

Commercial Harbor Craft Regulation Overview



**Caterpillar, San Leandro
August 5, 2008**



California Environmental Protection Agency

Air Resources Board

Commercial Harbor Craft Vessel Types

- ◆ Ferries and excursion vessels
- ◆ Tugboats and towboats
- ◆ Crew and supply vessels
- ◆ Commercial fishing
- ◆ Charter fishing boats
- ◆ Pilot boats
- ◆ Work boats
- ◆ Other vessels



U.S. EPA Engine Standards

- ◆ Engines meeting Tier 1 standards became available in 2000
- ◆ Tier 2 standards became effective 2004 to 2007
- ◆ Tier 3 and Tier 4 standards adopted by U.S. EPA in March 2008
- ◆ Tier 3 standards effective 2012 to 2014 and Tier 4 in 2014 to 2017

Harbor Craft Emission Reductions

Key to Multiple Plans

- ◆ Diesel Risk Reduction Plan
- ◆ Goods Movement Plan
 - Harbor craft goals:
 - 2010 -25% reduction
 - 2015 -30% reduction
 - 2020 -40% reduction
- ◆ San Pedro Bay Port Clean Air Action Plan
 - Third largest emissions impact after ocean going vessels and cargo handling equipment
- ◆ State Implementation Plan (SIP)

Commercial Harbor Craft Regulation

- ◆ Board Approved in Nov. 2007
- ◆ Emission reduction focus on ferries, excursions vessels, tugboats and towboats
 - In-use engine requirements
 - Oldest highest use engines must comply first
- ◆ All Commercial Harbor Craft
 - New vessel and engine requirements
 - Monitoring, reporting, and recordkeeping
- ◆ Effective Jan. 1, 2009

Summary of Regulation Areas of Responsibility

Vessel Use	Reporting And Recordkeeping		"New" Requirements		"In-use" Requirements	
	Hour Meter	Initial Report	New Vessel	New Engine	Purchase of Engine	Compliance Action
Ferry	√	√	√	√	√	√
Excursion	√	√	√	√	√	√
Tug	√	√	√	√	√	√
Tow	√	√	√	√	√	√
Fishing	√	√	√	√	√	
Work	√	√	√	√	√	
Crew	√	√	√	√	√	
Pilot	√	√	√	√	√	
Other	√	√	√	√	√	

Exemptions from Entire Regulation

- ◆ Vessels traversing within 24 nautical miles of the California Coast without stopping
- ◆ Temporary emergency rescue/recovery vessels
- ◆ Recreational vessels
- ◆ Ocean-going vessels (except ocean-going tugs)
- ◆ Vessel engines registered with the Portable Engine Registration Program prior to January 1, 2009
- ◆ U.S. Coast Guard vessels
- ◆ Military tactical support vessels

In-Use Engine Requirements

- ◆ Existing ferries, excursion vessels, tug and towboats
- ◆ Tier 0 and Tier 1 engines replaced/rebuilt or retrofitted to meet Tier 2/3 emission std.
- ◆ Two compliance timelines
 - Statewide
 - South Coast
- ◆ Phased compliance schedule
 - December 31, 2009 - first compliance date

Exemptions from In-Use Engine Requirements

- ◆ Temporary replacement vessels
- ◆ Registered historic vessels
- ◆ Engines rated at less than 50 horsepower
- ◆ Engines operated less than 300 hours per year
- ◆ Near-retirement vessels

Engine Compliance Schedule

- ◆ Statewide
 - First Compliance Date 2009
 - Tier 0 engines 2009-2016
 - Tier 1 engines 2015-2022
- ◆ Accelerated schedule for South Coast
 - First Compliance Date 2009
 - All Tier 0 engines 2009-2013
 - All Tier 1 engines 2014-2020

Compliance Date Extensions

- ◆ No suitable engine replacement
- ◆ Manufacturer delay or installation difficulties
- ◆ Engines on multiple vessels within fleet requiring compliance in one year
- ◆ Change in annual engine hours of operation

Alternative Control of Emissions

- ◆ Operators may comply using alternative emission control strategies
- ◆ Must achieve equivalent or greater reductions
- ◆ Application process includes public review process

New Vessel and Engine Replacement Requirements

- ◆ All harbor craft vessel types
- ◆ New build vessels
 - Install engine meeting the most current new engine standard
 - Ferries have additional BACT requirement
- ◆ Replacement engines on in-use vessels
 - Install engine meeting the most current new engine standard

All Harbor Craft Vessels Required to Comply

- ◆ Monitoring
 - non-resettable hour meters on all engines
- ◆ Recordkeeping
- ◆ Reporting
 - Initial report (Feb.28, 2009)
 - Compliance report
 - Ferries, excursion, tugboats, and towboats



Regulation Emission Benefits and Cost Effectiveness

- ◆ Total emissions reduced over life of regulation (2009-2022)
 - 4.9 million pounds PM
 - 39 thousand tons NOx
- ◆ Cost effectiveness
 - \$29/lb if all costs are attributed to PM
 - \$1800/ton NOx if costs divided equally between NOx and PM

Funding Opportunities: Early and Extra Emission Reductions

- ◆ Carl Moyer Program Funding
- ◆ Proposition 1B Funding for goods movement related sources
 - Funding in specific trade corridors only:
 - Los Angeles/Inland Empire, Central Valley, Bay Area, and San Diego/Border
 - Available for tugboats, towboats, crew and supply vessels, commercial fishing boats, work boats, and pilot boats
- ◆ Both require real, surplus, quantifiable, and enforceable reductions
- ◆ Contact your local air pollution control district

Barge: Portable or Harbor Craft Engine?

- ◆ A barge is a commercial harbor craft
- ◆ Engines on barges are subject to regulation if:
 - fuel or exhaust system integral to the vessel
 - engine welded or physically connected
 - engine cannot be easily removed for land-based applications without modifications
- ◆ New barge engines required to meet the latest EPA emission standards

Exempted Barge Engines

- ◆ Barge engines currently in the PERP or Local Air District permit pre-1/1/09
- ◆ If PERP requirements met, barge engine may register in PERP after 1/1/09

Harbor Craft Regulation Timeline

- ◆ Final rulemaking package to Office of Administrative Law (OAL) by September 5, 2008
- ◆ OAL has 30 days to review
- ◆ Regulation goes into effect January 1, 2009

ARB Ocean-going Vessel Rule

- ◆ Approved by the Board on July 24, 2008
- ◆ Applies to ocean-going vessels (ships) visiting CA ports, including cargo ships, tankers, and passenger cruise ships
- ◆ Requires the use of cleaner distillate fuel in ship main engines, auxiliary engines, and auxiliary boilers (rather than residual)
- ◆ Cleaner fuel required within 24 nm of the California coastline

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