



UNDERSTANDING SCAQMD AIR QUALITY RULES FOR MISCELLANEOUS NO_x SOURCES (RULE 1147)

The following is intended to help you understand air quality Rule 1147, which applies to permitted miscellaneous NO_x sources from the South Coast Air Quality Management District (“SCAQMD” or “District”). **Please note: this brochure is for informational purposes only. The reader is responsible for consulting his or her own experts to interpret the SCAQMD rules.** The full text of Rule 1147 can be found at aqmd.gov/rules/reg/reg11/r1147.pdf.

Is my equipment subject to Rule 1147?

If your equipment has or is required to obtain an SCAQMD permit to construct and/or operate and is in one of the following categories it may be subject to this rule:

- Ovens, dryers, dehydrators, heaters, kilns, calciners, furnaces, crematories, incinerators, heated pots, cookers, roasters, fryers, closed and open heated tanks and evaporators,

distillation units, afterburners, degassing units, vapor incinerators, catalytic or thermal oxidizers, soil and water remediation units and other combustion equipment with nitrogen oxide emissions.

However, Rule 1147 does not apply to units at RECLAIM facilities or to units covered by other District Regulation XI rules such as:

The full text of Rule 1147 can be found at aqmd.gov/rules/reg/reg11/r1147.pdf.

EQUIPMENT <u>NOT</u> SUBJECT TO RULE 1147	APPLICABLE DISTRICT RULE
Boilers and process heaters at petroleum refineries	Rule 1109
Internal combustion engines	Rule 1110.2
Natural-gas fired, fan-type central furnaces	Rule 1111
Cement kilns	Rule 1112
Glass melting furnaces	Rule 1117
Residential type natural-gas-fired water heaters	Rule 1121
Stationary gas turbines	Rule 1134
Boilers	Rules 1146, 1146.1, 1146.2
Charbroilers	–
Flares subject to Rule 1118	Rule 1118
Flares, afterburners, degassing units, thermal or catalytic oxidizers, or vapor incinerators in which a fuel is used only to maintain a pilot or is used for five minutes or less to bring a unit up to operating temperature	–
Municipal solid waste incinerators permitted before December 5, 2008	–

For a full list of exemptions, please see subdivision (g) of the rule

What are the requirements under this rule?

For existing in-use equipment, the NO_x emissions must meet the limit specified in Table 1 in accordance with the compliance schedule in Table 2, or at the time of combustion modification. For new or modified permits, compliance is required at the time a District permit is issued. Compliance must be demonstrated by a source test following an SCAQMD-approved protocol.

In addition, operators must perform combustion maintenance in accordance with the manufacturer’s schedule and specifications, and a copy of the written maintenance instructions must be maintained on-site. Records of maintenance activities for at least three years must also be maintained on-site.

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TABLE 1 – NO_x EMISSION LIMIT

EQUIPMENT CATEGORY	NO _x EMISSION LIMIT PPM @ 3 percent O ₂ , dry or Pound/mmBtu heat input ¹		
	PROCESS TEMPERATURE		
Gaseous fuel-fired equipment	≤ 800° F	> 800° F and < 1200° F	≥ 1200° F
Asphalt manufacturing operation	40 ppm	40 ppm	
Afterburners, degassing unit, remediation unit, thermal oxidizer, catalytic oxidizer or vapor incinerator ²	30 ppm or 0.036 lb/mmBtu	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Evaporator, fryer, heated process tank or parts washer	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu	
Metal heat treating, metal melting furnace, metal pot, or tar pot	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Oven, dehydrator, dryer, heater, kiln, crematory, incinerator, calciner, cooker, roaster, furnace, or heated storage tank	30 ppm or 0.036 lb/mmBtu	30 ppm or 0.036 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Make-up air heater or other air heater located outside of building with temperature controlled zone inside building	30 ppm or 0.036 lb/mmBtu		
Tenter frame or fabric or carpet dryer	30 ppm or 0.036 lb/mmBtu		
Other unit or process temperature	30 ppm or 0.036 lb/mmBtu	30 ppm or 0.036 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Liquid fuel-fired equipment	≤ 800° F	> 800 ° F and < 1200° F	≥ 1200° F
All liquid fuel-fired units	40 ppm or 0.053 lb/mmBtu	40 ppm or 0.053 lb/mmBtu	60 ppm or 0.080 lb/mmBtu

¹ Any person complying with the lb/mmBtu limit must install and maintain a non-resettable, totalizing fuel meter for each unit.

² Emission limit applies to burners in units fueled by 100 percent natural gas that are used to incinerate air toxics, VOCs, or other vapors; or to heat a unit. The emission limit applies solely when burning 100 percent fuel and not when the burner is incinerating air toxics, VOCs or other vapors. The unit shall be tested or certified to meet the emission limit while fueled with natural gas.

TABLE 2 – COMPLIANCE SCHEDULE FOR IN-USE UNITS

EQUIPMENT CATEGORIES	SUBMIT PERMIT APPLICATION	UNIT SHALL BE IN COMPLIANCE
Remediation unit manufactured prior to 1998	Seven months prior to combustion modification or change of location	Upon combustion modification or change of location beginning March 1, 2012
Tarpot		All new permit applications beginning January 1, 2013
Afterburner, degassing unit, catalytic oxidizer, thermal oxidizer, vapor incinerator, evaporator, food oven, fryer, heated process tank, parts washer or spray booth make-up air heater manufactured prior to 1998	December 1, 2013	July 1, 2014
Other unit manufactured prior to 1986	December 1, 2011	July 1, 2012
Other unit manufactured prior to 1992	December 1, 2011	July 1, 2012
Other unit manufactured prior to 1998	December 1, 2012	July 1, 2013
Any unit manufactured after 1997	December 1 of the year prior to the compliance date	July 1 of the year the unit is 15 years old

When do I have to meet the NOx emission limits?

Table 2 summarizes the compliance schedule for in-use units. The schedule includes the dates when the equipment must be in full compliance and when an application must be submitted if equipment modification is required.

If your facility has five or more units with permitted emissions > 1lb/day that will require burner modification, you may submit an alternate compliance plan by January 1, 2012 to phase-in compliance of all units starting in April 1, 2012 and ending before January 1, 2015.

You may also opt to delay the compliance date by three additional years if you agree to pay a mitigation fee. You would have to submit an alternate compliance plan (along with a filing fee) and pay the emissions mitigation fee to the District at least 150 days prior to the applicable compliance date in Table 2. The equation for calculating the amount of the emissions mitigation fee is given in subparagraph (i)(3)(D) of the rule. In order to calculate the potential fee under this option you would need to know the average annual fuel usage for each unit over the past five years and be able to provide supporting documentation. For example, the emission mitigation fee for a unit that is required to meet the 30 ppm NOx limit and consumed an annual average of 1 million standard cubic feet of gas (1 mmscf) is about \$3,900.

I just installed new burners a few years ago. Do I get additional time to comply?

If the new burners were installed between January 1, 2000 and December 5, 2008 and resulted in replacement of more than 75 percent of the rated heat input capacity, your compliance date is 10 years after the date that the modification was performed.

Is the Five-Year Extension applicable to my equipment?

If your equipment emits one pound per day or less of NOx, then you may defer compliance for up to five years from the compliance date in Table 2. NOx emissions of 1 lb/day or less must be demonstrated by one of the following:

- ① The unit has a rated heat input capacity of 400,000 Btu/hour or less; or
- ② The unit has an SCAQMD permit that limits NOx emissions to 1 lb/day or less; or
- ③ You may submit an application by January 1, 2012 to request a permit condition which limits your NOx emissions to 30 lb/month or less. A non-resettable fuel meter or timer will be required and records will have to be kept which document that NOx emissions are consistently less than 1 lb per day or 30 lb/month, based on the quantity of fuel used or hours of operation.

Where do I measure process temperature?

The rule sets NOx emission limits based on equipment category and process temperature. Process temperature is measured at the point where processing takes place. For an oven, the oven temperature is measured inside the oven where the desired heat is required by the operator. For an RTO, the temperature is measured in the chamber or set by the permit where VOC destruction occurs.

Are there certified burners for my equipment?

The rule contains provisions for manufacturers to certify equipment or burner systems for units that do not allow for adjustment of the fuel and combustion air. However, due to the wide variety of equipment covered under this rule, it is possible that there are no certified burners available to retrofit your equipment.

Can I derate my equipment to get out of Rule 1147?

It may be possible to derate your equipment to get out of Rule 1147. The rule only applies to equipment that requires an SCAQMD permit, so if you don't need a permit then the rule does not apply. If your equipment has heat input rating of less than 2 million Btu per hour, only burns natural gas, and has no other emissions other than the products of combustion, it would be exempt from permitting.

How do I know what my current NOx emissions are?

You can measure NOx emissions using a portable analyzer to get an idea of whether the NOx emissions already meet the rule limits. Southern California Gas Company (SoCalGas®) has technicians that may be able to assist you with this testing. If your exhaust gas oxygen level is high, specific source testing may be required.

Can I use SCAQMD's Certified Emissions Testing Program (for Boilers) in lieu of a source test to satisfy compliance?

A source test must be performed by an independent contractor using an approved source test protocol utilizing an approved source test method. A tester can use portable analyzers for R1147 source tests using the approved test methods in 1147(d)(3), but a tester cannot use the [Protocol](#) for R1146/1146.1 testing for Rule 1147 compliance determination

What if my current NOx emissions are lower than the rule limit?

If your equipment meets the rule limits, you must demonstrate compliance with a source test performed by a certified source testing company on or before the compliance date. Before conducting the test, a source test protocol must be submitted to the District for approval at least 90 days prior to the scheduled test date. The source test report shall be maintained on-site for 10 years and made available to District personnel upon request.

What if my current NOx emissions exceed the rule limit?

If your equipment does not currently meet the rule limits, you can replace the whole unit or retrofit it with new burners. You may also shut the equipment down and surrender the permit. Whether you replace or retrofit the unit, a permit application must be submitted to the SCAQMD before the date listed in Table 2. You must obtain a permit to construct before installing or modifying any equipment.

How much is the permit application fee to modify my equipment?

Permit application fees are listed in Rule 301. Look up your equipment in Table IB (p. 66) for the fee schedule (e.g. A, B, C etc.). The fees are listed in the table "Summary Permit Fee Rates –

Permit Processing, Change of Conditions, Alteration/Modification” (p. 62). Permit fees range from about \$1,300 to more than \$5,000 per unit.

Are Timers and Fuel Meters Required?

Timers and/or fuel meters are only required under two circumstances:

- 1 You are complying with the NO_x emission standard in terms of lb/mmBtu rather than concentration (ppm), in which case you need to install a fuel meter; or
- 2 You have equipment that emits less than 1 lb/day of NO_x and you have a permit condition that limits operation such that emissions are <1 lb/day and you need to keep records to prove it. In this case you may have to install a timer or fuel meter, whichever is appropriate for limiting emissions.

In general, timers and fuel meters are installed in order to measure how much fuel your equipment consumes and how long it operates. If your current SCAQMD permit requires a non-resettable timer or fuel meter, then you would need to submit a permit modification to remove it. If you have a timer or fuel meter on your equipment but it is not explicitly required on your permit and you do not need it for Rule 1147 compliance you may be able to remove it.

How can I determine the age of my unit?

Unit age is based on:

- A The original date of manufacture as determined by:
 - i. Original manufacturer’s identification or rating plate permanently fixed to the equipment; if not available then,
 - ii. Invoice from manufacturer for purchase of equipment; if not available then,
 - iii. Information submitted to SCAQMD with prior permit applications for the specific unit; if not available then,
 - iv. Unit is deemed by SCAQMD to be 20 years old; or
- B The date that operations start for a tunnel kiln or crematory rebuilt prior to January 1, 2010 with new burners as documented by appropriate records and/or invoices.

What if my unit is small and/or operates infrequently?

Units with a District permit and NO_x emissions of less than or equal to 1 lb per day may defer compliance for up to five years from the compliance date in Table 2; see response to the question about the five year extension.

What records do I have to keep?

The following records must be kept on-site:

- Manufacturer’s written maintenance instructions;
- Records of combustion maintenance activities for the past three years; and
- District-approved source test reports or District certifications 10.

Also, you need the following:

- A permanent rating plate on the unit; and
- Documents identifying the unit’s rated heat input capacity.

I have multiple units that will require burner modification. Can I file an alternate compliance plan?

Facilities with five or more in-use units with permit emissions > 1 lb/day that will require burner modification may submit an alternate compliance plan by January 1, 2012 to phase-in compliance of all units starting April 1, 2012 and ending before January 1, 2015. At least one unit must be modified to comply with the applicable emission limit by April 1, 2012. Each year thereafter at least 20% of the additional units must be modified and no less than one unit per year. All units must comply by January 1, 2015.

How do I get a source test done?

Contact the SCAQMD or check the SoCalGas’ website for a list of certified source testers. A source test protocol must be submitted to the SCAQMD for approval at least 90 days prior to the test date. Once the source test is completed, the source test report must be submitted to the District for approval. Retain a copy of the source test report on file for at least 10 years and make it available to District personnel upon request.

Contact SCAQMD or check Southern California Gas Company’s website for a list of certified source testers.