



Working Group Meeting #1

Proposed Amended Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines

Proposed Amended Rule 1470 – Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines

Proposed Amended Rule 1472 – Requirements For Facilities With Multiple Stationary Emergency Standby Diesel-Fueled Internal Combustion Engines

December 10, 2020, 1:00 p.m.

Join Zoom Meeting

<https://scaqmd.zoom.us/j/92386239548>

Zoom Webinar ID: 923 8623 9548

Teleconference Dial-In: +1 (669) 900-6833

If the Zoom link does not work, please cut and paste it into your browser

Agenda

Background

Rule Development Process

Current Requirements Emergency
Standby Engines

Public Safety Power Shutoff (PSPS)

Rule Comparisons and State Airborne Toxic
Control Measure (ATCM) Requirements

Next Steps

Today's Working Group Meeting

- First Working Group Meeting in a series of future meetings
- Objective is to provide background information about the rulemaking process and regulatory requirements
- Staff is not providing any recommendations today
- Encourage stakeholder comments

Background

- During the 2020 legislative session SB 1099 – Emergency backup generators: critical facilities: exemptions was introduced but was not passed
- Through the legislative process, staff worked with supporters to develop a possible regulatory pathway to address their concerns
- Concerns generally focused on the need for increased use of emergency standby engines at critical facilities due to wildfires and other natural disasters

Key Comments from Supporters of SB1099

- Comments were primarily from water districts and hospitals
- Two general comments:
 - Need for regulatory certainty and relief if an emergency standby engine exceeded allowable usage hours under certain circumstances
 - Need for additional testing and maintenance hours for older higher emitting emergency standby engines

Proposed Rulemaking

- The purpose of this rulemaking process is to work with stakeholders to identify regulatory pathways to address stakeholder comments identified through SB 1099
- Initial thoughts are that proposed rulemaking will focus on:
 - Use of emergency standby engines at essential public services and health facilities during certain events
 - Health facility as defined in Section 1250 of the California Health and Safety Code
- Through the rulemaking staff will discuss types of certain events, initial thoughts are Public Safety Power Shutoffs (PSPS) and possibly wildfires

Rule 1302 Essential Public Services Include:

- Sewage treatment facilities
- Prisons
- Police facilities
- Fire fighting facilities
- Schools
- Hospitals
- Construction and operation of landfill gas control or processing facility
- Water delivery operations
- Public transit

Rule Development Process



South Coast AQMD's rulemaking process is designed to be collaborative



Objective is to build consensus and to work through key issues



All stakeholders are encouraged to participate in the rulemaking process

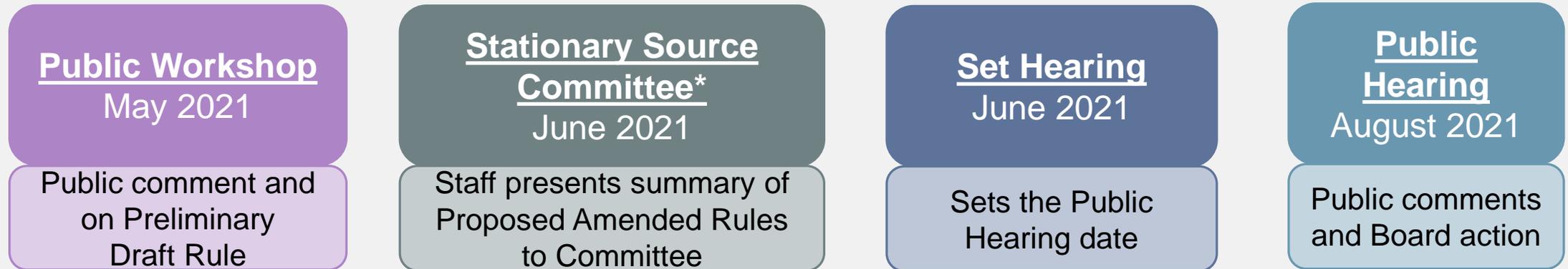


Working Groups generally meet monthly

Overview of Rule Development Process



Key Milestone Dates in Rulemaking Process



- Preliminary schedule, subject to change
- California Environmental Quality Act (CEQA) compliance required
 - Significant environmental impacts require additional CEQA analysis which may extend rulemaking process
- Draft Rule and Draft Staff Report released 30 days before Public Hearing
 - Socioeconomic impact analysis
 - Substantial rule changes which impact emissions will require re-noticing of Public Hearing

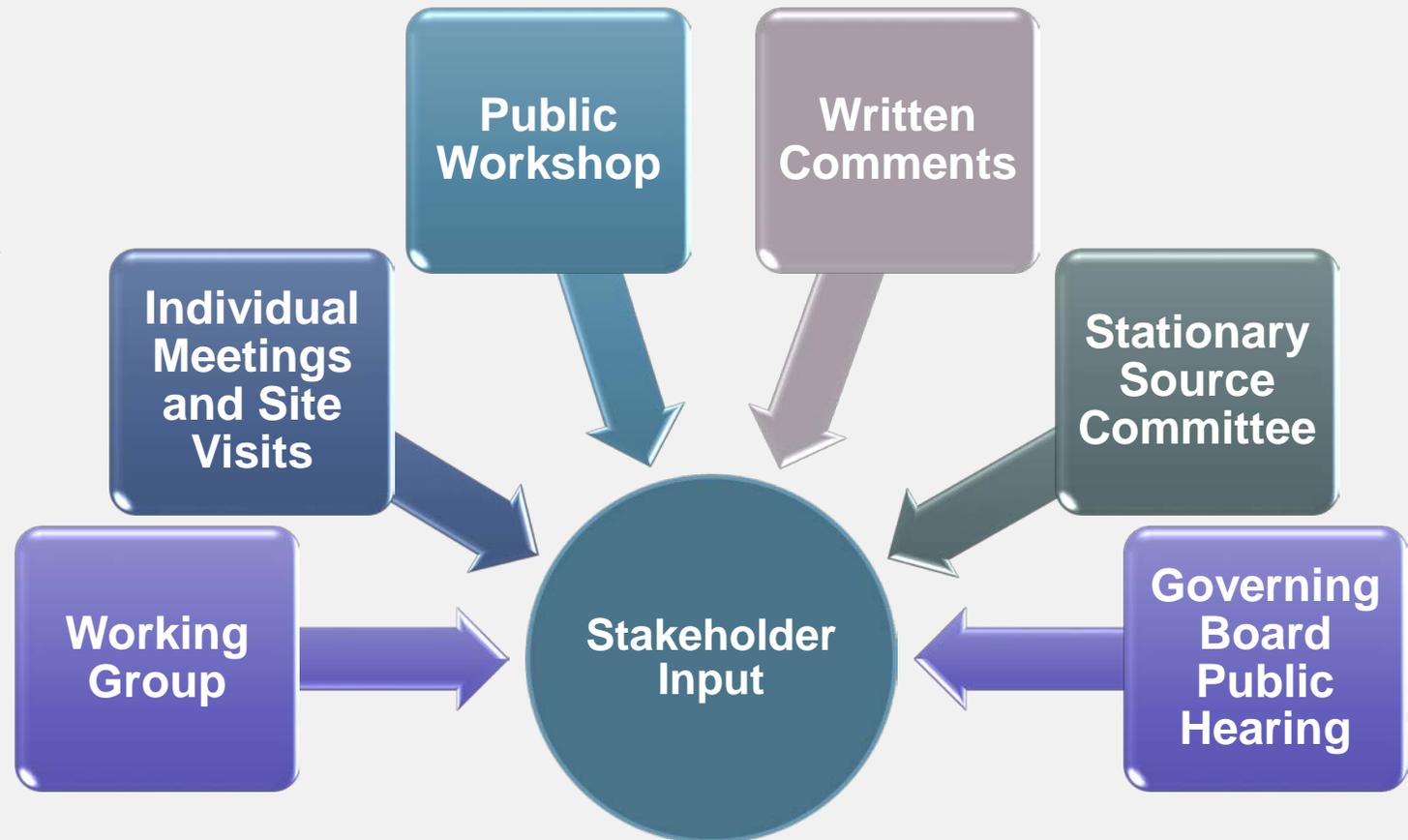
* Generally two months prior to the Public Hearing, staff will brief the Stationary Source Committee. Anticipated briefing

Working Group Meetings

- Working Group Meetings are a key component of the rule development process
- Comprised of representatives from industry, equipment suppliers, community and environmental groups, other agencies, and other interested parties
- Working Group Meetings are generally held monthly and throughout the rule development process
- Objectives of Working Group Meetings:
 - Build consensus and work through issues
 - Exchange information and understanding of key issues
 - Collaboration and create a dialogue with stakeholders

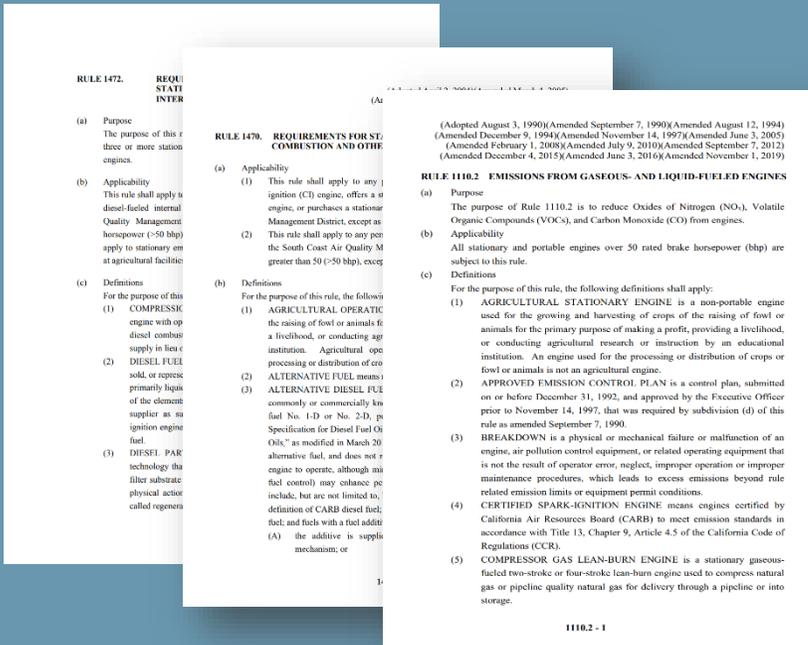
Stakeholder Input

- Stakeholders can provide input throughout the rulemaking process
- Early input is strongly encouraged
 - Provides staff the opportunity to try to resolve issues
- Variety of ways for stakeholders to provide input



Current Requirements for Emergency Standby Engines

- Three main rules that establish existing requirements for emergency standby engines:
 - Rule 1110.2 - Emissions from Gaseous- and Liquid-Fueled Engines
 - Rule 1470 – Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines
 - Rule 1472 - Requirements For Facilities With Multiple Stationary Emergency Standby Diesel-fueled Internal Combustion Engines



Rule 1110.2 Requirements

(Adopted August 3, 1990)(Amended September 7, 1990)(Amended August 12, 1994)
(Amended December 9, 1994)(Amended November 14, 1997)(Amended June 3, 2005)
(Amended February 1, 2008)(Amended July 9, 2010)(Amended September 7, 2012)
(Amended December 4, 2015)(Amended June 3, 2016)(Amended November 1, 2019)

RULE 1110.2 EMISSIONS FROM GASEOUS- AND LIQUID-FUELED ENGINES

(a) Purpose

The purpose of Rule 1110.2 is to reduce Oxides of Nitrogen (NO_x), Volatile Organic Compounds (VOCs), and Carbon Monoxide (CO) from engines.

(b) Applicability

All stationary and portable engines over 50 rated brake horsepower (bhp) are subject to this rule.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

- (1) **AGRICULTURAL STATIONARY ENGINE** is a non-portable engine used for the growing and harvesting of crops or the raising of fowl or animals for the primary purpose of making a profit, providing a livelihood, or conducting agricultural research or instruction by an educational institution. An engine used for the processing or distribution of crops or fowl or animals is not an agricultural engine.
- (2) **APPROVED EMISSION CONTROL PLAN** is a control plan, submitted on or before December 31, 1992, and approved by the Executive Officer prior to November 14, 1997, that was required by subdivision (d) of this rule as amended September 7, 1990.
- (3) **BREAKDOWN** is a physical or mechanical failure or malfunction of an engine, air pollution control equipment, or related operating equipment that is not the result of operator error, neglect, improper operation or improper maintenance procedures, which leads to excess emissions beyond rule related emission limits or equipment permit conditions.
- (4) **CERTIFIED SPARK-IGNITION ENGINE** means engines certified by California Air Resources Board (CARB) to meet emission standards in accordance with Title 13, Chapter 9, Article 4.5 of the California Code of Regulations (CCR).
- (5) **COMPRESSOR GAS LEAN-BURN ENGINE** is a stationary gaseous-fueled two-stroke or four-stroke lean-burn engine used to compress natural gas or pipeline quality natural gas for delivery through a pipeline or into storage.

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- Establishes NO_x, VOC, and CO emission limits for stationary and portable engines > 50 bhp
- Requires emissions testing, monitoring, reporting, and recordkeeping
- Includes specific exemptions for emergency standby engines

NO_x

11 ppmv*

VOC

30 ppmv*

CO

250 ppmv*

* Parts per million by volume, corrected to 15% oxygen

➤ Rule 1110.2 Requirements for Emergency Standby Engines

- Includes specific exemptions for emergency standby engines
- Defines emergency standby engine as an engine which operates as a temporary replacement for primary mechanical or electrical power during periods of fuel or energy shortage or while the primary power supply is under repair

Exemption for Emergency Standby Engines

- Currently exempts emergency standby engines, engines used for fire-fighting and flood control, and any other emergency engine approved by the Executive Officer from meeting NO_x, VOC, and CO emission limits provided:
 - Engine has a permit condition that limits the operation to 200 hours or less per year as determined by an elapsed time meter
- Exempted emergency standby engines also exempted from monitoring, testing, recordkeeping, and reporting requirements
- Operating hours includes all operations:
 - Emergency use
 - Maintenance
 - Testing



Stakeholder Comments Related to Rule 1110.2

- Need for regulatory certainty and relief if an emergency standby engine exceeds 200 hours under certain circumstances
- Some stakeholders are concerned about increased usage of emergency standby engines due to PSPS events
- Under the current regulatory structure, if an operator exceeds the 200 hours they can petition the Hearing Board

Public Safety Power Shutoff

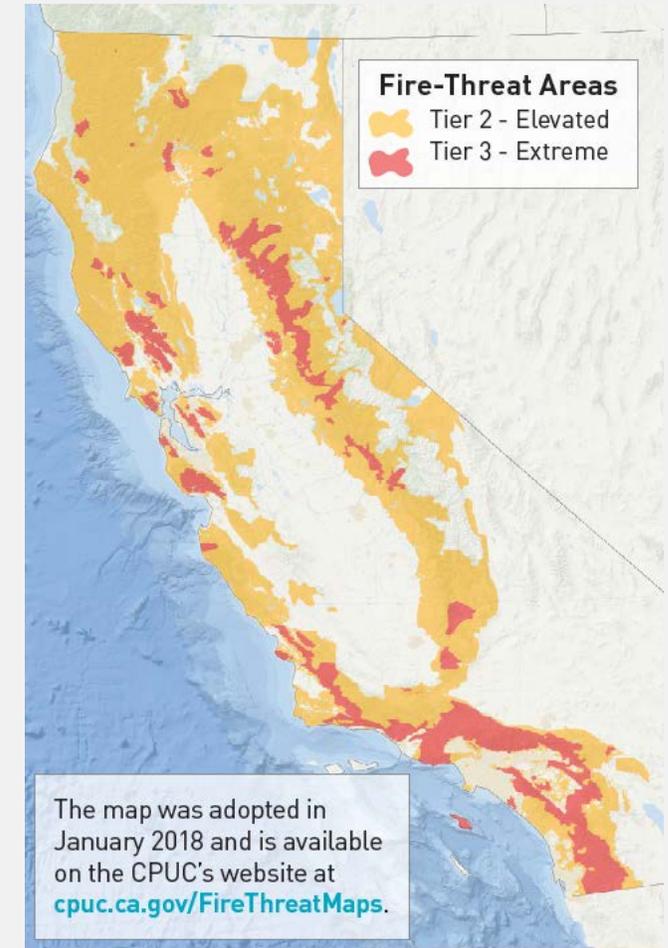
A PSPS occurs in response to severe weather where power is turned off to help prevent a wildfire and keep communities safe

- Over the past decade, California has experienced increased wildfires
 - Roughly half of the most destructive fires in California history are attributed to power lines
- In 2012, California Public Utilities Code Sections 451 and 399.2(a) provides electric utilities the authority to shut off electric power in order to protect public safety



Public Safety Power Shutoff Program

- Electricity providers continually monitor for extreme weather threats and high fire danger
- PSPS events are considered after taking a combination of criteria into account including:
 - “Extreme” fire danger threat level
 - Red flag warning
 - Sustained winds
 - Low humidity levels
 - Site-specific conditions
 - Critically dry vegetation
 - Real-time observations



General Process for PSPS Event

Planning and Monitoring	4-7 Days Ahead	When extreme weather is forecasted, begin planning for potential PSPS
	3 Days Ahead	Send initial notifications about possible PSPS event to local governments, first responders, hospitals, and other critical infrastructure and service providers
	2 Days Ahead	Send initial notifications to customers and update notifications to local government and agencies
	1 Day Ahead	Send update notifications
Outage	Day of Power Shutoff	When extreme fire weather is present and dangerous conditions validated by field resources; notify local government, agencies, and customers of power shutoff
	Power Restoration	Inspections begin when extreme weather subsides to safe levels and conditions validated by field resource. When power is restored, agencies and customers notified of power restoration

Duration of PSPS Events

- From January 2019 to December 2019, Southern California Edison reported 158 of their circuits underwent a PSPS event
 - Sum of PSPS durations per circuit ranging from less than hour to 154 hours
- Table below depicts circuits with PSPS durations totaling over 120 hours
- PSPS hours vary for specific locations within the circuit

Circuit Name	Location	Number of PSPS Events	Average Duration (Hours)	Total Duration (Hours)
Acosta	San Bernardino County	3	45	135
Calstate	San Bernardino County	4	30	120
Club Oaks	San Bernardino County	3	45	136
Energy	Los Angeles County	4	35	141
Shovel	Los Angeles County	4	38	154

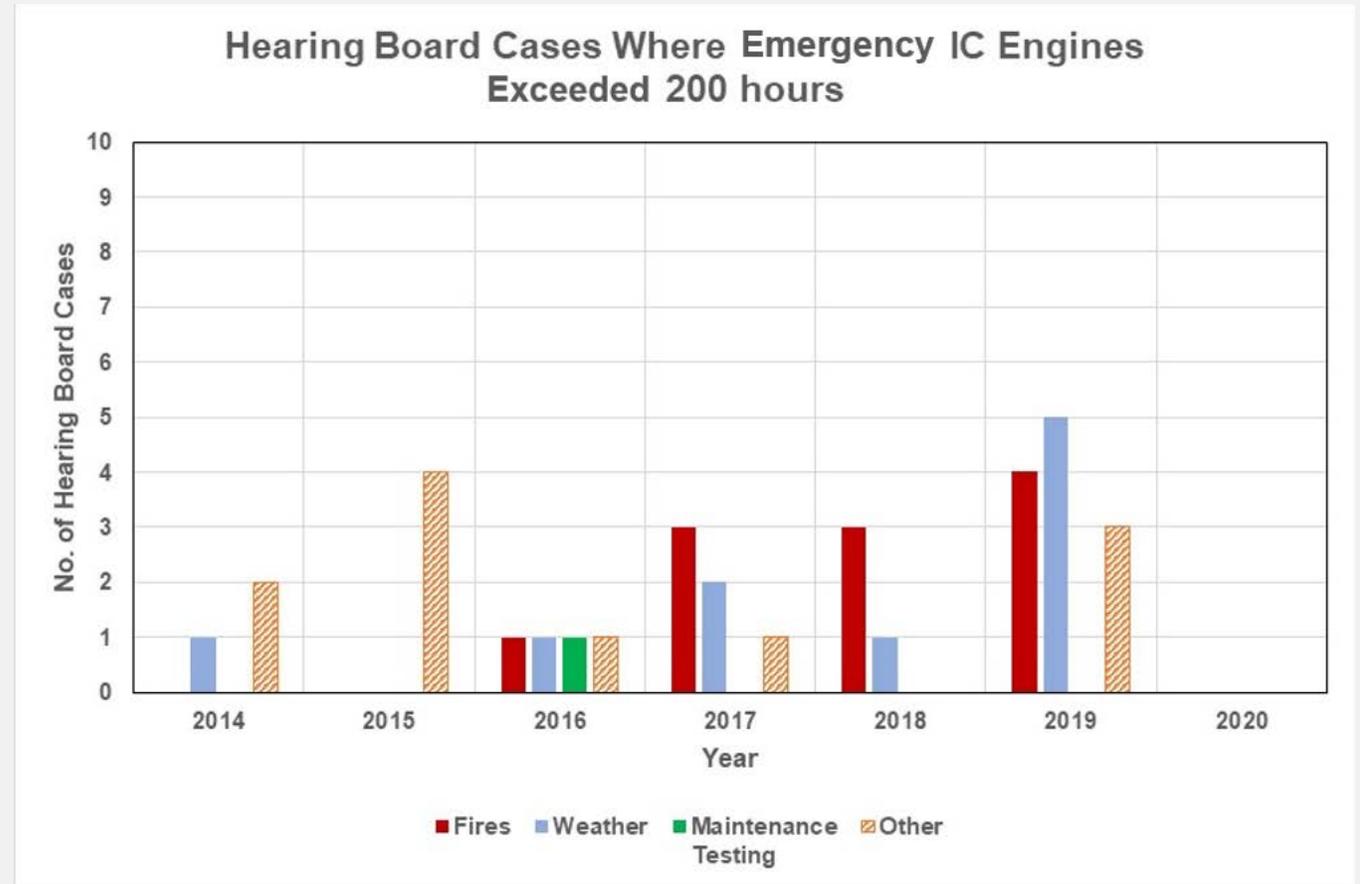
South Coast AQMD's Hearing Board

*Quasi-judicial board
authorized to provide
relief from South Coast
AQMD regulations under
certain circumstances*

- Authorized to hear:
 - Petitions for variances and Orders for Abatement
 - Appeals from granting of permits, permit conditions, permit denials and suspensions, denials of emission reduction credits and pollution control plans
 - Appeals by third parties
- Not authorized to:
 - Modify rules
 - Exempt businesses from compliance with a rule
 - Grant variances from violation of the public nuisance law
 - Review violation notices
- Listens to all sides of a case before weighing evidence to reach a decision

Hearing Board Activity

- Since January 2014, 33 cases for emergency standby engines were filed with the Hearing Board for exceeding 200 hours limit
 - 11 – fire related
 - 10 – weather related
 - 1 – maintenance/testing
 - 11 – other reasons
- Total emergency engine universe at ~13,700 permitted units



Rule 303 - Hearing Board Fees

- All applicants must pay a filing fee for each petition of \$1,300 to \$2,000, depending on type of variance
- When variance is granted, there is a minimum fee of \$204.66 after excess fee is remitted
- Establishes method to calculate excess emission fees
- Table I - Schedule of Excess Emission Fees
 - \$3,771.10 per ton oxides of nitrogen
 - \$4,397.67 per ton of particulate matter

Background for Rule 1470 and 1472

- Diesel particulate matter (PM) from internal combustion engines was designated as a carcinogen by CARB in 1998
- Rules 1470 and 1472 are designed to reduce diesel particulate from engines
 - Both rules are designed to implement and supplement the State ATCM for diesel engines
 - Both rules have specific requirements for emergency standby engines
- Emergency standby engines are currently exempt from health risk requirements under Rule 1401 – Toxics New Source Review

Rule 1470 Requirements

(Adopted April 2, 2004)(Amended March 4, 2005)
(Amended November 3, 2006)(Amended June 1, 2007)
(Amended May 4, 2012)

RULE 1470. REQUIREMENTS FOR STATIONARY DIESEL-FUELED INTERNAL COMBUSTION AND OTHER COMPRESSION IGNITION ENGINES

(a) Applicability

- (1) This rule shall apply to any person who either sells a stationary compression ignition (CI) engine, offers a stationary CI engine for sale, leases a stationary CI engine, or purchases a stationary CI engine for use in the South Coast Air Quality Management District, except as provided in subdivision (h).
- (2) This rule shall apply to any person who owns or operates a stationary CI engine in the South Coast Air Quality Management District with a rated brake horsepower greater than 50 (>50 bhp), except as provided in subdivision (h).

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

- (1) **AGRICULTURAL OPERATIONS** means the growing and harvesting of crops or the raising of fowl or animals for the primary purpose of making a profit, providing a livelihood, or conducting agricultural research or instruction by an educational institution. Agricultural operations do not include activities involving the processing or distribution of crops or fowl.
- (2) **ALTERNATIVE FUEL** means natural gas, propane, ethanol, or methanol.
- (3) **ALTERNATIVE DIESEL FUEL** means any fuel used in a CI engine that is not commonly or commercially known, sold, or represented by the supplier as diesel fuel No. 1-D or No. 2-D, pursuant to the specifications in ASTM Standard Specification for Diesel Fuel Oils D975-11, "Standard Specification for Diesel Fuel Oils," as modified in March 2011, which is incorporated herein by reference, or an alternative fuel, and does not require engine or fuel system modifications for the engine to operate, although minor modifications (e.g., recalibration of the engine fuel control) may enhance performance. Examples of alternative diesel fuels include, but are not limited to, biodiesel and biodiesel blends that do not meet the definition of CARB diesel fuel; Fischer-Tropsch fuels; emulsions of water in diesel fuel; and fuels with a fuel additive, unless:
 - (A) the additive is supplied to the engine fuel by an on-board dosing mechanism; or

- Purpose of Rule 1470 is to reduce diesel PM emissions from new and in-use engines \geq 50 brake horsepower (bhp)
- Rule 1470 establishes requirements for prime and emergency standby engines

Requirements for Emergency Standby Engines



Fuel requirements



Emission Standards for New Engines



Operating Requirements and Emission Standards for In-Use Engines



↑
Stakeholder comments were generally focused on in-use requirements

➤ Rule 1470 Operating Requirements and Emission Standards for In-Use Engines

- Established limits for non-emergency operating requirements for in-use engines within 500 feet of a school including maintenance and testing
- Engines located at an essential public service or health facility may install an engine exhaust back pressure relief device under certain conditions
- Establishes limits on maintenance and testing hours which vary based on the PM emission rate of the engine

Rule 1470 Maintenance and Testing Hours

- Annual maintenance and testing of engines cannot exceed:

Engines	Hours	PM Emission Rate (g/bhp-hr)
In-use	20*	> 0.4 g
	30	>0.15 and \leq 0.4
	50	>0.01 and \leq 0.15
	100	\leq 0.01
New	50	\leq 0.15

*10 additional hours of operation allowed at health facilities (defined by CHSC, Section 1250)

Rule 1472 Requirements

(Adopted March 7, 2008)

RULE 1472. REQUIREMENTS FOR FACILITIES WITH MULTIPLE STATIONARY EMERGENCY STANDBY DIESEL-FUELED INTERNAL COMBUSTION ENGINES

- (a) Purpose
The purpose of this rule is to reduce diesel PM emissions from facilities with three or more stationary emergency standby diesel-fueled internal combustion engines.
- (b) Applicability
This rule shall apply to facilities with three or more stationary emergency standby diesel-fueled internal combustion engines operating in the South Coast Air Quality Management District and each is rated at greater than 50 brake horsepower (>50 bhp), except as provided in subdivision (j). This rule shall not apply to stationary emergency standby diesel-fueled internal combustion engines at agricultural facilities.
- (c) Definitions
For the purpose of this rule, the following definitions shall apply:
- (1) COMPRESSION IGNITION (CI) ENGINE means an internal combustion engine with operating characteristics significantly similar to the theoretical diesel combustion cycle. The regulation of power by controlling fuel supply in lieu of a throttle is indicative of a compression ignition engine.
 - (2) DIESEL FUEL means any fuel that is commonly or commercially known, sold, or represented by the supplier as diesel fuel, including any mixture of primarily liquid hydrocarbons – organic compounds consisting exclusively of the elements carbon and hydrogen – that is sold or represented by the supplier as suitable for use in an internal combustion, compression-ignition engine. For the purposes of this rule, diesel fuel shall include jet fuel.
 - (3) DIESEL PARTICULATE FILTER (DPF) means an emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate and periodically removing the collected particles by either physical action or by oxidizing (burning off) the particles in a process called regeneration.

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- Reduce diesel PM emissions from facilities with three or more stationary emergency standby engines
- Supplements Rule 1470 by requiring facilities with three or more engines to meet a specific risk level (referenced as an “Engine Group Index”)
 - Facilities exceeding Engine Group Index required to reduce diesel PM emissions
- References the testing hours in Rule 1470

Stakeholder Comments Related to Rule 1470

- A water district has commented that up to 10 additional testing hours are needed for the most restrictive engine category (engines with a PM emission rate > 0.4 g/bhp-hour)
- Staff may have limitations on allowing additional testing hours

Implementation of the State ATCM

- Rule 1470 implements State Airborne Toxic Control Measure (ATCM) requirements for Stationary Compression Ignition Engines such as
 - Emission standards and operating requirements for In-Use Stationary Emergency Stand-By Engines
 - Limits on maintenance and testing hours [definition (b)(43)] of engines
- California Health and Safety Code Section 39666 requires local air districts to implement and enforce the ATCMs or adopt and enforce equally effective or more stringent ATCMs requirements than those adopted by the state board

▸ Areas Where Rule 1470 and 1472 are More Stringent than the State ATCM

- Two general areas where Rule 1470 is more stringent than the State ATCM
 - Annual limits for maintenance and testing hours for health facilities
 - New engines less than 50 meters from a sensitive receptor*
- Rule 1472 goes beyond the State ATCM by establishing additional requirements for facilities with three or more engines

*Sensitive receptor means any residence including private homes, condominiums, apartments, and living quarters, schools as defined under paragraph (b)(57), preschools, daycare centers and health facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing.

Comparison Between Rule 1470 and the ATCM for Testing Hours at Health Facilities

- Rule 1470 allows fewer testing hours for engines with a PM emission rate > 0.15 g/bhp-hour at health facilities than the ATCM

Engine	Diesel PM Emission Rate (g/bhp-hr)	Rule 1470	State ATCM
In-use	> 0.4 g	30 hours	Up to 40 hours
In-use	>0.15 and ≤ 0.4 g	30 hours	Up to 40 hours for health facilities
In-use	>0.01 and ≤ 0.15	50 hours	50 hours
In-use	≤ 0.01	100 hours	100 hours
New	≤ 0.15	50 hours	50 hours
New	≤ 0.01	50 hours	Up to 100 hours

Comparison Between Rule 1470 and the ATCM for PM Emission Limits for New Engines

- Rule 1470 establishes lower PM limits for new engines less than 50 meters from a sensitive receptor than the ATCM

Engine Size	Rule 1470	State ATCM
$50 < \text{HP} < 175$	0.15 g/bhp-hr	0.15 g/bhp-hr
$175 \leq \text{HP} \leq 750$	0.01 g/bhp-hr	0.15 g/bhp-hr
$> 750 \text{ HP}$	0.075 g/bhp-hr 0.02 g/bhp-hr	0.15 g/bhp-hr

Comparison Between Rule 1472 and the ATCM for In-Use Requirements for Multiple Engines at a Facility

- State ATCM does not establish in-use PM or health risk requirements for facilities with multiple engines
- Rule 1472 goes beyond the State ATCM by requiring facilities to meet an Engine Group Index, which is based on health risk
- Rule 1472 allows three compliance options:
 - Reduce Engine Group Index to less than or equal to 1.0
 - All engines meet a diesel PM emission rate less than or equal to 0.15 g/bhp-hr
 - Emit diesel PM at weighted average rate of less than or equal to 0.15 g/bhp-hr for all engines within engine group

Comparison of Rule 1110.2, Rule 1470, and Rule 1472

	Rule 1110.2	Rule 1470	Rule 1472
Applicability	All stationary and portable engines > 50 bhp	Stationary compression ignition engines > 50 bhp	Facilities with three or more stationary compression ignition engines > 50 bhp
Fuel Types	All fuel types	Diesel-fueled only	Diesel-fueled only
Pollutants Regulated	NOx, CO, and VOC	Diesel PM (toxic air contaminant)	Diesel PM (toxic air contaminant)
Emergency Engines	Exempt if operating < 200 hours/year	Establishes testing hours depending on how diesel PM emissions	Establishes compliance plan requirements and Engine Group Index calculations

Next Steps

- Staff will discuss possible rule concepts at next Working Group Meeting
- Next Working Group Meeting in early February

Rule Contacts

Proposed Amended Rules 1110.2, 1470, and 1472

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