**02 DEPARTMENT OF PROFESSIONAL AND FINANCIAL REGULATION**

**41 OFFICE OF PROFESSIONAL AND OCCUPATIONAL REGULATION**

 **BOILER AND PRESSURE VESSEL SAFETY PROGRAM**

**Chapter 74: POWER BOILERS**

SUMMARY: This Chapter establishes requirements for the safe and proper construction, installation, repair, use, operation and inspection of power boilers.

**SECTION 1. New Installations**

1. **Approval of Installation**. Before a power boiler is installed, the owner must submit to the chief inspector detailed plans and specifications of the installation for approval at least thirty (30) days prior to installation on a form approved by the director. The owner must comply with any request by the chief inspector for additional information. A power boiler may not be installed unless the chief inspector has issued a written approval for the installation. Notwithstanding the requirements of Section 1, Subsection 1 of this Chapter, emergency situations will be handled on a case-by-case basis by the chief inspector and may be approved less than thirty (30) days prior to installation.

 2. **Initial Inspections**

A. **Inspection**. The chief inspector shall conduct the initial inspection of a new or relocated power boiler in accordance with the applicable code(s) specified in Chapter 73 of the Program’s rules. So long as construction permits, the initial inspection must consist of an internal and external inspection. The entire boiler and boiler external piping must be hydrostatically tested after field installation. The chief inspector shall maintain a record of the results of the inspection.

B. **Interim Inspection Certificate**. If after initial inspection the chief inspector determines that a power boiler complies with all provisions of Title 32, Chapter 131, the Program’s rules, and any applicable national safety codes and standards, the chief inspector may issue an interim inspection certificate for the operation of the power boiler that is valid for up to sixty (60) days pending issuance of the initial inspection certificate.

C. **Expenses**. The owner or the owner’s designee must pay the initial inspection fee and any related expenses for the initial inspection of a power boiler. If the fee has not been paid by the date the interim certificate expires, the chief inspector shall direct the owner to suspend operation of the power boiler.

 3. **Approval of Operation**. Before a newly installed power boiler is operated:

1. The owner must comply with the provisions of Section 1, Subsections 1 and 2 of this Chapter, and

 B. The chief inspector must have approved the operation on a form approved by the director.

4. **Relocation**. Before a relocated power boiler is installed, the owner must petition the chief inspector for a variance to approve the installation. A relocated boiler must meet the requirements for new installations, whenever practicable.

**SECTION 2. Existing Power Boilers**

1. **Rules Applicable to Construction and Installation**. The design, construction, construction-related inspection, installation, and stamping of all existing power boilers must comply with the rules of the Program in effect at the time of installation.

 2. **Rules Applicable after Installation**. The maintenance, operation, and post-installation inspection of all existing power boilers must comply with the rules of the Program in effect at the time of the maintenance, operation, or post-installation inspection.

**SECTION 3. Registration Numbers**

1. **Display; Not Transferable**. The assigned State of Maine registration number must appear on each power boiler at all times. The registration number assigned to a power boiler may not be transferred to another boiler.

 2. **High Pressure Numbers**. Before any power boiler may be operated in this State, the assigned State of Maine registration number preceded by the letters “ME” must be stamped on a durable and visible tag with the numbers and letters not less than 3/8 of an inch in height. This tag must appear in the vicinity of the manufacturer’s code stamping.

**SECTION 4. Periodic Inspections of Power Boilers**

1.  **Frequency and Method**. Before the initial inspection certificate expires, and annually thereafter, all power boilers in the State must be inspected as follows:

1. An Inspector must conduct one (1) annual certificate inspection, which must be an internal inspection, and one (1) annual external inspection conducted approximately six (6) months from the date of the certificate inspection while the boiler is in operation.
2. Miniature boilers must:

(1) Once a year, undergo a certificate inspection, which must be an external inspection, documented by an Inspector on the inspection certificate; and

 (2) Once every two (2) years, undergo an internal inspection.

1. Thermal fluid heaters must undergo a certificate inspection once a year which may or may not be an internal inspection; however it must include verification of acceptable internal condition based on non-destructive testing.

2. **Report**. An Inspector must submit a report of each certificate inspection required under Section 4, Subsection 1 of this Chapter to the director on a form approved by the director.

**SECTION 5.** **MAWP of Existing Power Boilers Not Constructed to Code**

 1. The MAWP on the shell of a power boiler or drum 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 course, and the factor of safety allowed by Paragraph A of Section 5, Subsection 1 of this Chapter. The formula for determining MAWP is as follows:

**TStE** = MAWP, PSIG

RFS

**Where**:

TS = Ultimate tensile strength of shell plates, PSI

R = Inside radius of the weakest course of the shell or drum, inches.

t = Minimum thickness of shell plates in weakest course, inches.

E = Efficiency of longitudinal joint, as calculated in the ASME Boiler and Pressure Vessel Code specified in Chapter 73 of the Program’s rules.

FS = Factor of Safety allowed by Paragraph A of this Subsection.

 A. **Factor of Safety**. The factor of safety must be at least 5.

 B. **Tensile Strength**. When the tensile strength of steel or wrought-iron shell plates is not known, it must be assumed to be 55,000 PSI for steel and 45,000 PSI for wrought iron.

 C. **Strength of Rivets**. Calculations concerning riveted joints must be those established by the ASME Boiler and Pressure Vessel Code specified in Chapter 73 of the Program’s rules, or as approved by the director.

**SECTION 6. Lap Seam Boilers**

 No boiler of longitudinal lap seam construction may be installed or operated as a power boiler within the State.

**SECTION 7. Non-Code H.R.T. Boilers**

 A non-code horizontal return tubular boiler may not be installed or operated as a power boiler unless it was in use in this State before January 9, 1936.

**SECTION 8. Pitch Horizontal Firetube Boilers**

 Horizontal firetube boilers must be pitched toward the blow-off outlet not less than one (1) inch for each ten (10) feet of tube length when set.

**SECTION 9. Manual Dampers**

 Fully closable manual dampers are prohibited on automatically fired power boilers. The owner must ensure that any such existing dampers are removed.

**SECTION 10. Engineers-in-Charge**

The owner must assign an engineer-in-charge for any power boiler operated in the State of Maine as required by Chapter 80, Boiler Operators and Stationary Steam Engineers. The engineer-in-charge must comply with the provisions of Chapter 80, Section 7 of these rules.

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