

November 12, 2025

Michael Walker, CEO  
STAX Engineering, Inc.  
215 West Figueroa Street  
Santa Barbara, California 90802  
[m.walker@staxengineering.com](mailto:m.walker@staxengineering.com)

Dear Michael Walker:

California Air Resources Board (CARB) has reviewed STAX Engineering's (STAX) test plan and design change request for the Xcraft-1 system (STAXbox 1-1 and STAXbox 1-2) to treat emissions from auxiliary engines on container and ro-ro vessels.

The Xcraft-1 system is currently approved under Executive Orders (EOs) G-23-294-003 and G-24-054-003 for container and ro-ro vessels as a CARB Approved Emissions Control Strategy (CAECS) for compliance with the 2020 At Berth Regulation. Under these EOs, STAX is authorized to operate one STAXbox per auxiliary engine, or two STAXboxes simultaneously in dual-train mode to control two auxiliary engines on the same ro-ro vessel.

On September 12, 2025, STAX submitted a test plan and design change request to modify the EOs to allow one STAXbox to control two auxiliary engines using a Y-manifold. This manifold combines exhaust from two engines into a single duct routed to one STAXbox train. Under this configuration, only one train will operate at a time. The active train will be the one equipped with the Y manifold, which controls two auxiliary engines. The second train will remain inactive and will not control emissions.

CARB staff reviewed the test plan, provided comments on October 9, 2025, and received a revised version on October 13, 2025.

---

## **Approval and Conditions**

CARB approves the revised test plan submitted on October 13, 2025, under the requirements of the 2020 At Berth Regulation (title 17, Cal. Code Regs. §§ 93130 et seq.) and CARB's Recommended Emissions Testing Guidelines for Ocean-Going Vessels.

This approval is based on the system description, design, and procedures described in the test plan. No changes to the Xcraft-1 system (STAXbox 1-1 and STAXbox1-2) are allowed without prior CARB approval.

To receive EO approval for the Y-manifold configuration, STAX must:

- Complete all testing outlined in the approved test plan.
- Submit all test reports to CARB.

Any deviation from the approved test plan without prior CARB approval may result in the application being deemed incomplete or disapproved by CARB's Executive Officer.

Examples of deviations include:

- Testing on additional vessel visits not included in the plan.
- Operating outside the approved system configuration.

The approved test plan is limited to auxiliary engines using one STAXbox with a Y-manifold to control two engines. CARB may request results from any additional testing beyond what is described in the plan.

---

## Use of Research Exceptions

Up to **six** vessel visits conducted under the approved test plan may qualify for the research exception under sections 93130.8(d) or 93130.10(e). These exceptions only apply to testing described in the approved plan and conducted after its approval.

STAX is responsible for:

- Tracking the use of the six approved research exception visits.
- Providing the approved test plan to each participating vessel.
- Coordinating with vessel operators to ensure they understand the testing and which visit number they represent.

If more than six visits are needed, STAX must request additional approval from CARB.

---

## Reporting Requirements

All research exception visits must be reported by the terminal operator, vessel operator, and STAX. Specifically:

- **Within 7 days of vessel departure**, STAX must email [shorepower@arb.ca.gov](mailto:shorepower@arb.ca.gov) with:
  - Vessel type, name, and IMO number
  - Test plan name and CARB approval date

- Tests performed
- Number of research exceptions used and remaining
- **Before vessel arrival**, terminal operators must confirm and record the visit's research exception status with CARB and follow all requirements in section 93130.10(e).
- **Within 30 days of vessel departure**, vessel operators must report the visit in their vessel visit report per section 93130.8(d).

Failure to report within 7 days may result in the application being deemed incomplete or disapproved by the Executive Officer.

---

If you have any questions, please contact Angela Csondes, Manager, Marine Strategies Section, at [angela.csondes@arb.ca.gov](mailto:angela.csondes@arb.ca.gov).

Sincerely,



Bonnie Soriano, Chief, Freight Activity Branch, Transportation and Toxics Division

Attachment: STAX two\_to\_one RORO test plan (13 Oct 25) rev2.PDF

cc: Angela Csondes, Section Manager, Marine Strategies Section