**PROPOSED AMENDED RULE 1147 NOx REDUCTIONS FROM MISCELLANEOUS SOURCES**

(a) Purpose

The purpose of this rule is to reduce nitrogen oxide (NOx) emissions while limiting carbon monoxide (CO) emissions from gaseous and liquid fuel fired combustion equipment as defined in this rule.

(b) Applicability

This rule applies to manufacturers, distributors, retailers, installers, owners, and operators of combustion equipment with NOx emissions that require a South Coast AQMD permit and are not specifically required to comply with requirements of other South Coast AQMD Regulation XI combustion rules.

(c) Definitions

(1) ANNUAL CAPACITY FACTOR means the ratio of the Annual Heat Input of a Unit in a calendar year to the amount of fuel it could have burned if it had operated at the rated heat input capacity for 100 percent of the time during the calendar year.

(2) ANNUAL HEAT INPUT means the actual amount of heat released by fuels burned in a unit during a calendar year, based on the fuel's higher heating value.

(3) AUTOCLAVE means a device that uses both heat and pressure (over 15 pounds per square inch) to process materials, employing a heating method that includes an internal heat-transfer coil and an external combustion system which fires gaseous or liquid fuels through the coil.

(4) BTU means British thermal unit or units.

(5) CHILLER means any natural gas fired unit that captures and uses waste heat to provide cold water for air conditioning and other process requirements.

(6) COMBUSTION SYSTEM MODIFICATION means any modification of burner(s) or heating unit that contains a burner(s), or burner(s) fuel system, combustion air supply, or combustion control system that changes the Rated Heat Input Capacity of the burner(s) or heating unit.

(7) COMBUSTION SYSTEM REPAIR means fixing or refurbishing of a burner(s) or heating unit that contains a burner(s), or burner(s) fuel system, combustion

air supply, or combustion control system that does not result in a Combustion System Modification or Combustion System Replacement.

(8) COMBUSTION SYSTEM REPLACMENT means the substituting of a burner(s) or a heating unit that includes a burner(s).

(9) CONTINUOUS EMISSIONS MONITORING SYSTEM (CEMS) means the total combined equipment and systems required to continuously determine air contaminants and diluent gas concentrations and/or a mass emission rate of a source effluent (as applicable). The CEMS consists of three major subsystems: sampling interface, analyzer and data acquisition system.

(10) DECOMMISSION means to permanently shut down a Unit by removing the fuel, air, electricity, or other utility source connected to it and deactivate the Unit's applicable South Coast AQMD permit.

(11) FOOD OVEN means an oven, cooker, dryer, roaster, or other fuel-fired unit, excluding fryer, used to heat, cook, dry, roast, or prepare food, food products, or products used for making beverages for human consumption.

(12) FORMER RECLAIM FACILITY means a facility, or any of its successors, that was in the Regional Clean Air Incentives Market program as of January 5, 2018, as established in Regulation XX, that has received a final determination notification, and is no longer in the RECLAIM program.

(13) HEATER means any combustion equipment that is fired with gaseous and/or liquid fuels and which transfers heat from combusted fuel to materials or air contained in the unit or in an adjoining cabinet, container or structure. Heater does not include any boiler or Process Heater designed to transfer heat to water or process streams that is subject to any NOx emission limits of South Coast AQMD Rules 1109, 1146, 1146.1 or 1146.2, and does not include any internal combustion engine, TURBINE, AUTOCLAVE, or TUNNEL KILN.

(14) HEAT INPUT means the higher heating value of the fuel to the unit measured as BTU per hour.

(15) HEAT OUTPUT means the enthalpy of the working fluid output of the unit.

(16) INFRARED BURNER means a burner with:

(A) Ceramic, metal fiber, sintered metal, or perforated metal flame-holding surface;

(B) More than 50% of the heat output as infrared radiation and that is operated in a manner where the zone including and above the flame-holding surface is red and does not produce observable blue or yellow flames in excess of ½ inch (13 mm) in length; and

(C) A RATED HEAT INPUT CAPACITY per square foot of flame holding surface of 100,000 BTU per hour or less.

(17) IN-USE means is demonstrated to the Executive Officer that a UNIT was in operation at the current location prior to *[Date of Adoption]*.

(18) MAKE-UP AIR HEATER means a Unit used to heat incoming air in order to maintain the temperature of a spray booth, container, room or other enclosed space and to provide breathable air for a person who may be present during operation.

(19) NEW UNIT means a Unit that is installed, relocated, or replaced after [*Date of Adoption]*.

(20) NON-RECLAIM FACILITY means a facility, or any of its successors, that was not in the Regional Clean Air Incentives Market program as of January 5, 2018, as established in Regulation XX.

(21) NOx EMISSIONS means the sum of nitrogen oxide and nitrogen dioxide in the flue gas, collectively expressed as nitrogen dioxide.

(22) PROCESS HEATER means any equipment that is fired with gaseous and/or liquid fuels and which transfers heat from combusted fuel to water or process streams. PROCESS HEATER does not include any fryer or any furnace, kiln or oven used for melting, heat treating, annealing, drying, curing, baking, cooking, calcining, or vitrifying; any heated tank; or any unfired waste heat recovery heater that is used to recover sensible heat from the exhaust of any combustion equipment.

(23) PROTOCOL means a test protocol for determining compliance with emission limits for applicable equipment.

(24) RATED HEAT INPUT CAPACITY means the gross Heat Input of the combustion Unit specified on a permanent rating plate attached by the manufacturer to the device. If the Unit has been altered or modified, the new gross HEAT INPUT as specified in subparagraph (i)(2)(A) shall be considered as the rated HEAT INPUT capacity.

(25) RELOCATION means removal from one parcel of land in the jurisdiction of the South Coast AQMD and installation on another non-contiguous parcel of land. Relocation does not mean a move from one parcel of land to another parcel of land where the two parcels have the same address, are under common ownership, and are separated solely by a public roadway or other public right-of-way.

(26) RECLAIM FACILITY means a facility, or any of its successors, that was in the Regional Clean Air Incentives Market program as of January 5, 2018, as established in Regulation XX.

(27) REMEDIATION UNIT means a device used to capture or incinerate air toxics, VOCs or other combustible vapors extracted from soil or water.

(28) RESPONSIBLE OFFICIAL means:

(A) For a corporation: a president or vice-president of the corporation in charge of a principal business function or a duly authorized person who performs similar policy-making functions for the corporation; or

(B) For a partnership or sole proprietorship: general partner or proprietor, respectively.

(C) For a government agency: a duly authorized person

(29) SHUTDOWN is as defined in Rule 429 – Startup and Shutdown Exemption Provisions for Oxides of Nitrogen.

(30) STARTUP is as defined in Rule 429 – Startup and Shutdown Exemption Provisions for Oxides of Nitrogen.

(31) TENTER FRAME DRYER is a cloth dryer that holds the edges of the material as it is dried in order to control shrinkage.

(32) TUNNEL KILN means any gaseous fired equipment which transfers heat from combusted fuel to air contained in the unit with exhaust moisture content above 30 percent using a continuous moving conveyor or vehicle.

(33) TURBINE means, for the purposes of this rule, any turbine that is gas and/or liquid fueled with or without power augmentation. This turbine is either attached to a foundation at a facility or is portable equipment that will reside at the same location for more than 12 consecutive months. Two or more turbines powering one shaft shall be treated as one turbine.

(34) UNIT means, for the purposes of this rule, any combustion equipment with NOx emissions requiring a South Coast AQMD permit and not specifically required to comply with requirements of other South Coast AQMD Regulation XI combustion rules. Basic equipment with integrated control is considered a single Unit.

(35) VAPOR INCINERATOR means a furnace, afterburner, or other device for burning and destroying air toxics, VOCs or other combustible vapors in gas or aerosol form in gas streams.

(d) Requirements

(1) Until an owner or operator is required to meet the NOx and CO emission limits in Table 2 pursuant to the implementation schedule in subdivision (e), the owner or operator shall not operate a Unit that exceeds a NOx emission limit:

(A) In Table 1 at a Non-RECLAIM Facility as demonstrated pursuant to subdivision (h); or

(B) Of 102 ppm, corrected to 3% oxygen, dry, for any Unit at a Former RECLAIM Facility or RECLAIM Facility that does not have an existing NOx concentration limit demonstrating compliance with emission limits in Table 1 or Table 2 on its Permit as demonstrated pursuant to subdivision (h).

(2) An owner or operator of a Unit with an existing permit condition(s) that complies with the applicable NOx limits in Table 1 shall meet the applicable NOx and CO limits in Table 2, as demonstrated by a source test pursuant to subdivision (h), by the schedule specified in paragraph (e)(2).

(3) Until an owner or operator is required to comply with the emission limits of Table 2 specified in the implementation schedule in paragraph (e)(2), an owner or operator of a Unit that meets NOx and CO emission limits of Table 1 as of [date of adoption] shall:

(A) Operate the Unit in compliance with the permit if it has an existing permit condition that meets the NOx and CO emission limits in Table 1; or

(B) For a Unit that does not, as of [date of adoption], have an existing permit condition that meets the NOx and CO emission limits in Table 1,

(i) Submit a permit application by May 1, 2022 to add a permit condition to the Permit to Operate that requires compliance with the NOx and CO concentration limits in Table 1; and

(ii) Demonstrate compliance with the NOx and CO emission limits in Table 1 by a source test conducted pursuant to subdivision (h) and approved by the Executive Officer where the source test has been conducted no later than 6 months after when the permit application is submitted and where no modification to the Unit has been made between the date of the source test and when the permit application is submitted.

(4) In lieu of complying with the emission limits of Table 2 pursuant to paragraphs (d)(2) or (d)(3), an owner or operator of a Unit may elect to decommission the Unit pursuant to paragraph (e)(4).

(5) An owner or operator of a Unit shall not operate a unit that exceeds the applicable NOx and CO emission limits in Table 2 on and after the applicable date specified in subdivision (e).

(6) An owner or operator of a New Unit shall not operate a New Unit that exceeds the applicable NOx and CO emission limits in Table 2.

(7) An owner or operator of a Unit is not required to meet the NOx or CO emission limits in this subdivision (d) provided that:

(A) The owner or operator of an In-Use unit submits a permit application by January 1, 2023 to add a permit condition that limits NOx emissions to less than one pound per day;

(B) The owner or operator of a New Unit with a permit condition that limits NOx emissions to less than one pound per day; and

(C) The owner or operator demonstrates that NOx emissions are less than one pound per day pursuant to subdivision (g).

(8) An owner or operator of a Unit demonstrating compliance with paragraph (d)(7) that emits 1 or more pounds NOx per day pursuant to subdivision (g) and recordkeeping pursuant to subdivision (j), shall:

(A) Submit a permit application to meet the emission limits in Table 2 within 6 months of the date owner or operator emits 1 or more pounds NOx per

day pursuant to subdivision (g) and recordkeeping pursuant to subdivision (j); and

(B) Meet the emission limits in Table 2 within 12 months after a Permit to Construct is issued.

(9) An owner or operator of an in-use distillate fuel-fired Turbine permitted prior to [Date of Adoption] subject to emission limits of Table 1 shall:

(A) Submit a permit application by July 1, 2023 to add a permit condition to the Permit to Operate that requires compliance with an annual fuel throughput of 13,800 gallons/year; and

(A) Not operate the Unit in excess of an annual fuel throughout of 13,800 gallons/year.

**Table 1 – NOx and CO Emission Limits for Unit Permitted Prior to *[Date of Adoption]***

| **Equipment Categories** | **Process Temperature** | **Emission Limits (At 3% O2, dry unless otherwise specified)** | |
|---|---|---|---|
| | | **NOx Limit (ppmv)** | **CO Limit (ppmv)** |
| **Gaseous Fuel-Fired Equipment** | | | |
| Afterburner, Degassing Unit, Remediation Unit, Thermal Oxidizer, Catalytic Oxidizer or Vapor Incinerator [1] | All | 60 ppmv or 0.073 lb/MMBtu | 1,000 ppmv |
| Burn-off Furnace, Burnout Oven, Incinerator or Crematory with or without Integrated Afterburner | All | 60 ppmv or 0.073 lb/ MMBtu | |
| Evaporator, Fryer, Heated Process Tank, or Parts Washer | All | 60 ppmv or 0.073 lb/ MMBtu | |
| Oven, Dehydrator, Dryer, Heater, Kiln, Calciner, Cooker, Roaster, Furnace, or Heated Storage Tank | <1,200°F | 30 ppmv or 0.036 lb/ MMBtu | |
| | ≥1,200°F | 60 ppmv or 0.073 lb/ MMBtu | |

| Equipment Categories | Process Temperature | Emission Limits (At 3% O2, dry unless otherwise specified) | |
|---|---|---|---|
| | | NOx Limit (ppmv) | CO Limit (ppmv) |
| **Gaseous Fuel-Fired Equipment** | | | |
| Make-Up Air Heater or other Air Heater located outside of building with temperature controlled zone inside building | All | 30 ppmv or 0.036 lb/ MMBtu | 1,000 ppmv |
| Tenter Frame or Fabric or Carpet Dryer | All | 30 ppmv or 0.036 lb/ MMBtu | |
| Other Unit or Process Temperature | <1,200°F | 30 ppmv or 0.036 lb/ MMBtu | |
| | ≥1,200°F | 60 ppmv or 0.073 lb/ MMBtu | |
| **Liquid Fuel-Fired Equipment** | | | |
| Turbine <0.3 MW [2] (In-Use distillate fuel <0.3 MW) | All | 77 ppm or 0.094 lb/mmBtu | 1,000 ppmv |
| All liquid fuel-fired Units | <1,200°F | 40 ppm or 0.053 lb/ MMBtu | |
| | ≥1,200°F | 60 ppmv or 0.073 lb/ MMBtu | |

**1.** Emission limit applies to burners in units fueled by 100% 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% 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.

**2.** Emission limit for turbines are corrected to 15% $O_2$, dry basis.

**Table 2 – NOx and CO Emission Limits**

| Equipment Categories | Process Temperature | Emission Limits (At 3% O2, dry unless otherwise specified) | |
|---|---|---|---|
| | | NOx Limit (ppmv) | CO Limit (ppmv) |
| **Gaseous Fuel-Fired Equipment** | | | |
| Afterburner, Degassing Unit, Remediation Unit, Thermal Oxidizer, Catalytic Oxidizer or Vapor Incinerator [1] | All | 20 ppmv or 0.024 lb/mmBtu | 1,000 ppmv |
| Burn-off Furnace, Burnout Oven, Incinerator or Crematory with or without Integrated Afterburner | All | 30 ppmv or 0.036 lb/mmBtu | |
| Evaporator, Fryer, Heated Process Tank, or Parts Washer | All | 60 ppmv or 0.073 lb/mmBtu | |
| Oven, Dehydrator, Dryer, Heater, Kiln, Calciner, Cooker, Roaster, Furnace, or Heated Storage Tank | <1,200°F | 20 ppmv or 0.024 lb/mmBtu | |
| | ≥1,200°F | 30 ppmv or 0.036 lb/mmBtu | |
| Make-Up Air Heater or other Air Heater located outside of building with temperature controlled zone inside building | All | 30 ppmv or 0.036 lb/mmBtu | |
| Tenter Frame or Fabric or Carpet Dryer | All | 20 ppmv or 0.024 lb/mmBtu | |
| Autoclave | All | 30 ppmv or 0.036 lb/mmBtu | |
| Tunnel Kiln | <1,200°F | 30 ppmv or 0.036 lb/mmBtu | |
| | ≥1,200°F | 60 ppmv or 0.073 lb/mmBtu | |
| Chiller (Absorption or Adsorption) | All | 20 ppm or 0.024 lb/mmBtu | |

| Equipment Categories | Process Temperature | Emission Limits (At 3% O2, dry unless otherwise specified) | |
|---|---|---|---|
| | | NOx Limit (ppmv) | CO Limit (ppmv) |
| **Gaseous Fuel-Fired Equipment** | | | |
| Turbine <0.3 MW[2] | All | 9 ppm or 0.011 lb/mmBtu | 1,000 ppmv |
| Other Unit or Process Temperature | <1,200°F | 30 ppmv or 0.036 lb/mmBtu | |
| | ≥1,200°F | 60 ppmv or 0.073 lb/mmBtu | |
| **Liquid Fuel-Fired Equipment** | | | |
| All liquid fuel-fired Units | <1,200°F | 40 ppm or 0.053 lb/mmBtu | 1,000 ppmv |
| | ≥1,200°F | 60 ppmv or 0.073 lb/mmBtu | |

**1.** Emission limit applies to burners in units fueled by 100% 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% 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.

**2.** Emission limit for turbines are corrected to 15% $O_2$, dry basis.

(10) An owner or operator of a Unit shall perform combustion system maintenance pursuant to subdivision (l) and maintain records pursuant to subdivision(j).

(11) Compliance by Certification

For units that do not allow adjustment of the fuel and combustion air for the combustion system by the owner or operator, and upon approval by the Executive Officer at the time of permitting, an owner or operator may demonstrate compliance with the emission limit and demonstration requirement of this subdivision by:

(A) Certification granted to the manufacturer pursuant to subdivision (k) for any model of equipment sold for use in the South Coast AQMD; and

(B) Any unit certified pursuant to subdivision (k) shall be deemed in compliance with the applicable emission limit in Table 1 or Table 2 and

demonstration requirement of this subdivision, unless a South Coast AQMD approved source test shows non-compliance.

(e) Compliance Schedule

(1) An owner or operator of a Unit that is required to meet the NOx and CO concentration limits in Table 2 pursuant to paragraph (d)(2) shall:

(A) Submit a permit application to add a permit condition for each Unit that limits emissions to a level not to exceed the NOx and CO limits in Table 2:

(i) On or before July 1, 2023 for any Unit where the burner age is 12 years or older, as determined pursuant to subdivision (f), as of January 1, 2023; or

(ii) On or before July 1 of the year when a Unit's burner age reaches 12 years, as determined pursuant to subdivision (f), by January 1 of that year; and

(B) Not operate a Unit that exceeds the NOx and CO concentration limits in Table 1 on and after 12 months following issuance of a permit.

(2) An owner or operator of a Unit that meets the requirements of Table 1 required to meet the NOx and CO emission limits in Table 2 pursuant to paragraph (d)(3) shall:

(A) Submit a permit application to add a permit condition for each Unit that limits NOx and CO emissions to a level not to exceed the emission limits in Table 2:

(i) On or before July 1, 2023 for any Unit where the burner age is 32 years or older, as determined pursuant to subdivision (f), as of January 1, 2023; or

(ii) On or before July 1 of the year when a Unit's burner age reaches 32 years, as determined pursuant to subdivision (f), by January 1 of that year; and

(B) Not operate the Unit that exceeds the NOx and CO emission limits in Table 2, on and after 12 months following issuance of a permit.

(3) In lieu of meeting the schedule requirements in paragraphs (e)(1) and (e)(2), an owner or operator of a Unit identified in Table 3 may elect to comply with the

NOx and CO emission limits specified in Table 2 pursuant to the compliance schedule in Table 3.

**Table 3 – Alternative Compliance Schedule**

| Equipment Category(ies) | Permit Application Submittal Deadline | Compliance Deadline |
|---|---|---|
| **Specific Unit** | | |
| Remediation Unit manufactured and installed prior to March 1, 2012 with an active South Coast AQMD permit | Seven months prior to a combustion system modification, combustion system replacement or Unit Replacement or a Relocation. | Upon combustion system modification, combustion system replacement or Unit replacement or relocation |
| Evaporator, heated process tank, or parts washer operating prior to January 1, 2014 with an active South Coast AQMD permit | Seven months prior to combustion system modification, combustion system replacement or unit replacement | Upon combustion system modification, combustion system replacement or Unit replacement |

(4) An owner or operator that elects to Decommission a Unit, in lieu of meeting the concentration limit requirements of Table 2 pursuant to subdivision (h) shall:

(A) Submit a permit application on or before the permit application submittal date pursuant to the implementation schedule in subparagraph (e)(1)(A) or (e)(2)(A) to take a permit condition to Decommission the Unit no later than 30 months after the permit application submittal date; and

(B) Decommission the Unit no later than 30 months after the permit application submittal date by disconnecting all fuel, air, and electricity to the Unit.

(5) Implementation Schedule for Facilities with Five or More Units

An owner or operator of a facility with five or more Units electing to comply with the multiple unit implementation schedule pursuant to Table 4, in lieu of the schedule in clause (e)(1)(A)(i) or (e)(2)(A)(i), provided:

(A) Submit permit applications by the permit application submittal deadline specified in Table 4 to comply with the applicable NOx and CO emission limits in Table 2 or Decommission the unit pursuant to paragraph (d)(4); where;

(i) The total Rated Heat Input Capacity is calculated as the sum of the Rated Heat Input Capacity of all Units at a facility that are subject to paragraph (e)(1) or (e)(2) as of July 1, 2023; and

(ii) The minimum percentages listed in Table 4 is calculated using the Rated Heat Imput Capacity of the Units for which a permit application is submitted divided by the total Rated Heat Input Capacity calculated pursuant to clause (e)(5)(A)(i) rounded up to the nearest whole number.

(B) Demonstrates compliance for each applicable Unit, by a source test pursuant to subdivision (h), with the NOx and CO emission limits in Table 2 no later than 12 months following the issuance of a permit; and

**Table 4 – Multiple Unit Implementation Schedule**

| Application Submission Deadline | 5 to 9 units (Minimum % of Total Heat Input) | 10 to 19 units (Minimum % of Total Heat Input) | 20+ units (Minimum % of Total Heat Input) |
|---|---|---|---|
| July 1, 2023 | 50% | | |
| July 1, 2024 | 100% | 50% | 33% |
| July 1, 2025 | Not Applicable | | |
| July 1, 2026 | | 100% | 67% |
| July 1, 2027 | | Not Applicable | |
| July 1, 2028 | | | 100% |

(f) Burner Age

(1) Burner age for Units equipped with burners of varying ages shall be based on the oldest burner age.

(2) Burner age shall be based on the original date of installation determined by:

(A) Invoice from burner manufacturer for purchase of burner equipment;

(B) Information submitted to the South Coast AQMD with applications for permit prior to [*Date of Adoption*] for the specific burner;

(C) Original Unit manufacturer's identification or rating plate permanently affixed to the Unit; or

(D) Any other method of determining burner age that can be substantiated through sufficient written information as approved by the Executive Officer.

(3) The burner shall be deemed to be 32 years old as of January 1, 2023 for any Unit where the burner age cannot be determined pursuant to paragraph (f)(2).

(g) Demonstration of Less than One Pound of NOx per Day

(1) Effective upon *[six months after Date of Adoption]*, an owner or operator of a Unit demonstrating compliance with NOx emissions of less than one pound per day shall:

(A) Install and maintain in service a non-resettable totalizing time meter on the Unit and operate the Unit no more than the specified time per day in Table 5 or as calculated using Equation 1; or

Daily Operating Minutes = 60 minutes/hour ÷[R x (EF ÷HHV)] (Eq. 1)

Where,

R = Rated Heat Input (MMBtu/hr),

EF = Emission Factor for the Unit (lbs NOx/MMScf natural gas),

HHV = Higher Heating Value of Natural Gas (1,050 MMBtu/MMScf)

| **Table 5 – Less than One Pound per Day Daily Operating LimitsUnit Rated Heat Input (Btu/hr)** | **Daily Operating Limit (minutes)** |
|---|---|
| < 1,000,000 | 480 |
| ≥ 1,000,000 to < 1,500,000 | 300 |
| ≥ 1,500,000 to ≤ 2,000,000 | 240 |

(B) Install and maintain in service a non-resettable totalizing fuel meter on the Unit and consume no more than the Therms of fuel per day calculated using Equation 2.

Daily Therms of Fuel = (1÷EF) x HHV x 10 (Eq. 2)

Where,

EF = Emission Factor for the Unit (lbs NOx/MMScf natural gas)

HHV = Higher Heating Value of Natural Gas (1,050 MMBtu/MMScf)

10 = Conversion from MMBtu to Therms

(h) Monitoring and Source Testing

(1) All compliance determinations pursuant to paragraph (d)(1), (d)(2), (d)(3), or (d)(4) shall be calculated:

(A) Using a South Coast AQMD approved test protocol averaged over a period of at least 15 minutes of combustion system operation and no more than 60 consecutive minutes;

(B) After unit start up; and

(C) In the unit's firing rate under normal operating conditions.

(2) For each unit, a compliance determination shall be made in the maximum heat input range at which the unit normally operates.

(3) An additional compliance determination shall be made for any of the following types of units: Make-Up Air Heater, other Air Heater located outside of process building, Oven, Dehydrator, Dryer, Tenter-Frame Dryer, Fabric Dryer, Carpet Dryer, Heater, Cooker, Roaster, non-metallurgical Furnace, or Heated Storage Tank. The additional compliance determination for the specified units in this paragraph shall be made:

(A) Using a heat input of less than 35% of the rated heat input capacity; or

(B) For at least 30 consecutive minutes after unit start up using the lowest operating temperature that may be used during normal operation of the unit.

(4) For compliance determinations after the initial approved test, the operator is not required to resubmit a protocol for approval if: there is a previously approved protocol and the unit has not been altered in a manner that requires a permit

alteration; and rule or permit emission limits have not become more stringent since the previous test.

(5) Compliance with the $NO_X$ emission limits of subdivision (d) and determination of stack-gas oxygen and carbon dioxide concentrations for this rule shall be determined according to the following procedures:

(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 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 alternative test method determined approved before the test in writing by the Executive Officers of the South Coast AQMD, the California Air Resources Board and the United States Environmental Protection Agency.

(6) For any operator who chooses to comply using pound per million Btu, $NO_X$ emissions in pounds per million Btu of heat input shall be calculated using procedures in 40 CFR Part 60, Appendix A, Method 19, Sections 2 and 3.

(7) Records of source tests shall be maintained for five years and made available to South Coast AQMD personnel upon request. Emissions determined to exceed any limits established by this rule through the use of any of the test methods specified in subparagraphs (h)(5)(A) through (h)(5)(C) shall constitute a violation of this rule.

(8) All compliance determinations shall be made using an independent contractor to conduct testing, which is approved by the Executive Officer under the Laboratory Approval Program for the applicable test methods.

(9) For equipment with two or more units in series or multiple units with a common exhaust, the owner or operator may demonstrate compliance with the emission limits in Table 1 and Table 2 by one of the following:

(A) Test each unit separately and demonstrate each unit's compliance with the applicable limit, or

(B) Test only after the last unit in the series and at the end of a common exhaust for multiple units, when all units are operating, and demonstrate that the series of units either meet:

(i) The lowest emission limit applicable to any of the units in series, or

(ii) A heat input weighted average of all the applicable emission limits using the following calculation.

$$\textbf{Weighted Limit} = \frac{\Sigma\,[\,(EL_X)*(Q_X)\,]}{\Sigma\,[\,Q_X\,]}$$

**Where:**

$EL_X$ = emission limit for unit X

$Q_X$ = total heat input for unit X during test

(10) An owner or operator of any unit with a Unit heat rating of 2 million Btu per hour or less may elect to demonstrate compliance with the applicable emission limit through a burner manufacturer's emission certification in lieu of a compliance demonstration pursuant to subparagraphs (e)(1), (e)(2) or subdivision (k) of this rule provided the following information is provided when a permit application is submitted for a unit:

(A) The manufacturer or manufacturer authorized distributor of the burner(s) submits emission certifications that are signed by the burner manufacturer's responsible official pursuant to paragraph (c)(28) that guarantees the burner(s), fuel and combustion air system, and combustion control system identified in the application for the South Coast AQMD Permit that complies with the applicable NOx emission limit in Table 1 or Table 2 when used for specified processes, operating conditions, and within specified temperature ranges.

(B) The signed emissions certifications pursuant to paragraph (h)(10)(A) shall be submitted separately, and addressed to the:

(i) Owner or operator of the unit; and

(ii) Executive Officer or designee.

(C) The burner manufacturer, manufacturer authorized distributor submits to the Executive Officer or designee, supporting documentation including

emission test reports of at least five South Coast AQMD approved emission tests using South Coast AQMD approved test protocol and methods of five different units operating the same:

(i) Process;

(ii) Burner;

(iii) Fuel and combustion air system;

(iv) Combustion control system; and

(v) Temperature range.

(D) The emission test results specified in subparagraph (h)(10)(C) shall be approved by the South Coast AQMD prior to submittal of an application for permit

(E) A contract or purchase order, signed by the responsible official of the unit's owner or operator pursuant to paragraph (c)(28), for purchase of the burner(s), fuel and combustion air system, and combustion control system to be installed in the unit as identified in the permit application and the signed letter or bid from the burner manufacturer to the owner or operator of the unit as specified in subparagraph (h)(10)(A) of this rule.

(F) The owner or operator of any unit where the requirements specified in subparagraphs (h)(10)(A) through (h)(10)(E) are not met or submits any manufacturer's emission certification, contract, or purchase order that is not identical to the combustion system specified in the application for the unit's permit and installed in the unit, shall demonstrate unit compliance:

(i) With the applicable emission limit in Table 1 or Table 2 through emission testing pursuant to the requirements of subdivision (e);

(ii) Through emission testing within 12 months following issuance of a permit; and

(iii) For the life of the unit.

(G) The owner or operator of any unit that fails to operate the unit as specified in the manufacturer's emission certification in subparagraphs (h)(10)(A) through (h)(10)(E), including specified processes, operating conditions, and temperatures, shall demonstrate compliance with the applicable emission limit in Table 1 or Table 2 through emission testing pursuant to the requirements of paragraphs (h)(1) through (h)(9).

(11) An owner or operator of a Unit subject to this rule with emissions of greater than or equal to one pound of NOx per day as determined by subdivision (g) shall conduct source tests pursuant to paragraphs (h)(1) through (h)(9), to demonstrate compliance with the applicable NOx and CO emission limit requirements in Table 1 or Table 2:

(A) For a Unit with a rated heat input capacity lower than 10 million Btu per hour, conduct source testing every 5 calendar years, but no earlier than 48 calendar months after the previous source test;

(B) For a Unit with a rated heat input capacity greater than or equal to 10 million Btu per hour and less than 40 million BTU per hour, conduct source testing every 3 calendar years, but no earlier than 24 calendar months after the previous source test; or

(C) For a Unit with a rated heat input capacity greater than or equal to 40 million BTU per hour:.

(i) Conduct source testing every calendar year, but no earlier than 6 calendar months after the previous source test; or

(ii) If the Unit has not operated for at least 6 consecutive calendar months, conduct a source test no later than 90 days after the date of resumed operation and maintain monthly fuel usage using a non-resettable fuel meter to demonstrate that the Unit has not been operated for at least 6 consecutive calendar months.

(12) An owner or operator of an In-Use Unit shall:

(A) Conduct an initial source test no later than 24 months after [Date of Adoption] and establish the date of this source test as the basis for subsequent source testing frequency; or

(B) Use the results of a South Coast AQMD-approved source test conducted between the applicable frequency required in paragraph (h)(11) and *[Date of Adoption]* and establish the date of this source test as the basis for subsequent source testing frequency.

(13) Provided the emissions test set forth in this paragraph is conducted within the same schedule as the compliance determination required in paragraph (h)(11), an owner or operator of a unit may use the following emissions test to comply with paragraph (h)(11):

(A) Periodic monitoring or testing of a unit as required in a Title V permit pursuant to Regulation XXX, or

(B) Relative accuracy testing for continuous emissions monitoring verification pursuant to Rule 218.2 and Rule 218.3.

(14) An owner or operator of an existing continuous in-stack emissions monitor or equivalent verification system located at a non-RECLAIM or former RECLAIM facility prior to *[Date of Adoption]* shall:

(A) Retain the system and comply with the requirements specified in Rules 218.2 and 218.3.

(B) Use a rolling averaging time of 24-hour corrected to 3% oxygen, dry, to demonstrate compliance with the NOx emission limits specified in paragraph (d)(2) or (d)(3).

(15) An owner or operator of a Unit subject to this rule complying with Table 1 or Table 2 using pounds per million BTU, shall:

(A) Install and maintain in service non-resettable, totalizing, fuel meters for each unit's fuel(s) prior to the compliance determination specified in subdivision (d); and

(B) Owners or operators of a unit with a combustion system that operates at only one firing rate that comply with an emission limit using pounds per million BTU shall install a non-resettable, totalizing, time or fuel meter for each fuel.

(16) An owner or operator of a Unit required to install a meter pursuant to paragraph (h)(15) shall:

(A) Provide a permanent supply of electric power that cannot be unplugged, switched off, or reset except by the main power supply circuit for the building and associated equipment or the unit's safety shut-off switch; and

(B) Maintain electric power to a unit meter unless the unit is not operating and is shutdown for maintenance or safety.

(i) Labeling Requirements

(1) An owner or operator of a Unit shall display the model number and Rated Heat Input of the Unit burner on a permanent rating plate.

(2) The owner or operator of a Unit that is altered shall:

(A) Display the new Rated Heat Input on a new permanent supplemental rating plate installed in an accessible location on the Unit or burner; and

(B) Determine the date of Unit Alteration pursuant to the burner age determination requirements of subdivision (f).

(j) Reporting, and Recordkeeping

(1) An owner or operator shall maintain on-site, for at least 5 years and make available to the Executive Officer upon request, source test reports and, if applicable, daily records demonstrating compliance with the 1 pound NOx per day demonstration requirements of subdivision (g).

(2) An owner or operator of a Unit shall maintain records on-site identifying the Rated Heat Input for any Unit subject to this rule and make such records available to the Executive Officer upon request.

(3) An owner or operator of a Unit that is modified and subject to this rule shall maintain records on-site to include the name of the company and person modifying the Unit, a description of all modifications, the date(s) the Unit was modified, and a calculation of the Rated Heat Input and make such records available to the Executive Officer upon request.

(4) An owner or operator of a Unit equipped with a CEMS shall maintain records on-site in compliance with any applicable South Coast AQMD Rule for CEMS certification, operation, monitoring, reporting, and notification or any applicable permit condition, for at least 5 years and make records available to the Executive Officer upon request.

(5) RECLAIM facilities must continue to comply with reporting requirements pursuant to Regulation XX until such time that the facility becomes a Former RECLAIM facility.

(6) An owner or operator of a Unit shall maintain on-site, for at least 5 years and make available to the Executive Officer upon request, a copy of the manufacturer's, distributor's, installer's or maintenance company's written maintenance schedule and instructions.

(k) Certification

(1) Unit Certification

For Units that do not allow adjustment of the fuel and combustion air for the combustion system by the owner or operator, any manufacturer or distributor

that distributes for sale or sells units or burner systems for use in the South Coast AQMD may elect to certify such units or burner systems as compliant with subdivision (d) by submitting the following to the Executive Officer:

(A) A statement that the model is in compliance with subdivision (d). The statement shall be signed and dated by the manufacturer's responsible official and shall attest to the accuracy of all statements;

(B) General Information

(i) Name and address of manufacturer,

(ii) Brand name, if applicable,

(iii) Model number, as it appears on the unit rating plate; and

(iv) Rated Heat Input Capacity, gross output of burner(s) and number of burners;

(C) A description of each model being certified; and

(D) A South Coast AQMD approved source test report pursuant to subdivision (h) conducted within 90 days of certification submittal and within 120 days of proposed sale or installation, whichever is sooner.

(2) The Executive Officer shall certify a unit model which complies with the provisions of subdivision (d) and paragraph (k)(1),.

(3) Certification status shall be valid for five years from the date of approval by the Executive Officer.

(l) Maintenance

(1) An owner or operator of a Unit subject to subdivision (d) shall perform combustion system maintenance in accordance with the manufacturer's schedule and specifications as identified in the manual and other written materials supplied by the manufacturer or distributor.

(m) Exemptions

(1) The provisions of this rule shall not apply to Units:

(A) subject to other South Coast AQMD Regulation XI rules; or

(B) with heat input ratings below 325,000 Btu per hour.

(2) The provisions of this rule shall not apply to charbroilers or food ovens.

(3) The provisions of this rule shall not apply to:

(A) Flares subject to South Coast AQMD Rule 1118;

(B) Flares, afterburners, degassing units, thermal or catalytic oxidizers or vapor incinerators in which a fuel, including but not limited to natural gas, propane, butane or liquefied petroleum gas, is used only to maintain a pilot for vapor ignition or is used for five minutes or less to bring a unit up to operating temperature;

(C) Municipal solid waste incinerators with a South Coast AQMD permit operating before December 5, 2008;

(D) An afterburner or vapor incinerator with a South Coast AQMD permit operating before December 5, 2008 that has an integrated thermal fluid heat exchanger that captures heat from the afterburner or vapor incinerator and an oven or furnace exhaust in order to reduce fuel consumption by an oven or the afterburner or vapor incinerator; or

(E) A flare, afterburner, degassing unit, remediation unit, thermal oxidizer, catalytic oxidizer or vapor incinerator process in which particulate matter, air toxics, VOCs, landfill gas, digester gas or other combustible vapors are mixed in the unit's burner with combustion air or fuel, including but not limited to:

(i) Natural Gas;

(ii) Propane;

(iii) Butane; and

(iv) Liquified petroleum gas.

(F) For the Units specified in subparagraph (m)(3)(E), the exemption shall apply to the combustion process prior to or at incineration in the unit, in order to maintain vapor concentration above the upper explosion limit or above a manufacturer specified limit in order to maintain combustion or temperature in the unit.

(G) The exemption specified in subparagraph (m)(3)(E) shall not apply to a regenerative thermal or catalytic oxidizer unit with a burner used to heat up or maintain temperature of the unit or a unit that incinerates particulate matter, air toxics, VOCs or other combustible vapors in a gas stream moving past the burner flame.

(4) Remediation units installed after December 5, 2008 and before March 1, 2012, are exempt from the emission limit in Table 1 and Table 2 until replacement with a new unit, a combustion system modification, combustion system replacement, or relocation on or after January 1, 2012.

(5) Fryers installed and operating before January 1, 2014 and with emissions less than one pound per day, are exempt from the emission limit in Table 2 until the unit is 35 years old, a combustion system modification, combustion system replacement, relocation, or the unit is replaced. Fryers installed after December 5, 2008 and operating before January 1, 2014 and with emissions of one pound per day or more, are exempt from the emission limit in Table 1 and Table 2 until July 1 of the year the unit is 15 years old.

(6) Remediation units are exempt from the applicable emission limit in Table 1 and Table 2 while fueled with propane, butane or liquefied petroleum gas in a location where natural gas is not available. Remediation units must comply with the emission limit when natural gas is available and while fueled with natural gas.

(7) The provisions of subdivision (d) shall not apply to any evaporator, heated process tank, or parts washer with a South Coast AQMD permit issued and operating prior to January 1, 2014 until a combustion system modification, combustion system replacement, relocation, or the unit is replaced.

(8) The provisions of subdivision (d) shall not apply to units heated solely with infrared burners.

(9) On and after December 5, 2008, the provisions of subdivision (d) shall not apply to any unit that becomes subject to this rule subsequent to a revision of District Rule 219, on or after May 5, 2017, until the unit is replaced. a combustion system modification, combustion system replacement, unit relocation, the applicable compliance date in Table 3.

(10) The requirement to demonstrate compliance with an emission limit in Table 1 and Table 2 shall not apply to any in-use unit with NOx emissions less than one pound per day NOx at the time the unit is:

(A) Relocated to the new facility location; and

(B) The facility and unit is owned and operated by the same company and owner(s) for 36 calendar months prior to and 36 calendar months after the unit relocation.

(11) Emission requirements of Table 1 and Table 2 shall not apply to owners or operators of Tunnel Kilns subject to paragraph (h)(14) during periods of startup or shutdown provided that:

(A) Startup or shutdown period does not exceed 180 minutes;

(B) Frequency of startup and shutdown events does not exceed four times during one calendar month; and

(C) Records of startup or shutdown period shall be maintained and kept on site for five years and contain the following information:

(i) Unit permit or application number;

(ii) Date startup or shutdown event occurred; and

(iii) Cause for startup or shutdown.