "interim evaluation" provisions as ***any*** serious restriction on proceeding rapidly with the Proposed Regulation. In responding to a discussion by Board member Gioia about the importance of the interim evaluation to stakeholders, Chair Nichols replied that "by signaling that we're going to do a review in 2023, are we incentivizing people to just not do anything until 2023? . . . That would be obviously the wrong direction to go in . . . .So I hope we have some understanding of what exactly is going to start to happen the minute this gets underway." These statements illustrate the Governing Board's and CARB staff's understanding of the interim evaluation as a separate opportunity for ***additional*** future regulation of at berth activity, not as a limit on the proposed standards already in the rule.

Moreover, the 15-Day Changes now also allow CARB staff to recommend the Board either defer or *advance* compliance deadlines "backward or forward in time" based on the findings of the interim evaluation. *See* 15-Day Changes, Proposed Section 93130.14(d). Though there is little risk that a full and fair evaluation would support advancing the deadlines still further, with an even shorter compliance period remaining, the inclusion of this language eliminates any "window of certainty."

VII. The 15-Day Changes to the Proposed Regulation's CAECS Provisions Fail to Address the Counterproductive "Grid-Neutral" Requirement

Finally, the "grid-neutral" provisions in proposed Section 93130.5(c) and (d) in the 15-Day Changes would impose unnecessary new requirements on any CAECS requiring provision of power. Some terminal operators currently draw power from a combination of grid and on-site cogeneration power. To meet the proposed "grid-neutral" requirement, these operators would need to isolate the power supply for the CAECS to pull directly and ***only*** from the grid, which adds unnecessary project complexity and is not a cost-effective way to reduce GHG emissions.

WSPA believes the grid-neutral requirement in the proposed 15-Day Changes is unnecessary. A market-based incentive to reduce GHG emissions from a CAECS already exists through the Cap-and-Trade Program, and the value of auctioned allowances is used by the state to further mitigate GHG emissions that might be generated by a CAECS. Additionally, a grid-neutral requirement drives facilities away from on-site cogeneration, which puts facilities at greater risk from Public Safety Power Shutoff events (which tend to drive facilities towards on-site power generation). For these reasons, this requirement should be removed from the 15-Day Changes. If CARB staff are concerned about impacts from a temporary power source (e.g., diesel engines) needed to power a CAECS, the 15-Day Changes should simply specify that CAECS may not be powered by those temporary power sources of concern.

[6] In addition, the new provisions requiring CARB staff to "consider" public information and studies they receive do not create any new duty for CARB staff, and do not commit CARB staff to do anything more than report their findings to the Board and make recommendations for possible future regulatory amendments.

We apologize for the length of this 15-Day Changes comment letter, but we feel we are given no alternative due to the extensive unresolved issues in this rulemaking. Our hope was that by 1) working together through numerous meetings, 2) conducting visits to various facilities to understand the complexities, unfeasibility, and safety concerns these regulations pose, 3) providing seven sets of comment letters dating back to February of 2019 summarizing these concerns, and 4) working hard on an alternative compliance option that achieves the same emission reductions, would have yielded a different and better outcome.

CARB has historically stood on a long-standing performance-based philosophy - setting the emission reduction targets and allowing industry and business to figure out the most cost-effective and safe way to meet those targets. This regulation unfortunately deviates from this historical approach as it does not address the need for a feasibility study, poses unacceptable safety risks, picks a particular technology which is unproven, unsafe, and extremely costly which will not be available within the specified timelines, proposed at a time with what appears to be little acknowledgement of the unprecedented social and economic disruptions caused by the pandemic, and without recognizing a viable alternative pathway that industry worked hard to develop to meet the emission reductions the regulation attempts to achieve. CARB did, most recently, put forth an Innovative Concept but unfortunately it does not provide a functional alternative to compliance with at berth control and capture requirements, thus disincentivizing its use.

WSPA had hoped for a win-win solution for meeting the health goals of the communities with a performance based emission reduction pathway. We are now hopeful perhaps we can resume discussions to meet that mutual goal. Please feel free to contact me if I can provide any clarifications or answers any questions.

Sincerely,

Attachments

cc: CARB Governing Board Members
Governor Gavin Newsom
CalEPA Secretary Jared Blumenfeld

Western States Petroleum Association
Comments on 15-Day Changes
to At Berth Regulation

List of Attachments

Tab	Document
1	WSPA Comment Letter of March 6, 2020
2	CARB December 5, 2019 Hearing Transcript (excerpts)
3	Letter dated March 20, 2020 from California Association of Port Authorities, Cruise Lines International Association, Pacific Merchant Shipping Association, WSPA and World Shipping Council to Jared Blumenfeld (CalEPA) and Mary Nichols (CARB).
4	Letter dated March 24, 2020 from International Longshoreman and Warehouse Union and California Association of Port Authorities to Jared Blumenfeld (CalEPA) and Mary Nichols (CARB).
5	Letter dated April 15, 2020 from California Chamber of Commerce, local chambers of commerce and other organizations to Governor Newsom
6	Letter dated April 10, 2020 from the California Manufacturers Association and other organizations, including WSPA, to Governor Newsom
7	Letter dated April 21, 2020 from state legislators to Mary Nichols (CARB)
8	Letter dated April 27, 2020 from Brad Williams (Capitol Matrix Consulting) to Catherine Reheis-Boyd (WSPA)
9	WSPA document, "Stack Capture is not ready for pilot testing on tankers."
10	Tom Guldner, *A crude oil tanker exploded – Why is that unusual?* Int'l Fire Fighter Magazine (Oct. 12, 2018), https://iffmag.mdmpublishing.com/a-crude-oil-tanker-exploded-why-is-that-unusual/
11	France Secretariat D'Etat Aux Transports et a La Mer, Bureau enquête — accidents / mer (BEAmer), "Technical Report of the Inquiry Into the Explosion On Board the Oil Tanker Chassiron" (excerpts) (http://www.bea-mer.developpement-durable.gouv.fr/IMG/pdf/RET_CHASSIRON_En_Site.pdf)
12	"Industry supports calls for IGS on small tankers," Riviera Newsletters (Apr. 11, 2017) (https://www.rivieramm.com/opinion/opinion/industry-supports-calls-for-igs-on-small-tankers-29052)
13	WSPA document, "List of Inaccurate Staff and Public Statements, CARB Hearing on At Berth Rule – Dec. 5, 2019."
14	WSPA document, "Response to Coalition for Safe Environment Presentation."

WSPA

Tab 1

Catherine H. Reheis-Boyd
President

March 6, 2020

Mr. Richard Corey
California Air Resources Board
1001 I Street
Sacramento, California 95814

sent via email to Richard.Corey@arb.ca.gov

Re: WSPA Supplemental Comments on and Suggested Red Line of CARB Proposed Control Measure for Ocean-Going Vessels at Berth

Dear Richard:

This letter supplements comments previously submitted by the Western States Petroleum Association (WSPA) on the California Air Resources Board's (CARB) Proposed Control Measure for Ocean-Going Vessels at Berth (Proposed Regulation), released October 15, 2019, and its accompanying Draft Environmental Analysis (Draft EA), released October 1, 2019. WSPA is a non-profit trade association representing companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas and other energy supplies in California and four other western states.

WSPA is providing these comments as part of a continuing effort to provide feedback on the At Berth Regulations. We incorporate our previous comments submitted on February 15, March 29, May 30, June 14, August 15, 2019, and December 3, 2019 by reference herein.

The safety and well-being of our members' employees and the communities in which they operate is of critical importance to our members and their facilities. As you know, WSPA strongly supports CARB's air emission reduction goals and improving the air quality in communities where our members operate. We continue to have concerns, however, that the Proposed Regulation still does not adequately address potential safety and feasibility issues associated with the emissions capture and control equipment that would be required for tanker terminals. Like CARB, WSPA members feel strongly that the Proposed Regulation should not create an unacceptable risk of a catastrophic explosion or other dangerous incident.

Since workshops on the Proposed Regulation began, WSPA has documented the recognized safety and feasibility problems associated with proposed tanker emission controls, urging CARB to partner with industry to first conduct a feasibility study. WSPA has also called on CARB staff to add to the Proposed Regulation an alternative compliance option that would achieve equivalent emission reductions from other sources.

To help address these issues, WSPA is attaching to this letter a suggested redline of the Proposed Regulation that clarifies additional provisions regarding the need for a feasibility study prior to the imposition of deadlines, and an alternative compliance option that would enable a more feasible path to compliance while ensuring the health and safety of the communities in which we operate. We believe that the propose changes improve the Proposed Regulation and help ensure that any measures required for marine terminals and tankers achieve important emissions reductions in a feasible, safe and cost-effective way.

1. **Any emission control strategy for tanker vessels must first be demonstrated feasible and safe in the types of facilities and marine terminals where it is proposed.**

Tankers have unique characteristics and safety concerns that distinguish them from other marine vessels. Tankers have very large boilers necessary to drive transfers of flammable liquid cargo. Indeed, the Proposed Regulation singles out tanker boilers as the sole category of boilers to be regulated on any at-berth vessel. For these boilers, CARB staff have acknowledged in the Initial Statement of Reasons (ISOR) that "[s]hore power . . . cannot be used to power boilers, because boilers are configured to operate on electricity. As such, shore power does not reduce tanker boiler emissions." ISOR, p. ES-23.

Additional challenges with equipping tanker vessels with shore power include adoption by the international fleet given a lack of international requirements and standards to allow for a vessel to connect, to a grid, at multiple locations. Further, the time required to "turn over" the fleet of tankers to be equipped with this capability would be extensive. Accordingly, CARB staff have concluded that the most suitable control strategy would be stack capture and control ("stack capture").

However, attempting to control tanker boilers with stack capture introduces significant risk, including risk of explosion that precludes testing the equipment on actual tankers. CARB staff may not have considered a stack capture system on an actual tanker, but instead may have only looked at stack capture systems that are used on *container* vessels in POLA and POLB, and may have concluded that those systems would work safely and feasibly on tanker vessels because they worked on container vessels. We are concerned that this conclusion does not contemplate the unique operations and safety considerations that exist for tanker boilers, including the following:

- Tanker boilers are required by regulation to route their exhaust gas to the cargo hold, in varying amounts, to make the vapor space in the cargo hold safe from explosion. Extensive engineering studies are needed to determine if and how stack capture and control can be designed and operated without impairing this safeguard or violating existing safety regulations.

- Capturing tanker boiler exhaust gas without a properly engineered and tested control mechanism runs the risk of static electricity generation, electrostatic discharge, and creating a potential explosive condition on a vessel filled with flammable and explosive liquid.

- There are no international or domestic standards or safety guidelines specifying how a stack capture and control mechanism would be safely managed or maintained for oil tankers. The international tanker fleet consists of a large variety of ships, mostly operated by third parties, with a complex mix of boiler configurations. All types of connections and interfaces between tankers and terminals must be designed to engineering standards, rules and guidelines from regulators (USCG, Classification Societies) and industry (Oil Companies International Marine Forum (OCIMF), International Safety Guide for Oil Tankers and Terminals (ISGOTT), International Marine Organization (IMO)). The Proposed Regulation would require installation of capture and control systems on tankers with no currently available guidance on how that could be done safely or feasibly.

Thus, before any actual pilot testing can be conducted, a feasibility study needs to be conducted to fully take into account these and other operational and safety considerations, including the

need for development of rules and standards in order to design a safe interface and operational procedures for any control equipment between an oil tanker and an emissions capture system. We appreciate that CARB staff, in its staff report, have already recognized that more tests and safety studies need to be performed before attempting to use stack capture on tanker vessels, regardless of site or location. Also, as CARB staff heard from a lead technology provider in the April 16, 2019 CARB At Berth Working Session, a land-based system faces a number of design challenges when applied to any tanker vessel, including safety (a higher hazard level, need for safety standards and procedures, emergency protocols) and ability to design and operate a larger and more complex configuration. Vessel operators, mostly third-party, will not allow the connection of equipment that is not regulated, classified, and/or certified to design and safety standards recognized by regulators and industry.

We respectfully request CARB to conduct a feasibility study before any terminal plan deadlines prior to 2023 are enforced. This feasibility study would identify the key criteria to demonstrate the operability and safety of stack capture on tankers, and require the engineering analysis of stack capture designs against these criteria prior to conducting any pilot testing program. In the attached redlined version of the Proposed Regulation, we have proposed changes that would address the need for a feasibility study. WSPA respectfully requests CARB to incorporate these redlines into a *revision of the Proposed Regulation.*

2. **The Proposed Regulation should include an alternative compliance option to achieve equivalent emission reductions.**

During the January 30, 2020 webinar on the Proposed Regulation, CARB staff indicated that they are working on including an “alternative” compliance option to allow regulated facilities to reduce emissions from sources other than vessels at-berth. We believe such an “alternative” option must provide sources a way to to achieve similar emissions reductions to those anticipated by the Proposed Regulation, but through alternative methods ***in lieu of*** those capture and control requirements specified in the Proposed Regulation.

If an alternative compliance option can reduce emissions in communities adjacent to ports in an amount equivalent to the Proposed Regulation and by the currently proposed timelines, then the intent of the Proposed Regulation should be fulfilled, and there should be no additional requirements or limitations imposed on the alternative emission reductions.

In the attached redlines to the Proposed Regulation, WSPA has suggested revisions that would incorporate a workable example of the alternative compliance option described above. If available, an alternative emission reduction option would allow operators the ability to achieve the same air quality objectives as those targeted by the standards in the Proposed Regulation, in the same timeframe or earlier. It is important that operators be given the ability to achieve the same air quality objectives through alternative means, given the differences between operators, berths, etc.

WSPA commends CARB’s important ongoing work to identify and achieve real-world health benefits from feasible and cost-effective emissions reduction measures in communities impacted by air pollution. Those health benefits simply will not be achieved if proposed regulations are not feasible, and further dangerous risks of harm from fire or explosion could be created if the regulation proceeds forward without properly assessing the safety of the proposed requirements. Because California law requires a formal feasibility determination before a regulation is adopted, WSPA again respectfully requests staff to reassess the Proposed Regulation, provide for a

feasibility evaluation study before imposing any enforceable requirements on stakeholders, and revise the regulatory implementation in accordance with the findings of the feasibility evaluation study.

WSPA appreciates this opportunity to comment on the Proposed Regulation and strongly supports CARB's air emission reduction goals and improving the air quality in communities where our members operate. We appreciate the ongoing dialogue with you and staff on safety and other key feasibility issues associated with the emissions capture and control system that would be required for tanker terminals.

If you have any questions, please contact me at this office.

Sincerely,

Attachment

CC: CARB Governing Board members

Attachment

APPENDIX A [Official] PROPOSED

REGULATION ORDER

Amend title 13, division 3, chapter 5.1, section 2299.3; and title 17, division 3, chapter 1, subchapter 7.5, section 93118.3; California Code of Regulations (CCR), and

Adopt new title 17, division 3, chapter 1, subchapter 7.5, sections 93130-93130.20, CCR, to read as follows:

(Note: The proposed amendments to title 13, section 2299.3 and title 17, section 93118.3 are shown in underline to indicate additions and strikeout to indicate deletions from the existing regulatory text. The symbol "***" means that intervening text not amended is not shown. The entire text of sections 93130 through 93130.20 set forth below is new language in "normal type" proposed to be added to title 17, CCR.)

Section 2299.3. Airborne Toxic Control Measure for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At-Berth in a California Port.

***

(c) On January 1, 2021, section 93118.3 of title 17 of the California Code of Regulations shall be superseded by sections 93130 through 93130.20 of title 17 of the California Code of Regulations, as specified in section 93130. However, if sections 93130 through 93130.20 collectively are repealed or deemed invalid in their entirety by a final court decision, the requirements of section 93118.3 of title 17 of the California Code of Regulations shall again become operative. This subsection shall not be construed as expanding or limiting either the application or requirements of sections 93130 through 93130.20, title 17, CCR, but is intended to alert affected persons of the requirements regarding the operation of auxiliary diesel engines on ocean-going vessels at-berth in a California port and other provisions in that section.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

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

***

(b) Applicability and General Exemptions.

***

(4) On January 1, 2021, this section 93118.3, and section 2299.3 of title 13 of the California Code of Regulations, shall be superseded by sections 93130 through 93130.20 of title 17 of the California Code of Regulations, as specified in section 93130. However, if sections 93130 through 93130.20 collectively are repealed or deemed invalid in their entirety by a final court decision, the requirements of section 93118.3 of title 17 and section 2299.3 of title 13 of the California Code of Regulations shall again become operative. This section shall not be construed as expanding or limiting either the application or requirements of sections 93130 through 93130.20, title 17, CCR, but is intended to alert affected persons of the state's requirements regarding ocean-going vessels, ports, terminals, berths, and emission control strategies for ocean-going vessels.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130. Control Measure for Ocean-Going Vessels At Berth.

The Control Measure for Ocean-Going Vessels At Berth is set forth in sections 93130 through 93130.20, title 17, California Code of Regulations, and is referenced as the "Control Measure" within those sections.

On January 1, 2021, the requirements of this Control Measure shall supersede the requirements of section 93118.3 of title 17 and section 2299.3 of title 13 of the California Code of Regulations. However, the reporting and recordkeeping requirements of section 93118.3 (g) of title 17 shall remain in effect for compliance years through 2020. The annual statements of compliance for 2020 in section 93118.3 (g)(1)(A)(2) and (g)(2)(A)(3) are still due to the Executive Officer on March 1, 2021. Annual wharfinger data from the ports under section 93118.3 (g)(3) is still due to the Executive Officer on April 1, 2021. Compliance records in section 93118.3 (g)(1)(B), (g)(2)(B), and (g)(3)(B) are still required to be maintained for 5 years, through December 31, 2025.

As specified in section 93130.20, the individual provisions in this Control Measure are severable. However, if sections 93130 through 93130.20 collectively are repealed or deemed invalid in their entirety by a final court decision, the requirements of section 93118.3 of title 17 and section 2299.3 of title 13 of the California Code of Regulations shall again become operative.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.1. Purpose and Intent.

The purpose of this Control Measure is to reduce oxides of nitrogen (NOx), reactive organic gasses (ROG), particulate matter (PM), diesel particulate matter (DPM), and greenhouse gas (GHG) emissions from ocean-going vessels while docked at berth at California ports. This Control Measure also ensures that

ocean-going vessels do not create excess visible emissions. California's ocean-going vessel operations are largely situated in and around at-risk communities that directly benefit from localized reductions of NOx and PM. This contributes to meeting community health goals set forth in Assembly Bill 617 (Garcia, Stats. 2017, ch. 136). Furthermore, NOx and PM emission reductions contribute to meeting California's State Implementation Plan obligations for attainment, and further CARB's obligations under sections 39660 et seq. and 43013 et seq. of the Health & Safety Code. Additionally, reductions from shore power have a benefit of reducing GHG emissions. This contributes to meeting California's GHG emission reduction targets established in Assembly Bill 32 (Nunez, Stats. 2006, ch. 488) and Senate Bill 32 (Pavley, Stats. 2016, ch. 249).

The intent of this Control Measure is to ensure that emissions from ocean-going vessels are reduced using a California Air Resources Board (CARB) approved emission control strategy to control PM, NOx, and ROG emissions at berth without increasing overall GHG emissions from this Control Measure, and that every ocean-going vessel meets visible emission standards at berth and at anchor. All parties necessary to achieving emission reductions from ocean-going vessels at berth have responsibilities and requirements under this Control Measure including but not limited to vessel operators, terminal operators, ports, and operators of CARB approved emission control strategies.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.2. Section Summary, and Definitions.

(a) Section summary.

(b) Definitions.

The definitions in Health and Safety Code sections 39010 through 39060 shall apply to this Control Measure, except as otherwise specified in this section.

(1) "Alternative Control Technologies" means technologies, techniques, or measures that reduce the emissions of NOx, PM, ROG, or GHG from an auxiliary engine and/or tanker auxiliary boiler other than shutting it down and operating on shore power.

(2) "Anchorage" means a vessel's allotted place to moor in place or drop anchor in California waters.

(3) "Applicant" means any person who requests an approval from CARB for an emission control strategy.

(4) "Application" means a formal request from an applicant using the process outlined in section 93130.5 of this Control Measure.

(5) "Articulated Tug Barge" means a tanker barge that is mechanically linked with a paired tug that functions as one vessel. For the purposes of this Control Measure, articulated tug barges are not considered ocean-going vessels.

(6) "Auxiliary Boiler" means a steam generator on an ocean-going vessel designed primarily to provide steam for uses other than propulsion or pumping cargo.

(7) “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 engines”.

(8) “Berth” means a vessel's allotted place at a wharf, pier, or dock. This does not include anchorages such as at the off-shore tanker terminal at El Segundo, or where passenger vessels tender at anchor such as at Santa Barbara, or Catalina.

(9) “Bulk Vessel” means a self-propelled ocean-going vessel constructed or adapted primarily to carry unpackaged dry bulk cargo. A bulk vessel may use vessel-based or shore-based equipment for loading and discharging of cargo.

(10) “Calendar Year” means the time period beginning on January 1 through December 31 of a single year.

(11) “California Ports (Ports)” means any port or independent marine terminal in California that receives an ocean-going vessel including:

(A) Landlord ports where the port owns the wharves which it rents or leases to a terminal operator;

(B) Operational ports where the port functions as a terminal operator; and

(C) Independent marine terminals.

(12) “California time aggregate method” means the California State Implementation Plan method of calculating opacity emissions. The California time aggregate method is virtually identical to United States Environmental Protection Agency method 9 in the procedures the observer follows, but most notably differs in that the data is analyzed by counting the readings that exceeded the limit, rather than averaging all readings in a set.

(13) “CARB” means the California Air Resources Board.

(14) “CARB Approved Emission Control Strategy (CAECS)” means a method of reducing emissions from an ocean-going vessel at berth to a satisfactory level for compliance with the Control Measure and is verified and approved by CARB.

(15) “CARB Approved Emission Control Strategy Operator” means any party who operates a CARB approved emission control strategy to reduce emissions for compliance with this Control Measure.

(16) “Charter” or “Charter Agreement” means an agreement or contract where one person rents, leases, hires, or uses ocean-going vessels from another person to convey or transport goods or passengers to one or more designated locations.

(17) “Charter Company” means any person that is in the business of leasing, renting, or lending ocean-going vessel(s) to other companies or persons to convey or transport goods or passengers to one or more designated locations.

(18) “Commissioned Shore Power Vessel” means a shore power equipped vessel that visits a compatible shore power berth at a terminal and has completed vessel commissioning at that terminal.

(19) “Container Vessel” means a self-propelled ocean-going vessel constructed or adapted primarily to carry uniformly sized ocean freight containers.

(20) “Diesel-Electric Engine” means a diesel engine connected to a generator that is used as a source of electricity for propulsion or other uses.

(21) “Diesel Engine” means an internal combustion, compression-ignition engine with operating characteristics substantially similar to the theoretical diesel combustion cycle. Regulating power by controlling fuel supply in lieu of a throttle indicates a compression ignition engine.

(22) “Diesel Particulate Matter (DPM)” 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.

(23) “Distributed Generation” means electrical generation technologies that produce electricity near the place of use.

(24) “Docked at Berth (at berth)” means the state of being secured to a berth.

(25) “Executive Officer” means the Executive Officer of CARB, or his or her designee.

(26) “Excess Emissions” means air pollution emitted by a vessel at berth during a time period when the vessel operator is required to reduce emissions, but does not achieve the full required reductions.

(27) “Exception” means a situation that results in a compliant visit with or without emission reductions.

(28) “First Line” means the time when a vessel’s line is first attached to a berth in the process berthing the vessel.

(29) “Fleet” means a group of vessels of the same vessel type that have agreed to utilize their combined Vessel Incident Events (VIEs) at a port or marine terminal. Vessel operators designate their fleet in the vessel visit reporting.

(30) “Foreign-flag Vessel” means any vessel of foreign registry including vessels owned by United States citizen(s) but registered in a nation other than the United States.

(31) “General Cargo Vessel” means a self-propelled ocean-going vessel constructed or adapted primarily to carry cargo that must be loaded individually, and that may or may not be in uniform-sized ocean freight containers. May use vessel-based or shore-based equipment for loading and discharging of cargo.

(32) “Government or Military Vessel” means vessels operated by any branch of local, state, federal government military service, or by a foreign government, when such vessels are operated on government or military non-commercial service. This definition includes Coast Guard vessels. A commercial vessel that also carries some military cargo is not a government or military vessel unless the military is the vessel operator.

(33) “Greenhouse Gas” (GHG) means carbon dioxide (CO2), methane (CH4), nitrogen trifluoride (NF3), nitrous oxide (N2O), sulfur hexafluoride (SF6), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and other fluorinated greenhouse gases.

(34) “Grid-neutral” means emitting no more GHG emissions than if the strategy were powered by the California grid as represented in the most recent eGRID Summary Table for State Output Emission Rates as the California CO2e emissions rate.

(35) “Independent Marine Terminal” means a terminal that operates independently from a port or port authority. An Independent Marine Terminal has all the responsibilities of a terminal and a port.

(36) “Last line” means when the time when the vessel is untied from the berth and the last line from the berth to the vessel is released.

(37) “Lease” means a contract where one person conveys property or services to another person for a specific duration.

(38) “Low Activity Terminal” means a terminal that has not previously exceeded the terminal thresholds in section 93130.10(a) of this Control Measure.

(39) “Marine Gas Oil (MGO)” means any fuel that meets all the specifications for DMX or DMA grades as defined in Table I of International Standard ISO 8217, as revised on November 1, 2005, which is incorporated herein by reference, or DMX, DMA, or DMZ grades as defined in Table I of International Standard ISO 8217, as revised on June 15, 2010, which is incorporated herein by reference.

(40) “Master” means the person who operates an ocean-going vessel or is otherwise in charge of the vessel’s operations.

(41) "Malfunction" means any sudden and unavoidable failure to operate in a normal manner by air pollution control equipment that is not caused in any way by poor maintenance, negligent operation, or any other reasonably preventable upset condition or equipment breakdown.

(42) “Ocean-Going Vessel” means a commercial, government, or military vessel, excluding articulated tug barges, meeting any of these criteria:

(A) A vessel greater than or equal to 400 feet in length overall as defined in 50 CFR § 679.2, as adopted June 19, 1996;

(B) A vessel greater than or equal to 10,000 gross tons under 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.

(43) “Own” means having the incidents of ownership, including the legal title whether or not that person lends, or pledges an item; having or being entitled to the possession of the item as the purchaser under a conditional sale contract; or being the mortgagor of an item.

(44) “Oxides of Nitrogen (NOx)” means compounds of nitric oxide (NO), nitrogen dioxide (NO_2), and other oxides of nitrogen, which are typically created during combustion processes and are major contributors to smog formation and acid deposition.

(45) “Particulate Matter (PM)” 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).

(46) “Particulate Matter 2.5 (PM2.5)” means any particulate matter with a diameter of less than 2.5 micrometers.

(47) “Passenger Vessel” means a self-propelled vessel constructed or adapted primarily to carry people.

(48) “Person” has the same meaning as set California Code, Health and Safety Code section 39047.

(49) “Physical Constraint” at a terminal means an unavoidable barrier to provide a service due to the layout of a terminal or waterway where a state or federal public agency with jurisdiction over the resources effected by this Control Measure has made a safety determination that prevents the use of a CARB approved control strategy.

(50) “Pilot on Board” means the vessel’s pilot has boarded the vessel to assume navigational control to prepare for vessel departure.

(51) “Port” see California Port.

(52) “Previously Unregulated Vessels” means container, refrigerated cargo, or passenger vessels that were part of a fleet before January 1, 2021 where the fleet did not exceed the annual visit thresholds specified in California Code of Regulations, title 17, section 93118.(b)(3)(E) for any year between 2014 and 2020 or the vessel is a steamship.

(53) “Privately Owned United States Flag Commercial Vessel” means a vessel:

(A) registered and operated under the laws of the United States,

(B) used in commercial trade of the United States,

(C) owned and operated by United States citizens, including a vessel under voyage or time charter to the Government, and

(D) a Government-owned vessel under bareboat charter to, and operated by, United States citizens.

(54) “Reactive Organic Gases (ROG)” has the same meaning as set forth in subsection (a)(23) of section 2752 of title 13 of the California Code of Regulations.

(55) “Ready to Work” means that the vessel is tied to the berth, the gangway has been lowered with netting down, and the United States Coast Guard, United States Customs and Border Protection, and other government authorities have cleared the vessel.

(56) “Refrigerated Cargo Vessel” (commonly known as “reefer”) means a self-propelled vessel constructed or adapted primarily to carry refrigerated cargo. Refrigerated cargo vessels include vessels where the cargo may be stored in large refrigerated rooms within the vessel or vessels that primarily carry refrigerated cargo containers.

(57) “Regulated California Waters” means any and all of the following:

(A) All California internal waters;

(B) All California estuarine waters;

(C) All California ports, roadsteads, and terminal facilities (collectively “ports”);

(D) All waters within 3 nautical miles of the California baseline, starting at the California-Oregon border and ending at the California-Mexico border at the Pacific Ocean, inclusive;

(E) All waters within 12 nautical miles of the California baseline, starting at the California-Oregon border and ending at the California-Mexico border at the Pacific Ocean, inclusive;

(F) All waters within 24 nautical miles of the California baseline, starting at the California-Oregon border to 34.43 degrees North, 121.12 degrees West; inclusive; and

(G) All waters within the area, not including any islands, between the California baseline and a line starting at 34.43 degrees North, 121.12 degrees West; thence to 33.50 degrees North, 118.58 degrees West; thence to 32.65 degrees North, 117.81 degrees West; and ending at the California-Mexico border at the Pacific Ocean, inclusive.

(58) “Remediation Fund” means an account established by a CARB-approved fund administrator under the terms of a Memorandum of Understanding with CARB to provide incentive monies to activities that achieve emission reductions, not otherwise required by law or regulation, in communities impacted by excess emissions from vessels at berth.

(59) “Responsible Official” means any person(s) with the authority to determine the existence of emergency and safety events, and to substantiate that a vessel, terminal, port, or control equipment complies with requirements of this Control Measure.

(60) “Responsible Party” means any person with an obligation under this Control Measure.

(61) “Roll-On/Roll-Off Vessel” (commonly known as “ro-ro”, “auto”, or “vehicle carrier”) means a self-propelled vessel constructed or adapted primarily to carry wheeled cargo that can be rolled on and off. Ro-ro vessels may carry exclusively automobiles (commonly known as a “pure car carrier”) and/or a mixture of bulk equipment on wheels.

(62) “Safety and Emergency Events” means an event where a responsible official reasonably determines that compliance with this Control Measure would endanger the safety of the vessel, crew, cargo, passengers, terminal, or terminal staff because of severe weather conditions, a utility event, or other extraordinary reasons beyond the control of the terminal operator or vessel operator.

(63) "Selective Catalytic Reduction (SCR)" means an emission control system that reduces NOx emissions through the catalytic reduction of NOx in diesel exhaust by injecting nitrogen-containing compounds into the exhaust stream, such as ammonia or urea.

(64) “Shore Power” refers to electrical power being provided by either the local utility or by distributed generation to a vessel at berth.

(65) “Tanker Auxiliary Boiler” means a steam generator on a tanker vessel used to offload liquid product.

(66) “Tanker Vessel” means a self-propelled vessel constructed or adapted primarily to carry liquid bulk cargo. Tanker vessels may carry petroleum crude, petroleum products, or non-petroleum based products, and are classified as either non-edible and dangerous or edible and non-dangerous.

(67) “Terminal” means a terminal operator’s facility consisting of adjacent wharves, piers, docks, other berthing locations and storage, which are used primarily for loading and unloading of passengers, cargo or material from vessels or for the temporary storage of this cargo or material on-site. Operational ports that rent a berth to vessel operators rather than lease to terminal operators shall treat that berth as a terminal.

(68) “Terminal Incident Event (TIE)” is an exception provided to terminal operators to allow for a limited number of incidents where a vessel does not reduce emissions as required during a visit.

(69) “Terminal Operator” means a person who leases terminal property from a port to load and unload passengers, cargo or material from vessels or for the temporary storage of this cargo or material on-site. Operational ports that use a single berth to service an individual customer are the terminal operator and the customer’s berth is a terminal.

(70) “This Control Measure” means the Control Measure for Ocean-Going Vessels At Berth, California Code of Regulations, title 17, sections 93130-93130.20.

(71) “Utility” shall have the same meaning and be used interchangeably with the term “Electric Utility” and means any person engage in or, or authorized to engage in, generating, transmitting, or distributing electric power by any facilities, including, but not limited to, any such person who is subject to the regulation of the Public Utilities Commission. Pub. Resource Code, section 25108 as it read on January 7, 1975.

(72) “Utility Event” means the period of time during which any of the following events occurs; the utility event begins when such an event begins and ends when the event is over:

(A) The utility serving the port or terminal cannot provide electrical power to the port because of a failure of equipment owned and maintained by the utility, a transmission emergency, distribution emergency, a California Independent System Operator (CAISO) or Los Angeles Department of Water and Power (LADWP) Stage 3 emergency, or the utility needs to reduce power to the port and/or terminal because of a sudden and reasonably unforeseeable natural disaster, such as, but not limited to, an earthquake, flood, or fire; or

(B) When the utility providing electrical power notifies the terminal operator(s) to reduce the use of grid-based electrical power in response to a transmission or distribution emergency, a CAISO or LADWP Stage 3 emergency, or to avoid a Stage 3 emergency if one is anticipated. The emergency event ends when CAISO or LADWP cancels the Stage 3 emergency or the utility notifies the terminal operator(s) that reduction in the use of grid-based electrical power is no longer necessary. The port may contact the terminal operator(s) on behalf of the utility if such an agreement exists between the utility and the port.

(73) “United States flag Vessel” when used independently means either a United States government vessel or a privately owned United States flag commercial vessel.

(74) “Vessel” means watercraft used, or capable of being used, as a means of transportation. For the purposes of this Control Measure, “vessel” is used interchangeably with the term “ocean-going vessel.”

(75) “Vessel Arrival” means the date and time that a vessel is initially tied to a berth with first line.

(76) “Vessel Commissioning” means the process undertaken by the vessel operator and terminal operator to ensure that the shore power equipment on the vessel is compatible with the shore power equipment on the terminal and that there are no safety issues for both the equipment and the personnel handling the connection.

(77) “Vessel Departure” means the date and time that the a vessel casts off the last line.

(78) “Vessel Incident Event (VIE)” is an exception provided to vessel fleets to allow for a limited number of incidents where a vessel operator does not reduce emissions as required during a vessel visit.

(79) “Vessel Operator” means any person who decides where a vessel is to call or who is in direct control of the vessel. The party in direct control of the vessel may be a third-party hired to carry cargo or passengers for the person under a charter agreement to operate the vessel. Direct control does not include the vessel master or any other member of the vessel crew, unless the vessel master or crew member is also the owner of the vessel or decides where a vessel is to call.

(80) “Vessel Owner” means any party with an ownership interest in the vessel. The owner may be an individual or multiple parties.

(81) “Vessel Type” means a categorization of ocean-going vessels distinguished by the main cargo the vessel carries into the following types: bulk/general cargo, container, passenger, refrigerated cargo, ro-ro, and tanker vessels.

(82) “Visible Emissions” means any particulate or gaseous matter which can be detected by the human eye.

(83) “Visit” means the time period from when the vessel is “Ready to Work” to “Pilot on Board”.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.3 Applicability.

(a) General applicability.

Except as provided in section 93130.4 Exceptions, this Control Measure applies to:

(1) any person who owns, operates, charters, or leases any United States or foreign-flag ocean-going vessel that visits a California port, terminal, or berth;

(2) any person who owns, operates, or leases a port, terminal, or berth located where ocean-going vessels visit; and

(3) any person who owns, operates, or leases CARB approved emission control strategy for ocean-going vessel auxiliary engines or tanker auxiliary boilers.

All responsible parties may be held jointly and severally liable.

(b) Federal requirements.

Nothing in this Control Measure shall be construed to amend, repeal, modify, or change any applicable federal regulations, including any United States Coast Guard regulations or requirements. Any person subject to this Control Measure shall ensure compliance with both federal regulations (including any United States Coast Guard regulations) and the requirements of this Control Measure, including but not limited to, where applicable, obtaining any necessary approvals, exceptions, or orders from the United States Coast Guard. To the extent any requirements in this Control Measure conflict with any applicable federal regulation, the requirements of the federal regulation shall prevail.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.4 Exceptions.

The requirements of this Control Measure do not apply to:

(a) Non-stop voyages.

(1) Ocean-going vessel voyages that do not stop at a California port, terminal, or berth including:

(A) Stopping and anchoring required by the United States Coast Guard;

(B) Stopping necessary due to force majeure or distress as defined in the “Responsibility of States for Internationally Wrongful Acts (2001)”, which is incorporated herein by reference; or

(C) A stop made solely to render assistance to persons, vessel, or aircraft in danger or distress.

(2) The following voyages are considered a “stop” and do not qualify for the exemption:

(A) Innocent 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 1982, Article 19, subpart 2 as it read on November 16, 1994; or

(B) The passage of vessel(s) that are otherwise scheduled or intended to call at a port or terminal facility for any reasons other than the three enumerated reasons listed in subsection (a)(1).

(b) Government and military vessels.

The requirements of this Control Measure do not apply to government or military vessels. However, government or military vessels are encouraged to act in a manner consistent, as far as is reasonable and practicable, with this section.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.5 CARB Approved Emission Control Strategy.

(a) Executive Order requirement.

No person may operate an emissions control strategy, other than shore power, at a port or terminal for compliance with this Control Measure unless it receives approval by CARB through an Executive Order. The Executive Order shall provide compliance instructions for each emission control strategy and include requirements that each responsible party must follow in order to use that strategy.

(b) Requirement to reduce emissions.

The emission control strategy must reduce emissions for vessel visits, unless:

(1) The visit is subject to an exception in sections 93130.4, 93130.8, or 93130.10 of this Control Measure; or

(2) The person uses a TIE or a VIE for the visit as provided in section 93130.11 of this Control Measure; or

(3) The person pays the remediation fund payments for the visit or portion of a visit as provided in section 93130.15 of this Control Measure; or.

~~(3)~~(4) The person has implemented emission reductions as provided in sections 93130.5(d)(7).

(c) Shore power.

Shore power is a CARB approved emission control strategy. If distributed generation is used to supply shore power, the electricity generated must meet the following emissions standards:

(1) NOx 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 1 grain per 100 standard cubic foot
(3) Distributed generation GHG emissions must be grid-neutral; and
(4) Ammonia emissions no greater than five parts per million on a dry volume basis (ppmdv), if selective catalytic reduction (SCR) is used.

(d) Requirements for CARB approval of an emission control strategy.

(1) Emission Reductions

Except as provided in Section 95130.5(d)(7), ~~T~~to receive CARB approval, a person must demonstrate that the emission controls strategy achieves emission rates less than 2.8 g/kW-hr for NOx, 0.03 g/kW-hr for PM2.5, and 0.1 g/kW-hr for ROG for auxiliary engines. Additionally, for strategies approved after 2020, GHG emissions from the strategy must be grid-neutral for the year that the technology is granted an Executive Order. Default emission rates of auxiliary engines on ocean-going vessels are 13.8 g/kW-hr for NOx, 0.17 g/kW-hr for PM2.5, and 0.52 g/kW-hr for ROG.

(2) Tanker Vessels.

Except as provided in 95130.5(d)(7), ~~F~~for tanker vessels with steam driven pumps, unless the tanker is using shore power to reduce emissions from auxiliary engines, a person must demonstrate that the CARB approved emission control strategy achieves emission rates less than 0.4 g/kW-hr for NOx, 0.03 g/kW-hr for PM2.5, and 0.02 g/kW-hr for ROG for tanker auxiliary boilers. Default emission rates of tanker auxiliary boilers on ocean-going vessels are 2.0 g/kW-hr for NOx, 0.17 g/kW-hr for PM2.5, and 0.11 g/kW-hr for ROG

(3) Already approved strategies

Where CARB has already issued an Executive Order for strategies under California Code of Regulations, title 17, section 93118 (e)(4), these are approved as a CARB approved emission control strategy. These strategies can operate under their Executive Order until 2025 before a person needs to apply for an extension in section 93130.5 (i)(1) of this Control Measure and demonstrate the strategies ability to meet all the requirements of this section including being grid neutral.

(4) SCR Strategy

Emission control strategy utilizing SCR shall have ammonia slip no greater than 5 ppmdv, and shall continuously test ammonia slip and NOx

(5) Warranty

The applicant must provide a warranty that meets the following:

(A) The manufacturer of each emission control strategy shall warrant for 10 years when a unit is purchased that the strategy is:
  i. Designed, built, and equipped to conform, at the time of sale, with this Control Measure; and
  ii. Free from defects in materials and workmanship which cause the failure of a warranted part to no longer be identical in all material respects to that part as described in the manufacturer's application for certification.

(B) The applicant of the emission control strategy system shall provide the end user with maintenance practices set forth by the manufacturer.

(6) When a person sells or leases a unit, the person must conduct in-use compliance testing of the strategy to demonstrate that the expected percentage of emissions reductions being achieved. The person must report the results to the Executive Officer within 30 days. If testing shows the unit does not meet the emission requirements set forth in section 93130.5 (d)(1) the unit cannot be used to satisfy the emission requirements of this regulation.

(7) Alternative Emission Reduction Strategy

(a) As an alternative to meeting the requirements in subsections (d)(1) and (d)(2) above, upon approval of the Executive Officer, a person subject to the requirements of this section may apply for and implement an Alternative Emission Reduction Strategy. At a minimum, the Alternative Emission Reduction Strategy must contain provisions meeting the following requirements:

i. By no later than the compliance dates in section 95130.7(b) and 95130.7(c), the applicant shall fully implement measures to reduce NOx, ROG and PM2.5 emissions from vessels operating in Regulated California Waters and/or from onshore sources with emissions originating within 5 miles of the port or terminal.

ii. The NOx, ROG and PM2.5 emission reductions achieved under the Alternative Emission Reduction Strategy shall be calculated as the difference between baseline year mass emissions of NOx, ROG and PM2.5 from the applicant's sources covered in the Strategy, and emissions that would have occurred from those same sources in that baseline year emissions if the Alternative Emission Reduction Strategy had been in place that year. The baseline year shall be based on best available emissions data from 2016 or a representative alternative year, subject to approval by the Executive Officer.

iii. The NOx, ROG and PM2.5 emission reductions to be achieved under the Alternative Emission Reduction Strategy must achieve either (1) no less than an 80% reduction versus baseline year emissions, or (2) reductions no less than the difference between the applicant's at-berth vessel emissions in the baseline year and at-berth vessel emissions that would have been realized that same baseline year if the applicant had met the NOx, ROG and PM2.5 emission rates in subsections (d)(1) and (d)(2).

~~i.~~iv. All emissions reductions to be achieved by the Alternative Emission Reduction Strategy must be real, permanent, quantifiable, enforceable and surplus to any NOx, ROG and PM2.5 reductions already required by existing U.S. law or regulation in effect as of December 31, 2016.

(e) Application process.

(1) Before submitting an application requesting approval from CARB for an emission control strategy, an applicant shall submit a test plan to the Executive Officer for conducting the emissions reduction testing, durability testing, and a timeline for testing.

(2) The applicant shall submit an application that includes all source test data only after the applicant receives CARB approval for the test plan.

(3) If the Executive Officer approves of the application, the applicant's strategy will be considered a "CARB approved emission control strategy" and shall become a compliance option for the type(s) of vessel visits for which the emission control strategy is approved, when used in a manner that is consistent in accordance with all the conditions of the approval.

(f) Test plan requirements.

(1) A test plan shall include:

(A) The contact persons, phone numbers, names, and addresses of person submitting the test plan.

(B) Description of the emission control strategy's principles of operation. A schematic depiction of the components and operation must be included. It is the responsibility of the applicant to demonstrate that the qualifying strategy relies on sound principles of science and engineering to achieve emission reductions.

(C) Description of testing to be conducted to demonstrate emission reductions and durability.

(D) Timeline for all emissions reduction testing and durability testing, including an estimate for the testing's duration and the number of vessel visits needed to complete proposed testing.

(2) Durability.

The applicant of an emission control strategy shall demonstrate, to the satisfaction of the Executive Officer, the durability of the applicant's emission control strategy through an actual field demonstration. If the applicant has demonstrated the durability of the equipment (identical in design and components) in a prior verification or has demonstrated durability through field experience, the applicant may request that the Executive Officer accept the previous demonstration in fulfillment of this requirement. In evaluating such a request, the Executive Officer may consider all relevant information including, but not limited to, the similarity of baseline emissions and application duty cycles, the relationship between the emission control group used in previous testing and the current emission control group, the number of engines tested, evidence of successful operation and user acceptance, and published reports.

(3) Test plan disapproval.

If, after reviewing the test plan, the Executive Officer determines that the applicant has not made a satisfactory demonstration that its strategy relies on sound principles of science and engineering to achieve emission reductions at the rates required for certification or if the test plan is incomplete, the Executive Officer shall notify the applicant of the disapproval in writing within 30 calendar days of receiving the test plan. The applicant may choose to withdraw from the application process or submit additional materials and clarifications.

(4) Test plan approval.

Within 45 calendar days after determining the test plan is satisfactory, the Executive Officer shall issue a test plan approval letter to the applicant.

(g) Source testing.

A person shall use source testing to demonstrate that a proposed emission control strategy achieves the performance standards in section 93130.5 (d) of this Control Measure. Testing must be done by certified third party source testers specified in the test plan. Alternative test methods or emission verifications may be used when specified in the test plan upon written approval from the Executive Officer. The following requirements shall apply to source testing conducted under this Control Measure, unless the Executive Officer has provided written approval of alternative applicable test methods or emission verifications specified in the test plan:

(1) NOx, N2O, CO2, CO, CH4, and Diesel PM or PM10, shall be measured using ISO 8178 Test Procedures: ISO 8178-1: August 15,1996(E) ("ISO 8178 Part 1"); ISO 8178-2: August 15, 1996(E) ("ISO 8178 Part 2"); and ISO 8178-4: August 15, 1996(E)

("ISO 8178 Part 4" August 15, 1996), respectively, all of which are incorporated herein by reference;

(2) PM2.5 is calculated using the factor of weight fraction of PM2.5/TPM based on CARBs speciation data for PM size fractions ("PMPROF REF (Excel) - Reference number for PM profiles," July 8, 2019, incorporated herein by reference). For MGO, the factor is 0.92;

(3) ROG shall be calculated as a fraction of the TOG, set forth in CARB's Off-Road Diesel HC to Rog/Tog Ratio ("FRAC (Excel) - Fraction data for source categories," February 21, 2019, incorporated herein by reference). For MGO, the factor is 0.856 for internal combustion engines and 0.946 for boilers. TOG shall be measured using Method 25A (40 CFR Pt. 60, App. A-7, Method 25A, December 23, 1971), which is incorporated herein by reference;

(4) CO2E for a control system shall be calculated as follows lbs CO2E = (lbs CO2 + 25 * lbs CH4 + 298 * lbs N2O). CO2, CH4 and N2O shall be measured before and after the control strategy, and include any uncontrolled auxiliary sources for the control strategy using the test methods specified in section 93130.5(g)(1) and 93130.5(g)(3) in this Control Measure. Strategies that use a fuel with a CARB Low Carbon Fuel Standard certified pathway may apply a reduction to CO2E by the factor of the carbon intensity of the fuel to the carbon intensity of the standard fuel;

(5) Grid-neutral shall be determined by calculating the ratio of the CO2E to the measured MWh of the control system which value must be lower than the state output emission rate;

(6) Ammonia slip shall be measured using the Bay Area Air Quality Management District Source Test Procedure ST-1B, Ammonia Integrated Sampling, dated January 20, 1982, which is incorporated herein by reference, or other equivalent CARB or district approved test method(s);

(7) The sulfur content of fuels shall be determined pursuant to International Standard ISO 8754 (as adopted on July 15, 2003), which is incorporated herein by reference;

(8) Exhaust Flow Rate shall be measured using CARB Method 100, Procedures for Continuous Gaseous Emission Stack Sampling (as amended July 28, 1997), which is incorporated herein by reference; and

(9) Engine Work shall be determined by measuring the total power output in MWh of the control strategy's generators electrical output during the test periods.

(h) Application Submittals to CARB.

(1) All applications, correspondence, and reports relating to source testing shall be submitted to CARB addressed to:

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(2) Verbal submissions do not constitute acceptable application formats.

(3) Supporting data in electronic format may be accepted as part of the application at the discretion of the Executive Officer.

(4) Applications shall follow the format and include the contents described in CARB's Recommended Emissions Testing Guidelines for Ocean-Going Vessels (dated June 20, 2012), which is incorporated herein by reference.

(5) CARB may allow electronic or e-mail submittal with instructions on the CARB website.

(6) The Executive Officer shall determine whether the application is complete. If incomplete, the Executive Officer will notify the applicant within 30 calendar days requesting additional information required to complete the application.

(i) CARB approval of the control strategy.

Within 90 calendar days after an application has been deemed complete, the Executive Officer shall act to approve or disapprove the application. The Executive Officer shall notify the applicant of the decision in writing and identify any terms and conditions that are necessary for any party to use the CARB approved emission control strategy. The approval of an emission control strategy is valid for 5 years, unless it is revoked by CARB as set forth in section 93130.5 (i)(3).

(1) Extensions of CARB approved emission control strategy.

If the applicant wishes to extend an approval of a CARB approved emission control strategy, it must apply to do so within 6 months of the end date of the approval to ensure the Executive Order does not lapse. The applicant may apply for an extension by submitting an extension application to the Executive Officer asserting that the strategy has not changed and is still effective, following to the requirements specified in subsection (h) above.

(2) Modifications to a CARB approved emission control strategy.

(A) Proposed modifications to the design or operation of a CARB approved emission control strategy that have any potential to affect the emissions control effectiveness or operational

performance must be reviewed and approved by the Executive Officer before they are implemented.

(B) Failure to obtain Executive Officer approval before modifying the design or operation of a CARB approved emission control strategy is a violation, and may also be grounds for revocation of CARB's approval, as set forth in subsection 93130.5 (i)(3).

(C) The applicant shall describe in detail the design modification along with an explanation of how the modification will change the operation and performance of the strategy. The applicant shall submit additional test data, durability data, engineering justification and analysis, or any other information deemed necessary by the Executive Officer to address the differences between the modified and original designs, and to ensure that the strategy's reductions are maintained.

(D) A modification includes, but is not limited to:

i. Any change of materials used in, or specifications of, the control strategy;

ii. Any change to the components, component design, composition, materials, or reagent usage;

iii. Any change to the sensors, part sizes, or sizing methodology;

iv. Any change to the monitoring and notification system control; logic, algorithms, operating parameters; or

v. Any proposed change to a portion of the approval.

(E) The Executive Officer will reissue the approval with updates to reflect the modifications if he or she determines that the modifications have no material effect on the control strategy, or if the modifications are found to affect the control strategy but the strategy's emission reductions still meet the requirements in section 93130.5(d) of this Control Measure.

(3) Revoking a CARB approved emission control strategy.

If an applicant modifies the design or operation of a CARB approved emission control strategy without review and approval pursuant to subsection (2) above, the Executive Officer may revoke its approval of the emission control strategy. To resume compliance using the strategy, the applicant must re-submit an application and receive a new approval.

(j) Review of CARB approved emission control strategy.

(1) At a minimum, emission control technologies shall be tested annually to demonstrate that the expected percentage of emissions reductions being achieved.

(2) The applicant shall provide the results of such testing to the Executive Officer by December 31, annually.

(3) The Executive Officer may modify the testing frequency as he or she deems appropriate.

(4) The Executive Officer may request that the owner or operator of a CARB approved emission control strategy conduct periodic emission source testing or other types of monitoring to verify the proper operation of alternative control technologies or distributed generation equipment, or to verify the emission rate of an auxiliary engine.

(k) Records Retention

(1) Records made pursuant to Section 93130.5 shall be kept for a minimum of five years. This information shall be supplied to the Executive Officer within 30 days of a request from CARB staff.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.6 Opacity Requirement.

(a) No person shall discharge or cause the discharge from any ocean-going vessel at berth and at anchor, into the atmosphere, any visible emissions of any air pollutant, for a period of periods aggregating three minutes in any 1 hour from any operation on the vessel that is:

(1) As dark as the Ringelmann 2, as published by the United States Bureau of Mines (May 1967), which is incorporated by reference; or

(2) Of such opacity as to obscure an observer's view to a degree equal to or greater than the Ringelmann 2.

(b) The California time aggregate method and the United States Environmental Protection Agency Opacity Test Method 9 (40 CFR Pt. 60, App. A-4, December 23, 2017), which is incorporated herein by reference will be used to analyze the readings to determine compliance.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510, 41511, and 41701, Health and Safety Code.

Section 93130.7. Vessel Operator Requirements.

Vessel operators that visit a berth or terminal in California shall meet the following requirements, except as provided in section 95130.5(d)(7). Any failure to perform any specific items in this section shall constitute a separate violation for each day that the failure occurs.

(a) Shore power requirements for at berth emission reductions.

Vessel operators with commissioned shore power vessels shall plug in to shore power on each and every visit to a compatible shore power berth.

(b) Requirements for vessel auxiliary engines.

Vessel operators shall reduce auxiliary engine emissions to the performance standards set forth in section 93130.5(d)(1) of this Control Measure through use of a CARB approved emission control strategy while at berth by the date specified for each vessel type in this section unless the visit qualifies for an exception identified in sections 93130.4, 93130.8, or 93130.10 of this Control Measure. A summary of responsibilities is provided in section 93130.17 of this Control Measure.

Table 1: Compliance Start Dates by Vessel Type	
January 1, 2021	Container and refrigerated cargo vessels
January 1, 2021	Passenger vessels
January 1, 2025	Roll-on roll-off vessels
January 1, 2027	Tanker vessels that visit the ports of Los Angeles or Long Beach
January 1, 2029	All remaining tanker vessels

(c) Requirements for tanker auxiliary boilers on tanker vessels with steam driven product pumps.

Vessel operators shall reduce boiler emissions to the performance standards set forth in section 93130.5(d)(2) of this Control Measure through use of a CARB approved emission control strategy while at berth by the date specified for each vessel type in this section unless the visit qualifies for an exceptions identified in sections 93130.4, 93130.8, or 93130.10 of this Control Measure. A summary of responsibilities is provided in section 93130.17 of this Control Measure.

Table 2: Compliance Start Dates for Tanker Vessels with Steam Driven Product Pumps	
January 1, 2027	Tanker vessels with steam driven product pumps that visit the ports of Los Angeles or Long Beach
January 1, 2029	All remaining tanker vessels with steam driven product pumps

(d) Visits by vessels with on-board control strategies.

If the CARB approved emission control strategy is operated solely on the vessel, vessel operators shall confirm in writing with terminal operator that the equipment is operational and will be used, prior to the vessel's arrival at a California berth.

(e) Vessel compliance checklists.

Vessel operators shall complete all items in the checklist to ensure compliance under the Control Measure:

(1) At least 7 calendar days before arrival, the vessel operator shall communicate in writing with the terminal operator and operator of the CARB approved emission control strategy to coordinate the use of a CARB approved emission control strategy and do all of the following if the vessel operator is using a CARB approved emission control strategy:

(A) Request use of a CARB approved emission control strategy; and

(B) Supply the terminal operator and the operator of the CARB approved emission control strategy with information about the compatibility of the vessel with the intended CARB approved emission control strategy.

(2) Ensure the vessel is commissioned as required by the terminal operator.

(3) Use shore power or another CARB approved emission control strategy during the vessel visit.

(A) Begin using shore power or another CARB approved emission control strategy within 1 hour after “Ready to Work”.

(B) Cease using shore power or another CARB approved emission control strategy no sooner than 1 hour before “Pilot on Board.”

(4) Report the following visit information to CARB electronically within 7 calendar days of departure, using local time for all dates and times:

(A) Vessel name;

(B) Vessel IMO number;

(C) Vessel type;

(D) Vessel operator contact information, including fleet, name, address, email address, and telephone number;

(E) Port, terminal, and berth visited;

(F) Vessel arrival time and vessel departure time;

(G) Vessel shift to another berth (must be reported as a separate visit), where applicable;

(H) Type of CARB approved emission control strategy used, where applicable;

(I) Date and time when vessel declared as “Ready to Work”;

(J) date and time when a CARB approved emission control strategy is begins reducing emissions and date and time when a CARB approved emission control strategy stops reducing emissions, where applicable;

(K) Type of fuel used in auxiliary engine(s) and auxiliary boiler(s);

(L) Sulfur content of fuel used in auxiliary engine(s) and auxiliary boiler(s), where applicable;

(M) Amount of fuel used in auxiliary engine(s) and boiler(s), during vessel visit, where applicable;

(N) Date and time pilot on-board in preparation for departure;

(O) Information specified in the approved compliance strategy's Executive Order compliance instructions;

(P) Information if a vessel uses an exception, including the type of exception, a detailed description, including dates and times, and any relevant correspondence (e.g. emails) documenting the visit exception;

(Q) Information if a vessel uses the remediation fund, including detailed description of the allowed circumstance outlined in section 93130.15 of this Control Measure, the number of days/hours the event took place, and the tier rating of the auxiliary engine; and

(R) Information if a TIE or VIE is used for the visit including the person who authorized the use of the TIE or VIE.

(f) Send accurate and complete reporting to CARB.

(1) Vessel compliance information submitted to CARB shall:

(A) Be written in the English language;

(B) Attest that the information submitted is true, accurate and complete, signed by the Responsible Official under penalty of perjury; and

(C) Be submitted to CARB in writing to:

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(2) CARB may also allow online submittal to a CARB reporting system or e-mail with instructions on the CARB website.

(g) Records Retention

(1) Records made pursuant to Section 93130.7 shall be kept for a minimum of five years. This information shall be supplied to the Executive Officer within 30 days of a request from CARB staff.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.8 Vessel Visit Exceptions.

Vessel operators are exempt from the operational requirements in section 93130.7 of this Control Measure if any of the following occurs.

(a) Vessel safety and emergency events.

The emission reduction requirements of section 93130.7 and section 93130.9 of this Control Measure do not apply during a portion of the visit that a responsible official reasonably determines that compliance with section 93130.7 would endanger the safety of the vessel, its crew, its cargo or its passengers because of severe weather conditions, a utility event or other extraordinary reasons beyond the master's reasonable control. All safety and emergency events are subject to review and audit by the Executive Officer. This exception applies if approved and only as long as the event occurs and only to the extent necessary to secure the safety of the vessel, its crew, its cargo, or its passengers and provided that the master:

(1) Take all reasonable precautions after the conditions necessitating the exception have ended to avoid or minimize repeated claims of exception under this subsection; and

(2) Include with the reporting requirement of section 93130.7(e)(4) of this Control Measure all documentation necessary to establish the conditions necessitating the safety exception and the date(s), local time, and location. All required documentation must be in the English language.

(b) Bulk and general cargo vessels.

Bulk and general cargo vessels are not subject to the vessel auxiliary engine requirements in sections 93130.7(b) of this Control Measure, and are only required to report their vessel visit activity under section 93130.7(e)(4) of this Control Measure starting January 1, 2021.

(c) Vessel commissioning.

The first vessel commissioning visit made by a vessel to a terminal may be an exception as long as the vessel was able to successfully connect to shore power during that visit. Documentation of a successful vessel commissioning

must be submitted with the vessel visit reporting requirements of section 93130.7(e)(4) of this Control Measure. Additional vessel commissioning visits may qualify for exception if approved by CARB in writing where the vessel operator demonstrates:

(1) The commissioning process could not be accomplished in a single visit; or

(2) The terminal requires that the vessel be recommissioned.

(d) Research.

Vessel visits that participate in testing of an alternative technology may be an exception provided that the vessel operator:

(1) Receives a CARB approved test plan for the alternative technology prior to arrival;

(2) Participates in testing in accordance with the approved test plan;

(3) Keeps a copy of the approved test plan on the vessel at all times;

(4) Provides a copy of the approved test plan to CARB staff upon request; and

(5) Reports all information including the use of the research exception pursuant to section 93130.7(e)(4) of this Control Measure.

(e) Previously unregulated vessels.

(1) Until January 1, 2023, previously unregulated vessels are not subject to the vessel auxiliary engine requirements in sections 93130.7(b) of this Control Measure.

(2) Vessel operators are required to report their vessel visit activity under section 93130.7(e)(4) of this Control Measure.

(f) Vessels visiting a low activity terminal.

(1) The specific requirements for vessel categories in section 93130.7 and section 93130.9 of this Control Measure do not apply to vessel visits to low activity terminals as specified in section 93130.10(a) of this Control Measure.

(2) Vessel operators are required to report their vessel visit activity under section 93130.7(e)(4) of this Control Measure starting on January 1, 2021.

(g) Vessel incident event (VIE) and terminal incident event (TIE).

(1) The requirements of section 93130.7 and 93130.9 of this Control Measure do not apply during a visit if the fleet operator uses a VIE or terminal operator uses a TIE as specified in section 93130.11 of this Control Measure.

(2) Vessel operators are required to report their vessel visit activity under section 93130.7(e)(4) of this Control Measure.

(h) Remediation.

(1) The requirements of this Control Measure do not apply during a visit that qualifies and uses the remediation fund option in section 93130.15 of this Control Measure.

(2) Vessel operators are required to report their vessel visit activity under section 93130.7(e)(4) of this Control Measure.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.9 Terminal Operator Requirements.

Terminal operators that receive ocean-going vessels in California shall meet the following requirements, except as provided in section 95130.5(d)(7). Any failure to perform any specific items in this section shall constitute a separate violation for each day that the failure occurs.

(a) Shore power requirements for at berth emission reductions.

(1) Operators of terminals with berths equipped to receive compatible shore power vessels must connect these vessels to shore power when visited by a commissioned shore power vessel.

(2) The terminal operator is responsible for commissioning vessels equipped with compatible shore power.

(3) If the commissioned shore power vessel is berthed in a way that prevents it from connecting to shore power, the terminal may use a TIE or must provide an alternative CARB approved emission control strategy compatible with the vessel.

(b) Visits to terminals without shore power.

Terminals without shore power are responsible for arranging a CARB approved emission control strategy for each visit by vessels with requirements for auxiliary engines or tanker auxiliary boilers in section 93130.7 (b) or 93130.7 (c) of this Control Measure. If neither the vessel nor the terminal has shore power, then it is the shared responsibility of both parties to arrange a CARB approved emission control strategy for this visit.

(c) Visits by vessels with on-board control strategies.

If the CARB approved emission control strategy is operated solely on the vessel, terminal operators are required to confirm with vessel operators that the equipment is operational and will be used, prior to the vessel's arrival at a California berth.

(d) Terminal operator compliance checklist.

Terminal operators shall complete the following items in this checklist to ensure compliance under the Control Measure:

(1) At least 7 calendar days before arrival, the terminal operator shall communicate with the vessel operator and operator of the CARB approved emission control strategy in writing to coordinate the use of a CARB approved emission control strategy. If the vessel operator is using a CARB approved emission control strategy, the terminal operator shall supply the vessel operator with information about the terminal's compatibility with the intended CARB approved emission control strategy.

(2) For shore power:

(A) Ensure shore power vessels are commissioned for shore power at the terminal they are visiting or notify vessel operator if commissioning is required.

(B) Position vessel appropriately to enable use of shore power or the CARB approved emission control strategy.

(C) Record power meter reading before starting shore power;

(D) Plug in vessel within 1 hour of vessel "Ready to Work";

(E) Disconnect shore power no more than 1 hour before "Pilot on Board"; and

(F) Record power meter reading after disconnecting from shore power.

(3) Report the following vessel visit information within 7 calendar days of the vessel's departure, using local time for all dates and times:

(A) Vessel name;

(B) Vessel IMO number;

(C) Port, terminal and berth visited;

(D) Terminal operator contact information, including name, address, email address, and telephone number;

(E) Arrival date and time;

(F) Departure date and time;

(G) CARB approved emission control strategy used;

(H) If CARB approved emission control strategy was provided by the terminal, or terminal and vessel shared arrangement responsibility, start and end date and time of emission control;

(I) For shore power visits, the terminal must report the power meter readings at the time of shore power connection and after disconnection;

(J) Information specified in the approved compliance strategy's compliance instructions;

(K) Information relating to any exception claimed by the terminal during the visit, including a detailed description of the exception and documentation detailing the exception, and any relevant correspondence (e.g. emails) documenting the visit exception;

(L) Information if a terminal uses the remediation fund, including detailed description of the allowed circumstance outlined in section 93130.15 of this Control Measure, the number of days/hours the event took place, and the tier rating of the vessel's engine; and

(M) Information if a TIE or VIE is used for the visit including the person who authorized and if a TIE or VIE was used.

(e) Send accurate and complete reporting to CARB.

(1) Terminal compliance information submitted to CARB shall:

(A) Be written in the English language;

(B) Attest that the information is true, accurate and complete, signed by the Responsible Official under penalty of perjury, and

(C) Be submitted to CARB in writing to:

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(2) CARB may also allow online submittal to a CARB reporting system or e-mail with instructions on the CARB website.

(f) Construction or repair.

The terminal operator is responsible for providing an alternative CARB approved emission control strategy for vessels to reduce emissions if the CARB approved emission control strategy for the berth is unavailable due to construction or repair. Terminals also have the option of using a TIE or remediation fund for construction or repair.

(g) Records Retention

(1) Records made pursuant to Section 93130.9 shall be kept for a minimum of five years. This information shall be supplied to the Executive Officer within 30 days of a request from CARB staff.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.10. Terminal Exceptions.

The terminal-related requirements of this Control Measure in section 93130.9 are subject to certain exceptions, set forth in this section.

(a) Vessel visits to a low activity terminal.

(1) The at berth emission reduction requirements of section 93130.7 and section 93130.9 of this Control Measure do not apply during a visit if the vessel visits a low activity terminal.

(2) For each vessel type listed in section 93130.7(b), a terminal that receives fewer than 20 visits in both 2019 and 2020 is initially considered a low activity terminal for that vessel type.

(3) A low activity terminal that receives 20 or more visits per year for two consecutive calendar years from a vessel type no longer qualifies for the low activity terminal exception for that vessel type and is required to reduce emissions starting January 1 of the following year.

(4) Terminal operators shall report vessel visit information under section 93130.9 (d)(3) of this Control Measure.

(b) Bulk and general cargo vessels.

Terminals that receive bulk and general cargo vessels are not required to arrange for CARB approved emission control strategies for their visits. Terminals are only required to report the vessel visit information for bulk and general cargo vessels under section 93130.9 (d)(3) of this Control Measure starting January 1, 2021.

(c) Terminal safety and emergency events.

The at berth emission reduction requirements of section 93130.7 and section 93130.9 of this Control Measure do not apply during a visit if a responsible official reasonably determines that compliance with this section would endanger the safety of the terminal, or its staff because of severe weather conditions, a utility event, or other extraordinary reasons beyond the terminal's reasonable control. All safety and emergency events are subject to review and audit by the Executive Officer. This exception applies if approved and only as long as the event occurs provided that the terminal operator:

(1) Take all reasonable precautions after the conditions necessitating the exception have ended to avoid or minimize repeated claims of exception under this subsection; and

(2) Include with the reporting requirements of section 93130.9(d)(3) of this Control Measure all documentation necessary to establish the conditions necessitating the terminal safety exception and the date(s), local time, and location. All required documentation must be in English.

(d) Research.

Vessel visits that participate in testing of an alternative technology may be excluded from the at berth emission reduction requirements in section 93130.7 and section 93130.9 of this Control Measure. Research visits are subject to reporting requirements 93130.9(d)(3) of this Control Measure. To qualify for a research exception, the following conditions must apply:

(1) A research visit to a terminal must have a CARB approved research exception prior to arrival;

(2) A terminal must confirm and record a visit's research exception status with CARB prior to arrival; and

(3) Any testing must be conducted in accordance with the approved test plan.

(e) Terminal incident event (TIE) and vessel incident event (VIE).

The at berth emission reduction requirements of section 93130.7 and section 93130.9 of this Control Measure do not apply during a visit if the vessel fleet uses a VIE or the terminal operator uses a TIE specified in section 93130.11 of this Control Measure. Terminal operators shall report vessel visit information under section 93130.9 (d)(3) of this Control Measure.

(f) Remediation.

The at berth emission reduction requirements of section 93130.7 and section 93130.9 of this Control Measure do not apply during the portion of a visit that qualifies and uses the remediation fund option in section 93130.15 of this Control Measure. Terminal operators shall report vessel visit information under section 93130.9(d)(3) of this Control Measure.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.11. Vessel Incident Events (VIE) and Terminal Incident Events (TIE).

A VIE or a TIE accommodates a limited number of situations where a vessel does not reduce emissions during a visit.

(a) Granting VIEs and TIEs.

(1) The fleet that is designated in a vessel's visit report will be granted VIEs based on a percentage of fleet vessel visits to a California port between January 1 and December 31 in the previous year. The terminal operator that is designated in a vessel's visit report will be granted TIEs based on a percentage of vessel visits to the terminal between January 1 and December 31 in the previous year. In 2021, VIEs and TIEs will be granted by CARB staff by January 1, 2021. Each year after, VIEs and TIEs will be granted by CARB staff on February 1 of that year.

(2) These percentages are listed in the table in section 93130.11(b) of this Control Measure. The number of VIEs and TIEs granted is rounded to the nearest whole number. Since visit information is not available initially, in 2021, VIEs and TIEs will be determined by the fleet 2019 recordkeeping requirements in California Code of Regulations, title 17, section 93118.3(g)(1)(B) and wharfinger data in section 93118.3(g)(3)(A) of the previous at berth regulation.

(3) The fleet operator will be able to assign each received VIE to a visit made by a vessel in the fleet. The terminal operator will be able to assign each received TIE to a visit made by a vessel to the terminal.

(b) Table of VIEs and TIEs rates.

Table 3: VIEs and TIEs Rates by Vessel Type per Year

		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030+
TIEs	**All Terminals**	15%	15%	15%	15%	5%	5%	5%	5%	5%	5%
VIEs	**Container/ Reefer**	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
	Passenger	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
	Ro-ro					5%	5%	5%	5%	5%	5%
	LA/LB Tankers							5%	5%	5%	5%
	Other Tankers									5%	5%

(c) Expiring VIEs and TIEs.

VIEs and TIEs expire on January 31 of the year after they are granted. VIEs can only be used at the port for which they are granted and by the fleet they are granted to and TIEs can only be used at the terminal for which they are granted.

(d) Retiring VIEs and TIEs.

VIEs and TIEs are limited in number and can be used for infrequent situations listed in section 93130.17 of this Control Measure. Fleet operators and terminal operators must report the use of a VIE or TIE with the vessel visit report in sections 93130.7(e) and 93130.9(d) of this Control Measure. VIEs and TIEs cannot be traded with other fleets, terminals, or any other entity.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.12. CARB Approved Emission Control Strategy Operator Requirements.

CARB approved emission control strategy operators shall fulfill the following responsibilities:

(a) Maintain subcontractor services and agreements.

(1) Maintain a list of all subcontracted service providers and the services performed by each, maintaining copies of all agreements with service providers.

(2) Provide copies to CARB upon request of any agreement with service providers.

(b) CARB approved emission control strategy checklist.

CARB approved emission control strategy operators shall complete all of the following items in this checklist for each vessel visit to ensure compliance under the Control Measure. Any failure to perform any specific items in this section shall constitute a separate violation for each day that the failure occurs.

(1) Notification. At least 7 calendar days before a vessel's arrival, the operator of the CARB approved emission control strategy must coordinate in writing with the vessel operator and terminal operator for the use of the strategy and supply the vessel operator with information about the compatibility with the vessel and terminal of the CARB approved emission control strategy.

(2) Operational. During the visit, the operator of the CARB approved emission control strategy shall:

(A) Begin use of control strategy within 1 hour of vessel “Ready to Work”;

(B) Record inlet and outlet levels of emissions during the visit; and

(C) Continue using control strategy until at least 1 hour before “Pilot on Board”.

(D) Ensure vessels are operating on CARB compliant distillate marine fuel.

(3) Reporting. The operator of the CARB approved emission control strategy shall report the following information regarding the vessel visit within 7 calendar days of vessel departure, using local time for all dates and times:

(A) Vessel name;

(B) Vessel IMO number;

(C) Vessel type;

(D) Port, terminal and berth visited;

(E) Vessel operator contact information, including name, address, email address, and telephone number;

(F) Terminal operator contact information, including name, address, email address, and telephone number;

(G) Arrival date and time of the vessel;

(H) Departure date and time of the vessel;

(I) Dates and times when a CARB approved emission control strategy starts controlling emissions and finishes controlling emissions; and

(J) Vessel emissions while control strategy operated for the following categories:

i. NOx emissions in g/kW hr;

ii. PM2.5 emissions in g/kW hr; and

iii. ROG emissions in g/kW hr.

(4) Malfunction Reporting.

The operator of the CARB approved emission control strategy shall report within 24 hours to CARB by electronic means, the following information regarding any malfunction that is expected to create emissions in excess of any applicable emissions limitation for a period greater than 1 hour. If electronic notification is not immediately possible, telephone notification or

notification at the beginning of the next working day is acceptable. The notification must include the following information:

(A) Identification of the equipment causing the emissions in excess of any applicable emissions limitation;

(B) Magnitude, nature, and cause of the excess emissions;

(C) To the extent known, time and duration of the excess emissions;

(D) Description of the corrective actions taken or expected to be taken to remedy the malfunction and to limit the excess emissions;

(E) Information sufficient to demonstrate, to CARB's Executive Officer's reasonable satisfaction, that the malfunction was not caused in any way by poor maintenance, negligent operation, or any other reasonably preventable upset condition or equipment breakdown; and

(F) Readings from any continuous emission monitor used in the emission control strategy and readings from any ambient monitors nearby.

(5) Corrective Action Report.

Within 7 calendar days after a malfunction has been corrected, the operator of the CARB approved emission control strategy shall submit a written report to CARB that includes:

(A) A statement that the malfunction has been corrected, the date of correction, and proof of compliance with all applicable CARB approval requirements;

(B) The specific cause of the malfunction;

(C) A description of any preventive measures taken and/or to be taken; and

(D) A statement affirming under penalty of perjury that the malfunction was not caused entirely or in part by poor maintenance, careless operation, poor design, or any other preventable condition or preventable equipment breakdown.

(6) Records Retention

(A) Records made pursuant to Section 93130.12 shall be kept for a minimum of five years. This information shall be supplied to the Executive Officer within 30 days of a request from CARB staff.

(7) All information submitted to CARB shall:

(A) Be written in the English language;

(B) Attest that it is true, accurate, and complete, signed by the Responsible Official under penalty of perjury; and

(C) Be submitted to CARB in writing to:

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(D) CARB may also allow online submittal to a CARB reporting system or e-mail with instructions on the CARB website.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.13. Port Requirements.

(a) Port infrastructure.

Ports with terminals not excluded under the thresholds set forth in section 93130.10(a) Terminal Exceptions of this Control Measure, shall provide equipment or necessary infrastructure that is outside of terminal operators' contractual ability to provide and which will enable a terminal to comply with this Control Measure including but not limited to necessary underground infrastructure, conduit, cabling, ducting, and shore power vaults.

(b) Cessation of obligation.

If a terminal operator and/or vessel operator elects to purchase and use CARB approved emissions control equipment that does not need port assistance or infrastructure to operate in compliance with this Control Measure, then the port has no additional responsibility for that equipment.

(c) Wharfinger data.

All operators of a public or private California port or independent marine terminal shall provide wharfinger data to the Executive Office of CARB annually by January 31st of the following calendar year, regardless of visit activity. At a minimum, the wharfinger information shall include for each visit to the port:

(1) Name of the vessel;

(2) Vessel type;

(3) Name, address, email and telephone number for Company operating the vessel;

(4) IMO number for each vessel;

(5) Berth used by the vessel; and

(6) Date(s) and time the vessel was initially tied to the berth and subsequently released from the berth.

(d) Send accurate and complete reporting to CARB.

Port reports and wharfinger information submitted to CARB shall:

(1) Be written in the English language;

(2) Attest that it is true, accurate, and complete, signed by the Responsible Official under penalty of perjury; and

(3) Be submitted to CARB in writing to:

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(4) If available, CARB may also allow electronic or e-mail submittal with instructions on the CARB website.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.14. Terminal and Port Plans and Interim Evaluation.

(a) Terminal plans.

(1) Terminal plan requirements.

Beginning in 2021, terminal operators shall submit a terminal plan that discusses how the terminal will comply with the requirements for ocean-going vessels visiting each berth, or the requirements for achieving reductions from alternative sources as provided in 93130.5(d)(7). For vessel categories with compliance dates after 2021, the terminal operator shall submit plans with the most likely control strategy. As an alternative, Ports may submit plans for their terminal operators.

(2) Terminal plan submission dates.

Terminal operators shall submit terminal plans to CARB by the following dates:

(A) Container, refrigerated cargo, passenger terminals: July 1, 2021;

(B) Ro-ro terminals: December 1, 2021;

(C) ~~LA/LB~~All tanker terminals, complying with 93130.5(d)(7): December 1, 2021;

(D) All ~~other~~ tanker terminals, complying with 93130.5(d)(1)-(2): ~~December 1, 2021~~July 1, 2024; and

(E) Low-use terminals that exceed~~s~~ the terminal threshold shall

submit a terminal plan by July 1 the following year.

(F) Ro-ro and tanker terminals shall revise and resubmit terminal plans on the following schedule, which must reflect any changes to the terminal since the initial plan.

i. Ro-ro terminals: February 1, 2024;

ii. LA/LB tanker terminals: February 1, 2026; and

iii. All other tanker terminals: February 1, 2028

(3) Terminal plan information.

Except for terminals complying with section 93130.5(d)(7), ~~T~~the terminal plan shall include discussion of necessary infrastructure modifications needed to reduce emissions from ocean-going vessels at a terminal~~. For each strategy implemented at a terminal, the terminal plan~~and shall include:

(A) Identification and description of all necessary equipment, including whether it will be located on the vessel, wharf, shore, or elsewhere;

(B) Number of vessels expected to visit the terminal using the strategy;

(C) List of each berth with geographic boundary coordinates;

(D) Identity of berth(s) where equipment will be used;

(E) Terminal/port specific berthing restrictions;

(F) Schedule for implementing equipment; and

(G) Division of responsibilities between the terminal operator and the port, including contractual limitations applicable to the terminal, relevant to enacting the infrastructure required by each terminal's plan; and

(H) A terminal claiming that a physical and/or operational constraint will delay its ability to implement its preferred CARB-approved control strategy to achieve emission reductions from vessels at berth according to the requirements of section 93130 et seq, must also include with its terminal plan a technical feasibility study evaluating if there are any other emission control options that could be implemented more quickly at the terminal.

(4) Alternative Terminal Plan Information

(A) For at-berth emission reductions, the information in section 93130.14(a)(3);

(B) Identification and description of all vessel and/or onshore sources from which alternative reductions will be achieved;

(C) Schedule for completing work necessary to achieve alternative reductions; and

(D) Reported NOx, ROG and PM2.5 emissions data from 2016 (or other approved baseline year) for all vessel and/or onshore sources from which alternative reductions will be achieved.

~~(4)~~(5) All terminal plans shall be signed by the applicable terminal's Responsible Official under penalty of perjury and are subject to verification by enforcement staff.

(b) Port plans.

(1) Port plan requirements.

Port~~s~~ operators shall submit a plan showing proof that the necessary terminal infrastructure modifications, or the requirements for achieving reductions from alternative sources as provided in 93130.5(d)(7), are being developed or have been completed and/or report any modifications still required in order for all of the Port's terminals with control requirements to reduce emissions of vessels at berth or achieve alternative emissions reductions as provided in 93130.5(d)(7). Ports should use terminal plans as basis for developing port plans, and may submit terminal plans on behalf of one or more of the port's terminal operators.

(2) Port plan submission dates

Port operators shall submit port plans to CARB by the following dates:

(A) Container, refrigerated cargo, passenger terminals: July 1, 2021;

(B) Ro-ro terminals: December 1, 2021;

(C) ~~LA/LB~~ All tanker terminals, complying with 93130.5(d)(7): December 1, 2021;

(D) All~~Non-LA/LB~~ tanker terminals, complying with 93130.5(d)(1)-(2): ~~December 1, 2021~~July 1, 2024;

(E) Updated plan by July 1 the following year after any new terminal at the port exceeds the annual visit threshold.

(3) Port plan information.

Except for ports with terminals complying with 93130.5(d)(7), ~~T~~the port operator shall include in its port plan a discussion of necessary infrastructure modifications needed to reduce emissions from ocean-going vessels at a terminal, and shall~~. For each strategy implemented at a berth, the plan must~~ include all of the following:

(A) Identification and description of which strategy each applicable terminal will use for compliance;

(B) Identify any equipment purchases and/or construction that are in progress or must still be completed to reduce emissions;

(C) Provide schedule for installing equipment and/or any necessary construction projects;

(D) Identify terminals where equipment will be used;

(E) Listing of each terminal with geographic boundary coordinates;

(F) Specify any port specific berthing restrictions; and

(G) List the division of responsibilities between the terminal and the ports for enacting the infrastructure required by each terminal's plan.

(4) Alternative Port Plan Information

For ports with terminals complying with section 93130.5(d)(7), the port plan shall include:

(A) For at-berth emission reductions, the information in section 93130.14(b)(3);

(B) Identification and description of all vessel and/or onshore sources from which alternative reductions will be achieved;

(C) Schedule for completing work necessary to achieve alternative reductions; and

(D) Reported NOx, ROG and PM2.5 emissions data from 2016 (or other approved baseline year) for all vessel and/or onshore sources from which alternative reductions will be achieved.

(4)(5) All port plans shall be signed by the applicable port's Responsible Official under penalty of perjury and are subject to verification by enforcement staff. If port plan schedules are not met, they are subject to enforcement actions.

(c) Approval of terminal or port plan plans.

Within 90 calendar days following submittal of a terminal plan under section 93130.14(a) or a port plan under section 93130.14(b), CARB shall notify the applicable terminal operator or port of any deficiencies in the contents of the plan (as set forth in sections 93130.14(a) and (b) respectively), and/or in the plan's demonstration that the terminal or port is making good faith efforts to facilitate use of a CARB-approved control strategy at each berth. If CARB does not notify the applicable terminal operator or port of any such deficiencies, the plan shall be deemed acceptable on the 90th day following submittal.

(d) Interim evaluation for tanker and ro-ro technology.

CARB staff will facilitate the completion of a feasibility study to assess ~~the progress made in adopting~~ control technologies for use with tanker and ro-ro vessels, as well

as the status of landside infrastructure improvements that may be needed to support emission reductions at ro-ro and tanker terminals. By July 1, 2023, staff will publish ~~analysis and findings~~results of the feasibility study in a report and make it available for public review at least 30 calendar days prior to presenting the report to the Board at a public meeting. The feasibility study will be conducted by a reputable third party with marine engineering expertise and will include the following elements:

(1) Engagement with key stakeholders (e.g. vessel and terminal operators, emission control vendors, marine engine and marine boiler experts, etc.) along with regulatory agencies (CARB, USCG, CSLC, BCDC, IMO, etc.), to assess and document the applicability, safety, reliability, cost-effectiveness and operability of potential candidate vessel- and land-based capture and/or control strategies.

(2) Identification of unique characteristics of affected terminals and Ro-Ro and tanker ship classes that may affect the applicability, safety, reliability, cost-effectiveness and/or operability of each candidate vessel- and land-based capture and/or control strategy.

(3) A final determination regarding the applicability, safety, reliability, cost-effectiveness and/or operability of each candidate vessel- and land-based capture and/or control strategy, and identification of the criteria employed to make that determination.

(A) For each technology determined to be feasible, a full hazard and operability study (HAZOP) shall be conducted on the identified technology, and the feasibility study shall propose a set of design standards that will comply with MOTEMS and other existing regulations, and that can support the full development of the technology.

(B) If no technology is determined to be feasible, identify the specific requirements and/or changes (if any) which will need to be met before the technology can be considered feasible.

(e) Results of the interim evaluation for tanker and Ro-Ro technology.

(1) If a technology or set of technologies is determined to be feasible, CARB staff in consultation with the third party marine engineering firm will assess the compliance deadlines in this Section to determine if adjustments need to be made. CARB staff shall initiate formal rulemaking to adjust the deadlines in this Section if it is determined that

the technology cannot be implemented under the current schedule. If staff finds that the compliance deadlines for ro-ro or tanker vessels need to be extended, the report will include recommendations to initiate staff's development of potential formal regulatory amendments.

(2) If no technology is determined to be feasible, CARB staff will initiate formal rulemaking to exempt or exclude Ro-Ro and/or tanker vessels from this Section of the regulation.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.15 Remediation Fund Use

This section sets forth an additional compliance option which may be used under limited circumstances where vessels and/or terminal operators have made certain enforceable commitments to controlling emissions at berth. Even if the emissions are not controlled for all or part of a vessel visit, under certain circumstances, a vessel may qualify to remediate emissions, as set forth in this section.

(a) For a vessel or terminal operator to utilize the remediation fund, a remediation fund administrator must be established with a Memorandum of Understanding executed with CARB under section 93130.16 of this Control Measure to manage the funds generated at that port or independent marine terminal.

(b) Vessel operators, terminal operators, and ports may request to use the remediation fund option in the following circumstances, if the request is supported by compelling documentation that demonstrates the eligibility of the request, consistent with the criteria in this section, as determined by CARB.

(1) Terminal equipment repairs – a terminal has invested in shoreside control equipment, and maintains that equipment according to manufacturer recommendations, but that equipment has failed and is being repaired, or new or replacement equipment has been ordered in a timely manner, but has not been received.

(2) Vessel equipment repairs -- a vessel operator has invested in shore power or other on-board control equipment, and maintains that equipment according to manufacturer recommendations, but that equipment has failed and is being repaired, or new or replacement equipment has been ordered in a timely manner, but has not been received.

(3) Delays with operation of existing control strategy – a vessel visits a berth and all parties have taken the required actions to use a CARB-approved control strategy, but the visit fails to achieve the

full emission reductions required under section 93130.5 of this Control Measure due to a delay or interruption in controlling emissions. If CARB-approved emission control strategy operator is under contract to reduce emissions from that vessel visit and a malfunction causes or contributes to a delay or interruption in emissions control, that operator must have notified CARB of the malfunction according to the provisions of section 93130.12(b)(4) of this Control Measure for that visit to be eligible to use the remediation fund for the uncontrolled hours of the visit.

(4) Terminal construction project – a terminal has invested in shoreside control equipment, and maintains that equipment according to the manufacturer recommendations, but takes that equipment out of service to allow a planned terminal upgrade or construction project that cannot safely be performed with the terminal side control equipment operating.

(5) A terminal plan deemed acceptable under section 93130.14(c) of this Control Measure identifies a physical and/or operational constraint that is delaying the implementation of a CARB-approved emission control strategy at the terminal.

(c) For excess vessel emissions that are otherwise required to be reduced under section 93130.5 of this Control Measure, the vessel operator, terminal operator, or port may elect to request use of the remediation fund option for each hour of uncontrolled emissions during a vessel visit if all of the criteria in this section 93130.15 of this Control Measure are met. Such request shall be submitted to CARB electronically within 7 calendar days of the vessel's departure, according to the requirements of section 93130.7(e) for vessel operators, section 93130.9(d) for terminal operators, and section 93130.13 for ports.

(d) For each request to use the remediation fund option, CARB shall evaluate the request to determine if the requirements of this section have been met and the request is eligible. If the party requesting use of the remediation fund option fails to adequately support its eligibility for that option based on the criteria in subsection (c), above, to CARB's satisfaction, then CARB may deny that request. Within 30 calendar days of receipt of each request, CARB shall notify the requestor whether the visit or visits are eligible to use the remediation fund option. Ineligible requests to use the remediation fund for a vessel visit shall result in that visit being considered non-compliant with this regulation.

(e) Within 30 calendar days of CARB's determination of eligibility, the requestor shall transfer a sum equal to the number of hours of excess emissions times the applicable hourly payment to the CARB-approved fund administrator, according to the specific payment provisions established by that administrator in its Memorandum of Understanding with CARB. Each partial hour of excess emissions shall be counted as full hour for the purpose of calculating the payment. These

payments are intended to cover the administrator's cost to achieve emission reductions through incentive activities in the communities exposed to the excess emissions, including 10 percent for administration expenses.

(f) Remediation fund hourly amount.

Table 4: Remediation Fund Hourly Amount		
Vessel Type	**Hourly Remediation Payment Beginning in 2021***	
	Normal Rate	**Tier III Rate**
Container, Reefer, Ro-ro	$1,900	$1,100
Tanker with electric pumps	$1,600	$1,000
Tanker with steam driven pumps	$3,400	$2,700
Passenger vessels with capacity under 1,500 combined passengers and crew	$5,300	$3,200
Passenger vessels with capacity of 1,500 or more combined passengers and crew	$12,000	$7,100
* Remediation payments used by vessel operators shall be reduced by 20 percent for IMO Tier III tanker vessels with steam driven pumps, and 40 percent for all other IMO Tier III vessels.		

(g) Prior to the beginning of each odd numbered calendar year, the hourly remediation payment amounts set forth in this section shall be adjusted by considering the current Consumer Price Index values published by the Bureau of Labor Statistics relative to 2019, to determine the hourly remediation payment amounts for that calendar year and the subsequent year. CARB shall post any updates to the hourly remediation payment on its website.

(h) For requests to use the remediation fund option for multiple vessel visits over an extended time period, the requestor may seek a prospective eligibility determination from CARB before the relevant visit occurs. Upon CARB's determination of eligibility, the requestor shall report data on each vessel visit within the required 7 days, and shall make payments at least monthly to the remediation fund administrator until the equipment is operational again and payments have been made for all uncontrolled vessel visits.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.16. Remediation Fund Administration.

This section sets forth the criteria for CARB approval of an entity to administer a

remediation fund for individual ports and independent marine terminals, and the requirements for approved administrators to manage those funds. The intent of the remediation fund is to mitigate the community impact of the excess emissions from vessel visits that did not reduce emissions at berth to the required levels, as set forth under section 93130.15. It is CARB's intention that the monies from the remediation fund achieve emission reductions not otherwise required by law or regulation by funding incentive activities that comply with adopted CARB guidelines on existing incentive programs.

(a) CARB staff shall notify, in writing, the local air quality management districts and air pollution control districts with jurisdiction in the communities adjacent to covered ports and independent marine terminals of the opportunity to apply to administer the remediation funds.

(b) Each district may elect to submit a written application, within 120 calendar days of notification, to the Executive Officer to administer remediation funds for that district's geographic area.

(c) Applications shall include the following information:

(1) Description of the applicant's experience implementing incentive programs for heavy-duty diesel vehicles and off-road equipment, with a focus on the Carl Moyer Program, Proposition 1B Program, or Community Air Protection Incentives, or similar programs for mobile and/or stationary sources of air pollution.

(2) Technical knowledge of engines, vehicles, equipment, and/or stationary air pollution sources that would be eligible for incentives.

(3) Remediation activity types and applicable CARB incentive program guidelines the fund administrator will use to recruit, evaluate, select, fund and track incentive activities.

(4) Demonstration of the applicant's capacity to administer the fund, including: personnel resources; operating budgets; accounting and legal support; activity tracking, emission reduction quantification, reporting mechanisms, and outreach experience.

(5) The ability to establish a separate account, and track deposits and payments, solely for the remediation fund.

(6) The proposed timeline for recruiting and funding incentive activities, and for those activities becoming operational to reduce emissions, once remediation funds are deposited into the applicant's separate account. For efficiency, these milestones may be aligned with existing solicitations, obligation, and liquidation deadlines for other incentive programs.

(d) CARB shall review submitted applications to determine whether the applicant is eligible and all required information is included in the application. CARB shall verify that:

(1) The applicant is eligible to administer a remediation fund based on the criteria in subsection (c) above;

(2) The application is complete, the responses demonstrate the applicant's capacity to successfully administer the remediation fund to the satisfaction of CARB; and

(3) The application includes a resolution from the applicant's governing board authorizing the applicant to participate in the remediation fund program.

(e) If CARB determines that the conditions in subsection (d) above have been met, CARB will notify the applicant and execute a Memorandum of Understanding with the applicant to enable the applicant to serve as the remediation fund administrator for ports and independent marine terminals in that air district's geographic area.

(f) If the air district with jurisdiction in the region that includes a covered port or independent marine terminal does not execute a Memorandum of Understanding with CARB to administer the remediation fund, CARB may invite non-profit organizations in the region with the demonstrated capacity and substantial experience administering incentive programs to apply. Any invited organization that wishes to participate must demonstrate no conflict of interest with the intended purpose of the remediation fund. CARB may approve a non-profit organization as the remediation fund administrator following the procedures and requirements of this section.

(g) CARB will post executed Memoranda of Understanding, and each successful applicant's application, on its public website.

(h) Each Memorandum of Understanding shall include the following minimum elements:

(1) Parties, contact information, effective date and term.

(2) Environmental justice: The fund administrator agrees to conduct its programs in a manner that ensures the fair treatment of all people in the State.

(3) Emission reductions: The fund administrator agrees to use remediation funds for incentive activities that directly benefit communities impacted by excess emissions from the port or independent marine terminal, and achieve emission reductions consistent with CARB's most recent applicable incentive program guidelines for: Carl Moyer Program, Proposition 1B: Goods Movement Emission Reduction Program, or Community Air Protection Incentives. Fund administrators shall seek to prioritize eligible activities in communities that are also identified by CARB under the AB 617 Community Air Protection Program or disadvantaged communities as defined by the Secretary for Environmental Protection. While at berth remediation funds can be administered as part of an existing incentive program, the

remediation funds cannot be used in place of any required match funding.

(4) Incentive activity types and applicable guidelines: The fund administrator agrees to recruit, evaluate, select, fund and track incentive activities in conformance with the requirements of the applicable guidelines for the incentive program or programs identified in the application.

(5) Schedule: The fund administrator will identify anticipated major milestones for implementing emission reduction projects once remediation monies have been received by the administrator.

(6) Reporting requirements: The fund administrator is responsible for submitting to CARB semi-annual reports covering fiscal activity and remediation activities funded, including, but not limited to, recipient, type, location, and estimated emission reductions achieved.

(7) Recordkeeping requirements: The fund administrator agrees to retain fund records, e.g., solicitations, applications, invoices, contracts, and correspondence, for 3 years after activity completion.

(8) Oversight: The fund administrator agrees to allow ongoing evaluations, reviews, and fiscal audits by CARB, other State agencies, or their designees.

(9) Records access: The fund administrator agrees to allow CARB or its designees access to evaluate or audit fund records.

(10) Enforcement: The fund administrator authorizes CARB or its designee to inspect incentive activities to ensure compliance with CARB requirements.

(11) Administration expenses: The fund administrator may retain up to 10% of the remediation funds collected for its direct and reasonable expenses incurred to implement the incentive program.

(12) Earned interest: The fund administrator agrees to maintain records and report on interest earned on remediation funds, and to expend earned interest according to the provisions of the MOU.

(13) Non-performance provisions: The fund administrator agrees that the following is a non-exhaustive list of the circumstances that constitute non-performance under this MOU. These circumstances include, but are not limited to:

(A) Failure to comply with the provisions of this Control Measure for remediation fund administrators or the CARB-approved guidelines of the applicable incentive programs.

(B) Failure to obligate or expend remediation funds within established timelines, or to show timely interim progress to meet these timelines.

(C) Insufficient performance or widespread deficiencies with remediation fund oversight, enforcement, record keeping, contracting provisions, inspections, or any other fund element as determined by CARB.

(D) Misuse of remediation funds.

(E) Funding of ineligible incentive activities or other items.

(F) Exceeding administration fund allotment.

(G) Insufficient, incomplete, or faulty incentive activity documentation.

(H) Failure to provide required documentation or reports requested from CARB, or other State agencies, in a timely manner.

(I) Poor performance as determined by a review or fiscal audit.

(14) Remedies: The fund administrator agrees to provisions to remedy non-performance, including:

(A) A corrective action plan.

(B) Transfer of collected remediation monies to an alternative fund administrator identified by CARB.

(C) Constraints on opportunity to administer future remediation funds.

(D) Termination of the Memorandum of Understanding.

(15) Indemnification: The fund administrator agrees to indemnify and hold harmless the State for any liability arising out of the performance by the fund administrator.

(16) Entitlements: The fund administrator agrees to comply with all laws, ordinances, regulations, and standards in administering remediation activities, including by obtaining any permits or approvals necessary to undertake the activities funded by the remediation fund, and complying with all environmental review requirements associated with such activities.

(17) Severability: The remaining provisions of an agreement continue in effect even if a court holds a specific provision invalid.

(18) Force majeure: CARB and fund administrator are not liable for any delay or failure in performance resulting from war, natural disasters, and other acts beyond their control.

(19) Amendments: The amendments shall only occur by mutual agreement in writing and signed by all parties.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.17 Summary of Responsibilities.

This Control Measure has shared responsibilities between all parties involved in reducing emissions from ocean-going vessels. The following table outlines a summary of responsibilities and how the terminal or vessel operator can apply exceptions, VIEs, TIEs, and remediation fund.

Table 5: Summary of Responsibilities				
Circumstances that may qualify for a VIE/TIE or remediation				
Circumstances	**Exception**	**VIE/TIE**	**Remediation Fund**	**Responsible Parties**
Safety/emergency, research, or vessel commissioning	✕			
Visits without reductions		✕	*	Terminal, Vessel
Vessel control equipment repair		✕	✕	Vessel
Terminal control equipment repair		✕	✕	Terminal, Port
Terminal upgrades/construction		✕	✕	Terminal, Port
Delays, but reduction occur		✕	✕	Terminal, Vessel
CAECS failure		✕	✕	Vessel, CAECS operator
*In general, all visits may use a VIE or TIE if available, but not all visits qualify for remediation. See section 93130.15(b) of this Control Measure				

Table 5: Summary of Responsibilities (Continued)		
Circumstances that will be evaluated for non-compliance		
Circumstances		**Responsible Parties**
Berth	**Vessel**	
Has shore power	**Does not have shore power**	Vessel
No shore power, but has other CAECS	**Has shore power**	Terminal, Port
No shore power, but has other CAECS	**Does not have shore power**	Terminal, Port, Vessel
Has other CAECS	**No shore power, but doesn't allow CAECS**	Vessel

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.18 Violations.

(a) Any person subject to this Control Measure who fails to comply with any provision, prohibition, limit, standard, criteria, or requirement in this Control Measure is subject to the penalties, injunctive relief, and other remedies specified in Health and Safety Code sections 38580, 39764, 42400 et seq., 43016, other applicable sections in the Health and Safety Code, and other applicable provisions as provided under California law for each violation. Nothing in this Control Measure shall be construed to limit or otherwise affect any penalties or other remedies available under federal law.

(b) Any failure to meet any provision, prohibition, limit, standard, duty, criteria, or requirement in this Control Measure shall constitute a single, separate violation of this Control Measure for each day that a vessel operates without using a CARB approved emission control strategy.

(c) Violating the recordkeeping or reporting requirements in this Control Measure shall constitute a single, separate violation of this section for each day that the applicable recordkeeping or reporting requirement has not been met.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 39674, 41510, 41511, and 43016, Health and Safety Code.

Section 93130.19 Sunset.

The requirements specified in this Control Measure shall cease to apply if the United States adopts and enforces requirements that will achieve emissions reductions within the Regulated California Waters equivalent to those achieved by this Control Measure. Equivalent requirements may be from IMO regulations adopted and enforced by the United States, or may be contained in regulations adopted or enforced by the United States Environmental Protection Agency. This Control Measure shall remain in effect until the Executive Officer issues written findings that federal requirements are in place that will achieve equivalent emissions reductions within the Regulated California Waters and are being enforced within the Regulated California Waters.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Section 93130.19 Severability.

If any section, paragraph, subparagraph, sentence, clause, phrase, or portion of this Control Measure is 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 Control Measure.

Note: Authority cited: Sections 38560, 38562, 39600, 39601, 39658, 39659, 39666, 43013, and 41511, Health and Safety Code. Reference: Sections 38510, 38530, 38562, 38566, 38580, 39600, 39650, 39658, 39659, 39666, 41510 and 41511, Health and Safety Code.

Tab 2

MEETING

STATE OF CALIFORNIA

AIR RESOURCES BOARD

DEFREMERY PARK RECREATION CENTER

1651 ADELINE STREET

OAKLAND, CALIFORNIA

THURSDAY, DECEMBER 5, 2019

10:00 A.M.

JAMES F. PETERS, CSR
CERTIFIED SHORTHAND REPORTER
LICENSE NUMBER 10063

includes an interim evaluation in 2023. So staff have set ambitious implementation timelines for realizing the health benefits of this regulation as early as possible, but we also realize there may be some uncertainty with adapting these technologies for new vessel types and also with the infrastructure developments that may be required.

Now you may hear today that technology does not exist for ro-ro and tanker vessels or that staff's proposed timelines are too aggressive.

Now, technology manufacturers have assured CARB staff that there are engineering solutions for both ro-ro and tanker vessels. And shore power has actually been used on tanker vessels here in California.

And while there are no current capture and control projects that are occurring yet for ro-ro and tanker vessels in California, staff have been able to analyze multiple terminal infrastructure projects really to assess the timelines that are required to complete existing projects. And we feel the timelines that are proposed here are aggressive but feasible.

However, to address the uncertainty of the timelines for these new vessel types, CARB staff propose an interim evaluation in 2023 to assess the progress of adapting technology for new vessel types and also the necessary infrastructure improvement projects that might

based on the fact that it would have to meet some emissions level. And so it doesn't prescribe that a tanker would have to use shore power, or the bonnet system, or on-board. It is flexible in that manner.

So we would, at this point, as I think Nicole mentioned and there's a picture in one of the slides is that shore power has been and is in use at a terminal in Long Beach at T121. And so it's -- it is demonstrated to be effective for tankers. We up here do not want to downplay the role of safety for tankers for any vessel categories. And so safety is going to be the important concern with any emission control technology. And any of the technologies will have their own specific components that will have to be designed with safety in mind.

And so currently, we think that the two probably most likely technologies are either the capture and control systems. And those are effective because there doesn't have to be any vessel infrastructure done, right? A vessel can show up that doesn't have any shore power infrastructure on the vessel and it can be controlled.

And so that, I think, is one reason why we consider the capture and control systems likely for tankers. But tankers could use a combination of, say for example, cleaner tier 3 engines that are coming up in the future with maybe a diesel particulate filter on board.

comments to the docket on this item will remain open until December 9th, 2019. After that date, if it's determined that additional modifications are appropriate, the record will be reopened and a 15-day Notice of Public Availability will be issued. And the staff has already indicated that they do intend to do that.

So it will be reopened, and there will be another 15-day Notice of Availability, and then the public may submit more written comments on proposed changes, which will be considered and responded to in the Final Statement of Reasons for the regulation.

Written comments that are received after December 9th, but before the notice -- the 15-day notice is issued do not get considered as part of the official record. So I think in plain English what that means is this regulation is going to come back to the Board with some proposals for amendments included. We don't have a date second -- set for that yet, but we certainly heard a lot of testimony that people would like that to be sooner rather than later. And I hope that the staff can do its work expeditiously, so that we can -- so that we can hear it quickly.

Now, before we turn to the resolution that's before the Board, I want to ask for Board members who have additional comments on what they've heard to speak. And

March 20, 2020

Jared Blumenfeld, Secretary
California Environmental Protection Agency
1001 I Street
Sacramento, California 95812

Mary Nichols, Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95812

Subject: Impact of COVID-19 on At-Berth Regulatory Schedule

Dear Secretary Blumenfeld and Chair Nichols:

The spread of COVID-19 is disrupting the entire world. The impact has been particularly difficult to manage in an industry based upon the international movement of goods and people. Necessary precautions to address COVID-19 have already made compliance with the existing At-Berth Rule difficult and, at times, impossible. Travel bans and self-quarantines have already kept key personnel from reaching vessels and terminals. Many vessel sailings were cancelled from China and vessel schedule will take months to restabilize. Here in the United States, while we are still in the early stages of the spread of this disease, industry has already documented to your staff the many instances of our inability to conduct routine maintenance, repairs, or vessel commissioning as a result of COVID-19 restrictions.

In addition to the challenges that this public health crisis poses to industry compliance with the existing shorepower regulation, we will also be impacted with respect to promulgation of a new proposed rule. We appreciate that your staff has already delayed the release of the 15-Day package for the At Berth amendments and is considering extending deadlines for comments. Unfortunately, that is not enough. Based on the recent study from Imperial College London, this outbreak will not subside for months with the peak in the United States not reached until June 2020. As a result of the extraordinary disruptions to normal business operations associated with this crisis, it will be impossible for the regulated community, spread across the world, already dealing with limitations with respect to our ability to comply with the current regulation to also participate in the rulemaking process for months.

With respect to implementation, it is unclear when personnel and vendors will be able to travel again to begin making necessary improvements to comply with the requirements of any amended rule. The proposed rule compliance date was already very aggressive, and our Coalition has consistently and repeatedly raised concerns that compliance was infeasible even under the best of circumstances due to the operational and infrastructure changes to be implemented.

As a result of the COVID-19 circumstances described above and in anticipation of other extenuating factors arising from this crisis that may come to light in the coming months, we respectfully request that the regulatory schedule be paused until January 2021 when this crisis is over and its full impacts have been assessed.

We look forward to continuing our good working partnerships and positive relationships with the Agency and the Air Resources Board during these trying times.

Sincerely,

California Association of Port Authorities
Cruise Lines International Association
Pacific Merchant Shipping Association
Western States Petroleum Association
World Shipping Council

Tab 4

March 24, 2020

Jared Blumenfeld
Secretary
California Environmental Protection Agency
1001 I Street
Sacramento, California 95812

Mary D. Nichols
Chair
California Air Resources Board
1001 I Street
Sacramento, California 95812

Secretary Blumenfeld and Chair Nichols:

On behalf of the California Association of Port Authorities (CAPA) and the International Longshore and Warehouse Union (ILWU), we are writing to request a pause in the development of the currently pending At-Berth regulatory package. Our industry and workers are currently managing the COVID-19 crisis, which has resulted in a shelter-in-place order for the State of California. As our state manages the current health crisis, the health and safety of our communities and of the critical workers, who continue to work to keep goods moving through the supply chain, is our top priority.

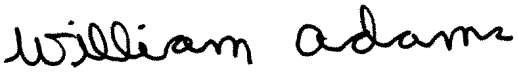
CAPA represents the eleven public seaports in California, including three of the largest container ports in the nation – Los Angeles, Long Beach and Oakland – as well as eight smaller ports situated along the coast from Humboldt to San Diego, and along inland waterways in West Sacramento and Stockton. The ILWU was formed by dockworkers in 1934 and represents 40,000 men and women in Oregon, Washington, California, Alaska and Hawaii, on the docks and in other industries.

Given the current crisis, we request that the At-Berth regulatory package process be delayed until January of 2021. This pause would afford ports and port workers time to get through the COVID-19 outbreak and navigate its economic impacts prior to enacting a regulatory change that could complicate economic recovery. COVID-19 is changing the tourism and goods movement industry in ways that we do not yet fully comprehend; it would be appropriate to consider these changes into the rulemaking process. For example, the Port of San Diego has already experienced a precipitous drop in revenues related to the complete halt of the tourism industry with a projected fiscal year end (June 31, 2020) deficit of $30 million. Of course, the halt of the tourism industry also means a significant drop in work for port workers.

CAPA and ILWU desire a strong partnership with CARB to reduce emissions, improve the environment, and maintain jobs. We remain committed to these shared goals and we are merely asking for a pause in a pending regulatory process during this unprecedented health crisis. Therefore, we request a pause in the At-Berth regulatory process until January of 2021 in order to focus on the current pressing issues and

for all parties to better understand the long-terms shifts that will be occurring in the tourism and goods movement industries. Thank you for your consideration.

Sincerely,



William E. Adams
President
International Longshoreman and Warehouse Union

Eugene D. Seroka
Chairman
California Association of Port Authorities

Tab 5


CalChamber
CALIFORNIA CHAMBER OF COMMERCE
NFIB
CIVIL JUSTICE
ASSOCIATION OF CALIFORNIA
CALIFORNIA ASSOCIATION of WINEGRAPE GROWERS
California Food Producers
California CREDIT UNION LEAGUE
CALIFORNIA ATTRACTIONS AND PARKS ASSOCIATION
CAPA
CAA California Apartment Association
CBIA CALIFORNIA BUILDING INDUSTRY ASSOCIATION
cga
FOOTHILL PARTNERS
REAL ESTATE AND URBAN ECONOMICS
International Council of Shopping Centers
Western Manufactured Housing Communities Association
Associated General Contractors (AGC)
American Property Casualty Insurance Association
INSURING AMERICA apci.org
autocare ASSOCIATION
ALLIED MANAGED CARE INCORPORATED
FLASHER BARRICADE ASSN.
ACLHIC
Coalition of Small & Disabled Veteran Businesses
AIMS
ACCLAMATION INSURANCE MANAGEMENT SERVICES
IFA
Franchising
Building local businesses, one opportunity at a time.
PMSA
PACIFIC MERCHANT SHIPPING ASSOCIATION
CALIFORNIA RETAILERS ASSOCIATION
WESTERN INDEPENDENT REFINERS ASSOCIATION
PIFC
Agricultural Council of California
CALIFORNIA STRAWBERRY COMMISSION
CDIA
CONSUMER DATA INDUSTRY ASSOCIATION
CALIFORNIA FRESH FRUIT ASSOCIATION
ACLI
Financial Security...for Life.
CALIFORNIA FARM BUREAU FEDERATION
NAIOP
COMMERCIAL REAL ESTATE DEVELOPMENT ASSOCIATION
NAIOP OF CALIFORNIA
BOMA California
California Business Properties Association
CBBD
FAMILY BUSINESS ASSOCIATION OF CALIFORNIA
MENDOCINO
SCLC
SOUTHERN CALIFORNIA LEADERSHIP COUNCIL
Humboldt Redwood
OPG
THE CHAMBER
Norwalk Chamber of Commerce
GCA
MURRIETA/WILDOMAR CHAMBER OF COMMERCE
HOLLYWOOD CHAMBER OF COMMERCE
BURBANK CHAMBER OF COMMERCE
REGIONAL CHAMBER OF COMMERCE SAN GABRIEL VALLEY
SILICON VALLEY CHAMBER OF COMMERCE
nocc
NORTH ORANGE COUNTY CHAMBER
REDDING CHAMBER OF COMMERCE
CONVENER | CATALYST | CHAMPION
SANTA MARIA VALLEY Chamber
Chamber of Commerce | Visitors Bureau | Economic Development
AZUSA Chamber of Commerce
palm desert area chamber of commerce
OPENING DOORS FOR BUSINESS
North Sacramento CHAMBER OF COMMERCE
Petaluma Area CHAMBER of COMMERCE
GREATER STOCKTON CHAMBER OF COMMERCE
El Centro Chamber of Commerce & VISITORS BUREAU
CONNECTIONS START HERE
COSTA MESA Chamber of Commerce
LODI CHAMBER OF COMMERCE

April 15, 2020

The Honorable Gavin Newsom
Governor, State of California
State Capitol
Sacramento, CA 95814

Dear Governor Newsom:

We deeply appreciate your aggressive leadership responding to the coronavirus pandemic. The business community is also helping where possible by providing essential services, having employees work remotely, and of course providing support for our workers and communities. Like you, our businesses are keenly focused on meeting this crisis and finding a path to recovery. The interconnectedness of our economy and its supply chains means the reverberation of shutting down public gatherings and non-essential outings has been felt by every Californian.

You have already taken preliminary actions to mitigate some of the burdens on individuals and private employers as they deal with the vast economic consequences, including directing tax agencies to delay the income tax filing deadlines and suspending the California WARN act for employers who have unexpectedly been required to shut down their businesses with little notice. We are grateful for these efforts so far but

believe there is much more to be done to ease the economic pain being visited on employers and their workers throughout the state.

Our organizations recommend the Administration urgently act to pause non-essential state regulatory functions that will not impact measures designed to protect imminent harm to human health. Specifically, we urge you to issue an Executive Order temporarily suspending all pending new rulemaking, as well as any rules or amendments first taking effect after your stay-at-home order of March 19, 2020, not urgently needed to protect public health, for all state agencies and commissions for at least six months.

Since public participation is an integral part of the development of new regulations and proposed rules, regulators must protect due process rights of regulated entities and the public. As businesses direct their focus to providing essential services and protecting their workforce, they will lose the capacity to meaningfully contribute to draft regulations or proposals from state agencies, boards, and commissions. Nor is there an accessible platform for stakeholders to participate on a virtual basis that is also equipped to accommodate widespread public comments or participation.

We are aware of the following agencies that are still moving forward with proposed rulemaking, which can be postponed during this emergency without affecting public health and safety, or the state's response to the COVID-19 crisis. As we become aware of others, we will advise you.

- Draft Supplemental Guidance by the Department of Toxic Substances Control: Screening and Evaluating Vapor Intrusion, for which public comment is due April 30.
- Department of Fish & Wildlife Commission - Petition to List the Southern California/Central Coast Evolutionarily Significant Unit (ESU) of Mountain Lions as Threatened under the California Endangered Species Act (CESA), submitted by the Center for Biological Diversity and the Mountain Lion Foundation – Hearing April 16.
- California Department of Housing and Community Development (HCD) - Multifamily Housing Program (MHP) 2020 Draft Guideline amendments: Comments deadline May 5.
- Air Resources Board (ARB) - Vessels at berth regulation: Comments deadline May 1.
- ARB Transportation Refrigeration Unit regulation: Comments deadline April 27 (extended 30 days from March 27)
- ARB Advanced Clean Trucks: Expected public comment deadline approximately week of May 11-22.
- ARB Public Hearing on adoption of the proposed amendments to the Regulation on the Commercialization of Alternative Diesel Fuels (ADF) – April 23.
- State Water Resources Control Board (SWRCB) Microplastics in Drinking Water: Comments deadline April 24. On Board agenda 6/16/20.
- SWRCB Hexvalent Chromium MCL Staff workshop 4/27/20: Comments deadline May 15.
- SWRCB Drinking Water Fees: Comments deadline May 15.
- Water Board Once Through Cooling Extensions: Comments deadline May 11.
- CalRecycle – SB 1383 Regulatory Language – Comments deadline May 20.

Employers should also have an extended period of time to implement regulations that have not yet taken effect, for at least 90 days following the end of both a local and statewide shelter-in-place order. We are aware of the following upcoming regulations and will advise of others as we become aware:

- CEQA guidelines adopted by the Natural Resources Agency implementing SB 743 changes on analysis and mitigation of VMT thresholds.
- Suspend the enforcement of AB 827 that is set to take effect July 1, 2020, as it applies to amusement parks. Before the Legislature went into emergency recess, the author of AB 827 was moving rapidly his clean-up urgency legislation, AB 1506, to clarify application of the original bill. With the Legislature on indefinite recess, amusement parks would be expected to spend substantial sums for compliance – even if not open for business;
- California Consumer Privacy Act regulations, set to take effect July 1, 2020.

- State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State – implementation date May 28, 2020.

We believe that Californians' health and safety will not suffer from a pause in these regulatory processes, and that state regulators can accommodate these changes to their schedules. We appreciate your urgent attention to this matter.

Sincerely,

Allan Zaremberg
President, CEO
California Chamber of Commerce

On behalf of the above organizations

AZ:JB:ll

Tab 6


CMTA
CALIFORNIA MANUFACTURERS & TECHNOLOGY ASSOCIATION
CONSUMER BRANDS ASSOCIATION
AHAM
ASSOCIATION OF HOME APPLIANCE MANUFACTURERS
California Business Properties Association
BOMA California
NAIOP
COMMERCIAL REAL ESTATE DEVELOPMENT ASSOCIATION
NAIOP OF CALIFORNIA
CALIFORNIA RESTAURANT ASSOCIATION
California Food Producers
International Council of Shopping Centers
LOS ANGELES OPG OFFICIAL GARAGE UNIT
CALIFORNIA RETAILERS ASSOCIATION
Consumers Economy Jobs
CAWP
autocare ASSOCIATION
Independence drives us.
PACTIV
WPA
Western Plastics Association
APR
The Association of Plastic Recyclers
BIODEGRADABLE PRODUCTS INSTITUTE
American Chemistry Council
PMSA
PACIFIC MERCHANT SHIPPING ASSOCIATION
CICC
Chemical Industry Council of California
IEA
INDUSTRIAL ENVIRONMENTAL ASSOCIATION
Promoting Industry and Protecting the Environment
FPI
FOODSERVICE PACKAGING INSTITUTE
CALIFORNIA FARM BUREAU FEDERATION
HCPA
Representing Household & Commercial Products
WSPA
CROWLEY
FRAGRANCE CREATORS ASSOCIATION
CIPA
California Independent Petroleum Association
acp
association of claims professionals
The American Waterways Operators
CALIFORNIA RAILROADS
WEST COAST LUMBER & BUILDING MATERIAL ASSOCIATION
WESTERN INDEPENDENT REFINERS ASSOCIATION
CALCIMA
California Construction and Industrial Materials Association
CFCA
CALIFORNIA FUELS & CONVENIENCE ALLIANCE
DART
DART CONTAINER CORPORATION
PLASTICS INDUSTRY ASSOCIATION
NEII
NATIONAL ELEVATOR INDUSTRY, INC.
SETTING STANDARDS IN MOTION
American Coatings ASSOCIATION

April 10, 2020

Via Electronic Delivery
The Honorable Gavin Newsom
Governor, State of California
State Capitol Building
Sacramento, CA 95814

Subject: Request for Postponement of Deadlines for Pending Policy and Regulatory Initiatives.

Dear Governor Newsom,

The undersigned organizations thank you for your leadership in guiding California through the uncharted territory of the COVID-19 pandemic. We appreciate the open lines of communication your administration has maintained to address emerging problems in real time. This unprecedented public health crisis requires all parties to work together for the greater good of California and its citizens.

We write you now asking you to direct all state agencies to postpone near-term rulemaking and related deadlines to allow a reasonable period of time for meaningful public participation in decision making processes. We also ask that you direct state agencies to be judicious in exercising enforcement authority while businesses make unprecedented changes to their operations to help reduce the spread of the virus.

The business community has been working diligently to adapt to shelter in place orders. Businesses that are still in operation have reduced staffing levels to comply with social distancing guidelines and other health-related measures. Employee focus has necessarily been diverted from normal workload to COVID-19 response. A "business as usual" approach from state regulatory agencies conflicts with the administration's directives to focus limited resources on protecting employee health and safety while continuing to provide essential goods and services to the public.

Many rulemaking and policy development initiatives were either launched or already in process at the front end of the COVID-19 crisis. As the following few examples attest, several of the pending deadlines pertain to environmental and workplace-related initiatives:

- Cal-Recycle SB 1335 Implementation: Cal-Recycle is in in the process of developing regulations for determining the types of food service packaging that are reusable, recyclable, or compostable. Cal-Recycle opened a formal comment period on March 13 which is scheduled to close on April 28.
- State Water Resources Control Board Economic Feasibility Guidance: The SWRCB issued a "White Paper" on Evaluation of Economic Feasibility as the first step in developing a new drinking water standard for hexavalent chromium. The White Paper was released on March 6 with a comment deadline of April 27. The SWRCB also announced three public workshops scheduled for mid-April. This guidance is expected to set precedents for all future state drinking water standards.
- Air Resources Board Transport Refrigeration Unit, Commercial Harbor Craft, and Vessels At-Berth Regulations: The public comment deadlines on these multiple

proposed amendments to existing regulations on our state's "essential service" supply chain were extended to April 27, April 30, and May 1, respectively. All the critical supply chain functions provided by these freight sectors are essential to the delivery of medical equipment, pharmaceuticals, fresh foods and other vital products currently in short supply.

- Cal-EPA Supplemental Vapor Intrusion Guidelines: This draft guidance, which could have significant negative impacts on in-fill development and affordable housing projects, was issued in mid-February. Public workshops originally scheduled for early April have been postponed until further notice and the public comment deadline extended by 30 days to June 1.
- Office of Environmental Health Hazard Assessment Public Health Goals: OEHHA announced on March 27 that it is initiating development of PHGs for 1,4 dioxane and NDMA in drinking water with a solicitation for scientific information on health effects. This notice indicates an April 27 deadline for public comments.
- Cal-OSHA Indoor Heat Illness Prevention Regulations: Cal-OSHA is nearing completion of work required by the Office of Administrative Law to approve a notice of proposed rulemaking, which would commence a 45-day public review and comment period. As currently drafted, this proposed regulation will impact thousands of businesses statewide.

Continuing to advance new regulatory initiatives in the current environment will undermine public participation and lead to poorly informed decisions that may present unintended and undesirable consequences. While the extensions granted to date are appreciated, they are being issued on a piecemeal basis and are inadequate given uncertainty about the duration of the crisis. Therefore, in recognition of the overwhelming impact of the COVID-19 response effort, all pending regulatory proceedings including informal pre-rulemaking activities should be postponed for a reasonable period of time after shelter in place orders are lifted.

In addition to regulatory initiatives, some industries such as food production and processing, continue to receive 60-day notices of intent to sue under Proposition 65. The Attorney General should recognize that many businesses are uniquely vulnerable to predatory litigation practices while they focus on responding to the COVID-19 crisis and should prioritize these cases for state intervention.

The undersigned groups want to make clear that we are simply seeking a short-term stay in state regulatory agendas while we do our part to support California's response to this public health crisis. We remain committed to working with the state toward practical and sustainable regulations and to meeting existing regulatory requirements to the maximum extent feasible.

Thank you again for your time and continued leadership in these difficult times. We appreciate your consideration of our urgent requests. Please contact me if you have any questions at lhastings@cmta.net or (916) 527-4334.

Sincerely,

Lance Hastings, President

California Manufacturers & Technology Association

Cc: Ann O'Leary, Governor's Office, Chief of Staff
Jared Blumenfeld, Secretary, Environmental Protection Agency
Joaquin Esquivel, Chair, State Water Resources Control Board
Katrina Hagen, Director, Department of Industrial Relations
Ken DaRosa, Acting Director, CalRecycle
Lauren Zeise, Director, Office of Environmental Health Hazard Assessment
Mary Nichols, Chair, Air Resources Board

American Chemistry Council
American Coatings Association
Association of Claims Professionals
Association of Home Appliance Manufactures
Association of Plastic Recyclers
Biodegradable Products Institute
Building Owners and Managers Association of California
California Business Properties Association
California Construction and Industrial Materials Association
California Farm Bureau Federation
California Food Producers
California Fuels & Convenience Alliance
California Independent Petroleum Association
California Independent Petroleum Association
California Railroads
California Restaurant Association
California Retailers Association
CAWA - Representing the Automotive Parts Industry, and the Auto Care Association
Chemical Industry Council of California
Commercial Real Estate Development Association
Consumer Brands Association
Crowley
Dart Container Corporation
Foodservice Packaging Institute
Fragrance Creators Association
Industrial Environmental Association
International Council of Shopping Centers
National Elevator Industry, Inc.
Official Police Garage Association of Los Angeles
Pacific Merchant Shipping Association
Pactiv, LLC
Plastics Industry Association
Representing Household and Commercial Products
The American Waterways Operators

The California League of Food Producers
The Western Plastics Association
West Coast Lumber & Building Material Association
Western Independent Refineries Association
Western States Petroleum Association

Tab 7

CALIFORNIA LEGISLATURE

STATE CAPITOL
SACRAMENTO, CALIFORNIA
95814

April 21, 2020

Mary D. Nichols, Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Rulemaking Impacting Essential Services Freight Transportation

Dear Chair Nichols,

The COVID-19 crisis has posed a fundamental threat to California's public health and our economy. In light of the economic impacts of this extraordinary event, it is imperative that the state government not only commit to slowing the spread of the virus, but also take the steps needed to protect our state's economy and employment opportunities for our working families.

Preserving the operations of our freight transportation system will be key to protecting our economy, keeping medical supplies moving, and ensuring that products are available on our store shelves during this unprecedented crisis. We thank Governor Newsom for recognizing that our goods movement industry and supply chains are "essential services" that must remain up and running during the pandemic. Without a fully functioning supply chain, we risk disrupting the delivery of critical medical supplies, the distribution of groceries, and billions of dollars in personal income, job opportunities, and tax revenue.

As such, we request that the California Air Resources Board (CARB) put all current and proposed rulemakings regarding freight transportation and harbor craft on hold until January 2021. This will ensure that the state can focus our essential transportation assets on delivering critical goods and providing transportation mobility options during this crisis.

We share CARB'S goal of protecting our air quality and the belief that we must base any new regulations on science, facts, air quality modeling, cost-effectiveness, and minimizing any negative impact on the statewide economy.

Over the past several weeks, COVID-19 has fundamentally transformed life as we know it in California, and it may take several months after the conclusion of this crisis before we can understand what the new baseline of our economy and environment will look like. Therefore, it is necessary for regulators to pause and reevaluate any proposed regulations based on our new reality once the crisis has subsided.

We are hopeful that by January 2021, we can evaluate COVID-19's impact on our state and work together to achieve the best environmental and economic outcomes for all Californians.

Sincerely,

Patrick O'Donnell
Assembly District 70

Patricia C. Bates
Senate District 36

Anna M. Caballero
Senate District 12

Wendy Carrillo
Assembly District 51

Phillip Chen
Assembly District 55

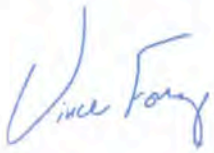
Jordan Cunningham
Assembly District 35

Tom Daly
Assembly District 69

Bill Dodd
Senate District 3

Tyler Diep
Assembly District 72

Heath Flora
Assembly District 12



Vince Fong
Assembly District 34

Jim Frazier
Assembly District 11

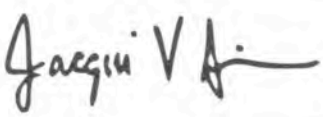
James Gallagher
Assembly District 3

Mike A. Gipson
Assembly District 64

Timothy S. Grayson
Assembly District 14

Shannon Grove
Senate District 16

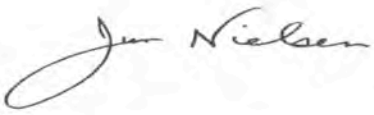
Melissa Hurtado
Senate District 14



Jacqui Irwin
Assembly District 44

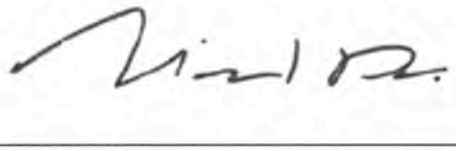
Chad Mayes
Assembly District 42

John M. W. Moorlach
Senate District 37



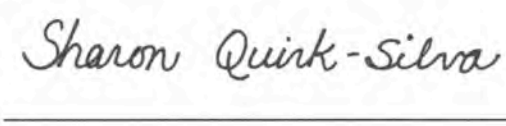
Jim Nielsen
Senate District 4

Jay Obernolte
Assembly District 33



Richard Pan
Senate District 6

Jim Patterson
Assembly District 23



Sharon Quirk-Silva
Assembly District 65

James C. Ramos
Assembly District 40

Freddie Rodriguez
Assembly District 52

Rudy Salas
Assembly District 32

Miguel Santiago
Assembly District 53

Thomas J. Umberg
Senate District 34

Scott Wilk
Senate District 21

cc: The Honorable Gavin Newsom, Governor
The Honorable Eleni Kounalakis, Lieutenant Governor
Jared Blumenfeld, Secretary for Environmental Protection, CalEPA
Chris Dombrowski, Acting Director, Governor's Office of Business and Economic Development

Tab 8

Capitol Matrix Consulting
Analysis, Advice, Advocacy

April 27, 2020

Ms. Catherine Reheis-Boyd
President
Western States Petroleum Association
1415 L Street, Suite 900
Sacramento, CA 95814

Dear Ms. Reheis-Boyd:

This letter is in response to your request that our firm evaluate the effects of the COVID-19 pandemic on the estimates in the California Air Resources Board (CARB) Standardized Regulatory Impact Assessment (SRIA) of the *Ocean-Going Vessels at Berth* proposal, as modified by the "15-day changes" document released on March 26, 2020.

Background and Proposed Regulation

The proposed regulation would expand the type and number of ships that must use shore electrical power or an alternate recapturing method to reduce emissions while at berth. Existing rules require most container ships, refrigerated ships and cruise ships to use shore power when docked in ports rather than run their auxiliary engines to create electricity for lighting, air conditioning or operation of shipboard equipment. Alternatively, these ships can continue to use auxiliary engines but then must connect to an on-shore or barge-based capture and control system. The current regulations are in place at six ports: Los Angeles, Long Beach, Oakland, San Diego, San Francisco and Hueneme.

Key provisions of the proposed regulation (as modified by the 15-day changes) would:

- Make smaller container, reefer and cruise ships subject to the shore power regulation. Those requirements would phase-in beginning in 2021.
- Make roll-on/roll-off (ro-ro) ships subject to the shore power regulation starting in 2024.
- Expand the requirement to include tankers beginning in 2025 at the Los Angeles and Long Beach terminals, and elsewhere in 2027. In addition to auxiliary engines, the proposal would require large tankers to reduce emissions from boilers used to power steam-driven pumps involved in offloading crude oil, unless shore power is installed.

- Expand the ports and terminals covered in the regulations. Ports, including refinery docks, in Northern California in or near cities such as Stockton, Richmond, Rodeo, Benicia and Martinez, would now be covered.
- Allow vessel and terminal operators to meet berth emission reduction requirements through an approved "innovative concept." The concept, which according to CARB would most likely be used at smaller ports, allows vessel or terminal operators to achieve targeted emissions savings through an alternative project. These concepts would only qualify to the extent they are not required by regulation, including future regulations and AB617 Community Emission Reduction Plans.

CARB Estimates of the Proposal's Impact

CARB estimates that the proposed regulation would have the following impacts:

- A total net cost of $2.40 billion for the period 2021 to 2032 and avoided adverse health outcomes worth $2.44 billion for the same period.
- Unit costs of regulation in 2030 of $1.30 per Twenty-Foot Equivalent Unit (TEU) for container or reefer vessels, $5.25 per cruise passenger, $7.49 per automobile moved on a ro-ro ship, and less than a penny per gallon of finished product for products moved by tanker.
- Net decreases in economic activity over the 2021 to 2032 period due to added regulatory costs and reduced productivity, offset in a few years by new construction activity.
  - By the final year of the projection period (2032), *decreases* of:
    - $297 million in gross state product;
    - 2,385 jobs;
    - $234 million in personal income; and
    - $90 million in private investment.

Methodology and Assumptions Behind CARB's Estimate

Methodology: CARB's estimates were based on a multiple-step process:

- Information was developed by CARB staff regarding such factors as costs of permitting, planning, engineering, construction, equipment, installation, and operations, and maintenance.
- These assumptions were then entered into a proprietary economic forecasting and policy analysis model licensed by REMI. The REMI model integrates input-output, computable general equilibrium, econometric, and economic geography methodologies to estimate the impacts of cost changes and other factors on the

broader economy. A basic feature of computable general equilibrium models is that their outputs are highly sensitive to changes in economic assumptions.

Key assumptions. The REMI economic model starts with a baseline set of economic assumptions that tie to the California Department of Finance (DOF) forecasts made in the Spring of 2019. At the time, DOF projected that U.S. and California economies would experience moderate but sustained economic growth through 2022, as follows:

1) Employment increasing by an average of 1 percent per year,
2) Personal income increasing by 4 percent per year, and
3) U.S. real gross domestic product increasing by 2 percent per year.

The May 2019 population projection indicated that California would add about 2.4 million people between 2019 and 2032.

Other inputs into CARB's estimates included diesel price projections and "industry growth factors." The diesel price projections were based on U.S. Energy Information Administration's (EIA) October 2018 estimate, which assumed steady growth in diesel prices, from $2.80 per gallon in 2019 to $5.03 by 2032. The industry growth factors are intended to capture the impacts of expected growth in port volume over time. They are used by CARB for its baseline emissions estimates and most of its cost estimates. The growth factors are based on a combination of projections supplied by U.S. Federal Highway Administration's Freight Analysis Framework (FAF) 65 and, where available, from individual ports. Using these estimates, CARB assumes growth factors of 77 percent for container vessels, 79 percent for cruise ships, 52 percent for ro-ro vessels, and 14 percent for tankers.

Impact of COVID-19 On CARB's Assumptions

Every key economic assumption in the CARB estimate of the proposed regulation has been dramatically affected by the COVID-19 pandemic. Fuel prices, economic output, jobs, international trade and waterborne port activity will all be sharply lower than anticipated in any economic forecast made prior to March of this year. Given the emerging expectation that recovery from the historic COVID-19-related downturn will be slow (see discussion below), we expect the economic measures will remain below the levels assumed in the CARB projections for several years to come. This will, in turn, have impacts on CARB's estimates of (1) baseline emissions, (2) emissions reduction and health-related savings resulting from the proposal, (3) costs and savings to the ports, terminals, and vessel operators, and (4) broader economic impacts of the proposed regulation.

Recent economic developments. The COVID-19 pandemic has led to a global economic contraction that is more severe than the 2008-2010 Great Recession. Nationally, new claims for unemployment insurance totaled 26 million over the five weeks ending on April 23. Over the three weeks ending on the same date, California processed about 3.4 million unemployment claims. These claims represent about 17 percent of the U.S. and California

workforces, respectively. Turmoil in global oil markets have driven the price of West Texas Crude downward, to less than $17 per barrel as of April 23, 2020.[1]

Department of Finance comments. On April 10, the California Department of Finance (DOF) sent a budget letter to the Legislature alerting them to the dramatic impact that the COVID-19 pandemic is having on the California economy and state budget. In the letter, DOF indicated that the effects of the downturn will be felt immediately, that the California unemployment rate could peak at a rate higher than the Great Recession of 2008, and that economic softness could persist into 2020-21 and additional years depending on the pace of recovery to local, state, and national economies. It referenced a multi-year recession alternative included in its January budget, and indicated that actual increases in unemployment would be much larger.

Other recent forecasts. Recent national economic forecasts show a similarly dark picture for the U.S. economy. On April 23, the Congressional Budget Office released its first post COVID-19 forecast, which showed a 5.6 percent decline in inflation-adjusted gross domestic product in 2020, followed by a subdued increase of 2.8 percent in 2021.[2] (For context, real GDP fell by a cumulative total of 2.6 percent in the first two years of the 2008-2010 recession, which was considered to be the most severe since the 1930s.) CBO's projected level of unemployment is 11.4 percent for 2020 and 10.1 percent in 2021. The primary reason that CBO's forecast anticipates only a modest rebound in 2021 is its expectation that social distancing will continue (albeit at a lesser rate) through the first half of 2021.

Other forecasts show equally sharp declines in 2020, and, under some scenarios, an extended period of subdued economic activity.[3] Factors that could result in long-term declines include permanent downsizing of some sectors and occupations due to such factors as reduced travel, changes in consumer spending patterns, workplace practices (e.g., more home-based workers, more reliance on technology, less travel), and shifts in global supply chains.

Areas Where A Changing Economic Outlook Will Impact Estimates of the Proposed Regulation

Following are examples of areas where the weaker post COVID economic outlook will affect CARB's outdated estimates of the proposed regulation's impact.

Less port activity under the baseline. As noted earlier, the CARB estimates assume substantial growth in vessel visits through 2032. However, trade flows and port activity are

[1] Price accessed on Oilprice.com April 23, 2020. https://oilprice.com/oil-price-charts/45

[2] "CBO's Current Projections of Output, Employment, and Interest Rates and a Preliminary Look at Federal Deficits for 2020 and 2021." Congressional Budget Office, April 24, 2020. https://www.cbo.gov/publication/56335.

[3] See for example, S&P Global Ratings, Economic Research: COVID-19 Deals A Larger, Longer Hit to Global GDP. https://www.spglobal.com/ratings/en/research/articles/200416-economic-research-covid-19-deals-a-larger-longer-hit-to-global-gdp-11440500

highly sensitive to changes in the state, national, and global economic environments.[4] Based on current economic realities, vessel activity will grow by considerably less than what was assumed in the SRIA. Beyond the general impacts of an economic recession on port volume, we believe it is possible, potentially likely, that the COVID pandemic will have lasting impacts on growth in cruise ship totals, further reducing port activity in the state.

The reduction in vessel activity will lower the level of baseline emissions, which in turn affects the amount of potential emission reductions and health benefits that can be realized from the regulation.

On the cost side, the methodology used by CARB scales the great majority of regulatory costs upward and downward in proportion to the size of the projected industry growth factor. Hence, we would expect reduced vessel activity to lower its estimate of regulatory costs. However, we note that not all of the costs associated with the proposed regulation will rise or fall in line with the industry growth factor. We would expect, for example, infrastructure-related costs to the terminals themselves to have both fixed and variable components. Because these fixed costs would be spread over fewer visits, a reduction in activity would *raise* per-vessel regulatory costs.[5]

Cost shifting. The SRIA analysis assumes that a significant share of the major costs associated with the land-based shore-power and capture and control systems will be initially be borne primarily by ports. However, the impact on ports is assumed to lessened by two factors: (1) the major capital costs are annualized over a 20-year life for terminal equipment; and (2) some, perhaps most, of the costs will be shifted – from ports to terminal operators through lease increases, and from terminal operators to vessel owners and owners of discretionary cargo through rate increases. Thus, the ultimate incidence of the proposed regulation is assumed to be shared by entities around the world.

However, a couple of points are worth noting. First, the required infrastructure costs are not revenue-producing. Consequently, it is not possible to finance them through the traditional revenue-bonding mechanisms used by ports. While it may be reasonable to assume that some of the port authorities could handle the major expenses imposed by this proposal without reducing other expenditures during good economic times, the situation is markedly different when the economy is soft, even at the larger ports. Under such circumstances, regulatory costs are more likely to squeeze out other port projects that are potentially productivity-enhancing or emissions-reducing (at a more cost-effective rate).

Second, the impact on ports is magnified by the fact that it is more difficult to shift costs onto vessel owners and owners of discretionary cargo when these entities are facing their own financial hardships in a depressed economy. If a smaller portion of the regulation's

[4] As an example, cargo tonnage through the Port of Los Angeles grew by 50 percent between 2002 and 2007, but plunged 17 percent the following year, and did not return to the pre-recession level for a decade. Source: Tonnage Statistics/Port of Los Angeles. https://www.portoflosangeles.org/business/statistics/tonnage-statistics

[5] As noted in the on page 26 of SRIA report,"As terminal visit activity decreases, the cost effectiveness of installing emissions control equipment becomes worse, as there are fewer vessels calling at the terminal to use the equipment and to help recoup the costs of installing, operating, and maintaining the equipment."

costs are borne by discretionary cargoes and vessel visits, then a larger portion of those costs will necessarily be borne by Californians. In a growing market, it may be reasonable to assume that the cost-incidence of a proposed regulation will be shared broadly by cargo owners and consumers around the world. However, when markets are less robust, those costs will become more concentrated in this state.

Fuel-related savings estimate. CARB's estimate of net costs incurred by vessel operators using port power includes vessel equipment and maintenance costs. But these costs are partly offset by fuel savings, since the vessels would no longer have to run their auxiliary engines when in port. The estimated amount of fuel savings is based on the marine gas-oil price of $763/metric ton (actual cost in April 2019), adjusted using the U.S. Energy Information Administration's (EIA) price projections for transportation diesel fuel. The EIA projection, made in October 2018, assumed that diesel prices would rise from $2.80 per gallon in 2018 to $3.39 in 2020, $4.30 by 2025 and $5.03 by 2030. (The same forecast assumed that West Texas crude oil would rise from $50 per barrel in 2018 to $72 per barrel by 2020, $100 per barrel by 2025, and $120 per barrel by 2030. As noted earlier, the price as of April 24 of this year was $17 per barrel.) If lower crude-oil prices persist, the avoided costs will be substantially *less* than assumed in the CARB estimate, and net costs of the regulation will be *higher*.

Competitiveness. The SRIA indicates that the proposed regulation will increase costs to California ports and the vessels that visit them. It also indicates that it is not possible to determine the impact of the higher costs on cargo diversions. It asserts that studies exploring the relationship between general cost increases and cargo diversion have come to varying conclusions; and in cases where effects were found, they were the result of cost increases that were much larger than those that were estimated to result from the proposed regulation.

We recognize that shipping decisions are based on a variety of factors in addition to costs, including logistical considerations and access-to-markets. However, we also believe that cost considerations become more important when economic conditions deteriorate, and shipping margins become tighter. This may be particularly true for some of the Northern California ports, newly affected by this proposed regulation, that are closer to the port in Tacoma, Washington. For this reason, we believe it would make sense to revisit these potential cost impacts on California port competitiveness in light of the new economic realities.

Conclusion

The COVID-19 virus has fundamentally altered the economic landscape. The Department of Finance May 2019 economic forecast and the EIA fuel price projections, and other inputs used by CARB to develop the benefits, costs, and economic impacts of the proposed regulation, are no longer credible. For these reasons, CARB's existing SRIA would not accurately inform its Board and members of the public of the true economic impacts of the proposed regulation, and needs to be revised. It makes sense to delay action on the

proposed regulation at least until the economy emerges from the current crisis, and the post-COVID-19 outlook becomes clearer. At that point, CARB should re-estimate the proposal's impacts based on assumptions that more accurately reflect the economy in the post-COVID-19 world.

Please feel free to contact me if you have any questions about the information contained in this letter. I can be reached at (916) 761-2574.

Sincerely,

Brad Williams
Chief Economist
Capitol Matrix Consulting

Enclosure: Author Biography

Author Biography

Brad Williams joined Capitol Matrix Consulting (CMC) in 2011 after serving in various positions in California state government for nearly 33 years. During the past nine years at CMC, Mr. Williams has been involved in hundreds of projects covering energy and regulatory policy, economic forecasting, economic impact analysis, and state and local government taxation and finance. During his prior three decades in state government, Mr. Williams served in key positions in the State Treasurer's office, Assembly Appropriation Committee and the Legislative Analyst's Office, where he was chief economist and Director of Budget Overview and Fiscal Forecasting. During his government career, Mr. Williams was regarded one of the state's top economic and fiscal experts, and he was recognized by the Wall Street Journal as the most accurate forecaster of the California economy in the 1990s.

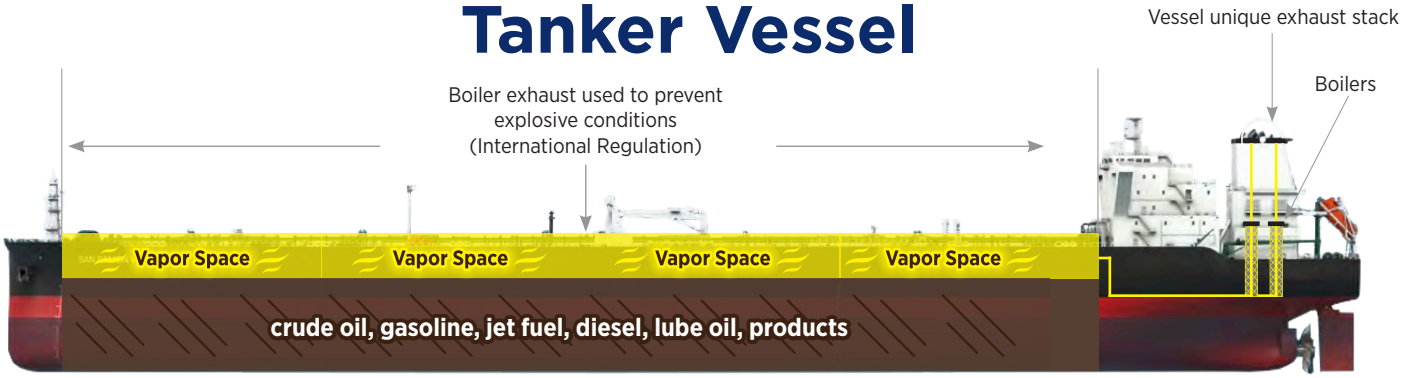
Tab 9

Stack Capture is not ready for pilot testing on tankers

A Feasibility Study is needed first to ensure all safety and operational conditions are taken into consideration because:

- Tankers are different from cargo vessels and have more safety considerations than container vessels
- Stack Capture systems will disrupt tanker boiler systems used to prevent explosive conditions.
- Stack Capture connections need to be vetted by U.S. and international maritime regulators and organizations

Tanker Vessel



Container Vessel

Container Vessels  **Tankers** 

Equipment Type		Container Vessels	Tankers
	Boilers	• Small composite boilers • Heats fuel for propulsion fuel and makes hot water • Not regulated by proposed At-Berth Regulation	• Very large boilers • Provides steam to drive cargo pumps and heats cargos • Exhaust gas used to make cargo space not explosive (required by international regulations) • Regulated by proposed at berth regulation
	Cargo	• Containerized cargo • Transferred by shore cranes	• Flammable petroleum products (crude oil, gasoline, jet fuel, diesel, lube oils etc...) • Transferred with ship steam driven pumps
	Notes	• No hazardous cargo zones	• Large hazardous cargo regulated area • Vessel are always required to be ready to move from the berth in 30 minutes or less

Tab 10

INTERNATIONAL FIRE FIGHTER

A crude oil tanker exploded – Why is that unusual?

TOM GULDNER (HTTPS://IFFMAG.MDMPUBLISHING.COM/AUTHOR/TOMGULDNER/) - 10/12/2018

On August 15, 2018 an explosion rocked the VLCC Desh Vaibhav. The vessel had just off-loaded 270,000 mt of crude from the Persian Gulf and her tanks were empty at the time of the explosion. Tragically, several crew members were killed in the incident.

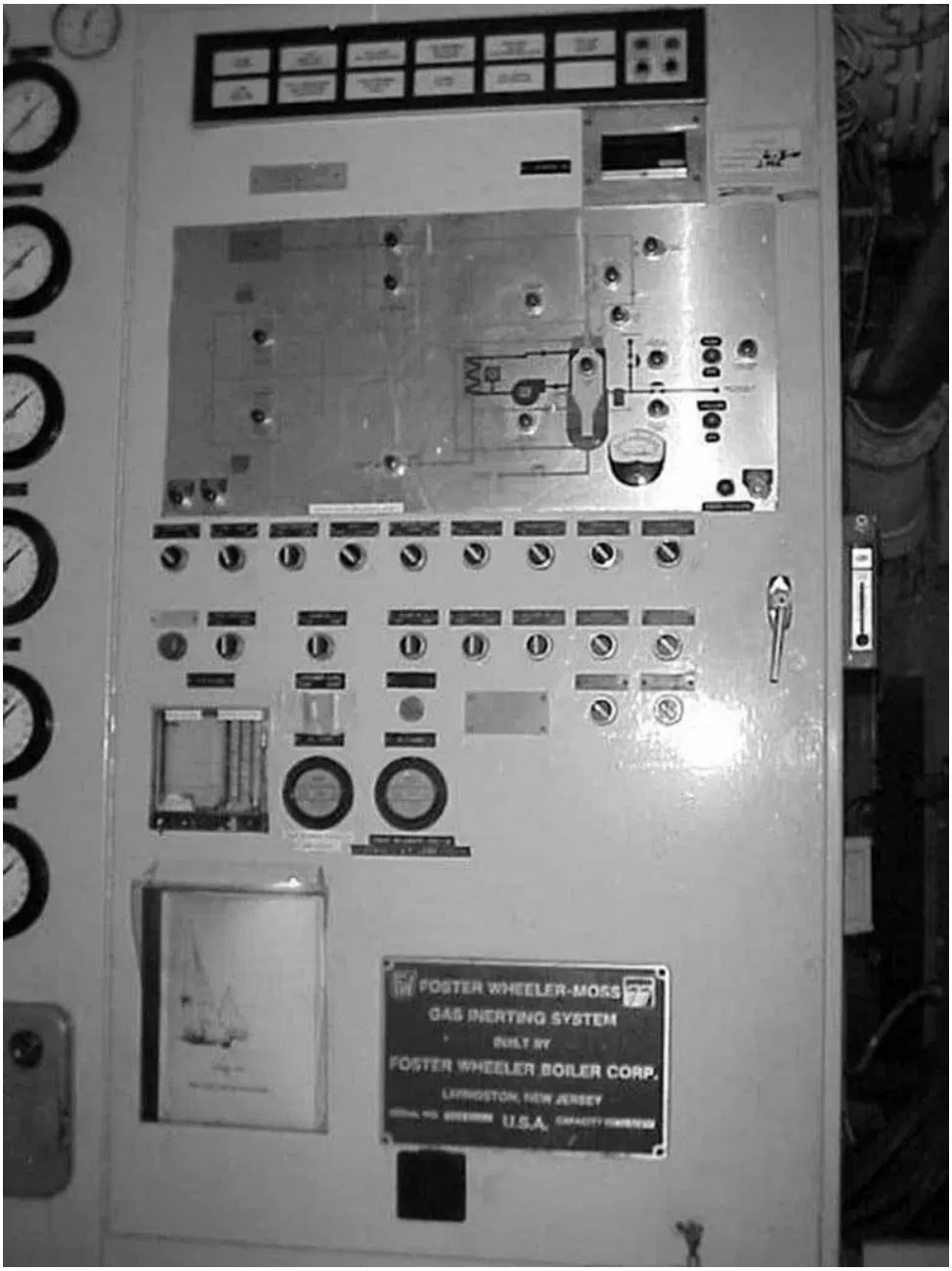
The explosion is reported to have occurred in a forward empty tank. Now, we all know that an empty tank can me more dangerous than a full tank. A full tank usually does not have enough of a vapor space to allow a flammable atmosphere. The empty tank is filled with the vapors from its previous cargo. In this case, the previous cargo was crude oil whose vapors are extremely flammable.

Many experts at the time stated that due to the tanks previous cargo the explosion was not unusual. One would think that this was a logical conclusion. Flammable vapors can explode if they are confined.

So, why do I say that it should it be unusual to hear that this empty crude oil tank exploded? And, why is important that land-base firefighters care about this at all?

First, lets look at the history of the marine transport of crude oil. Many years ago, crude oil tankers were merely single hulled vessels with very few safety features. There were also not many restrictions on the venting of the tanks after unloading. In fact, many times after unloading, the tank covers were just left open to allow the tanks to vent by themselves. These openings were supposed to be covered with a flame screen but that was often either not done or the flame screens were not well maintained, and many contained holes.

If the vapors escaping the venting tanks reached a source of ignition and those vapors were within the flammable range, the vapors would ignite and burn back to the open tank causing a devastating explosion.



Inert Gas Generator.

One such incident occurred on Dec. 17, 1976 in Los Angles harbor aboard the SS Sansinena, a tanker ship which had just unloaded her cargo of 20 million gallons of crude oil. The cargo tanks were left open to vent the tanks. This venting was legal at the time if there was a sufficient breeze. On this night however, the breeze was very slight and the heavy crude oil vapors wafted along the deck until they found an ignition source. The resulting explosion killed 9 people, broke the ship in two, and blew the deck off the ship and sent it 200 feed inland.

That incident changes some of the rules and even prompted some changes to tanker design. The SS Sansinena had a mid-ships bridge with an officer accommodation area over the product tank. After this explosion no accommodation blocks could be located above the product tanks. Another change will be mentioned below.

So, that's for a tanker at dock. The VLCC Desh Vaibhav was underway when the explosion occurred. Let's go back in history again to look at this issue. Many years ago, numerous crude oil tankers were experiencing explosions mid-ocean while returning home after discharging their cargo. Investigators were looking for any hot work being performed during the explosion which might have led to the ignition of vapors.

In many cases the crews were adamant that there was no hot work being carried out at the time of the explosion. However, the consensus of the investigators and the ship owners at the time was that the crew members were lying about the hot work because the only other operation being carried out at the time of the explosion was the washing of the tanks.

At that time tank cleaning was being carried out with water, under high pressure, ejected from nozzles either permanently mounted in each tank or from portable nozzles which would be brought out and mounted into deck openings. Again, these nozzles were only using water. That could not cause an ignition.....Or could it?

After many of these explosions, which damaged or destroyed the vessels and killed many crew members, the owners wanted a review of the water washing procedures. Engineers were able to duplicate the tank cleaning procedure for study and found that when the water left the end of the nozzle and was traveling to the sides of the tank the stream built up a static electric charge. Just as the water stream was about to touch the side of the tank the electric charge would jump, in the form of a spark, from the stream to the tanks wall. The atmosphere inside of the tank with the crude oil residue was highly flammable and confined in the tank. The explosion was so violent that it often blew holes in the vessels decks and hull plating and in many cases caused the total loss of the ship.

Image purporting to show the blast damage aboard the Vaibhav.

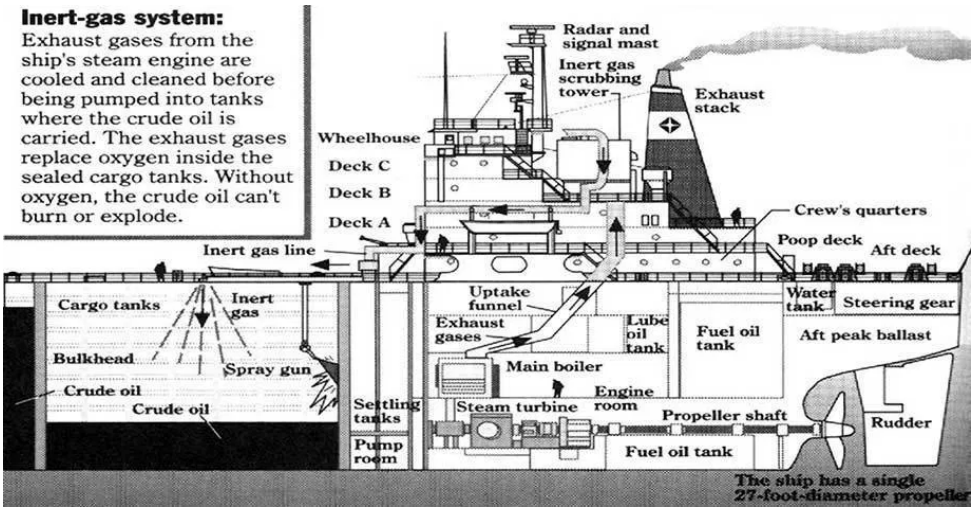
We have just found another issue that need regulations. It was determined that tankers with flammable cargos would need to be fitted with a “gas inerting system”. In 1974 the US Coast Guard formulated regulations requiring Inert Gas Systems (IGS) on all crude oil tankers over 100,000 tons that were built AFTER 1974. This rule did not affect existing ships and only applied to ships operating in US waters. After the SS Sansinena disaster the rule was extended to include all oil tankers over 20,000 tons and operating in US waters. The International reaction took much longer to provide regulatory measures to counter this problem.

In 1982, the International Maritime Organization (IMO) rules required IGS on all new oil tankers above 20,000 deadweight built after May 1982. The IMO rule was amended in May 1985 to include existing tankers.

What exactly is a Gas Inerting System? In a cargo tank containing flammable vapors there will be a vapor area above the cargo which can be flammable if there is or was a flammable cardo in that tank. If we inject another gas, which is inert, and will not support combustion, into that vapor space in enough quantities, there will no longer be a flammable atmosphere.

The International Convention for Safety of Life at Sea (SOLAS) 1974 requires the Inert Gas System be capable of delivering inert gas with an oxygen content in the inert gas main of not more than 5% of volume. By maintaining a positive pressure in the cargo tanks at all times, with an atmosphere not having an oxygen content greater than 8% by volume, the tank atmosphere is rendered non-flammable. For an added safety margin, the figure of 5% is used.

And where do we find this inert gas? One of the most common inert gasses in Nitrogen. Many ships with IGS systems will have nitrogen generators aboard. However, this can be expensive.



Inert Gas System.

But someone in the marine community looked up that his vessels exhaust stack and said, “that’s an inert gas being ejected out into the atmosphere. Why don’t we use that to inert the tanks and save money! And they did.

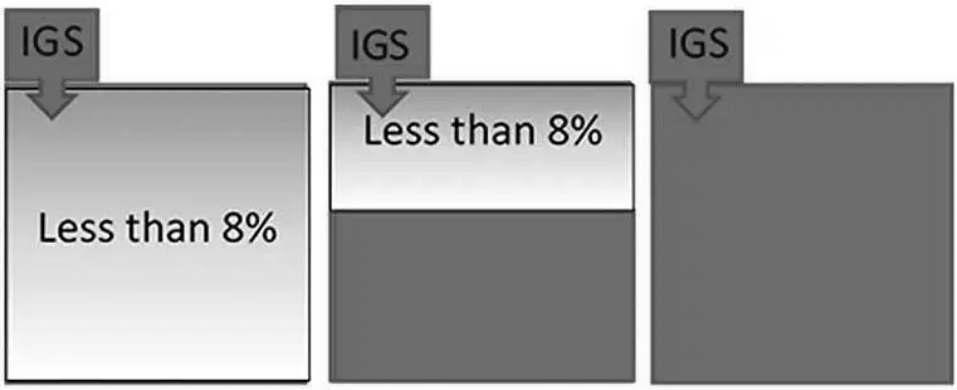
Most IGS systems aboard tankers today are supplied by the vessels own exhaust gas. Of course, the gasses must be cooled and cleaned before you would inject it into a cargo tank. That is why these vessels also have exhaust gas scrubbers. The cleaned exhaust gas is inserted into the vapor area of the cargo tank until the oxygen content of the vapor area is below 5%. At that percentage there can be no combustion.

When the ship is off-loading, the inert gas is continued to fill the empty cargo space and maintain the inert atmosphere. When the tanks are filled the surplus inert gas is vented out of risers on the deck or the vapors are returned to the loading facility.

Some of these vessels will have both the exhaust gas IGS and a Nitrogen generator which would be used as a back-up should the ships engine shut down or be unable to keep the O2 level below 5%

Safety alarms are set to go off if the oxygen level increases and the loading/un-loading operation would be shut down until the condition is corrected.

So, let us get back to my initial question from the start of this article. Why is it unusual that the VLCC Desh Vaibhav exploded? That vessel should have had a required IGS system which, if operating properly, should have made an explosion inside of a cargo tank impossible.



IGS using exhaust gas.

We will have to wait for a full investigation to find the answer but I'm willing to bet that something failed aboard which prevented the IGS system from doing its job.

This is important to land-based Firefighters because the first question I, as a marine firefighter responding to a fire aboard a tanker either loading or unloading would be, "Is the IGS system functioning properly? What is the O2 level in the tanks?"

If the IGS system is not operating properly then both firefighters and mariners should be aware that the International SOLAS regulations for Inert Gas Systems requires that the system can be augmented from outside sources via required fixed piping for that purpose.

And if you're a mariner, those questions should be even more important You will be on that vessel while its underway and you will not be able to just evacuate to the dock as I would!

(https://www.facebook.com/sharer.php?
Until next time. Stay safe out there.

Tab 11

SECRETARIAT D'ETAT AUX TRANSPORTS ET A LA MER
INSPECTION GÉNÉRALE DES SERVICES DES AFFAIRES MARITIMES
Bureau enquête — accidents / mer (*BEA*mer)

TECHNICAL REPORT OF THE INQUIRY INTO THE EXPLOSION

(one fatality)
ON BOARD THE OIL TANKER

CHASSIRON

ON 13TH JUNE 2003
OFF BAYONNE

=**=

1* CIRCUMSTANCES

On 12th June 2003 the *CHASSIRON* called at Bayonne from Donges to unload the cargo of her 386th voyage consisting of 3 parcels distributed as follows :

- **Cargo tanks 1 (P & S) : domestic heating oil**
- **Cargo tanks 2, 3, 4, 5 (P & S) : gas oil**
- **Cargo tanks 6 (P & S) : unleaded mogas (98 octane)**

She left Bayonne for Donges at 0500 on 13th June 2003 to take on an identical but differently distributed cargo load.

- **Cargo tanks 1 (P & S) : unleaded mogas (98 octane)**
- **Cargo tanks 2, 3, 4, 5 (P & S) : gas oil**
- **Cargo tanks 6 (P& S) : domestic heating oil.**

After the vessel got under way, the pumpman and the boatswain began tank washing operations on Tank 1 (P & S) and 6 (P & S).

At 0709 they had just begun washing cargo Tanks 6 (P & S), which had previously contained mogas, when there was a very loud whistling sound immediately followed by an explosion and fire in Cargo tank 6. The boatswain who was standing by himself near the cargo manifold, was unhurt. The pumpman who was near Cargo tank 6 port was first reported missing and a search was carried out in the sea, but he was eventually found dead in the after part of Cargo tank 6 port. The deck of the vessel was ripped open from the bridgehouse to the manifold and the bulkheads of Cargo tanks 5 and 6 were severely damaged.

The fire was brought under control at 0800.

Considerable nautical and aeronautical resources were deployed by the CROSS-A to help in the search for the pumpman on the one hand, and to fight the fire on the other hand.

A 6-man assessment team comprising representatives of the Bayonne office of the Bordeaux Ship Safety Centre, and the Bayonne harbourmaster's office as well as the Bayonne pilot and tug services went on board at 1052. After the situation had been assessed, the vessel was granted permission to return to Bayonne where she berthed at 1348.

=**=

7* CONCLUSIONS

Up to now it has not been possible to determine unequivocally the origin of the ignition source which caused the explosion. Nevertheless, two possibilities have been retained :

- a source of mechanical origin due to the malfunction of the cargo pump,

- a source of electrostatic origin which could have been produced by a lack of equipotentiality of the cargo pump or tank washing machine, or (but this is less likely) by deterioration of the coating of the tank surfaces (spots of rust were observed at the bottom of the tank).

The air/unleaded grade 98 mogas ATEX in Tank 6 starboard only needed a few microjoules energy to ignite.

Four sequences were considered :

- **a deflagration detonation transition;**
- **a "bang box" phenomenon (high-pitched whistling sound) followed by a generalized explosion;**
- **the rapid propagation of a deflagration from one tank to another;**
- **an explosion in one tank resulting in combustion phenomena (multiple explosions) in other tanks.**

According to the analysis of the accident, the damage sustained was the result of the domino effect of a series of successive explosions (three in all) in a deflagration regime.

The observations made by the BEAmer investigators and the INERIS specialists favour the hypothesis that the first explosion took place somewhere near the bottom of Tank 6 starboard (in all likelihood near the cargo pump), followed by a second explosion in Tank 6 port caused by the propagation of the heat of the first explosion and a third and final explosion due to the ignition of the gas oil vapour in Tank 5 port.

The noise heard just before the explosion, which was described as a whistling sound, could have been the noise made by turbulent combustion in a small confined space and, as such, would have been the "initial" event characteristic of the explosion. It could also have been due to a rise in pressure inside in the tank, the noise being made by gases escaping through the small inspection hatch just before the explosion, or again, it could have been due to friction between moving parts.

Among the factors which may have helped to trigger the explosion :

- **the operation of the pressure venting valves during unloading, opening the small inspection hatches for tank inspection and tank cleaning, the technique of injecting compressed air to strip the submerged pumps all led to the ingress of air which provided the oxidizer making it possible for an explosive mixture to form;**
- **the unleaded grade 98 mogas carried was of the "summer", less volatile variety; its vapour pressure was therefore lower than that of the "winter" product. This reduction of the vapour pressure brought it closer to the flammable range;**
- **tank washing operations set up turbulence zones within the tanks.**

Bearing in mind the low flash point of the unleaded grade 98 mogas and its temperature (25.2°C) before unloading commenced , it can be affirmed that the weather conditions had no influence on the formation of an air/unleaded grade 98 mogas ATEX during unloading.

Tank cleaning was carried in the usual way. The pumpman was very experienced as regards tank cleaning but human error cannot be excluded. Dropping a tool, for example.

As regards firefighting, the destruction of the fire line on deck and the absence of sectioning valves on the engine-room fire main meant that the firefighting system was not immediately available (it was necessary to wait for the damaged section to sectioned off by means of a plug). Further sectioning valves should be installed so that the fire main in the engine room remains available for use in the event that other sections of the system become unserviceable.

Finally, as a preventive measure, the use of electrostatically non-insulating paints or coatings for tank surfaces should be preferred

=**=

Industry supports calls for IGS on small tankers

11 Apr 2017 by Riviera Newsletters

A year after 8,000 dwt tanker newbuildings were required to fit inert gas systems, many agree this is an arbitrary limit

A year after 8,000 dwt tanker newbuildings were required to fit inert gas systems, many agree this is an arbitrary limit

"How big a blast can you accept?" That was how Rune Damsgaard, business director of the nitrogen-generating system maker Air Products, summed up the debate about the 8,000 dwt threshold for tanker newbuildings to be equipped with fixed inert gas systems. It was adopted by IMO's Maritime Safety Committee (MSC) at its 93rd meeting in May 2014, came into effect at the start of last year, and applies to tankers of that size and above when carrying certain cargoes.

But ships smaller than that are also at risk of explosion. One such was *Doola No 3*, a 6,500 dwt product tanker that exploded while it was cleaning its tanks after offloading a full cargo of gasoline in January 2012. Only five of its 16 crew survived, and three casualties were never recovered. The Korean Maritime Safety Tribunal report highlighted management and operational errors: the tanks had not been adequately gas-freed, and most of the crew's clothing "contained polyester fibres, which are highly conducive to static."

Discussing the incident with *Tanker Shipping & Trade*, Mr Damsgaard suggested that, whatever the cause in that case, when a tank is inerted "it will forgive mistakes".

Alfa Laval business development manager Rob Fortanier made a similar point, saying that most failures on a tanker are the result of human error or incorrect operation. Although the risk of an explosion is lower on smaller tanks, "human error can never be 100 per cent prevented, so "if safety is first, then you need inert gas on smaller vessels," he said.

At Coldharbour Marine, which makes the Sea Guardian inert gas system (IGS), commercial manager Phil Hughes echoed that sentiment. "Inerting systems should be fitted to smaller vessels, particularly on newbuildings," he said.

But Erik Taule, general manager for IGSs at Wärtsilä Moss, provided a reality check. He agreed that "statistics do not lie: size does not dictate explosions." But "the market does not show any signs of implementing safety systems that are not required under rules and regulations," he added. In his experience, no customer has asked for an IGS to be included in a quote involving vessels below 8,000 dwt.

Even with the lower tonnage limit, it will be some time before a significant proportion of

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Editor's Choice

Storage needs drive product tanker earnings to new heights

Covid-19: low power prices could affect auction outcomes

• Download the *Doola No 3* accident report via http://bit.ly/Doola3

Flashpoint, not size, is what matters

If a ship's size should not be used to determine whether it needs an inert gas system (IGS), what is the alternative? When IMO debated the changes to Solas in 2007, Intertanko's delegation proposed that its cargo's flashpoint should be the deciding factor.

It is an approach supported by Rune Damsgaard, business director of the nitrogen-generating system maker Air Products. He pointed out to *Tanker Shipping & Trade* that offshore supply vessels, irrespective of their size, already have to have nitrogen systems for carrying low flashpoint liquids. So the principle already exists.

Class notations might be one way of indicating what cargoes a ship could carry, he suggested. Chemical tanker notations already reflect this, based on their tank construction and equipment outfitting, so a similar notation could be devised based on a tanker's inerting system.

By this assessment, for example, a tanker destined for a long-term charter to carry vegetable oil would not need an IGS, whatever its size. It must be carried in a ship classed to carry IMO type 2 chemicals that, depending on its size, will be fitted with an IGS that is never used apart from when it is tested. "The rules should be more in balance with real life," Mr Damsgaard said.

TANKER SHIPPING & TRADE

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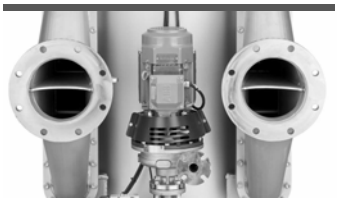


Compact German ballast water treatment system chosen for retrofit on small tanker
29 Apr 2020

ClassNK grants AiP to new dual-fuel LPG bulk carrier
29 Apr 2020

South Korea to pay for tankers to slow down
28 Apr 2020

Bureau Veritas-led group to study feasibility of ammonia as fuel
24 Apr 2020

Tab 13

List of Inaccurate Staff and Public Statements
CARB Hearing on At Berth Rule – Dec. 5, 2019

- p. 5:19-24: "Further emissions reductions from ocean-going vessels at berth are needed to provide public health benefits to the port communities that are already heavily burdened by air pollution from port-related freight sources, as well as to contribute to our ozone and greenhouse gas reduction goals."
    - The evidence in the record does not support the view that reductions at berth are likely to be any significant contributor to achieving ozone and greenhouse gas reduction goals, or that such reductions will yield any measurable net public health benefit.
    - Also, Staff's estimate of growth in emissions in inaccurate, as it only relies on the 2016 Mercator report and the Freight Analysis Framework

- p. 7:16-22: "But staff has taken this opportunity to really connect with our port communities and work closely with them and the maritime industry in order to develop a regulation that's really health protective, but also takes into account the unique operations that occur in our ports here in the State."
    - Also p. 14:4-6: "Now, to develop this proposed regulation, staff has conducted extensive community and industry outreach."; 13-19 "We've also had the opportunity to thoroughly engage with our maritime industry. We've gotten the opportunity to visit many of the vessels, ports, and terminals that would be included in this regulation. And again, the tour gave our staff a much better insight to understand the unique layouts and operations of some of these vessels, terminals, and ports."
    - Staff has largely <u>rejected</u> data from industry showing that the regulations are not likely to reflect the public health benefits staff claim.

- p. 13:6-11: "Now, after full implementation of the existing regulation in 2020, there are no additional measures on the books to continue reducing the remaining health benefits -- or sorry, the health burdens that are associated with our ocean-going vessels at berth."
    - The suggestion that the existing regulation would not continue to reduce health burdens and emissions after 2020 is not true. The existing regulation imposes aggressive diesel engine operational time limits and emission reduction requirements that apply indefinitely, and those limits and reductions have gotten more and more stringent over the past 10 years. Electricity provided to vessels at berth must meet minimum NOx, PM and CO emissions standards. Vessels visiting a terminal equipped to provide compatible shore power must use that power in every visit to that berth. These are measures that will continue to yield health benefits well beyond 2020.

- p. 14:21-24: "So through this extensive interaction, staff was able to craft a proposal that we believe is aggressive, yet technically feasible."
    - Also, p. 26:10-12: "Now, technology manufacturers have assured CARB staff that there are engineering solutions for both ro-ro and tanker vessels."

- The technology providers may have assured staff that engineering solutions can be developed at some future date, but they have not stated that solutions currently exist or that implementation can be assured within the proposed timeline. As WSPA has discussed with CARB staff on numerous occasions, the evidence demonstrates that implementing the necessary infrastructure at tanker terminals cannot be accomplished feasibly and safely within the rule's deadlines. Moreover, there is no way to know whether the proposal as currently designed is ultimately feasible without conducting a feasibility study.
- Moreover, technology providers have not assured staff that feasibility is already demonstrated. *See*, *e.g.*, Initial Statement of Reasons Appendix C-1 (SRIA), p. 81: "During meetings between staff, tanker industry stakeholders, Tri-Mer and CAEM, Tri-Mer stated that a feasibility study would be needed at each terminal to determine how the technology would be incorporated into the terminal's operations."

- pp. 25:24-25 to 26:1-6: "So I also mentioned earlier that the proposed regulation also includes an interim evaluation in 2023. So staff have set ambitious implementation timelines for realizing the health benefits of this regulation as early as possible, but we also realize there may be some uncertainty with adapting these technologies for new vessel types and also with the infrastructure developments that may be required."
  - This is not a matter of mere "uncertainty with adapting these technologies for new vessel types and also with the infrastructure developments that may be required." CARB staff have not established in the **first** instance that the current state of technology would even allow for tanker adoption at private marine terminals.

- p. 26:12-13: "And shore power has actually been used on tanker vessels here in California."
  - The evidence does not reflect that this has been done at scale anywhere for oil tankers calling on private marine terminals.
  - Other statements in the transcript itself rebut this claim. *See* p. 106 (Port of Long Beach ("POLB") tanker demonstration is unique), p. 114 (T. Umenhofer response to Board member Gioia), pp. 118-119 (B. McDonald response)

- p. 26:16-20: "[S]taff have been able to analyze multiple terminal infrastructure projects really to assess the timelines that are required to complete existing projects. And we feel the timelines that are proposed here are aggressive but feasible."
  - As industry has communicated to staff, the existing projects staff have looked at do not begin to reflect the massive and complex level of work that would be required at terminals to construct equipment that would even have a chance at meeting this regulation.

- pp. 26:21-27:1 – "However, to address the uncertainty of the timelines for these new vessel types, CARB staff propose an interim evaluation in 2023 to assess the progress of adapting technology for new vessel types and also the necessary infrastructure improvement projects that might be going on."

- This proposed interim evaluation, not due until in December 2022, would not "address the uncertainty of the timelines for these new vessel types." This is not just about "uncertainty of timelines"; this is about whether compliance with the regulation **as written** is feasible at all for marine terminals hosting oil tankers. The current regulation imposes hard deadlines for tanker compliance, regardless of the results of the interim evaluation. So, terminals will be bound by those deadlines irrespective of the actual feasibility of these measures in that timeframe, and would be completely dependent on CARB choosing to adopt new deadlines, which this regulation would not require it to do.
- Board member Gioia, on pp. 153-158, expresses concern about long permitting time frames, referencing his own experience.

- p. 27:10-18: "And most importantly, as seen here on slide 20, the health benefits of the proposed regulation outweigh the costs. And looking at real costs for the regulation, so in other words those costs that might be passed down to the consumer, we're looking at the total cost of the proposed regulation are expected to be minimal on a per unit basis, for example, less than one cent for a gallon of fuel."
  - *See also* p. 28:9-12: "So the projected NOx reductions of 46 percent and diesel PM reductions of 52 percent at full implementation of the proposal are shown here on slide 22."
  - *See also* pp. 28:19-29:1: "Now, as a result of the projected emissions reductions achieved by staff's proposal, a reduction in potential cancer risk of 55 percent is projected for the ports of Los Angeles, Long Beach, and Richmond. And non-cancer related benefits are also expected in association with staff's proposal, including 16 avoided emergency room visits, 72 avoided hospital [ad]missions, and 230 avoided premature deaths."
  - The evidence does not establish that the health benefits would outweigh the costs, as CARB staff consistently overstate the expected health benefit versus the baseline and understate the implementation costs to industry.

- p. 28:2-7: "Now, an important highlight on this slide is the $10 million that CARB has earmarked for a capture and control system for tankers. Now, it's staff's intent that a tanker terminal would use these available funds to demonstrate capture and control technology use on tanker vessels here in California."
  - The fact that CARB has earmarked this $10 million evidences that capture and control has not been demonstrated on tanker vessels, and belies the claim that stack capture and control has somehow already been shown to be feasible. Capture and control is not ready for field demonstration on tankers, and it would be unsafe to attempt one at this time. Not only is a feasibility study required, but industry would need to first perform engineering to address the unique safety considerations of tankers and the diverse configurations of the worldwide tanker fleet. If the technology shows promise, it can lead to a field demonstration, but only as the final step.

- pp. 30:23-31:2, 11-15: "Now, staff is also proposing to develop a process for industry to pursue innovative emissions reductions concepts, if they can be proven to achieve extra

or early emissions and exposure reductions in impacted port communities without a delay . . . Now, these concepts would be limited in duration and only acceptable until the infrastructure needed for the regulation is completed. They would not provide an out [from the] At Berth Regulation and the process would include an opportunity for public review."

- *See also* pp. 49:24-50:5: "BOARD MEMBER TAKVORIAN: So we can't have this temporary solution occurring and all the effort going into that and then the permanent solution fix being worked on afterwards? TRANSPORTATION AND TOXICS DIVISION CHIEF ARIAS: Correct. This is not in lieu of ultimate regulatory compliance."
- *See also* p. 174, Takvorian: innovative alternatives shouldn't be a "way out"; and p. 183, Mary Nichols, interim review should not provide "a potential off ramp."
- Industry stakeholders clearly stated to CARB staff that alternatives like those discussed would need to be **in lieu of** the proposed reduction requirements for tankers visiting terminals, not in addition to the regulation, or only available for the time needed to build infrastructure.
- These statements reflect staff's assumption that, even if the emission capture and control technology is not feasible today, it will be in the future, so that alternatives or "innovative concepts" would only be necessary as a "bridge" to the ultimate control technology. But this is only an assumption; no evidence exists today that the currently proposed capture and control systems for tanker terminals would ever be reasonably safe and feasible. The rule needs to provide for permanent alternatives that can still accomplish the same reductions in mass emissions, but feasibly and more cost-effectively than the proposed rule. *See also* WSPA's more detailed comments on the Innovative Concept proposal in our letter on the 15-Day Changes.

- p. 37:5-9: "So we would, at this point, as I think Nicole mentioned and there's a picture in one of the slides is that shore power has been and is in use at a terminal in Long Beach at T121. And so it's -- it is demonstrated to be effective for tankers."
  - From POLB – T121 Marathon Terminal does have shore power capability that is being used by one tanker vessel, but that vessel is unique because it uses diesel electric engines. The rest of the vessels visiting the Port are not capable of shore power retrofits, as their boilers cannot be electrified. *See* POLB letter to CARB dated December 9, 2019, Comments on the Proposed Regulation Order, "Airborne Toxic Control Measure for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At Berth in a California Port", p. 2.

- p. 54:11-16: Sara Rees, South Coast Air Quality Management District staff, stated: "For ro-ro vessels, we are suggesting an earlier compliance date of 2023 instead of 2025 for the ports of Los Angeles and Long Beach. We're requesting this as ro-ro vessels have similar operational power requirements as container vessels and currently approved technologies can be utilized by these vessels."
  - *See also* p. 26:10-12: "Now, technology manufacturers have assured CARB staff that there are engineering solutions for both ro-ro and tanker vessels."

- On the contrary, according to POLB's December 9, 2019 letter (p. 1): "The implication that RoRo vessels could utilize current emission capture and control technology is not true. The technology for RoRo vessels will need to be engineered to accommodate the greater reach requirements of the RoRo vessels and different stack configurations. A technology capable of scrubbing RoRo emissions has never been demonstrated to date."

- pp. 78:22-79:14: A resident of Point Richmond stated that "there are sites which can implement these requirements in a significantly shorter time. For example, there the Chevron's Long Wharf dock, which is leased from the State of California. Four hundred vessels a year, sometimes four at a time, dock there, running their auxiliary diesel engines 24 hours a day, and spewing diesel particulates borne by the prevailing wind directly into the City of Richmond. These vessels referred to as lighters by Chevron as -- but as tankers by a layman, are part of a shuffle of perhaps only a dozen different -- distinct vessels. Chevron, which has its own electric power plant and can provide electricity in any quantity, and of any type required to allow these ships to heat the crude oil and pump it up to the refinery without running their diesel engine. Chevron was asked to do this almost five years ago, during refinery modernization but refused to do so."
  - This statement from a lay member of the public is incorrect.

    Chevron's two existing Cogeneration plants, built in the 1990s, are fully subscribed to support existing refinery operations as the refinery is a net importer of power from PG&E under normal operating conditions. Any incremental power demands as a result of construction or operational activities needed to comply with CARB's At Berth regulation would require either construction of an additional Cogen to support shore power, or additional purchased power supplied from PG&E to support the capture and control system. This means that Chevron and/or PG&E would have to build electrical infrastructure to support either proposed emission reduction technology.

    The duration of time necessary for this project to be implement at any marine terminal is driven by the following factors: (1) development and testing feasibility of a technology that is safe and suitable for tankers and tanker boilers; (2) design and engineering; (3) completing the CEQA process and obtaining any required permits; (4) procurement of novel equipment developed for this application; and (5) construction in compliance with existing federal, state and local requirements, including species-specific construction windows within San Francisco Bay. To complete the above steps, Chevron has previously provided comments to CARB that the it estimates the above process to take approximately 10 years, and possibly longer, from start to finish. In contrast to the commenter's statement, it would take Chevron longer to construct the required equipment than most other terminals, because Chevron's terminal has four operating berths that must remain operational throughout construction to minimize the risk of supply disruptions to the Bay Area.

    Chevron Richmond Long Wharf sees upwards of 200 unique vessels calling its Wharf in any given year, not a dozen as mistakenly stated by the commenter,

further complicating the feasibility and timeline for implementing the stack-based capture and control system and shore power.

- pp. 81-89: Staff describes the AMEC system, allegedly an existing feasible capture and control system. This is based on the Coalition for a Safe Environment comments.
    - WSPA understands that the system referenced is a capture and control system for container vessels located at the Port of Long Beach, and has not been designed or tested for tankers.

- pp. 145-148, in a response to a commenter who misunderstood the summary of CEQA impacts, Chair Nichols stated that the environmental analysis "is not intended to say that there's any harm that we know of that would come about as a result of implementing this regulation." CARB counsel stated "[w]e didn't want to suggest that those changes are going to be really considerable or environmentally harmful" and "we would expect that the local government that approves those infrastructure changes would implement those mitigation measures."
    - The Draft Environmental Analysis ("Draft EA") discloses numerous environmental impacts that are potentially significant and unavoidable. In addition, as discussed in WSPA's December 3, 2019 comments and our comments on the 15-Day Changes, the Draft EA understates and fails to adequately address numerous environmental impacts. Even for a regulation intended to benefit air quality, CARB cannot downplay environmental impacts from implementation; disclosing and mitigating such adverse side-effects is the purpose of CEQA review. Moreover, the time needed for local governments to conduct project-level CEQA review that would result in mitigation measure implementation is one of the key reasons that the deadlines are infeasible, as explained in WSPA's December 3, 2019 comments.

- pp. 154-159; Board member Gioia is receptive to innovative alternatives whether reductions come from ship or on shore so long as the reductions are additional as required for offsets.
    - *See also* Board members Balmes, Riordan, Mitchell, pp. 165-167, all of whom express interest in obtaining truck emission reductions from alternatives to the proposed regulation.
    - *See also* p. 140 where an environmental justice advocate supports the alternative of truck electrification as a "tremendous opportunity."
    - If the terminal operators have implemented truck electrification or some other alternative to CARB's satisfaction, in the period beyond the deadlines while the feasibility of an at berth system is still being explored, there would be no reason to stop and undo the already working alternative and instead implement an at berth control system at a later date. Requiring operators to do so would be arbitrary and capricious double-counting, unnecessary to address emissions already offset by the alternative. *See also* WSPA's more detailed comments on the Innovative Concept proposal in our letter on the 15-Day Changes.

- p. 168:17-23: “In the course of developing this regulation, staff has done two things. One, in 2018, we did a technology assessment. And part of that technology assessment looked at different technologies, what they were feasible -- what -- how they were feasible, areas that they needed improvement. So that in itself was a portion of the feasibility study.”
    - CARB OGV Technology Assessment looked at the technologies available to date but did not include a formal engineering assessment to evaluate the readiness to control emissions from other vessel types.

- p. 169:9-21: “And so in terms of a feasibility study, we feel that between those two documents that we have done a feasibility study. And we have found that these technologies, they exist already, they can be adapted to tankers. We do feel there are safety challenges that are going to have to be addressed during the design. There are going to be site-specific issues that need to be addressed during design and engineering. And so I think our position is that we have done a feasibility study. We need the regulatory certainty now to move into the process, where we're actually looking at design and site-specific engineering projects for these different tanker terminals.”
    - The “two documents” referenced here are the Initial Statement of Reasons (“ISOR”) for the Proposed Regulation and the CARB’s Draft Technology Assessment: Ocean Going Vessels (May 2018). A detailed assessment of both documents and their inadequacies as feasibility studies is attached as Attachment A to this Tab 13, “Review of the ‘Feasibility Study’ for the Proposed At Berth Regulation.
    - Staff has not done a robust feasibility assessment to date. The CARB berth analysis is not a technical document, but simply an aggregation of terminal operator and harbor pilot opinions, and Google Maps review.
    - The berth analysis should have been based on an engineering assessment of the infrastructure required at the terminals. In addition, costs used by CARB in the ISOR are based on conversations with technology developers, rather than real cost quotes.

Attachment A

Review of the "Feasibility Study" for the Proposed At Berth Regulation

ARB has concluded that the most likely emission control system for tankers is a shore-based capture and control system ("SBCC"); ES-26 ISOR. At the December 5, 2019 CARB Board hearing, CARB Staff (Bonnie Soriano, video marker 3:38) claimed they have completed a feasibility study for SBCC for tankers at marine terminals. They claim the 2018 Technical Assessment and ISOR amount to a feasibility study that examines:

1. cost
2. cost-effectiveness
3. market availability
4. ability to scale up
5. safety issues.

This claim was false and misled Board members and the public. Neither document shows how existing capture and control technologies can be adapted to tankers at marine terminals, or that such a technology has been developed. The documents acknowledge the need to re-design and scale up existing technologies because tankers and marine terminal environments are unique, but provides no discussion of how those technologies can be re-designed, omits any discussion of industry's safety concerns, and defers safety studies. As shown below, the 2018 Technical Assessment and ISOR do not identify existing applications of SBCC for tankers at marine terminals and therefore, CARB cannot claim SBCC is feasible for tankers at marine terminals

I. 2018 CARB Technical Assessment

A. Only three pages (out of 147) discuss the state of shore/barge-based emission control systems.

B. **The document does not identify any existing SBCCs in a marine terminal and tanker application.** It only identifies two technologies (METS-1 and AMECS) which are barge-based, in use at a port, and only on container vessels. There is no discussion of how adaptable these technologies are to tankers and/or marine terminal environments.

From pages 70-71 of the Technical Assessment:

Shore- and Barge-Based Emission Control Systems (connected at dockside)

1. Technology Description

NOT shore-based

NOT marine terminals. NOT tanker vessesl

Figure III-8: AMECS Barge System

Shore-based emission control systems include exhaust gas scrubbing technologies and after-treatment technologies that allow for the capture of auxiliary engine emissions as they exit the stack and treat the exhaust before it is released to the atmosphere. There are also shore side electrical pumps to assist in offloading product from tankers (typically steam turbine pumps are used for offloading). There are currently two barge based systems on the market: the Marine Exhaust Treatment System-1 (METS-1) developed by Clean Air Engineering Maritime, Inc., and the Advanced Marine Emissions Control System (AMECS) developed by Advanced Cleanup Technologies, Inc. These systems are both located at POLA/POLB, and are used by container vessels as an alternative technology to fulfill emission reduction requirements at berth to comply with CARB's At-Berth Regulation.

The barge based exhaust cleanup systems captures the vessel's exhaust directly from the exhaust stack, using long, flexible ducting to transfer the exhaust smoke back to the barge to be cleaned. Flexible ducting is brought by crane to the vessel's stack. The current systems operate under a strong vacuum to reduce any leakage of air from the

Only discussion of shore-based system. Future demonstration is NOT for atanker. NOT for a marine terminal.

exhaust. Once on the barge, the system reheats the exhaust and injects urea so that a selective catalytic reduction system can remove NOx. The system also passes the exhaust through a particulate filter. In addition to engine exhaust, these systems have the potential to also capture and clean boiler exhaust.

Bonnet technology can also be utilized via a land-based system. A shoreside system demonstration is currently planned for use on bulk vessels at POLA beginning in 2018.

2. System/Network Suitability and Operational/Infrastructure Needs

Barge-based exhaust cleanup systems are capable of connecting to a vessel's stacks with a crane mounted ducting system. The barge is towed in place with a tug boat next to a vessel at-berth. These systems have the potential to capture and control the emissions from a range of vessels at berth, and possibly from vessels while anchored. There are times when the barge may be unable to safely connect to a vessel. For example, there may be safety concerns if a crane works a vessel while opposite the barge or if strong winds are occurring. Additionally, the control barge may share the same footprint of a bunker barge, so when vessels are being refueled at-berth, the vessel may be unable to use the barge based control system. Different vessel types may also have different concerns Providers of barge-based systems are aware of many of these operational concerns, however, and take steps to mitigate them. Taking operational challenges into consideration, a barged based emission control system may be a cost effective option for reducing emissions from vessels that visit infrequently or are unable to connect to shore power, with little to no modification to the vessel.

Technology is "demonstrated" based on METS-1 and AMECS. Again, NOT shore-based, NOT on tankers, NOT at a marine

3. Technology Readiness

To meet the goal of eliminating at-berth ship emissions, continued work on alternative shore power technology is needed to assist vessels and terminals where shore power infrastructure is not feasible or available. Alternative shore power technologies have been demonstrated and are now being deployed. Two systems, the Marine Exhaust Treatment System version 1 (METS-1) and the Advanced Maritime Emission Control System (AMECS) received approval in 2015 for use on container vessels as an alternative to shore power for compliance with CARB's At-Berth Regulation. Clean Air Engineering's METS-1 was developed at POLA as part of a terminal lease obligation. Advanced Cleanup Technologies' AMECS was developed through San Pedro Bay Ports Technology Advancement Program (TAP).

C. The report agrees with industry that more work (i.e. feasibility study) is needed to demonstrate the technology.

From page 71 of the Technical Assessment:

6. Next Steps to Demonstrate and Deploy Technology

Although these shore-based and barge-based emission control systems are effective at reducing PM and NOx emissions on container vessels, more testing is needed on other vessel types, including tankers, auto carriers, general cargo, and bulk cargo. Additional work with stakeholders is needed to identify and implement methods (e.g., incentives, regulations, and lease agreements) to encourage or require deployment of additional shore power or alternative shore power systems beyond what's needed to comply with CARB's At-Berth Regulation.

D. The report acknowledges problems with using SBCCs on tanker boilers

From page 104 of the Technical Assessment:

Auxiliary boilers are not presently subject to CARB's At-Berth Regulation since they provide steam rather than electrical power. However, they are subject to the low sulfur fuel requirements in both CARB's OGV Clean Fuel Regulation and the federal ECA. These fuel requirements significantly reduce their PM and SOx emissions, and their NOx emissions are already low compared to diesel engines. Additional reductions may also be possible in the future by utilizing new control technologies. One possible control strategy is the use of a barge or land-based bonnet capture and control emissions control technologies discussed in Section III.E. Bonnet capture and control systems are designed to control auxiliary diesel engines, but could potentially also be used to capture and control tanker boiler emissions. Current designs may not be suitable to control the large exhaust volumes from tanker boilers offloading petroleum products, but if the current designs prove to be effective in controlling emissions from smaller emissions sources, it may be possible that they could be scaled up to handle the larger exhaust volumes from tanker boilers.

II. ISOR

- The ISOR does not show that a SBCC for tankers at marine terminals is available on the market.
- The ISOR does not address how a SBCC can be designed to operate safely for tankers at marine terminals.
- The ISOR discusses the need to scale up existing capture and control, but does not provide an existing example.
- Therefore, the ISOR cannot reasonably estimate cost or cost-effectiveness of SBCC.

A. CARB omits industry's safety concerns of land-based systems. CARB does not provide an example of SBCC adapted for tankers.

From page ES-30 of the ISOR

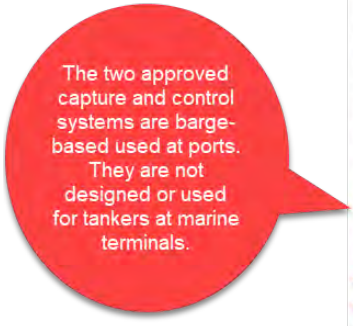
For tanker vessels, CARB staff assume the preferred approach to reducing emissions at berth will involve capture and control systems based on conversations with industry members and representatives. Tanker vessel operators have expressed safety concerns with barge systems and indicate the method of capture and control would be land-based, which may require significant infrastructure improvements to the existing tanker terminals across the state. Controlling the auxiliary engines and boilers at berth also mean that the existing capture and control systems will likely need to be able to handle a higher amount of exhaust gas, and as a result may need to be re-designed and scaled up accordingly. Because of the extent of engineering and infrastructure work needed to adapt the existing technologies for use on tanker vessels, CARB staff propose a January 1, 2027, compliance date for tankers visiting regulated terminals at POLA and POLB, and a January 1, 2029 compliance date for the remainder of the tanker terminals across California.

B. CARB does not provide an example of any capture and control system adapted for marine terminal environments

From page ES-30 of the ISOR:

During these conversations, CARB staff learned that the process of improving infrastructure at the POLA and POLB was typically faster than in Northern California, due to additional permitting and conservation requirements placed on terminals in the San Francisco Bay.[56] The terminal infrastructure in Northern California may require more complex infrastructure improvements as the Northern California marine oil terminals (also referred to as "long wharves" can stretch out over a mile into the San Francisco Bay and Carquinez Straits, and can be affected by harsher weather conditions and stronger currents than their Southern California counterparts. Figures ES-17 and ES-18 show an example of the two main tanker terminal types in California.

From page I-32 of the ISOR:



Thus far, CARB staff has issued Executive Orders formally approving two barge-based system designs (by two manufacturers), consistent with the provisions of the Existing Regulation. Approval required "real world" demonstration of the effectiveness of each system in both capturing and controlling emissions on a number of vessels at berth. The calculated performance of the system must consider the emissions from the small engine on the barge. Each system has continuous emissions monitoring to detect any problems with performance over time.

Terminals with wider channels may readily accommodate a barge alongside a vessel at berth, but terminals with narrow channels may not be able to physically fit a barge without blocking navigation in the channel. At many of Northern California's independent marine terminals, there are also potential constraints resulting from the impacts of tidal flows and from prohibitions on impeding the transit of other vessels in designated shipping lanes (between the supports of an adjacent bridge, for example).

C. The only SBCC is a prototype not used for tankers at marine terminals, nor is there discussion on how it can be adapted.

From page I-33 of the ISOR:

This is the ONLY discussion of a land-based system. Still, not used for tankers at marine terminals.

This approach is essentially a land-based version of the barge-based system described above. There is one prototype unit in operation (Figure I-23) that is semi-mobile (the system can be moved along the dock by truck). Once the unit is in place on the dock, the system's articulated arm raises and places the ducting over the vessel stack. The system captures and routes the vessel exhaust emissions from auxiliary engines and boilers to the landside control technology.

Figure I-23: Land-Based Capture and Control System

Like the barge-based system, this compliance option would capture emissions from both auxiliary engines and boilers at berth. It reduces emissions of DPM, PM2.5, NOx, ROG, and black carbon. However, it can result in a slight increase in GHG emissions if a combustion engine is used to power the system. Future versions could be zero-emissions on-site, powered by grid electricity, batteries, or fuel cells.

D. The report does not demonstrate that a SBCC can be designed and operated safely for tankers at marine terminals. Safety studies have not been performed.

From page III-22 of the ISOR

The report provides for more time to build infrastructure for tankers at marine terminals, but DOES NOT explain how existing technologies can be adapted to tankers in marine terminals.

Safety studies HAVE NOT been performed because a system has not been designed

Staff proposed to split the implementation schedule into two phases for tankers. Tanker terminals at POLA and POLB would phase in first in 2027 due to fewer infrastructure upgrade challenges. The earlier date for POLA and POLB tanker terminals also highlights the pressing need for NOx reductions in the South Coast Air Basin. All other tanker terminals including the Northern California terminals would be scheduled to phase in at 2029. Combining the challenges of installing significant infrastructure and unique permitting requirements placed on terminals in the San Francisco Bay region, a longer timeline is expected for any infrastructure project being undertaken for the Northern California tanker terminals.

Regardless of location, safety studies need to be performed to ensure all safety consideration are met, given that the tanker vessels carry explosive cargos. In addition, comprehensive site-specific engineering and design work needs to be accomplished prior to implementation.

The Feasibility Study for the 2007 At Berth Regulation

In contrast, before CARB started developing concepts for the 2007 At Berth regulation, it completed a cold-ironing feasibility study report that identified three categories of information that affirmed the proposed control technology (cold-ironing) was feasible **for vessels at locations** the rule proposed to regulate. These included the third-party technical feasibility studies commissioned by ports and existing/planned applications of cold-ironing (some excerpts shown below). Based on these sources of information, the report can and discusses cost-effectiveness.

For the proposed At Berth regulation, CARB's 2018 Technical Assessment and ISOR do not demonstrate, how SBCC is feasible **for tankers at marine terminals**, but assumes they will be and imposes control requirements and compliance deadlines. Cost and cost-effectiveness discussions are premature because the technology has not been developed for tankers at marine terminals. WSPA has invited CARB to partner and conduct a feasibility study to properly inform the proposed regulation, but it has so far declined.

Port of Long Beach

In April 2003, the Port of Long Beach commissioned ENVIRON International to conduct a study on the feasibility of connecting ships to electricity rather than running their auxiliary engines while docked at the Port. The study, "Cold Ironing Cost Effectiveness Study," was released in March 2004, and it evaluated

Port of San Francisco

In October 2004, the Port of San Francisco commissioned ENVIRON to conduct a study on the feasibility of providing shore power at the new passenger ship terminal at Piers 30-32. The new terminal is scheduled for completion in 2008. The feasibility study was required as part of the permit conditions set by the San Francisco Bay Conservation and Development Commission. In this study, four passenger ships that currently visit the Port were evaluated for potential cold-ironing candidates. One of these ships, the Dawn Princess, is already cold-ironed when at port in Juneau, Alaska. The cost estimates used in the report included high- and low-end estimates for ship-side conversions and shore-side

The following are descriptions of cold-ironing installations already operating on the West Coast.

China Shipping Terminal at Port of Los Angeles

The Port of Los Angeles retrofitted the China Shipping Terminal to include a shore-power infrastructure as part of a lawsuit settlement with the Natural Resources Defense Council (NRDC), the Coalition for Clean Air, and local community groups. The settlement requires a minimum of 70 percent of ship calls to this berth, on an annual average, to utilize shore power. Two ships began connecting to shore power in June 2004. According to the Port's Stipulated Judgment Quarterly Report for the third quarter of 2005, there are now 15 China Shipping vessels that are equipped with shore power. During the first three quarters of 2005, shore power was used for 28 out of 39 ship calls to Berth

Princess Cruises Ships in Juneau, Alaska

Princess Cruises began cold-ironing its ships berthed at the South Franklin St. dock in Juneau in 2001. The shore power operations were installed in response to community concerns over the smoke emissions from passenger ships visiting in the summer. During the summer cruise season, the air is stagnant over Juneau and the emissions from the ships' auxiliary engines significantly reduce visibility.

According to Princess Cruises, there are currently six ships that are equipped to cold-iron when at port in Juneau. If two of these ships are in port at the same time, only one ship is cold-ironed because the South Franklin Street dock has only one berth. According to Juneau's 2005 Cruise Ship Roster, 38 passenger ships visited Juneau last summer, including all six of Princess's shore-power-equipped ships. One of these ships never berthed at the South Franklin Street dock; however, the five Princess Cruises ships that did cold-iron represented 93 out of 586 total ship visits to Juneau in 2005 (or 16 percent).

C. Future Cold-Ironing Installations

The following are descriptions of shore power installations planned for ports in California as well as ships that have already been built with cold-ironing capabilities.

NYK Atlas at Port of Los Angeles

The Port of Los Angeles is currently building a shore-side infrastructure at berths 212-221 (Yusen Terminal) to provide power to a container ship (NYK Atlas) when in port. The NYK Atlas was equipped with shore-power capabilities when built. The ship first arrived at the Port in August 2004 and made a total of five visits that year. The NYK Atlas is one of 36 NYK ships that visited the Port in 2004, with the other 35 vessels making a total of 107 ship visits. Shore-side construction for this installation is expected to be completed by early 2006. At this site, 6.6 kV will be provided at a plug on the wharf (a "wharf box"). Two cables that are housed on a cable reel on the Atlas will be lowered down the side of the ship via a roller guide and connected to the wharf box. Because the Atlas uses 6.6 kV, no transformer will be needed for this cold-ironing application.

Other Sites Planned at the Port of Los Angeles

The Port has indicated that all new shore-side power infrastructures for container ships will include a 6.6 kV plug at the wharf. Transformers, connection cables, cable reels, and plugs will be expected to be included on the ships, not at the wharf. However, the Port is considering an innovative approach of housing a portable power-transfer system, which includes a transformer, cables, and cable

Tab 14

Response to Coalition for Safe Environment Presentation

Slide 3

"Electric Shore power and SECT Technologies are Feasible"

- There are no certified, approved, or tested shore power connections or Ship Emissions Control Technologies (SECT) for tankers at tanker terminals.
- There is no standard electrical connection for tankers at this time. Any connection will need to meet strict standards to allow connection during hazardous cargo transfer operations.
- No SECT system has been tested or proven to connect to a large tanker boiler.
- These technologies have been shown to work on dry non-hazardous bulk cargo vessels, but development of safe interfaces capable of servicing tankers during hazardous cargo operations will require significant research, development, and testing.

"Electric shorepower and SECT Technologies are proven technologies"

- SECT has been proven for a specific vessel type, however there are several challenges to ensure that this technology can be safely implemented on tankers during hazardous cargo transfer.
- A standard shorepower interface must be developed to allow a safe connection at terminals that conduct hazardous cargo transfer. This connection must be retrofitted to tankers which are not currently required to have shorepower connections.
- SECT systems proven for other vessels are undersized and do not have adequate safety system interfaces to ensure safe connection to tanker boilers that are essential equipment for hazardous cargo transfer and storage.

Slide 4

"All Ports & Shipping Companies can use SECT until their electrical infrastructure is built"

- Current SECT systems are significantly undersized for tanker boilers.
- Current SECT systems are barge based and are not allowed alongside during hazardous cargo operations to ensure tankers can clear a berth during emergencies.

Slide 5

~ Use existing state-of-the art off-the-shelf proven technologies

- These technologies are not adequate in size and are not designed for hazardous cargo environments.

~ Do Not require any modification of a ship

- It is highly likely that modifications to tankers would be required to ensure a safe and reliable interface between tankers and SECT systems. The extent of such required modifications is unknown since no system has been designed for tankers.

~ Do Not require any modification of terminal infrastructure

- It has been accepted that barge based systems alongside tankers are not feasible.
- It is anticipated that most if not all terminal berths would be unable to accept structural loading from mobile systems and mobile cranes, so permanent infrastructure would be required. In addition, portable or mobile equipment must be rated for use in hazardous electric area classifications.

~ Do Not require any additional special permits

- Constructing a shore side SECT system will require major construction and permitting that will take on the order of a decade to complete.
- California Environmental Quality Act (CEQA) mandates that any project requiring discretionary approvals must be evaluated for environmental impacts, including impacts to marine resources, visual and aesthetic impacts, and safety.

- Some examples of permitting agencies with jurisdiction over marine terminals include California State Lands Commission, the US Army Corps of Engineers, California Department of Fish and Wildlife, US Fish and Wildlife Service/National Marine Fisheries Service, San Francisco Bay Coastal Development Commission and the Regional Water Quality Control Board each of which requires a discretionary approval that may be deemed “special” or supplemental to normal terminal operations.

~ Can be built Stationary On-Dock or Mobile On-Barge

- As documented, barge based systems are not feasible alongside tankers
- Constructing a shore side SECT system will require major construction and permitting that will take on the order of a decade to complete.
- New dock space will need to be constructed to support the scrubber systems and cranes at most marine oil terminals. This will create cumulative and substantial impacts to the marine environment for the scope of this regulation.

~ Work on any category class of ship

- No system has been tested on large marine boilers associated with tanker vessels.
- No similar shore system that works with tankers has been proven to work with the wide variety of tankers and tanker boilers that will call on California oil terminals.
- Tankers require significant safety considerations due to the transfer of hazardous cargo
- No SECT barge-based or shore-side system has been designed to reach to the stack of a tanker-sized vessel.
- CARB has not evaluated the safety risk of deploying a SECT system on a tanker and its potential to cause boiler overpressure and risk of vessel fire or explosion. This technology has not been proven or demonstrated to safely “work” on tanker vessels.
- Vendor AEG expressed concern regarding the variety of tanker ship spark arrestors on their stacks and SECT’s current inability to accommodate those spark arrestor designs with existing technology. AEG stated vessel-specific coupling devices would need to be created for each individual ship, spark arrestor and stack diameter. CARB’s rulemaking baseline of 2016 indicated over 1,600 tanker vessel visits to California, with many visiting no more than one time per year.

~ Capture & Treat Emissions from both Auxiliary Engines & Boilers

- No system has been tested on large tanker boilers.
- SECT builders expressed concerns about their system working at low flow rates and during dynamic changes in flow as cargo transfer rates change.
- SECT vendors have stated in stakeholder meetings with CARB in 2019 that the SECT technology is not ready for tankers and has not been tested.

Slide 6

AMECS has undergone risk evaluations by both the American Bureau of Shipping (ABS) and Det Norske Veritas (DNV)

- These risk evaluations did not include hazard review of interfacing with large marine boilers and their unique operational characteristics.
- Most significantly, in spite of these evaluations these systems are still not built to any recognized standard or certification.