

**PROPOSED RULE 1109.1. EMISSIONS OF OXIDES OF NITROGEN FROM  
PETROLEUM REFINERIES AND RELATED  
INDUSTRIES**

(a) Purpose

The purpose of this rule is to reduce emissions of oxides of nitrogen (NO<sub>x</sub>), while limiting carbon monoxide (CO) emissions, from units at petroleum refineries and facilities with related operations to petroleum refineries.

(b) Applicability

The provisions of this rule shall apply to an owner or operator of units at petroleum refineries and facilities with related operations to petroleum refineries, including asphalt plants, biofuel plants, hydrogen production plants, petroleum refineries, facilities that operate petroleum coke calciners, sulfuric acid plants, and sulfur recovery plants.

(c) Definitions

- (1) ASPHALT PLANT means a facility that processes crude oil into asphalt, which is mixture of dark bituminous pitch with sand or gravel.
- (2) BIOFUEL PLANT means a facility that produces fuel by refining feedstocks including vegetable oil, animal fats, and tallow.
- (3) BOILER means any unit that is fired with gaseous fuel and used to produce steam. Boiler does not include carbon monoxide boilers (CO boilers).
- (4) CONTINUOUS EMISSION MONITORING SYSTEM (CEMS) is the total combined unit and systems required to continuously determine air contaminants and diluent gas concentrations and/or mass emission rate of a source effluent (as applicable).
- (5) FACILITY WITH RELATED OPERATIONS TO PETROLEUM REFINERIES includes asphalt plants, biofuel plants, hydrogen production plants, petroleum coke calcining facilities, sulfuric acid plants, and sulfur recovery plants.
- (6) FLUIDIZED CATALYTIC CRACKING UNIT (FCCU) is a process unit in which petroleum derivative feedstock is charged and fractured into smaller molecules in the presence of a catalyst; or reacts with a contact material to improve feedstock quality for additional processing; and the

catalyst or contact material is regenerated by burning off coke and other deposits. The unit includes, but is not limited to, the riser, reactor, regenerator, air blowers, spent catalyst, and all equipment for controlling air pollutant emissions and recovering heat. FCCU may include a CO boiler, which is a boiler with an integral waste heat recovery system used to oxidize CO-rich waste gases generated by the FCCU.

- (7) GAS TURBINE is an internal-combustion engine in which the expanding gases drive a turbine which then drives a generator to produce electricity. Gas Turbines can be equipped with a cogeneration gas turbine that recovers heat from the gas turbine exhaust. Gas turbine can be equipped with or without a duct burner, which is a device located in the heat recovery steam generator of a gas turbine that combusts fuel and adds heat energy to the turbine exhaust to increase the output of the heat recovery, and fired with gaseous fuel.
- (8) GROUND-LEVEL FLARE means a combustion device that oxidizes combustible gases or vapors, where the combustible gases or vapors being destroyed are routed directly into the burner without energy recovery.
- (9) HEAT INPUT means the heat of combustion released by burning a fuel source, using the higher heating value of the fuel. This does not include the enthalpy of incoming combustion air.
- (10) HIGHER HEATING VALUE (HHV) means the total heat liberated per mass of fuel combusted expressed as British thermal units (Btu) per pound, when fuel and dry air at standard conditions undergo complete combustion and all resulting products are brought to their standard states at standard conditions.
- (11) HYDROGEN PRODUCTION PLANT is a facility that produces hydrogen by steam methane reforming, partial oxidation of hydrocarbons, or other processes which primarily supplies hydrogen for petroleum refinery processes.
- (12) MALFUNCTION means any sudden, infrequent, and not reasonably preventable failure of air pollution control, monitoring equipment, or a process to operate in a normal manner, which causes, or has the potential to cause, the emission limitations to be exceeded. Breakdowns subject to Rule 430 – Breakdown Provisions or Rule 2004 – Requirements are not MALFUNCTIONS.

- (13) OXIDES OF NITROGEN (NO<sub>x</sub>) EMISSIONS means the sum of nitric oxide and nitrogen dioxide emitted in the flue gas, calculated and expressed as nitrogen dioxide.
- (14) PETROLEUM COKE CALCINER is process equipment used to drive off contaminants from green petroleum coke by bringing the coke into contact with heated gas for the purpose of thermal processing. The unit includes, but is not limited to, a kiln, which is a refractory lined cylindrical device that that rotates on its own axis, and a pyroscrubber, which combusts large carbon particles in a stream of waste gas.
- (15) PETROLEUM REFINERY is a facility identified by the North American Industry Classification System Code 324110, Petroleum Refineries.
- (16) PROCESS HEATER means any equipment fired with gaseous and/or liquid fuels which transfers heat from combusted gases to water or process streams.
- (17) RATED HEAT INPUT CAPACITY means the maximum heat input capacity, which is the heat of combustion released by burning a fuel source, as specified by the permit issued by the Executive Officer, or if not specified on the permit, as specified on the nameplate of the combustion unit. If the combustion unit has been altered or modified such that its maximum heat input is different than the heat input capacity specified on the nameplate, the new maximum heat input shall be considered as the Rated Heat Input Capacity.
- (18) ROLLING AVERAGE means the average of a 15-minute subset of CEMS concentrations which is modified by shifting the subset forward, excluding the first number of the series and including the next value in the subset.
- (19) SHUTDOWN is the time period that begins when an operator with the intent to shut down a unit, reduces load and for flue gas temperatures to fall below the minimum operating temperature of the emission control equipment, and which ends in a period of zero fuel flow, unless otherwise defined in the South Coast AQMD permit to operate
- (20) START-UP is the time period that begins when a NO<sub>x</sub> emitting unit combusts fuel after a period of zero fuel flow and which ends when the flue gas temperature reaches the minimal operating temperature of the emission control equipment. Start-up does not include the time used to dry refractory if a separate unit is used for the drying process.

- (21) STEAM METHANE REFORMER (SMR) HEATER means any equipment that is fired with gaseous fuels and transfers heat from the combusted fuel to process tubes that contain catalyst, which converts light hydrocarbons combined with steam to hydrogen. Light hydrocarbons include, but is not limited to, methane, ethane, propane, or a mixture of those hydrocarbons.
  - (22) SULFURIC ACID FURNACE means a unit fueled with gaseous fuels and/or hydrogen sulfide gas used to convert elemental sulfur and/or decompose spent sulfuric acid, which is used sulfuric acid which contains multiple impurities, and is partially neutralized. into sulfur dioxide (SO<sub>2</sub>) gas.
  - (23) SULFURIC ACID PLANT is any facility or unit engaged in the production of sulfuric acid at a concentration ranging from 93 percent to 99.2 percent.
  - (24) SULFUR RECOVERY PLANT is a facility or processing unit within a refinery that recovers elemental sulfur or sulfur compounds from sour gases and/or sour water generated by petroleum refineries.
  - (25) SULFUR RECOVERY UNITS/TAIL GAS (SRU/TG) INCINERATORS is the thermal or catalytic oxidizer where the residual hydrogen sulfide in the gas existing the sulfur recovery plant (tail gas) is oxidized to SO<sub>2</sub> before being emitting to the atmosphere.
  - (26) UNIT means, for the purpose of this rule, boilers, fluid catalytic cracking units, gas turbines, ground-level flares, petroleum coke calciner, process heaters, steam methane reformer heaters, sulfuric acid furnace, sulfur recovery units/tail gas incinerators, and vapor incinerators requiring a South Coast AQMD permit and not specifically required to comply with a NO<sub>x</sub> emission limit by other South Coast AQMD Regulation XI rules.
  - (27) VAPOR INCINERATOR means a thermal oxidizer, afterburner, or other device for burning and destroying air toxics, VOCs or other combustible vapors in gas or aerosol form in gas streams.
- (d) Emission Limits
- (1) On and before [*COMPLIANCE DATE OR COMPLIANCE PLAN*], an owner or operator shall not operate a unit, excluding start-up and shutdown periods as specified pursuant to subdivision (e), unless the unit meets the applicable NO<sub>x</sub> and CO emission limits specified in Table 1 as demonstrated with CEMS pursuant to subdivision (f) or a source test pursuant to subdivision (g).

**TABLE 1: NO<sub>x</sub> AND CO EMISSION LIMITS IN  
PARTS PER MILLION BY VOLUME (ppmv)**

<b>BOILERS</b>				
Rated Heat Input Capacity (MMBtu/hour)	NO <sub>x</sub> (ppmv)	CO (ppmv)	Averaging Time (Rolling Average)	Compliance Date
	3% Oxygen (O <sub>2</sub> )			
<40	40	400	2 hours	[6 MONTHS AFTER DATE OF RULE ADOPTION]
	5	400		Pursuant to paragraph (j)(1)
≥40	2	400	8 hours	TBD
<b>GAS TURBINES</b>				
	NO <sub>x</sub> (ppmv)	CO (ppmv)	Averaging Time (Rolling Average)	Compliance Date
	15% O <sub>2</sub>			
Gas Turbine	2	130	8 hours	TBD
<b>GROUND-LEVEL FLARES</b>				
	NO <sub>x</sub> (ppmv)	CO (ppmv)	Averaging Time (Rolling Average)	Compliance Date
	3% O <sub>2</sub>			
Ground-Level Flares	20	400	3 hours	TBD
<b>FLUIDIZED CATALYTIC CRACKING UNITS</b>				
	NO <sub>x</sub> (ppmv)	CO (ppmv)	Averaging Time (Rolling Average)	Compliance Date
	0% O <sub>2</sub>			
FCCU	2	500	365 days	TBD
	5	500	7 days	
<b>PETROLEUM COKE CALCINERS</b>				
	NO <sub>x</sub> (ppmv)	CO (ppmv)	Averaging Time (Rolling Average)	Compliance Date
	3% O <sub>2</sub>			
Petroleum Coke Calciner	5	N/A	365 days	TBD
	10	N/A	7 days	

<b>PROCESS HEATERS</b>				
Rated Heat Input Capacity (MMBtu/hour)	NOx (ppmv)	CO (ppmv)	Averaging Time (Rolling Average)	Compliance Date
	3% O <sub>2</sub>			
<20	40	400	2 hours	[6 MONTHS AFTER DATE OF RULE ADOPTION]
	9	400		Pursuant to paragraph (j)(2)
20 – <40	30	400	2 hours	TBD
	9	400		Pursuant to paragraph (j)(2)
≥40	2	400	8 hours	TBD
<b>SULFUR RECOVERY UNITS/TAIL GAS INCINERATORS</b>				
	NOx (ppmv)	CO (ppmv)	Averaging Time (Rolling Average)	Compliance Date
	3% O <sub>2</sub>			
SRU/TG Incinerators	30	400	8 hours	TBD
<b>STEAM METHANE REFORMER HEATERS</b>				
Equipment Category	NOx (ppmv)	CO (ppmv)	Averaging Time (Rolling Average)	Compliance Date
	3% O <sub>2</sub>			
SMR Heater	5	400	8 hours	TBD
<b>STEAM METHANE REFORMER HEATERS WITH GAS TURBINE</b>				
Equipment Category	NOx (ppmv)	CO (ppmv)	Averaging Time (Rolling Average)	Compliance Date
	3% O <sub>2</sub>			
SMR Heater with Gas Turbine	5	130	8 hours	TBD

<b>SULFURIC ACID FURNACES</b>				
	NOx (ppmv)	CO (ppmv)	Averaging Time (Rolling Average)	Compliance Date
	3% O <sub>2</sub>			
Furnace	30	400	365 day	[6 MONTHS AFTER DATE OF RULE ADOPTION]
<b>VAPOR INCINERATORS</b>				
	NOx (ppmv)	CO (ppmv)	Averaging Time (Rolling Average)	Compliance date
	3% O <sub>2</sub>			
Vapor Incinerators	20	400	3 hours	TBD

- (2) Notwithstanding the emission limits and averaging times in Table 1, an owner or operator of units with combined stacks and CEMS will be subject to the most stringent NOx limit and corresponding averaging time pursuant to Table 1.
- (e) Start-up, Shutdown, and Malfunction
  - (1) An owner or operator of a unit with post-combustion controls that requires a minimum temperature to reduce NOx emissions is exempt from the applicable NOx and CO emission limits in paragraph (d)(1) during start-up, shutdown, or malfunction of a unit only for the time periods specified in Table 2, or a lesser time if specified in an South Coast AQMD permit.

**TABLE 2: START-UP, SHUTDOWN, MALFUNCTION ALLOWANCES**

Unit	Not to Exceed per Start-up, Shutdown, or Malfunction (hours)
Gas Turbines	2
Sulfuric Acid Furnace	24
Boilers, Process Heaters, or Steam Methane Reformer Heaters	48
Steam Methane Reformer with Gas Turbine	60
FCCUs, Petroleum Coke Calciner, or SRU/TG Incinerators	120

- (2) An owner or operator of a unit complying with the emission limits in subdivision (d) by using the start-up and shutdown allowances in Table 2 shall:
- (A) Submit the timetable of the estimated dates for the scheduled startup and shutdown events for that year to the Executive Officer by January 1 of each year; and
  - (B) Not exceed XX scheduled start-up and shutdown events per year.
- (3) An owner or operator of a unit with a start-up, shutdown, or malfunction event that exceeds the NO<sub>x</sub> and CO emissions limit specified in paragraph (d)(1) shall:
- (A) Implement good air pollution control practices to minimize NO<sub>x</sub> emissions during periods of start-up, shutdown, and malfunction;
  - (B) Notify the Executive Officer within 24 hours following the shutdown, startup or malfunction by calling 1-800-CUT-SMOG (1-800-288-7664); and
  - (C) Submit a report, in a format approved by the Executive Officer, at the end of each month providing the start-up, shutdown, and malfunction events with the following information:
    - (i) Dates, times, and duration of the startup, shutdown, and malfunction event(s); and
    - (ii) Any other process variables that are appropriate as determined by the Executive Officer.



- (4) An owner or operator of a unit with a CEMS that measures zero NO<sub>x</sub> emissions during a shutdown shall exclude those measurements when calculating the average NO<sub>x</sub> emissions pursuant to paragraph (d)(1).
  
- (f) CEMS Requirements
  - (1) An owner or operator of a boiler with a rated heat input capacity greater than 40 MMBtu/hour; gas turbine; FCCU; petroleum coke calciner; process heater with a rated heat input capacity greater than 40 MMBtu/hour; SMR heater; SMR heater with a gas turbine; or sulfuric acid furnace and subject to paragraph (d)(1) shall install, operate, and maintain a CEMS, or an equivalent verification system, to measure NO<sub>x</sub>, CO, and O<sub>2</sub>, that complies with the applicable Rule 218 series to demonstrate compliance with the NO<sub>x</sub> emissions limits of this rule.
  - (2) Until the CEMS is operating, an owner or operator of a unit that has a 365-day rolling average with a non-operational CEMS, which is a CEMS that is not collecting data, shall:
    - (A) Calculate missing data using the average of the recorded emissions for the hour immediately before the missing data period and the hour immediately after the missing data period, if the missing data period is less than or equal to 8 continuous hours; or
    - (B) Calculate missing data using the maximum hourly emissions recorded for the previous 30 days commencing on the day immediately prior to the day the missing data occurred, if the missing data period is more than 8 continuous hours.
  - (3) Emissions determined to exceed any limits established by this rule through the use of CEMS, and data generated pursuant to paragraph (f)(2), shall constitute a violation of the rule.
  
- (g) Source Test Requirements
  - (1) An owner or operator of a unit that is not required to install and operate a CEMS pursuant to paragraph (f)(1), shall demonstrate compliance with the applicable NO<sub>x</sub> and CO emission limits in paragraph (d)(1) by conducting a source test according to Table 3.
  - (2) An owner or operator of a unit listed in Table 3 that operates a CEMS, are subject to subdivision (f) in lieu of subdivision (g).

TABLE 3: SOURCE TESTING SCHEDULE

Combustion Equipment	Rated Heat Input Capacity (MMBtu/ hour)	Source Test Schedule
Boilers and Process Heaters	<40	Within 12 months from previous source test and every 12 months thereafter
SRU/TG Incinerators	ALL	
Vapor Incinerators and Enclosed Ground Flares	All	Within 36 months from previous source test and every 36 months thereafter

- (3) An owner or operator of a new unit shall conduct the initial source test within 6 months from installation.
- (4) An owner or operator of a unit that has not conducted a source test within the schedule in Table 3 shall conduct a source test within 6 months from [DATE OF RULE ADOPTION].
- (5) An owner or operator of a unit shall submit a source test protocol for approval no later than 60 days prior to a scheduled source test date and conduct the source test within 90 days after a written approval of the source test protocol by the Executive Officer is distributed; and
- (6) At least one week prior to conducting a source test, an owner or operator of a unit shall notify the Executive Officer, in writing, of the intent to conduct source testing.
- (7) Unless requested by the Executive Officer, after the approval of the initial source test protocol pursuant to paragraph (g)(5), an owner or operator of a unit subject to this rule is not required to resubmit a source test protocol for approval pursuant to paragraph (g)(5) if:
  - (A) The method of operation of the unit has not been altered in a manner that requires a permit application submittal;
  - (B) Rule or permit emission limits have not become more stringent since the previous source test; and
  - (C) There have been no changes in the source test method that is referenced in the approved source test protocol.

- (8) An owner or operator of a unit shall conduct the source test using a South Coast AQMD approved contractor under the Laboratory Approval Program:
  - (A) Using a South Coast AQMD approved source test protocol;
  - (B) Using the applicable Averaging Time specified in paragraph (d)(1);
  - (C) During operation other than start up or shut down; and
  - (D) In as-found operating condition.
- (9) An owner or operator of a unit shall submit all source test reports, including the source test results and a description of the unit tested, to the Executive Officer within 60 days of completion of the source test.
- (10) An owner or operator of a unit shall conduct the source test using a South Coast AQMD approved contractor under the Laboratory Approval Program according to the following methods:
  - (A) South Coast AQMD Source Test Method 100.1 - Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling (March 1989), or
  - (B) South Coast AQMD Source Test Method 7.1 - Determination of Nitrogen Oxide Emissions from Stationary Sources (March 1989) and South Coast AQMD Source Test Method 10.1 - Carbon Monoxide and Carbon Dioxide by Gas Chromatograph/Non-Dispersive Infrared Detector (GC/NDIR) - Oxygen by Gas Chromatograph-Thermal Conductivity (GC/TCD) (March 1989); or
  - (C) Any other test method determined to be alternative and approved before the test in writing by the Executive Officer of the South Coast AQMD and the California Air Resources Board and the Regional Administrator of the U.S. EPA, Region IX.
- (11) Emissions determined to exceed any limits established by this rule by any of the reference test methods in paragraph (g)(9) shall constitute a violation of the rule.
- (12) An owner or operator of a unit that exceeds any limits established by this rule by any of the reference test methods in paragraph (g)(10) shall inform the Executive Officer within 72 hours from the time an owner or operator knew of excess emissions, or reasonably should have known.

- (h) Diagnostic Emission Checks
  - (1) An owner or operator of a unit required to perform a source test pursuant to subdivision (f) shall:
    - (A) Perform diagnostic emissions checks of NO<sub>x</sub>, CO, and O<sub>2</sub> emissions, , with a portable NO<sub>x</sub>, CO, and O<sub>2</sub> analyzer that is calibrated, maintained and operated in accordance with manufacturers specifications and recommendations and the South Coast AQMD Combustion Gas Periodic Monitoring Protocol for the Periodic Monitoring of Nitrogen Oxides, Carbon Monoxide, and Oxygen from Combustion Sources Subject to Rules 1110.2, 1146 and 1146.1; and
    - (B) Conduct the portable analyzer diagnostic emission checks 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.
  - (2) An owner or operator shall perform diagnostic emission checks pursuant to paragraph (h)(1) at least every 31 days or 744 operating hours, whichever occurs later. If the unit complies for three consecutive diagnostic emission checks, without any adjustments to the O<sub>2</sub> sensor set points, then the unit may be checked every 90 days or every 2,000 operating hours, whichever occurs later, until the resulting diagnostic emission check exceeds the applicable limit at which time unit must be checked at least every 31 days or 744 operating hours, whichever occurs later.
  - (3) A diagnostic emissions check that finds the emissions in excess of those allowed by this rule or a permit condition shall not constitute a violation of this rule if an owner or operator corrects the problem and demonstrates compliance with another diagnostic emissions check within 72 hours from the time an owner or operator knew of excess emissions, or reasonably should have known, or shutdown the unit by the end of an operating cycle, whichever is sooner. Any diagnostic emission check conducted by South Coast AQMD staff that finds emissions in excess of those allowed by this rule or a permit condition is a violation.

- (i) Monitoring, Recordkeeping, and Reporting Requirements
  - (1) An owner or operator of a unit subject to Rule 1109.1 shall comply with the applicable Rule 218 series to demonstrate compliance with the NOx emissions limits of this rule.
  - (2) Operating Log

An owner or operator of a unit shall maintain the following daily records for each unit, in a manner approved by the South Coast AQMD:

    - (A) Time and duration of start-ups and shutdowns;
    - (B) Total hours of operation;
    - (C) Quantity of fuel; and
    - (D) Cumulative hours of operation to date for the calendar year;
  - (3) An owner or operator of a unit shall keep and maintain all records, including CEMS data, source tests reports, diagnostic emission checks and written logs of start-ups, shutdowns, and malfunctions, and all maintenance, service and tuning records, and any other information required by this rule:
    - (A) On-site for five years, except that all data gathered or computed for intervals of less than 15 minutes shall be maintained for a minimum of 48 hours; and
    - (B) Made available to the Executive Officer upon request.
  - (4) An owner or operator of a process heater or boiler that is exempt from the applicable emission limits in paragraph (d)(1) pursuant to paragraph (l)(2) or an owner or operator of a ground-flare that is exempt from the applicable emission limits in paragraph (d)(1) pursuant to subparagraph (l)(4)(A) shall monitor and maintain hours of operation records as follows:
    - (A) For the 200 hours per year validation, using a calibrated non-resettable totalizing time meter or equivalent method approved in writing by the Executive Officer; or
    - (B) For the annual throughput limit equivalent to 200 hours per year validation, using a calibrated fuel meter or equivalent method approved in writing by the Executive Officer.
  - (5) An owner or operator of a vapor incinerator that is exempt from the applicable emission limits in paragraph (d)(1) pursuant to paragraph (l)(5) shall monitor and maintain emissions records as follows:
    - (A) Annual throughput shall be monitored using a calibrated fuel meter or equivalent method approved in writing by the Executive Officer, and

- (B) Emissions shall be determined using a source test pursuant to subdivision (f) or by using a default emission factor approved in writing by the Executive Officer.
- (j) Compliance Schedule
- (1) An owner or operator of a boiler with a rated heat input capacity less than 40 MMBtu/hour must comply with the 5 ppmv NO<sub>x</sub> limit at replacement pursuant to paragraph (d)(1) by [TEN YEARS AFTER RULE ADOPTION] or when 50 percent or more of the unit's burners are replaced, whichever is earlier.
  - (2) Effective [TEN YEAR AFTER RULE ADOPTION], an owner or operator of a process heater with a rated heat input capacity less than 40 MMBtu/hour must comply with the 9 ppmv NO<sub>x</sub> limit at replacement pursuant to paragraph (d)(1) when 50 percent or more of the unit's burners are replaced.
  - (3) An owner or operator of a process heater with a rated heat input capacity less than or equal to 40 MMBtu/hour exempt from the applicable emission limits in paragraph (d)(1) pursuant to subparagraph (l)(4)(B), must comply with the 2 ppmv emission limits in paragraph (d)(1) according to the following schedule:
    - (A) For units with post-combustion controls operating more than 25 years, [TEN YEARS AFTER RULE ADOPTION] or when the existing post-combustion air pollution control equipment is replaced, whichever is earlier; or
    - (B) For units with post-combustion controls operating less than 25 years, 25 years after the installation of post-combustion control equipment.
- (k) BARCT Compliance Alternative Plan  
*[In development]*
- (l) Exemptions
- (1) The provisions of this rule shall not apply to owners or operators of:
    - (A) Boilers that are unfired; and
    - (B) Boilers and Heaters with a rated heat input capacity  $\leq 5$  MMBtu/hour that are fired with liquid and/or gaseous fuel and used exclusively for space or water heating will be subject to Rule 1146.1 – Emissions

of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters, if applicable.

- (2) An owner or operator of a process heater only used for start-up of a FCCU that operates 200 hours or less per calendar year shall be exempt from the requirements in subdivisions (d), (f) and (g) provided:
  - (A) The process heater or boiler has a South Coast AQMD permit that specifies conditions that limits the operating hours to 200 hours; and
  - (B) The process heater or boiler operates in compliance with the South Coast AQMD permit condition.
- (3) An owner or operator of a process heater used for start-up or boiler used during shutdown at a sulfuric acid plant that does not exceed 90,000 MMBtu of annual heat input per calendar year and shall be exempt from the requirements in subdivisions (d), (f) and (g) provided:
  - (A) The process heater or boiler has a South Coast AQMD permit that specifies conditions that limits the heat input to 90,000 MMBtu or lower per calendar year; and
  - (B) The process heater or boiler operates in compliance with the South Coast AQMD permit condition.
- (4) An owner or operator of a process heater shall be exempt from the provisions in subdivision (d) provided:
  - (A) The rated heat input capacity of the process heater is less than 40 MMBtu/hour and was installed prior to [DATE OF RULE ADOPTION] and meets the following:
    - (i) The South Coast AQMD permit to operate as of [DATE OF RULE ADOPTION] includes a condition limiting the NO<sub>x</sub> concentration to 40 ppmv NO<sub>x</sub> or less at three percent O<sub>2</sub> on a dry basis; and
    - (ii) The NO<sub>x</sub> and ammonia limits; averaging time; and start-up, shutdown conditions; and tuning requirements specified on the South Coast AQMD permit to operate as of [DATE OF ADOPTION] are retained.
  - (B) The rated heat input capacity of the process heater is greater or equal to 40 MMBtu/hour and was installed prior to [DATE OF RULE ADOPTION] and meetings the following:

- (i) The South Coast AQMD permit to operate as of [DATE OF RULE ADOPTION] includes a condition limiting the NO<sub>x</sub> concentration to 5 ppmv NO<sub>x</sub> or less at three percent O<sub>2</sub> on a dry basis; and
  - (ii) The NO<sub>x</sub> and ammonia limits; averaging times; and start-up, shutdown provisions; and tuning requirements specified on the South Coast AQMD permit to operate as of [DATE OF RULE ADOPTION] are retained.
- (5) Ground-Level Flares
  - (A) An owner or operator of a ground-level flare that operates 20 hours or less per calendar year, or with an annual throughput limit equivalent to 20 hours per year, shall be exempt from the requirements in subdivisions (d) and (g) provided:
    - (i) The flare has a permit that specifies conditions that limits the operating hours or annual throughput; and
    - (ii) The flare or flare station operates in compliance with the permit condition.
  - (B) An owner or operator of an open flare, which is an unshrouded flare, shall not be required to conduct source testing pursuant to subdivision (g).
- (6) Vapor Incinerators

An owner or operator of a vapor incinerator that emits 100 pounds of NO<sub>x</sub> or less in a year shall exempt from the requirements in subdivision (d) provided:

  - (A) The vapor incinerator has a permit that specifies conditions that limits the operating hours or annual throughput; and
  - (B) The vapor incinerator operates in compliance with the permit condition.