PROPOSED REGULATION OF

THE DIVISION OF INDUSTRIAL RELATIONS OF

THE DEPARTMENT OF BUSINESS AND INDUSTRY

LCB File No. R185-18

October 3, 2019

EXPLANATION – Matter in ***italics*** is new; matter in brackets [~~omitted material~~] is material to be omitted.

AUTHORITY: §§1-23, NRS 455C.110.

A REGULATION relating to boilers; establishing a process for the review of revisions to certain publications which are adopted by reference; exempting historic power boilers from certain provisions governing boilers and pressure vessels; establishing certain requirements and limitations for the entry and operation of historic power boilers; requiring locomotive boilers to comply with certain regulations, codes and standards under certain circumstances; establishing certain requirements for the equipping and stamping of certain historic power boilers; establishing provisions governing the maximum allowable working pressure for certain historic power boilers; requiring annual inspections of historic power boilers; requiring the maintenance of operational logs for historic power boilers; establishing requirements for certain repairs and alterations of historic power boilers; revising requirements for obtaining a permit for the installation or alteration of a boiler or pressure vessel; requiring a contractor to apply for a permit for the installation of a portable boiler or pressure vessel under certain circumstances; revising provisions governing the capacity of boiler safety relief valves; revising provisions relating to publications which govern boiler room ventilation; requiring drain valves on hot water boilers; and providing other matters properly relating thereto.

Legislative Counsel's Digest:

Existing regulations set forth certain publications which the Division of Industrial Relations of the Department of Business and Industry adopt by reference. (NAC 455C.108) **Section 2** of this regulation establishes a process by which the Division will review revisions to certain of those publications to determine the suitability of those revisions for adoption by this State.

Existing law requires the Division of Industrial Relations to adopt regulations to establish standards and procedures relating to the installation, operation, maintenance, relocation, improvement, alteration and repair of boilers and pressure vessels and for providing exemptions from those standards and procedures. (NRS 455C.110) **Section 3** of this regulation defines the

term “historic power boiler,” and **section 14** of this regulation exempts historic power boilers from provisions governing: (1) the adoption by reference of certain publications, including certain codes and standards relating to boilers and pressure vessels; (2) certain prerequisites to the operation of a new boiler or pressure vessel; (3) procedures to obtain exemptions for certain conditions or practices; (4) the imposition and collection of certain fees by the Enforcement Section (the Occupational Safety and Health Administration) of the Division; (5) the requirement of notification of changes in coverage by insurance companies; (6) the certification of special inspectors; (7) permits to operate boilers and pressure vessels; (8) inspections of boilers and pressure vessels; (9) installations of boilers and pressure vessels; (10) stamping, tagging and numbering of boilers and pressure vessels; (11) safety requirements for boilers and pressure vessels; (12) certain requirements relating to the operating conditions for boilers and pressure vessels; and (13) the requirement of a contractor’s license to perform certain activities relating to boilers and pressure vessels.

Section 4 of this regulation establishes certain requirements for and limitations on the entry and operation of a historic power boiler in this State.

Section 5 of this regulation requires locomotive boilers to comply with certain regulations, codes and standards under certain circumstances.

Section 6 of this regulation requires every historic power boiler to be equipped with certain features. **Section 6** also requires certain historic power boilers to have stamping which is legible and clearly visible to an inspector or special inspector.

Section 7 of this regulation sets forth provisions governing the maximum allowable working pressure for certain historic power boilers.

Section 8 of this regulation requires every historic power boiler to be inspected annually by an inspector or special inspector and sets forth certain requirements for such inspections.

Section 9 of this regulation: (1) requires the owner of a historic power boiler which operates in this State to maintain an operational log for the life of that boiler; (2) requires the recording of certain information in the operational log; and (3) establishes certain requirements governing the availability for inspection, reporting of loss or misplacement and change of ownership of such a log.

Section 10 of this regulation sets forth requirements for alterations, welding repairs and mechanical repairs to a historic power boiler.

Sections 12, 15, 19 and 22 of this regulation change the term “lined potable water heater” to “potable water heater.”

Existing regulations authorize a contractor, in the case of an emergency, to install or alter a boiler or pressure vessel in this State without first obtaining a permit from the Enforcement Section if the contractor notifies the Enforcement Section as soon as practicable after the alteration or installation and obtains a permit at that time. (NAC 455C.182) **Section 16** of this regulation requires the contractor to notify the Enforcement Section and obtain the permit not later than 10 calendar days after the alteration or installation.

Existing regulations require the owners of certain boilers or pressure vessels to apply for a permit to reinstall the boilers or pressure vessels after removing or moving the boilers or pressure vessels under certain circumstances. (NAC 455C.184) **Section 17** of this regulation requires a contractor who is to move a portable boiler or pressure vessel for temporary use in this State to apply for a permit for the installation of the portable boiler or pressure vessel.

Section 18 of this regulation revises the maximum allowable working pressure for the capacity of the safety relief valve of a boiler under certain circumstances.

Section 20 of this regulation updates a reference to certain codes which are adopted by reference to govern the determination of the size of the louver for the ventilation of a room in which a boiler is located.

Existing regulations require each hot water boiler to be equipped with a stop valve that has been installed in accordance with certain applicable provisions. (NAC 455C.278) **Section 21** of this regulation requires each hot water boiler to also be equipped with a drain valve that has been installed in accordance with the same provisions.

Section 1. Chapter 455C of NAC is hereby amended by adding thereto the provisions set forth as sections 2 to 10, inclusive, of this regulation.

Sec. 2. ***If any publication adopted by reference in subsections 1 to 4, inclusive, 11, 12 or 13 of NAC 455C.108 is revised, the Division will review the revision to determine its suitability for this State. If the Division determines that the revision is not suitable for this State, the Division will hold a public hearing to review its determination within 6 months after the date of publication of the revision and give notice of that hearing. If, after the hearing, the Division does not revise its determination, the Division will give notice within 30 days after the hearing that the revision is not suitable for this State. If the Division does not give such notice, the revision becomes part of the publication adopted by reference in NAC 455C.108.***

Sec. 3. ***"Historic power boiler" means any:***

1. Power boiler or pressure vessel which is permanently installed in a fixed location;

2. Portable boiler or pressure vessel;

3. Standard boiler or pressure vessel;

4. Nonstandard boiler or pressure vessel;

5. Locomotive boiler;

6. Steam traction engine;

7. Scale model of a boiler, engine or pressure vessel identified in subsections 1 to 6, inclusive; or

8. Free-lance model of a boiler, engine or pressure vessel identified in subsections 1 to 6, inclusive,

➥ which is owned by a publicly operated museum, nonprofit organization or other person, which preserves, maintains, exhibits and only occasionally operates the boiler, pressure vessel, engine or model on a not-for-profit basis and for the primary purpose of perpetuating the agricultural and pioneer heritage of Nevada.

Sec. 4. *1. The owner or user of a historic power boiler must apply for and receive authorization from the Mechanical Compliance Section before the boiler may enter or be operated in this State.*

2. A person shall not operate in this State:

(a) A historic power boiler which:

(1) Is a nonstandard boiler or pressure vessel; and

(2) Has lap-riveted longitudinal joints.

(b) A historic power boiler which is a nonstandard boiler or pressure vessel that was constructed after the effective date of this regulation.

(c) A free-lance model of a boiler, engine or pressure vessel identified in subsections 1 to 6, inclusive, of section 3 of this regulation that was constructed after the effective date of this regulation.

(d) A scale model of a boiler, engine or pressure vessel identified in subsections 1 to 6, inclusive, of section 3 of this regulation that was constructed after the effective date of this regulation.

3. Before a historic power boiler enters this State, the owner or user of the boiler must provide reports containing calculations of the maximum allowable working pressure and ultrasonic testing of the boiler to the Mechanical Compliance Section for its consideration in making a determination whether to authorize the entry of the boiler. The calculations and testing must be recent and must be completed by a person who has knowledge of and is familiar with the performance of such calculations and testing. All results included in the reports are subject to acceptance by the Mechanical Compliance Section.

4. An application for the entry into and operation in this State of a historic power boiler which is a standard boiler or pressure vessel must be accompanied by a copy of the Manufacturer's Data Report for Pressure Vessels (American Society of Mechanical Engineers Form U-1) for the historic power boiler.

5. At any time during the application process, the Mechanical Compliance Section may request additional information, including, without limitation, information relating to the design, materials, inspection and testing of a historic power boiler.

Sec. 5. *A locomotive boiler which:*

1. Operates in a system that is noninsular or on tracks that are gauged 24 inches or greater must comply with:

(a) Regulations of the Federal Railroad Administration of the United States Department of Transportation; and

(b) Supplement 1 to Part 2 of the edition of the National Board Inspection Code adopted by reference in subsection 11 of NAC 455C.108.

2. Operates on tracks that are gauged less than 24 inches must comply with Supplement 2 to Part 2 of the edition of the National Board Inspection Code adopted by reference in subsection 11 of NAC 455C.108.

Sec. 6. *1. Every historic power boiler must be equipped with:*

(a) A National Board rated safety valve of adequate capacity, bearing an ASME stamp.

(b) A calibrated pressure gauge.

(c) A water level indicator which consists of a gauge glass.

(d) A siphon or equivalent device of sufficient capacity to keep the gauge tube filled with water installed between the pressure gauge and the boiler.

(e) Two suitable means of introducing water into the boiler.

(f) An operational try cock.

(g) A fusible plug. The fusible plug must:

(1) Be constructed to meet the requirements of the ASME Boiler and Pressure Vessel Code, as adopted by reference in NAC 455C.108.

(2) Be located at the lowest permissible water level as determined by the manufacturer of the boiler or the Mechanical Compliance Section when that information is not available from the manufacturer.

(3) Protrude not less than 1 inch into the water in the boiler.

(4) Protrude not more than 1 inch into the firebox, furnace or combustion chamber of the boiler.

(5) Be removed for inspection annually. Each date on which a fusible plug is removed for inspection must be recorded in the operational log for the boiler which is maintained pursuant to section 9 of this regulation.

(6) After 300 hours of service, be replaced with a new fusible plug which is constructed to meet the requirements of the ASME Boiler and Pressure Vessel Code. Each date on which a fusible plug is replaced must be recorded in the operational log for the boiler which is maintained pursuant to section 9 of this regulation.

(7) Not be refilled.

2. All stamping on a historic power boiler which is a standard power boiler or pressure vessel must be legible and clearly visible to an inspector or special inspector.

Sec. 7. *1. The maximum allowable working pressure:*

(a) For a historic power boiler that is a standard power boiler or pressure vessel, except as otherwise provided by subsection 2, must be:

(1) Determined in accordance with the applicable provisions of the edition of the ASME Boiler and Pressure Vessel Code, as adopted by reference in NAC 455C.108, under which the historic power boiler was constructed.

(2) Calculated with a minimum safety factor of 5, not to exceed 125 PSIG.

(b) For a historic power boiler that is a nonstandard power boiler or pressure vessel must be calculated with a minimum safety factor of 5.5, not to exceed 15 PSIG, using the formula for nonstandard boilers as set forth in NAC 455C.242.

2. The minimum safety factor for a historic power boiler which:

(a) Is a standard boiler or pressure vessel; and

(b) Has lap-riveted longitudinal joints,

➥ must be 6.5. The maximum allowable working pressure must not exceed 100 PSIG. Lap-riveted longitudinal joints on a historic power boiler which is a standard boiler or pressure vessel may not be seal-welded.

Sec. 8. *1. Every historic power boiler must be inspected annually by an inspector or special inspector.*

2. At the time of the annual inspection of a historic power boiler, each pressure gauge equipped on the boiler must be proven accurate by:

(a) Testing; or

(b) Documentation of calibration.

3. At the discretion of the inspector or special inspector, a pressure test with the following conditions may be conducted on a historic power boiler:

(a) Water temperature between 70 to 120 degrees Fahrenheit; and

(b) Pressure not to exceed 90 percent of the set pressure of the boiler's pressure relief device which has the lowest setting, held for a period of not less than 30 minutes.

Sec. 9. *1. The owner of a historic power boiler which operates in this State shall maintain a bound operational log for that boiler. The owner of a historic power boiler who does not possess an operational log for the boiler, or has failed to report a lost or misplaced operational log for the boiler as required by subsection 6, is prohibited from operating the boiler in this State.*

2. Following the successful completion of the first inspection of a historic power boiler, the owner of the boiler shall present the operational log for that boiler to the inspector or special inspector. The inspector or special inspector shall record the following information in the operational log:

(a) A number of the State of Nevada as described in NAC 455C.190;

(b) The name, signature and commission number of the inspector or special inspector; and

(c) The date on which the inspection was performed.

3. An operational log for a historic power boiler must include, without limitation, the following information:

(a) For each occasion on which the historic power boiler was operated:

(1) The date on which the boiler was operated;

(2) The length of time the boiler was operated; and

(3) The location where the boiler was operated.

(b) For each inspection of the historic power boiler:

(1) The date of the inspection;

(2) The name, signature and commission number of the inspector or special inspector who performed the inspection;

(3) The jurisdiction which is represented by the inspector or special inspector; and

(4) Any and all instructions given by the inspector or special inspector.

(c) For each repair or alteration of the historic power boiler:

(1) The date of the repair or alteration;

(2) A description of the repair or alteration;

(3) The name, signature and commission number of the inspector or special inspector who performed an inspection of the repair or alteration; and

(4) Any and all instructions given by the inspector or special inspector.

(d) For each test performed on the historic power boiler:

(1) The date of the test;

(2) A description of the test; and

(3) The name of the person who performed the test.

(e) For each incident in which the historic power boiler was involved:

(1) The date of the incident; and

(2) A description of the incident.

(f) For each change in ownership of the historic power boiler:

(1) The date on which the change in ownership occurred; and

(2) The name of the new owner.

(g) On the first page of the operational log, an index of the page numbers of all inspections, repairs and alterations, tests and incidents involving the historic power boiler.

4. The owner of a historic power boiler is responsible for retaining all operational logs, initial and supplemental, for the life of that boiler.

5. The operational log for a historic power boiler must be available to an inspector or special inspector at all times during which the boiler is to be operated in this State.

6. An owner or user of a historic power boiler who has lost or misplaced the operational log for the boiler shall immediately report the lost or misplaced operational log to the Mechanical Compliance Section.

7. In the event of a change in ownership of a historic power boiler, the previous owner of the boiler shall provide the new owner with all original copies of operational logs, initial and supplemental, for the boiler. The previous owner may make and retain a copy of the operational logs for his or her records.

Sec. 10. *1. Any repair to a historic power boiler that includes welding or any alteration to a historic power boiler must be performed:*

(a) In accordance with the provisions of the Code; and

(b) By an organization which holds a valid R Certificate of Authorization from the National Board. If the repair or alteration is performed in this State, the holder of the R Certificate of Authorization must also hold a valid contractor's license issued pursuant to chapter 624 of NRS.

2. Any mechanical repair to a historic power boiler, including, without limitation, the replacement of tubes, rivets and stays:

(a) Must be performed in accordance with the Code; and

(b) May be performed by the owner of the historic power boiler or his or her designee if:

(1) The person who is to perform the repair is knowledgeable about the repair; and

(2) The Mechanical Compliance Section grants prior approval of the repair.

3. Every repair and alteration, welded or mechanical, to a historic power boiler must be:

(a) Inspected by an inspector or special inspector if the repair or alteration is performed in this State. If the repair or alteration is performed outside this State, the inspection must be performed by a boiler inspector who holds a commission.

(b) Recorded in the operational log for that historic power boiler pursuant to section 9 of this regulation.

(c) Documented on a Form R-1 Report of Repair or Form R-2 Report of Alteration, as applicable, published by the National Board. The forms may be obtained from the National Board free of charge at the Internet address https://www.nationalboard.org/Index.aspx?pageID=113&ID=171. The owner of the historic power boiler shall ensure that the applicable form is submitted to the Mechanical Compliance

Section office which maintains the record for the historic power boiler. The Mechanical Compliance Section office shall maintain the form in its files.

Sec. 11. NAC 455C.020 is hereby amended to read as follows:

455C.020 As used in NAC 455C.020 to 455C.300, inclusive, ***and sections 3 to 10, inclusive, of this regulation,*** unless the context otherwise requires, the words and terms defined in NAC 455C.022 to 455C.106, inclusive, ***and section 3 of this regulation*** have the meanings ascribed to them in those sections.

Sec. 12. NAC 455C.064 is hereby amended to read as follows:

455C.064 ~~[~~"Lined potable~~]~~ ***"Potable*** water heater" means a fired heater for the storage of water which has a corrosion-resistant lining and is used to supply potable hot water.

Sec. 13. NAC 455C.080 is hereby amended to read as follows:

455C.080 "Portable boiler ~~[~~"~~]~~ ***or pressure vessel"*** means a boiler ***or pressure vessel*** that is intended primarily for temporary use and has a construction that allows it to be moved readily from one location to another.

Sec. 14. NAC 455C.114 is hereby amended to read as follows:

455C.114 ***1.*** The provisions of NAC 455C.020 to 455C.300, inclusive, do not apply to:

~~[~~1.~~]~~ ***(a)*** Boilers and pressure vessels governed by the provisions of chapter 512 of NRS and chapter 512 of NAC.

~~[~~2.~~]~~ ***(b)*** Boilers and pressure vessels installed or used in a single-family residence unless the boiler or pressure vessel is a:

~~[~~(a)~~]~~ ***(1)*** Hot water supply boiler;

~~[~~(b)~~]~~ ***(2)*** Hot water supply tank that has a storage capacity which exceeds 120 gallons;

~~[~~(c)~~]~~ ***(3)*** Low-pressure heating boiler;

~~[(d)]~~ ***(4)*** Power boiler; or

~~[(e)]~~ ***(5)*** Pressure vessel that:

~~[(1)]~~ ***(I)*** Operates at pressures that exceed 15 PSIG; or

~~[(2)]~~ ***(II)*** Has a storage capacity of 5 cubic feet or more by volume.

~~[3.]~~ ***(c)*** Boilers and pressure vessels under the control of the Federal Government.

~~[4.]~~ ***(d)*** Unfired pressure vessels meeting the requirements of the United States Department of Transportation for the shipment of liquids or gases under pressure.

~~[5.]~~ ***(e)*** Unfired pressure vessels having an inside diameter not exceeding 6 inches (152 millimeters).

~~[6.]~~ ***(f)*** Unfired pressure vessels containing cold water under pressure, including those containing air, the compression of which serves only as a cushion.

~~[7.]~~ ***(g)*** Pressure vessels containing water heated by steam or by any other indirect means if none of the following limitations is exceeded:

~~[(a)]~~ ***(1)*** An input of heat of 199,999 British thermal units per hour (58,600 watts).

~~[(b)]~~ ***(2)*** A water temperature of 210 degrees Fahrenheit (99 degrees Centigrade).

~~[(c)]~~ ***(3)*** A water capacity of 120 gallons (450 liters).

~~[8.]~~ ***(h)*** Unfired pressure vessels that do not exceed 5 cubic feet in volume and 15 PSIG.

~~[9.]~~ ***(i)*** An unfired pressure vessel that may be classified as a pressure container which is an integral part or component of a rotating or reciprocating mechanical device, including a pump, compressor, turbine, generator, engine and hydraulic or pneumatic cylinder where the primary considerations of or stresses in the design, or both, are derived from the functional requirements of the device.

~~[10.]~~ ***(j)*** Unfired pressure vessels used for the storage of compressed air only.

~~[11.]~~ ***(k)*** A hot water heater constructed of continuous coils, which is used only to produce steam vapor to clean machinery, equipment and buildings, if:

~~[(a)]~~ ***(1)*** The tubing or pipe size does not exceed three-fourths of an inch in diameter and drums and headers are not attached;

~~[(b)]~~ ***(2)*** The nominal water containing capacity does not exceed 6 gallons;

~~[(c)]~~ ***(3)*** The water temperatures do not exceed 350 degrees Fahrenheit; and

~~[(d)]~~ ***(4)*** Steam is not generated within the coil,

➥ except that the provisions of NAC 455C.020 to 455C.300, inclusive, do apply to safety relief valves on a hot water heater constructed of continuous coils.

~~[12.]~~ ***(l)*** Unfired pressure vessels and piping containing liquid petroleum gas and liquid natural gas.

~~[13.]~~ ***(m)*** A boiler or heater for a pool, if:

~~[(a)]~~ ***(1)*** The supply or return line has no stop valves installed; and

~~[(b)]~~ ***(2)*** It is impossible for the unit to build pressure in excess of 15 pounds per square inch.

2. The provisions of NAC 455C.108 to 455C.300, inclusive, do not apply to historic power boilers.

Sec. 15. NAC 455C.156 is hereby amended to read as follows:

455C.156 1. A power boiler or a high-pressure, high-temperature water boiler must be inspected upon installation and must have an internal inspection, if the construction and design of the boiler so allows, at least once each year thereafter, and an external inspection approximately 6 months after the date of the internal inspection. If an internal inspection is not possible, such a boiler must have an external inspection at least once every 6 months.

2. A low-pressure steam heating boiler must be inspected upon installation and at least once each year thereafter. The inspection must be:

(a) An internal inspection, if the construction and design of the boiler so allows and the inspector or special inspector so requests; or

(b) An external inspection that includes operational testing of all controls and safety devices.

3. Except as otherwise provided in subsection 4, a low-pressure hot water heating boiler and a hot water supply boiler must be inspected upon installation and at least once every 2 years thereafter. The inspection must be:

(a) An internal inspection, if the construction and design of the boiler so allows and the inspector or special inspector so requests; or

(b) An external inspection that includes operational testing of all controls and safety devices.

4. A ~~[~~lined~~]~~ potable water heater must have an external inspection at least once every 2 years. The external inspection must include operational testing of all controls and safety devices if the installation and construction of the ~~[~~lined~~]~~ potable water heater so allows.

5. Any other fired pressure vessel for which a frequency of inspection is not specified in subsections 1 to 4, inclusive, must be inspected upon installation and at least once each year thereafter. The inspection must be:

(a) An internal inspection, if the construction and design of the pressure vessel so allows;

(b) An external inspection that includes operational testing of all controls and safety devices, if the installation and construction of the pressure vessel so allows; or

(c) An external inspection that includes operational testing of each control and safety device that it is possible to test given the installation and construction of the pressure vessel.

6. An unfired pressure vessel must be inspected upon installation and at least once every 4 years thereafter. The inspection must be:

(a) An internal inspection, if the construction and design of the pressure vessel so allows; or

(b) An external inspection that includes operational testing of all controls and safety devices.

7. A refrigeration pressure vessel must be inspected upon installation and at least once every 4 years thereafter. The inspection must be:

(a) An internal inspection, if the construction and design of the pressure vessel so allows; or

(b) An external inspection that includes operational testing of all controls and safety devices.

8. A boiler or pressure vessel installed or used in a single-family residence must be inspected by an inspector upon installation. The inspection must include a preliminary and a final inspection and must be an internal inspection, if the construction and design of the boiler or pressure vessel so allows, or an external inspection that includes operational testing of all controls and safety devices. If the owner of the boiler or pressure vessel wishes to have an inspector perform any subsequent inspections of the boiler or pressure vessel, he or she must submit a written request for such an inspection to the Enforcement Section.

9. An inspector or special inspector may require any boiler or pressure vessel to be prepared for inspection in the manner set forth in NAC 455C.158 if, in his or her opinion, an inspection is necessary to determine whether the boiler or pressure vessel is operating in a safe manner.

10. An inspection organization that has been authorized by the Enforcement Section to inspect its boilers and pressure vessels may request approval from the Enforcement Section to inspect its boilers and pressure vessels at a different interval.

11. Upon application from a petroleum company, chemical plant, public utility or other employer considered by the Enforcement Section as having a program acceptable to the

Enforcement Section for preventive maintenance and examination, an operating permit that allows an extension of time between required internal inspections may be granted if the power boiler is inspected by external inspections at intervals of approximately 6 months. The application for the operating permit that allows an extension of time must be submitted in writing at least 45 days before the required internal inspection. The application must include the history of the power boiler or, if the power boiler is newly installed, of a similar boiler, substantiating that there is no significant deterioration from scaling, corrosion, erosion or overheating. Points of reference established by the owner of the power boiler or an authorized inspection entity at the time of the first inspection must be used to determine the thickness of the walls of the power boiler. If the application is approved after the internal inspection of each power boiler, a record showing the total corrosion and any other conditions that need correction must be submitted to the Enforcement Section.

12. An operating permit issued pursuant to subsection 11 expires 1 year after the date of an internal inspection. Before the expiration of the permit, the boiler must be inspected by an external inspection conducted by an inspector or special inspector who will review the operation logs and records of water treatment. If the owner of the power boiler or his or her agent applies for an extension of an operating permit issued pursuant to subsection 11, the inspector or special inspector shall submit a report of inspection and recommendations to the Enforcement Section. If the Enforcement Section approves the application, it may extend the operating permit for a period not to exceed 6 months. Before the expiration date of the extension, the owner or his or her agent must apply again for an extension and the boiler must again be inspected by an external inspection conducted by an inspector or special inspector. A second extension may be issued for

an additional period of 6 months after which the boiler must be inspected by an internal inspection.

Sec. 16. NAC 455C.182 is hereby amended to read as follows:

455C.182 1. Each boiler and pressure vessel must be installed and trimmed as required by the stamping of the original manufacturer of the boiler or pressure vessel and in accordance with the applicable provisions of the code.

2. Except as otherwise provided in subsection 6, a contractor must obtain a permit for installation before installing or altering a boiler or pressure vessel, including, without limitation, a refrigeration pressure vessel, in this State. If installation is begun before the permit is issued, installation must be suspended until the permit is issued.

3. A request for a permit for installation must be submitted by the contractor to the Enforcement Section in writing not less than 10 days before the installation will begin and include:

(a) A data report from the manufacturer of the boiler or pressure vessel and, if the boiler or pressure vessel that is being installed was moved from another location, a copy of the original permit for installation and report of inspection;

(b) The plans and specifications of the boiler room in which the boiler or pressure vessel is being installed which designate the location of the boiler or pressure vessel and which comply with the requirements of NAC 455C.250 and 455C.254; and

(c) A copy of his or her contractor's license issued pursuant to chapter 624 of NRS which authorizes the contractor to install boilers or pressure vessels.

4. Except for an existing installation or a reinstalled boiler or pressure vessel, a boiler or pressure vessel may not be installed in this State unless it has been registered with the National Board.

5. Before a secondhand boiler or pressure vessel, reinstalled boiler or pressure vessel, or portable boiler or pressure vessel may be installed or shipped for installation into this State, the owner of the boiler or pressure vessel or his or her agent or the contractor must apply to the Enforcement Section for approval to install it. The request for a permit for installation must include, without limitation, a report of inspection. The report of inspection must be prepared by a person who holds a commission and who inspected the boiler or pressure vessel. The fittings and appurtenances of the boiler or pressure vessel must comply with the requirements for the installation of a new boiler or pressure vessel.

6. In the case of an emergency, a contractor may install or alter a boiler or pressure vessel, including a refrigeration pressure vessel, in this State without first obtaining a permit from the Enforcement Section if the contractor:

(a) Notifies the Enforcement Section ~~[as soon as practicable]~~ ***not later than 10 calendar days*** after the alteration or installation; and

(b) Obtains the permit required by subsection 2 at that time.

Sec. 17. NAC 455C.184 is hereby amended to read as follows:

455C.184 1. If a boiler or pressure vessel is removed from its original site and is to be reinstalled at the same location or reinstalled at a new location with or without a change of ownership, the contractor must apply to the Enforcement Section for a permit for installation before reinstalling the boiler or pressure vessel. The fittings and appurtenances must comply with the requirements for the installation of a new boiler or pressure vessel.

2. If a standard boiler or pressure vessel is to be moved to another state for temporary use or repair, the owner of the boiler or pressure vessel or his or her agent must apply to the Enforcement Section for approval to reinstall the boiler or pressure vessel within this State.

3. Each time a portable boiler or pressure vessel is to be moved for temporary use within this State, a contractor who is to install the portable boiler or pressure vessel must apply to the Enforcement Section for a permit for installation before installing the portable boiler or pressure vessel.

Sec. 18. NAC 455C.232 is hereby amended to read as follows:

455C.232 1. Each hot water heating boiler must have at least one safety relief valve, certified by the American Society of Mechanical Engineers or the National Board, set to relieve pressure at or below the maximum allowable working pressure of the boiler. Each hot water supply boiler must have at least one safety relief valve of the automatic reseating type, certified by the American Society of Mechanical Engineers or the National Board, set to relieve at or below the maximum allowable working pressure of the boiler. Safety relief valves must have a capacity certified by the American Society of Mechanical Engineers or the National Board and must have a spring-pop type action if tested by steam. If more than one safety relief valve is used on hot water heating or hot water supply boilers, the additional valve must be rated by the American Society of Mechanical Engineers or the National Board and set within a range not to exceed 6 PSIG above the maximum allowable working pressure of the boiler up to and including 60 PSIG and 10 percent if the maximum allowable working pressure exceeds 60 PSIG. Safety relief valves must be spring loaded. Safety relief valves must be arranged so that they cannot be reset at a higher pressure than the maximum permitted by this subsection.

2. Material that is likely to fail because of deterioration or vulcanization if it is subjected to a saturated steam temperature which corresponds to test pressure for capacity must not be used for any part of the safety relief valve.

3. A safety relief valve must not be smaller than three-quarters of an inch or larger than 4 1/2 inches in a standard pipe size, except that boilers having ~~[a]~~ ***an*** input of heat of not more than 15,000 British thermal units per hour may be equipped with a safety relief valve of one-half of an inch in diameter or its equivalent area. The opening for the inlet must have an inside diameter approximately equal to, or greater than, the diameter of the seat. The minimum opening through any part of the valve must not be less than one-fourth of an inch in diameter or an equivalent area.

4. The capacity of the safety relief valve for each boiler must be such that, with the fuel-burning equipment installed and operated at maximum capacity, the pressure cannot exceed ~~[6 PSIG above the maximum allowable working pressure of the boiler up to and including 60 PSIG and]~~ 10 percent ~~[if]~~ ***above*** the maximum allowable working pressure ~~[exceeds 60 PSIG.]~~ ***of the boiler.***

5. If operating conditions are changed or additional boiler heating surface is installed, the capacity of the valve must be increased, if necessary, to meet the new conditions as set forth in the code and must be in accordance with subsection 4. The additional valves required because of changed conditions may be installed on the outlet piping if there is no intervening valve.

6. If there is any doubt as to the capacity of the safety relief valve, an accumulation test must be run as provided in section IV of the *ASME Boiler and Pressure Vessel Code*, as adopted by reference in NAC 455C.108.

7. A valve of any description must not be placed between the safety relief valve and the boiler, or on the discharge pipe between the safety relief valve and the atmosphere. The discharge pipe must be at least full size and fitted with an open drain to prevent water from lodging in the upper part of the safety relief valve or in the discharge pipe. If an elbow is placed on the discharge pipe, it must be located close to the safety relief valve outlet or the discharge pipe must be securely anchored and supported. All discharges from the safety relief valve must be so located or piped as not to endanger any person in the area.

8. A pressure and temperature relief valve must be installed on all water heaters and hot water supply boilers to which the provisions of NAC 455C.020 to 455C.300, inclusive, apply.

Sec. 19. NAC 455C.234 is hereby amended to read as follows:

455C.234 1. A ~~[~~lined~~]~~ potable water heater must have at least one pressure and temperature relief valve that is:

(a) Not smaller than three-fourths of an inch standard pipe size; and

(b) Marked with the symbol V or HV to ensure compliance with the construction and rating requirements of the code.

2. The pressure setting of the relief valve must be less than or equal to the maximum allowable working pressure of the ~~[~~lined~~]~~ potable water heater. The temperature setting of the relief valve must not exceed 210 degrees Fahrenheit. If any other components of the hot water supply system, such as a valve, pump, expansion or storage tank or piping, have a working pressure rating that is less than the ~~[~~lined~~]~~ potable water heater, the pressure setting for the relief valve must be based upon the component with the lowest maximum allowable working pressure rating. If there is more than one safety relief valve on a ~~[~~lined~~]~~ potable water heater, the pressure of the additional valve must not exceed the pressure of the first valve by more than 10 percent.

3. The relieving capacity for the safety relief valve of an electrically powered ~~[~~lined~~]~~ potable water heater must be greater than 3,500 British thermal units per hour per kilowatt of input. The required relieving capacity for the safety relief valve on any other ~~[~~lined~~]~~ potable water heater must be in British thermal units per hour and must not be less than the maximum allowable input.

4. A ~~[~~lined~~]~~ potable water heater must have a safety relief valve capacity such that when the fuel-burning equipment is installed and operated at maximum capacity, the pressure cannot rise more than 10 percent of maximum allowable working pressures.

5. If operating conditions change or additional heating surface is installed, the capacity of the safety relief valve on a ~~[~~lined~~]~~ potable water heater must be increased to meet the requirements of this section. If any additional valves are required because of a change in operating conditions, the valves may be installed on the outlet piping if there is not an intervening valve.

Sec. 20. NAC 455C.270 is hereby amended to read as follows:

455C.270 1. A permanent source of outside air must be provided for the room in which the boiler is located to allow satisfactory combustion of the fuel as well as proper ventilation of the room under normal operating conditions. Air used for combustion must not be taken from a room that contains equipment for refrigeration.

2. The total input of British thermal units of the burners for all fired pressure vessels in the room for the boiler must be used to determine the size of the louver, whether the boilers are fired by coal, oil or gas in compliance with the applicable provisions of ~~[Controls and Safety Devices for Automatically Fired Boilers,]~~ ***the National Fuel Gas Code, ANSI Z223.1/NFPA 54,*** as adopted by reference in NAC 455C.108.

Sec. 21. NAC 455C.278 is hereby amended to read as follows:

455C.278 1. Each hot water boiler must have a thermometer so located and connected that it is easily readable when observing the burner of the boiler. The thermometer must be so located and connected that it will at all times indicate, in degrees Fahrenheit, the temperature of the water in the boiler at or near the outlet.

2. In addition to satisfying the requirements set forth in subsection 1, each hot water boiler must be equipped with:

(a) An operating control and a secondary high limit control that automatically interrupts the fuel supply to the boiler if the boiler reaches its designed maximum operating temperature; and

(b) A stop valve ***and a drain valve*** that ~~[has]~~ ***have*** been installed in accordance with:

(1) The applicable construction code, if any; or

(2) Controls and Safety Devices for Automatically Fired Boilers, as adopted by reference in NAC 455C.108.

Sec. 22. NAC 512.570 is hereby amended to read as follows:

512.570 1. An internal inspection conducted pursuant to this section must consist of as complete an examination as can reasonably be made of the internal and external surfaces of a boiler or pressure vessel while it is not operating and must not be conducted until any plates for a manhole or handhole or other closures of openings used for an inspection are removed. An external inspection conducted pursuant to this section must consist of an examination of the external surfaces of a boiler or pressure vessel and must be performed while the boiler or pressure vessel is in operation. An inspection conducted pursuant to this section must include operational testing of all controls and safety devices.

2. A power boiler and a high-pressure, high-temperature boiler must be inspected internally, if the construction and design of the boiler so allows, at least once each year and externally approximately 6 months after the date of the internal inspection. If an internal inspection is not possible, such a boiler must be inspected externally at least once every 6 months.

3. A low-pressure steam boiler must be inspected externally at least once every year and internally, if the construction and design of the boiler so allows, at least once every 2 years.

4. A hot water heating boiler and a hot water supply boiler must be inspected externally at least once every 2 years and internally, if the construction and design of the boiler so allows, at the request of the inspector or special inspector.

5. A ~~[~~lined~~]~~ potable water heater must be inspected externally at least once every 2 years.

6. Any other fired pressure vessel for which a frequency of inspection is not specified in subsections 1 to 5, inclusive, must be inspected internally, if the construction and design of the pressure vessel so allows, at least once each year.

7. Except as otherwise provided in this section, a pressure vessel must be inspected externally at least once every 3 years.

8. An inspector or special inspector may require any boiler or pressure vessel to be prepared for inspection if, in his or her opinion, an inspection is necessary to determine whether the boiler or pressure vessel is operating in a safe manner.

9. As used in this section:

(a) "Fired pressure vessel" means a vessel other than a boiler in which steam or vapor pressure is generated in excess of 15 pounds per square inch by direct firing with a solid, liquid or gaseous fuel or by an electric heating element.

(b) ~~["Lined potable]~~ ***"Potable*** water heater" means a fired heater for the storage of water which has a corrosion-resistant lining and is used to supply potable hot water.

Sec. 23. NAC 512.575 is hereby amended to read as follows:

512.575 1. A contractor shall submit a written notice to the Administrator before installing a boiler or pressure vessel in this State that is constructed in a manner that meets the standards of this State, the American Society of Mechanical Engineers or the National Board. Except for an existing or a reinstalled boiler or pressure vessel, a boiler or pressure vessel must not be installed in this State unless it has been registered with the National Board.

2. Except as otherwise provided in subsection 4, the notice of installation of a boiler or pressure vessel must include the American Society of Mechanical Engineers' data report of the manufacturer concerning the construction of the boiler or pressure vessel, or an equivalent standard which is approved by the National Board, unless the boiler is constructed of cast iron.

3. A notice of installation of a new boiler or pressure vessel must include the plans and specifications of the boiler room in which the boiler or pressure vessel is being installed which designates the location of the boiler or pressure vessel and which complies with the requirements of NAC 512.579.

4. Before a secondhand ***boiler or pressure vessel*** or portable boiler or pressure vessel may be installed or shipped for installation into this State, the owner or user or the contractor installing the boiler or pressure vessel must submit to the Administrator a notice of installation. The notice of installation must include, without limitation, a report of inspection. The report of inspection must be prepared by a person who holds a commission and who inspected the boiler or pressure vessel. The fittings and appurtenances of the boiler or pressure vessel must comply with the requirements for the installation of a new boiler or pressure vessel.

5. As used in this section:

(a) "Existing boiler or pressure vessel" means any boiler or pressure vessel constructed, installed, placed in operation or contracted for use in this State before January 28, 2000.

(b) "Portable boiler ~~[~~"~~]~~ ***or pressure vessel"*** means a boiler ***or pressure vessel*** that is intended primarily for temporary use and has a construction that allows it to be moved readily from one location to another.

(c) "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 with or without a change of ownership.

(d) "Secondhand boiler or pressure vessel" means a boiler or pressure vessel that has changed ownership and has been moved since its original installation.