

NEBRASKA ADMINISTRATIVE CODE

TITLE 229 - DEPARTMENT OF LABOR

CHAPTER 20 - POWER BOILERS – NEW INSTALLATIONS

001. This chapter is adopted pursuant to *Neb. Rev. Stat. §48-727*.

002. A. No new power boiler shall hereafter be brought into this state or installed in this state unless it has been constructed and inspected in accordance with the requirements of ASME Section I Rules for Construction of Power Boilers.
- B. No new power boiler shall hereafter be brought into this state or installed in this state unless it bears the ASME Certification Mark with the Section I Designator or is inspected and stamped in accordance with the requirements of the National Board of Boiler and Pressure Vessel Inspectors; or has been approved as a "state special."
- C. All new power boilers installed in the state of Nebraska shall be registered with the National Board.
- D. Upon completion of installation, all power boilers shall be inspected by the chief inspector or a deputy inspector and at least once each year thereafter shall be subjected to an inspection unless exempted by other provisions of this Title or the Act.
- E. All power boilers shall be equipped with controls and safety devices based upon the BTU/hr burner input, as specified in the original code of construction, and in accordance with the following codes and standards:
1. Boilers with energy input ratings of less than 12,500,000 BTU/hr shall meet the requirements of ASME CSD-1, Controls and Safety Devices for Automatically Fired Boilers.
 2. Boilers with energy input ratings of 12,500,000 BTU/hr and above shall meet the requirements of NFPA-85 Boiler and Combustion Systems Hazard Code.
 3. All electric boilers, regardless of input, shall meet the requirements of ASME CSD-1 Controls and Safety Devices for Automatically Fired Boilers.
 4. All atmospheric fluidized-bed boilers, boilers with pulverized fuel systems, and boilers that are stoker fired shall meet the requirements of NFPA-85 Boiler and Combustion Systems Hazard Code.

5. All heat recovery steam generators (HRSG's) shall meet the requirements of NFPA-85 Boiler and Combustion Systems Hazard Code.
 6. For boilers that are fired by other types of fuel not covered in CSD-I or NFPA-85, the Chief Inspector shall be contacted to determine what types of fuel burning controls are to be acceptable to ensure the safety of the unit and personnel. The Chief Inspector shall use the requirements in ASME CSD-1, NFPA-85, ANSI Standards or Underwriters Laboratories Standards and the manufacturer's specifications to determine the appropriate fuel controls to be installed.
003. Each power boiler shall be protected from overpressure in accordance with the requirements of ASME Section I and shall have at least one (1) safety valve. All power boilers with more than five hundred square feet of water heating surface or an electric power input of more than eleven hundred kilowatts shall have two (2) or more safety valves.
004. The safety valve or valves shall be connected to the power boiler, independent of any other steam connection and attached as close as possible to the power boiler, without unnecessary intervening pipe or fittings.
005. No valves of any type shall be placed between the safety valve and the power boiler. If a discharge pipe is used, no valve shall be placed on the discharge pipe between the safety valve and the atmosphere. The discharge pipe shall be at least the full size of the safety valve discharge and fitted with an open drain to prevent water lodging in the upper part of the safety valve or discharge pipe. The discharge pipe shall be as short and straight as possible and so arranged as to avoid undue stress on the valve or valves. All safety valve discharges shall be so located or piped as to be carried away from walkways or platforms.
006. The safety valve capacity of each power boiler shall be such that the safety valve or valves will discharge all the steam that can be generated by the power boiler, without allowing the pressure to rise more than six percent above the highest pressure to which any valve is set, and in no case, to more than six percent above maximum allowable working pressure.
007. One or more safety valves on every power boiler shall be set at or below the maximum allowable working pressure. The remaining valves may be set within a range of three percent above the maximum allowable working pressure but, the range setting of all the safety valves on a power boiler shall not exceed ten percent of the highest pressure at which any valve is set.
008. When two (2) or more power boilers operating at different pressures and safety-valve settings are interconnected, the lowest pressure boilers or interconnected piping shall be equipped with safety valves of sufficient capacity to prevent over-pressure, considering the maximum generating capacity of all boilers.
009. The minimum safety valve or safety-relief valve relieving capacity for electric power boilers shall be three and one-half pounds per hour per kilowatt input.
010. Each power boiler shall have a feed supply that is in compliance with the requirements of ASME Section I and which will permit the boiler to be fed at any time while under pressure as follows:
- A. A boiler having more than five hundred square feet of water-heating surface shall have at least two (2) means of feeding. Each source of feed water shall be capable of supplying water to the boiler at a pressure of three (3) percent higher than the highest setting of any safety valve on the boiler.

- B. Boilers fired by gaseous, liquid, or solid fuel in suspension may be equipped with a single means of feeding water provided means are furnished for the immediate shutoff of heat input prior to the water level going below the lowest permissible level. The feed-water shall be introduced into the boiler in such a manner that it will not be discharged close to joints of furnace sheets, directly against surfaces exposed to products of combustion, or directed to surfaces subject to radiation from the fire.
 - C. The feed piping to the boiler shall be provided with a check valve near the boiler and a stop valve between the check valve and the boiler.
 - D. When two (2) or more boilers are fed from a common source, there shall also be a valve on the branch to each boiler between the check valve and source of supply. Whenever a globe valve is used on feed piping, the inlet shall be under the disk of the valve.
011. Power Boiler External Piping shall be designed, constructed, installed and inspected in accordance with the requirements of ASME B31.1, Power Piping, and bears the ASME Certification Mark with the appropriate Designator.
- A. Each steam outlet from a boiler, except safety valve and water-column connections, shall be fitted with a stop valve located as close as practicable to the boiler. When a stop valve is so located that water can accumulate, ample drains shall be provided. The drainage shall be piped to a safe location and shall not be discharged on the top of the boiler or its setting.
 - B. When boilers provided with manholes are connected to a common steam main, the steam connection from each boiler shall be fitted with two (2) stop valves having an ample free-blowing drain between them. The discharge of the drain shall be piped clear of the boiler setting. The stop valve arrangement shall consist of one automatic non-return valve next to the boiler and second valve of the outside screw and yoke type.
 - C. All other Boiler Proper piping and/or External Piping, valves, gauges, and devices shall comply with the rules as stated in ASME B31.1 and ASME Section I.