

**Environmental Quality, Air Quality**  
**R307-230**  
**NOx Emission Limits for Natural Gas-Fired Water Heaters**

**NOTICE OF CHANGE IN PROPOSED RULE**

DAR FILE NO.: 39355

FILED: 09/15/2015

**RULE ANALYSIS**

**PURPOSE OF THE RULE OR REASON FOR THE CHANGE:** The purpose of the rule is to reduce Nitrogen Oxides (NOx) emissions. The rule is necessary to help attain the federal PM2.5 standard.

**SUMMARY OF THE RULE OR CHANGE:** The changes in the proposed rule consist of the following: 1) a uniform implementation date of 11/01/2017; 2) a clarification to the prohibition on selling or installing certain water heaters; 3) a clearer delineation of the categories of water heaters; 4) a clarification regarding the labeling of the water heaters; and 5) a method by which manufacturers should use to comply with the rule. (DAR NOTE: This change in proposed rule has been filed to make additional changes to a proposed new rule that was published in the June 1, 2015, issue of the Utah State Bulletin, on page 90. Underlining in the rule below indicates text that has been added since the publication of the proposed rule mentioned above; strike-out indicates text that has been deleted. You must view the change in proposed rule and the proposed new rule together to understand all of the changes that will be enforceable should the agency make this rule effective.)

**STATUTORY OR CONSTITUTIONAL AUTHORIZATION FOR THIS RULE:** Section 19-2-101 and Section 19-2-104

**ANTICIPATED COST OR SAVINGS TO:**

♦ **THE STATE BUDGET:** The changes to the proposed rule will require some counties to comply with the rule a year earlier than the proposed rule initially stated. However, an earlier compliance date results in only a negligible increase in cost. Ultra-low NOx water heaters are already available in California at prices comparable to water heaters that don't meet the ultra-low NOx levels. There should be no additional costs to the state budget by requiring compliance statewide by 11/01/2017.

♦ **LOCAL GOVERNMENTS:** The changes to the proposed rule will require some counties to comply with the rule a year earlier than the proposed rule initially stated. However, an earlier compliance date results in only a negligible increase in cost. Ultra-low NOx water heaters are already available in California at prices comparable to water heaters that don't meet the ultra-low NOx levels. There should be no additional costs to local government budgets.

♦ **SMALL BUSINESSES:** After the rule is implemented, any water heater that small businesses need to install will need to meet the ultra-low NOx levels of the rule. Because suppliers and installers will have adequate time to build their supply and because ultra-low NOx water heaters are already available in California at prices comparable to water heaters that don't meet the ultra-low NOx levels, there should be no additional costs.

♦ **PERSONS OTHER THAN SMALL BUSINESSES, BUSINESSES, OR LOCAL GOVERNMENTAL ENTITIES:** After the rule is implemented, any water heater that small businesses need to install will need to meet the ultra-low NOx levels of the rule. Because suppliers and installers will have adequate time to build their supply and because ultra-low NOx water heaters are already available in California at prices comparable to water heaters that don't meet the ultra-low NOx levels, there should be no additional costs. Businesses that manufacture water heaters may also save money as a result of the change in the proposed rule because the changes in the rule eliminate any requirement to have ratings labels on the packaging.

**COMPLIANCE COSTS FOR AFFECTED PERSONS:** Because installers and vendors have a phase-in period in which to cycle through their current inventories and buildup their ultra-low NOx inventories and because prices of the ultra-low NOx heaters are comparable to other water heaters, there is no anticipated compliance costs for affected persons. The changes to the proposed rule make the phase-in period uniform throughout the state. A box labeling requirement was also eliminated from the rule, which could cut costs for affected persons.

**COMMENTS BY THE DEPARTMENT HEAD ON THE FISCAL IMPACT THE RULE MAY HAVE ON BUSINESSES:** Because installers and vendors have a phase-in period in which to cycle through their current inventories and build up their ultra-low NOx inventories and because prices of the ultra-low NOx heaters are comparable to other water heaters, there is no anticipated fiscal impact on businesses.

**THE FULL TEXT OF THIS RULE MAY BE INSPECTED, DURING REGULAR BUSINESS HOURS, AT:**

ENVIRONMENTAL QUALITY  
 AIR QUALITY  
 FOURTH FLOOR  
 195 N 1950 W  
 SALT LAKE CITY, UT 84116-3085  
 or at the Division of Administrative Rules.

**DIRECT QUESTIONS REGARDING THIS RULE TO:**

♦ Ryan Stephens by phone at 801-536-4419, by FAX at 801-536-0085, or by Internet E-mail at rstephens@utah.gov

**THIS RULE MAY BECOME EFFECTIVE ON: 11/02/2015**

**AUTHORIZED BY: Bryce Bird, Director**

**R307. Environmental Quality, Air Quality.**

**R307-230. NO<sub>x</sub> Emission Limits for Natural Gas-Fired Water Heaters.**

**R307-230-1. Purpose.**

The purpose of R307-230 is to reduce emissions of nitrogen oxides (NO<sub>x</sub>) from natural gas-fired water heaters.

**R307-230-2. Applicability.**

R307-230 applies to the sale and installation of natural gas-fired water heaters beginning November 1, 2017, on the implementation schedule as outlined in Table 1:

Location	Rule Implementation Date
Box Elder, Cache, Davis, Salt Lake, Foose, Utah and Weber Counties	January 1, 2017
Washington, Duchesne and Uintah Counties	January 1, 2018
Remaining portions of Utah	January 1, 2019

**R307-230-3. Exemptions.**

The requirements of R307-230 shall not apply to:

- (1) ~~[units] water heaters~~ using a fuel other than natural gas;
- (2) ~~[units] water heaters~~ used in recreational vehicles; ~~and~~
- (3) ~~[units] water heaters~~ manufactured in Utah for shipment and use outside of Utah ~~and~~
- (4) ~~water heaters~~ manufactured before November 1, 2017.

**R307-230-4. Definitions.**

The following additional definitions apply to R307-~~370~~230:

"Heat output" means the enthalpy of the working fluid output of the unit.

~~"Heat input" means the heat of combustion released by fuels burned in a unit based on the higher heating value of fuel. This does not include the enthalpy of incoming combustion air.~~

"Recreational vehicle" means 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.

"Natural gas-fired water heater" means a device that heats water by the combustion of natural gas to a thermostatically-controlled temperature not exceeding 210 degrees F (99 degrees C) for use external to the vessel at pressures not exceeding 160 psig.

**R307-230-5. Standards.**

(1) ~~[Beginning on the rule implementation date specified in Table 1 for each area of the state, a]~~ No person shall sell or install any natural gas-fired water heater with an emission rate exceeding the limits ~~[in Table 2] described in R307-230-5(1)(a)~~. ~~[The NO<sub>x</sub> limits are expressed in nanograms of nitrogen oxides (calculated as NO<sub>2</sub>) per Joule of heat output.~~

TABLE 2  
NO<sub>x</sub> Emission Rate for Natural Gas-Fired Water Heaters

Category	Limits (ng/Joule)
Water heater up to 75,000 BTU/hr, excluding those installed in mobile homes	10
Water heater 75,001 - 2,000,000 BTU/hr	14
Any tank with power assist	10
Mobile home water heater	40
Pool/spa heater less than 400,000 BTU/hr	40
Pool/spa heater 400,001-2,000,000 BTU/hr	14

~~]~~ (a) Subsections R307-230-5(1)(i)-(v) provide the NO<sub>x</sub> emission limits for natural gas-fired water heaters.

~~(i) Water heaters up to 75,000 BTU/hr, excluding those in mobile homes: 10 ng/Joule of heat output or 15 ppm at 3% O<sub>2</sub>.~~

~~(ii) Water heaters 75,001-2,000,000 BTU/hr: 14 ng/Joule of heat output or 20 ppm at 3% O<sub>2</sub>.~~

~~(iii) Mobile home water heaters: 40 ng/Joule of heat output or 55 ppm at 3% O<sub>2</sub>.~~

~~(iv) Pool/spa heaters less than or equal to 400,000 BTU/hr: 40 ng/Joule of heat output or 55 ppm at 3% O<sub>2</sub>.~~

~~(v) Pool/spa heaters 400,001-2,000,000 BTU/hr: 14 ng/Joule of heat output or 20 ppm at 3% O<sub>2</sub>.~~

(2) The water heater manufacturer shall display the model number on each unit and the appropriate NO<sub>x</sub> emission rat[e]ing ~~[of a water heater complying with this rule on the shipping carton and-] on [the] a permanent [rating plate of each] label on each unit.~~

(3) Manufacturers shall use SCAQMD Method 100-1 to comply with the NO<sub>x</sub> standards in R307-230-5(1)(a).

**KEY: water heaters, natural gas, NO<sub>x</sub>, air quality**

**Date of Enactment or Last Substantive Amendment: 2015**

**Authorizing, and Implemented or Interpreted Law: 19-2-101; 19-2-104**

End of the Notices of Changes in Proposed Rules Section