



Proposed Amended Rule 1134 (PAR 1134)

Emissions of Oxides of Nitrogen from Stationary Gas Turbines

**Public Workshop
September 23, 2021**

Join Zoom Meeting:

<https://scaqmd.zoom.us/j/93043741522>

Meeting ID: 930 4374 1522

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

Background

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- Rule 1134 adopted on August 4, 1989
- In March 2017, the South Coast AQMD adopted the 2016 AQMP
 - Control measure CMB-05 requires the RECLAIM program to transition to a command-and-control structure
 - Requires a 5 ton per day NO_x emission reduction to be achieved with Best Available Retrofit Control Technology (BARCT) as soon as feasible and no later than 2025
- Rule 1134 most recently amended on April 5, 2019 to update BARCT limit as part of the RECLAIM transition
- U.S. EPA requested that changes be made to rule
 - Startup and shutdown requirements to achieve the National Ambient Air Quality Standards for ozone should be included
 - Interim emission limits are needed as former RECLAIM facilities transition out of RECLAIM
- Clarification on recuperative gas turbines and other provisions are also needed

Rule Applicability

- Applies to stationary gas turbines rated ≥ 0.3 MW for RECLAIM, former RECLAIM, and non-RECLAIM facilities
 - Excludes gas turbines subject to other facility specific rules
 - Rule 1109.1 – Emissions of Oxides of Nitrogen from Petroleum Refineries and Related Operations
 - Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities
 - Rule 1150.3 – Emissions of Oxides of Nitrogen from Combustion Equipment at Landfills
 - Rule 1179.1 – NO_x Emission Reduction from Combustion Equipment at Publicly Owned Treatment Work Facilities
- 74 turbines at 39 facilities are subject to Rule 1134

Objective of Proposed Amendments

- After the April 2019 amendment, U.S. EPA requested that changes be made to:
 - Startup and shutdown requirements to assure attainment and maintenance of the National Ambient Air Quality Standards (NAAQS)
 - Startup and shutdown provisions will be removed from PAR 1134 and be addressed under Rule 429 – Start-up and Shutdown Exemption Provisions for Oxides of Nitrogen
 - Staff will amend Rule 429 to update provisions for Rule 1134 facilities and other facilities
 - Public Hearing for PAR 429 is currently scheduled for February 2022
 - Interim emission limits are needed as former RECLAIM facilities transition out of RECLAIM
- Additionally, stakeholders have requested other updates to Rule 1134

Proposed Amendments

Removal of
Startup and
Shutdown
provisions

Removal of
ammonia slip
limits

Allowance of
liquid fuel usage
for critical care
facilities

Add new
category for
recuperative gas
turbines

Update CEMS for
non-RECLAIM
and former
RECLAIM
facilities

Clarification of
source testing
frequency for gas
turbines

Establish interim
limits for
compressor gas
turbines

Preliminary Draft Rule Language

Applicability Subdivision (b)

- PAR 1134 will move the following rule exclusions to Exemptions (h):
 - Rule 1135 – Emission of Oxides of Nitrogen from Electricity Generating Facilities
 - Rule 1150.3 – NO_x Emission Reduction from Combustion Equipment at Landfills
 - Rule 1179.1 – NO_x Emission Reduction from Combustion Equipment at Publicly Owned Treatment Work Facilities
 - Proposed Rule 1109.1 – Emissions of Oxides of Nitrogen from Petroleum Refineries and Related Operations

Definitions – Subdivisions (c)

Removed

Cogeneration Gas Turbine

Landfill

Publicly Owned Treatment Works

Added

Force Majeure Natural Gas Curtailment

Health Facility

Recuperative Gas Turbine

Modified

Combined Cycle/
Cogeneration Gas Turbine

Existing Gas Turbine

Former RECLAIM NOx Facility

Shutdown

Startup

Thermal Stabilization Period

Tuning

Changes to Emission Limits – Paragraph (d)(3)

- Added clarification that recuperative gas turbines are included in “Other” limit in Table I
- Removing ammonia limits in Table I
 - Ammonia limits will continue to be addressed through the permitting process
- Combined cycle turbines will include cogeneration turbines with a 2 ppm NOx limit

Table I: Emissions Limits for Stationary Gas Turbines

(Corrected to 15% oxygen on a dry basis)

Fuel Type	NO _x (ppmv)	Ammonia (ppmv)
Liquid Fuel – Turbines Located on Outer Continental Shelf	30	5
Natural Gas – Combined Cycle/ <u>Cogeneration</u> Turbine	2	5
Natural Gas – Simple Cycle Turbine	2.5	5
Produced Gas	9	5
Produced Gas – Turbines Located on Outer Continental Shelf	15	5

Compressor Gas Turbine Interim Limits – Paragraph (d)(4)

- U.S. EPA commented that interim emission limits are needed for former RECLAIM facilities that have compliance dates after the facility transitions out of RECLAIM
- Interim limits would only apply to former RECLAIM facilities that have NOx BARCT limits that are effective after facilities exit RECLAIM
- Only compressor gas turbines have NOx BARCT limits that will be implemented after the sunset of RECLAIM which is expected to occur after January 1, 2024
- PAR 1134 will establish an interim NOx limit of 68 ppm for compressor gas turbines
 - Interim limit of 68 ppm is based on current permit limits
- No change to final implementation date or BARCT limit for compressor gas turbines

Startup and Shutdown – Paragraph (d)(5)

- Current Rule 1134 Startup, Shutdown, and Tuning provisions require all stationary gas turbines to follow the conditions stated in their permits
- PAR 1134 will remove all startup and shutdown provisions
- Rule 429 is an existing rule that currently addresses startup and shutdown provisions for Rule 1134 sources
 - Includes time limits for duration and frequency of scheduled startup and shutdowns
 - Additional requirements for startup, shutdown, and tuning of existing stationary gas turbines are currently included in the operating permits
- Staff will amend Rule 429 to update provisions for Rule 1134 facilities
- Public Hearing for PAR 429 is currently scheduled for February 2022

Force Majeure Natural Gas Curtailment – Paragraphs (d)(5), (d)(8), and (d)(9)

- Currently Rule 1134 prohibits the use of liquid fuel for stationary turbines except for those located on the outer continental shelf
- A stakeholder has informed staff that they currently provide emergency power for a health facility (hospital) using a turbine operating on liquid fuel
 - Hospitals are required to have a minimum of two independent power sources with 96 hours of back up power capability for health facilities per the 2019 California Electrical Code, Title 24, Part 3, Articles 517.29 and 517.30 and the National Fire Protection Association (Code 110)
- PAR 1134 will include a provision for turbines at health facilities to allow the use of liquid fuel during an emergency, a natural gas curtailment, and for readiness testing
 - NOx emission limits and duration limits for fuel readiness testing will be included in the operating permits

Source Testing Frequency for Gas Turbines – Paragraph (e)(2)

- PAR 1134 will clarify that each stationary gas turbine emitting less than 25 tons of NOx per calendar year shall perform a source test once every three years
- Ammonia source testing will be required at the same time as NOx source testing for turbines not equipped with a CEMS
- Gas turbines with a NOx CEMS not using an ammonia CEMS must perform four consecutive source tests to show ammonia emission limit compliance, followed with a source test every calendar year thereafter

CEMS for Non-RECLAIM and Former RECLAIM Facilities – Paragraph (e)(3)

- Currently Rule 1134 requires CEMS for stationary gas turbines greater than 2.9 MW
 - Non-RECLAIM facilities comply with Rule 218 – Continuous Emission Monitoring and Rule 218.1 – Continuous Emissions Monitoring Performance Specifications
 - Former RECLAIM facilities comply with Rule 2012 – Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NO_x) Emissions
- For RECLAIM transition purposes, staff has amended Rules 218 and 218.1 and developed two new monitoring rules for Non-RECLAIM and former RECLAIM facilities:
 - Rule 218.2 – Continuous Emission Monitoring System: General Provision
 - Rule 218.3 – Continuous Emission Monitoring System: Performance Specification
- Under Rule 1134, staff will update CEMS provisions for non-RECLAIM and former RECLAIM facilities by referencing Rules 218, 218.1, 218.2, and 218.3
- Stationary gas turbines located at RECLAIM facilities will still be subject to provisions under Rule 2012

Exemptions – Subdivision (h)

- Rule 1134 excludes gas turbines subject to source-specific rules (formerly in applicability section)
 - Petroleum Refineries (Rule 1109.1)
 - Electricity Generating Facilities (Rule 1135)
 - Landfills (Rule 1150.3)
 - Publicly Owned Treatment Works (Rule 1179.1)

PAR 1134 Impact Assessment

PAR 1134 Costs, Emission Reductions, Cost-Effectiveness, Incremental Cost-Effectiveness

Costs

- The provisions in PAR 1134 are not expected to impose any additional costs

Emission Reductions

- No additional emission reductions from PAR 1134
- Emission reductions for these units are a result of PAR 1134

Cost-Effectiveness and Incremental Cost-Effectiveness

- Cost-effectiveness is not applicable because PAR 1134 is not expected to impose any additional costs or result in any emission reductions
- Incremental cost-effectiveness is not applicable because there is no cost-effectiveness determination

California Environmental Quality Act (CEQA)

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- PAR 1134 is not expected to require substantial physical modifications that would cause a significant adverse effect on the environment
- PAR 1134 is exempt pursuant to CEQA Guidelines Section 15061 (b)(3) since it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment
- A Notice of Exemption will be prepared

Next Steps

Next Steps

Comments Due

October 8, 2021

Stationary Source
Committee

October 22, 2021

Set Hearing

November 5, 2021

Public Hearing

December 3, 2021

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For more information, visit:
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