

815 KAR 15:026. Existing boilers and pressure vessels; testing, repairs, inspection, and safety factors.

RELATES TO: KRS 236.010, 236.030, 236.110, 236.240, 236.250, 236.990

STATUTORY AUTHORITY: KRS 236.030, 236.040, 236.110

NECESSITY, FUNCTION, AND CONFORMITY: KRS 236.030 requires the commissioner to promulgate administrative regulations that establish reasonable standards for the inspection and repair of boilers and pressure vessels. This administrative regulation establishes the requirements for inspections and safe maintenance of boilers and pressure vessels.

Section 1. Frequency of Inspection of Existing Vessels. (1) Boiler inspections. Boilers shall be inspected pursuant to KRS 236.110 upon notification by a boiler inspector or special boiler inspector.

(2) Pressure vessel inspections. Pressure vessels shall be reinspected in accordance with this subsection and subsection (3) of this section.

(a) Pressure vessels exceeding 200 psi MAWP shall be inspected every five (5) years.

(b) Hot water storage tanks, sterilizers, and autoclaves shall be inspected every four (4) years.

(c) Pressure vessels for human occupancy and hyperbaric chambers shall be inspected every two (2) years.

(d) Jacketed kettles shall be inspected every two (2) years.

(e) Deareators shall be inspected externally and internally every ten (10) years.

(f) All pressure vessels shall be re-inspected at the time of repair, alteration, or relocation.

(3) Inspection times. Except as established in 815 KAR 15:027, inspections made by boiler inspectors shall be conducted during normal business hours of the department between 8:00 a.m. and 4:30 p.m. Monday through Friday.

Section 2. Preparation for Inspections and Tests. (1) The owner or user shall prepare the boiler or pressure vessel for inspection if requested by the boiler inspector, special boiler inspector, or owner-user inspector.

(2) Inspections shall be conducted within seven (7) days of the date of notification by the boiler inspector, special boiler inspector, or owner-user inspector.

(3) The owner or user shall prepare a boiler or pressure vessel for inspection by ensuring that:

(a) Water shall be drawn off and the boiler thoroughly washed;

(b) The manhole and handhole plates, washout plugs, and the plugs in water column connections shall be removed and the furnace and combustion chambers thoroughly cooled and cleaned;

(c) The grate of an internally fired boiler, if present, shall be removed;

(d) Brickwork shall be removed as required by the boiler inspector or special boiler inspector to determine the condition of the boiler, header, furnace, supports, or other parts; and

(e) Leakage of steam or hot water into the boiler shall be cut off by disconnecting or blocking off the pipe or valve at the most convenient point.

(4) If the boiler or pressure vessel is jacketed, enough of the jacketing shall be removed upon the request of the boiler inspector, special boiler inspector, or owner-user inspector so that the safety of the boiler or pressure vessel can be determined. If the covering cannot be removed at that time, the boiler inspector, special boiler inspector, or owner-user inspector shall order the boiler or pressure vessel out of service until the covering can be removed and a proper examination made.

(5) If a boiler has not been prepared for an inspection in accordance with the requirements of this section or the owner or user fails to comply with the requirements for the hydrostatic or other leak test established in this administrative regulation, the boiler inspector or special boiler inspector may decline to make the inspection or test and the inspection certificate shall be withheld until the owner or user complies with the requirements.

(6) Hydrostatic pressure tests. If a hydrostatic test is applied to an existing installation, the pressure shall be as established in paragraphs (a) through (d) of this subsection.

(a) For determining tightness, the pressure shall be equal to the release pressure of the safety valve or valves having the lowest release setting.

(b)1. For determining safety or the strength of a vessel and associated piping as well as tightness, the test shall conform to the procedures and the pressure shall conform to the test pressures established in the original code of construction but not exceed one and one-half (1 1/2) times the MAWP, except for a locomotive type boiler, in which case the pressure shall be one and one-fourth (1 1/4) times the MAWP.

2. The pressure shall be under proper control to prevent the required test pressure from exceeding testing requirements listed in the original code of construction.

(c) The temperature of the water used for the hydrostatic test shall not be less than ambient temperature and shall not be less than seventy (70) degrees Fahrenheit for boilers or thirty (30) degrees Fahrenheit above the minimum design metal temperature for pressure vessels, nor high enough to allow the metal temperature to exceed 120 degrees Fahrenheit.

(d) Minimum test pressure shall not be less than eighty (80) percent of the MAWP or the set pressure of the pressure-relieving device, whichever is greater.

Section 3. Safety Factors in Existing Boilers and Pressure Vessels. (1) Maximum pressure and temperature.

(a) Code boilers. The MAWP and temperature for standard pressure vessels and boilers shall be determined in accordance with the original code of construction.

(b) Noncode high pressure boilers. The MAWP of a noncode high pressure boiler shall be calculated in accordance with Section I of the ASME Boiler and Pressure Vessel Code.

(c) Noncode welded heating boilers.

1. The MAWP of a noncode steel or wrought iron heating boiler of welded construction shall not exceed fifteen (15) psi.

2. For other than steam service, the MAWP shall be calculated in accordance with Section IV of the ASME Boiler and Pressure Vessel Code as established by KRS 236.040(2).

(d) Noncode cast iron heating boilers. The MAWP of a noncode boiler, composed principally of cast iron shall not exceed fifteen (15) psi for steam service or thirty (30) psi for hot water service.

(2) Notice of accident or malfunction.

(a) If an accident or malfunction renders a boiler or pressure vessel inoperative, the owner, user, or insurer shall immediately notify the Boiler Inspection Section and submit a detailed report of the accident or malfunction.

(b) 1. For any accident, including an explosion, resulting in property damage, injury to a person, or loss of life, the owner, user, or insurer shall give notice immediately by phone or electronic mail to the Boiler Inspection Section.

2. The boiler, pressure vessel, or any of the parts shall not be removed or disturbed before an inspection has been made by a boiler inspector or special boiler inspector, except for the purpose of saving human life.

(3) Unsafe boilers and pressure vessels. A boiler or pressure vessel inspected by a boiler inspector or a special boiler inspector and found unsafe for further use shall be removed from

service, until the boiler or pressure vessel has been sufficiently repaired and inspected by a boiler inspector or a special boiler inspector.

(4) Removal of safety appliances.

(a) A person shall not attempt to remove or work on a safety appliance while a boiler or pressure vessel is in operation unless under the direction of a boiler inspector or special boiler inspector, or permitted by these administrative regulations.

(b) If a safety appliance is repaired during an outage of a boiler or pressure vessel, the appliance shall be reinstalled and in proper working order before the vessel is returned to service.

(5) Maintenance. The boiler, pressure vessel, and pressure piping shall be maintained in accordance with the minimum requirements of the edition of the ASME Code that was in effect at the time the boiler, pressure vessel, and pressure piping was constructed and installed.

Section 4. Used Vessels. (1) Used Vessel Inspections. Before a used boiler or pressure vessel is placed into service, it shall be inspected by a boiler inspector, and the inspection may include an internal and external visual inspection, a hydrostatic test, or other non-destructive examination.

(2) Reinstalled boilers or pressure vessels.

(a) If a boiler or pressure vessel is moved and reinstalled, the fittings and appliances shall comply with the ASME Boiler and Pressure Vessel Code, 2013 Edition or subsequent editions, as established by KRS 236.040(2), and 815 KAR Chapter 15.

(b) All pressure vessels for human occupancy shall comply with the ASME Safety Standard for Pressure Vessels for Human Occupancy, 2012 Edition or subsequent editions, as established by KRS 236.040(3), and 815 KAR Chapter 15.

(3) Appeal of an inspection decision.

(a) If the owner or user does not concur with the boiler inspector's decision regarding the condition of the boiler or pressure vessel, the owner or user may appeal to the commissioner who shall request a joint inspection by the chief boiler inspector and the boiler inspector.

(b) The chief boiler inspector and the boiler inspector shall render a report to the commissioner, who shall render the final decision, based upon the data contained in all the inspectors' reports.

Section 5. Repairs and Alterations. (1) Repair or alteration to a boiler, pressure vessel, and the appurtenances shall conform to the requirements of the National Board Inspection Code Part 3, 2015 Edition, or subsequent editions.

(2) Repairs or alterations to pressure relieving devices shall be made by a firm possessing the National Board Certificate of Authorization for Use of the Valve Repair (V-R) Stamp and the valve shall be stamped with the V-R stamp upon completion of the repair.

(3) An owner-user inspector may inspect repairs and alterations to pressure vessels that the owner-user inspector's company owns or operates.

Section 6. Inspection by Special Boiler Inspectors. (1) A special boiler inspector shall submit an inspection report to the Boiler Inspection Section on the applicable National Board Inspection Code Report of Inspection standard form or its electronic equivalent.

(2) An insurance company shall notify the Boiler Inspection Section of a new or a cancelled policy for a boiler or pressure vessel within thirty (30) days of the effective date of the policy.

(3) If a special boiler inspector finds, upon inspection of a boiler or pressure vessel a condition causing the special boiler inspector's company to refuse or suspend insurance of the boiler or pressure vessel, the company shall immediately notify the Boiler Inspection Section and submit a report of the defect.

Section 7. Inspection by Owner-User Inspectors. (1) An owner-user inspector shall submit an inspection report to the Boiler Inspection Section on the applicable National Board Inspection Code Report of Inspection standard form, or its electronic equivalent.

(2) An owner-user company shall immediately notify the Boiler Inspection Section of a defective pressure vessel and submit a report of the defect using the applicable National Board Inspection Code Report of Inspection standard form or its electronic equivalent.

(3) If there is a disagreement as to the acceptance of any condition of a pressure vessel or repair by the owner-user inspector and owner-user company, the department shall make the final determination in accordance with the standards established in this administrative regulation.

Section 8. Inspection by Owner's Piping Inspector. (1)(a) Owner's piping inspectors shall inspect all new, replacement, and repaired piping for compliance to the applicable ASME piping code to which the piping is installed.

(b) The owner's piping inspector shall sign the permit filed by the boiler and pressure vessel contractor performing the piping installation or repair and forward it to the Boiler Inspection Section.

(2)(a) The owner facility license and the independent inspection agency shall maintain copies of the material mill test reports and pressure test information including type of test, pressure at start and end of test, and duration of test for five (5) years pursuant to KRS 236.097(1)(h) and (3)(f).

(b) If welded joints are utilized, the file shall contain the qualified welder identification, weld procedure, and procedure qualification used.

(3) If there is a disagreement as to the acceptance of any condition of the piping installation or repair by the owner's piping inspector and owner's user facility, the department shall make the final determination in accordance with the standards established in this administrative regulation.

Section 9. Incorporation by Reference. (1) The "National Board Inspection Code", 2015 Edition, is incorporated by reference.

(2) This material may be inspected, copied, or obtained, subject to applicable copyright law, at the Department of Housing, Buildings and Construction, Division of Plumbing, Boiler Section, 500 Mero Street, Frankfort, Kentucky 40601, Monday through Friday, 8 a.m. to 4:30 p.m. (20 Ky.R. 2756; 2978; eff. 5-18-1994; 23 Ky.R. 3621; 24 Ky.R. 94; eff. 6-25-1997; TAm eff. 8-9-2007; 42 Ky.R. 1625; 2113; eff. 2-5-2016; 44 Ky.R. 819, 1341; eff. 1-5-2018; TAm eff. 5-29-2020.)