



Proposed Rule 1110.3

Emissions from Linear Generators

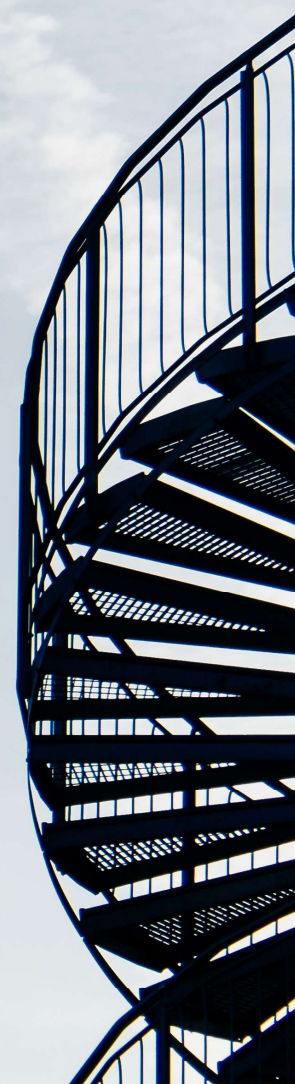
Working Group #2- December 8, 2022

Join Zoom Webinar Meeting:

<https://scaqmd.zoom.us/j/94563453689>

Webinar ID: 945 6345 3689

Teleconference Dial-In: 1-669-900-6833



Agenda



Summary of Previous Working Group Meeting

Proposed Rule Structure

Proposed Rule Language for PR 1110.3

Next Steps

Summary of Previous Working Group Meeting

Working Group Meeting # 1 held on November 9, 2022

Discussed the background of PR 1110.3 and the unique characteristics of linear generator technology

Provided an overview of the requirements in Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines (Rule 1110.2), which linear generators are currently subject to

Discussed proposed rule concepts for PR 1110.3

- NO_x, CO, and VOC concentration limits based on existing requirements in Rule 1110.2
- Source test requirements consistent with existing Rule 1110.2 requirements
- Possibility of using parametric monitoring in lieu of portable analyzer testing

Proposed Rule Structure

- Concentration limits for NO_x, CO, and VOCs will be contained in one table
- Subdivisions will be organized by requirement
 - Purpose (a)
 - Applicability (b)
 - Definitions (c)
 - Emission Limits (d)
 - Maintenance and Tuning Requirements (e)
 - Source Testing (f)
 - Monitoring, Recordkeeping, and Reporting (g)

Purpose (a) and Applicability (b)

Purpose

- The purpose of this rule is to reduce emissions of Oxides of Nitrogen (NO_x), Volatile Organic Compounds (VOCs), and Carbon Monoxide (CO) from linear generators

Applicability

- All linear generators are subject to this rule

Definitions (c)

Definitions used in other South Coast AQMD are incorporated in PR1110.3

New or modified definitions in PR 1110.3 include:

- **FACILITY** means any source or group of sources or other air contaminant emitting activities which are located on one or more contiguous properties within the South Coast AQMD, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control), or an outer continental shelf (OCS) source as determined in Section 55.2 of Title 40, Part 55 of the Code of Federal Regulations (40 CFR Part 55). Such above-described groups, if noncontiguous, but connected only by land carrying a pipeline, shall not be considered one facility
- **LINEAR GENERATOR** means any power generation technology that uses a thermochemical reaction to create linear motion that is directly converted into electricity

Emission Limits (d)

Table 1: Concentration Limits for Linear Generators

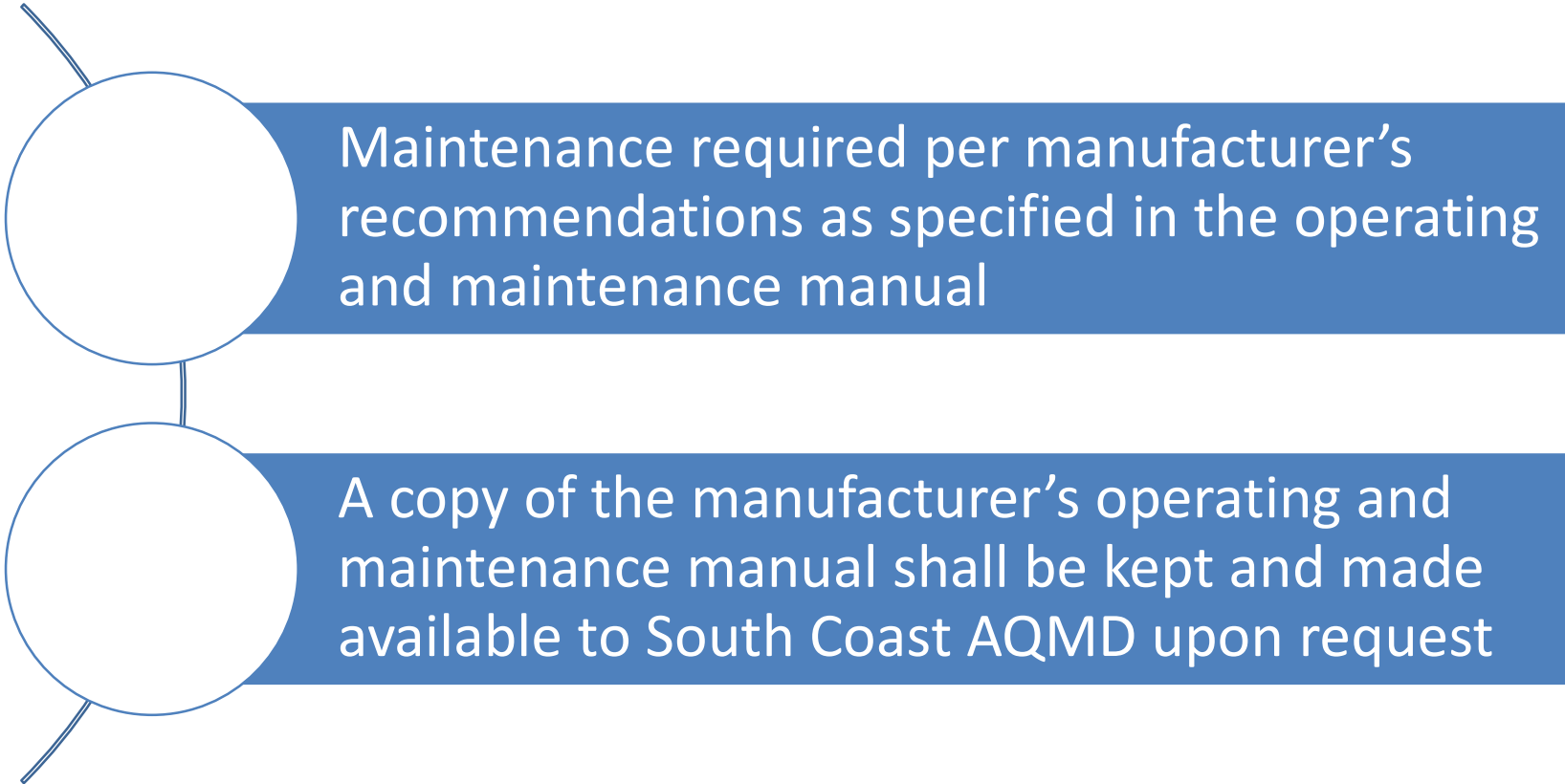
Units installed on and after <i>[Date of Adoption]</i>			
Fuel Type	NO _x (ppmvd) ¹	CO (ppmvd) ¹	VOC (ppmvd) ²
Natural Gas, Propane Gas, Hydrogen Gas, Landfill Gas, and Digester Gas	2.5	12	10

¹ Parts per million by volume, corrected to 15% oxygen on a dry basis.

² Parts per million by volume, measured as carbon, corrected to 15% oxygen on a dry basis and averaged over the sampling time required by the test method.

- Removed obsolete Rule 1110.2 cap on the number of units with 25 ppmv VOC limit
- Upon rule adoption, all new units will be subject to concentration limits in Table 1
- Units having a breakdown that results in emissions in excess of Table 1 are required to shutdown by the end of an operating cycle or within 24 hours of the breakdown, whichever is sooner

Maintenance Requirements (e)



Maintenance required per manufacturer's recommendations as specified in the operating and maintenance manual

A copy of the manufacturer's operating and maintenance manual shall be kept and made available to South Coast AQMD upon request

Source Testing (f)

- Staff is proposing to retain the source test frequency and procedures as currently required by Rule 1110.2
 - At least once every two years or every 8,760 operating hours, whichever occurs first
 - Source test frequency may be reduced to once every three years if the unit has operated less than 2,000 hours since the last source test
- Evaluating the possibility of reduced source testing frequency, if sufficient data is provided to substantiate the robustness of the parametric monitoring system

Overview of PR 1110.3 Source Testing Procedures

Approved Contractor and Test Methods (f)(2)	Source Test Protocol submittal & requirements (f)(3)	Source Test Protocol Approval (f)(4)	Previously Approved Protocols (f)(5)	Source Test Date Notification (f)(6)	Source Test Accessibility (f)(7)	Source Test Operating Conditions (f)(8) & (f)(9)
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Source Testing Methods (f)(2)

Source tests required to be conducted using a Laboratory Approval Program approved contractor according to the test methods specified in Table 2

Table 2: Testing Methods

Pollutant	Method
NOx	South Coast AQMD Method 100.1
CO	South Coast AQMD Method 100.1
VOC	South Coast AQMD Method 25.1* or Method 25.3*

*Excluding ethane and methane

Monitoring (g)(1)

Maintain the following systems and equipment used for emissions monitoring and PR 1110.3 compliance:

- Non-resettable totalizing time meter
- Calibrated electric meter
- Parametric monitoring system

Required daily monitoring and inspection of:

- Fuel flow rate
- Elapsed time meter operating hours
- Air-to-Fuel Ratio Controller system faults, alarms, and any other related emission control malfunctions
- Operating hours since the last source test

Recordkeeping (g)(2)

PR 1110.3 mirrors Rule 1110.2 records retention requirement of 5 years

Maintain Monthly Records of:

- Megawatt-hours of electricity produced
- AFRC system faults, alarms, and any other related emission control malfunctions
- Existing Rule 1110.2 required monthly records

Maintenance Records

- Provides compliance verification mechanism for Maintenance Subdivision (e)

Reporting (g)(3)

Proposed reporting requirements are consistent with Rule 1110.2

Breakdowns resulting in excess emissions are required to be reported within 1 hour

Submit breakdown report within 7 days after breakdown is corrected, but no later than 30 days from the initial breakdown, unless an extension is approved

Submit source test reports within 60 days of the test

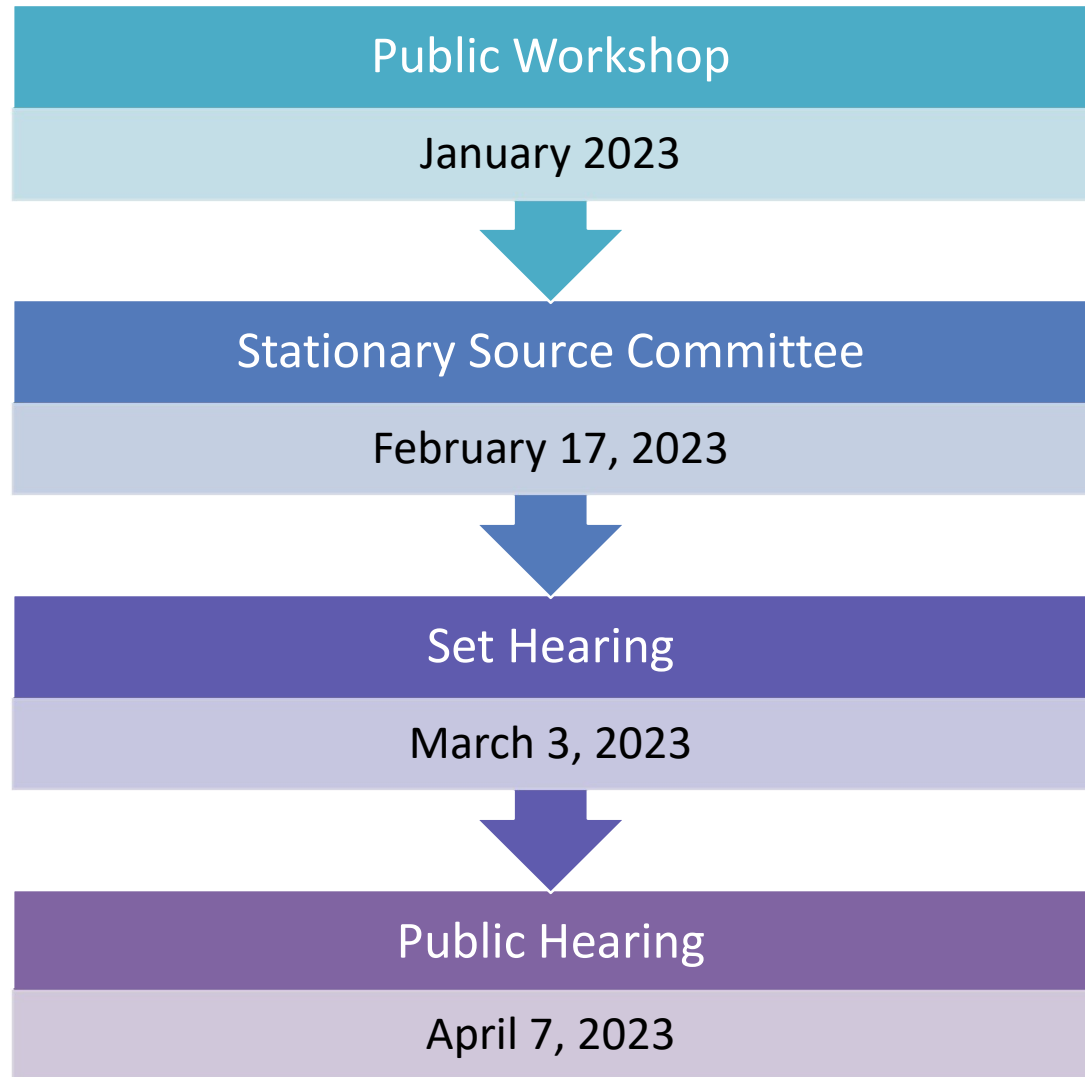
Proposed Amended Rule 1110.2

- Staff will amend Rule 1110.2 to exempt linear generators and remove applicable requirements
- PAR 1110.2 rule language will be released prior to the Public Workshop

Next Steps



Rule Schedule



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