At Berth Regulation Port & Terminal Plan

Port of Hueneme
Oxnard Harbor District

Revised January 2026

At Berth Regulation Port & Terminal Plan

for

Port of Hueneme
Oxnard Harbor District

Port Hueneme, CA

Revised by Oxnard Harbor District
February 2024
May 2024
May 2025
September 2025
January 2026

CERTIFICATION

Port of Hueneme
Oxnard Harbor District
At Berth Regulation Port & Terminal Plan

Signature of Responsible Port Official

Kristin Decas, CEO and Port Director

Date: January 20, 2026

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LIST OF ABBREVIATIONS

Abbreviation	Term/Phrase/Name
AECS	Approved Emission Control Strategy
AERAS	AERAS Technologies
CAEM	Clean Air Engineering Maritime
CARB	California Air Resources Board
ECCS	Emissions Capture and Control System
GHG	Greenhouse gas
HVSC	High Voltage Shore Connection
Port	Port of Hueneme
Reefer	Refrigerated cargo
RORO	Roll-on roll-off
STAX	STAX Engineering

1.0 INTRODUCTION

1.1 About the Port of Hueneme

The Port of Hueneme (Port), "The Port that Farmers Built," was established in 1937 under the Oxnard Harbor District. Building on that legacy, today the Port ranks amongst the top ten ports in the US for automobiles and fresh produce. Located sixty miles north of Los Angeles, the Port is strategically positioned to serve as a niche hub for the U.S. west coast exporters and importers without any congestion.

As a political subdivision of California, the Oxnard Harbor District operates as an independent State Special District of California that owns and manages the Port. A five-member Board of Harbor Commissioners, publicly elected at large from the Oxnard Harbor District, sets the policies for the Port. The District's current political boundaries include the cities of Oxnard and Port Hueneme, as well as a few beach communities within unincorporated Ventura County.

The Port is empowered to acquire, construct, own and operate all harbor works to fulfill its mission to maximize maritime commerce and provide extensive economic and social benefits to the community. The Port does not assess taxes and operates based on the revenues from its commercial activities. The Port has long term contracts with shipping line and cargo owners that provide for minimum annual revenue guarantees and incentives for increased velocity and cargo throughput. The only tax-payer dollars the Port has access to include state, federal and local grants available only if the Port has a competitive grant application awarded.

The Port prepares and controls its own budget, administers, and controls its fiscal activities, and is responsible for all Port construction and operations. Thus the Port operates under more of an operating port model than landlord port model, which is more common in California. Pursuant to the California Harbors and Navigation Code, the Port adopts an annual operating budget, including a capital spending plan and a debt service schedule for each fiscal year (July 1 through June 30). Annually, the Port engages an independent auditor to audit the fiscal year-end financial statements.

The Port is the 4th largest container port in California and is strategically located in Ventura County and lies approximately 60 miles north of Los Angeles. The Port specializes in the markets of fresh fruit, project cargo, automobiles and liquid bulk cargoes. Many of the products traversing the Port are deemed "essential and critical" including fresh foods, supplies, and military equipment. The Port itself is

identified as “critical infrastructure” in national and state level freight planning. The Port is also recognized as “Critical Infrastructure Sector” per the U.S. Cybersecurity and Infrastructure Security Agency’s designation.

Vessels subject to the 2020 Regulation calling at the Port include refrigerated cargo (reefer), roll-on roll-off (RORO) vessels, and tanker vessels. Reefer operations at the Port typically occur at Wharf 1 or South Terminal (which includes Berths 1 and 2), but may operate on Wharf 2 or North Terminal (Berths 4 and 5 – low use for reefer container) or Navy Terminal infrequently (low use for all vessel categories), RORO operations may occur at three terminals, consisting of Wharf 2 or North Terminal (Berths 4 and 5) and infrequently (low use) at the Navy Terminal, or infrequently (low use) at Wharf 1 or South Terminal, and tanker vessels call on Wharf 1 or South Terminal (Figure 1-1). In 2020, there were 153 reefer vessels calls at the port, with 145 occurring at Wharf 1 (96%), 8 at Wharf 2 (4%), and none at the Navy Terminal. In 2020, there were 186 RORO vessel calls at the Port with 182 occurring at Wharf 2 (98%) and 4 at the Navy Terminal (2%). Lastly, there were 12 tanker vessel calls at Wharf 1 in 2020.

The Navy Terminal has had fewer than 20 calls from all regulated vessels in 2021, 2022 and 2023 and therefore is considered to be a low-use terminal. Wharf 1 was not used for RORO vessels in 2020, it had 2 in 2021, and 2 in 2022, and is therefore considered to be a low-use terminal for RORO. Wharf 2 had only 8 reefer vessel calls in 2020, 2 in 2021, and 4 in 2022 and is therefore considered to be a low use terminal for reefer vessels. Low-use terminals do not have emissions control requirements; however, opacity and visit reporting requirements still apply. It is important to note that Navy Terminal is located on Navy Base Ventura County and is therefore neither on Port property nor under Port jurisdiction. The Port must request approval from Navy Port Operations to allow any vessel to be berthed at the Navy Terminal.

See Port berth coordinates in Table below as illustrated in Figure 1-1.

Berth Name	Western Boundary	Eastern Boundary
Berth 1	34°08'51"N 119°12'31"W	34°08'51"N 119°12'21"W
Berth 2	34°08'51"N 119°12'21"W	34°08'51"N 119°12'10"W
Berth 4	34°08'55"N 119°12'21"W	34°08'55"N 119°12'12"W
Berth 5	34°08'55"N 119°12'12"W	34°08'55"N 119°12'07"W
	Southern Boundary	Northern Boundary
Navy Terminal	34°08'55"N 119°12'22"W	34°09'05"N 119°12'22"W

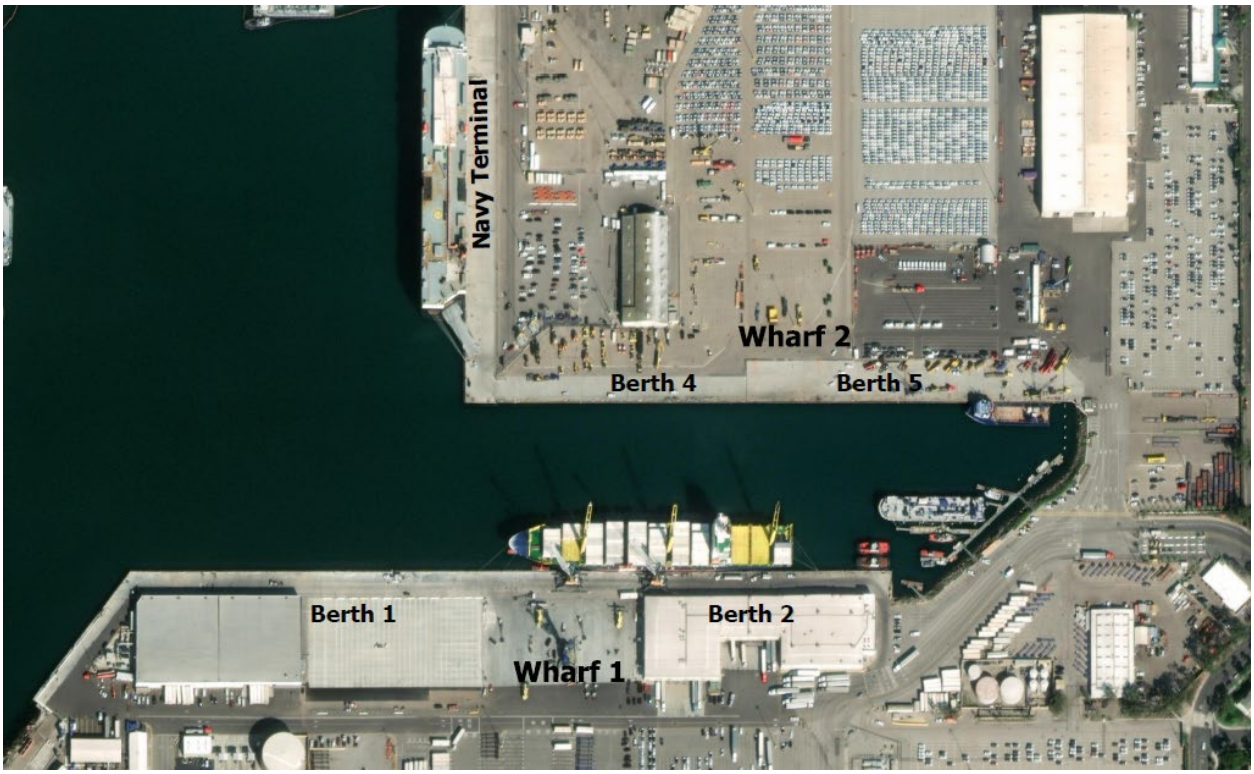

Figure 1-1: Port of Hueneme terminals

The Port plans to implement two strategies to comply with the At-Berth Regulation – shore power and an ECCS. The shore power system on the Wharf 1 South Terminal that served reefer vessels was destroyed in an unprecedented, atmospheric river rain storm that occurred on December 21, 2023.

On December 21, 2023, the Port, the cities of Port Hueneme and Oxnard experienced an unprecedented severe storm event that had significant impacts on the region. The storm's substantial rainfall totals were far beyond forecasted amounts, led to flooding, and triggered historic tornado warnings issued by the National Weather Service (NWS). At the Port's location, the National Oceanic Atmospheric Administration's Atlas 14 rain storm standard for a 60-minute, 1000-year storm event is 1.8" of rain, and during the December 21 storm event, more than 5" of rain fell, with almost 3.5" in less than one hour, nearly doubling the 1000-year storm event standard. Significant flooding from the huge volume of runoff poured onto the Port in many locations from the adjacent overwhelmed streets and gutters. The flooding damaged many of the Port's buildings and structures and rendered the shore power system a complete loss, making compliance with the terminal operator requirements of the CARB At Berth Regulation beyond the reasonable control of the Port. The Port immediately went into emergency response which continues to the present with the rebuild of the destroyed shore power system estimated to cost in excess

of $45 million. This new shore power system will be built for reefer container vessels on the footprint of the destroyed system and is set to be completed by late 2027 - early 2028.

Additionally, a shore power system will also be installed at the North Terminal to serve Berths 4 and 5. Upon project completion, the North Terminal's shore power system will be able to also serve reefer container and RORO vessels. One barge-based ECCS was deployed on November 1, 2024 and from that date to January 1, 2025, it serviced reefer container vessels. Since January 1, 2025 this barge has been serving RORO vessels at the North Terminal; however when not in RORO service, it has been servicing reefer container vessels. A second ECCS barge is arrived on May 24, 2025 which will be put into service on reefer container vessels, thus each regulated category of vessel will have one dedicated ECCS barge.

The Port is an operating port, directly involved in terminal operations at Wharf 1, Wharf 2, and Navy terminals, and as such serves in the role of both port authority and terminal operator. The Port is responsible for implementing emissions control strategies at the South and North Terminals for both reefer and RORO vessels. The following sections detail the Port's planned emissions control strategies for the Wharf 1 or South Terminal (Section 4) and North Terminal (Section 5) in compliance with the Control Measure for Ocean-Going Vessels at Berth, per Sections 93130.14(a) and (b) of the California Code of Regulations.

2.0 STATE OF THE TECHNOLOGY

Since 2014, the Port has continued to monitor the feasibility of different technology options to reduce emissions from vessel calls. The ultimate strategies of enabling emissions control, and proposed within, include the primary control technology of shore power infrastructure with an ECCS as the alternate, however the Port must ensure that it maintains the flexibility to pursue the most effective and feasible technologies for future use. This plan does not tie the Port to one technology if others prove to be a better fit for use within the Port of Hueneme in the future. This also recognizes the tepid pace of development of other potential control technologies and the constraints on implementation posed by the global strategic and energy uncertainties.

2.1 Shore Power

While shore power is a proven strategy for reducing emissions from at-berth vessels, deployment of a dedicated shore power system for RORO was substantially delayed by the IEC/ISO/IEEE not approving the High Voltage Shore Connection (HVSC) Standard 80005-01 for RORO vessels until the fall of 2023. This delay of the standards meant that engineering could not begin in earnest until after this date giving very little time to complete construction of a multi-year process of engineering, permitting, parts acquisition (with most components being specialty high voltage equipment with known post-pandemic lead times of 24-30 months at that time) and construction.

Additionally, the length of time of this approval process took to complete combined with ongoing post-pandemic supply chain disruptions created significant delays in the initiation of shore power retrofits of RORO vessels by vessel owners which in our conversations are anticipated to stretch many years beyond 2030. These delays in initiating retrofits added considerable complexity to the Port's compliance strategy planning because vessel owners are anticipating that retrofits of their fleets will take approximately three to seven years due to the need to drydock vessels when performing retrofits. In the interim time many RORO carriers have embraced the emissions reduction capabilities of the ECCS barges and are planning on these being their main compliance pathway.

2.2 Emissions Capture and Control Systems

The Port of Hueneme has contracted with STAX Engineering (STAX) to provide two ECCS to the Port that can be used on an as needed basis for both container and RORO vessels. The first ECCS barge was delivered and placed into service on November 1, 2024. Since January 1, 2025 this system has been prioritized for RORO vessel compliance, however it regularly is also used on container vessel when not in

service on any RORO vessels. The second barge, which arrived on May 24, 2025 was be placed into immediate container vessel service.

3.0 IMPLEMENTATION CHALLENGES

3.1 Shore Power

One of the key challenges for rebuilding and expanding the shore power system at the Port is the anticipated need to upgrade the utility feeds from Southern California Edison (SCE). Without adequate transmission and distribution system capacity, the terminal shore power system will have limited functionality and may be subject to utility-initiated outages. The Port is continuing its ongoing coordination with the utility company to make sure we have adequate power provided to the Port when we need it for all electrical loads, particularly new power loads, especially shore side power. In addition, the Port is evaluating on-site distributed energy resource options, including on-site generation and energy storage to help offset peak demands and reduce the immediate needs for utility upgrades. Very significant questions are being raised by CARB's push of industry towards electrical grid power as the clean energy fuel of the future at a time when Statewide grid resiliency is struggling and the frequency of power interruptions and outages grows more common due to climate change induced emergencies like heat events, unprecedented precipitation events and wildfires.

The length of time it took for the approval of the IEC/ISO/IEEE HVSC Standard 80005-01 for RORO vessels has delayed the initiation of shore power retrofits of RORO vessels by vessel owners. The Port is currently engineering a dual voltage power system for the North Terminal which will enable both refrigerated container and RORO vessels to plug in upon construction. However, delays in retrofits will limit the number of RORO vessels that will be able to connect to shore power, creating more demand for the ECCS. The Port will continue to work with shipping lines to stay apprised of their shore power retrofit schedules for vessel fleets calling on the Port. For these reasons, presently the Port anticipates that the vast majority of RORO vessels will be dependent on external barge based ECCS systems for the first several years of compliance with At Berth, while fleets are being retrofitted with shorepower compliant infrastructure.

3.2 Emissions Capture and Control Systems

The Port pursued the infrastructure required for compliance with the new at berth regulations from 2017-2024. This included applying to multiple grant opportunities for funding as well as having conversations with both the ocean carriers themselves as well as the technology vendors for ECCS systems as described in previous sections of this plan. In addition, the Port continued conversations with all invested parties including the ILWU, the stevedores and other California ports. As predicted, come January 1, 2025 a very

limited number of ECCS systems were available and there has been competition amongst California ports and terminals to secure the services of that limited number of systems available. Several Port and Terminals are facing significant compliance challenges in 2025 due to the lack of available barges. The ECCS vendors were limited in the sharing of information with ports about their capitalization, construction timelines as well as their planned timing of when systems would be available and to whom they would be offered. In this atmosphere of global uncertainty and technological and regulatory delays the Port persevered and secured the services of one of the first ECCS barges of this modern generation of barges to ensure a compliance system was available come January 2025. The Port planned to and succeeded, despite the destruction of its shore power system in the unprecedented storm, to have an ECCS barge system servicing RORO vessels on January 1, 2025.

4.0 SOUTH TERMINAL

The Port plans to implement two strategies to comply with the 2020 At Berth Regulation at the South Terminal, including shore power and deployment of the barge-based ECCS. For the South Terminal (Wharf 1), shore power will eventually serve as the primary emissions control strategy for reefer vessels once rebuilt in early 2028, however until then an ECCS barge will serve as the primary control strategy. Following the rebuild of the shore power system it is anticipated that the ECCS barge will revert to a back up control role.

4.1 Emission Control Strategies

Shore power will be rebuilt at the South Terminal (Wharf 1) to serve reefer vessels[1]. The system will allow two ships to be shore-power connected simultaneously while at berth. The Port has contracted with the ECCS company STAX to provide the services of the barge-based ECCS to serve all regulated container reefer vessels until the new shore power system is installed and commissioned, and thereafter on those vessels that are not shore power compatible.

4.1.1 Necessary Equipment

Two barge-based ECCS will serve the Port full time by June of 2025. One system is already in operation on the North terminal and on the South terminal when not in use on the North terminal, and a second is due to be delivered by the end of May 2025.

4.1.2 Number of Vessels Expected to Use Strategy

In 2020, 145 reefer vessels visited Wharf 1, and there were approximately 150 reefer vessel calls in 2021. Until the shore power system is rebuilt, the Port plans to make available one ECCS barge as its primary emissions control strategy at the South Terminal to serve all regulated vessels.

4.1.3 Berths Where Equipment will be Used

Shore power will be installed at Berths 1 and 2 on the South Terminal (Wharf 1). The ECCS will be used at Berths 1, and 2 for all regulated vessels, as feasible, until the new shore power system is installed and thereafter on vessels that cannot connect to shore power.

[1] The south terminal shorepower system was damaged by a major storm event at end of December 2023 and will be reconstructed in the upcoming years, see Appendices A-C for more detail.

4.1.4 Berthing Restrictions

Reefer container vessels generally dock at Wharf 1 due to the proximity of the associated container handling equipment and electrical infrastructure, and the only berthing restrictions are typically short term in nature due to terminal construction projects or vessel arrival timing issues from delays due to mechanical issues or weather.

4.1.5 Division of Responsibilities

The Port is responsible for the on-berth shore power infrastructure. Vessel operators are responsible for on-board shore power systems.

For ECCS services, the Port is providing an umbrella ECCS service agreement with STAX that guarantees ECCS service be available for Hueneme vessels. However, for RORO vessels these emission capture services will be conducted via a contract between the vessel operator and STAX. The Port is providing the service for refrigerated container vessels until the new shore power system becomes available.

Port:

Will provide functional berths and ensures a supply of electricity for shorepower use.

Constructs and maintains shorepower vaults and equipment to supply electricity.

Provides availability of ECCS barge service.

Terminal:

(Port of Hueneme is Serving in the Terminal Operator Role)

Will provides the shorepower vault infrastructure for vessel plug-in.

Stevedore provides ILWU labor to load and unload AMP containers.

Stevedore provides ILWU labor to perform vessel plug-in.

Provides alternative ECCS barge service availability

Assist vessel operator with obtaining ECCS service once shore power is again functional, when feasible.

Vessel Operator:

Ensure vessel crew are fully trained for shorepower processes.

Engage outside consultant when required for training Have crew on hand for all vessel plug/unplug.

Ensure all vessels systems have been inspected and in good working order prior to arrival.

Engage tugboat services to meet designated arrival and departure times.

Acquire and maintain shorepower containers or on-board vessel shorepower electrical infrastructure including cable and plugs in good working order.

Ensure ECCS services are properly arranged, if needed

Cooperate with Terminal Operator in sharing of information and call data as required by CARB regulation.

ECCS Operator

Supply ECCS services as specified in contract.

4.1.6 Physical and/or Operational Constraints

While there will be no physical or operational constraints for using shore power for those vessels that will be shore power compatible, there are significant physical and operational constraints on ECCS barge utilization in the Port.

Currently, the Port can accommodate two refrigerated container vessels on its South Terminal wharf, and one RORO vessel on its North Terminal wharf. This vessel alignment maximizes vessel call efficiency and is typical of weekly operations, and while maximizing, it allows very limited maneuvering availability for vessels and just allows for adequate net horizontal clearance for vessels to safely enter and exit their harbor berths under tug assist and guided by the Harbor Pilot. Maneuvering vessels safely in the event of high winds or an emergency requires even greater accommodations including, but not limited to, additional tug boats and lines. With the Port layout as described, when the ECCS barge is working a vessel, it must be positioned aside or astern of the vessel within the horizontal clearance area in order to safely connect to the vessel stacks. This presence of the barge thus reduces the horizontal clearance even greater to such a small extent that it precludes any safe vessel maneuvering. See Figure 4.1

Figure 4-1: Channel constraints when vessels simultaneously berthed at Wharfs 1 and 2

As part of their role in reviewing and giving independent recommendations regarding harbor and vessel safety scenarios and evolutions, the Port's Harbor Safety Committee reviewed the ongoing ECCS barge integration into vessel maneuvering and broader vessel and terminal safety scenarios. Through this review the HSC made the determination that the presence of the STAX barge(s) aside or astern of a berthed vessel, while other vessels are maneuvering adjacently, presents an unacceptable safety risk; and therefore it is critical to ensure the safety of the vessel crews, terminal workers and structures that the ECCS barge be relocated. These relocations would be limited to being required during vessel maneuvering when there are vessels to be berthed and need to arrive or depart. Therefore, the periods of periodic ECCS barge disconnection which will be required for terminal and harbor safety will be requested by the Port in our monthly CARB reporting forms to be categorized as exempt under the Terminal Safety exemption of Section 93130.10(d) of the At Berth regulation.

5.0 NORTH TERMINAL

The Port plans to implement two strategies to comply with the At Berth Regulation at the North Terminal, including shore power at Wharf 2 and deployment of a barge-based ECCS for vessels that are not shore power compatible. The North Terminal (Wharf 2), consisting of Berths 4 and 5, is shown in Figure 5.1.-. Spatial and operational constraints at Wharf 2 allow only one RORO vessel to be berthed at the terminal at one time.

Figure 5.-1: Port of Hueneme North Terminal (Wharf 2)

5.1 Emission Control Strategies

Shore power will be deployed at the North Terminal (Wharf 2) to serve RORO vessels and is anticipated to be completed and commissioned by first quarter of 2028. The shore power system will be a dual voltage system and thus include connection infrastructure for both regulated vessels to provide flexibility in connecting to the greatest number of shore power compatible vessels. The planned system will have a mobile connection system to allow for maximum flexibility in vessel berthing locations. The Port procured the services of one barge-based ECCS which has been primarily serving RORO vessels at the North Terminal since January 1, 2025.

5.1.1 Necessary Equipment

The shore power system will be compliant to IEC/ISO/IEEE High Voltage Shore Connection (HVSC) Standard 80005-01. Equipment to be installed include an electrical switchgear substation, associated underground conduits/conductors, mobile connection and cable infrastructure, and all utility company required power infrastructure.

One barge-based ECCS is available to serve the North Terminal full time.

5.1.2 Number of Vessels Expected to Use Strategy

In 2025, the Port estimates approximately 200 RORO vessel calls will berth at the North Terminal. As noted earlier, based on discussions with the shipping lines calling at the Port, plans for incorporating shore power into existing and new vessels vary by shipping line. It is anticipated that the number of shorepower retrofitted RORO vessels will be less than 10. In 2025, it is anticipated that over 200 vessels will require the use of an ECCS barge while at berth. As additional RORO vessels are retrofitted or constructed with shore power, the use of the ECCS will gradually decline but that will likely take many years.

5.1.3 Berths Where Equipment will be Used

Shore power will be used at Berths 4 and 5 at Wharf 2 for primarily RORO vessels and reefer vessels occasionally and any other regulated vessels. One of the two ECCS barges in the Port will be used primarily at Berths 4 and 5 at the North Terminal. The ECCS barge may be used opportunistically to service other regulated vessels when an ECCS is not required to serve RORO vessels at Wharf 2.

5.1.4 Berthing Restrictions

Most RORO vessels have a stern ramp positioned on the starboard side of the vessel. Due to the channel width between the Port's North and South Wharfs, the positioning for the ECCS is essential to accommodating a vessel transiting the channel when there are ships at berth along the North and South Terminals (Figure 5.2). The design of the shore power system will accommodate a range of vessel sizes, provided that the vessels are shore power enabled.

Figure 5-2: Ideal positioning of barge-based ECCS to maintain channel navigability

5.1.5 Schedule for Installing Equipment

The engineering of the North Terminal shore power system began in calendar year (CY) 2023 quarter 2 (Q2). Construction is scheduled to go out to bid in CY 2025 Q3, with construction and commissioning running through CY2027 Q4. These timelines are a reflection of the Port's aggressive pursuit of funding for this new infrastructure and consistent perseverance to have this system built as soon as possible, an early installation timeline has proven technologically, financially and logistically impossible. ECCS barge services have been procured and are in operation for RORO vessels.

5.1.6 Division of Responsibilities

The Port will be responsible for the installation of the on-berth shore power infrastructure. Vessel operators will be responsible for retrofitting vessels for shore power. Plans for retrofitting and constructing new vessels with shore power vary among shipping lines.

For ECCS services, the Port has provided an umbrella ECCS service agreement with STAX that guarantees ECCS service be available for Hueneme RORO calls. However, these emission capture

services will be conducted via a contract between the vessel operator and the ECCS provider. The Port will not enter into a three-way contract between the ECCS vendors, the ocean carriers and the Port. Vessel carriers will be able to enter into their own agreements with ECCS vendors of their choice if they choose not to utilize the system available at the Port, however this situation is anticipated to be unlikely or infrequent. It is critical to note that due to a significant number of elements out of the Port's control including unprecedented global energy and security uncertainty, the actions of other Ports, Terminals, and CARB, the construction and business model development of the ECCS vendor companies, as well as historic storm weather damage to Port infrastructure, the State-wide operation of ECCS systems, including the Port, will be an evolving operation up to and beyond January 1, 2025.

Port:

Will provides functional berths and ensures a supply of electricity for shorepower use.

Will Construct and maintains shorepower vaults and equipment to supply electricity.

Provides alternative ECCS.

Terminal:

(Port of Hueneme is Serving in the Terminal Operator Role)

Will provide the shorepower vault infrastructure for vessel plug-in.

Stevedore provides ILWU labor to load and unload AMP containers.

Stevedore provides ILWU labor to perform vessel plug-in.

Assist vessel operator with obtaining ECCS, when feasible.

Provides alternative ECCS when terminal construction interferes with berth availability.

Vessel Operator:

Ensure vessel crew are fully trained for shorepower processes.

Engage outside consultant when required for training Have crew on hand for all vessel plug/unplug.

Ensure all vessels systems have been inspected and in good working order prior to arrival.

Engage tugboat services to meet designated arrival and departure times.

Acquire and maintain shorepower containers or on-board vessel shorepower electrical infrastructure including cable and plugs in good working order.

Ensure ECCS services are properly arranged, if needed

Cooperate with Terminal Operator in sharing of information and call data as required by CARB regulation.

ECCS Operator:

Supply ECCS services as specified in contract with ocean carriers.

5.1.7 Physical and/or Operational Constraints

Until the newly constructed shore power system for the North Terminal is constructed and commissioned all other regulated vessels will require the use of an ECCS barge to comply with the At-Berth Regulation. While there will be no physical or operational constraints for using shore power for those vessels that will be shore power compatible and meeting IEC/ISO/IEEE High Voltage Shore Connection (HVSC) Standard 80005-01, there are significant physical and operational constraints on ECCS barge utilization in the Port.

Currently, the Port can accommodate two refrigerated container vessels on its South Terminal wharf, and one RORO vessel on its North Terminal wharf. This vessel alignment maximizes vessel call efficiency is typical of weekly operations, and while maximizing, it allows very limited maneuvering availability for vessels and just allows for adequate net horizontal clearance for vessels to safely enter and exit their harbor berths under tug assist and guided by the Harbor Pilot. Maneuvering vessels safely in the event of high winds or an emergency requires even greater accommodations including additional tug boats and lines. With the Port layout as described, when the ECCS barge is working a vessel, it must be positioned aside or astern of the vessel within the horizontal clearance area in order to safely connect to the vessel stacks. This presence of the barge thus reduces the horizontal clearance even greater to such a small extent that it precludes any safe vessel maneuvering. See Figure 5.3.

Figure 5-3: Channel constraints when vessels simultaneously berthed at Wharfs 1 and 2

As part of their role in reviewing and giving independent recommendations regarding harbor and vessel safety scenarios and evolutions, the Port's Harbor Safety Committee reviewed the ongoing ECCS barge integration into vessel maneuvering and broader vessel and terminal safety scenarios. Through this review the HSC made the determination that the presence of the STAX barge(s) aside or astern of a berthed vessel, while other vessels are maneuvering adjacently, presents an unacceptable safety risk; and therefore it is critical to ensure the safety of the vessel crews, terminal workers and structures that the ECCS barge be relocated. These relocations would be limited to being required during vessel maneuvering when there are vessels to be berthed and need to arrive or depart. Therefore, periods of ECCS barge disconnection which will be required for terminal and harbor safety will be submitted to CARB by the Port in our monthly CARB reporting forms to be requested to be categorized under the Terminal Safety exemption of Section 93130.10(d) of the At Berth regulation.

Amendment 1: Terminal Safety

As noted throughout this Port and Terminal plan, the Port can accommodate two refrigerated container vessels on its south terminal wharf, and one roll on roll off vessel on its north terminal wharf. This vessel layout is typical of weekly operations at the Port, and it allows very limited maneuvering availability for vessels and just allows for adequate net horizontal clearance for vessels to safely enter and exit their harbor berths under tug assist and guided by the Harbor Pilot. Please note the extremely narrow horizontal clearance spaces in Pictures 1, 2, and 3 below.

Maneuvering vessels safely in the event of high winds or an emergency requires even greater accommodations including additional tug boats and lines. With the Port layout as described, when a ECCS barge is servicing a vessel, it must be positioned aside or astern of the vessel within the horizontal clearance area in order to safely connect to the vessel stacks. This presence of the barge thus reduces the horizontal clearance even greater to such an extent that it precludes any safe vessel maneuvering.

After thorough review, informed by several months of ECCS barge operations integrated into Port cargo vessel operations, the Port's Harbor Safety Committee made a determination that the presence of a ECCS barge(s) aside or astern of a berthed vessel while other vessels are maneuvering adjacently presents an unacceptable safety risk, and therefore it is critical to ensure the safety of the vessel crews, Port workers and structures that CAECS barge(s) be relocated during vessel maneuvering when there are vessels to be berthed and need to arrive or depart. This safety measure will be required in the perpetuity of barge operations within the harbor during vessel maneuvering. The Harbor Safety Committee submitted a letter to CARB outlining this finding.

For all such periods necessitated by harbor safety considerations associated with disconnections of the CAECS barge(s) for vessel maneuvering as described above, the Port will be submitting these periods as safety and emergency events in our monthly CARB reporting forms pursuant to Section 93130.10(d), Terminal safety and emergency event.

Picture 1. ECCS Barge Servicing RORO vessel

Picture 2. Reefer Container Vessel Departing Port

Picture 3 Two Vessels with Connected STAX Barges