

Title 15: Mississippi Department of Health

Part 10: Boiler and Pressure Vessel Safety

Subpart 76: Boiler and Pressure Vessel Safety Act and Rules and Regulations

Chapter 1. Boiler and Pressure Vessel Safety Act and Rules and Regulations

Subchapter 1. General Information

Rule 1.1.1. Justification for Rules and Regulations: In accordance with the provisions of the Mississippi Boiler and Pressure Vessel Safety Law of 1974, the Governor with the approval of the Senate appoints a Technical Advisory Committee of Boiler and Pressure Vessel Safety. This Committee, under Section 45-23-9 of the Law, "shall recommend the adoption of definitions, rules and regulations for the safe construction, installation, inspection, care and good practice in the operation, maintenance and repair of boilers and pressure vessels by the State Department of Health." See Section 45-23-0 of the Mississippi Boiler and Pressure Vessel Safety Act of 1974.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.1.2. The requirements of the State of Mississippi, Bureau of Environmental Health boiler and pressure vessel regulations governing the construction of boilers and pressure vessels are the same as those incorporated in the American Society of Mechanical Engineers Boiler and Pressure Vessel Code. A copy of this code with such amendments and interpretations that have been approved by the Mississippi State Board of Health is on file in the office of the Chief Inspector, Boiler and Pressure Vessel Safety Branch.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.1.3. The regulations contained herein shall be understood to set forth rules for safeguarding life, limb and property by specifying minimum standards for the construction, installation, operation, inspection and repair of boilers and pressure vessels. There shall be a joint responsibility among the owner, user, and the operating employees for a compliance with these rules and regulations.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.1.4. The Mississippi State Department of Health rules and regulations do not presume to limit in any way the builder's right to choose any method of design or form of construction that conforms to the codes or standards prescribed or provided for in these rules and regulations. The codes or standards cover certain fundamental features of construction and leave a number of details to the judgment of designers and inspectors.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.1.5. Regarding special designs which are not covered by the codes or standards, their construction may be determined by the manufacturer in cooperation with the purchaser, subject to the approval of the Chief Inspector and the Technical Advisory Committee of Boiler and Pressure Vessel Safety.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.1.6. This chapter shall not be construed as in any way preventing the use, sale or reinstallation of a boiler or pressure vessel referred to in subsections (1) and (2) (45-23-13) provided it has been made to conform to the rules and regulations of the board governing existing installations and provided, further, it has been found upon inspection to be in a safe condition and that an inspection certificate can be issued.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.1.7. Any person who feels that these rules and regulations or interpretations of them impose an undue burden upon him shall have the right to appeal to the Mississippi State Department of Health.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 2. Caution

Rule 1.2.1. (For Information Only) Kindly observe the following provisions and avoid unnecessary inconvenience:

1. Do not buy any secondhand boiler or pressure vessel for use in this state without first having it inspected by a duly authorized inspector and approval obtained from the Chief Inspector that the boiler will be permitted to be installed and operated in the State of Mississippi.
2. Do not operate any boiler or pressure vessel unless it has been inspected by a Mississippi licensed inspector and a Certificate of Inspection has been issued from the Boiler and Pressure Vessel Safety Branch, Mississippi State Department of Health.
3. The Certificates of Inspection required by the rules and regulations for boilers and pressure vessels shall be posted under glass in the room containing the equipment to which they apply or in the case of outdoor or portable boilers or pressure vessels shall be kept in a metal container fastened to the equipment or kept on file indoors in a place convenient to the equipment.
4. Do not perform any welding on the pressure parts of any boiler or pressure vessel until you have received instructions and permission from the Chief Inspector or authorized inspector.

5. In case of accident to a boiler or pressure vessel, secure permission from either the insurance company if the boiler or pressure vessel is insured, or from the Chief Inspector or Deputy Inspector if uninsured, before any changes are made or before any parts are removed, unless removing a part of the structure is necessary toward the saving of life.
6. Refer all communication concerning boilers and pressure vessels to Boiler and Pressure Vessel Safety Branch, Mississippi State Department of Health, P. O. Box 1700, Jackson, Mississippi 39215-1700, telephone number (601) 960-7917. Always give the Mississippi State Serial Number, when known, in any correspondence.
 - a. Limiting Dimensions of 1 1/2 Cu. Ft., 5 Cu. Ft. and 120 Gal. Cylindrical Vessels
7. If the point of intersection of vertical and horizontal lines drawn through the dimensions of a cylindrical vessel falls above the curve, the vessel has a volume greater than the volume for which the curve is marked. If the point of intersection falls below the curve, the vessel has a volume less than that for which the curve is marked.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 3. Definition of Terms

Rule 1.3.1. The Act means the "Mississippi Boiler and Pressure Vessel Safety Law of 1974."

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.2. ASME Code means the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers with such revisions, amendments, and interpretations thereof as are made, approved and adopted by the American Society of Mechanical Engineers. Copies of the Code may be obtained from said Society at 345 East 47th Street, New York, New York 10017.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.3. Alteration means a change in a boiler or pressure vessel that substantially alters the original design requiring consideration of the effect of the change on the original design. It is not intended that the addition of the nozzles smaller than an unreinforced opening size be considered an alteration.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.4. Approved means approved by the Board.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.5. Authorized Inspection Agency means one of the following:

1. A department or division established by a state, commonwealth or municipality of the United States, or a province of Canada which has adopted one or more sections of the Boiler and Pressure Vessel Code of the ASME and whose inspectors are approved by the State of Mississippi.
2. An inspection agency of an insurance company which is authorized (licensed) to write boiler and pressure vessel insurance in those jurisdictions which have examined the agency's inspectors to represent such jurisdictions as is evident by the issuance of a valid certificate of competency to the inspector.
3. An Owner-User Inspection Agency that meets the requirements of Section 45-23-43 of the Act.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.6. Advisory Committee means Technical Advisory Committee of Boiler and Pressure Vessel Safety.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.7. Board means the Mississippi State Department of Health.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.8. Bureau means the Bureau of Environmental Health.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.9. Boiler means a closed vessel in which water is heated, steam is generated, steam is superheated, or any combination thereof, under pressure or vacuum for use externally to itself by the direct application of heat. The term "boiler" shall include fired units for heating or vaporizing liquids other than water where these units are separate from processing systems and are complete within themselves.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.10. Power Boiler means a boiler in which steam or other vapor is generated at a pressure of more than 15 psig and includes a high pressure, high temperature water boiler.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.11. High Pressure, High Temperature Water Boiler means a water boiler operating at pressures exceeding 160 psig and/or temperatures exceeding 250ø F. at or near the boiler outlet.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.12. Miniature Boiler means any boiler which does not exceed any of the following limits.

1. 16 inches inside diameter of shell
2. 20 square feet heating surface
3. 5 cubic feet gross volume, exclusive of casing and insulation 100 psig maximum allowable working pressure

Rule 1.3.13. Heating Boiler means a steam boiler operated at pressures not exceeding 15 psig, or a hot water heating boiler operated at pressures not exceeding 160 psig and/or temperatures not exceeding 250ø F. at or near the boiler outlet.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.14. Hot Water Supply Boiler means a boiler (including fired storage water heater): furnishing hot water to be used externally to itself at pressures not exceeding 160 psig and/or temperatures not exceeding 250ø F. at or near the boiler outlet. With the exception of those hot water supply boilers, including fired storage water heaters, located in buildings owned by or under the control of the state, a county, municipality, separate school district or other public entity, the following would be exempt from this definition: such boilers, including fired storage water heaters, which are directly fired with oil, gas or electricity, when none of the following limitations is exceeded:

1. Heat input of 200,000 BTU per hour
2. Water temperature of 210ø F.
3. Nominal water containing capacity of 120 gallons.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.15. Electric Boiler means a boiler in which the source of heat is electricity.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.16. Portable Boiler means an internally fired boiler which is primarily intended for temporary location and the construction and usage permits it to be readily moved from one location to another.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.17. Certificate of Competency means a certificate issued to a person who has passed the prescribed examination as provided in Section 45-23-21 of the Act.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.18. Certificate Inspection means an inspection, the report of which is used by the Chief Inspector as justification for issuing, withholding or revoking the inspection certificate, as provided for in Section 45-23-33 of the Act. This certificate inspection shall be an internal inspection when required; otherwise, it shall be as complete an inspection as possible.

1. Internal Inspection means as complete an examination as can reasonably be made of the internal and external surfaces of a boiler or pressure vessel while it is shut down and manhole plates, handhold plates or other inspection opening closures are removed.
2. External Inspection means an inspection made when a boiler or pressure vessel is in operating condition or operating, if possible.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.19. Commission, National Board means the commission issued by the National Board to a holder of a Certificate of Competency who desires to make shop inspections or field inspections in accordance with the National Board By-laws and whose employer submits the inspector's application to the National Board for such commission.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.20. Division means the Bureau of Environmental Health.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.21. Department means the Boiler and Pressure Vessel Safety Branch of the Mississippi State Department of Health.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.22. Condemned Boiler or Pressure Vessel means a boiler or pressure vessel that has been inspected and declared unsafe, or disqualified by legal requirements by the Chief or Deputy Inspector who has applied a stamping or marking designating its condemnation.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.23. Existing Installation means and includes any boiler or pressure vessel constructed, installed, placed in operation or contracted for before the date of approval of Rules and Regulations.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.24. Inspection Certificate means a certification issued by the Chief Inspector for the operation of a boiler or pressure vessel as required in the Act.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.25. Inspector means the Chief Inspector, or any Deputy Inspector or Special Inspector.

1. Chief Inspector means the Chief Boiler and Pressure Vessel Inspector appointed under Section 45-23-19 of the Act.
2. Deputy Inspector means any inspector appointed by the Board under provisions of Section 45-23-21 of the Act.
3. Special Inspector means an inspector holding a Mississippi Certificate of Competency and who is regularly employed by an insurance company authorized to insure against loss from explosion of boilers or pressure vessels in Mississippi; or an inspector continuously employed by any company owning and operating pressure vessels in Mississippi for the purpose of making inspections of pressure vessels used or to be used by such company, but not for resale.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.26. License means the boiler and pressure vessel inspector's license issued to inspectors who have successfully completed requirements of Section 45-23-23 of the Act.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.27. Mississippi Special Boiler or Pressure Vessel means a boiler or pressure vessel fabricated or operated under Section 45-23-11 of the Act.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.28. Mississippi Standard Boiler or Pressure Vessel means a boiler or pressure vessel bearing the ASME Code symbol that has been shop inspected by a National Board commissioned boiler inspector.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.29. National Board means the National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper, Columbus, Ohio 43229.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.30. National Board Inspection Code means the Manual for Boiler and Pressure Vessel Inspectors supplied by the National Board. Copies of this Code may be obtained from the National Board.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.31. New Boiler or Pressure Vessel Installation means and includes all boilers or pressure vessels constructed, installed, placed in operation or contracted for after approval of the Rules and Regulations.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.32. Nonstandard Boiler or Pressure Vessel means a boiler or pressure vessel that does not bear the Mississippi stamp, the ASME stamp, the National Board stamp, or the stamp of any state or political subdivision which has adopted a standard of construction equivalent to that required by Mississippi.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.33. Owner or User means any person, firm or corporation legally responsible for the safe operation of any boiler or pressure vessel within Mississippi.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.34. Pressure Vessel means a vessel in which the pressure is obtained from an external source, or by the application of heat from an indirect source, or from a direct source, other than those boilers defined in Section 45-23-5 of the Act.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.35. PSIG means pounds per square inch gauge.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.36. Reinstalled Boiler or Pressure Vessel means a boiler or pressure vessel removed from its original setting and reinstalled at the same location or at a new location without change of ownership.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.37. Repair means work necessary to return a boiler or pressure vessel to a safe and satisfactory operating condition.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.38. Major Repair means a repair upon which the strength of a boiler or pressure vessel will depend.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.39. Secondhand Boiler or Pressure Vessel means a boiler or pressure vessel which as changed both location and ownership subsequent to its primary use.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.40. Standard Boiler or Pressure Vessel means a boiler or pressure vessel which bears the stamp of Mississippi or of another state which has adopted a standard of construction equivalent to that required by Mississippi, the ASME stamp, or both the ASME and the National Board stamps.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.41. Storage Tanks -- Hot Water Supply means those heated by steam or any other indirect means when any one of the following limitations is exceeded:

1. Heat input of 200,000 BTU per hour
2. Water temperature of 210ø F.
3. Nominal water containing capacity of 120 gallons.

SOURCE: Miss. Code Ann. §45-23-9

Rule 1.3.42. Underwriters' Laboratories means a nonprofit, independent organization testing for public safety. It maintains and operates laboratories for the examination and testing of devices, systems, and materials to determine their relation to life, fire, casualty hazards and crime prevention.

SOURCE: Miss. Code Ann. §45-23-9

Chapter 2. Administration

Subchapter 1. Minimum Construction Standards for Boilers and Pressure Vessels

Rule 2.1.1. Boilers and unfired pressure vessels to be installed for operation in Mississippi shall be designed, constructed, inspected, stamped and installed in accordance with the applicable ASME Boiler and Pressure Vessel Code, and these rules and regulations.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.1.2. In addition, boilers and pressure vessels may bear the National Board stamping, or be stamped Mississippi Standard. A copy of the manufacturer's data report, signed by the manufacturer's representative and the authorized inspector, shall be filed by the owner or user with the Chief Inspector prior to operation in Mississippi.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.1.3. Pressure Piping -- (including welded piping) -- Piping external to power boilers from the boiler to the first stop valve of a single boiler, and to the second stop valve in a battery of two or more boilers is subject to the requirements of ASME Power Boiler Code, Section I, and the design, fabrication, installations and testing

of the valves and piping shall be in conformity with the applicable paragraphs of ASME Code. Applicable ASME Data Report Forms for such piping shall be furnished by the owner to the Chief Inspector.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.1.4. Mississippi Special -- If a boiler or pressure vessel is of special design or one that cannot bear the ASME and National Board stamping, details of the proposed construction, including shop drawings, shall be submitted to the Chief Inspector and approval as "Mississippi Special" for construction installations must be obtained from the Board before construction is started.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.1.5. Before secondhand equipment is installed, application for permission to install shall be filed by the owner or user with the Chief Inspector and approval obtained.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.1.6. The assembly, maintenance, operation and testing of controls and safety devices shall be in accordance with ASME Code CSD-1, current edition, and its addenda. Existing boiler installations shall comply with CSD-1 upon a major alteration or retrofitting of a boiler.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 2. Frequency of Inspections of Boilers and Pressure Vessels

Rule 2.2.1. On and after the effective date of the rules and regulations first promulgated by the Board, each boiler and pressure vessel used or proposed to be used within this state, except boilers or pressure vessels exempt under Section 45-23-33 of the Act, shall be thoroughly inspected as to their construction, installation and condition as follows.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.2.2. Power boilers and high pressure, high temperature water boilers shall receive a certificate inspection annually or as the Board may require and shall also be externally inspected annually while under pressure if possible.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.2.3. Heating boilers shall receive a certificate inspection biennially.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.2.4. Pressure vessels subject to internal corrosion shall receive a certificate inspection biennially.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.2.5. Pressure vessels not subject to internal corrosion shall receive a certificate inspection biennially, but internal inspection shall not be required of pressure vessels, the contents of which are known to be noncorrosive to the material of which the shell, heads or fittings are constructed, either from the chemical composition of the contents or from evidence that the contents are adequately treated with a corrosion inhibitor, or from evidence that vessel parts are isolated from the contents with a corrosion resistant lining, provided that such vessels are constructed in accordance with the rules and regulations of the Board, and provided further that evidence proving noncorrosiveness is approved by the Board.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.2.6. Nuclear vessels within the scope of this chapter shall be inspected biennially and reported in such form and with such appropriate information as the Board shall designate.

SOURCE: Miss. Code Ann. §45-23-9

A grace period of two (2) months beyond the periods specified in paragraphs (a), (b), (c), (d) and (e) (of Miss Code Ann **§45-23-33 Inspection requirements**) may elapse between certificate inspections.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.2.7. The Board may, in its discretion, permit longer periods between certificate inspections.

1. Based upon documentation of such actual service conditions by the owner of the operating equipment, the Board may, in its discretion, permit variations in the inspection requirements.
2. The inspections herein required shall be made by the Chief Inspector, by a Deputy Inspector, or by a Special Inspector provided for in the Act.
3. If the Inspector can show due cause that a hydrostatic test is necessary, it shall be made by the owner or user of the boiler or pressure vessel, at the owner's or user's expense.
4. All boilers, other than cast iron sectional boilers, and pressure vessels to be installed in this state after the twelve (12) month period from the date upon which the rules and regulations of the Board shall become effective, shall be inspected during construction as required by the applicable rules and regulations of the Board by an inspector authorized to inspect boilers and pressure vessels in this state, or, if constructed outside of the state, by an inspector holding a license issued by an organization approved by the Board.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 3. Notification of Inspection

Rule 2.3.1. Certificate inspections shall be in accordance with the frequency established by the Act and at a time mutually agreeable to the inspector and owner or user.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.3.2. External inspections may be performed by inspector during reasonable hours and without prior notification.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.3.3. When as a result of external inspection or determination by other objective means it is the inspector's opinion that continued operation of the boiler or pressure vessel constitutes a menace to public safety, the inspector may request an internal inspection and/or an appropriate pressure test to evaluate conditions. In such instances, the owner or user shall prepare the boiler or pressure vessel for an internal inspection and/or appropriate pressure test as the inspector designates.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 4. Examination for an Inspector's Certificate of Competency

Rule 2.4.1. Examination for an inspector's certificate of competency in accordance with the requirements shall be held at the office of the Board or at any other location to be selected by the Board, four times each year, namely the first Wednesday of the months of March, June, September and December.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.4.2. An applicant for an examination shall have education and experience equal to at least one of the following:

1. A degree in mechanical engineering plus one year of experience in design, construction, operation or inspection of high pressure boilers and pressure vessels.
2. A degree in a branch of engineering, other than mechanical engineering, plus two years of experience in design, construction, operation or inspection of high pressure boilers and pressure vessels.
3. The equivalent of a high school education plus three years of experience:
 - a. in high pressure boiler and pressure vessel construction or repair; or
 - b. as an operating engineer in charge of high pressure boiler operation; or
 - c. as an inspector of high pressure boilers and pressure vessels.

- d. Applications for examination shall be in writing on a form to be furnished by the Board stating the education of the applicant, a list of his employers, his period of employment and position held with each employer.
 - e. Applications containing willful falsifications or untruthful statements shall be rejected.
 - f. If the applicant's education and experience are acceptable to the Board, he shall be given a written examination dealing with the construction, installation, operation, maintenance and repair of boilers and pressure vessels and their appurtenances, and the applicant shall be accepted or rejected on the merits of this examination. If the applicant is successful in meeting the requirements of the Board, a certificate of competency will be issued by the Board when the inspector is employed on a full-time basis by an authorized inspection agency as defined in the Act.
4. Upon the expiration of ninety days, an applicant who fails to pass the examination will be permitted to take another written examination and his acceptance or rejection will be determined by the Board on the basis of this examination.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 5. Examination Fees

Rule 2.5.1. A fee of twenty-five dollars will be charged for each applicant taking the examination for a certificate of competency. In the event an applicant fails to pass the examination, this fee shall be good for a period of one year during which a re-examination may be taken. Checks or money orders for examination fees shall be made payable to the Mississippi State Department of Health, Boiler and Pressure Vessel Safety Fund.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 6. Certificate of Competency and Identification Card

- Rule 2.6.1. Upon request, a certificate of competency and an identification card shall be issued by the Board to:
1. An inspector who is employed full-time by a governmental authority having an authorized inspection agency as defined in the Act.
 2. An inspector who is employed full-time by an insurance company which is authorized to insure against loss from explosions of boilers and pressure vessels in Mississippi.
 3. An inspector who is continuously employed by a company which operates boilers and/or pressure vessels in Mississippi and has a valid owner-user inspection agency agreement as provided in the Act.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 7. Provided

Rule 2.7.1. The applicant has satisfactorily passed the examination as set forth and paid the application fee of twenty-five dollars; or

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.7.2. The applicant holds a valid commission or certificate of competency from a state that has a standard of examination substantially equal to that of Mississippi, or a valid commission and identification card issued by the National Board. The request for the certificate of competency and identification card shall be completed on forms to be provided by the Chief Inspector and shall be accompanied by, when applicable, a facsimile of the applicant's commission, certificate of competency and identification cards, named above, and a processing fee of twenty-five dollars (\$25.00) shall be paid to the "Mississippi State Department of Health, Boiler and Pressure Vessel Safety Fund."

1. The Mississippi certificate of competency and valid identification card shall be returned to the Chief Inspector when the inspector to whom they were issued is no longer employed by the organization employing him at the time that the certificate was issued.
2. Each person holding a Mississippi certificate of competency and who conducts inspections as provided by the Safety Act shall apply to the Chief Inspector on forms provided and obtain an identification card annually, not later than January 30 of the year in which the card is required. A processing of twenty-five dollars (\$25.00) for each card, payable to the "Mississippi State Department of Health, Boiler and Pressure Vessel Safety Fund" shall accompany the application. An inspector's certificate of competency may be suspended by the Chief Inspector after due investigation and recommendation by the Board for incompetence or untrustworthiness of the holder thereof, or for willful falsification of any matter or statement contained in his application, or in a report of any inspection made by him. Written notice of any such suspension shall be given by the Chief Inspector, within not more than ten (10) days, to the inspector and his employer. Persons whose certificate of competency has been suspended shall be entitled to an appeal to the Board as provided for in the Act and to be present in person or to be represented by counsel at the hearing of the appeal.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 8. Inspector's to Have No Other Interests

Rule 2.8.1. Inspectors shall not engage in the sale of any article or device relating to boilers, pressure vessels, or their appurtenances.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 9. Inspection Reports to be Submitted by Special Inspector

Rule 2.9.1. Special Inspectors shall, within one year of the effective date of these rules and regulations for power boilers and high pressure, high temperature water boilers and two years for other installations, submit to the Chief Inspector an inspection report on a Standard Form for states operating under the ASME Code, Boiler and Pressure Vessel Data Report -- First Internal Inspection, for each boiler and pressure vessel subject to inspection in this state. Complete data shall be submitted on this Standard Form for each nonstandard boiler or pressure vessel.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.9.2. Except as provided in (e) below, subsequent inspections of both standard and nonstandard boilers and pressure vessels shall be reported on a Standard Form for states operating under the ASME Code, Boiler or Pressure Vessel - Report of Inspection.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.9.3. Inspection reports, as required in (a) and (b) above, shall be submitted within thirty days from date of inspection.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.9.4. When hazardous conditions affecting the safety of a boiler or pressure vessel are found to exist at the time of any inspection, the inspector shall report such conditions immediately by quickest means of communication to the Chief Inspector. Where there are violations of the Code and/or Rules and Regulations, they shall appear on individual inspection forms. Multiple listing of pressure vessels is permissible when there are no recommendations involved and the operating certificates are to be renewed on the same date.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.9.5. Owner-User Inspection Agencies may report subsequent inspections of both standard and nonstandard pressure vessels on forms approved by the Board. Such report shall be filed as provided in the Act.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 10. Insurance Companies to Notify Chief Inspector of New, Canceled or Suspended Insurance on Boilers or Pressure Vessels

Rule 2.10.1. All insurance companies shall notify the Chief Inspector, within thirty days, of all boiler or pressure vessels on which insurance is written, canceled, or not renewed or immediately on suspension because of unsafe conditions.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 11. Special Inspectors to Notify Chief Inspector of Unsafe Boilers and Pressure Vessels

Rule 2.11.1. If A Special Inspector, upon first inspection of a new risk, finds that a boiler or pressure vessel, or any appurtenance thereof, is in such condition that his company would refuse insurance, the company shall immediately notify the Chief Inspector and submit a report on the defects.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.11.2. If, upon inspection, a Special Inspector finds a boiler or pressure vessel to be unsafe for further operation, he shall promptly notify the owner or user, stating what repairs or other corrective measures are required to bring the object into compliance with these rules and regulations. Unless the owner or user agrees to make such repairs or adopt such other corrective measures promptly, the Special Inspector shall immediately notify the Chief Inspector. Until such corrections have been made, no further operation of the boiler or pressure vessel involved shall be permitted. If an inspection certificate for the object is required and is in force, it shall be suspended by the Chief Inspector. When reinspection establishes that the necessary repairs have been made or corrective actions have been taken and that the boiler or pressure vessel is safe to operate, the Chief Inspector shall be notified. At that time a certificate of inspection, where applicable, will be issued.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 12. Owner-User Inspection Agency

Rule 2.12.1. Any person, firm, partnership or corporation operating pressure vessels in this State may seek approval and registration as an Owner-User Inspection Agency by filing an application with the Chief Inspector on forms prescribed and available from the Department, and request approval by the Board. Each such application shall be accompanied by a fee of twenty-five dollars and a bond in the penal sum of five thousand dollars which shall continue to be valid during the time the approval and registration of the company as an Owner-User Inspection Agency is in effect.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.12.2. Such application and registration shall show the name of such agency and its principal address in this State, and the name and address of the person or persons having supervision over inspections made by such agency. Changes in such supervisory personnel shall be reported to the Chief Inspector within thirty days after any such change.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.12.3. Each Owner-User Inspection Agency as required by the provisions of the Boiler Safety Act and these Rules and Regulations shall:

1. Conduct inspections of boilers and/or pressure vessels, not exempt by the Act, utilizing only qualified inspection personnel, as provided in the Act.
2. Retain on file at the location where the equipment is inspected a true record or copy of the report of the latest of each inspection signed by the inspector who made the inspection.
3. Execute and deliver to the owner or user (management) a true report of each inspection together with appropriate requirements or recommendations that result from such inspections.
4. Promptly notify the Chief Inspector of any boiler and/or pressure vessel which does not meet the requirements of safe operating conditions.
5. Maintain inspection records which will include a list of each boiler and/or pressure vessel covered by the Act, showing a serial number and such abbreviated description as may be necessary for identification; the date of last inspection of each unit and approximate date for the next inspection, arrived at by applying the appropriate rules to all data available at the time such inspection record is compiled (Re: frequency and type of inspection in the Act). Such inspection record shall be readily available for examination by the Chief Inspector or his authorized representative during business hours.
6. File a statement annually, on a date mutually agreed upon, with the Chief Inspector. Such statement shall be signed by the individual having supervision over the inspections made during the period covered. The statement shall include the number of vessels, covered by the Act, inspected during the year and certifying that each such inspection was conducted pursuant to the inspection requirements provided for by the Act. Such annual statement shall be accompanied by a filing fee in accordance with the fee schedule. Checks shall be made out to the "Mississippi State Department of Health, Boiler and Pressure Vessel Safety Fund."

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 13. Defective Conditions Disclosed at Time of External Inspection

Rule 2.13.1. If, upon an external inspection, there is evidence of a leak or crack, sufficient covering of the boiler or pressure vessel shall be removed to permit the inspector to satisfactorily determine the safety of the boiler or pressure vessel. If the covering cannot be removed at that time, he may order the operation of the boiler or pressure vessel stopped until such time as the covering can be removed and proper examination made.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 14. Owner or User to Notify Chief Inspector of Accident

Rule 2.14.1. When an accident occurs which serves to render a boiler or pressure vessel inoperative, the owner or user shall immediately notify the Chief Inspector, and submit a detailed report of the accident. In case of a serious accident, such as in a personal injury or an explosion, notice shall be given immediately by telephone, telegraph or messenger, and neither the boiler or pressure vessel, nor any parts thereof, shall be removed or disturbed before an inspection has been made by the inspector, except for the purpose of conserving human life and limiting consequential damage.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 15. Inspection Certificate and Inspection Fees

Rule 2.15.1. If a boiler or pressure vessel after inspection is found to be suitable and to conform to these Rules and Regulations, the owner or user shall pay directly to the State Department of Health a fee of ten dollars for an annual certificate and twenty dollars for a biennial certificate for each boiler and pressure vessel required to be inspected under the Act before an inspection certificate shall be issued. Checks and money orders for payment of inspection certificate fees should be made payable to the "Mississippi State Department of Health, Boiler and Pressure Vessel Safety Fund."

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.15.2. When inspected by the State, an additional fee for the inspection service as required by the Act shall be paid before the inspection certificate is issued. The inspection fees to be charged by the Chief Inspector or Deputy Inspector for the inspection of a boiler or pressure vessel shall be in accordance with the Act and Rules and Regulations.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.15.3. Fee Justification, Section 45-23-53 of the Act ("Boiler Pressure and Pressure Safety")

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.15.4. Fees Schedules of fees. The owner or user of a boiler or pressure vessel required by this chapter to be inspected shall pay directly to the State Department of Health, upon completion of inspection, fees in accordance with the following schedule:

1. Power boilers and high pressure, high temperature water boilers:
 - a. Certificate of inspections

- b. Boilers of 50 square feet of heating surface or less \$12.00
- c. Boilers over 50 square feet of heating surface and less than 4,000 square feet of heating surface \$ 25.00
- d. Boilers of 4,000 square feet of heating surface or more and less than 10,000 square feet of heating surface \$ 35.00
- e. Boilers of 10,000 square feet of heating surface or more \$ 40.00
- f. External inspections
- g. Boilers of 50 square feet of heating surface or less \$ 10.00
- h. Boilers over 50 square feet of heating surface \$ 12.00
- i. Not more than the equivalent of the certificate and external inspection fees shall be charged or collected for any and all inspections as above of any boiler in any one year.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.15.5. Heating boilers.

- 1. Certificate inspections
 - a. Heating boilers without a manhole: \$ 12.00
 - b. Heating boilers with a manhole: \$ 25.00
 - c. Hot water supply boiler: \$ 10.00
 - d. Storage water heaters fired – ALL public-private over 200,000 BTU input: \$10.00
- 2. Not more than one fee shall be charged or collected for any and all inspections as above of any heating boiler in any required inspection period.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.15.6. Pressure vessels:

- 1. Certificate inspections
 - a. Fees to be based on the maximum length of the vessel times the maximum width or diameter thereof. Each pressure vessel subject to inspection having a cross sectional area of 50 square feet or less: \$ 10.00

- b. For each additional 100 square feet of area in excess of 50 square feet:
\$10.00
- 2. Not more than fifty dollars shall be paid for each inspection on any one vessel.
- 3. A group of pressure vessels, such as the rolls of paper machine or dryer operating as a single machine or unit shall be considered as one pressure vessel.
- 4. Not more than one fee shall be charged or collected for any and all inspections as above of any pressure vessel in any required inspection period.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.15.7. Hydrostatic tests: When it is necessary to make a special trip to witness the application of a hydrostatic test, an additional fee based on the scale of fees applicable to a certificate inspection of the boiler or pressure vessel will be charged.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.15.8. All other inspections, including shop inspections, and inspections of secondhand or used boilers or pressure vessels made by the Chief Inspector shall be charged for at the rate of not less than sixty (60) dollars for one-half day of four (4) hours, and one hundred (100) dollars for one full day of eight hours, plus all expenses, including travel and lodging.

- 1. Miscellaneous fees:
 - a. Inspectors' license fees
 - i. Examination for a Mississippi Inspector: \$25.00
 - b. Annual license --
 - i. Renewal: \$25.00
 - ii. Replacement of lost or destroyed license: \$10.00
 - c. Rules and Regulations, Blr. & PV Dept; \$1.00
- 2. Owner-User Filing Fees
 - a. For statements covering not more than twenty-five (25) vessels -- Three dollars (\$3.00 per vessel)
 - b. For statements covering more than twenty-five (25) but less than one hundred one vessels -- Seventy-five Dollars (\$75.00)

- c. For statements covering more than one hundred (100) but less than five hundred one (501) vessels -- One Hundred Fifty Dollars (\$150.00)
 - d. For statements covering more than five hundred (500) vessels -- Three Hundred Dollars (\$300.00).
3. Permit for State Special
- a. Boiler or pressure vessel \$500 Minimum
4. There is hereby created a special fund in the state treasury to be known as the "Boiler and Pressure Vessel Safety Fund" into which shall be deposited all funds appropriated by the Legislature for the implementation of this chapter, and funds from fees, fines, and any other source that shall be used for implementation and administration of this chapter, by the Mississippi State Department of Health.
5. Checks and money orders for fees, fines, and any other source shall be made payable to the "Mississippi State Department of Health, Boiler and Pressure Vessel Safety Fund."
6. If the owner or user of a boiler or pressure vessel required to be inspected refuses to allow an inspection to be made or refuses to pay the fee stipulated above, the inspection certificate shall be suspended by the Chief Inspector until the owner or user complies with the requirements.
7. The owner or user who causes a boiler or pressure vessel to be operated without a valid certificate shall be subject to the penalty as provided for in the Act.
8. Inspection certificates are not required for boiler and/or pressure vessels inspected by an authorized Owner-User Inspection Agency. However, such agency shall keep on file in its office in the establishment where the equipment is located a true record or copy of the report of the latest of each such inspection signed by the inspector who made such inspection.
9. Should any authorized Owner-User Inspection Agency fail or neglect to carry out the provision of the Act, their mandate as an Owner-User agency shall be terminated by the Board, until such time as they comply with the terms of their mandate that are spelled out in the Act.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 16. Validity of Inspection Certificate

- Rule 2.16.1. An inspection certificate, issued in accordance with the Act, shall be valid until expiration unless some defect or condition affecting the safety of the boiler or pressure vessel is disclosed, provided, however, that a certificate issued for a boiler or pressure vessel inspected by a Special Inspector shall be valid only if the

boiler or pressure vessel for which it was issued continues to be insured by a duly authorized insurance company.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 17. Restamping Boilers and Pressure Vessels

Rule 2.17.1. When the stamping on a boiler or pressure vessel becomes indistinct, the inspector shall instruct the owner or user to have it restamped. Request for permission to restamp the boiler or pressure vessel shall be made to the Chief Inspector, and the proof of the original stamping shall accompany the request. The chief Inspector may grant such authorization. Restamping authorized by the Chief Inspector shall be done only in the presence of an inspector, and shall be identical with the original stamping, except that it will not be required to restamp the ASME Code Symbol. Notice of completion of such restamping shall be filed with the Chief Inspector by the inspector who witnessed the stamping on the boiler or pressure vessel, together with a facsimile of the stamping applied.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 18. Penalty for Operation of Unsafe Boilers or Pressure Vessels

Rule 2.18.1. If, upon inspection, a boiler or pressure vessel is found to be in such condition that it is unsafe to operate, the inspector shall notify the Chief Inspector as required by the Act and the inspection certificate shall be suspended by the Chief Inspector. Any person, firm, partnership or corporation causing such objects to continue to be operated shall be subject to the penalty provided in the Act.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 19. Condemned Boiler and Pressure Vessels

Rule 2.19.1. Any boiler or pressure vessel having been inspected and declared unsafe by the Chief Inspector or Deputy Inspector shall be stamped by the inspector with an arrowhead stamp having an overall length of 1/2 inch and width of 3/8 inch on either side of the letters "XXX" and the letters of the State, as shown by the following facsimile, which will designate a condemned boiler or pressure vessel:

► XXX MS XXX ◄

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.19.2. Any person, firm, partnership, or corporation using or offering for sale a condemned boiler or pressure vessel for operation within this State shall be subject to the penalties provided by the Act.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 20. Reinstallation of Standard Boilers or Pressure Vessels

Rule 2.20.1. If a standard boiler or pressure vessel located in Mississippi is to be moved to another state for temporary use or repair, application shall be made by the owner or user to the Chief Inspector for permission to reinstall the boiler or pressure vessel in Mississippi.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 21. Reinstallation of Nonstandard Boilers or Pressure Vessels

Rule 2.21.1. A nonstandard boiler or pressure vessel which is moved outside the boundaries of Mississippi cannot be reinstalled in Mississippi without securing permission from the Board. Shipment of nonstandard boiler and pressure vessels into this state for use is prohibited without permission from the Board.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 22. Installation of Used or Secondhand Boilers or Pressure Vessels

Rule 2.22.1. Before a used or secondhand boiler or pressure vessel can be shipped for installation into Mississippi, an inspection must be made by an inspector qualified by an examination equal to that required by Mississippi, or by an inspector holding a National Board Commission, and data submitted by him shall be filled by the owner or user of the boiler or pressure vessel with the Chief Inspector for his approval. Such boilers and pressure vessels when installed in Mississippi shall be equipped with fittings and appliances that comply with the Rules and Regulations for new installations.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 23. Reinstalled Boiler or Pressure Vessel

Rule 2.23.1. When a stationary boiler or pressure vessel is moved and reinstalled, the attached fittings and appliances shall comply with these Rules and Regulations for new installations.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 24. Factor of Safety for Existing Installations

Rule 2.24.1. Any inspector may increase the factor of safety on any existing installation if the condition of the boiler or pressure vessel warrants it.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.24.2. If the owner or user does not concur with the inspector's decision, the owner or user may appeal to the Board, which may request a joint inspection by the Chief

Inspector and the Deputy Inspector or Special Inspector. Each inspector shall render his report to the Board and the Board shall render the final decision, based upon the data contained in the inspector's reports.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 25. Repairs by Welding

Rule 2.25.1. When major repairs or alterations are to be made by welding, they shall follow generally accepted nationwide engineering standards.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 26. Riveted Patches

Rule 2.26.1. In applying riveted patches, the design of the patch and method of installation shall be in accordance with the National Board Inspection Code, Chapter VI.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 27. Removal of Safety Appliances

Rule 2.27.1. No person shall attempt to remove or do any work on any safety appliance prescribed by these Rules and Regulations while a boiler or pressure vessel is in operation, except as provided in applicable sections of the ASME Code. Should any of these appliances be removed for repair during an outage of a boiler or pressure vessel, they must be reinstalled and in proper working order before the object is again placed in service.

SOURCE: Miss. Code Ann. §45-23-9

Rule 2.27.2. No person shall load the safety valve or valves in any manner to maintain a working pressure in excess of that stated on the inspection certificate.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 28. Requirements for New Installations

Rule 2.28.1. No boiler or pressure vessel shall hereafter be installed in this State unless it has been constructed, inspected and stamped in conformity with the ASME Code, except:

1. Those exempt by the Act.
2. Those stamped Mississippi Special or Mississippi Standard.
3. Those existing boilers and pressure vessels which are to be reinstalled.

- a. All new boiler and pressure vessel installations, including reinstalled and second-hand boilers and pressure vessels, shall be installed in accordance with the requirement of the ASME Code and these Rules and Regulations.
- b. A boiler or pressure vessel constructed equivalent to ASME standards, or having the standard stamping of another state that has adopted a standard of construction equivalent to the standard of this state, may be accepted by the Chief Inspector provided, however, that the person desiring to install the boiler or pressure vessel shall make application for the installation prior to construction and shall file with the application the manufacturer's data report covering the construction of the boiler or pressure vessel in question.
- c. The stamping shall not be concealed by lagging or paint and shall be exposed at all times unless a suitable record is kept of the location of the stamping so that it may be readily uncovered at any time this may be desired.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 29. Application of State Numbers

Rule 2.29.1. Upon completion of the installation of a new boiler or pressure vessel or at the time of the initial certificate inspection of an existing installation, each boiler or pressure vessel shall be identified by the inspector with a Mississippi serial number, consisting of letters and figures to be not less than 5/16 inch in height and ranged as follows:

1. All boiler and pressure vessels in Mississippi shall be stamped or shall have securely attached a metal tag of not less than one inch in height, which shall have the serial number of the state stamped thereon.
2. All cast-iron, low pressure heating boilers shall have securely attached to the front of the boiler a metal tag of not less than one inch in height, which shall have the serial number of the state stamped thereon.
3. All pressure vessels constructed of cast iron, or of material of such thickness that it should not be stamped, shall have securely attached a metal tag not less than one inch in height, which shall have the serial number of the state stamped thereon.
 - a. Power Boilers: MS 0000
 - b. Low Pressure Heating Boilers: MS 00000 H
 - c. Pressure Vessels: MS 000000 V

SOURCE: Miss. Code Ann. §45-23-9

Chapter 3. Existing Installations

Subchapter 1. Power and High Pressure

Rule 3.1.1. High Temperature Water Boilers - Age Limit of Existing Boilers

1. The age limit of any boiler of nonstandard construction, installed prior to August 6, 1975, shall be 30 years except that, after a thorough internal and external inspection, and a hydrostatic pressure test of 1 1/2 times these allowable working pressure and held for a period of at least 30 minutes, during which time no distress or leakage develops, any boiler having other than a riveted, longitudinal, lap joint may be continued in operation without reduction in working pressure. The age limit of any boiler having riveted, longitudinal, lap joints and operating at a pressure in excess of 50 psi shall be 20 years. This type of boiler, when removed from an existing setting, shall not be installed for a pressure in excess of 15 psig. A reasonable time for replacement, not to exceed one year, may be given at the discretion of the Chief Inspector.
2. The shell or drum of a boiler in which a typical "lap seam crack" is discovered along a longitudinal riveted joint for either butt or lap joints shall be permanently discontinued for use under steam pressure. By "lap seam crack" is meant the typical crack frequently found in lap joints extending parallel to the longitudinal joint and located either between or adjacent to rivet holes.
3. The age limit of boilers of standard construction, installed prior to August 6, 1975, shall be determined from the results of a thorough internal and external inspection by an authorized inspector and the application of an appropriate pressure test. Hydrostatic test pressure shall be at 1 1/2 times the allowable working pressure and maintained for 30 minutes. The boiler may be continued in service at the same working pressure provided there is no evidence of leakage or distress under these test conditions.
4. The phenomenon of brittle fracture may result from stresses imposed during hydrostatic testing below the Nil-Ductility Transition Temperature of the materials. Where such data is unavailable on site, it is suggested that the manufacturer be contacted for the recommended minimum temperature to be used during hydrostatic testing.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.1.2. **Maximum Allowable Working Pressure for Standard Boilers:** The maximum allowable working pressure for standard boilers shall be determined in accordance with the applicable provisions of the edition of the ASME Code under which they were constructed and stamped.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.1.3. **Maximum Allowable Working Pressure for Nonstandard Boilers**

1. The maximum allowable working pressure on the shell of a nonstandard boiler shall be determined by the strength of the weakest section of the structure, computed from the thickness of the plate, the tensile strength of the plate, the efficiency of the longitudinal joint or tube ligaments, the inside diameter of the weakest course and the factor of safety allowed by these rules and regulations.

$TStE \div RSF =$ maximum allowable working pressure, psig where:

TS = ultimate tensile strength of shell plates, psi

t = minimum thickness of shell plate, in weakest course, inches

E = efficiency of longitudinal joint

For tube ligaments and riveted construction, E shall be determined by the rules given in Section I, Part PR, of the ASME Code for Power Boilers.

For seamless construction, E shall be considered 100 percent.

R = inside radius of the weakest course of the shell, in inches

FS = factor of safety permitted

2. Tensile strength: When the tensile strength of steel or wrought iron shell plates is not known, it shall be taken as 55,000 psi for steel and 45,000 psi for wrought iron.
3. Crushing strength of mild steel: The resistance to crushing of mild steel shall be taken at 95,000 psi cross-sectional area.
4. Strength of rivets in shear
 - a. When computing the ultimate strength of rivets in shear, the following values, in pounds per square inch, of the cross-sectional area of the rivet shank shall be used

PSI (Table 1)

Iron rivets in single shear	38,000
Iron rivets in double shear	76,000
Steel rivets in single shear	44,000
Steel rivets in double shear	88,000

- b. When the diameter of the rivet holes in the longitudinal joints of a boiler is not known, the diameter and cross-sectional area of rivets, after driving, may be selected from Table 1, or as ascertained by cutting out one rivet in the body of the joint.

Table 2: Sizes of rivets based on plate thickness

Thickness of plate, inches					
1/4	9/32	5/16	11/32	3/8	13/32
Diameter of rivet after driving, inches					
11/16	11/16	3/4	3/4	13/16	13/16
Thickness of plate, inches					
7/16	15/32	1/2	9/16	5/8	
Diameter or rivet after driving, inches					
15/16	15/16	15/16	1-1/16	1-1/16	

- 5. Factors of safety: The following factors of safety shall be increased by the inspector if the condition and safety of the boiler demand it:
 - a. The lowest factor of safety permissible on existing installations shall be 4.5, except for horizontal-return-tubular boilers having continuous longitudinal lap seams more than 12 feet in length, when the factor of safety shall be eight. When this latter type of boiler is removed from its existing setting, it shall not be reinstalled for pressure in excess of 15 psig.
 - b. Reinstalled or secondhand boilers shall 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.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.1.4. **Cast-Iron Headers and Mud Drums:** The maximum allowable working pressure on a water-tube boiler, the tubes of which are secured to cast-iron or malleable-iron headers, or which have cast-iron mud drums, shall not exceed 160 psig.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.1.5. **Pressure on Cast-Iron Boilers:** The maximum allowable working pressure for any cast-iron boiler, except hot water boilers, shall be 15 psig.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.1.6. Safety Valves

1. The use of weighted-lever safety valves, or safety valves having either the seat or disk of cast iron, shall be prohibited after these regulations become effective. Valves of this type or construction shall be replaced by direct, spring-loaded, pop-type valves that conform to the requirements of the ASME Code, Section I.
2. Each boiler shall have at least one safety valve, and if it has more than 500 square feet of water-heating surface, or an electric power input of more than 1100 kw, it shall have two or more safety valves.
3. The valve or valves shall be connected to the boiler, independent of any other steam connection, and attached as close as possible to the boiler, without unnecessary intervening pipe or fittings. Where alteration is required to conform to this requirement, owners or users shall be allowed reasonable time in which to complete the work.
4. No valves of any description shall be placed between the safety valve and the boiler nor on the escape pipe, if used, between the safety valve and the atmosphere, except as provided by applicable sections of the ASME Code. When an escape pipe is used, it shall be at least 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 escape pipe. When an elbow is placed on a safety valve escape pipe, it shall be located close to the safety-valve outlet, or the escape pipe shall be anchored and supported securely. All safety-valve discharges shall be so located or piped as to be carried clear from walkways or platforms.
5. The safety-valve capacity of each boiler shall 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 to which any valve is set, and in no case to more than six percent above the maximum allowable working pressure.
6. One or more safety valves on every 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 of setting of all safety valves on a boiler shall not exceed 10 percent of the highest pressure to which any valve is set.
7. When two or more boilers, operating at different pressures and safety-valve settings, are interconnected, the lower 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.

8. In those cases where the boiler is supplied with feedwater directly from water mains without the use of feeding apparatus (not to include return traps), no safety valve shall be set at a pressure higher than 94 percent of the lowest pressure obtained in the supply main feeding the boiler.
9. The relieving capacity of the safety valves on any boiler shall be checked by one of the three following methods and, if found to be insufficient, additional valves shall be provided:
 - a. By making the accumulation test, which consists of shutting off all other steam discharge outlets from the boiler and forcing the fires to the maximum. The safety valve capacity shall be sufficient to prevent a rise of pressure in excess of six percent of the maximum allowable working pressure. This method should not be used on a boiler with a superheater or reheater.
 - b. By measuring the maximum amount of fuel that can be burned and computing the corresponding evaporative capacity (steam-generating capacity) upon the basis of the heating value of this fuel. These computations shall be made as outlined in the Appendix of the ASME Code, Section I.
 - c. By measuring the maximum amount of feedwater than can be evaporated. When either of the methods outlined in (2) or (3) is employed, the sum of the safety valve capacities shall be equal to or greater than the maximum evaporative capacity (maximum steam-generating capacity) of the boiler.
10. The relieving capacity of safety valves for forced-flow steam generators shall be in accordance with the requirements of Section I of the ASME Code.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.1.7. Boiler Feeding

1. Each boiler shall have a feed supply which will permit it to be fed at any time while under pressure.
2. A boiler having more than 500 square feet of water-heating surface shall have at least two means of feeding, one of which shall be an approved feed pump, injector or inspirator. A source of feed directly from water mains at a pressure six percent greater than the set pressure of the safety valve with the highest setting may be considered one of the means. As provided for in the ASME Power Boiler Code, Section I, 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 if the water feed is interrupted.

3. The feedwater shall be introduced into the boiler in such manner that it will not be discharged close to riveted joints of shell or furnace sheets, or directly against surfaces exposed to products of combustion, or to direct radiation from the fire.
4. The feed piping to the boiler shall be provided with a check valve near the boiler and a valve or cock between the check valve and the boiler. When two 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.
5. In all cases where returns are fed back to the boiler by gravity, there shall be a check valve and stop valve in each return line, the stop valve to be placed between the boiler and the check valve, and both shall be located as close to the boiler as is practicable. It is recommended that no stop valves be placed in the supply and return pipe connections of a single boiler installation.
6. Where deaerating heaters are not employed, it is recommended that the temperature of the feedwater be not less than 120ø F to avoid the possibility of setting up localized stress. Where deaerating heaters are employed, it is recommended the minimum feedwater temperature be not less than 215ø F so that dissolved gases may be thoroughly released.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.1.8. Water Level Indicators

1. No outlet connections (except for damper regulator, feedwater regulator, low-water fuel cutout, drain, steam gauges, or such apparatus that does not permit the escape of an appreciable amount of steam or water therefrom) shall be placed on the piping that connects the water column to the boiler. The water column shall be provided with a valved drain of at least 3/4 inch pipe size, the drain to be piped to a safe location.
2. Each boiler shall have three or more gauge cocks located within the visible length of the water glass, except when the boiler has two water glasses located on the same horizontal lines. Boilers not over 36 inches in diameter, in which the heating surface does not exceed 100 square feet, need have but two gauge cocks.
3. For all installations where the water gauge glass or glasses are more than 30 feet above the boiler operating floor, it is recommended that remote water-

level indicating or recording gauges be installed at eye height above the operating floor.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.1.9. Steam Gauges

1. Each steam boiler shall have a steam gauge, with dial range not less than 1 1/2 times the maximum allowable working pressure, connected to the steam space or to the steam connection to the water column. The steam gauge shall be connected to a siphon or equivalent device of sufficient capacity to keep the gauge tube filled with water and so arranged that the gauge cannot be shut off from the boiler except by a cock placed near the gauge and provided with a tee or lever handle arranged to be parallel to the pipe in which it is located when the cock is open.
2. When a steam gauge connection longer than eight feet becomes necessary, a shutoff valve may be used near the boiler provided the valve is of the outside-screw-and-yoke type and is locked open. The line shall be of ample size with provision for free blowing.
3. Each boiler shall be provided with a connection and suitable valving which connects to the steam space of each boiler for the exclusive purposes of attaching a test gauge when the boiler is in service so that the accuracy of the boiler steam gauge may be ascertained.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.1.10. Stop Valves

1. Except for a single-boiler, prime-mover installation, 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.
2. In a single-boiler, prime-mover installation, the steam stop valve may be omitted provided the prime-mover throttle valve is equipped with an indicator to show whether the valve is open or closed and is designed to withstand the required hydrostatic pressure test of the boiler.
3. 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.
4. When boilers provided with manholes are connected to a common steam main, the steam connection from each boiler shall be fitted with two stop valves having an ample free-blow drain between them. The discharge of the

drain shall be visible to the operator while manipulating the valves and shall be piped clear of the boiler setting. The stop valves shall consist preferably of one automatic non-return valve (set next to the boiler) and a second valve of the outside-screw-and-yoke type.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.1.11. Blowoff Connection

1. The construction of the setting around each blowoff pipe shall permit free expansion and contraction. Careful attention shall be given to the problem of sealing these setting openings without restricting the movement of the blowoff piping.
2. All blowoff piping, when exposed to furnace heat, shall be protected by firebrick or other heat-resisting material, so constructed that the piping may be inspected readily.
3. Each boiler shall have a blowoff pipe, fitted with a valve or cock, in direct connection with the lowest water space. Cocks shall be of the gland or guard type and suitable for the pressure allowed. The use of globe valves shall not be permitted. When the maximum allowable working pressure exceeds 100 psig, each blowoff pipe shall be provided with two valves or a valve and cock.
4. Blowoff piping shall comply with the requirements of the ASME Code, Section I, from the boiler to the valve or valves, and shall be run full size without use of reducers or bushings. The piping shall not be galvanized.
5. All fittings between the boiler and blowoff valve shall be of steel. In case of renewal of blowoff pipe or fittings, they shall be installed in accordance with the rules and regulations for new installations of the ASME Code.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.1.12. Repairs and Renewals of Boiler Fittings and Appliances: Whenever repairs are made to fittings or appliances or it becomes necessary to replace them, such repairs or replacements shall comply with the requirements of the ASME Code.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.1.13. Recommendations for Operation: It is recommended that Section VII of the ASME Code covering Recommended Rules for the Care of Power Boilers be used as a guide for proper and safe operating practices.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.1.14. **Conditions Not Covered by These Requirements:** All cases not specifically covered by these requirements shall be treated as new installations or may be referred to the Chief Inspector for instructions concerning the requirements.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 2. Heating Boilers

Rule 3.2.1. **Standard Boilers:** The maximum allowable working pressure of standard boilers shall in no case exceed the pressure indicated by the manufacturer's identification stamped or cast on the boiler or on a plate secured to it.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.2.2. **Nonstandard Riveted Boilers:** The maximum allowable working pressure on the shell of a nonstandard riveted heating boiler shall be determined in accordance with Item 3 covering Existing Installations, Power Boilers, except that in no case shall the maximum allowable working pressure of a steam heating boiler exceed 15 psig, or a hot-water boiler exceed 160 psig or 250 °F temperature.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.2.3. **Nonstandard Welded Boilers:** The maximum allowable working pressure of a nonstandard steel or wrought iron heating boiler of welded construction shall not exceed 15 psig for steam. For other than steam service, the maximum allowable working pressure shall be calculated in accordance with Section IV of the ASME Code.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.2.4. Nonstandard Cast-Iron Boilers

1. The maximum allowable working pressure of a nonstandard boiler composed principally of cast-iron shall not exceed 15 psig for steam service or 30 psig for hot-water service.
2. The maximum allowable working pressure of a nonstandard boiler having cast-iron shell or heads and steel or wrought iron tubes shall not exceed 15 psig for steam service or 30 psig for hot-water service.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.2.5. Safety Valves

1. Each steam boiler shall have one or more officially rated safety valves of the spring pop type adjusted to discharge at a pressure not to exceed 15 psig. Seals may be attached in a manner to prevent the valve from being taken apart

without breaking the seal. The safety valves shall be arranged so that they cannot be reset to relieve at a higher pressure than the maximum allowable working pressure of the boiler. A body drain connection below seat level shall be provided by the manufacturer, and this drain shall not be plugged during or after field installation. For valves exceeding two inch pipe size, the drain hole or holes shall be tapped not less than 3/8 inch pipe size. For valves less than two inches, the drain hole shall not be less than 1/4 inch in diameter.

2. No safety valve for a steam boiler shall be smaller than 1/2 inch unless the boiler and radiating surfaces consist of a self-contained unit. No safety valve shall be larger than 4 1/2 inches. The inlet opening shall have an inside diameter equal to, or greater than, the seat diameter.
3. The minimum relieving capacity of the valve or valves shall be governed by the capacity marking on the boiler.
4. The minimum valve capacity in pounds per hour shall be the greater of that determined by dividing the maximum BTU output at the boiler nozzle obtained by the firing of any fuel for which the unit is installed by 1,000, or shall be determined on the basis of the pounds of steam generated per hour per square foot of boiler heating surface as given in Table 2. In many cases, a greater relieving capacity of valves will have to be provided than the minimum specified by these rules. In every case, the requirements of (e) below shall be met.

Table 3: Minimum pounds of steam per hour per square foot of heating surface

Boiler Heating Surface:	Firetube Boilers	Watertube Boilers
Hand Fired	5	6
Stoker Fired	7	8
Oil, gas, or pulverized fuel fired	8	10
Waterwall Heating Surface:	Firetube Boilers	Watertube Boilers
Hand Fired	8	8
Stoker Fired	10	12
Oil, gas, or pulverized fuel fired	14	16

Notes:

- a. When a boiler is fired only by a gas giving a heat value not in excess of 200 BTU per cubic foot, the minimum safety valve or safety relief valve relieving capacity may be based on the value given for handfired boilers above.
- b. The minimum safety valve or safety relief valve relieving capacity for electric boilers shall be 3 1/2 pounds per hour per kilowatt input.

- c. For heating surface determination, see ASME Code, Section IV, para HG-403.
5. The safety valve capacity for each steam boiler shall be such that with the fuel burning equipment installed, and operated at maximum capacity, the pressure cannot rise more than 5 psi above the maximum allowable working pressure.
6. When operating conditions are changed, or additional boiler surface is installed, the valve capacity shall be increased, if necessary, to meet the new conditions and be in accordance with (d) and (e). The additional valves required, on account of changed conditions, may be installed on the outlet piping provided there is no intervening valve.
7. If there is any doubt as to the capacity of the safety valve, an accumulation test shall be run (see ASME Code, Section VI, Care of Heating Boilers).
8. No valve of any description shall be placed between the safety valve and the boiler, nor on the discharge pipe between the safety valve and the atmosphere. The discharge pipe shall be at least full size and be fitted with an open drain to prevent water lodging in the upper part of the safety valve or in the discharge pipe. When an elbow is placed on the safety valve discharge pipe, it shall be located close to the safety valve outlet or the discharge pipe shall be securely anchored and supported. All safety valve discharges shall be so located or piped as not to endanger persons working in the area.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.2.6. Safety Relief Valve Requirements for Hot Water Boilers

1. Each hot water heating boiler shall have at least one officially rated (ASME approved and National Board rated) safety relief valve set to relieve at or below the maximum allowable working pressure of the boiler. Each hot water supply boiler shall have at least one officially rated safety relief valve of the automatic reseating type set to relieve at or below maximum allowable working pressure of the boiler. Safety relief valves officially rated as to capacity shall have pop action when tested by steam. When more than one safety relief valve is used on either hot water heating or hot water supply boilers, the additional valve or valves shall be officially rated and may be set within a range not to exceed 6 psi above the maximum allowable working pressure of the boiler up to and including 60 psig and 10 percent for those having maximum allowable working pressure exceeding 60 psig. Safety relief valves shall be spring loaded. Safety relief valves shall be so arranged that they cannot be reset at a higher pressure than the maximum permitted by this paragraph.
2. No materials liable to fail due to deterioration or vulcanization when subject to saturated steam temperature corresponding to capacity test pressure shall be used for any part.

3. No safety relief valve shall be smaller than 3/4 inch nor larger than 4 1/2 inches standard pipe size, except that boilers having a heat input not greater than 15,000 BTU per hour may be equipped with a rated safety relief valve of 1/2 inch standard pipe size. The inlet opening shall have an inside diameter approximately equal to or greater than, the seat diameter. In no case shall the minimum opening through any part of the valve be less than 1/4 inch diameter or its equivalent area.
4. The required steam relieving capacity, in pounds per hour, of the pressure relieving device or devices on a boiler shall be the greater of that determined by dividing the maximum output in BTU at the boiler outlet obtained by the firing of any fuel for which the unit is installed by 1,000, or on the basis of pounds of steam generated per hour per square foot of boiler heating surface as given in Table 2. In many cases, a greater relieving capacity of valves will have to be provided than the minimum specified by these rules. In every case, the requirements of (f) shall be met.
5. When operating conditions are changed, or additional boiler heating surface is installed, the valve capacity shall be increased, if necessary, to meet the new conditions and shall be in accordance with (f). The additional valves required, on account of changed conditions, may be installed on the outlet piping provided there is no intervening valve.
6. Safety relief valve capacity for each boiler shall be such that, with the fuel burning equipment installed and operated at maximum capacity, the pressure cannot rise more than 6 psi above the maximum allowable working pressure for pressure up to and including 60 psig and 10 percent of maximum allowable working pressures over 60 psig.
7. If there is any doubt as to the capacity of the safety relief valve, an accumulation test shall be run (see ASME Code, Section VI, Care of Heating Boilers).
8. No valve of any description shall be placed between the safety relief valve and the boiler, nor on the discharge pipe between the safety relief valve and the atmosphere. The discharge pipe shall be at least full size and fitted with an open drain to prevent water lodging in the upper part of the safety relief valve or in the discharge pipe. When an elbow is placed on the safety relief valve discharge pipe, it shall be located close to the safety relief valve outlet or the discharge pipe shall be securely anchored and supported. All safety relief valve discharges shall be so located or piped as not to endanger persons working in the area.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.2.7. **Valve Replacement:** Safety valves and safety relief valves requiring repairs shall be replaced with a new valve or repaired by the manufacturer or his authorized representative.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.2.8. **Pressure Relieving Devices:** Boilers and fired storage water heaters exempt in Article I, Items 7 (d) and 7 (e), shall be equipped with pressure relieving devices in accordance with the requirements of Section IV of the ASME Boiler and Pressure Vessel Code.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.2.9. **Instruments, Fittings and Control Requirements:** Instruments, fittings and controls for each boiler installation shall comply with the requirements of the ASME Heating Boiler Code, Section IV, Part HG, Article 6.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.2.10. **Low Water Fuel Cutoff**

1. Each automatically fired hot water heating boiler with heat input greater than 400,000 BTU/HR shall have an automatic low water fuel cutoff which has been designed for hot water service, so located as to automatically cut off the fuel supply when the surface of the water falls to the level established in Paragraph (b), also see Figure HG-702.2, ASME Heating Boiler Code, Section IV).
2. As there is no normal waterline to be maintained in a hot water heating boiler, any location of the low water fuel cutoff above the lowest safe permissible water level established by the boiler manufacturer is satisfactory.
3. A coil type boiler or a water tube boiler with heat input greater than 400,000 BTU/HR requiring forced circulation, to prevent overheating of the coils or tubes, should have a flow sensing device installed in the outlet piping, in lieu of the low water fuel cutoff required in Paragraph (a), to automatically cut off the fuel supply when the circulating flow is interrupted.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.2.11. **Steam Gauges**

1. Each steam boiler shall have a steam gauge connected to its steam space, its water column, or its steam connection, by means of a siphon or equivalent device exterior to the boiler. The siphon shall be of sufficient capacity to keep the gauge tube filled with water and so arranged that the gauge cannot be shot off from the boiler except by a cock with a tee or lever handle placed in the pipe near the gauge. The handle of the cock shall be parallel to the pipe in which it is located when the cock is open.
2. The range of the scale on the dial of a steam boiler steam gauge shall be not less than 30 psi. The gauge shall be provided with effective stops for the indicating pointer at the zero point and at the maximum pressure point. The travel of the pointer from zero to full scale shall be at least three inches.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.2.12. Pressure or Altitude Gauges

1. Each hot-water boiler shall have a pressure or altitude gauge connected to it or to its flow connection in such a manner that it cannot be shut off from the boiler except by a cock with tee or lever handle placed on the pipe near the gauge. The handle of the cock shall be parallel to the pipe in which it is located when the cock is open.
2. The range of the scale on the dial of the pressure or altitude gauge shall be not less than 1 1/2 times nor more than three times the maximum allowable working pressure. The gauge shall be provided with effective stops for the indicating pointer at the zero point and at the maximum pressure point.
3. Piping or tubing for pressure or altitude gauge connections shall be of nonferrous metal when smaller than one inch pipe size.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.2.13. Thermometers: Each hot-water boiler shall have a thermometer so located and connected that it shall be easily readable when observing the water pressure or altitude gauge. The thermometer shall be so located that it will at all times indicate the temperature in degrees Fahrenheit of the water in the boiler at or near the outlet.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.2.14. Water Gauge Glasses

1. Each steam boiler shall have one or more water gauge glasses attached to the water column or boiler by means of valved fittings. The lower fitting shall be provided with a drain valve of the straightaway type with opening not less than 1/4 inch diameter to facilitate cleaning. Gauge glass replacement shall be possible while the boiler is under pressure.
2. Transparent material, other than glass, may be used for the water gauge provided that the material has proved suitable for the pressure, temperature and corrosive conditions encountered in service.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.2.15. Stop Valves and Check Valves

1. If a boiler can be closed off from the heating system by closing a steam stop valve, there shall be a check valve in the condensate return line between the boiler and the system.

2. If any part of a heating system can be closed off from the remainder of the system by closing a steam stop valve, there shall be a check valve in the condensate return pipe from that part of the system.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.2.16. Feedwater Connections

1. Feedwater, make-up water, or water treatment shall be introduced into a boiler through the return piping system or through an independent feedwater connection which does not discharge against parts of the boiler exposed to direct radiant heat from the fire. Feedwater, make-up, or water treatment shall not be introduced through openings or connections provided for inspection or clean, safety valve, safety relief valve, surface blowoff, water column, water gauge glass, pressure gauge or temperature gauge.
2. Feedwater piping shall be provided with a check valve near boiler and a stop valve or cock between the check valve and the boiler or return pipe system.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.2.17. Return Pump: Each boiler equipped with a condensate return pump, where practicable, shall be provided with a water level control arranged to automatically maintain the water level in the boiler within the range of the gauge glass.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.2.18. Repairs and Renewals of Boiler Fittings and Appliances: Whenever repairs are made to fittings or appliances, or it becomes necessary to replace them, such repairs or replacements shall comply with Section IV of the ASME Code for new construction.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 3. Pressure Vessels

Rule 3.3.1. Maximum Allowable Working Pressure for Standard Pressure Vessels: The maximum allowable working pressure for standard pressure vessels shall be determined in accordance with the applicable provisions of the edition of the ASME or API-ASME Code under which they were constructed and stamped. The maximum allowable working pressure shall not be increased to a greater pressure than shown on the manufacturer's name plate stamping and data report.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.3.2. Maximum Allowable Working Pressure for Nonstandard Pressure Vessels

1. For internal pressure: The maximum allowable working pressure on the shell of a nonstandard pressure vessel shall be determined by the strength of the weakest course computed from the thickness of the plate, the tensile strength of the plate, the efficiency of the longitudinal joint, the inside diameter of the weakest course and the factor of safety set by these rules.

TStE

RFS = maximum allowable working pressure, psig

where:

TS = ultimate tensile strength of shell plate, psi. When the tensile strength of the steel plate is not known, it shall be taken as 55,000 psi for temperatures not exceeding 700° F.

t = minimum thickness of shell plate of weakest course, inches.

E = efficiency of longitudinal joint depending upon construction. Use the following values:

For riveted joints - calculated riveted efficiency; For fusion-welded joints:

For riveted joints -- calculated riveted efficiency: For fusion-welded joints:

Single lap weld	40
Double lap weld	60
Single butt weld	60
Double butt weld	75
Forge weld	70
Brazed steel	80

R5 inside radius of weakest course of shell, inches, provided the thickness does not exceed 10 percent of the radius. If the thickness is over 10 percent of the radius, the outer radius shall be used. FS5 factor of safety allowed by these rules.

2. For external pressure: The maximum allowable working pressure for cylindrical nonstandard pressure vessels subjected to external or collapsing pressure shall be determined by the rules in Paragraphs UG-28 and UG-29 of Section VIII, Division 1, of the ASME Code.
3. Factors of safety: The minimum factor of safety shall in no case be less than four for existing installations. The factor of safety may be increased when deemed necessary by the inspector to insure the operation of the vessel within safe limits. The condition of the vessel and the particular service of which it is subject. The condition of the vessel and the particular service of which it is subject will be the determining factors.

4. End closures: The maximum allowable working pressure permitted for formed heads under pressure shall be determined by using the appropriate formulas from Paragraphs UG-32, UG-33, or UG-35 of Section VIII, Division 1, ASME Code, and the tensile strength and factors of safety given in Paragraph 2(a), (c).

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.3.3. **Inspection of Inaccessible Parts:** Where in the opinion of the inspector, as the result of conditions disclosed at the time of inspection, it is advisable to remove the interior or exterior lining, covering, or brickwork to expose certain parts of the vessel not normally visible, the owner or user shall remove such materials to permit proper inspection and to establish construction details. Metal thickness shall be determined utilizing appropriate equipment including drilling if necessary.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.3.4. **Pressure Relief Devices:** Pressure relief devices for each pressure vessel installation shall comply with the requirements of ASME Pressure Vessel Code, Section VIII.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.3.5. **Safety Appliances:** Each pressure vessel shall be protected by such safety and relief valves and indicating and controlling devices as will insure its safe operation. These valves and devices shall be so constructed, located and installed that they cannot readily be rendered inoperative. The relieving capacity of the safety valves shall be such as to prevent a rise of pressure in the vessel of more than 10 percent above the maximum allowable working pressure, taking into account the effect of static head pressure. Safety valve discharges shall be carried to a safe place.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.3.6. **Repairs and Renewals of Fittings and Appliances:** Whenever repairs are made to fittings or appliances, or it becomes necessary to replace them, such repairs or replacements shall comply with the ASME Code.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.3.7. **Conditions Not Covered by These Requirements:** All cases not specifically covered by these requirements shall be treated as new installations or may be referred to the Chief Inspector for instructions concerning the requirements.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 4. General Requirements

Rule 3.4.1. Inspection of Boilers and Pressure Vessels

1. All boilers and pressure vessels, not exempt by the Act, shall be inspected internally and externally, as provided by these rules and regulations, by an authorized inspector. The owner or user shall prepare each boiler or pressure vessel for such inspection and for appropriate pressure tests, whenever necessary. Following is a recommended general guide in preparing equipment for an internal inspection:
2. Boilers
 - a. Cool the boiler, furnace and setting sufficiently to prevent damage to any part.
 - b. Drain and wash thoroughly internal parts to be inspected.
 - c. Remove manhole and handhole plates, and wash out drain and inspection plugs.
 - d. Remove a sufficient number of grates or internally fired boilers, as requested by the inspector.
 - e. Remove brickwork, refractory and insulation, as required by the inspector, to determine condition of boiler, headers, tubes, furnace, structural supports, and other parts.
 - f. Prevent leakage of water, steam or vapors into boiler interiors that would endanger personnel.
 - g. Before opening the manhole or handhole covers and entering any parts of the steam-generating unit connected to a common header with other boiler, the non-return and steam stop valves must be closed, tagged, and preferably padlocked, and drain valves or cocks between the two valves opened. The feed and check valves must be closed, tagged, and preferably padlocked, and drain valves or cocks located between the two valves opened. After draining the boiler, the blowoff valves shall be closed and padlocked. Blowoff lines, where practicable, shall be disconnected between pressure parts and valves. All drains and vent lines shall be opened.
 - h. Prepare the pressure gauge for testing.
3. Pressure vessels
 - a. Remove manhole and handhole plates, cleaning and inspection plugs.

- b. Clean internal surfaces and adequately ventilate all interior surfaces.
- c. Isolate the unit to the extent that internal temperature, pressure and environment are not injurious to personnel and are under strict control during complete inspection.
- d. Remove linings or coverings, as required by the inspector, to determine true physical condition of the vessel and its components.
- e. Make protective and regulating controls readily accessible for inspection.
- f. Prepare the pressure gauges for testing.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.2. **Boilers and Pressure Vessels Improperly Prepared for Inspection.:** If a boiler or pressure vessel has not been properly prepared for an internal inspection, or if the owner or user fails to comply with the requirements for a hydrostatic test as set forth in these rules and regulations, the 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.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.3. **Removal of Covering to Permit Inspection:** If the boiler or pressure vessel is jacketed so that the seams of shells, drums, or domes cannot be seen, sufficient jacketing, setting wall, or other form of casing or housing shall be removed to permit reasonable inspection of the seams and so that the size of the rivets, pitch of the rivets, and other data necessary to determine the safety of the boiler or pressure vessel may be obtained, provided such information cannot be determined by other means.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.4. **Lap-Seam Crack:** The shell of a pressure vessel, in which a lap-seam crack is discovered along a longitudinal riveted joint, shall be immediately discontinued from use. If the equipment is not more than 15 years of age, a complete new course of the original thickness may be installed at the discretion of the inspector and after approval by the Chief Inspector. Patching is prohibited. (By "lap-seam crack" is meant the typical crack frequently found in lap seams, extending parallel to the longitudinal joint and located either between or adjacent to rivet holes.)

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.5. **Hydrostatic Pressure Tests**

- 1. A hydrostatic pressure test, when applied to boiler or pressure vessels, shall not exceed 1 1/2 times the maximum allowable working pressure. the pressure shall

be under proper control so that in no case shall the required test pressure be exceeded by more than two percent.

2. See Article III, Section I, Item 1(d), for temperature limitations on particular power boiler installations.
3. Note: When a hydrostatic test is to be applied to existing installations, the pressure shall be as follows:
 - a. For all cases involving the question of tightness, the pressure shall be equal to the working pressure.
 - b. For all cases involving the question of safety, the pressure shall be equal to 1 1/2 times the maximum allowable working pressure. During such test the safety valve or valves shall be removed or each valve disk shall be held to its seat by means of a testing clamp and not by screwing down the compression screw upon the spring.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.6. Automatic Low-Water Fuel Cutoff and/or Water-Feeding Device

1. Each automatically fired and unattended steam or vapor system boiler shall be equipped with an automatic low-water fuel cutoff so located as to automatically cut off the fuel supply when the surface of the water falls to the lowest safe water line. If a water-feeding device is installed, it shall be so constructed that the water inlet valves cannot feed water into the boiler through the float chamber and so located as to supply requisite feedwater. The lowest safe water line should be not lower than the lowest visible part of the water glass. Such fuel or feedwater control device may be attached direct to a boiler or to the tapped openings provided for attaching a water glass direct to a boiler provided that for low-pressure boilers such connections from the boiler are nonferrous tees of Y's not less than 1/2-inch pipe size between the boiler and the water glass, so that the water glass is attached direct and as close as possible to the boiler; the straightaway tapping of the Y or tee to take the water glass fittings, the side outlet of the Y or tee to take the fuel cutoff or water-feeding device.
2. The ends of all nipples shall be reamed to full-size diameter.
3. Designs embodying a float and float bowl shall have a vertical straightaway valve drain pipe 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. A coil type boiler or a water tube boiler with heat input greater than 400,000 BUT/HR requiring forced circulation, to prevent overheating of the coils or tubes, shall have a flow sensing device installed in the outlet piping, in lieu of the low water fuel cutoff required in this item, to automatically cut off fuel supply when the circulating flow is interrupted.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.7. Pressure-Reducing Valves

1. Where pressure-reducing valves are used, one or more relief or safety valves shall be provided on the low-pressure side of the reducing valve when the piping or equipment on the low-pressure side does not meet the requirements for the full initial pressure. Proper protection shall be provided to prevent injury or damage caused by the escaping fluid from the discharge of relief or safety valves if vented to the atmosphere. The combined discharge capacity of the relief or safety valves shall be such that the pressure rating of the lower pressure piping or equipment shall not be exceeded in case the reducing valve sticks open. The use of hand-controlled bypasses around reducing valves is permissible. If a bypass is used around the reducing valve, the safety valve required on the low pressure side shall be sufficient capacity to relieve all the fluid that can pass through the bypass without overpressuring the low pressure side.
2. It is mandatory that a pressure gauge be installed on the low-pressure side of a reducing valve.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.8. Blowoff Equipment

1. The blowdown from a boiler or boilers that enters a sewer system or blowdown which is considered a hazard to life or property shall pass through some form of blowoff equipment that will reduce pressure and temperature as required hereinafter.
2. The temperature of the water leaving the blowoff valve equipment shall not exceed 150ø F.
3. The pressure of the blowdown leaving any type of blowoff equipment shall not exceed 5 psig.
4. The blowoff piping and fittings between the boiler and the blowoff tank shall comply with Section I of the ASME Code.
5. All materials used in the fabrication of boiler blowoff equipment shall comply with Section II of the ASME Code.
6. All blowoff equipment shall be fitted with openings to facilitate cleaning and inspection.

7. Blowoff equipment shall conform to the provisions set forth in the National Board of Boiler and Pressure Vessel Inspectors' publication, "Boiler Blowoff Equipment."

SOURCE: Miss. Code Ann. §45-23-9

- Rule 3.4.9. **Location of Discharge Piping Outlets:** The discharge of safety valves, blowoff pipes and other outlets shall be located so as to prevent injury to personnel.

SOURCE: Miss. Code Ann. §45-23-9

- Rule 3.4.10. **Major Repairs:** Where repairs are necessary, which in any way affect the working pressure or safety of a boiler or pressure vessel, an inspector shall be called for consultation and advice as to the best method of making such repairs. After such repairs are made, they shall be reviewed by and found acceptable to an inspector. Repairs to all boilers and pressure vessels shall conform to the applicable provisions of the National Board Inspection Code.

SOURCE: Miss. Code Ann. §45-23-9

- Rule 3.4.11. **Supports:** Each boiler and pressure vessel shall be supported by masonry or structural supports of sufficient strength and rigidity to safely support the boiler or pressure vessel and its contents. There shall be no excessive vibration in the boiler, pressure vessel, or their connected piping or fittings.

SOURCE: Miss. Code Ann. §45-23-9

- Rule 3.4.12. **Boiler Door Latches**

1. A watertube boiler shall have the firing doors of the inward-opening type, unless such doors are provided with substantial and effective latching or fastening devices or otherwise so constructed as to prevent them, when closed, from being blown open by pressure on the furnace side.
2. These latches or fastenings shall be of the positive self-locking type. Friction contacts, latches, or bolts actuated by springs shall not be used. The foregoing requirements for latches or fastenings shall not apply to coal openings of downdraft or similar furnaces.
3. All other doors, except explosion doors, not used in the firing of the boiler, may be provided with bolts or fastenings in lieu of self-locking latching devices. Explosion doors, if used and if located in the setting walls within seven feet of the firing floor or operating platform, shall be provided with substantial deflectors to divert the blast.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.13. **Clearance:** When boilers are replaced or new boilers are installed in either existing or new buildings, a minimum height of at least three feet shall be provided between the top of the boiler proper and the ceiling and at least three feet between all sides of the boiler and adjacent walls or other structures. Boilers and pressure vessels having manholes shall have five feet clearance from the manhole opening and any wall, ceiling or piping that will prevent a person from entering the boiler or vessel. All boilers and pressure vessels shall be so located that adequate space will be provided for the proper operation of the boilers and pressure vessels and their appurtenances, for the inspection of all surfaces, tubes, waterwalls, economizers, piping, valves and other equipment, and for their necessary maintenance and repair and replacement of tubes.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.14. **Ladders and Runways:** When necessary for safety, there shall be a steel runway or platform of standard construction installed across the tops of adjacent boilers or pressure vessels or at some other convenient level for the purpose of affording safe access. All runways shall have at least two means of exit, each to be remotely located from the other.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.15. **Air and Ventilation Requirements:** A permanent source of outside air shall be provided for each boiler room to permit satisfactory combustion of fuel as well as proper ventilation of the boiler room under normal operating conditions.

1. The total requirements of the burners for all fired pressure vessels in the boiler room must be used to determine the louver sizes whether fired by coal, oil or gas; however, the minimum net free louvered area must not be less than one square foot. The following table or formula shall be used to determine the net louvered area in square feet:

Input BTU/Hour	Required Air Cu.Ft./Min.	Min. Net Louvered Area Sq. Ft.
500,000	125	1.0
1,000,000	250	1.0
2,000,000	500	1.6
3,000,000	750	2.5
4,000,000	1000	3.3
5,000,000	1250	4.1
6,000,000	1500	5.0
7,000,000	1750	5.8
8,000,000	2000	6.6
9,000,000	2250	7.5
10,000,000	2500	8.3

(BTU/HR ÷ 100) X 1.5

$60 \div 300 = \text{Min. Net Area Req. Sq. Ft.}$

2. When mechanical ventilation is used in lieu of (a) the supply of combustion and ventilation air to the boiler room and the firing device shall be interlocked with the fan so the firing device will not operate with the fan off. The velocity of the air through the ventilating fan shall not exceed 500 feet per minute, and the total air delivered shall be equal to or greater than shown in (1.).

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.16. Fired Jacketed Steam Kettles

1. Fired jacketed steam kettles are acceptable for installation if constructed and stamped in accordance with Section I, IV, or VIII, Division 1, of the ASME Boiler Code and registered with the National Board.
2. Gas-fired jacketed steam kettles may be constructed under the rules of the ASME Pressure Vessel Code, Section VIII, provided the following additional requirements are met:
3. Welded joints in contact with products of combustion shall be of Type No. 1 of Table UW-12.
4. When parts subjected to pressure are made of carbon steel material, the minimum thickness shall be 1/2 inch. The minimum thickness of stainless steel or nonferrous pressure parts shall be as specified in the applicable part of Subsection C.
5. When in contact with products of combustion, carbon steel material shall be pressure vessel quality and austenitic stainless steel parts shall be of either extra-low carbon or stabilized grades.
6. Structural grade carbon steel shall not be used for any pressure part.
7. The operating pressure of the jacket shall not exceed 50 psig.
8. Vessels constructed under this rule shall be inspected by an authorized inspector and shall not be marked with the UM Symbol regardless of volume.
9. No steam or water shall be withdrawn from the jacket for use externally to the vessel.
10. The capacity of the safety valve in pounds of steam per hour shall be at least equal to the BTU rating of burner divided by 1,000.
11. The jacket shall be furnished with the following minimum appurtenances and controls:

- a. A pressure gauge.
 - b. A water gauge glass.
 - c. A separate connection, fitted with a check valve and stop valve, for adding water to the jacket (the water may be added while the vessel is not under pressure.)
- 12. An automatic gas valve controlled by pressure or temperature to maintain the steam pressure in the jacket below the safety valve setting.
 - 13. A low water cut-off that will cut off the level to the burner if the water in the jacket below the lowest permissible water level as established by the manufacturer.
 - 14. A safety pilot control that will cut off the fuel to both the main burner and the pilot burner in case of pilot flame failure.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.17. Shop Inspection and Inspection of Secondhand or Used Boilers or Pressure Vessels

- 1. Shop inspections and inspections of secondhand or used boilers or pressure vessels made by the Chief Inspector or a Deputy Inspector shall be charged for in accordance with fee schedule.
- 2. Note: The shop inspections required by an applicable section of the ASME Boiler & Pressure Vessel Code shall be made by an inspector who holds a valid license or commission recognized by the Department.
- 3. Pressure vessels which are covered under the Liquefied Compressed Gas Equipment Inspection Law of Mississippi, being Sections 75-57-1 through 75-57-63, Mississippi Code of 1972, are exempt from these Regulations.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.18. Manufacturers: Boilers and pressure vessels and component parts to be installed for use in the State of Mississippi except those exempted by the provisions of Section 45-23-15 of the Act shall be designed, constructed, inspected, stamped and installed in accordance with current applicable section of the ASME Boiler and Pressure Vessel Code and/or the Rules and Regulations of the Department. Boilers and pressure vessels shall be stamped with applicable:

1. ASME Code stamping, Or
Mississippi Special number or Mississippi Standard number
ASME Code Symbol and the word "User," see Par. UG-116 (a)(1)(a), and
Underwriters' Laboratory label on electrically heated boilers, pressure vessels and water heaters.
2. Manufacturer's data reports on boilers, pressure vessels, and component parts which are to be installed and operated in the State of Mississippi except those exempted by the provisions of Section 45-23-15 of the Act shall be filed with the Chief Inspector, Boiler and Pressure Vessel Safety Branch.
3. If a boiler or pressure vessel is of special design and will not bear the ASME Code Symbol and National Board or user stampings, a permit for a State Special must be applied for in writing by the Mississippi user. Blueprints, design data, calculations and material showing details of the proposed construction shall be submitted to the Branch and approval obtained before construction is started.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.19. Conditions Not Covered by These Rules and Regulations: For any condition not covered by these requirements, the applicable provisions of the ASME Code and/or the National Board Inspection Code shall apply.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.20. Accessibility for Inspection

1. All unfired pressure vessels hereafter installed or reinstalled shall be placed above ground where possible and so installed that all parts of the vessels can be readily inspected.
2. Where necessary to install a vessel under ground, it shall be enclosed in a concrete, brick or steel enclosure with a removable cover, so that regular inspections of the entire shell and heads of the vessel can be made.
3. Exceptions: Vessels not in excess of 100 psi design working pressure having adequate cathodic protection with epoxy or bitumastic coating and containing non-toxic or non-flammable material may be buried without a pit enclosure provided such vessels shall have means of internal inspection.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.21. **Boilers Exposed to the Elements:** Boilers not contained in boiler rooms that are exposed to freezing temperatures shall have their water and steam lines either steam traced or wrapped with electric heating tape where needed.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.22. **Fired Storage Water Heaters and Supply Vessels**

1. Minimum Controls -- All fired storage water heaters and supply vessels shall be equipped with the following controls and devices:
 - a. Operating temperature control;
 - b. High-limit temperature control;
 - c. Positive flame failure cut-off;
 - d. Approved pressure-temperature relief valve, set at or below the safe working pressure of the vessel, with such setting satisfactory for the application.
2. Location -- All fired vessels and heaters shall be so located as to provide access to the controls, safety relief valve and drain.
3. Discharge Lines -- When a discharge line from a relief valve is installed, it shall not be reduced but shall be full size and be piped to a safe location, graded down.
4. Relief Valve Testing -- The operator shall manually test the relief valve once each month.
5. Alternative Use -- Storage water heaters and supply vessels, fired or unfired, shall not be used as a heating boiler.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.23. **Safety Valves and Rupture Disk Notes**

1. Any safety valve, piping, valve, or appurtenance exposed to freezing temperatures shall be properly positioned against collecting moisture and properly drained to prevent freeze-up.
2. Safety valves on Dowtherm and similar vaporizers shall be removed annually for cleaning and testing, at time of certificate inspection. Safety valves for compressed-air tanks shall not exceed three inches in diameter and shall be proportioned for the maximum number of cubic feet of free air that can be applied per minute.

3. Rupture disks or heads may be used as the pressure safety device on vessels containing non-toxic gases provided they are designed to fail at not more than the design pressure of the vessel.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.24. **Portable Boilers and Pressure Vessels:** Every owner or user of portable boilers or pressure vessels shall furnish in writing to the Branch, on or before the effective date of these regulations and yearly thereafter, a list of their portable boilers and unfired pressure vessels, giving the location of each and indicating whether it is insured and inspected by an Insurance Company licensed in Mississippi to inspect boilers and pressure vessels. No such boiler or pressure vessel shall be used until it has been inspected by an authorized boiler inspector and a certificate of inspection has been issued.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.25. **Fuel Conversions and Increases in Size of Fuel Burning Apparatus:** Either of these shall nullify the current operating certificate and a re-inspection by a licensed inspector is mandatory prior to returning the boiler to service.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.26. **Inspection Openings -- Not To Be Used for Any Other Purpose:** Any and all inspection openings shall not be obstructed; they shall have adequate clearance for their purpose of being used as an inspection opening. They shall not be used for pipe connection. They shall not be increased in size unless with the concurrence of a licensed inspector, and then only according to and in compliance with the ASME Code's pertinent paragraphs.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.27. **Boilers and Pressure Vessels That Are Exempt:** The fact that boilers and pressure vessels are exempt from the Act does not preclude them from having the normal and proper safety controls and devices.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.28. **Exit from Boiler Room:** All boiler rooms exceeding 500 square feet floor area and containing one or more boilers having fuel burning capacity of 1,000,000 BTU per hour, or equivalent electrical heat input, shall have at least two means of exit. Each exit shall be remotely located from the other.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.29. **Return Loop Connection:** It is recommended that the return water connections to all low pressure, steam heating boilers supplying a gravity return heating

system be so arranged as to form what is known as the "return pipe loop connection," so that the water cannot be forced out of the boiler below the safe water level. This connection is shown in Figure HG-703-1 of Section IV, ASME Heating Boiler Code.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.4.30. Authorization Required for Repairs

1. No repair or alteration affecting the safety of the boiler or pressure vessel shall be made until the contemplated repair or alteration has been authorized by a licensed inspector. Nothing in this requirement shall prohibit the exchange or interchange of valves, fittings, and accessories for the same purpose.
2. No pressure vessel that has been subject to a fire shall be returned to service until it has been inspected by a licensed inspector and found safe. Any vessel that has been altered or repaired or subjected to a fire shall be prepared for hydrostatic test if one is considered necessary by the licensed inspector. Any welding on which the strength of any boiler or pressure vessel is dependent shall be made by a welder suitably certified under the ASME Code, Section IX.

SOURCE: Miss. Code Ann. §45-23-9

Subchapter 5. Recommended Safe Practices - Non-Mandatory

Rule 3.5.1. Design Changes and Alterations of Boilers or Pressure Vessels: No repairs or alterations involving flame, arc, or other method of welding shall be made on any pressure vessel or system unless such vessel or system shall first have been certified as gas free or oxygen free by competent personnel.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.5.2. Operators

1. All power boilers (over 15 psi) with fully automatic control, having a rated output of 1000 or more pounds of steam or vapor per hour and high pressure, high temperature water boilers, shall not be operated without being periodically checked by an operator at intervals of not less than once every two hours, regardless of whether or not the boiler is equipped with automatic feedwater regulator, fuel or damper regulator, high and low water alarm or any other form of automatic control while the boiler is in service.
2. All power boilers and high pressure/high temperature water boilers without fully automatic control shall have a full-time operator while the boiler is in service. Operator -- a competent attendant who is familiar with the particular boilers to be operated and who has received proper instruction in their safe operation.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.5.3. **Fuel Burning Apparatus and Systems (Flame Safeguard):** Fuel burning apparatus and systems should be equipped with regulating and protective controls in accordance with applicable standards of the National Fire Protection Association, American Gas Association, and Underwriters' Laboratories.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.5.4. **Electric Boilers**

1. Electric boilers 600 volts or less subject to the requirements of the Safety Act and these rules and regulations shall bear the Underwriter's laboratories label on the completed unit or assembly by the manufacturer. This label shall be in addition to the code symbol stamping requirements of the ASME and the National Board.
2. All appliances required for electric boilers shall be attached in accordance with the following rules:
3. A cable at least as large as the income power line to the boiler shall be provided for grounding the boiler shell. This cable shall be permanently fastened to the boiler and grounded in an approved manner.
4. Conductor or conductors shall be attached by means of suitable connectors, lugs, pressure connectors, clamps or other approved means, Connectors that depend on solder to maintain connection shall not be used.
5. A suitable screen or guard shall be provided around high tension bushings and a sign posted warning of high voltage. This screen or guard shall be so located that it will be impossible for anyone working around the boiler to come in contact accidentally with the high tension circuit.
6. When adjusting safety valves, the power circuit to the boiler shall be open. The boiler may be under steam pressure, but the power line shall be open while the operator is making the necessary adjustment.
7. Safety or relief valves shall have a relieving capacity of three and one-half (3 1/2) pounds per hour for each kilowatt maximum rating.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.5.5. **Fire Safety Precautions:** All fired boiler and fired pressure vessel installations shall be on a non-combustible floor or base, and breeching or flue shall not pass through combustible wall, ceiling, roof or partition unless suitably guarded against excess heat

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.5.6. Precautions To Be Taken Prior to Entering Boilers and Pressure Vessels

1. All confined spaces shall be kept well purged and ventilated of all atmospheric contaminants.
2. All internal space and surfaces shall be at reasonable temperatures.
3. All electrical equipment and electrical cords shall be adequately grounded and preferably of the low voltage (12 volt) type.
4. Pressure vessels that have contained flammable, toxic, corrosive, or irritant contents shall be properly cleaned and certified as safe to enter by an Industrial Hygienist or other person qualified to make the necessary required tests.
5. Pressure vessels that are being lined or coated with a vaporous compound shall be well purges at all times during the process, and anyone in the vessel shall be attached to an adequate life-line and attended by a competent person stationed at the vessel's entrance.
6. Common sense shall be exercised at all times.

SOURCE: Miss. Code Ann. §45-23-9

Rule 3.5.7. Hydrostatic Testing Precautions

1. When performing or witnessing any hydrostatic test, only properly instructed and qualified personnel should actually perform the test.
2. Protective barriers or pits should surround or enclose the object being tested.
3. No personnel should be in the immediate vicinity of the object being tested while pressure is being raised or is above the allowable working pressure.
4. No vessel shall be left unattended while pressure is being raised and no vessel under pressure (hydrostatic) shall be left overnight in a heated area unless it is equipped with a pressure relief device.
5. For water temperature and high pressure incrementation procedure, it is recommended that reference be made to the proper engineering manuals.
6. Only qualified inspectors shall check the object under hydrostatic test, and then only after the pressure has been reduced to the approved allowable working pressure, for any deformation, tightness, distress or integrity.
7. When strain gauge readings are necessary, it is recommended that remote reading and/or recording tape be used.

8. Glass lined or concrete lined pressure vessels shall not be hydrostatically tested in excess of their allowable working pressure, as indicated on the stamping or manufacturer's data report.
 - a. Petition
 - b. Petition: For the modification of any of these rules, the following shall be the method of procedure.
 - c. Any employer or employee, or other person interested or affected by such rules may petition for a hearing on the reasonableness of such rules by filing a petition with the Technical Advisory Committee of Boiler and Pressure Vessel Safety, setting forth the rule or rules upon which a change is desired and the reasons for said change.
 - d. Upon the receipt of a petition, the Technical Advisory Committee will determine its merits and if a hearing is necessary, notice of time and place will be given to the petitioner and to such other persons as the State Board of Health may find directly interested.

SOURCE: Miss. Code Ann. §45-23-9