



# Air Resources Board



**Matthew Rodriguez**  
Secretary for  
Environmental Protection

**Mary D. Nichols, Chair**  
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**Edmund G. Brown Jr.**  
Governor

October 17, 2015

Mr. Ruben Garcia, President  
Advanced Cleanup Technologies, Inc.  
20928 Lambertson Avenue  
Carson, California 90810

*Ruben*  
Dear Mr. Garcia:

Air Resources Board (ARB) staff has reviewed Advanced Cleanup Technologies, Inc.'s (ACTI) Test Report, dated May 20, 2015 and additional test data, dated September 15, 2015, for the Advanced Marine Emissions Control System (AMECS). The objective for the Test Report was to provide emission measurements and associated information to support the development of control factors for AMECS for use by regulated fleets subject to ARB's Airborne Toxic Control Measure for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At-Berth in a California Port (At-Berth Regulation).

ARB staff's review of the ACTI Test Report and additional test data was based on the requirements in the At-Berth Regulation, the guidelines provided in ARB's "Recommended Emissions Testing Guidelines for Ocean-going Vessels," and the approved ACTI Emissions Test Protocol dated January 10, 2015.

We are pleased to inform you that we have approved the results of the emission measurements and are issuing the attached Executive Order AB-15-02 which allows the use of AMECS by specified container vessels for compliance with the At-Berth Regulation. Executive Order AB-15-02 identifies the approved control efficiencies, as well as monitoring, reporting, and recordkeeping requirements for AMECS. Executive Order AB-15-02 also stipulates the approved operating conditions for the use of AMECS which are identified in the table below.

*The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.*

California Environmental Protection Agency

**AMECS Approved Operating Conditions**

Parameter	Value
Ocean-going vessel type	Container vessels
Ocean-going vessel engine type	One or two auxiliary engines only per visit
Fuel composition limitations	Marine distillate fuel with $\leq 0.1\%$ sulfur content
Maximum SCR inlet temperature	650°F
Static pressure	Minimum of -2 inches of water at the emission control system
Connection	Direct connect system with seal per specifications in AMECS Operations and Maintenance Manual <sup>1</sup> Section 3.1
Maximum engine MCR (kilowatt (kW)) for each engine type	3,700 kW
Allowable operating range (kW)	500-1700 kW
Exhaust flow rate that can be treated (standard cubic feet per minute (scfm))	1400 to 6500 scfm of engine exhaust; up to two engines may be simultaneously controlled per AMECS system
Maintenance requirements	Per AMECS Operations & Maintenance Manual
SOx filter operation	Required
Ammonia slip emission	Not to exceed 5 ppm <sub>dv</sub> , averaged over 60 minutes;

<sup>1</sup>AMECS Operations and Maintenance Manual is included as Confidential Appendix B to the Executive Order AB-15-02

While AMECS can now be used by fleets for compliance with the At-Berth Regulation, it is important to note that this approval is not a verification under the "Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines" (verification process). Because this action does not require ACTI to provide the warranty required under the verification process, purchasers/lessees will need to negotiate warranty coverage directly with your company. We note that if Proposition 1B funding is used to acquire the system, ACTI must provide a ten year warranty for the performance of the system.

In closing, we appreciate the opportunity to work with ACTI in its efforts to implement a barge based control system as an alternative compliance option for the At-Berth Regulation.

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If you have any questions, please contact Ms. Angela Csondes, Manager, Technical Analysis Section at [angela.csondes@arb.ca.gov](mailto:angela.csondes@arb.ca.gov) or (916) 323-4882, or Mr. Jonathan Foster, Air Resources Engineer, at [jonathan.foster@arb.ca.gov](mailto:jonathan.foster@arb.ca.gov) or (916) 327-1512.

Sincerely,



Cynthia Marvin, Chief  
Transportation and Toxics Division

Attachment

cc: Angela Csondes, Manager  
Technical Analysis Section  
Transportation and Toxics Division

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Air Resources Engineer  
Technical Analysis Section  
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