



July 2018

At its meeting on July 13, 2018, the Ohio Board of Building Standards adopted the rule changes identified as Amendments Group 95. These rule amendments were adopted with an **effective date of August 1, 2018.**

Amendments Group 95 included the amended and No-Change Boiler and Pressure Vessel Rules rules shown below. For your use, the complete text of the final-filed amended rules can be found following this coversheet.

Rule Number	Action	Certification Rule Title	Effective date
4101:4-1-01	No change	Definitions and abbreviations.	August 1, 2018
4101:4-2-01	No change	Scope, administration, and enforcement.	August 1, 2018
4101:4-2-02	No change	Types and qualifications of inspectors.	August 1, 2018
4101:4-3-01	Amend	Accepted engineering practice and approved standards.	August 1, 2018
4101:4-4-01	No change	Design of boilers and pressure vessels.	August 1, 2018
4101:4-4-02	No change	Maximum allowable working pressure of new boilers and pressure vessels.	August 1, 2018
4101:4-4-03	No change	Safety devices and controls.	August 1, 2018
4101:4-4-04	No change	Steam boiler blowoff systems.	August 1, 2018
4101:4-4-05	No change	Clearances.	August 1, 2018
4101:4-5-01	No change	Boilers and pressure vessels of special design.	August 1, 2018
4101:4-6-01	No change	Construction and stamping of boilers and pressure vessels.	August 1, 2018
4101:4-7-01	Amend	Contractor registration and boiler permits	August 1, 2018
4101:4-8-01	Amend	Inspection of boilers.	August 1, 2018
4101:4-9-01	Amend	Existing boilers and pressure vessels.	August 1, 2018
4101:4-10-01	Amend	Licensure and attendance requirements of operators.	August 1, 2018

Reason for Changes: To comply with the five year rule review requirement, the Board amended the Ohio Administrative Code rules as follows: **4101:4-3-01** to update all Sections of the ASME BPVC and the NBIC to the 2017 editions, to update the title of the ASME BPVC Section IX, to update ASME B31.1 to the 2014 edition, to update NFPA 85 to the 2015 edition, to update the NB-27 standard to Revision 1, to update the NB-263 standard to July 2017 edition, and to update the NB-371 standard to October 2016, Revision 8.1.1.0, **4101:4-7-01** to correct the fees referenced in the Revised Code, **4101:4-8-01** to clarify that the superintendent may issue a Certificate of Operation in an emergency situation when the boiler has already been inspected, **4101:4-9-01** to clarify that only routine boiler repairs that involve welding require a permit and inspection, and **4101:4-10-01** to add a requirement that an Ohio Registered Professional Engineer prepare and seal a Process Hazard Analysis (PHA). Remaining rules **4101:4-1-01, 4101:4-2-01, 4101:4-2-02, 4101:4-4-01, 4101:4-4-02, 4101:4-4-03, 4101:4-4-04, 4101:4-4-05, 4101:4-5-01,** and **4101:4-6-01** will remain without change.

If you should have any questions regarding these rule changes, please call BBS staff at (614)644-2613.

4101:4-3-01

Accepted engineering practice and approved standards.

- (A) Where references are made in Chapters 4101:4-1 to 4101:4-10 of the Administrative Code to the applicable section of the "ASME Boiler and Pressure Vessel Code" or to other standards or publications, this rule identifies the specific edition of the code, standard, or publication that is adopted. Conformity to the applicable technical provisions, requirements, recommendations, and determinations in the codes, standards or other referenced publications adopted in "Table 4-3-01" of this rule, is prima-facie evidence of conformity with accepted engineering practice or with an approved standard.
- (B) The board of building standards adopts existing published standards by year of issue as shown in "Table 4-3-01" of the Administrative Code as well as amendments, supplements, and addenda subsequently published prior to issuance of the next edition by the same authority in accordance with section 4104.02 of the Revised Code.

Table 4-3-01

Authority	Edition Date	Designation	Title
ASME	2010 <u>2017</u>	BPVC -Section I (see footnote a)	Power Boilers.
ASME	2010 <u>2017</u>	BPVC -Section II	Material Specifications. Part A-Ferrous. Part B-Non-Ferrous. Part C-Welding Rods, Electrodes and Filler Metals. Part D-Properties.
ASME	2010 <u>2017</u>	BPVC -Section III	Nuclear Facility Components.
ASME	2010 <u>2017</u>	BPVC -Section IV	Heating Boilers.
ASME	2010 <u>2017</u>	BPVC -Section V	Nondestructive Examination.
ASME	2010 <u>2017</u>	BPVC -Section VI	Recommended Rules for Care and Operation of Heating Boilers.

ASME	2010 <u>2017</u>	BPVC -Section VII	Recommended Guidelines for Care of Power Boilers.
ASME	2010 <u>2017</u>	BPVC -Section VIII	Pressure Vessels-Division 1.
ASME	2010 <u>2017</u>	BPVC -Section VIII	Pressure Vessels-Division 2.
ASME	2010 <u>2017</u>	BPVC -Section VIII	Pressure Vessels-Division 3.
ASME	2010 <u>2017</u>	BPVC -Section IX	Welding and , Brazing, <u>and Fusing</u> Qualifications.
ASME	2010 <u>2017</u>	BPVC -Section X	Fiber-Reinforced Plastic Pressure Vessels.
ASME	2010 <u>2017</u>	BPVC -Section XI	Rules for Inservice Inspection of Nuclear Power Plant Components.
ASME	2010 <u>2017</u>	BPVC	Code Cases.
ASME	2010 <u>2016</u>	B 31.1	Power Piping.
ASME	2012 <u>2015</u>	CSD-1	"Controls and Safety Devices for Automatically Fired Boilers."
NFPA	2011 <u>2015</u>	NFPA 85	"Boiler and Combustion Systems Hazards Code"
National Board	2011 <u>2017</u>	NBIC	National Board Inspection Code.
National Board	Jul. 2012, Rev. 0 <u>Rev. 1</u>	NB-27	A Guide for Blowoff Vessels.

National Board	May 2012, Rev. 5 <u>Jul. 2017</u>	NB-263	Rules for National Board Inservice and New Construction Commissioned Inspectors <u>(RCI-1)</u> .
National Board	Feb. 2011 <u>Oct. 2016,</u> Rev. 4 <u>8.1.1.0</u>	NB-371	Accreditation of Owner-User Inspection Organizations (OUIO).

Footnote a: For riveted construction, see "ASME, BPVC-Section I, Power Boilers, Part PR (1971 edition)."

Effective: 8/1/2018
Five Year Review (FYR) Dates: 5/1/2018 and 05/01/2023

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Certification

07/13/2018

Date

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Statutory Authority: 4104.02(A)
Rule Amplifies: 4104.02(B)
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01/01/1990, 01/01/1993, 02/01/1996, 04/01/1999,
04/01/2001, 01/01/2002, 03/01/2005, 07/01/2007,
11/01/2007, 03/01/2013, 01/01/2015

4101:4-7-01

Contractor registration and boiler permits.

Unless exempt by paragraph (B) of rule 4101:4-2-01 of the Administrative Code,

- (A) Every contractor or owner shall be registered with the division of industrial compliance before installing or making major repairs or alterations to any boiler. Applications for registration will be obtained from the division of industrial compliance on forms prescribed by the superintendent.
- (B) All contractors or owners performing boiler installations, repairs, or alterations shall register annually with the superintendent. The annual registration processing fee shall be fifty dollars.
- (C) Every contractor or owner shall apply for and obtain a permit from the division of industrial compliance prior to making the installation of any boiler. The application shall be made on forms prescribed by the superintendent. A processing permit fee of ~~fifty~~one-hundred dollars per boiler shall be submitted with each permit application form.
- (D) Unless the contractor or owner obtains a "National Board "R" Certificate of Authorization" as prescribed in "Part 3" of the "NBIC" referenced in rule 4101:4-3-01 of the Administrative Code, every contractor or owner shall apply for and obtain a permit from the division of industrial compliance prior to making a routine repair that involves welding or a major repair to an existing boiler . The application shall be made on forms prescribed by the superintendent. A processing permit fee of ~~fifty~~one-hundred dollars per boiler shall be submitted with each permit application form.
- (E) Every contractor or owner performing boiler alterations shall obtain a "National Board "R" Certificate of Authorization" as prescribed in "Part 3" of the "NBIC" referenced in rule 4101:4-3-01 of the Administrative Code. The contractor or owner is not required to apply for or obtain a permit from the division of industrial compliance. However, in accordance with the "NBIC" and rule 4101:4-9-01 of the Administrative Code, authorization from an authorized inspector shall be obtained prior to making the proposed alteration.

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01/01/2002, 07/01/2007, 03/01/2013

4101:4-8-01

Inspection of boilers.

- (A) Unless exempt by paragraph (B) of rule 4101:4-2-01 of the Administrative Code, upon completion of an installation and in accordance with rules 1301:3-5-01 to 1301:3-5-09 of the Administrative Code, all boilers shall be inspected by a general or special inspector who holds an Ohio commission issued by the superintendent. Each boiler shall be assigned a state of Ohio serial number obtained from the superintendent and affixed by the inspector. ~~The~~Unless otherwise authorized by the superintendent, the boilers shall not be operated until a certificate of operation has been issued by the superintendent.
- (B) In accordance with division (F) of section 4104.18 of the Revised Code, in addition to any fee assessed and collected directly from the owner or user for the inspection and issuance of a certificate of operation, the superintendent will collect, directly from the owner or user, a board assessed fee of three dollars and twenty-five cents for each certificate of operation or renewal thereof and for each inspection conducted.
- (C) The three dollar and twenty-five cent assessment fee collected directly from the owner or user on behalf of the board shall be remitted to the board when deposited by the division of industrial compliance pursuant to section 121.084 of the Revised Code. The superintendent shall report to the board the amounts remitted not later than one month following the first full month's collection and then monthly thereafter.
- (D) Before inspection or any other work is started on an electric boiler it shall be isolated electrically. An appropriate warning tag shall be posted on the disconnect.
- (E) If, in the judgment of the inspector, it is advisable to apply a hydrostatic test to a boiler or pressure vessel, the owner or user shall prepare for and apply the test, which shall be witnessed by the inspector.

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09/01/1994, 02/01/1996, 01/01/2003, 07/01/2007

4101:4-9-01

Existing boilers and pressure vessels.

- (A) All existing boilers and pressure vessels and the associated equipment, controls, devices, and safeguards shall be maintained in a safe and sanitary condition, in good working order, and free of leaks and defects. The owner or the owner's designated agent shall be responsible for the maintenance of such boilers and pressure vessels and associated equipment, controls, devices, and safeguards.
- (B) The rules of the board shall not be retroactively applied to existing boilers or pressure vessels that are not otherwise being altered, repaired, reinstalled, or relocated. Portions of a boiler or pressure vessel not altered or repaired and not affected by an alteration or repair are not required to comply with the code requirements for a new boiler or pressure vessel.
- (C) Routine boiler repairs such as piping or tube replacement or repairs considered general maintenance may be made without permit or inspection. ~~provided that application is made for~~ However, routine repairs that involve welding do require a permit and approval ~~has been~~ must be obtained from a general or special inspector prior to performing the repair. In the case where the contractor or owner making the routine repair has obtained a "National Board "R" Certificate of Authorization", the authorized inspector shall authorize the routine repair prior to the work being performed. If the repair requires welding, it shall be in accordance with the provisions of section IX of the "ASME Boiler and Pressure Vessel Code" as referenced in rule 4101:4-3-01 of the Administrative Code.
- (D) Where a major repair or alteration (including a re-rating) is necessary or desired on an existing boiler which bears the stamp of the appropriate "ASME" symbol or which is stamped with a state of Ohio boiler number, the repair or alteration shall comply with the requirements of "Part 3" of the "NBIC" as referenced in rule 4101:4-3-01 of the Administrative Code. The repair or alteration shall meet the requirements for the conditions under which it will be operated.
- (1) In accordance with rule 4101:4-7-01 of the Administrative Code, unless the contractor or owner has obtained a "National Board "R" Certificate of Authorization", all contractors or owners shall apply for a permit from the division of industrial compliance to make proposed repairs and the repairs shall be approved by a special or general inspector. A repair report, executed and signed by the special or general inspector, shall be filed with the superintendent on forms provided.
- (2) In accordance with the "NBIC," contractors or owners performing boiler alterations shall obtain a "National Board "R" Certificate of Authorization" prior to making any alterations. All alterations shall be authorized and approved by an authorized inspector.

- (E) Where a major repair or alteration (including a re-rating) is necessary or desired on an existing boiler or pressure vessel which does not bear the appropriate "ASME" symbol stamp or which is not stamped with a state of Ohio boiler number, the boiler or pressure vessel shall be evaluated by the superintendent and required to meet the applicable requirements of the "ASME Boiler and Pressure Vessel Code" referenced in rule 4101:4-3-01 of the Administrative Code. Otherwise, the boiler or pressure vessel shall be retired from use.
- (F) Repairs made to an existing "Ohio Special" boiler or pressure vessel shall be done in accordance with paragraph (C), (D)(1), or (H)(1) of this rule, as applicable.
- (G) Alterations, including re-ratings, made to an existing "Ohio Special" boiler or pressure vessel shall be approved, prior to the alteration, by the board of building standards in accordance with the special procedure outlined in rule 4101:4-5-01 of the Administrative Code for boilers and pressure vessels of special design.
- (H) Where a major repair or alteration (including a re-rating) is necessary or desired on an existing pressure vessel which bears the stamp of the appropriate "ASME" symbol, the repair or alteration shall comply with the requirements of "Part 3" of the "NBIC" as referenced in rule 4101:4-3-01 of the Administrative Code. The repair or alteration shall meet the requirements for the conditions under which it will be operated.
- (1) Unless the contractor or owner has obtained a "National Board "R" Certificate of Authorization", all contractors or owners shall notify the division of industrial compliance prior to making repairs to an existing pressure vessel and the repairs shall be approved by a special or general inspector. A repair report, executed and signed by the special or general inspector, shall be filed with the superintendent on forms provided.
- (2) In accordance with the "NBIC", contractors or owners performing pressure vessel alterations shall obtain a "National Board "R" Certificate of Authorization" prior to making any alterations. All alterations shall be authorized and approved by an authorized inspector.
- (I) Whenever repairs are made to fittings, safety devices, appliances, or controls or it becomes necessary or desirable to replace them, the work shall comply with the requirements for new installations as prescribed in the applicable section of the "ASME Boiler and Pressure Vessel Code" as referenced in rule 4101:4-3-01 of the Administrative Code. When an owner wishes to install safety devices and controls which will enable an existing boiler to be operated without continuous, manned attendance by a licensed operator, the requirements of paragraph (B)(4) or (B)(5) of rule 4101:4-10-01 of the Administrative Code shall be met.

- (J) An existing stationary boiler or pressure vessel which bears the appropriate "ASME" symbol or which is stamped with a state of Ohio boiler number may be reinstalled or relocated within Ohio, provided that the installation complies with the applicable section of the "ASME Boiler and Pressure Vessel Code" as referenced in rule 4101:4-3-01 of the Administrative Code and an inspection is made by a special or general inspector prior to operation. The fittings and appliances shall comply with the requirements for a new installation.
- (K) A secondhand boiler or pressure vessel stamped with the appropriate "ASME" symbol or having the standard stamping of another state that has adopted rules of construction equivalent to those of Ohio may be installed for use in the state of Ohio provided that application is made for the installation, the manufacturer's data report, indicating that the boiler or pressure vessel was inspected during construction by an authorized inspector, is filed in the office of the superintendent, and an inspection is made by a special or general inspector prior to operation. The inspector shall submit a report to the superintendent which contains a facsimile of the code stamping, a statement concerning any corrosion or other deteriorating conditions and the extent and location of any welded or riveted repairs. Upon approval of a secondhand boiler by the superintendent, a certificate of operation shall be issued.
- (L) Except as permitted in paragraph (K) of this rule, an existing boiler or pressure vessel that does not bear the appropriate "ASME" symbol, was not registered with the "National Board," does not have a state of Ohio boiler number stamped upon it, or does not have an "Ohio Special" serial number tagged upon it is prohibited from reinstallation or relocation within the state of Ohio.
- (M) The maximum allowable steam working pressure for cast iron boilers, except for hot water boilers, shall be fifteen psig.
- (N) The maximum allowable working pressure on the shell or drum of an existing 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 the tube ligaments, the inside diameter of the weakest course and the factor of safety allowed by these rules.

$(S)(t)(E)/(R)(F) = \text{Maximum allowable working pressure, psig.}$

Where:

S = ultimate tensile strength of shell plates, psi.

When the ultimate tensile strength, "S", of steel or wrought-iron shell plates is not known, it shall be taken as fifty-five thousand psi for steel and forty-five thousand psi for wrought-iron.

t = minimum thickness of shell plate, in weakest course, inch.

E = efficiency of longitudinal joint.

For riveted construction, "E" shall be determined by rules given in paragraph "PR-15" of the 1971 edition of the "ASME Boiler and Pressure Vessel Code, section I."

For tube ligaments, "E" shall be determined by rules "PG-52" or, "PG-53" of the "ASME Boiler and Pressure Vessel Code, section I" and "PR-25", of the 1971 edition of the "ASME Boiler and Pressure Vessel Code, section I."

R = inside radius of the weakest course of the shell or drum in inches.

F = factor of safety permitted.

- (1) 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 (after driving) shall be used:

Strength of existing rivets in shear

Type of rivet	Strength
Iron rivet in single shear	38,000
Iron rivet in double shear	76,000
Steel rivets in single shear	44,000
Steel rivets in double shear	88,000

- (2) 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 ascertained from the following table or by cutting out one rivet in the body of the joint:

Sizes of rivets in inches 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 of rivet after driving, inches.	15/16	15/16	15/16	17/16	17/16	-

- (3) The resistance of steel to crushing shall be taken as ninety-five thousand psi.
- (4) The lowest factor of safety permissible on existing installations shall be 4.5 excepting for horizontal return tubular boilers having continuous longitudinal lap seams more than twelve feet in length where the factor of safety shall be 8, and when this latter type of boiler is removed from its existing setting, it shall not be reinstalled for pressure in excess of fifteen psig. Reinstalled or secondhand nonstandard boilers shall have a minimum factor of safety of 6 when the longitudinal seams are of lap riveted construction, and a minimum factor of 5 when the longitudinal seams are of butt and double strap construction. A boiler constructed of wrought iron shall have a factor of safety of 7. Upon inspection of the boiler, if conditions are found which justify a reduction of the safe working pressure, the factor of safety as stated above shall be appropriately increased.
- (O) The maximum allowable working pressure of a nonstandard low pressure steam boiler shall not exceed fifteen psig.
- (P) The maximum allowable working pressure of a nonstandard boiler constructed principally of cast iron or constructed of a cast iron shell or heads and steel tubes shall not exceed thirty psig for hot water service.

- (Q) The maximum allowable working pressure of a nonstandard 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 one hundred sixty psig for steam service.
- (R) If in the judgment of the inspector a low pressure boiler is unsafe for operation at the pressure previously approved, the pressure shall be reduced, proper repair made, or the boiler retired from service.
- (S) Nonstandard pressure vessels except those exempt in section 4104.04 of the Revised Code and paragraph "U-1" of the "ASME Boiler and Pressure Vessel Code, section VIII", are prohibited for use in excess of fifteen psi internal or external pressure.
- (T) Any owner or operator who in any manner loads the safety valve or valves to a greater pressure than that allowed by the certificate of operation shall be subject to the penalty provided in section 4104.99 of the Revised Code.

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03/01/2013, 01/01/2015

4101:4-10-01

Licensure and attendance requirements of operators.

- (A) In accordance with section 4104.05 of the Revised Code, no person shall operate a low pressure steam boiler that has more than three hundred sixty square feet of heating surface, a power steam boiler that has more than three hundred sixty square feet of heating surface, or a stationary steam engine operating at more than thirty horsepower, unless one of the following applies to that person:
- (1) The person holds the required license as specified in section 4104.05 of the Revised Code, or
 - (2) The person is working under the direct supervision of a person holding the required license as specified in section 4104.05 of the Revised Code.
- (B) The operator described in paragraph (A) of this rule shall maintain continuous, manned attendance during all times of operation of a steam boiler that has more than three hundred sixty square feet of heating surface or a stationary steam engine operating at more than thirty horsepower, except as follows:
- (1) The continuous, manned attendance by the operator during all times of operation of such steam boiler or stationary steam engine may occur from a central control room on the premises when the steam boiler or stationary steam engine can be monitored, controlled, and shut down from that central control room by the operator and is equipped with manual operational resets.
 - (2) The steam boiler may be operated without continuous, manned attendance for a maximum length of time equal to the time it takes for the boiler to go into a low water condition when subjected to an annual evaporation test conducted in accordance with the "ASME Boiler and Pressure Vessel Code, Section VI, 7.05 (H)" referenced in rule 4101:4-3-01 of the Administrative Code.
 - (3) The continuous, manned attendance by the operator during all times of operation of a non-solid-fuel- fired steam boiler or stationary steam engine is not required when the superintendent of the division of industrial compliance has approved a site-specific, detailed written plan to provide for automated electronic monitoring of the steam boiler or stationary steam engine which utilizes controls that contain all operational functions, are equipped with manual operational resets, and are labeled for the intended operation, provided that all of the following apply:
 - (a) The control equipment must be located within the same complex or production facility premises;

- (b) A person licensed under section 4104.19 of the Revised Code is present at all times within the same complex or production facility premises and is available to respond to an emergency condition when summoned by the automated electronic monitoring system;
 - (c) A secondary means of alerting such licensed person is within the same complex or production facility premises in the event of failure of the primary electronic monitoring system;
 - (d) A qualified individual as defined in rule 4101:4-1-01 of the Administrative Code performs annual operational tests on the automated electronic monitoring system to verify that the system is maintained in accordance with that original manufacturer specification; and
 - (e) A copy of such dated and signed service report or checklist, listing each control and safety device tested with the manufacturer's name, model number, set point, and actual operational test point is provided to the superintendent of the division of industrial compliance upon request. Failure to produce such service report may result in the issuance of an adjudication order within the meaning of Chapter 119. of the Revised Code.
- (4) The continuous, manned attendance by the operator during all times of operation of a non-solid-fuel-fired steam boiler having a fuel input rating of less than 12,500,000 BTU/hr is not required when an automated electronic control system meeting the requirements of "ASME CSD-1" referenced in rule 4101:4-3-01 of the Administrative Code is utilized, provided that all of the following requirements have also been met:
- (a) The boiler manufacturer and the installing contractor shall complete and sign a certification report (similar to the report shown in Appendix C of ASME CSD-1) for each boiler. The certification report shall meet the requirements of Section CG-510 of the ASME CSD-1 and shall identify the manufacturer, model number, and operational test date for each specific boiler control and safety device and certify that each control and safety device was installed and tested in accordance with the manufacturer's installation instructions and the ASME CSD-1.
 - (b) The installing contractor, who shall be registered in accordance with rule 4101:4-7-01 of the Administrative Code, shall obtain and provide to the owner or user the operating, testing, servicing, and cleaning instructions for the controls and safety devices. Additionally, the installing contractor shall provide to the owner or user the complete wiring and piping

diagrams and a written precaution that the annual operating, testing, and servicing of the controls and safety devices is to be performed only by a qualified individual. The contractor shall obtain a receipt from the owner or user for the delivery of these instructions.

- (c) The certification report and the receipt described in paragraphs (B)(4)(a) and (B)(4)(b) of this rule shall be submitted to the superintendent prior to the required inspection and issuance of the certificate of operation prescribed in rule 4101:4-8-01 of the Administrative Code. Failure to submit this documentation may result in the issuance of an adjudication order within the meaning of Chapter 119. of the Revised Code.
 - (d) The owner or user shall develop, coordinate, and implement a preventative maintenance program and ensure that the employee responsible for maintaining the boiler is trained, knowledgeable, and competent to operate and maintain such boiler, controls, and safety devices. The maintenance program shall be consistent with the manufacturer's recommendations and shall include regular inspections and operational testing for the boiler controls and safety devices. Annual inspection and operational testing shall be performed and documented by a qualified individual as defined in rule 4101:4-1-01 of the Administrative Code. Daily, weekly, monthly, and semi-annual inspections and operational testing, as outlined by the manufacturer and as recommended in Appendix D of the ASME CSD-1, shall be performed and documented by an employee who has been trained, is knowledgeable, and is competent to operate and maintain such boiler, controls, and safety devices. The maintenance records shall identify the manufacturer, model number, set point, the operational tests performed, the operational test date, the inspection results, and who performed the tests or inspection for each specific boiler control and safety device. The maintenance records shall be made available to the inspector for review during the certificate inspection. Failure to provide the required maintenance records may result in the issuance of an adjudication order within the meaning of Chapter 119. of the Revised Code.
- (5) The continuous, manned attendance by the operator during all times of operation of a non-solid-fuel-fired steam boiler having a fuel input rating of greater than or equal to 12,500,000 BTU/hr and meeting the requirements of "NFPA 85" referenced in rule 4101:4-3-01 is not required when an automated electronic control system is utilized meeting the requirements of the ASME CSD-1 referenced in rule 4101:4-3-01 of the Administrative Code, provided that all of the following requirements have also been met:

- (a) The certification report, wiring diagrams, instructions, maintenance, and testing requirements for the control system outlined in paragraphs (B)(4)(a) to (B)(4)(d) of this rule shall apply.
- (b) Prior to installation of the boiler(s), the owner shall submit a detailed, written, process hazard analysis (PHA) to the superintendent of industrial compliance that identifies and evaluates the hazards associated with the unattended operation of the boiler and justifies the method(s) proposed to address the hazards. The analysis shall be prepared and sealed by a registered professional engineer holding a certificate issued under section 4733.14 of the Revised Code and shall identify possible incident scenarios, the proposed protection/solution for each scenario, and any such additional information as determined necessary by the superintendent. The PHA shall be reviewed by the owner, updated at least every five years, and submitted to the superintendent for review and filing. Failure to provide the required PHA may result in the issuance of an adjudication order within the meaning of Chapter 119. of the Revised Code.

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