

**PROPOSED
RULE 1110.3**

EMISSIONS FROM LINEAR GENERATORS

(a) 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.

(b) Applicability

All linear generators fueled solely by natural gas are subject to this rule.

(c) Definitions

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

- (1) BREAKDOWN means a physical or mechanical failure or malfunction of a Linear Generator, air pollution control equipment, or related operating equipment that is not the result of operator error, neglect, improper operation or improper maintenance procedures.
- (2) EMERGENCY STANDBY UNIT means any Linear Generator which operates as a temporary replacement for primary power during periods of fuel or energy shortage or while the primary power supply is under repair.
- (3) 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. Sources or installations involved in crude oil and gas production in Southern California Coastal or OCS Waters and transport of such crude oil and gas in Southern California Coastal or OCS Waters shall be included in the same facility which is under the same ownership or use entitlement as the crude oil and gas production facility on-shore.

- (4) LINEAR GENERATOR means any power generation technology that uses a thermochemical reaction to create linear motion that is directly converted into electricity.
 - (5) NATURAL GAS means a mixture of gaseous hydrocarbons, with at least 80 percent methane by volume, and of pipeline quality, such as the gas sold or distributed by any utility company regulated by the California Public Utilities Commission.
 - (6) OPERATING CYCLE means a period of time within which a round of regularly recurring events is completed, and cannot be stopped without the risk of endangering public safety or health, causing material damage to the equipment or product, or cannot be stopped due to technical constraints. Economic reasons alone will not be sufficient to extend this time period. The Operating Cycle includes batch processes that may start and finish several times within a twenty-four hour period, in which case each start to finish interval is considered a complete cycle.
 - (7) OXIDES OF NITROGEN (NO_x) means the sum of nitric oxides and nitrogen dioxides emitted, collectively expressed as nitrogen dioxide emissions.
 - (8) TUNING means adjusting, optimizing, rebalancing, or other similar operations to a Unit or an associated control device or as otherwise defined in the Permit to Operate. Tuning does not include automatic adjustments made by a unit's control system or normal operations to meet load fluctuation.
 - (9) UNIT means any linear generator.
 - (10) VOLATILE ORGANIC COMPOUND (VOC) as defined in Rule 102 – Definition of Terms.
- (d) Emission Limits
- (1) An owner or operator of a Unit shall not operate the Unit in a manner that exceeds the NO_x, CO, and VOC emission limits listed in Table 1 pursuant to subdivision (f) and subparagraph (g)(1)(B):

Table 1: Concentration Limits for Linear Generators

Units with a Permit to Operate Issued on and after [Date of Adoption]			
Fuel Type	NO_x (ppmv)¹	CO (ppmv)¹	VOC (ppmv)²
Natural Gas	2.5	12	10

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

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.

(e) Maintenance Requirements

- (1) An owner or operator of a Unit shall perform maintenance per manufacturer's recommendations as specified in the operating and maintenance manual.
- (2) An owner or operator of a Unit shall keep a copy of the manufacturer's operating manual and be made available to the Executive Officer within 48 hours upon request.

(f) Source Testing

- (1) An owner or operator of a Unit shall conduct source testing for NO_x, VOC reported as carbon, and CO concentrations (concentrations in ppm by volume, corrected to 15 percent oxygen on dry basis) at least once every four years from the date of the previous source test, no later than the last day of the calendar month that the test is due, or every 26,280 operating hours, whichever occurs first.
- (2) An owner or operator of a Unit shall conduct the source test by using a contractor that is approved under the South Coast AQMD's Laboratory Approval Program (LAP) for the test methods specified in Table 2: Testing Methods, or any test methods approved by CARB and EPA, and authorized by the Executive Officer.

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

- (3) An owner or operator of a Unit without an approved generic source test protocol shall submit a source test protocol to the Executive Officer for written approval at least 60 days before the scheduled date of the test. The source test protocol shall include, but not limited to the following:
 - (A) Name, address, and phone number of the Unit operator and a South Coast AQMD-approved source testing contractor that will conduct the test;
 - (B) All relevant application number(s), permit number(s), and emission limits;
 - (C) Description of the Unit(s) to be tested and the test methods and procedures to be used;
 - (D) Number of tests to be conducted and under what loads; and
 - (E) Required minimum sampling time for the VOC test, based on the analytical detection limit and expected VOC levels.
- (4) An owner or operator of a Unit shall conduct the source test within 90 days after a written approval of the source test protocol by the Executive Officer is electronically distributed.
- (5) An owner or operator of a Unit with an approved generic protocol, or with a previously approved source test protocol, shall submit a subsequent protocol if the Unit has been altered in a manner that requires a permit modification, if emission limits for the Unit have changed since the previous source test, or if requested by the Executive Officer.
- (6) An owner or operator of a Unit shall provide the Executive Officer at least 30 days prior notice of any source test to afford the Executive Officer the opportunity to have an observer present. If, after the 30 days prior notice is given, there is a delay (due to operational problems, etc.) in conducting the scheduled source test, the owner or operator of a Unit shall notify the Executive Officer as soon as possible of any delay in the original test date, either by providing notice of the rescheduled

date of the source test at least seven days prior, or by arranging a rescheduled date mutually agreed upon with the Executive Officer.

- (7) An owner or operator of a Unit shall provide source testing facilities as follows:
 - (A) Sampling ports adequate for the applicable test methods. This includes constructing the air pollution control system and stack or duct such that pollutant concentrations can be accurately determined by applicable test methods;
 - (B) Safe sampling platform(s), scaffolding or mechanical lifts, including safe access, that comply with California General Safety Orders; and
 - (C) Utilities for sampling and testing equipment.
- (8) The LAP contractor shall conduct the source test at least 40 operating hours after any Unit servicing or tuning
- (9) The LAP contractor shall conduct source testing for at least 30 mins during normal operation (actual duty cycle). This test shall not be conducted under a steady-state condition unless it is the normal operation. The LAP contractor shall not conduct any pre-tests for compliance.
- (10) An owner or operator of any Unit previously not required to conduct an initial source test shall conduct a source test within 90 days of written notification from the South Coast AQMD.
- (11) An owner or operator of at least four identical Units located at the same facility, shall be allowed to conduct pooled source testing, pursuant to the following:
 - (A) Pooled source testing may commence upon completion of an initial source test on all pooled Units at the facility. After the initial source test, at least one-third of the Units shall be source tested in accordance with paragraph (f)(1) and subsequent testing shall be conducted on a different one-third Units in the group of pooled Units;
 - (B) Identical Units installed after the initial source test has been performed shall be included in the pool and subject to the pooled subsequent emissions testing;
 - (C) If any Unit subject to the pooled source testing fails to demonstrate compliance with the emissions standards in Table 1, the owner or operator shall repair and repeat the test on the same Unit and conduct source testing on one additional Unit, or remove the Unit;

- (D) Upon source testing of all the pooled Units within the facility, the owner or operator may elect to conduct source testing pursuant to this paragraph, or subject individual Units to the test schedule set forth in paragraph (f)(1).
- (g) **Monitoring, Recordkeeping, and Reporting**
 - (1) **Monitoring**
 - (A) An owner or operator of a Unit shall maintain an operational non-resettable totalizing time meter to determine the elapsed operating time of the Unit.
 - (B) An owner or operator of a Unit shall conduct diagnostic emission checks by a portable NO_x, CO, and oxygen analyzer at least once every two years from the date of the previous emissions test, no later than the last day of the calendar month that the test is due, or every 8,760 operating hours, whichever occurs first, and comply with the following requirements:
 - (i) No Unit or control system maintenance or tuning may be conducted within 40 hours prior to the diagnostic emission check, unless it is an unscheduled, required repair;
 - (ii) The portable analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations and in accordance with the South Coast AQMD's Combustion Gas Periodic Monitoring Protocol of Nitrogen Oxides, Carbon Monoxide, and Oxygen from Combustion Sources subject to South Coast Air Quality Management District Rules 1110.2, 1146, and 1146.1, or subsequent protocol approved by EPA and the Executive Officer;
 - (iii) The portable analyzer tests required in subparagraph (g)(1)(B) shall only be conducted by a person who has completed an appropriate South Coast AQMD-approved training program in the operation of portable analyzers and has received a certification issued by South Coast AQMD; and
 - (iv) A source test pursuant to (f)(1) shall be an acceptable substitute diagnostic emission check to satisfy subparagraph (g)(1)(B).
 - (C) If a diagnostic emission check results in finding emissions in excess of rule or permit limits, an owner or operator shall correct the exceedance as soon

as possible and demonstrate compliance with another diagnostic emission check pursuant to (g)(1)(B).

- (D) An owner or operator of a Unit shall maintain an operational calibrated electric meter that measures the net electrical output of the Unit, which is the difference between the electrical output and the electricity consumed by the auxiliary equipment necessary to operate the Unit.
- (E) An owner or operator of a Unit shall maintain an operational parametric monitoring system including the associated components necessary to maintain a proper air-to-fuel ratio, a malfunction indicator light, and an audible alarm.
- (F) An owner or operator of a Unit shall inspect and maintain all sensors and meters used by the parametric monitoring system per manufacturer's recommendations as specified in the operating manual.
- (G) An owner or operator of a Unit shall develop and implement procedures for at least daily monitoring of the parametric monitoring system.

(2) Recordkeeping

An owner or operator of a Unit shall retain all data logs, source test reports, and other records required by this rule for at least five years and be made available to the Executive Officer within 48 hours upon request.

- (A) The owner or operator of a Unit shall maintain records, on a monthly basis, for the following parameters(s) or item(s):
 - (i) Total hours of operation;
 - (ii) Quantity of fuel consumption (e.g. cubic feet of gas);
 - (iii) Date of last emissions test and cumulative hours of operation since the last emissions test required in subdivision (f) and subparagraph (g)(1)(B);
 - (iv) Megawatt-hours of electricity produced; and
 - (v) Air-to-Fuel system faults, alarms, and any other related emission control malfunctions.
- (B) An owner or operator of a Unit shall keep records to demonstrate compliance with paragraphs (e)(1), (f)(1), (f)(9), and (g)(1).
- (C) An owner or operator of a Unit shall keep operating records to demonstrate that it meets the requirements of the emissions testing deadlines, pursuant to paragraph (f)(1) and (g)(1)(B).

- (D) An owner or operator of a Unit that is certified under the California Air Resources Board (CARB) Distributed Generator Certification regulation shall maintain records demonstrating certification.
- (3) Reporting
 - (A) An owner or operator of a Unit shall submit all source test reports to the Executive Officer within 60 days of completion of the test.
 - (B) An owner or operator of a Unit that has a California Air Resources Board (CARB) Executive Order issued under the Distributed Generation Certification Regulation shall submit a written notification the Executive Officer any change to the certification status within 14 days of receipt of the notification of the change in certification status.
 - (i) Units that are no longer certified shall demonstrate compliance with emission limits pursuant to subdivision (f) and subparagraph (g)(1)(B) within 90 days upon receipt of the notification of the change in certification status.
- (h) Exemptions
 - (1) The provisions of subdivision (d) and subparagraph (g)(1)(B) shall not apply to Laboratory Units used for testing and research purposes.
 - (2) The provisions of subdivision (f) and subparagraph (g)(1)(B) shall not apply to Emergency Standby Units, Units used for fire-fighting and flood control, and any other emergency Unit approved by the Executive Officer, which have permit conditions that limit operation to 200 hours or less per year as determined by an elapsed operating time meter.
 - (3) The provisions of this rule shall not apply to Units that have a CARB Executive Order issued under the Distributed Generation Certification Regulation, provided that the certification is maintained and recertified upon expiration.