

**RULE 3.23 - NATURAL GAS-FIRED WATER HEATERS, SMALL BOILERS, AND
PROCESS HEATERS**

(Adopted 10/03/2016)

A. PURPOSE

The purpose of this rule is to limit the emissions of oxides of nitrogen (NOx) from the use of natural gas-fired water heaters, small boilers, and process heaters.

B. APPLICABILITY

1. The provisions of this rule shall apply to any person in the Feather River Air Quality Management District that offers for sale, sells, or installs any of the following:
 - a. Natural gas-fired boilers, steam generators, process heaters, or water heaters with a rated heat input capacity of greater than or equal to 75,000 British Thermal Units per hour (Btu/hr) and less than 1 million Btu/hr;
 - b. Natural gas-fired pool/spa heaters with a rated heat input capacity of greater than 400,000 Btu/hr and less than 1 million Btu/hr.

C. SEVERABILITY

1. If any section, subsection, sentence, clause, phrase or portion of this rule is, for any reason, held invalid, unconstitutional, or unenforceable by any court of competent jurisdiction, that portion shall be deemed as a separate, distinct and independent provision, and the holding shall not affect the validity of the remaining portions of the rule.

D. EXEMPTIONS

1. The provisions of this rule shall not apply to the following:
 - a. Water heaters, boilers and process heaters using any fuel other than natural gas;
 - b. Water heaters, boilers and process heaters used in recreational vehicles.

E. DEFINITIONS

1. **Boiler or Steam Generator**: An individual piece of combustion equipment fired with any fuel with the primary purpose of producing hot water or steam. Boiler or steam generator does not include any unit that is used exclusively to produce electricity for sale, any waste heat recovery boiler that is used to recover sensible heat from exhaust of combustion or a combustion turbine, nor does it include equipment associated with a chemical recovery cycle.
2. **British Thermal Unit (Btu)**: The amount of heat required to raise the temperature of one pound of water from 59°F to 60°F at one atmosphere.
3. **Gaseous Fuel**: Any fuel which is a gas at standard conditions.
4. **Heat Input**: The heat of combustion released by fuels burned in a unit based on the higher heating value of the fuel. This does not include the enthalpy of incoming combustion air.
5. **Heat Output**: The product obtained by multiplying the recovery efficiency, as defined by Section 6.1.3 of the Code of Federal Regulation, Title 10, Part 430, Subpart B, Appendix E, by the rated heat input capacity of the unit.
6. **Higher Heating Value (HHV)**: The total heat liberated per mass of fuel burned (BTU per pound), when fuel and dry air at standard conditions undergo complete combustion and all resultant products are brought to their standard states at standard conditions.
7. **Mobile Home Water Heater**: A natural gas-fired water heater manufactured exclusively for use in a mobile home.
8. **Nanogram Per Joule (ng/J)**: A standard unit of measure equal to one billionth of a gram per one joule of heat output.
9. **Natural Gas**: A mixture of gaseous hydrocarbons, provided by a regulated public utility, containing at least 80 percent methane by volume as determined according to ASTM Test Method D1945-03.

10. **NOx Emissions**: The sum of nitrogen oxide (NO) and nitrogen dioxide (NO₂) in the flue gas.
11. **Parts Per Million by Volume (ppmv)**: The ratio of the number of gas molecules of a given species, or group of species, to the number of millions of total gas molecules.
12. **Pool/Spa Heater**: A device in which water is heated when pool or spa water circulates through a heat exchanger.
13. **Process Heater**: Any combustion equipment fired with any fuel, and which transfers heat from combustion gases to heat water or process streams. This definition does not include any dryers in which the material being dried is in direct contact with the products of combustion, cement or lime kilns, glass melting furnaces, and smelters.
14. **Rated Heat Input Capacity**: The heat input capacity, in million Btu per hour (MMBtu/hr), 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 maximum heat input shall be considered as the rated heat input.
15. **Recreational Vehicle**: Any vehicle used for recreational purposes and designed to include a natural gas-fired water heater and is required to be licensed to be driven or moved on the highways of California.
16. **Standard Conditions**: As used in these Regulations, refers to a gas temperature of sixty (60) degrees Fahrenheit and a gas pressure of fourteen and seven-tenths (14.7) pounds per square inch absolute.
17. **Unit**: Any boiler, steam generator, pool/spa heater, process heater, or water heater as defined in this Rule.
18. **Water Heater**: A vessel in which water is heated and is withdrawn for use external to the vessel, including the apparatus by which heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210°F (99°C).

F. REQUIREMENTS

1. NOx EMISSION LIMITS: Effective 1/1/2017, no person shall offer for sale, sell, or install any natural gas-fired unit subject to this rule with NOx emissions in excess of the following limits:
 - a. Mobile Home Water Heaters - 40 ng/J or 55 ppmv corrected to 3 percent oxygen.
 - b. All Other Units Subject to This Rule - 14 ng/J or 20 ppmv corrected to 3 percent oxygen.

2. COMPLIANCE REPORT: A reseller or manufacturer shall submit to the Air Pollution Control Officer a Compliance Report that demonstrates compliance with Section F.1 of this Rule for each unit model subject to the provisions of this Rule. The Compliance Report shall be submitted to the District at least 30 days before the unit is offered for sale, sold, or installed within the District. The Compliance Report shall contain the following information:
 - a. General Information:
 1. Name and address of the manufacturer;
 2. Brand name and model;
 3. Model number (as it appears on the rating plate);
 4. Unit description; and
 5. Rated Heat Input Capacity as defined by Section E.14.
 - b. Test Report:
 1. All compliance test procedures and results for each unit model; and
 2. All calculations for determining compliance of each unit model.
 - c. Compliance Statement: A signed and dated statement attesting to the accuracy of all statements and information in the Compliance Report.

3. CERTIFICATION: In lieu of submitting a Compliance Report in Section F.2, a reseller or manufacturer may submit to the District an approved South Coast Air Quality Management District (SCAQMD) certification pursuant to SCAQMD Rules 1121 or 1146.2. This certification shall be submitted to the District at

least 30 days before the unit is offered for sale, sold, or installed within the District.

4. UNIT LABELING: The reseller or manufacturer shall display the model number of the unit complying with the requirements specified in Section F.1 of this Rule on the unit shipping carton and rating plate.

G. TEST METHODS AND PROCEDURES

1. TEST METHODS: The manufacturer shall have each water heater, boiler, or process heater subject to Section F.1 of this Rule tested in accordance with one of the following:
 - a. South Coast Air Quality Management District Protocol: "Nitrogen Oxides Emission Compliance testing for Natural Gas-Fired Water Heaters and Small Boilers."
 - b. South Coast Air Quality Management District Test Method 100.1.
 - c. EPA Reference Test Method 7E (40 CFR 60, Appendix A).
 - d. A manufacturer that has certified a water heater model to demonstrate compliance with a State or local agency rule that meets the requirements of this Rule may submit the test results to the District in lieu of conducting duplicative testing.

H. RECORDKEEPING AND REPORTING REQUIREMENTS

1. RECORDKEEPING: A manufacturer shall keep certification reports, test reports, and certification statements demonstrating compliance with Section F.1 of this Rule for as long as the water heater, boiler or process heater model is offered for sale, sold, or installed within the District, or five years, whichever is longer. These records shall be made available to the Air Pollution Control Officer upon request.