



**PROCEDURE TO ESTABLISH OPERATING CERTIFICATION
FOR STEAM BOILER OPERATORS**

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Article 1 – Scope and Definitions.

1.01 The procedure and certification of steam engineers and boiler firemen and the procedures relating to the operation of boilers as defined herein provide the means for ensuring safe operation of boilers. Words and phrases used relating to the procedure and certification of steam engineers and boiler firemen shall have the following meanings:

“Appeals Board” will review written appeals pertaining to the examination process. The Appeals Board shall consist of three members of the Steam Certification Board.

“Approved Refresher Course” is an eight-hour course designed to keep the certified operator informed of boiler safety, regulation additions/changes and new technology including an open book exam.

“Automatic boiler” means a boiler equipped with certain controls and limit devices as required by the WAC 296-104.

“Boiler” means a closed vessel in which water is heated, steam is generated, steam is superheated, or any combination thereof, under pressure or vacuum by the direct application of heat. The term boiler shall also include fired units for heating or vaporizing liquids other than water where these systems are complete within themselves.

“Boiler log book” is a bound, legal document (consistent with WISHA standards) with numbered pages used for operator entries of boiler related data, of which must be signed by the operator making the entries.

“Check by certified operator” means physical examination of the boiler and entries in the boiler logbook to ensure proper operation and maintenance.

“Governing jurisdictions” a governing body that adopts this procedure as a means of assuring certification to Steam Boiler operators.

“Hot water supply boiler” means a low-pressure hot water heating boiler having a volume exceeding 120 gallons, or a heat input exceeding 200,000 Btu per hour or an operating temperature exceeding 200 degrees Fahrenheit, that provides hot water to be used externally to itself.

“Issuing agency” is any entity authorized to issue boiler operator certificates.

“Certified operator” means a person holding any one of the classes of certification issued in accordance with provisions of this program, authorizing him/her to operate or supervise the operation of specified classes of boiler plants.

“Low pressure hot water heating boiler” means a boiler in which water is heated for the purpose of supplying heat at pressures not exceeding 160 pounds per square inch (psi) and temperatures not exceeding 250 degrees Fahrenheit.

“Low pressure steam heating boiler” means a boiler operated at pressures not exceeding 15 pounds per square inch (psi) for steam.

“Observation experience” is allowed for a Class IV Boiler Fireman certified applicant that includes, but not limited to, system diagrams, and safety and operational procedures on a functioning, permitted boiler. The applicant must submit a portfolio of the aforementioned duties.

“Power hot water boiler (high temperature water boiler)” means a boiler used for heating water or liquid to a pressure exceeding 160 pounds per square inch or to a temperature exceeding 250 degrees Fahrenheit.

“Power steam boiler” means a boiler in which steam or other vapor is generated at pressures exceeding 15 pounds per square inch. For purposes of this procedure the term shall not include a Small Power Boiler.

“Recognized school of technology” is a program, with a minimum of 1200 hours, approved by the Steam Certification Board that contains curriculum on, but not limited to, boilers, refrigeration, electrical and controls.

“Small power boiler” means a boiler with pressures exceeding 15 pounds per square inch but not more than 100 pounds per square inch and having less than 440,000 Btu per hour heat input.

“Steam engine/Turbine” means all prime movers using vapors from a boiler for motive power, steam driven compressors, and steam pumps, except steam pumps and similar auxiliaries used only as appurtenances for the operation of a boiler.

“Steam Certification Board” is established by this procedure.

“Training Program” is a course, with a minimum of 80 hours, approved by the Steam Certification Board that contains curriculum on, but not limited to, fundamentals, operation, safety, and maintenance of boilers.

“Twice daily check” means two inspections of a boiler that are required to be recorded in the boiler logbook by this procedure. The first check of the day shall be made not less than eight hours after the last recorded check of the previous day; the second check of the day shall be made at least six hours after the first recorded check of the day. This definition shall not preclude, in any way, additional checks being made to ensure safe operation of a boiler.

Article 2 – Classes of Certification.

- 2.01 There shall be five grades of certification to cover the operation and maintenance of boiler plants, such grades of certification to be designated and limited as follows:
- A. Class I Chief Operating Engineer Certification shall entitle the holder thereof to take complete charge of the operation and maintenance of any boiler plant.
 - B. Class II Operating Engineer Certification shall entitle the holder thereof to operate or to have charge of the operation of any boiler plant while on duty, under the direct supervision of a Chief Operating Engineer. In plants where there is not a Certified Chief Operating Engineer, the certification shall be limited to operation of a boiler plant not exceeding an aggregate of 300 million Btu/Hr input.
 - C. Class III Operating Engineer Certification shall entitle the holder thereof to operate any boiler plant under the direct supervision of a certified Class I Chief Operating Engineer or Class II Operating Engineer. When not working under the direct supervision of a Class I Chief Operating Engineer or a Class II Operating Engineer, the certified operator shall be limited to operation of a boiler plant not exceeding an aggregate of 50 million Btu/Hr input.

- D. Class IV Boiler Fireman Certification shall entitle the holder to operate any boiler plant under the direct supervision of a certified Class I Chief Operating Engineer or Class II Operating Engineer. The certified operator shall be limited to operation of a boiler plant not exceeding an aggregate of 20 million Btu/Hr input.
- E. Class V Boiler Fireman Certification shall entitle the holder to operate any boiler not exceeding 5 million Btu/Hr input.

Article 3 – Plant Capacity Change.

3.01 Any certified operating engineer or boiler fireman whose certification limits are changed so that the capacity of the plant where he/she is employed exceeds his/her certification limits shall, upon application, be certified by the Steam Certification Board for a provisional certification of the same grade, with limits extended to apply only to the plant where he/she is so employed for a period not to exceed one year.

Article 4 – Eligibility Criteria.

401 All applicants shall be eighteen (18) years of age or older. The Steam Certification Board on a case-by-case basis will review any extraordinary circumstances. No person shall be eligible for examination for any class of certification unless he/she possesses the following qualifications:

- A. **Class I Chief Operating Engineer:** The applicant shall furnish verification of an aggregate of five years' experience operating high or low pressure boiler plants or Equivalent experience, OR

The applicant has attended a recognized school of technology and shall furnish verification of an aggregate of three years' experience operating high or low pressure boiler plants or equivalent experience, OR

The applicant has attended a recognized training program and shall furnish verification of an aggregate of four years' experience operating high or low pressure boiler plants or equivalent experience.

The applicant shall furnish, to the issuing agency, evidence of qualifications for examination.

- B. **Class II Operating Engineer:** The applicant shall furnish verification of an aggregate of four years' experience operating high or low pressure boiler plants or equivalent experience, OR

The applicant has attended a recognized school of technology and shall furnish verification of an aggregate of two years' experience operating high or low pressure boiler plants or equivalent experience, OR

The applicant has attended a recognized training program and shall furnish verification of an aggregate of three years' experience operating high or low pressure boiler plants or equivalent experience.

The applicant shall furnish, to the issuing agency, evidence of qualifications for examination.

- C. Class III Operating Engineer:** The applicant shall furnish verification of an aggregate of three years' experience operating high or low pressure boiler plants or equivalent experience, OR

The applicant has attended a recognized school of technology and shall furnish verification of an aggregate of one year experience operating high or low pressure Boiler plants or equivalent experience, OR

The applicant has attended a recognized training program and shall furnish verification of an aggregate of two years' experience operating high or low pressure boiler plants or equivalent experience.

The applicant shall furnish, to the issuing agency, evidence of qualifications for examination.

- D. Class IV Boiler Fireman:** The applicant shall furnish verification of an aggregate of one years' experience operating high or low pressure boiler plants or equivalent experience, OR

The applicant has attended a recognized school of technology and shall furnish verification of an aggregate of 80 hours observation experience operating high or low pressure boiler plants or equivalent experience, OR

The applicant has attended a recognized training program and shall furnish verification of an aggregate of 120 hours observation experience operating high or low pressure boiler plants or equivalent experience.

The applicant shall furnish, to the issuing agency, evidence of qualifications for examination.

- E. Class V Boiler Fireman:** The applicant shall furnish, to the issuing agency, evidence of qualifications for examination.

Article 5 – Application, Examination and Renewal of Certification.

5.01 Application

Persons desiring certification described in Article 4 of this procedure shall make written application to an approved issuing agency on the forms provided by that issuing agency.

Application shall include the applicant's full name and address, and if the applicant is an employee, the name and address of his/her employer.

5.02 Examination

Any person making application for any grade of certification as an operator of a boiler plant shall be required, before such certification is issued, to submit to examination or furnish an equal reciprocal license or certification as approved by the Steam Certification Board.

The examination for Class I, II, or III shall be both written and oral and shall consist of questions covering care, maintenance, operation, and knowledge of construction of boilers, appurtenances, and auxiliaries applicable to the class of certification or license for which such examination is held.

The applicant shall pass the written portion with a grade of 70 percent and shall also satisfy the examiner by oral examination that he/she is competent to work as a Class I, II, or III certified operator.

The examination for Class IV or V shall be written and shall consist of questions covering care, maintenance, operation, and knowledge of construction of boilers, appurtenances, and auxiliaries applicable to the class of certification for which such examination is held.

The applicant shall pass the written exam with a grade of 70 percent to work as a Class IV or V boiler fireman.

If, upon examination, any applicant fails to obtain certification, he/she shall not be eligible for re-application until a period of 30 days has expired.

A fee as recommended by the Steam Certification Board and approved by Bates Technical College Board of Trustees shall be charged for each examination for all classes of certification.

5.03 Renewal

Certified operating engineers and boiler firemen shall renew their certification on an annual basis. Recertification should be completed prior to the expiration of the existing certification.

In order to maintain certification under this policy, operating engineers and boiler firemen shall attend an approved refresher course, or other courses as approved by

the Steam Certification Board on a case-by-case basis, at a minimum of once every five years. The refresher course may be taken at any point during the five year period, but must be completed prior to the expiration date of the certificate during the fifth year. Completion of this requirement shall be evidenced by submission of a true copy of a refresher course completion certificate along with a renewal application during the five year cycle.

Renewal applications that are received after the expiration date of the existing certificate are subject to late fees. If the renewal application is not received within 45 days after the expiration of the existing certificate, or the applicant fails to complete the refresher course during the five year cycle, the applicant shall be required to complete the application and testing requirements for an initial certification.

5.04 Appeal

If the applicant fails to pass an examination, renew certification, or complete refresher training and believes extenuating circumstances exist, he/she may appeal the decision by serving a written notice of his/her intention to appeal such decision to the Steam Certification Board, within 10 days.

An Appeals Board shall review the examination papers of said applicant, and if necessary submit the applicant to an additional oral examination and decide whether or not he/she is entitled to a certification.

The decision of the majority of the members of the Appeals Board shall control and said decision shall be final.

Article 6 – Appeals Board.

- 6.01 The Appeals Board shall consist of at least three members of the Steam Certification Board.

Article 7 – Reciprocity.

- 7.01 In lieu of a qualifying examination, an approved issuing agency may accept as evidence of meeting the requirements of Article 4.01, a valid, current and unlimited reciprocal license or certification as approved by the Steam Certification Board. When, in the judgment of the issuing agency, the applicant's submitted certification is valid, the applicant has submitted a completed application, as described in Article 5.01, and has paid the annual certification fee, the issuing agency will issue the equivalent class of certification.

- 7.02 Acceptance of reciprocal certification programs is subject to review and approval of the Steam Certification Committee and shall be maintained as a matter of record by the committee.

Article 8 - Exemptions from Certification Requirements.

- 8.01 Exemptions to the certification requirements contained herein may be granted by governing jurisdictions that have adopted this policy for certification of operating engineers and boiler firemen.

Article 9 – Expectations of Certified Operating Engineers and Boiler Firemen.

- 9.01 The original operating engineer or boiler fireman certification shall be posted in a conspicuous place in the plant where they are employed. If the posting of his/her certification is not practicable, such certification shall be on his/her person, and on demand he/she shall exhibit same. Those certified operators that work in multiple locations might copy their certification for multiple postings.

- 9.02 A certified operating engineer or boiler fireman shall comply with the operational and safety requirements that are established by the governing jurisdiction, and should perform the following duties in connection with his/her operation and maintenance of boilers:

- A. Test the operation of the boiler and its control and safety devices on a routine basis in accordance with nationally recognized standards and/or boiler and control manufacturer's written recommendations.
- B. Maintain and operate the equipment in a safe manner and according to nationally recognized standards.
- C. Prepare and maintain a boiler logbook with supplemental pertinent boiler data attached, or in a separate readily accessible book, as may be required by the boiler inspector and the senior certification holder in charge of the boiler operation. Such pertinent boiler data shall include, but not limited to, recommended set points or operating limits of all control devices and recommended firing rates as well as other pertinent data for that boiler. The operating instructions shall specify that observations of unsafe conditions shall require immediate shutdown of the boiler and recording the same in the boiler logbook. This attachment, when it remains unchanged, shall be transferable from logbooks and kept with the current book and used for comparing readings to. The boiler logbook shall be kept on the premises at all times and be available for inspection.
- D. Make entries into a "boiler logbook". Enter pertinent boiler data required by the boiler owner, a boiler inspector and/or the senior certification holder in charge of the boiler operation. These entries shall include such items as any unusual conditions observed, including safety shutdowns, repairs required, adjustments required and/or made, and any procedural changes. All entries shall be made in

the “boiler logbook” with permanent ink, and shall include the signature of the person making such readings, observations, or adjustments. It shall be lawful to cross out words or sentences that should be changed or corrected, but erasures shall be prohibited.

- E. Follow designated procedures for the proper light off, operating, shut down procedure as set forth in the attachment to the “boiler logbook”. Determine the proper firing rate and the set point or operating limits of all safety devices required by the attachment
- F. Monitor and log boiler and auxiliaries to insure safe operation. Monitoring and logging shall include, as applicable, but not limited to, water gauge level, boiler pressure, oil temperature, fuel oil suction line pressure, high and low gas pressure, stack temperature, and the windbox pressure. Such temperatures, pressures, vacuums and levels are to be observed by the boiler operator as often as safety requires.

Article 10 – Enforcement.

- 10.01 The governing jurisdiction shall be responsible for enforcing this Procedure, and promulgates rules and regulations necessary to provide a means for ensuring safe and proper installation, repair, use, and operation of boilers.
- 10.02 All charges against any person certified under the provisions of this Procedure shall be filed in writing with Steam Certification Board and the issuing agency.
- 10.03 The Steam Certification Board has the authority to review, suspend, or revoke certification for any person holding a certificate under this policy.

Article 11 - Steam Certification Board

- 11.01 There shall be a Steam Certification Board consisting of nine (9) members appointed for three (3) year terms, except that upon making the first appointments the length of terms of the members shall be staggered so that no more than three (3) board members’ terms of service expire in the same year. All new Steam Certification Board members will be recommended by the Steam Certification Board and approved by Bates Technical College Board of Trustees.
- 11.02 Steam Certification Board shall consist of nine (9) members. Three (3) persons who are certified as a Class I Chief Operating Engineer; one (1) representative from a labor union; two (2) business owners/representatives; two (2) persons from education; and one (1) legal representative.

- 11.03 The Steam Certification Board is hereby delegated powers and duties reasonable necessary to implement and effectuate the purposes of this Procedure, including but not limited to the power and duty to:
- A. Promulgate standards related to training and certification for operators of steam boilers and similar pressure vessels subject to approval of the issuing agencies;
 - B. Promulgate standards related to and approve or disapprove the curriculum of, schools of technology, training programs, and refresher courses, relating to the fundamentals, operation, safety and maintenance of boilers;
 - C. Promulgate standards relating to the issuance of boiler operator certifications, supplemental to and consistent with those contained in Articles 4 and 5;
 - D. Promulgate written and oral applications and examinations to be used in the certification process;
 - E. Verify and adjudicate, through the Steam Certification Board or a delegate thereof, successful completion of approved schools of technology, training programs, refresher course, and licensing examinations;
 - F. Issue, change, suspend, or vacate boiler operator certifications, including reciprocal licenses or certifications;
 - G. Promulgate mandatory appellate procedures to be applied by the Steam Certification Board in the case of any person aggrieved by a ruling by the Board or a delegate thereof; and
 - H. Recommend to the issuing agency the appropriate amount of costs and fees to be assessed to applicants, including but not limited to fees to be charged for each written and oral examination and late fees to be imposed upon persons who fail to secure a certification renewal within a period of 45 days following expiration of a certification.
- 11.04 Steam Certification Board may recommend to the issuing agency such revisions to the Steam Boilers – Engineers and Firemen Certification Procedure, as it may deem appropriate.
- 11.05 Any person or entity aggrieved by a final ruling of the Steam Certification Board may, after exhausting all appellate procedures promulgated by the Board, appeal such a ruling as provided by Article 11.06.
- 11.06 Any regulatory or policymaking decision by the Steam Certification Board may be appealed to the issuing agency, which may, by majority vote, overturn such a decision.