

PROPOSED RULES
NORTH DAKOTA ADMINISTRATIVE CODE
ARTICLE 45-12
NORTH DAKOTA BOILER RULES

Chapter 45-12-01 - Definitions

Subsections 4 and 23 of Section 45-12-01, relating to Definitions, are amended as follows:

4. "A.S.M.E. code" means the boiler and pressure vessel construction code of the American society of mechanical engineers of which sections I, II, IV, V, VIII (divisions 1, 2, and 3), IX, and X, ~~2010~~ 2013 edition ~~and section VIII, (division 2), 2004 edition~~, are hereby adopted by the commissioner and incorporated by reference as a part of this article. A copy of the American society of mechanical engineers code is on file at the office of the boiler inspection program. The American society of mechanical engineers code may be obtained from the American society of mechanical engineers headquarters at ~~3~~ 2 park avenue, New York, New York 10016-5990 or from www.asme.org.

23. "National board inspection code" means the manual for boiler and pressure vessel inspectors supplied by the national board. The national board inspection code, ~~2011~~ 2013 edition, is hereby adopted by the commissioner and incorporated by reference as a part of this article. Copies of this code may be obtained from the national board at 1055 crupper avenue, Columbus, Ohio 43229.

History: Effective June 1, 1994; amended effective April 1, 1996; January 1, 2000; October 1, 2002; January 1, 2006; January 1, 2008; April 1, 2010; July 1, 2012; January 1, 2014.

General Authority: NDCC 26.1-22.1-14

Law Implemented: NDCC 26.1-22.1-14

Chapter 45-12-02 – Administration

Section 45-12-02-18, relating to Reports of welded repair or alterations, is amended as follows:

45-12-02-18. Reports of welded repair or alterations. All alterations and major repairs made to boilers in North Dakota must be reported on the appropriate national board form. The completed form must be sent to the chief boiler inspector by the repair concern effecting the repair or alteration within thirty days of the completion of the repair or alteration.

Subject to the administrative procedures of the boiler inspection program and the approval of the inspector, repairs of a routine nature may be given prior approval ~~or~~ and the requirement for the repair ~~report~~ stamping may be waived. The National Board Inspection Code must be used as a guideline in determining repairs of a routine nature.

History: Effective June 1, 1994; amended effective October 1, 2002; January 1, 2014.

General Authority: NDCC 26.1-22.1-14

Law Implemented: NDCC 26.1-22.1-14

Chapter 45-12-03 – General Requirements

Section 45-12-03-23, relating to Shop inspection – Manufacturing, is amended as follows:

45-12-03-23. Shop inspection – Manufacturing – Repairs - Alterations. Any ~~new boiler or pressure vessel~~ being constructed, repaired, or altered in North Dakota must be ~~shop-inspected~~ inspected by an inspector holding a North Dakota reciprocal commission and a national board commission. The boiler inspection program may function as an authorized inspection agency. The boiler inspection program may cooperate with the national board and American society of mechanical engineers in making shop reviews and audits.

History: Effective June 1, 1994; amended effective January 1, 2014.

General Authority: NDCC 26.1-22.1-14

Law Implemented: NDCC 26.1-22.1-14

Chapter 45-12-05 – Power Boilers – Existing Installations

Subsection 5 of Section 45-12-05-02, relating to Maximum allowable working pressure for nonstandard boilers, is amended as follows:

5. The following factors of safety must be increased by the inspector if the condition and safety of the boiler demand it:

The lowest factor of safety permissible on existing installations is four ~~and five-tenths~~, except for horizontal-return-tubular boilers having continuous longitudinal lap seams more than twelve feet [3.66 meters] in length, when the factor of safety is eight; when this latter type boiler is removed from its existing setting, it may not be reinstalled for pressures in excess of fifteen pounds per square inch gauge [103 kilopascals].

Reinstalled or secondhand boilers must have a minimum factor of safety of six when the longitudinal seams are of lap-riveted construction, and a minimum factor of safety of five when the longitudinal seams are of butt-and-double-strap construction. Steam traction engines must be considered as secondhand boilers for purposes of determining their factors of safety.

History: Effective June 1, 1994; amended effective July 1, 2012; January 1, 2014.

General Authority: NDCC 26.1-22.1-14

Law Implemented: NDCC 26.1-22.1-14

Section 45-12-05-08, relating to Safety valves and safety relief valves, is amended as follows:

45-12-05-08. Safety valves and safety relief valves.

1. ~~Each boiler must have at least one American society of mechanical engineers approved safety valve and if it has more than five hundred square feet [46.45 square meters] of water heating surface, or if an electric boiler it has a power input of more than eleven hundred kilowatts, it must have two or more American society of mechanical engineers approved safety valves.~~
2. ~~The safety valve capacity for each boiler must be such that the safety valve, or valves will discharge all the steam that can be generated by the boiler without allowing the pressure to rise more than six percent above the highest pressure at which any valve is set and in no case to more than six percent above the maximum allowable working pressure. The safety valve capacity of new units may not be less than the maximum designed steaming capacity as determined by the manufacturer.~~

3. ~~The required steam relieving capacity in pounds per hour, of the safety relief valves on a high temperature water boiler must be determined by dividing the maximum output in British thermal units at the boiler nozzle obtained by the firing of any fuel for which the unit is designed by one thousand (one British thermal unit equals 1.055×10 to the 3rd power joules).~~
4. ~~One or more safety valves on the boiler proper must be set at or below the maximum allowable working pressure. If additional valves are used, the highest pressure setting may not exceed the maximum allowable working pressure by more than three percent. The complete range of pressure settings of all the saturated steam safety valves on a boiler may not exceed ten percent of the highest pressure to which any valve is set. Pressure setting of safety relief valves on high temperature water boilers may exceed this ten percent range.~~
5. ~~For a forced-flow steam generator with no fixed steamline and waterline, equipped with automatic controls and protective interlocks responsive to steam pressure, safety valves may be installed in accordance with the following, as an alternative:~~
 - a. ~~One or more power-actuated pressure-relieving valves must be provided in direct communication with the boiler when the boiler is under pressure and must receive a control impulse to open when the maximum allowable working pressure at the superheater outlet is exceeded. The total combined relieving capacity of the power-actuated pressure-relieving valves may be not less than ten percent of the maximum design steaming capacity of the boiler under any operating condition as determined by the manufacturer. The valves must be located in the pressure part system where they will relieve the overpressure.~~

~~An isolating stop valve of the outside-screw-and-yoke type may be installed between the power-actuated pressure-relieving valve and the boiler to permit repairs provided an alternate power-actuated pressure-relieving valve of the same capacity is so installed as to be in direct communication with the boiler.~~
 - b. ~~Spring-loaded safety valves must be provided having a total combined relieving capacity, including that of the power-actuated pressure-relieving valve installed under subdivision a of subsection 5, of not less than one hundred percent of the maximum designed steaming capacity of the boiler, as determined by the manufacturer. In this total credit in excess of thirty percent of the total relieving capacity may not be allowed for the power-actuated pressure-relieving valves actually installed. Any or all of the spring-loaded safety valves may be set above the maximum allowable working~~

~~pressure of the parts to which they are connected but the set pressures must be such that when all these valves (together with the power-actuated pressure-relieving valves) are in operation the pressure will not rise more than twenty percent above the maximum allowable working pressure of any part of the boiler, except for the steampiping between the boiler and the prime mover.~~

- ~~e. When stop valves are installed in the water-steam flow path between any two sections of a forced-flow steam generator with no fixed steamline and waterline:
 - ~~(1) The power-actuated pressure-relieving valve required by subdivision a of subsection 5 must also receive a control impulse to open when the maximum allowable working pressure of the component, having the lowest pressure level upstream to the stop valve, is exceeded.~~
 - ~~(2) The spring-loaded safety valve must be located to provide the pressure protection requirements of subdivision b or c of subsection 5.~~
 - ~~(3) A reliable pressure-recording device must always be in service and records kept to provide evidence of conformity to the above requirements.~~~~
- ~~6. All safety valves or safety relief valves must be so constructed that the failure of any part cannot obstruct the free and full discharge of steam and water from the valve. Safety valves must be of the direct spring-loaded pop type, with seat inclined at any angle between forty-five and ninety degrees, inclusive, to the centerline of the spindle. The coefficient of discharge of safety valves must be determined by actual steam flow measurements at a pressure not more than three percent above the pressure at which the valve is set to blow.~~
- ~~7. Safety valves or safety relief valves may be used which give any opening up to the full discharge capacity of the area of the opening of the inlet of the valve, provided the movement of the valve is such as not to induce lifting of water in the boiler.~~
- ~~8. Deadweight or weighted-lever safety valves or safety relief valves may not be used.~~
- ~~9. For high temperature water boilers safety relief valves must be used. Such valves must have a closed bonnet. For purposes of selection, the capacity rating of such safety relief valves must be expressed in terms of actual steam flow determined on the same basis as for safety valves. In addition, the safety relief valves must be capable of satisfactory operation when~~

~~relieving water at the saturation temperature corresponding to the pressure at which the valve is set to blow.~~

- ~~10. A safety valve or safety relief valve over three inches [76.20 millimeters] in size, used for pressure greater than fifteen pounds per square inch gauge [103 kilopascals], must have a flange inlet connection or a welding-end inlet connection. The dimensions of flanges subjected to boiler pressure must conform to the applicable American national standards.~~

Safety valves and safety relief valves must meet the requirements of the edition of the American society of mechanical engineers code, section 1, referenced in this article or the requirements of the edition of the American society of mechanical engineers code, section 1, to which the boiler they are installed was constructed.

History: Effective June 1, 1994; amended effective January 1, 2014.

General Authority: NDCC 26.1-22.1-14

Law Implemented: NDCC 26.1-22.1-14

Section 45-12-05-09, relating to Superheater safety valve requirements, is amended as follows:

45-12-05-09. Superheater safety valve requirements.

- ~~1. Every attached superheater must have one or more safety valves near the outlet. If the superheater outlet header has a full, free, steam passage from end to end and is so constructed that steam is supplied to it at practically equal intervals throughout its length so that there is a uniform flow of steam through the superheater tubes and the header, the safety valve or valves may be located anywhere in the length of the header.~~
- ~~2. The discharge capacity of the safety valve or valves on an attached superheater may be included in determining the number and size of the safety valves for the boiler provided there are no intervening valves between the superheater safety valve and the boiler, and provided the discharge capacity of the safety valve or valves, on the boiler, as distinct from the superheater, is at least seventy five percent of the aggregate valve capacity required.~~
- ~~3. Every independently fired superheater that may be shut off from the boiler and permit the superheater to become a fired pressure vessel must have one or more safety valves having a discharge capacity equal to six pounds of steam per square foot [2.72 kilograms per square meter] of superheater surface measured on the side exposed to the hot gases. The number of safety valves installed must be such that the total capacity is at least equal to that required.~~

4. ~~Every reheater must have one or more safety valves, such that the total relieving capacity is at least equal to the maximum steam flow for which the reheater is designed. At least one valve must be located on the reheater outlet. The relieving capacity of the valve on the reheater outlet may not be less than fifteen percent of the required total. The capacity of reheater safety valves may not be included in the required relieving capacity for the boiler and superheater.~~
5. ~~A soot-blower connection may be attached to the same outlet from the superheater or reheater that is used for the safety valve connection.~~
6. ~~Every safety valve used on a superheater or reheater discharging superheated steam at a temperature over four hundred fifty degrees Fahrenheit [232.2 degrees Celsius], must have a casing, including the base, body, bonnet, and spindle. Construction must be of steel, steel alloy, or equivalent heat-resistant material. The valve must have a flanged inlet connection or a welding end inlet connection. It must have the seat and disk of suitable heat-erosive and corrosive-resistant material, and the spring fully exposed outside of the valve casing so that it is protected from contact with the escaping steam.~~

Superheater safety valves must meet the requirements of the edition of the American society of mechanical engineers code section referred in this article or the requirements of the edition of the American society of mechanical engineers code section to which the superheater they are installed was constructed.

History: Effective June 1, 1994; amended effective January 1, 2014.

General Authority: NDCC 26.1-22.1-14

Law Implemented: NDCC 26.1-22.1-14

Section 45-12-05-10, relating to Capacity, is amended as follows:

45-12-05-10. Capacity.

4. ~~The minimum safety valve or safety relief valve relieving capacity for other than electric all high pressure boilers, and forced-flow steam generators with no fixed steamline and waterline, must be determined on the basis of the pounds of steam generated per hour per square foot of boiler heating surface and waterwall heating surface, as given in the following table: other than steam traction engines must be determined by the edition of the American society of mechanical engineers code, section 1, referenced in this article or by the requirements of the American society of mechanical engineers code, section 1, to which the boiler they are installed was constructed.~~

The minimum safety valve relieving capacity for steam traction engines must be determined using the edition of the national board inspection code referenced in this article.

**MINIMUM POUNDS OF STEAM
PER HOUR PER SQUARE FOOT OF SURFACE**

	<u>Firetube Boilers</u>	<u>Watertube Boilers</u>
Boiler heating surface		
Hand-fired	5	6
Stoker-fired	7	8
Oil, gas, or pulverized-fuel-fired	8	10
Waterwall heating surface		
Hand-fired	8	8
Stoker-fired	8	8
Oil, gas, or pulverized-fuel-fired	14	16

~~When a boiler is fired only by a gas having a heat value not in excess of two hundred British thermal units [745.58 x 10 to the 4th power joules] per cubic foot [cubic meter], the minimum safety valve or safety relief valve relieving capacity may be based on the values given for hand-fired boilers above.~~

~~The minimum safety valve or safety relief valve relieving capacity for electric boilers is three and one-half pounds [3692.5 joules] per hour per kilowatt input.~~

~~In any cases a greater relieving capacity of safety valves or safety relief valves will have to be provided than the minimum specified by this rule, and in every case the requirements of section 45-12-05-08 must be met.~~

- ~~2. The heating surface must be computed for that side of the boiler surface exposed to the products of combustion, exclusive of the superheating surface. In computing the heating surface for this purpose, only the tubes, fireboxes, shells, tube sheets, and the projected area of headers need be considered, except that for vertical firetube steam boilers, only that portion of the tube surface up to the middle gauge cock is to be computed. The minimum number and size of safety valves or safety relief valves required must be determined on the basis of the aggregate relieving capacity and the relieving capacity marked on the valves by the manufacturer. If the operating conditions are changed, or additional heating surface such as water screens or waterwalls is connected to the boiler circulation, the safety valve or safety relief valve capacity must be increased, if~~

necessary, to meet the new conditions and be in accordance with subsection 2 of section 45-12-05-08. The additional valves required on account of changed conditions may be installed on the steamline or waterline between the boiler and the main stop valve except when the boiler is equipped with a superheater or other apparatus, in which case they may be installed on the steam pipes between the boiler drum and the inlet to the superheater or other apparatus, provided that the steam main between the boiler and points where a safety valve or valves may be attached has a cross-sectional area at least three times the combined areas of the inlet connections to the safety valves applied to it.

3. If the safety valve or safety relief valve capacity cannot be computed or if it is desirable to prove the computations, it may be checked in any one of the three following ways, and if found insufficient, additional capacity must be provided:
 - a. By making an accumulation test, that is, by shutting off all other steam discharge outlets from the boiler and forcing the fires to the maximum. The safety valve equipment must be sufficient to prevent an excess pressure beyond that specified in subsection 2 of section 45-12-05-08. This method should not be used on a boiler with a superheater or reheater or on a high temperature water boiler.
 - b. By measuring the maximum amount of fuel that can be burned and computing the corresponding evaporative capacity upon the basis of the heating value of the fuel.
 - c. By determining the maximum evaporative capacity by measuring the feedwater. The sum of the safety valve capacities marked on the valves must be equal to or greater than the maximum evaporative capacity of the boiler. This method may not be used on high temperature water boilers.

History: Effective June 1, 1994; amended effective January 1, 2014.

General Authority: NDCC 26.1-22.1-14

Law Implemented: NDCC 26.1-22.1-14

Section 45-12-05-11, relating to Mounting, is amended as follows:

45-12-05-11. Mounting.

1. When two or more safety valves are used on a boiler, they may be mounted either separately or as twin valves made by placing individual valves on Y-bases, or duplex valves having two valves in the same body casing. Twin valves made by placing individual valves on Y-bases or duplex valves having two valves in the same body must be of equal size.

When not more than two valves of different sizes are mounted singly the relieving capacity of the smaller valve may not be less than fifty percent of that of the larger valve.

2. The safety valve or safety relief valve or valves must be connected to the boiler independent of any other connection, and attached as close as possible to the boiler without any unnecessary intervening pipe or fitting. Such intervening pipe or fitting may not be longer than the face-to-face dimension of the corresponding tee fitting of the same diameter and pressure under the applicable American national standard rating. Every safety valve or safety relief valve must be connected so as to stand in an upright position with spindle vertical.
3. The opening or connection between the boiler and the safety valve or safety relief valve must have at least the area of the valve inlet. No valve of any description may be placed between the required safety valve or valves and the boiler nor on the discharge pipe between the safety valve or safety relief valve and the atmosphere. When a discharge pipe is used, the cross-sectional area may not be less than the full area of the valve outlet or of the total of the areas of the valve outlets, discharging thereinto and must be as short and straight as possible and arranged to avoid undue stresses on the valve or valves. All safety valve or safety relief valve discharges must be so located or piped as to be carried clear from running boards or platforms. Ample provision for gravity drain must be made in the discharge pipe at or near each safety valve or safety relief valve, and where water or condensation may collect. Each valve must have an open gravity drain through the casing below the level of the valve seat. For iron and steel-bodied valves exceeding two inches [50.8 millimeters] in size, the drain hole must be tapped not less than three-eighths-inch [9.53-millimeter] pipe size.

Discharge piping from safety relief valves on high temperature water boilers must have adequate provisions for water drainage as well as for steam venting.

The installation of cast iron-bodied safety relief valves for high temperature water boilers is prohibited.

4. If a muffler is used on a safety valve or safety relief valve, it must have sufficient outlet area to prevent back pressure from interfering with the proper operation and discharge capacity of the valve. The muffler plates or other devices must be so constructed as to avoid a possibility of restriction of the steam passages due to deposits. Mufflers may not be used on high temperature water boiler safety relief valves.

When a safety valve or safety relief valve is exposed to outdoor elements which may affect operation of the valve, it is permissible to shield the valve

~~with a satisfactory cover. The shield or cover must be properly vented and arranged to permit servicing and normal operation of the valve.~~

- ~~5. When a boiler is fitted with two or more safety valves or safety relief valves on one connection, this connection to the boiler must have a cross-sectional area not less than the combined areas of inlet connections of all the safety valves or safety relief valves with which it connects.~~
- ~~6. Safety valves may be attached to drums or headers by welding, provided the welding is done in accordance with the requirements of this article.~~
- ~~7. Every boiler must have proper outlet connections for the required safety valve, or safety relief valve, or valves, independent of any other outside steam connection, the area of opening to be at least equal to the aggregate areas of inlet connections of all of the attached safety valves or safety relief valves. An internal collecting pipe, splash plate, or pan may be used, provided the total area for inlet of steam thereto is not less than twice the aggregate areas of the inlet connections of the attached safety valves. The holes in such collecting pipe must be at least one-fourth inch [6.35 millimeters] in diameter and the least dimension in any other form of opening for inlet of steam must be one-fourth inch [6.35 millimeters].~~

~~Such dimensional limitations to operation for steam need not apply to steam scrubbers or driers provided the net free steam inlet area of the scrubber or drier is at least ten times the total area of the boiler outlets for the safety valves.~~

- ~~8. If safety valves are attached to a separate steam drum or dome, the opening between the boiler proper and the steam drum or dome must be not less than required by above.~~

The mounting of safety valves and safety relief valves must meet the requirements of the edition of the American society of mechanical engineers code, section 1, referenced by this article or the requirements of the edition of the American society of mechanical engineers, section 1, to which the boiler they are installed was constructed.

History: Effective June 1, 1994; amended effective January 1, 2014.

General Authority: NDCC 26.1-22.1-14

Law Implemented: NDCC 26.1-22.1-14

Section 45-12-05-12, relating to Operation, is amended as follows:

45-12-05-12. Operation.

- ~~1. Safety valves must be designed and constructed to operate without chattering and to attain full lift at a pressure no greater than three percent~~

~~above their set pressure. After blowing down, all valves must close at a pressure not lower than ninety-six percent of the set pressure of the lowest set valve. The minimum blowdown in any case is two pounds per square inch [13.79 kilopascals]. For spring-loaded pop safety valves for pressures between one hundred pounds per square inch [689.48 kilopascals] and three hundred pounds per square inch [2068.44 kilopascals], both inclusive, the blowdown is not less than two percent of the set pressure. To ensure the guaranteed capacity and satisfactory operation, the blowdown as marked upon the valve may not be reduced.~~

~~Safety valves used on forced-flow steam generators with no fixed steamline and waterline, and safety relief valves, used on high temperature water boilers, may be set and adjusted to close after blowing down not more than ten percent of the set pressure. The valves for these special uses must be so adjusted and marked by the manufacturer.~~

- ~~2. The blowdown adjustment must be made and sealed by the manufacturer or approved testing facility.~~
- ~~3. The popping point tolerance plus or minus may not exceed the following: two pounds per square inch [13.79 kilopascals] for pressures up to and including seventy pounds per square inch [482.63 kilopascals], three percent for pressures from seventy-one pounds per square inch [483.0 kilopascals] to three hundred pounds per square inch [2068.44 kilopascals], ten pounds per square inch [68.95 kilopascals] for pressures from three hundred one pounds per square inch [2069.0 kilopascals] to one thousand pounds per square inch [6894.80 kilopascals], and one percent for pressures over one thousand pounds per square inch [6894.80 kilopascals].~~
- ~~4. To ensure the valve being free, each safety valve or safety relief valve must have a substantial lifting device by which the valve disk may be positively lifted from its seat when there is at least seventy-five percent of full working pressure on the boiler. The lifting device must be such that it cannot lock or hold the valve disk in lifted position when the exterior lifting force is released.~~

~~Safety relief valve disks used on high temperature water boilers may not be lifted while the temperature of the water exceeds two hundred degrees Fahrenheit [93.3 Celsius]. If it is desired to lift the valve disk to assure that it is free, this shall be done when there is at least seventy-five percent of full working pressure on the boiler. For high temperature water boilers, the lifting mechanism must be sealed against leakage.~~

- ~~5. The seats and disks of safety valves or safety relief valves must be of suitable material to resist corrosion. The seat of a safety valve must be fastened to the body of the valve so that there is no possibility of the seat lifting.~~

- ~~6. Springs used in safety valves may not show a permanent set exceeding one percent of their free length ten minutes after being released from a cold compression test closing the spring solid.~~
- ~~7. The spring in a safety valve or safety relief valve in service for pressures up to and including two hundred fifty pounds per square inch [1683.7 kilopascals] may not be used for any pressure more than ten percent above or ten percent below that for which the safety valve or safety relief valve is marked. For higher pressures the spring may not be reset for any pressure more than five percent above or five percent below that for which the safety valve or safety relief valve is marked.~~

The operation of safety valves and safety relief valves must meet the requirements of the edition of the American society of mechanical engineers code, section 1, referenced in this article or the requirements of the edition of the American society of mechanical engineers code, section 1, to which the boiler they are installed was constructed.

- ~~8. If the operating conditions of a valve are changed so as to require a new spring under subsection 4 for a different pressure, the valve must be adjusted by the manufacturer, the manufacturer's authorized representative, or by a holder of a valid national board "VR" certificate who shall furnish and install a new nameplate.~~

History: Effective June 1, 1994; amended effective July 1, 2012; January 1, 2014.

General Authority: NDCC 26.1-22.1-14

Law Implemented: NDCC 26.1-22.1-14

Section 45-12-05-22, relating to Pressure on nonstandard steam traction engines, is amended as follows:

45-12-05-22. Pressure on nonstandard steam traction engines. All steam traction engines that are of nonstandard boiler construction are limited to a maximum allowable working pressure of one hundred pounds per square inch [690 kilopascals], unless a thorough ultrasonic thickness survey, engineering analysis, and other inspections, approved by the chief boiler inspector, determine that a different pressure is appropriate. The maximum allowable working pressure may not be greater than that permitted by the original manufacturer. Boilers herein described are not subject to the age limits of section 45-12-05-03.

History: Effective June 1, 1994; amended effective January 1, 2014.

General Authority: NDCC 26.1-22.1-14

Law Implemented: NDCC 26.1-22.1-14

Section 45-12-05-24, relating to Inspection and repair of standard and nonstandard steam traction engines, is created as follows:

45-12-05-24. Inspection and repair of standard and nonstandard steam traction engines. The national board inspection code referenced in this article must be used for the inspection and repair of all steam traction engines unless otherwise noted in this article.

History: Effective January 1, 2014.

General Authority: NDCC 26.1-22.1-14

Law Implemented: NDCC 26.1-22.1-14

**Chapter 45-12-09 – Heating, Low Pressure, and Hot Water Supply Boilers –
Existing Installations**

Section 45-12-09-06, relating to General, is amended as follows:

45-12-09-06. General. If in the judgment of the inspector, a ~~steam heating~~ boiler is unsafe for operation at the pressure previously approved, the pressure must be reduced, proper repair made, or the boiler retired from service.

History: Effective June 1, 1994; amended effective January 1, 2014.

General Authority: NDCC 26.1-22.1-14

Law Implemented: NDCC 26.1-22.1-14

Subsection 4 of Section 45-12-09-11, relating to Feedwater connections, is amended as follows:

4. There must be a stop valve and a check valve in the feedwater line at the boiler. For hot water heating boilers, the check valve must be a backflow preventer approved by the ~~State Plumbing Code, 2009 edition~~ state plumbing board.

History: Effective June 1, 1994; amended effective January 1, 2000; October 1, 2002; July 1, 2012; January 1, 2014.

General Authority: NDCC 26.1-22.1-14

Law Implemented: NDCC 26.1-22.1-14

Chapter 45-12-10 – Unfired Pressure Vessels

Section 45-12-10-01, relating to Construction and installation standards – Exceptions, is amended as follows:

45-12-10-01. Construction and installation standards - Exceptions. Unfired pressure vessels may not be installed in North Dakota unless such vessels have been constructed in accordance with the American society of mechanical engineers boiler and pressure vessel code, section VIII, division 1, 2, or 3, ~~2010~~ 2013 edition ~~or section VIII, division 2, 2004 edition~~, and bear the "U" stamp as proof of such construction.

Manufacturers shall register unfired pressure vessels with the national board of boiler and pressure vessel inspectors. Unfired pressure vessels must bear the required stamping of the national board.

The requirements of this section apply to all pressure vessels within the scope of the American society of mechanical engineers boiler and pressure vessel code, section VIII, division 1, 2, or 3, ~~2010~~ 2013 edition ~~or section VIII, division 2, 2004 edition~~, with these exceptions:

1. Pressure vessels under federal control.
2. Pressure vessels that do not exceed four cubic feet [30 United States gallons] in volume and two hundred fifty pounds per square inch gauge [1723.70 kilopascals] in pressure.
3. Pressure vessels that do not exceed one and one-half cubic feet [11.22 United States gallons] in volume and six hundred pounds per square inch gauge [4136.88 kilopascals] in pressure.
4. Unfired pressure vessels installed or ordered prior to November 1, 1987. However, these unfired pressure vessels must be maintained in a safe operating condition using ANSI/NB-23 and ANSI/API-510 as guidelines. Unfired pressure vessels referenced by this section must be protected with the American society of mechanical engineers stamped pressure relief devices as defined in section VIII of the American society of mechanical engineers boiler and pressure vessel code, ~~2010~~ 2013 edition. Existing pressure relief devices installed on unfired pressure vessels referenced by this section will be considered acceptable if the pressure relief device is set for the correct pressure, if the usage is correct, and if the device is in a satisfactory operating condition.

History: Effective June 1, 1994; amended effective April 1, 1996; January 1, 2000; October 1, 2002; January 1, 2006; April 1, 2010; July 1, 2012; January 1, 2014.

General Authority: NDCC 26.1-22.1-14

Law Implemented: NDCC 26.1-22.1-14