522 CMR 2.00: POWER BOILERS

Section

2.01: Scope and Application

In accordance with the provisions of M.G.L. c. 146, § 2, the Board adopts by reference the 2019 *ASME Boiler and Pressure Vessel Code*, Section I, *Rules for Construction of Power Boilers*.

2.02: Records

To ensure the proper daily inspection of steam Boilers, the following shall apply:

(1) When an engineer or fireman is operating steam Boilers or steam engines, he or she is actually engaged as an assistant to the person in charge, and during his or her hours on duty, he or she is held responsible for the proper operation of the Boilers and engines specified and their Appurtenances. Operators of steam Boilers shall sign the Operators' Record Book, as provided for in M.G.L. c. 146, § 46A, each time they assume responsibility as the licensed operator and make necessary entries to the operator's Record Book during the shift. These records shall be made available to the Chief or any District Engineering Inspector upon request.

(2) In the event of a Reportable Accident/Incident, the Owner/User or the Engineer in Charge shall notify the Massachusetts Emergency Management Agency at 508-820-2000 within 24 hours of the event.

(3) All Engineers and Firemen in charge of steam Boilers and/or engines shall notify the Department in writing, within seven days of his or her appointment, of the location of the Boilers and/or engines of which he or she is in charge. When accepting or leaving a position as an Engineer or Fireman in charge, the Engineer or Fireman shall notify the Department within seven days on a form approved by the Department. When accepting a position, the Engineer or Fireman must include a letter of designation as the engineer in charge, signed by the owner or owner's representative.

(4) The Engineer in Charge is the actual authority for the operation, maintenance, and repair of the Boilers, Pressure Vessels, engines, and their Appurtenances specified. All persons operating, repairing or maintaining these Boilers, Pressure Vessels, engines, and their Appurtenances do so under the direct authority of the Engineer in Charge. In order to effectively perform his or her duties, the Engineer in Charge shall make daily visits to the plant, unless an alternative schedule has been approved by the Chief. Individuals performing duties as the Engineer in Charge will leave daily written instructions to the operating personnel and those instructions will be made available to the District Engineering Inspector upon request. The Engineer in Charge shall sign the Engineer's Record Book, as provided for in M.G.L. c. 146, § 51, on a daily basis and shall review the Operator's Log Book on a daily basis.

2.03: Construction

(1) Heat Recovery Steam Generators (HRSGs). All heat recovery steam generators built after May 1, 2000, shall be built to the *ASME Boiler and Pressure Vessel Code* Section I, *Rules for Construction of Power Boilers* adopted at the time of installation.

2.03: continued

(2) Restrictions, Dual Pressure Controls, Bypass Switches.

(a) Steam Boilers under 522 CMR 2.03 are prohibited from having any device that enables the Boiler to operate at a pressure less than 10% of its normal operating pressure. Dual pressure controls or any similar device are prohibited from use on all steam Boilers operating above 15 PSIG.

(b) Manual devices and switches that allow the bypass of any safety control are prohibited unless such device or switch is provided with a "dead-man" capability that ensures that the Operator is present and responsible when the device or switch is in use. No such device or switch shall have the capability to fail in the closed position.

(3) Remote Monitoring Systems. When remote monitoring systems on Steam Boilers are in use, they shall monitor, but not be limited to: steam pressure, and water level, and include a remote shut down switch. All remote monitoring systems must be installed with uninterruptible system signals and include visible alarms and annunciators.

2.04: Repairs and Alterations

(1) Welded Repairs and Alterations. All welded repairs and alterations performed to the High Pressure/Power Boiler proper and the High Pressure/Power Boiler External Piping (BEP) shall be done in accordance with the provisions of M.G.L. c. 146 § 2 and NBIC Part 3 and shall be performed by an accredited R Certificate Holder. It is the responsibility of the Owner/User or Engineer in Charge to ensure that all repairs and alterations are performed in accordance with 522 CMR 2.00. Signed copies of completed Form R-1 and Form R-2, together with attachments, shall be submitted, in a format approved by the Chief, to the Department, and shall be made available upon request to the Division and Authorized Inspectors of the Boiler. Distribution of Form R-1 and Form R-2 and attachments shall be the responsibility of the organization performing the repair.

(2) Mechanical Repairs to Boiler External Piping Systems (BEP). Mechanical repairs to Boiler External Piping may be performed under the supervision of the Engineer in Charge. The Engineer in Charge shall record all work performed on it on forms to be obtained from the Department. These records shall be kept on file at the location of the Boiler, and shall be always accessible to the Division and Authorized Inspectors. Design requirements for mechanical repairs are to meet the original code of construction. Legible signed copies of such reports together with attachments shall be made on a form, and submitted in a format approved by the Chief within seven days of completion of the repair.

2.05: Installation

In accordance with the provisions of M.G.L. c. 146, § 2, the Board adopts the 2019 *NBIC Part 1*.

2.06: Inspection

In accordance with the provisions of M.G.L. c. 146, § 2, the Board adopts the 2019 *NBIC Part 2*.

(1) Application. Whoever owns or uses or causes to be used a High Pressure/Power Boiler that comes within the scope of M.G.L. c. 146, § 6, shall make application for inspection prior to installation and operation to the Chief in a format approved by the Department.

(2) Field Inspection. All High Pressure/Power Boilers shall be thoroughly inspected internally and externally while under pressure at least once annually in accordance with the 2015 *NBIC*. The annual external inspection shall be within six months after the annual internal inspection. A District Engineering Inspector shall perform the First Inspection as required by M.G.L. c. 146, § 6. Subsequent annual inspections shall be performed by a District Engineering Inspector or an Authorized Inspector. A thorough Internal Inspection requires the following:

2.06: continued

(a) Each space including, but not limited to, fireside and waterside spaces provided with a handhole, manhole, or other points of access such as doorways and openings into fireside and waterside spaces shall be opened and cleaned for a visual inspection.
(b) Pre-inspection and post-inspection activities as provided for in the 2015 *NBIC* shall be performed.

(3) Certificate to Be Posted.
(a) The Department shall issue to the Owner/User of a Boiler compliant with 522 CMR a Certificate, on the condition that the appropriate fees have been paid. The Certificate shall be protected from dirt, moisture, and contamination and shall be posted in a conspicuous place near where the Boiler specified therein is located and shall be kept with said Boiler and shall be always accessible to the District Engineering Inspector or Authorized Inspector.
(b) The Certificate shall include the name of the insurance company, the National Board number, the Mass Tag number, the name of the manufacturer, the name of the Owner/User, the location, size and number of the Boiler, the date of inspection and the maximum pressure at which it may be operated, with the signature of the inspector, and shall contain such extracts from the statutes as shall be deemed necessary by the board.
(c) The Certificate shall remain posted while the Certificate is in force, unless a District Engineering Inspector or an Authorized Inspector deems the Boiler or its Appurtenances unsafe or dangerous. If a Boiler is determined to be unsafe or dangerous, the District Engineering Inspector or Authorized Inspector shall remove the Certificate, and submit such certificate to the Chief, and the Boiler or Pressure Vessel shall not be operated until such time that a valid Certificate is re-issued.

(4) Preparation of Inspection. The Boiler shall be prepared for inspection in accordance with the NBIC. The Engineer in Charge is responsible to ensure the Boiler is properly prepared for inspection.

(5) Inspection Reporting. Pursuant to M.G.L. c. 146, § 10, whoever owns, or uses or causes to be used, any Power Boiler shall report in writing to the Chief the location of such Boiler, before the work of installation of such Boiler, and annually thereafter; provided, that the Owner/User of an insured Boiler shall report immediately in writing to the Chief whenever the insurance company ceases for any cause to inspect the Boiler.

(6) Reporting by Insurance Companies.
(a) Pursuant to M.G.L. c. 146, § 18, every insurance company shall forward to the Chief, within 14 days after each inspection, reports of all Boilers inspected by the Authorized Inspectors. Such reports shall be made on a form and submitted in a format approved by the Chief and shall contain all orders made by the company regarding such Boilers.
(b) All insurance companies shall notify the Chief, within 14 days, on a form and submitted in a format approved by the Chief, of all Boiler new business or discontinuation of business. All insurance companies shall report immediately to the Chief in writing the name of the Owner/User and the location of every Boiler required to be inspected by M.G.L. c. 146, § 19, upon which they have cancelled or refused insurance, giving the reasons therefor.
(c) The Authorized Inspector shall notify the Chief or his or her designee immediately in writing if the Authorized Inspector finds that an unsafe and dangerous condition exists resulting in the removal of the Certificate.

(7) Boiler Horsepower.
(a) Pursuant to M.G.L. c.146, § 48, when liquid or gaseous fuel, electric or atomic energy or any other source of heat is used, the horsepower of a Boiler shall be determined by either the manufacturer's factory tag affixed to the Boiler or burner denoting horsepower, or calculated by one of the following formulae: the steam output capacity as listed on the manufacturer's tag divided by 34.5, the BTU/hr input listed on the manufacturer's tag divided by 41,840 or the BTU/hr output listed on the manufacturer's tag divided by 33,475.
(b) If a tag is missing, damaged or unclear, the licensed Engineer in Charge or on duty at the time shall notify the Owner/User of the steam Boiler. The Owner/User shall obtain a notarized letter, signed by an officer of the manufacturer of the Boiler or burner, listing the maximum capacity of the steam Boiler in BTU/hr. Such letter shall be an acceptable basis for calculating the horsepower of that particular steam Boiler.

2.06: continued

(c) The minimum safety valve relieving capacity shall be determined in accordance with the ASME Code.

2.07: General Requirements

Pressure Tests. When it is unclear as to the extent of a defect or condition found in a High Pressure/Power Boiler, the District Engineering Inspector or the Authorized Inspector may require a pressure test at any time. Such tests shall be performed in accordance with the NBIC and the Engineer in Charge shall notify the Chief in writing of the date that such pressure test will be performed.

REGULATORY AUTHORITY

522 CMR 2.00: M.G.L. c. 146, §§ 1 through 51, 56 through 64 and 66 through 80.