(Adopted December 1, 1978)(Amended March 10, 1995)(Amended December 10, 1999) (Amended September 3, 2004)(Amended [Date of Rule Adoption])

PROPOSED AMENDED RULE 1121. CONTR

CONTROL OF NITROGEN OXIDES

REDUCTION OF NO_X EMISSIONS FROM

RESIDENTIAL TYPE, NATURAL GAS
FIRED WATER HEATERS

[RULE INDEX TO BE ADDED AFTER RULE ADOPTION]

(a) <u>Purpose</u>

The purpose of this rule is to reduce Oxides of Nitrogen (NOx) emissions from Water Heaters as defined in this rule.

(ab) Applicability

This The provisions of this rule applies are applicable to manufacturers, distributors, retailers, Resellers, and installers Installers of natural gas-fired water heaters Water Heaters, with heat input a Rated Heat Input Capacity rates less than 75,000 British thermal units (Btu) per hour.

(bc) Definitions

For the purpose of this rule:

- (1) BTU means British thermal unit or units.
- (2) DIRECT-VENT WATER HEATER means a water heater with air intake and exhaust ducts that use a gravity system to collect air from outside a building for combustion and exhaust combustion byproducts to the outside of a building.
- (1) EXISTING BUILDING means a building that is not a New Building as defined in this rule.
- (32) HEAT INPUT means the heat of combustion released by fuels burned in a unit based on the higher heating value of fuel. the chemical heat released due to assumed complete combustion of fuel to a Water Heater, using the higher heating value of the fuel. This does not include the enthalpy sensible heat of incoming combustion air.
- (43) HEAT OUTPUT means the product H_o as defined in Section 9.3 of the Protocol.the enthalpy of the working fluid output of the Water Heater.
- (54) INDEPENDENT TESTING LABORATORY means a testing laboratory that meets the requirements of District the South Coast AQMD Rule 304 Equipment,

- <u>Materials</u>, and <u>Ambient Air Analyses</u>, <u>subdivision (k)</u> and is approved by the <u>District-South Coast AQMD</u> to conduct certification testing under the Protocol.
- (6) MITIGATION FEE is an emission reduction option, in which monies collected by the District from water heater manufacturers are placed in a restricted fund and are used to fund stationary and mobile source emission reduction programs targeted at equivalent NOx emission reductions as to those that would have otherwise occurred and have been approved by the District's Governing Board.
- (5) INSTALL means the action of an Installer to place a Water Heater in a position ready for use.
- (6) INSTALLER means a person who Installs a Water Heater -and is required to obtain a license issued by the Department of Consumer Affairs Contractors State License Board for a classification related to buildings and appliances.
- (87) MOBILE HOME means a structure, transportable in one or more sections, that is built on a permanent chassis and designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities.
- (78) MOBILE HOME WATER HEATER means a <u>Water Heater closed vessel</u> manufactured exclusively for <u>mobile home Mobile Home</u> use in <u>which water is heated by combustion of gaseous fuel and is withdrawn for use external to the vessel at pressures not exceeding 160 psig, including the apparatus by which heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210°F (99°C).</u>
- (9) NEW BUILDING means a building that is newly constructed-, or a building with a major alteration which changes the occupancy classification of a building, which means a change in the formal designation of the primary purpose of the building pursuant to 2022 Title 24 California Building Code Part 2 Chapter 3 for occupancy classification and use. For Mobile Homes, the newly constructed building includes installation of the Mobile Home onto the property of residence.
- (<u>810</u>) NOx EMISSIONS means the sum of nitric oxide and nitrogen dioxide in the flue gas, emitted, calculated, and collectively expressed as nitrogen dioxide.
- (11) PARTS PER MILLION BY VOLUME (ppmv) means, for the purpose of this rule,

 Parts Per Million by Volume of a pollutant at a three percent oxygen correction on
 a dry basis at Standard Conditions.
- (9) POWER-VENT WATER HEATER means a water heater with a blower installed to assist in the expulsion of exhaust gases.

- (10) POWER DIRECT VENT WATER HEATER means a water heater with an air intake duct outside of a building with a blower installed to assist in the expulsion of exhaust gases.
- (1112) PROTOCOL means the most recent version of the South Coast Air Quality

 Management District AQMD Protocol to ensure standardization of compliance

 certification test procedures, titled: Nitrogen Oxides Emissions Compliance

 Testing for Natural Gas-Fired Water Heaters and Small Boilers, January 1998.
- (1213) RATED HEAT INPUT CAPACITY means the heat input capacity 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 from the heat input capacity specified on the nameplate, the new maximum heat input shall be considered as the rated heat input capacity the gross Heat Input of the combustion device, as supported by required documentation.
- (1314) RECREATIONAL VEHICLE means either a motor home, travel trailer, truck camper, or camping trailer, with or without motive power, designed for human habitation for recreational, emergency, or other occupancy, as defined pursuant to Section 18010 of the California Health and Safety Code any vehicle used for recreational purposes designed to include a Water Heater and licensed to be driven or moved on the highways of California.
- (15) RESELLER means anyone who sells Water Heater(s) either retail, wholesale, or on an individual basis.
- (16) 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.
- (17) STANDARD CONDITIONS are as defined by Rule 102 Definition of Terms.
- (1418) WATER HEATER means a closed vessel other than a mobile home water heater in which water is heated by combustion of gaseous fuel and is withdrawn for use that is fired with, or designed to be fired with, natural gas external to the vessel—at pressures not exceeding 160 psig, including the apparatus by which heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210°F (99°C).

(19) ZERO-NOx EMISSION UNITS means an appliance that provides water heating with heating capacity equivalent to Water Heaters subjected to this rule and emits no more than zero nanograms of NOx per joule of Heat Output (ng/J).

(ed) Requirements

- (1) Until July 1, 2002, no person shall manufacture for sale, distribute, sell, offer for sale, or install within the South Coast Air Quality Management District any gas-fired water heaters unless the water heater is certified pursuant to subdivision (d) to a NOx emission level of less than or equal to:
 - (A) 40 nanograms of NOx (calculated as NO₂) per joule of heat output (93 lb per billion Btu of heat output); or
 - (B) 55 ppmv at 3% O2, dry (71 lb per billion Btu of heat input).
- (2) On or after July 1, 2002, no person shall manufacture for sale, distribute, sell, offer for sale, or install within the South Coast Air Quality Management District any gasfired water heaters unless the water heater is certified pursuant to subdivision (d) to a NOx emission level of less than or equal to:
 - (A) 20 nanograms of NOx (calculated as NO2) per joule of heat output (46.5 lb per billion Btu of heat output); or
 - (B) 30 ppmv at 3% O2, dry (35 lb per billion Btu of heat input); or
 - (C) the emission limit specified in subparagraph (c)(1)(A) or (c)(1)(B) provided the manufacturer of the water heater meets the requirements of subdivision (e).
- On or after January 1, 2006, for water heaters less than or equal to 50 gallon capacity, excluding direct-vent, power-vent and power direct-vent water heaters; on or after January 1, 2007 for water heaters greater than 50 gallon capacity, excluding direct-vent, power-vent and power direct-vent water heaters; and on and after January 1, 2008 for all direct-vent, power-vent, and power direct-vent water heaters; no person shall manufacture for sale, distribute, sell, offer for sale, or install within the South Coast Air Quality Management District any gas-fired water heaters unless the water heater is certified pursuant to subdivision (d) to a NOx emission level of less than or equal to:
 - (A) 10 nanograms of NOx (calculated as NO₂) per joule of heat output (23 lb per billion Btu of heat output); or
 - (B) 15 ppmv at 3% O2, dry (17.5 lb per billion Btu of heat input).
- (4) On and after January 1, 2000, no person shall manufacture for sale, distribute, sell, offer for sale, or install within the South Coast Air Quality Management District

- any gas fired mobile home water heaters unless the water heater is certified pursuant to subdivision (d) to a NOx emission level of less than or equal to:
- (A) 40 nanograms of NOx (calculated as NO2) per joule of heat output (93 lb per billion Btu of heat output); or
- (B) 55 ppmv at 3% O2, dry (71 lb per billion Btu of heat input).
- (5) The manufacturer of any water heater manufactured for sale in the district shall elearly display on the shipping carton and the name plate of the water heater:
 - (A) the model number;
 - (B) the date of manufacture; and
 - (C) the certification status.
- (6) Notwithstanding the requirements in paragraph (c)(3), until July 1, 2006, any person may distribute, sell, offer for sale, or install any gas-fired water heaters less than or equal to 50 gallon capacity that are manufactured prior to January 1, 2006 and in compliance with paragraph (c)(2).
- (7) Notwithstanding the requirements in paragraph (c)(3), until July 1, 2007, any person may distribute, sell, offer for sale, or install gas-fired water heaters greater than 50 gallon capacity that are manufactured prior to January 1, 2007 and in compliance with paragraphs (c)(2).
- (8) Notwithstanding the requirements in paragraph (c)(3), until July 1, 2008, any person may distribute, sell, offer for sale, or install gas-fired direct-vent, power-vent, or power direct-vent water heaters that are manufactured prior to January 1, 2008 and in compliance with paragraphs (c)(2).
- (1) No person shall manufacture, supply, sell, resell, offer for sale, import, or Install, for use in the South Coast AQMD, any following Water Heater, unless the Water Heater is certified pursuant to subdivision (e) and does not exceed the applicable Table 1 NOx limit, expressed by nanograms of NOx per joule of Heat Output (ng/J) or ppmv:
 - (A) Any Water Heater prior to the applicable Table 2 compliance date, except for Mobile Home Water Heaters for Existing Buildings; and
 - (B) Any Mobile Home Water Heater for Existing Buildings.

<u>Table 1 − NOx Emission Limits</u>

Equipment	NOx Emission Limits		
<u>Equipment</u>	<u>ng/J</u>	<u>ppmv</u>	
Water Heater ¹	<u>10</u>	<u>15</u>	
Mobile Home Water Heater	<u>40</u>	<u>55</u>	

¹ Excluding Mobile Home Water Heater

On and after the applicable Table 2 compliance dates, no person shall manufacture, supply, sell, resell, offer for sale, import, or Install a Water Heater for use in the South Coast AQMD that exceeds the Table 2 NOx emission limits. The applicable Table 2 compliance dates for New Building types shall be determined based on the construction or alteration completion date.

Table 2 – Zero-Emission Limits and Compliance Schedule

Equipment Category	NOx limit (ng/J)	Building Type	Compliance Date
Water Heater ¹	<u>0</u>	<u>New</u>	<u>January 1, 2027</u>
	<u>0</u>	<u>Existing</u>	<u>January 1, 2029</u>
Mobile Home Water Heater	<u>0</u>	New	January 1, 2027

¹ Excluding Mobile Home Water Heater

(de) Certification

- (1) The manufacturer shall obtain confirmation that each model of water heater Water Heater complies with the applicable requirements of subdivision (e) paragraph (d)(1) from an independent testing laboratory Independent Testing Laboratory prior to applying for certification for a Water Heater. This confirmation shall be based upon emission tests conducted pursuant to the Protocol of a randomly selected unit of each model and the Protocol shall be adhered to during the confirmation testing of all water heaters subject to this rule.
- (2) When applying for certification of water heaters Water Heaters, the manufacturer shall submit to the Executive Officer the following:
 - (A) A statement that the model is in compliance with subdivision (e) paragraph (d)(1), . The statement shall be signed and dated by the manufacturer and dated, and shall attesting to the accuracy of all statements;
 - (B) General Information, including:

- (i) Name and address of manufacturer.
- (ii) Brand name, trade name; and
- (iii) Model number, as it appears on the water heater Water Heater rating plate;
- (C) A description of each model being certified; and
- (D) A source test report verifying compliance with subdivision (e) paragraph (d)(1) for each model to be certified. The source test report shall be prepared by the confirming independent testing laboratory Independent Testing Laboratory and shall containing all of the elements identified in Section 10 of the Protocol for each unit tested. The source test shall have been conducted no more than ninety days prior to the date of submittal to the Executive Officer.
- (3) When applying for certification of water heaters Water Heaters, the manufacturer shall submit the items identified in paragraph (d)(2)(e)(2) no more than ninety 180 days after the date of the source test identified in subparagraph (d)(2)(D)(e)(2)(D).
- (4) When applying for certification of water heaters for compliance with the emission limit specified in paragraph (c)(2) or (c)(3), the manufacturer shall submit the information identified in paragraph (d)(2) at least 90 days prior to the effective compliance date specified in either paragraph (c)(2) or (c)(3), respectively.
- (5) The Executive Officer shall certify a water heater model which complies with the provisions of subdivision (c) and of paragraphs (d)(1), (d)(2), and (d)(3).
- (6) Certification status shall be valid for three years from the date of approval by the Executive Officer. After the third year, recertification shall be required according to the requirements of paragraphs (d)(1) and (d)(2).

(f) Alternative Compliance Options

- (1) Zero-Emission Manufacturer (ZEM) Alternative Compliance Option

 Any manufacturer of Water Heaters subject to this rule may elect to comply with the ZEM Alternative Compliance Option in lieu of complying with paragraph (d)(2) provided:
 - (A) The manufacturer submits an alternative compliance plan, no later than November 1, 2026, that includes:
 - (i) A letter with the name of the manufacturer requesting the ZEM alternative compliance option signed by a Responsible Official;
 - (ii) A complete South Coast AQMD Form 400A with company name, indicating the application is for a compliance plan (section 7 of

- form), indicating the request is for the "Rule 1121 ZEM alternative compliance option" (section 9 of form), and signature of the Responsible Official; and
- (iii) Payment for the alternate compliance plan filing fee pursuant to Rule 306– Plan Fees; and
- (B) The manufacturer sells, or enables distributors, retailers, Resellers, or Installers to sell, Zero-NOx Emission Units into or within the South Coast AQMD at a percentage greater than or equal to the sales target specified in Table 3;
- (C) The Water Heaters sold under this alternative compliance option are certified to emit 10 ng/J (or 15 ppmv) or less of NOx:
- (D) The manufacturer pays \$50 mitigation fee for each Water Heater sold; and
- (E) The manufacturer submits a report and mitigation fee payment pursuant to paragraph (f)(1) no later than 90 days after the end of each calendar year utilizing this alternative compliance option.

<u>Table 3 – ZEM Alternative Compliance Option Targets and Mitigation Fee Schedule</u>

Compliance phase	Phase 1	Phase 2	Phase 3	Phase 4
Calendar Years	<u>2027 - 2028</u>	<u>2029 - 2032</u>	<u>2033-2035</u>	2036 and after
Zero-NOx Emission Unit Sales Target ¹	30 percent	50 percent	75 percent	90 percent
Water Heater Sales Target	70 percent	50 percent	25 percent	10 percent
Mitigation Fee for Water Heaters Sold Over Target (\$ per Water Heater)	<u>\$500</u>	<u>\$600</u>	<u>\$700</u>	<u>\$800</u>

- Sales target represents the percent of Zero-NOx Emission Units a manufacturer sells in a calendar year into or within the South Coast AQMD compared to the total number of Water Heaters and Zero-NOx Emission Units sales in a calendar year into or within the South Coast AQMD.
 - (2) ZEM Alternative Compliance Option Sales Target Deviation

 Any manufacturer of Water Heaters subject to this rule that elects to comply with

 the ZEM Alternative Compliance Option pursuant to paragraph (f)(1) that deviates

 from the applicable Sales Target in Table 3 shall:
 - (A) If the annual percentage of Water Heaters sold is greater than the applicable calendar year Water Heater Sales Target specified in Table 3, pay the

- mitigation fee specified in Table 3 for each Water Heater sold above the sales target; or
- (B) If the annual percentage of Zero-NOx Emission Units sold is greater than the applicable calendar year Zero-NOx Emission Unit Sales Target specified in Table 3, apply a discount to their annual mitigation fee required pursuant to subparagraph (f)(1)(D) according to the following equation:

Discounted Mitigation Fee =
$$F - F \times \frac{(P - T)}{(100 - T)}$$

Where:

F = Annual Mitigation Fee

P = Reported Percent Zero-NOx Emission Units

T = Sales Target

- (g) Labeling, Recordkeeping, and Reporting
 - (1) Labeling Requirements for Mobile Home Water Heaters
 - (A) For any Mobile Home Water Heater certified to meet the applicable Table

 1 NOx emission limit that is for distribution or sale inside of the South Coast

 AQMD, a manufacturer shall distribute or publish Informative Materials
 that clearly display the following language: "If installed in South Coast

 AQMD only: This water heater is only allowed to be installed and used for
 mobile homes before January 1, 2027; and is only allowed to be installed
 and used for existing mobile homes on and after January 1, 2027."
 - (B) For the purposes of subparagraph (g)(1)(A), "Informative Materials" shall mean the following:
 - (i) The consumer brochure for the Water Heater;
 - (ii) The technical specification sheet for the Water Heater; and
 - (iii) The manufacturer's website that promotes, discusses, or lists the Water Heater.
 - (C) A manufacturer may use alternative language in lieu of subparagraph (g)(1)(A), provided the alternative language is:
 - (i) Similar to the language in subparagraph (g)(1)(A); and
 - (ii) Submitted to the Executive Officer no later than 90 days after [Date of Rule Adoption].
 - (D) The manufacturer shall use the language in subparagraph (g)(1)(A) if the alternative language is not approved.

- (2) Reporting, and Recordkeeping Requirements for ZEM Alternative Compliance
 Option
 - The manufacturer of a Water Heater supplied or offered for use within the South Coast AQMD in accordance with the ZEM alternative compliance option in paragraph (f)(1) shall:
 - (A) Submit to the Executive Officer a report, signed by the Responsible Official for the manufacturer pursuant to the schedule in paragraph (f)(1)(E), that includes:
 - (i) Each model number and the quantity of Zero-NOx Emission Units distributed or sold into or within South Coast AQMD for the applicable calendar year; and
 - (ii) Each model number and the quantity of Water Heaters distributed or sold into or within South Coast AQMD for the applicable calendar year;
 - (B) Maintain records for at least five years, including the following information and any other information for compliance demonstration, and make them available to the Executive Officer upon request:
 - (i) Model number and serial number of each Zero-NOx Emission Unit;
 - (ii) Model number and serial number of each Water Heater;
 - (iii) Date and number of Water Heater and Zero-Emission Units sold to a distributor; and
 - (iv) The distributor's name, address, and phone number.
- (3) New and Existing Building Labeling Requirements
 - For any Water Heater, except Mobile Home Water heater, that is supplied or offered for sale for use in the South Coast AQMD and that is not electing to comply by paragraph (f)(1) for ZEM alternative compliance option during the period of January 1, 2026 to January 1, 2029, the manufacturer of the Water Heater shall prominently display on the shipping container, or the name plate of the Water Heater, the following:
 - (A) The statement "If Installed in South Coast AQMD: 1) After January 1, 2026, shall not be sold for installation in new buildings; and 2) After January 1, 2029, not compliant for use and installation in South Coast AQMD.";
 - (B) A manufacturer may use alternative language in lieu of subparagraph (g)(3)(A) provided the alternative language is:
 - (i) Similar to the language in subparagraph (g)(3)(A); and
 - (ii) Submitted to the Executive Officer on or before October 1, 2025.

- (C) The manufacturer shall use the language in subparagraph (g)(3)(A) if the alternative language is not approved.
- (4) The manufacturer of any Water Heater manufactured for sale in the South Coast AQMD shall clearly display on the shipping carton and the name plate of the water heater:
 - (A) Model number;
 - (B) Date of manufacture; and
 - (C) Certification status.
- (e) Mitigation Fee

Any manufacturer that elects to submit a mitigation fee to the District to meet the Nox emission level established under subparagraph (c)(2)(C) shall:

- (1) submit a Mitigation Fee Plan to the Executive Officer 180 days prior to complying with the provisions of paragraph (c)(2), where the Mitigation Fee Plan includes:
 - (A) the name of the manufacturer;
 - (B) the compliance period that the mitigation fee covers shall not exceed a 12-month time period; and
 - (C) the number of water heaters sold over the compliance period, which shall be based on sales records or invoices of water heaters in a similar model and size that were sold in the district over the past 12 months.
- (2) receive written verification from the Executive Officer that the Mitigation Fee Plan was approved prior to complying with the provisions of paragraph (c)(2);
- on and after January 1, 2005, pay a mitigation fee at the beginning of the compliance period in the amount of \$3.00 per water heater sold as specified in subparagraph (e)(1)(C), over the time period the mitigation fee covers as specified in subparagraph (e)(1)(B); and before January 1, 2005, pay a mitigation fee in the amount of \$5,400 per ton of NOx multiplied by the amount of NOx emission reductions needed as specified in Equation 1;

Equation 1:

$$MF = \$5,400/ton \times [(t \times n \times 190therms/yr \times (93 - 46.5lbs/billionBtu - output) \times 0.76)/(2000 \times 10,000)]$$

where:

MF = Mitigation fee, Dollars

t = Time period that mitigation fee covers as specified in subparagraph (f)(1)(C)

n = Number of water heaters sold as specified in subparagraph (f)(1)(D)

- (4) label water heaters identified in the Mitigation Fee Plan;
- (5) maintain records and report sales of water heaters covered by the Mitigation Fee Plan and if the number of water heaters originally estimated exceed the number of water heaters identified in subparagraph (e)(1)(C), the water heater manufacturer shall update the Mitigation Fee Plan within 60 days after the end of the compliance period. Make these records available to the Executive Officer upon request, for a period of at least three years after the end of the compliance period.

(f) Enforcement

The Executive Officer may periodically inspect distributors, retailers, and installers of water heaters located in the District and conduct such tests as are deemed necessary to insure compliance with subdivision (c).

(gh) Exemptions

- (1) The provisions of this rule shall not apply to: Water Heaters used in Recreational Vehicles.
- (2) The provisions of this rule shall not apply to Water Heaters subject to Rule 1146.2
 Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters.
- (3) Paragraph (d)(2) shall not apply to the following Water Heaters:
 - (A) Mobile Home Water Heaters for installation in Existing Buildings;
 - (B) Mobile Home Water Heaters for installation or use in master-metered Mobile Home parks, which are Mobile Home parks that take electricity through a master meter and then distribute it to park residents through their own system; and
 - (C) Water Heaters that will be installed or used in New Buildings with building permits issued prior to [Date of Adoption] by the appropriate enforcement agency.
- (1) Water heaters with a rated heat input capacity of 75,000 Btu per hour or greater.
- (2) Water heaters used in recreational vehicles.

(h) Final Progress Report

On or before April 1, 2007, any person that manufacturers direct-vent, power-vent or power direct-vent water heaters for sale within the South Coast Air Basin shall submit to the Executive Officer a final progress report that shall include:

- (1) Identification of efforts that have been made to reach commercialization of directvent, power vent, and power direct vent water heaters that meet the NOxemission level specified under paragraph (c)(3);
- (2) A description of the technologies used to meet the NOx emission level for directvent, power-vent, and power direct-vent water heaters specified under paragraph-(e)(3); and
- (3) Complete documentation for at least three laboratory test results each for direct-vent, power-vent, and power direct-vent water heaters developed to meet the NOx emission level specified under paragraph (c)(3) that shall include the emissions rate measured by an independent testing laboratory using the SCAQMD protocol specified under paragraph (b)(11) or other protocol approved in advance by the Executive Officer.
- (i) Program Administration

On and after September 3, 2004, the Executive Officer is authorized to use up to 5% of the mitigation fee funds collected in any given year for program administration.