PROPOSED REGULATION OF THE ADMINISTRATOR OF THE

DIVISION OF INDUSTRIAL RELATIONS OF THE

DEPARTMENT OF BUSINESS AND INDUSTRY

LCB File No. R141-98

October 7, 1998

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

AUTHORITY: §§2-48; NRS 512.131, §49, NRS 512.131 and 512.220, §50, NRS 512.131, 512.160 and 512.220; §51, NRS 512.131.

Section 1. Chapter 512 of NAC is hereby amended by adding thereto the provisions set forth as sections 2 to 50, inclusive, of this regulation.

Sec. 2. *"Administrator" has the meaning ascribed to it in NRS 512.004.*

Sec. 3. *As used in sections 3 to 48, inclusive, of this regulation, unless the context otherwise requires, the words and terms defined in sections 4 to 27, inclusive, of this regulation have the meanings ascribed to them in those sections.*

Sec. 4. "*Authorized inspection entity" means:*

1. The administrator;

2. An inspection entity which is licensed to write insurance for a boiler or pressure vessel in the State of Nevada and which employs boiler inspectors; or

3. An owner or user inspection organization.

Sec. 5. *"Boiler" means a closed vessel in which water is heated, steam is generated or steam is superheated, or any combination thereof, under pressure or vacuum, for use external to the boiler by the direct application of heat. The term includes, without limitation, a fired unit*

for heating or vaporizing liquids other than water if the unit is separate from the processing system and is complete within itself.

Sec. 6. *"Boiler inspector" means an inspector of boilers or pressure vessels who possesses a certificate of competency and a current commission and who is employed by an authorized inspection entity.*

Sec. 7. *"Certificate of competency" means a certificate issued to a person who has passed an examination that is prescribed by the division for qualification as a boiler inspector.*

Sec. 8. *"Code" means:*

1. The Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers adopted by the Council of the Society;

2. A boiler and pressure vessel code approved by the national board; or

3. The national board inspection code,

whichever is applicable.

Sec. 9. *"Commission" means the commission issued by the national board to a holder of a certificate of competency who is authorized to inspect boilers or pressure vessels.*

Sec. 10. *"Contractor" has the meaning ascribed to it in NRS 624.020.*

Sec. 11. *"Division" means the division of industrial relations of the department of business and industry.*

Sec. 12. *"Fired storage water heater" means a boiler used to store and directly supply potable hot water for external use which has:*

1. A 100 percent make-up; and

2. A firing rate of at least 200,000 British thermal units.

Sec. 13. *"Heat exchanger" means a device for transferring energy in the form of heat from a warmer medium to a cooler medium, including, without limitation, a radiator.*

Sec. 14. *"Heating boiler" means:*

1. A steam or vapor boiler intended for operation at pressures not exceeding 15 PSIG; or

2. A hot water boiler intended for operation at pressures not exceeding 160 PSIG or temperatures of not more than 250°F,

that is not used to heat potable water except through a heat exchanger.

Sec. 15. *"High-pressure, high-temperature water boiler" means a water boiler intended for operation at pressures in excess of 160 PSIG or at temperatures in excess of 250°F. The term includes, without limitation, a miniature boiler.*

Sec. 16. *"Miniature boiler" means a power boiler or high-pressure, high-temperature water boiler that does not exceed the following limits:*

1. An inside diameter of the shell of 16 inches (410 millimeters);

2. Except for electric boilers, a heating surface of 20 square feet (1.9 square meters);

3. A gross volume, not including casing and insulation, of 5 cubic feet (140 liters); and

4. A maximum allowable working pressure of 100 PSIG.

Sec. 17. *"National board" means the National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Avenue, Columbus, Ohio 43229.*

Sec. 18. *"National board inspection code" means the code contained in the National Board Inspection Code published by the national board.*

Sec. 19. *"New boiler or pressure vessel installation" means the construction, installation or placing into operation of or contracting for any boiler or pressure vessel on or after the effective date of this regulation.*

Sec. 20. *"Owner or user" means any person who is responsible for the safe installation, operation or maintenance of any boiler or pressure vessel within this state.*

Sec. 21. *"Owner or user inspection organization" means an owner or user who has been approved by the administrator to inspect his own boilers or pressure vessels pursuant to section 31 of this regulation.*

Sec. 22. *"Power boiler" means a boiler in which steam or other vapor is generated at a pressure of more than 15 PSIG. The term includes, without limitation, a high-pressure, high-temperature water boiler and a miniature boiler.*

Sec. 23. *"Pressure vessel" means a vessel in which pressure is obtained from an external source or by the application of heat from a direct or indirect source. The term includes, without limitation, an unfired steam boiler.*

Sec. 24. *"PSIG" means pounds per square inch gauge.*

Sec. 25. *"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 without a change of ownership.*

Sec. 26. *"Unfired steam boiler" means an unfired pressure vessel or a system of unfired pressure vessels intended for operation at a pressure in excess of 15 PSIG to produce and control an output of thermal energy. The term includes, without limitation, a boiler that heats water with waste heat.*

Sec. 27. *"Water heater" means a closed vessel in which water is heated by the combustion of fuel, electricity or any other source and withdrawn from the heater for use outside the system of the water heater at pressures not exceeding 160 PSIG and which includes, without limitation, any control or device necessary to prevent the water temperature from exceeding 210°F (99° C).*

Sec. 28. *The administrator may delegate any duties which he is assigned pursuant to sections 3 to 48, inclusive of this regulation, to the mine safety and training section of the division, or its successor.*

Sec. 29. *1. The administrator hereby adopts by reference the National Board Inspection Code, 1998 edition, which may be obtained from the National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Avenue, Columbus, Ohio 43229, for a cost of $70.*

2. The administrator hereby adopts by reference the following sections of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, 1998 edition, which are available from the American Society of Mechanical Engineers, P. O. Box 2900, Fairfield, New Jersey 07007-2900, for the cost indicated:

	Cost
(a) Section I, Power Boilers	*$210*
(b) Section II, Parts A, B, C and D, Material Specifications	*1,400*
(c) Section IV, Heating Boilers	*195*
(d) Section V, Nondestructive Testing	*215*
(e) Section VI, Recommended Rules for the Care and Operation of Heating Boilers	*125*

(f) Section VII, Recommended Guidelines for the Care of Power Boilers..... 145

(g) Section VIII, Pressure Vessels, Divisions 1, 2 and 3.....1,065

(h) Section IX, Welding and Brazing Qualifications 215

(i) Section X, Fiberglass Reinforced Plastic Pressure Vessels 185

3. The administrator hereby adopts by reference Controls and Safety Devices for Automatically Fired Boilers, CSD-1, 1998 edition, published by the American Society of Mechanical Engineers. This publication applies to automatically fired boilers which are directly fired with gas, oil, a combination of gas and oil or electricity, and is available from the American National Standards Institute, 11 West 42nd Street, New York, New York 10036, for a cost of $54.

4. The administrator hereby adopts by reference the Power Piping Code, B31.1, 1998 edition and addenda, published by the American Society of Mechanical Engineers. This publication and its addenda are available from the American Society of Mechanical Engineers, P. O. Box 2900, Fairfield, New Jersey 07007-2900, for a cost of $164.

5. The administrator hereby adopts by reference the National Fuel Gas Code, Z223.1, 1996 edition, which is available from the American National Standards Institute, 11 West 42nd Street, New York, New York 10036, for a cost of $40.

6. The administrator hereby adopts by reference the National Electrical Code, 1996 edition, which is available from the American National Standards Institute, 11 West 42nd Street, New York, New York 10036, for a cost of $65.

7. The administrator hereby adopts by reference the Uniform Building Code, 1997 edition, Volumes 1, 2 and 3, which are available from the International Conference of Building

Officials, 5360 South Workman Mill Road, Whittier, California 90601, for a cost of $61.25 for Volume 1, $61.25 for Volume 2 and $68.75 for Volume 3.

8. The administrator hereby adopts by reference the Uniform Mechanical Code, 1997 edition, which is available from the International Conference of Building Officials, 5360 South Workman Mill Road, Whittier, California 90601, for a cost of $42.

9. The administrator hereby adopts by reference the Uniform Fire Code, 1997 edition, Volumes 1 and 2, which are available from the International Conference of Building Officials, 5360 South Workman Mill Road, Whittier, California 90601, for a cost of $55.65 for Volume 1 and $88.20 for Volume 2.

10. The administrator hereby adopts by reference the Uniform Plumbing Code, 1997 edition, which is available from the International Association of Plumbing and Mechanical Officials, 20001 Walnut Drive South, Walnut, California 91789-2825, for a cost of $45.45.

Sec. 30. *The provisions of sections 3 to 48, inclusive, of this regulation do not apply to:*

1. An unfired pressure vessel that meets the requirements of the United States Department of Transportation for the shipment of liquids or gases under pressure.

2. An unfired pressure vessel which has an inside diameter that does not exceed 6 inches (152 millimeters).

3. An unfired pressure vessel used for domestic purposes which contains cold water under pressure, including, without limitation, a vessel containing air, the compression of which serves only as a cushion.

4. A pressure vessel which contains water heated by steam or by any other means if none of the following limitations is exceeded:

(a) An input of heat of 199,999 British thermal units per hour (58,600 watts);

(b) A water temperature of 210°F (99 C); and

(c) A water capacity of 120 gallons (450 liters).

5. A fired storage water heater that is directly fired with oil, gas or electricity when none of the following limitations is exceeded:

(a) An input of heat of 199,999 British thermal units per hour (58,600 watts);

(b) A water temperature of 210°F (99°C); and

(c) A water capacity of 120 gallons (450 liters).

6. An unfired pressure vessel that does not exceed 5 cubic feet in volume and 250 PSIG.

7. 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, such as 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.

8. A hot water heater constructed of continuous coils, which is used only to produce steam vapor to clean things such as machinery, equipment and buildings, if:

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

(b) The nominal water containing capacity does not exceed 6 gallons;

(c) The water temperatures do not exceed 350°F; and

(d) Steam is not generated within the coil,

except that the provisions of sections 3 to 48, inclusive, of this regulation, do apply to safety relief valves on a hot water heater constructed of continuous coils.

9. An unfired pressure vessel and piping containing liquid petroleum gas and liquid natural gas.

10. Any vessel, regardless of its size, that has an internal or external operating pressure less than or equal to 15 PSIG.

Sec. 31. *1. An owner or user who operates boilers or pressure vessels and who desires to inspect his own boilers or pressure vessels must file a request with the administrator for approval as an owner or user inspection organization.*

2. The request must include, without limitation:

(a) The name of the owner or user and his principal address in this state;

(b) The name and address of the person who will supervise the inspections; and

(c) Certification that the inspections will meet the requirements of the national board or other applicable code.

3. Each owner or user who is approved by the administrator to inspect his own boilers or pressure vessels shall:

(a) Use only boiler inspectors who are employed continuously by the owner or user to conduct the inspections;

(b) Retain on file at the location where the equipment is inspected a record or copy of each report of inspection which must be signed by the boiler inspector who conducted the inspection;

(c) Deliver to the administrator and to each person who operates a boiler or pressure vessel of the owner or user a report of inspection of the boiler or pressure vessel, including, without

limitation, any requirements imposed by or recommendations made by the boiler inspector for the operation of the boiler or pressure vessel;

(d) Immediately notify the administrator of any boiler or pressure vessel that does not meet the requirements for safety;

(e) Maintain in this state for the examination of the administrator during business hours, a record of the inspections of the boilers and pressure vessels which includes, without limitation:

(1) A list of each boiler or pressure vessel required to be inspected with the number of each boiler or pressure vessel and any description necessary for identification of the boiler or pressure vessel; and

(2) The date of the last inspection of each boiler or pressure vessel and the approximate date for the next inspection; and

(f) Notify the administrator within 30 days after a change is made in the person authorized to supervise the inspections.

Sec. 32. *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.*

2. A power boiler and a high-pressure, high-temperature water 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 heating 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 boiler inspector.

5. A lined potable water heater must be inspected externally at least once every 2 years. The inspection must include, without limitation, operational testing of all controls and safety devices.

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 subsection 5, a pressure vessel must be inspected internally, if the construction and design of the pressure vessel so allows, at least once every 3 years.

8. A boiler inspector employed by an authorized inspection entity may require any boiler or pressure vessel to be prepared for inspection when, in his opinion, an inspection is necessary to determine whether the boiler or pressure vessel is operating in a safe manner.

9. An owner or user inspection organization may apply to the administrator to modify the frequency of inspection of the boilers or pressure vessels of the owner or user. If the administrator determines that the owner or user has an acceptable program for preventive maintenance and examination of his boilers or pressure vessels, the administrator will grant such a modification for a period not to exceed 24 months, if the boilers or pressure vessels are inspected externally at least once every 6 months during the period of the modification. The application for such a modification must be submitted in writing to the administrator at least 45 days before the required internal inspection. The application must include, without limitation, the history of each boiler or pressure vessel or, if the boiler or pressure vessel is newly installed, the history of a similar boiler or pressure vessel, which substantiates that there is no significant deterioration from scaling, corrosion, erosion or overheating. Points of reference established by the owner or user or an authorized inspection entity at the time of the first inspection must be used to determine the thickness of the walls of the boiler or pressure vessel. If the application is approved after the internal inspection of each boiler or pressure vessel, a record showing the total corrosion and any other conditions that require correction must be sent to the administrator.

10. 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) "Hot water supply boiler" means a boiler completely filled with water which furnishes hot water to be used outside the boiler at pressures not exceeding 160 PSIG or at temperatures not exceeding 250°F at or near the boiler outlet and which:

(1) Uses a storage tank to supply hot water to the system; or

(2) Fires on demand to heat water that is supplied directly into the system.

(c) "Lined 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. 33. *If a boiler inspector, upon his inspection of a boiler or pressure vessel, finds that the boiler or pressure vessel or any appurtenance thereof is in such condition as to be unsafe, the boiler inspector shall immediately notify the owner or user and the administrator in writing and, as soon as practicable thereafter, submit to the owner or user and the administrator a report on the defects, which states which repairs or other corrective measures are required. Until the corrections have been made, the boiler or pressure vessel must not be operated.*

Sec. 34. *Except as otherwise provided in section 50 of this regulation, if an accident occurs that renders a boiler or pressure vessel inoperative, the owner or user shall immediately notify the administrator in writing and submit a detailed report of the accident. Neither the boiler nor pressure vessel, nor any parts thereof, may be removed or disturbed before an inspection has been made by the boiler inspector unless human life is endangered or except to limit further damage.*

Sec. 35. *1. A boiler inspector shall stamp a boiler or pressure vessel that he has inspected and declared unsafe with the letters "XXX" on each side of the number designated by the national board or this state.*

2. No person may use or offer for sale in this state a boiler or pressure vessel that has been stamped pursuant to subsection 1.

Sec. 36. *Except as otherwise provided in section 37 of this regulation, 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. The notice must include, without limitation, 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.*

Sec. 37. *1. A contractor shall submit a written notice of installation to the administrator before installing a new boiler or pressure vessel in this state.*

2. A notice of installation must include, without limitation:

(a) The American Society of Mechanical Engineers' data report of the manufacturer of the boiler or pressure vessel; and

(b) 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 section 38 of this regulation.

3. 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.

4. Before a secondhand 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 by a boiler inspector. 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 the effective date of this regulation.

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

(c) "Secondhand boiler or pressure vessel" means a boiler or pressure vessel that has been moved since its original installation.

Sec. 38. *Except as otherwise provided in section 39 of this regulation, if a boiler is replaced or a new boiler is installed in an existing or new building, a minimum height of at least 3 feet must be provided between the top of the boiler, excluding appurtenances, and the ceiling and at least 3 feet between any side of the boiler and any adjacent wall or other structure. A boiler or pressure vessel that has a manhole must have a 5-foot clearance from the opening of the manhole to any wall, ceiling or piping that will prevent a person from entering the boiler or pressure vessel. A boiler or pressure vessel must be located so that adequate space will be provided for the proper operation of the boiler or pressure vessel and its*

appurtenances, for the inspection of all surfaces, tubes, waterwalls, economizers, piping, valves and other equipment, and for the necessary maintenance and repair and the replacement of tubes. When a pressure vessel is installed or replaced, there must be an area of unobstructed clearance which is at least 18 inches wide and provides access for inspection, maintenance and repair. Clearance for repairs and cleaning may be provided through a door or access panel into another area if the door or access panel is large enough to allow the repairs and cleaning to be performed adequately.

Sec. 39. *The clearance between a wall or other structure and a fired storage and fired coil water heater must be at least that specified by the manufacturer.*

Sec. 40. *1. If a boiler or pressure vessel is removed from its original site and reinstalled at the same location or reinstalled at a new location without a change of ownership before reinstallation, the contractor must submit to the administrator a notice of installation before installing 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 or user must notify the administrator in writing before reinstalling the boiler or pressure vessel within this state.

3. As used in this section, "standard boiler or pressure vessel" means a boiler or pressure vessel that:

(a) Bears the stamp of the American Society of Mechanical Engineers, the American Petroleum Institute in conjunction with the American Society of Mechanical Engineers or the national board; or

(b) Meets a standard of construction approved by the national board.

Sec. 41. *1. If a valve or any appurtenance of a boiler or pressure vessel requires frequent manipulation or is so located that it cannot be reached or operated from the floor, a platform or other safe means of operation must be provided. If a platform or runway is used, it must be at least 24 inches wide and be provided with standard handrails and toeboards and have at least 7 feet and 6 inches of head room. A runway must have at least two means of exit remotely located from one another and be connected to a permanent stairway or incline ladder leading to the floor.*

2. When necessary for safety, a steel runway or platform of standard construction must be installed across the tops of adjacent boilers or pressure vessels or at some other convenient level to afford safe access. A runway must have at least two means of exit, remotely located from one another.

Sec. 42. *1. A repair or alteration to a boiler or pressure vessel must conform to the applicable provisions of the code.*

2. If a repair or alteration to a boiler or pressure vessel is necessary, a boiler inspector must be consulted regarding the best method for making the repair or alteration. After the repair or alteration is made, the boiler inspector shall inspect it. The contractor who makes such repairs or alterations shall submit to the administrator the appropriate "R" form prescribed by the national board within 30 days after completion of the repair or alteration.

3. Except as otherwise provided in subsection 4, a contractor who makes a repair or alteration to a boiler or pressure vessel must be qualified pursuant to the national board inspection code and must hold a current classification C-1 contractor's license.

4. A contractor who makes a repair or alteration to a boiler or pressure vessel by fusion welding to the pressure parts of the boiler or pressure vessel must hold a valid certificate of authorization and stamp designated as "R," which have been issued by the national board.

5. A repair or alteration made by fusion welding must not be made to the pressure parts of a boiler constructed of cast iron.

Sec. 43. *A person is qualified to attend a power boiler or high-pressure, high-temperature water boiler if he has the technical training, experience and knowledge necessary to start, operate and shut down the boiler.*

Sec. 44. *1. Except as otherwise provided in subsection 5, a high-pressure, high-temperature water boiler and a power boiler must be attended by a person who meets the qualifications set forth in section 43 of this regulation.*

2. A steam boiler must be attended by a person who meets the qualifications set forth in section 43 of this regulation, unless the boiler is equipped with:

(a) A cutoff for low water or low fuel;

(b) An automatic feed water regulator;

(c) Fireside regulators and controls;

(d) An audible alarm to indicate low water; and

(e) A pressure control.

3. The attendant shall check personally the operation of the boiler, the necessary auxiliaries and the level of water in the boiler at intervals necessary to ensure the safe operation of the boiler but not less than once every 60 minutes or for intervals in excess of the time required to evaporate the water from the normal operating level to the lowest water level

permissible when the feed water is shut off or the boiler is forced to its maximum capacity. A log noting the time of all checks and observations must be kept in the boiler room.

4. When attendance of the boiler is required pursuant to this section, a time clock to automatically start or stop the operation of the boiler must not be used, unless the timing mechanism is a device or system that has been approved by the administrator.

5. A high-pressure, high-temperature water boiler and a power boiler do not need to be attended, if the boiler is equipped with the following protective devices which are functioning properly, as required by the applicable provisions of Controls and Safety Devices for Automatically Fired Boilers, CSD-1, 1998 edition:

(a) If the boiler is operated at less than supercritical pressure:

(1) A cutoff for low water or low fuel;

(2) An automatic feed regulator;

(3) Fireside regulators and controls;

(4) An audible alarm to indicate low water;

(5) A pressure control; and

(6) A programmed flame safeguard system with an audible alarm on burners equipped with spark ignition.

(b) If the boiler is operated at supercritical pressure (3206 PSIG and 705°F):

(1) All the devices set forth in paragraph (a);

(2) A cutoff device for high temperature or fuel; and

(3) An audible alarm to indicate high temperature.

Sec. 45. *Each pressure vessel must be protected by safety or relief valves and indicating and controlling devices that will ensure its safe operation. These valves and devices must be so constructed, located and installed that the valves and devices cannot be rendered inoperative readily. The relieving capacity of safety valves must be sufficient to prevent a rise of pressure in the vessel of more than 10 percent above the highest pressure to which any device to relieve pressure is set, but in no case more than 6 percent above the maximum allowable working pressure. The opening (set) pressure of the device to relieve pressure must be no greater than the maximum allowable working pressure of the vessel.*

Sec. 46. *1. The capacity of a safety valve that is designed primarily for steam or vapor service must be rated in pounds per hour.*

2. The capacity of a relief valve that is designed primarily for liquid service must be rated in British thermal units per hour. The capacity of a relief valve used for liquid service with cold water may be rated in gallons per hour.

3. The capacity of a safety relief valve that is designed for use in steam or vapor and liquid service must be rated in pounds per hour when used for steam or vapor service and in British thermal units per hour when used for heated liquid service.

4. A pressure relief valve that is used for air service must be rated in PSIG.

Sec. 47. *Except as otherwise provided in section 42 of this regulation, a person shall not undertake to, or offer to undertake to, install, construct, alter, repair, add to, subtract from, improve or move any boiler, pressure vessel or water heater unless he holds a current classification C-1 contractor's license issued pursuant to chapter 624 of NRS that authorizes him to install boilers or pressure vessels.*

Sec. 48. *A new boiler, pressure vessel or water heater must not be operated in this state unless it is designed, constructed, inspected and installed in accordance with the code and the provisions of sections 3 to 48, inclusive, of this regulation.*

Sec. 49. *As used in NRS 512.220, the administrator will interpret the phrase "serious accident" to include, without limitation:*

1. The death of a person;

2. An injury to a person that has a reasonable potential to cause death;

3. The entrapment of a person for more than 30 minutes;

4. An unplanned inundation by a liquid or gas;

5. An unplanned ignition or explosion of gas or dust;

6. An unplanned fire that is not extinguished within 30 minutes after discovery;

7. An unplanned ignition or explosion of a blasting agent or explosive;

8. The unplanned fall of a roof which occurs at or above the zone of anchorage in active workings where roof bolts are in use or which impairs ventilation or impedes passage of persons;

9. An outburst of coal or rock that causes the withdrawal of persons from the mine or the disruption of regular mining activity for more than 1 hour;

10. An unstable condition at an impoundment, refuse pile or culm bank that requires emergency action to prevent the failure of the impoundment, refuse pile or culm bank or causes the evacuation of an area;

11. The failure of an impoundment, refuse pile or culm bank;

12. Damage to hoisting equipment in a shaft or slope that endangers a person or interferes with the use of the hoisting equipment for more than 30 minutes; and

13. Any event that causes death or bodily injury to a person who is not at the mine when the event occurred.

Sec. 50. *1. An operator of a mine shall report a serious accident that occurs at the mine immediately to the administrator at (702) 687-5243.*

2. An operator shall:

(a) Investigate any serious accident, occupational injury or occupational illness that occurs at the mine; and

(b) Submit a report relating to the investigation to the administrator within 10 business days after the serious accident, injury or occupational illness occurs.

3. As used in this section:

(a) "Occupational illness" means an illness or disease incurred by a worker from working at the mine and for which an award of compensation is made.

(b) "Occupational injury" means an injury to a worker for which he received medical treatment or which resulted in death, loss of consciousness or permanent or temporary inability to perform his duties.

Sec. 51. NAC 512.010 is hereby amended to read as follows:

512.010 As used in this chapter, unless the context otherwise requires, the words and terms defined in NAC 512.015 to 512.140, inclusive, *and section 2 of this regulation* have the meanings ascribed to them in those sections.