7/27/05

PROPOSED RULES

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

Subsections 4, 23, 28, and 35 of Section 45-12-01-01 – Definitions is 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, ~~2001~~ 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 park avenue, New York, New York 10016-5990.

23. "National Board Inspection Code" means the manual for boiler and pressure vessel inspectors supplied by the national board. The National Board Inspection Code, ~~2001~~ 2004 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.

28. "Reciprocal commission" means a commission issued by the commissioner to persons who have passed a written examination prescribed by the national board and who hold a national board commission issued by the national board, or to persons who have passed the written examination prescribed by the national board and are employed by ~~a self-insured corporation making their own inspections~~ an accredited national board owner/user inspection organization.

35. "Special inspector" means an inspector regularly employed by an ~~insurance company authorized to insure against loss from explosion of boilers in this state~~ accredited national board authorized inspection agency or an inspector who has passed the national board examination and is employed by ~~a self-insured corporation~~ an accredited national board owner/user inspection organization.

History: Effective June 1, 1994; amended effective April 1, 1996; January 1, 2000; October 1, 2002; _____.
General Authority: NDCC 26.1-22.1-14
Law Implemented: NDCC 26.1-22.1-14

Chapter 45-12-02 – Administration is amended as follows:

CHAPTER 45-12-02
ADMINISTRATION

Section

45-12-02-01 Inspection Reports to Be Submitted
45-12-02-02 Insurance Companies and Other Authorized Inspection Agencies to Notify the Chief Inspector of New, Canceled, or Suspended Risks
45-12-02-03 Insurance Companies and Other Authorized Inspection Agencies to Notify the Chief Inspector of Defective Boilers and Boiler Accidents
45-12-02-04 ~~Self-Insured Corporations~~ Owner/User Inspection Organizations Making Own Inspections
45-12-02-05 Defective Conditions Disclosed at Time of External Inspections
45-12-02-06 Owner or User to Notify the Chief Inspector in Case of Accident
45-12-02-07 Operating Without a Certificate of Inspection
45-12-02-08 Validity of Inspection Certificate for Boilers
45-12-02-09 Restamping Boilers
45-12-02-10 Condemned Boilers and Condemned Pressure Vessels
45-12-02-11 Owner and Installer to Notify Chief Boiler Inspector of Boilers to Be Installed in North Dakota or Brought Into North Dakota for Temporary Use
45-12-02-12 Owner to Notify the Chief Boiler Inspector of Businesses Closed or Reopened
45-12-02-13 Removal of Used Boilers From the State
45-12-02-14 Nonstandard Boilers
45-12-02-15 Installing Used or Secondhand Boilers
45-12-02-16 Reinstalled Boilers
45-12-02-17 Reporting Repairs to Be Made
45-12-02-18 Reports of Welded Repair or Alterations
45-12-02-19 Stamping of Boilers
45-12-02-20 Welders' Requirements
45-12-02-21 Alterations to Boilers
45-12-02-22 Major Repairs to Boilers

Section 45-12-02-01 – Inspection reports to be submitted is amended as follows:

45-12-02-01. Inspection reports to be submitted.

1. **Power boilers.** Each ~~insurance company or self-insured corporation~~ authorized inspection agency or owner/user inspection organization, to which a special inspector commission has been issued, shall submit to the chief boiler inspector complete data of each high pressure boiler insured or inspected by it or covered by a written inspection agreement in North Dakota on form ~~NB-5 or other approved form for boilers~~ SFN 10706. Each ~~internal~~ certificate inspection must be reported to the chief boiler inspector within fifteen days after inspection on form ~~NB-6 or other approved form for boilers~~ SFN 10706. ~~External~~ Noncertificate

inspections on high pressure boilers must be reported on form ~~NB-6 or other approved form~~ SFN 10706 only when hazardous conditions affecting the safety of the boiler are found to exist.

2. **Low pressure, hot water heating, and hot water supply boilers.** Within one year from effective date of this article, each ~~insurance company or self-insured corporation~~ authorized inspection agency or owner/user inspection organization shall submit to the chief boiler inspector complete data of each boiler insured or inspected by it or covered by a written inspection agreement in North Dakota on form ~~NB-5 or other approved form for boilers~~ SFN 10706. All required certificate inspections must be reported on ~~form NB-6 or other approved form~~ SFN 10706.

History: Effective June 1, 1994; amended effective _____.
General Authority: NDCC 26.1-22.1-14
Law Implemented: NDCC 26.1-22.1-14

Section 45-12-02-02 – Insurance companies and other authorized inspection agencies to notify the chief inspector of new, canceled, or suspended risks is amended as follows:

45-12-02-02. Insurance companies and other authorized inspection agencies to notify the chief inspector of new, canceled, or suspended risks. Each insurance company or other authorized inspection agency shall notify the chief inspector within thirty days of each boiler insured, covered by a written inspection agreement, canceled, not renewed, or suspended because of unsafe conditions.

History: Effective June 1, 1994; amended effective _____.
General Authority: NDCC 26.1-22.1-14
Law Implemented: NDCC 26.1-22.1-14

Section 45-12-02-03 – Insurance companies and other authorized inspection agencies to notify the chief inspector of defective boilers and boiler accidents is amended as follows:

45-12-02-03. Insurance companies and other authorized inspection agencies to notify the chief inspector of defective boilers and boiler accidents. If a special inspector, upon the first inspection of a ~~new risk~~ boiler, finds that the boiler or any of the appurtenances are in such condition that the inspector's company refuses insurance or the boiler does not comply with the provisions of this article, the company shall submit a report of the defects to the chief inspector. When an accident occurs to an insured boiler or to a boiler covered by a written inspection agreement which requires major repairs as defined in subsection 20 of section 45-12-01-01, or which results in the boiler being removed from service, that accident must be reported to the chief boiler inspector within thirty days of the insuring or inspecting company first becoming aware of the accident.

History: Effective June 1, 1994; amended effective _____.

General Authority: NDCC 26.1-22.1-14
Law Implemented: NDCC 26.1-22.1-14

Section 45-12-02-04 – Owner/user inspection organizations making own inspections is amended as follows:

45-12-02-04. ~~Self-insured corporations~~ Owner/user inspection organizations making own inspections. The chief inspector will not be required to inspect boilers in any establishment owned and operated by ~~a self-insured corporation~~ an owner/user inspection organization provided an annual boiler inspection program is established and maintained by such ~~corporation~~ organization and all boilers and appurtenances are constructed, installed, operated, and repaired in accordance with the provisions of this article. When boilers are inspected by an employee of ~~a self-insured corporation~~ an owner/user inspection organization, such inspector must hold a certificate of competency or a commission issued by North Dakota or a state that has adopted the American Society of Mechanical Engineers Code. A complete report of each boiler inspection must be filed with the chief inspector on ~~national board or other approved forms~~ form SFN 10706 within fifteen days of inspection.

History: Effective June 1, 1994; amended effective _____.
General Authority: NDCC 26.1-22.1-14
Law Implemented: NDCC 26.1-22.1-14

Section 45-12-02-08 – Validity of inspection certificate for boilers is amended as follows:

45-12-02-08. Validity of inspection certificate for boilers. A certificate of inspection, issued in accordance with this article, is valid until expiration unless some defect or condition affecting the safety of the boiler is disclosed and if all inspection fees have been paid. A certificate of inspection is valid for the following time periods:

1. Thirty-six months for power boilers over one hundred thousand pounds [45359.24 kilograms] of steam per hour as allowed by North Dakota Century Code section 26.1-22.1-07.

2. ~~Twenty-four~~ Twelve months for steam traction engines.

3. Twelve months for all other power boilers.

4. Thirty-six months for hot water heating and hot water supply boilers located in apartments and condominiums.

5. Twenty-four months for all other hot water heating, hot water supply, and low pressure boilers.

A certificate issued for a boiler inspected by a special inspector is valid only if the boiler for which it was issued continues to be insured by a duly authorized insurance company ~~or self-insured corporation~~ , covered by a written inspection agreement with an authorized inspection agency, or inspected by an accredited owner/user inspection organization. A two-month grace period must be extended for any certificate.

History: Effective June 1, 1994; amended effective January 1, 2000; _____.
General Authority: NDCC 26.1-22.1-14
Law Implemented: NDCC 26.1-22.1-14

Section 45-12-02-17 – Reporting repairs to be made is amended as follows:

45-12-02-17. Reporting repairs to be made.

1. The owner or person in charge of a boiler repair shop making major repairs to a boiler shall notify the chief boiler inspector of each major repair or alteration to be made to a boiler, and the anticipated repair must be approved before work is started; or

2. If the boiler is insured, covered by a written inspection agreement with an authorized inspection agency, or owned by ~~a self-insured corporation~~ an owner/user inspection organization, the special inspector may authorize the repair. After such repairs are made, they are subject to the approval of an inspector.

History: Effective June 1, 1994; amended effective _____.
General Authority: NDCC 26.1-22.1-14
Law Implemented: NDCC 26.1-22.1-14

Section 45-12-02-22 – Major repairs to boilers is amended as follows:

45-12-02-22. Major repairs to boilers. Major repairs, as defined in this article, must be made by:

1. A firm in possession of a valid national board "R" certificate of authorization for the type of vessel to be repaired;

~~2. Any self-insured company that has employees for the purpose of inspecting its own boilers in this state and these employees have been issued special inspector commissions under North Dakota Century Code section 26.1-22.1-08; or~~

~~3.~~ 2. A firm authorized by the commissioner to do repairs to boilers. Such authorization may only be issued upon a successful review of that firm's repair capabilities by the chief inspector. Such a review must be based on the National Board Inspection Code and must be made on a frequency determined by the chief

inspector. Such authorization may be revoked or not renewed by the chief inspector for cause.

The requirements of this section are effective December 1, 1994.

History: Effective June 1, 1994; amended effective _____.
General Authority: NDCC 26.1-22.1-14
Law Implemented: NDCC 26.1-22.1-14

Section 45-12-03-07 – Automatic low-water fuel cutoff or water-feeding device is amended as follows:

45-12-03-07. Automatic low-water fuel cutoff or water-feeding device.

1. Each automatically fired steam or vapor system boiler must be equipped with an automatic low-water cutoff located to automatically cut off the fuel supply when the surface of the water falls to the lowest safe waterline. For other than electric and miniature boilers, each automatically fired ~~high pressure~~ steam or vapor system boiler must be equipped with at least two low-water fuel cutoffs, one of which must be readily testable. One low-water fuel cutoff must be set to function ahead of the other. Functioning of the lower of the controls shall cause safety shutdown and lockout. The manual reset may be incorporated into the lower cutoff control. Where a reset device is separate from the low-water fuel cutoff, a means shall be provided to indicate actuation of the low-water fuel cutoff. The manual reset device may be of the instantaneous type or may include a time delay of not more than three minutes after the fuel has been cut off. A system may incorporate a time delay component with the low-water fuel cutoff device to prevent short cycling. A time delay must not exceed the manufacturer's recommended timing, or ninety second, whichever is less. A high pressure boiler regularly attended by a full-time operator is not considered as automatically fired, and is not required to be equipped with low-water fuel cutoffs. For other than electric boilers, the primary low-water fuel cutoff for low pressure steam boilers must be a float type that can be readily tested.

2. If a water-feeding device is installed, it must be constructed so that the water inlet valve cannot feed water into the boiler through the float chamber and located to supply requisite feedwater. The lowest safe waterline should not be lower than the lowest visible part of the water glass.

3. Such fuel or feedwater control device may be attached directly to a boiler or to the tapped openings provided for attaching a water glass directly to a boiler, provided that for low pressure boilers such connections from the boiler are nonferrous tees or Ys not less than one-half-inch [12.7-millimeter] pipe size between the boiler and the water glass, so that the water glass is attached directly and as close as possible to the boiler; the straight tapping of the Y or tee to take the water glass

fittings, and the side outlet of the Y or tee to take the fuel cutoff or water-feeding device. The ends of all nipples must be reamed to full-size diameter.

4. Designs embodying a float and float bowl must have a vertical straight drainpipe at the lowest point in the water equalizing pipe connections by which the bowl and the equalizing pipe can be flushed and the device tested. This drainpipe and connections must be not less than national pipe standard (NPS) 1.

History: Effective June 1, 1994; amended effective April 1, 1996; January 1, 2000; _____.
General Authority: NDCC 26.1-22.1-14
Law Implemented: NDCC 26.1-22.1-14

Section 45-12-03-08 – Safety appliances is amended as follows:

45-12-03-08. Safety appliances.

1. A person may not remove, tamper with, or render inoperative any safety appliances prescribed by these rules except for the purpose of making repairs. The resetting of safety appliances may not exceed the accepted working pressure of the unit.

2. Repairs or adjustments made to safety or safety relief valves must be done by the manufacturer of the valve or an approved testing facility equipped to do such repairs or adjustments. The resetting of safety valves or safety relief valves may not exceed the accepted working pressure for the unit.

3. An approved testing facility must be one of the following:

   a. A facility holding a valid certificate of authorization and "VR" symbol stamp issued by the national board of boiler and pressure vessel inspectors.

   ~~b. An owner or user "VR" program, the full equivalent of the national board "VR" program, reviewed and accepted by the chief boiler inspector, and a representative of the owner or user's authorized inspection agency responsible for the inservice inspection of the owner or user's boilers.~~

   ~~c.~~ b. An owner or user program for doing adjustments to set pressure or blowdown, or both, to boiler pressure relief valves owned by them, provided the adjusted settings or capacities, or both, and the date of the adjustments are recorded on a metal tag secured to the seal wire. All external adjustments must be sealed showing the identification of the organization making the adjustments. The chief boiler inspector shall review the training, qualifications, and procedures used to implement this program.

History: Effective June 1, 1994; amended effective _____.
General Authority: NDCC 26.1-22.1-14
Law Implemented: NDCC 26.1-22.1-14

Subdivision c of subsection 1 of Section 45-12-03-26 – Inspection of boilers is amended as follows:

c. Steam traction engines must be inspected at least once every ~~twenty-four~~ twelve months. Inspections must alternate between internal inspections and hydrostatic tests. External inspections, made with the boiler under pressure, will be made at the discretion of the inspector.

History: Effective June 1, 1994; amended effective April 1, 1996; January 1, 2000; _____.
General Authority: NDCC 26.1-22.1-14
Law Implemented: NDCC 26.1-22.1-14

Section 45-12-05-19 – Fusible plugs is amended as follows:

45-12-05-19. Fusible plugs.

1. Fire-actuated fusible plugs, if used, must conform to the requirements of the American Society of Mechanical Engineers Code for power boilers~~, July 1, 1973~~.

2. They may be replaced by steel plugs if the boiler is gas fired or oil fired and is equipped with a low water fuel cutoff.

History: Effective June 1, 1994; amended effective _____.
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 is amended as follows:

CHAPTER 45-12-09
HEATING, LOW PRESSURE, AND HOT WATER SUPPLY BOILERS - EXISTING INSTALLATIONS

Section
45-12-09-01 American Society of Mechanical Engineers Code Boilers
45-12-09-02 Nonstandard Riveted Boilers
45-12-09-03 Nonstandard Welded Boilers
45-12-09-04 Nonstandard Cast Iron Boilers

45-12-09-05 Fired Radiators
45-12-09-06 General
45-12-09-07 Pressure-Relieving Devices
45-12-09-08 Steam Pressure Gauge
45-12-09-09 Water Gauge Glasses
45-12-09-10 Stop Valves and Check Valves
45-12-09-11 Feedwater Connections
45-12-09-12 Pressure or Altitude Gauges
45-12-09-13 Thermometers
45-12-09-14 Temperature Control
45-12-09-14.1 Pressure Control
45-12-09-15 Provisions for Thermal Expansion in Hot Water Systems
45-12-09-16 Return Pump
45-12-09-17 Repairs and Renewals of Fittings and Appliances
45-12-09-18 Low-Water Fuel Cutoff
45-12-09-19 Modular Hot Water Heating Boilers
45-12-09-20 Bottom Blowoff and Drain Valves
45-12-09-21 Emergency Shutoff Switches

Section 45-12-09-14 – Temperature control is amended as follows:

45-12-09-14. Temperature control. Each automatically fired hot water boiler must be protected from over temperature by two temperature-operated controls.

1. Each individual automatically fired water boiler must have a safety limit control that will cut off the fuel supply to prevent water temperature from exceeding the maximum allowable temperature at the boiler outlet. The water temperature safety control must be constructed to prevent a temperature setting above the maximum allowable temperature and be of the manual reset type.

2. Each individual hot water boiler or each system of commonly connected boilers without intervening valves must have a control that will cut off the fuel supply when the water temperature reaches an operating limit, which must be less than the maximum allowable temperature.

History: Effective June 1, 1994; amended effective January 1, 2000; _____.
General Authority: NDCC 26.1-22.1-14
Law Implemented: NDCC 26.1-22.1-14

Section 45-12-09-14.1 – Pressure control is amended as follows:

45-12-09-14.1. Pressure control. Each automatically fired steam boiler must be protected from overpressure by two pressure-operated controls.

1. Each automatically fired steam boiler must have a safety limit control that will cut off the fuel supply to prevent steam pressure from exceeding the fifteen pounds per square inch [103 kilopascals] maximum allowable working pressure of the boiler. Each control must be constructed to prevent a pressure setting above fifteen pounds per square inch [103 kilopascals] and be of the manual reset type.

2. Each individual steam boiler or each system of commonly connected steam boilers must have a control that will cut off the fuel supply when the pressure reaches an operating limit, which must be less than the maximum allowable pressure.

3. Shutoff valves of any type may not be placed in the steam pressure connection between the boiler and the controls described in subsections 1 and 2. These controls must be protected with a siphon or equivalent means of maintaining a water seal that will prevent steam from entering the control.

History: Effective June 1, 1994; _____.
General Authority: NDCC 26.1-22.1-14
Law Implemented: NDCC 26.1-22.1-14

Section 45-12-09-18 – Low-water fuel cutoff is amended as follows:

45-12-09-18. Low-water fuel cutoff.

1. Each automatically fired hot water heating boiler must have an automatic low-water fuel cutoff that has been designed for hot water service and which can be tested without draining the system or the boiler. It must be so located as to automatically cut off the fuel supply prior to the surface of the water falling below the lowest safe water level as established by the boiler manufacturer.

2. A coil-type or watertube boiler requiring forced circulation to prevent overheating of the coils or tubes must have a flow-sensing device installed in the boiler or piping in lieu of the required low-water fuel cutoff that will cut off the fuel supply when the circulation flow is interrupted. Functioning of the low-water fuel cutoff due to a low water condition must cause safety shutdown and lockout. Where a reset device is separate from the low-water fuel cutoff, a means shall be provided to indicate actuation of the low-water fuel cutoff. The manual reset may be the instantaneous type, or may include a time delay of not more than three minutes after the fuel has been cut off.

3. Low-water fuel cutoff requirements for steam boilers are addressed by section 45-12-03-07.

History: Effective June 1, 1994; amended effective _____.
General Authority: NDCC 26.1-22.1-14

Law Implemented: NDCC 26.1-22.1-14

Section 45-12-09-21 – Emergency shutoff switches is created as follows:

45-12-09-21. Emergency shutoff switches.

1. A manually operated emergency shutoff switch or circuit breaker must be located just outside the boiler room door and marked for easy identification. Consideration should be given to the type and location of the switch to safeguard against tampering. If the boiler room door is on the building exterior, the switch must be located just inside the door. If there is more than one door to the boiler room, there must be a switch located at each door.

2. The emergency switch or circuit breaker must disconnect all power to the burner controls.

3. This requirement is limited to single and modular boilers exceeding 400,000 Btu/hr input installed after January 1, 2006.

History: Effective _____.
General Authority: NDCC 26.1-22.1-14
Law Implemented: NDCC 26.1-22.1-14

Section 45-12-10-01 – 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, ~~2001~~ 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, ~~2001~~ 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, ~~2001~~ 2004 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; _____.
General Authority: NDCC 26.1-22.1-14
Law Implemented: NDCC 26.1-22.1-14

Section 45-12-10-02 – Application of standards – Repairs is amended as follows:

45-12-10-02. Application of standards - Repairs. These rules apply only to new construction, except as noted below:

1. Reinstalled pressure vessels must meet the rules for new construction. Exception: National board registration is required only for those vessels ordered and constructed after November 1, 1987.

2. Repairs to unfired pressure vessels and to safety and safety relief valves for those vessels:

   a. Repairs to safety valves and safety relief valves must be such that valve function is not impaired and the repaired valve will perform to the standards for which it was originally constructed. It is recommended that these repairs be made by a firm in possession of a valid "VR" certificate of authorization from the national board of boiler and pressure vessel inspectors.

   b. Repairs to unfired pressure vessels must be such that vessels repaired will be returned to a safe and satisfactory operating condition, provided there is not deviation from the original design. It is recommended that these repairs be made by a firm in possession of a valid "R" certificate of

authorization from the national board of boiler and pressure vessel inspectors.

c. The National Board Inspection Code (ANSI/NB-23, ~~2001~~ 2004 edition) and the American Petroleum Institute Code (ANSI/API-510, 1997 edition) cover repair and alteration procedures. ANSI/API-510 may be used to cover the maintenance inspection, repair, alteration, and rerating procedure for pressure vessels used by the petroleum and chemical process industries. It is intended that ANSI/NB-23 cover installations other than those covered by ANSI/API-510.

3. Alterations to unfired pressure vessels:

a. Alterations, as defined in ANSI/NB-23, must be made by a national board "R" certificate holder.

b. Alterations may also be made by an organization operating under the provisions of ANSI/API-510, provided the alteration is within the scope of ANSI/API-510.

History: Effective June 1, 1994; amended effective April 1, 1996; January 1, 2000; October 1, 2002; _____.
General Authority: NDCC 26.1-22.1-14
Law Implemented: NDCC 26.1-22.1-14