

State of Utah
Administrative Rule Analysis
 Revised June 2022

NOTICE OF PROPOSED RULE		
TYPE OF RULE: New <u> X </u> ; Amendment <u> </u> ; Repeal <u> </u> ; Repeal and Reenact <u> </u>		
Title No. - Rule No. - Section No.		
Rule or Section Number:	R307-316	Filing ID: Office Use Only

Agency Information

1. Department:	Environmental Quality	
Agency:	Air Quality	
Room number:		
Building:	MASOB	
Street address:	195 N. 1950 W.	
City, state and zip:	Salt Lake City, Utah 84116	
Mailing address:	P.O. Box 144820	
City, state and zip:	Salt Lake City, Utah 84114-4820	
Contact persons:		
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Please address questions regarding information on this notice to the agency.		

General Information

2. Rule or section catchline:
R307-316. NO _x Emission Controls for Natural Gas-Fired Boilers greater than 5.0 MMBtu.
3. Purpose of the new rule or reason for the change (Why is the agency submitting this filing?):
<p>On October 7th, 2022, EPA finalized the reclassification of the Northern Wasatch Front Nonattainment Area (NAA) from marginal to moderate status for the 2015 NAAQS 8-hour ozone concentration. The moderate classification means that the state of Utah must identify and implement reductions of ozone precursor emissions, including Volatile Organic Compounds (VOCs) and Oxides of Nitrogen (NO_x), in the designated NAA area as part of its State Implementation Plan (SIP) obligations under section 172(c)(2) of the Clean Air Act.</p> <p>R307-316 will reduce emissions of NO_x from industrial, commercial, and institutional natural gas-fired boilers in Salt Lake, Weber, Davis, Tooele, and Utah counties by requiring any new boiler, or burner installed on a boiler in these areas to be certified to emit no more than 9 parts per million by volume (ppmv) while operating. The rule does not require retrofits or replacements of existing boilers. This rule will help reduce emissions from existing boilers within the nonattainment and surrounding areas over time as the existing boiler stock is replaced with compliant boilers. Future emissions will also be curbed as the areas continue to grow by requiring new boiler installations to comply.</p>
4. Summary of the new rule or change (What does this filing do? If this is a repeal and reenact, explain the substantive differences between the repealed rule and the reenacted rule):
<p>R307-316 will require a source operating a natural gas-fired boiler in an industrial, institutional or commercial setting in Salt Lake, Davis, Weber, Tooele, and Utah counties to install a unit certified to emit no more than 9 ppmv and retain the following records: a copy of the boilers emission rate specifications, the manufacturer's recommendations for proper operation and maintenance of the equipment, records showing proper operation and maintenance of equipment, the manufacturer's certification for any burners replaced, records of any testing as required on boilers greater than 40 MMBtu, and a record of approval for any approved alternative method of control.</p>

Fiscal Information

5. Provide an estimate and written explanation of the aggregate anticipated cost or savings to:
A) State budget:
<p>The fiscal impact of this rule on state budgets is unknown. This rule will eventually impact all boilers above 5 MMBtu in impacted counties, a portion of which are owned and operated by the state. The rule does not require retrofits to existing boilers, so the near-term impact of the rule will be limited to new installations, burner replacements, and boilers reaching the end of their useful life. A DAQ analysis identified 620 boilers greater than 5 MMBtu located in the impacted counties, but the proportion owned and operated by state government is not known. DAQ estimates a cost difference between \$13,000 and \$26,000 for a 6.7MMBtu standard boiler that is replaced with an Ultra-Low NO_x boiler rated at 9 ppmv. However, since the timing of replacement is unknown, the fiscal impact cannot be accurately estimated. For boilers over 40 MMBtu, verification of the required testing will occur as part of the regular compliance inspection process and will have no fiscal impact for DAQ or other state agency.</p>

B) Local governments:

The fiscal impact of this rule on local governments is unknown. This rule will eventually impact all boilers above 5 MMBtu in impacted counties, a portion of which are owned and operated by local governments. The rule does not require retrofits to existing boilers, so the near-term impact of the rule will be limited to new installations, burner replacements, and boilers reaching the end of their useful life. A DAQ analysis identified 620 boilers over 5 MMBtu located in the impacted counties, but the proportion owned and operated by local governments is not known. DAQ estimates a cost difference between \$13,000 and \$26,000 for a 6.7MMBtu standard boiler that is replaced with an Ultra-Low NO_x boiler rated at 9 ppmv. However, since the timing of replacement is unknown, the fiscal impact cannot be accurately estimated.

C) Small businesses ("small business" means a business employing 1-49 persons):

The fiscal impact of this rule on small business is unknown. This rule will eventually impact all boilers above 5 MMBtu in impacted counties, a portion of which are owned and operated by small businesses. The rule does not require retrofits to existing boilers, so the near-term impact of the rule will be limited to new installations, burner replacements, and boilers reaching the end of their useful life. A DAQ analysis identified 620 boilers over 5 MMBtu located in the impacted counties, but the proportion owned and operated by small businesses is not known. DAQ estimates a cost difference between \$13,000 and \$26,000 for a 6.7MMBtu standard boiler that is replaced with an Ultra-Low NO_x boiler rated at 9 ppmv. However, since the timing of replacement is unknown, the fiscal impact cannot be accurately estimated.

D) Non-small businesses ("non-small business" means a business employing 50 or more persons):

The fiscal impact of this rule on non-small business is unknown. This rule will eventually impact all boilers above 5 MMBtu in impacted counties, a portion of which are owned and operated by non-small businesses. The rule does not require retrofits to existing boilers, so the near-term impact of the rule will be limited to new installations, burner replacements, and boilers reaching the end of their useful life. A DAQ analysis identified 620 boilers over 5 MMBtu located in the impacted counties, but the proportion owned and operated by non-small businesses is not known. DAQ estimates a cost difference between \$13,000 and \$26,000 for a 6.7MMBtu standard boiler that is replaced with an Ultra-Low NO_x boiler rated at 9 ppmv. However, since the timing of replacement is unknown, the fiscal impact cannot be accurately estimated.

E) Persons other than small businesses, non-small businesses, state, or local government entities ("person" means any individual, partnership, corporation, association, governmental entity, or public or private organization of any character other than an *agency*):

The fiscal impact of this rule on other persons is unknown. This rule will eventually impact all boilers above 5 MMBtu in impacted counties, a portion of which are owned and operated persons other than small businesses, non-small businesses, state, or local governments. The rule does not require retrofits to existing boilers, so the near-term impact of the rule will be limited to new installations, burner replacements, and boilers reaching the end of their useful life. A DAQ analysis identified 620 boilers over 5 MMBtu located in the impacted counties, but the proportion owned and operated by other persons is not known. DAQ estimates a cost difference between \$13,000 and \$26,000 for a 6.7MMBtu standard boiler that is replaced with an Ultra-Low NO_x boiler rated at 9 ppmv. However, since the timing of replacement is unknown, the fiscal impact cannot be accurately estimated.

F) Compliance costs for affected persons (How much will it cost an impacted entity to adhere to this rule or its changes?):

The cost of compliance with this rule is estimated as the total cost difference between a boiler rated at 30 ppmv and a boiler rated at 9 ppmv for the same design value. A staff analysis of comparable models with a design value of 6.7MMBtu found this difference to be \$12,759.50. Larger boiler installations are expected to be greater, but proportionately similar to this estimate.

G) Regulatory Impact Summary Table (This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts will be included in narratives above.)

Regulatory Impact Table			
Fiscal Cost	FY2023	FY2024	FY2025
State Government	\$0	\$0	\$0
Local Governments	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Cost	\$0	\$0	\$0
Fiscal Benefits	FY2023	FY2024	FY2025
State Government	\$0	\$0	\$0
Local Governments	\$0	\$0	\$0
Small Businesses	\$0	\$0	\$0
Non-Small Businesses	\$0	\$0	\$0
Other Persons	\$0	\$0	\$0
Total Fiscal Benefits	\$0	\$0	\$0
Net Fiscal Benefits	\$0	\$0	\$0

H) Department head comments on fiscal impact and approval of regulatory impact analysis:

The Executive Director of the Department of Environmental Quality, Kimberly D. Shelley, has reviewed and approved this regulatory impact analysis.

Citation Information

6. Provide citations to the statutory authority for the rule. If there is also a federal requirement for the rule, provide a citation to that requirement:		
19-2-104	Ex 2: Subsection 63G-3-403(3)	

Incorporations by Reference Information

7. Incorporations by Reference (if this rule incorporates more than two items by reference, please include additional tables):	
A) This rule adds, updates, or removes the following title of materials incorporated by references (a copy of materials incorporated by reference must be submitted to the Office of Administrative Rules; <i>if none, leave blank</i>):	
Official Title of Materials Incorporated (from title page)	
Publisher	
Issue Date	
Issue or Version	

B) This rule adds, updates, or removes the following title of materials incorporated by references (a copy of materials incorporated by reference must be submitted to the Office of Administrative Rules; <i>if none, leave blank</i>):	
Official Title of Materials Incorporated (from title page)	
Publisher	
Issue Date	
Issue or Version	

Public Notice Information

8. The public may submit written or oral comments to the agency identified in box 1. (The public may also request a hearing by submitting a written request to the agency. See Section 63G-3-302 and Rule R15-1 for more information.)		
A) Comments will be accepted until:	02/03/2023	
B) A public hearing (optional) will be held:		
On (mm/dd/yyyy):	At (hh:mm AM/PM):	At (place):
02/03/2023	10:00 am	Video call link: https://meet.google.com/sgt-anta-dxu Or dial: (US) +1 650-530-6397 PIN: 377 759 539#
The scheduled hearing will be canceled if no request is received.		

9. This rule change MAY become effective on:	03/02/2023
NOTE: The date above is the date the agency anticipates making the rule or its changes effective. It is NOT the effective date.	

Agency Authorization Information

To the agency: Information requested on this form is required by Sections 63G-3-301, 302, 303, and 402. Incomplete forms will be returned to the agency for completion, possibly delaying publication in the <i>Utah State Bulletin</i> and delaying the first possible effective date.			
Agency head or designee and title:	Bryce C. Bird, Director	Date:	12/07/2022

R307. Environmental Quality, Air Quality.

R307-316. NO_x Emission Controls for Natural Gas-Fired Boilers greater than 5.0 MMBtu.

R307-316-1. Purpose.

Rule R307-316 establishes maximum emission thresholds for the emissions of oxides of nitrogen (NO_x) for new or modified

natural gas-fired boilers with a total rated heat input greater than 5.0 million British Thermal Units per hour (MMBtu/hr).

R307-316-2. Applicability.

Rule R307-316 applies to each boiler that commences construction or modification after the compliance date defined in Section R307-316-6 that:

- (1) is fueled by natural gas;
- (2) has a total rated heat input greater than 5.0 MMBtu/hr;
- (3) is operated in an industrial, institutional, or commercial setting;
- (4) is located in Salt Lake, Utah, Davis, Weber, or Tooele County; and
- (5) is not a temporary boiler.

R307-316-3. Definitions.

As used in this rule:

“Boiler” means boiler as defined in 40 CFR 63.11237, Subpart JJJJJ National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources, which is incorporated by reference in Rule R307-210.

“Burner” means the functional component of a boiler that provides the heat input by combustion of a fossil fuel with air or oxygen. Burners are available either as part of the boiler package from the manufacturer, as stand-alone products for custom installations, or as replacement products.

“Construction” means any physical change or change in the method of operation including fabrication, erection, installation, demolition, or modification of a source which would result in a change in actual emissions.

“Modification” means any planned change in a source that results in a potential increase of emission.

“Natural gas” means:

- (1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface of which the principal constituent is methane;
- (2) Liquefied petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see § 63.14);
- (3) A mixture of hydrocarbons that maintains a gaseous state at ISO conditions (i.e., a temperature of 288 Kelvin, a relative humidity of 60 percent, and a pressure of 101.3 kilopascals). Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 35 and 41 megajoules (MJ) per dry standard cubic meter (950 and 1,100 Btu per dry standard cubic foot); or
- (4) Propane or propane-derived synthetic natural gas. Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C₃H₈.

“Temporary boiler” means any gaseous or liquid fuel-fired steam generating unit that is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A steam generating unit is not a temporary boiler if any one of the following conditions exists:

- (1) The equipment is attached to a foundation.
- (2) The steam generating unit or a replacement remains at a location for more than 180 consecutive days. Any temporary boiler that replaces a temporary boiler at a location and performs the same or similar function will be included in calculating the consecutive time period.
- (3) The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least two years, and operates at that facility for at least three months each year.
- (4) The equipment is moved from one location to another in an attempt to circumvent the residence time requirements of this definition.

R307-316-4. Requirements.

- (1) Except as provided in Subsection R307-316-4(8), a person that:
 - (a) commences construction, or modification of a boiler;
 - (b) replaces a burner in a boiler; or
 - (c) replaces 50% or more of the burners in a multi-burner boiler,for a boiler meeting the requirements of Section R307-316-2 shall:
 - (2) Install a burner that is certified to meet a NO_x emission rate of nine parts per million by volume (ppmv) or less at 3% volume stack gas oxygen on a dry basis averaged over a 24-hour period.
 - (3) An owner or operator of a boiler subject to Subsection R307-316-4(1) shall operate and maintain the boiler and boiler subsystems, including burner(s), according to the manufacturer’s instructions.

(4) A manufacturer of a boiler or boiler burner meeting the requirement of Subsection R307-316-4(2) shall certify the boiler or boiler burner as complying with the emission rate in Subsection R307-316-4(2).

(5) Boilers over 40 MMBtu/hr shall be tested for compliance with the emission limit in Subsection R307-316-4(2) no less than once every three years using EPA Reference Method 7E.

(6) Manufacturer's operational specifications, records, and testing of any control system shall use the applicable EPA Reference Methods of 40 CFR Part 60, the most recent EPA test methods, or EPA-approved state methods, to determine the efficiency of the control device.

(7) The owner or operator must meet the applicable recordkeeping requirements for any control device.

(8) Any person may apply to the director for approval of an alternate method of control. The application must include a demonstration that the proposed alternate produces an equal air quality benefit as required by Subsection R307-316-4(2) or the best achievable level of control available.

R307-316-5. Recordkeeping.

(1) The owner or operator of any unit subject to Rule R307-316 shall:

(a) Retain documentation of the unit's emission rate specifications;

(b) Retain a copy of the manufacturer's recommendations for proper operation and maintenance of units covered by Rule R307-316;

(c) Maintain records showing proper operation and maintenance of units covered by Rule R307-316 following manufacturer's recommendations;

(d) Retain a copy of the manufacturer's certification for any replacement burner;

(e) Retain records of any certification testing as required under Section R307-316-4(5); and

(f) Retain a record of approval of any alternative method of control as outlined in Subsection R307-316-4(8).

(2) Operation and maintenance records shall be retained for five years and shall be made available to the director upon request.

R307-316-6. Compliance Schedule.

The compliance schedule for this rule shall begin on May 1, 2023.

KEY: air pollution, boiler, NO_x, nitrogen oxides

Date of Last Change:

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