LCB File No. R141-98

PROPOSED REGULATION OF THE DIVISION OF INDUSTRIAL RELATIONS

STATE OF NEVADA
DEPARTMENT OF BUSINESS AND INDUSTRY
DIVISION OF INDUSTRIAL RELATIONS

In the matter of the adoption of Regulations pertaining to Boiler and Pressure Vessels and the definition of "serious accident"	DIR 98-20 LCB: R141-98

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AUTHORITY: NRS 512.131

BOILERS AND PRESSURE VESSELS

Chapter 512 of NAC is hereby amended by adding thereto the provisions set forth as sections 1 to 58, inclusive of this regulation.

Section 1. *"Administrator" defined. "Administrator" means the Administrator of the Division of Industrial Relations of the Department of Business and Industry.*

Sec. 2. *"Approved" defined. "Approved" means approved by the Mine Safety and Training Section.*

Sec. 3. *"Authorized inspection entity" defined. "Authorized inspection entity" means one of the following:*
1. The division;
2. An inspection entity licensed to write insurance for a boiler and pressure vessel in the State of Nevada that employs inspectors who have passed an examination which is equivalent to the examination required in this state and been issued a certificate of competency by the division and who represent the jurisdiction; or
3. An owner/user inspection organization.

Sec. 4. *"Boiler" defined. "Boiler" means a closed vessel in which water is heated, steam is generated, steam is superheated, or any combination thereof, under pressure or vacuum, for use external to the boiler by the direct application of heat. "Boiler" includes fired units for heating or vaporizing liquids other than water if these units are separate from processing systems and complete within themselves.*

Sec. 5. *"Boiler inspector" defined. "Boiler inspector" means an inspector of boilers in*

possession of a certificate of competency and a current National Board Commission for the inspection of boilers and pressure vessels and who is employed by:
1. The division;
2. An authorized inspection entity; or
3. An owner/user inspection organization.

Sec. 6. *"Certificate of competency" defined. "Certificate of competency" means a certificate issued to a person who has passed an examination which is prescribed by the division for qualification as a boiler inspector.*

Sec. 7. ***"****Chief" defined. "Chief" means the Chief Administrative Officer for the Mine Safety and Training Section.*

Sec. 8. ***"****Code" defined. "Code" means the applicable,*
1. Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers adopted by the Council of the Society and approved and adopted by the Division of Industrial Relations of the Department of Business and Industry, or
2. A Boiler or Pressure Vessel Code as approved by The National Board and accepted by the Jurisdiction; or
3. The National Board Inspection Code.

Sec. 9 ***"****Commission" defined. "Commission" means the commission issued by The National Board of Boiler and Pressure Vessel Inspectors to a holder of a certificate of competency who is authorized to make inspections of boilers or pressure vessels.*

Sec. 10. ***"****Condemned boiler or pressure vessel" defined. "Condemned boiler or pressure vessel" means a boiler or pressure vessel that has been inspected and declared unsafe, or has been disqualified by legal requirements, by an inspector who has applied a stamp or mark condemning the boiler or pressure vessel.*

Sec. 11. ***"****Contractor" defined. "Contractor" means a contractor, as the term is defined in NRS 624.020.*

Sec. 12. ***"****Division" defined. "Division" means the Division of Industrial Relations, of the Department of Business and Industry, of the State of Nevada.*

Sec. 13. ***"****Existing installation" defined. "Existing installation" means any boiler or pressure vessel constructed, installed, placed in operation or contracted for use in Nevada before effective date of this regulation.*

Sec. 14. ***"****External inspection" defined. "External inspection" means an inspection which is made when a boiler or pressure vessel is operating.*

Sec. 15. ***"****Fired pressure vessel" defined. "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.

Sec. 16. *"Fired storage water heater" defined. "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 200,000 British thermal units or more.

Sec. 17. *"Heat exchanger" defined. "Heat exchanger" means any device, as a radiator, for transferring energy in the form of heat to a cooler medium from a warmer one.*

Sec. 18. *"Heating boiler" defined. "Heating boiler" means a:*
1. Steam or vapor boiler intended for operation at pressures not exceeding 15 PSIG; or
2. Hot water boiler intended for operation at pressures not exceeding 160 PSIG or temperatures of not more than 250□ F., which is not used to heat potable water except through a heat exchanger.

Sec. 19. *"High-pressure, high-temperature water boiler" defined. "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 250□ F.*

Sec. 20. *"Hot water supply boiler" defined. "Hot water supply boiler" means a boiler completely filled with water that 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 which is supplied directly into the system.

Sec. 21. *"Inspector for an owner or user inspection organization" defined. "Inspector for an owner or user inspection organization" means an boiler inspector who:*
1. Holds a valid commission issued by The National Board as an boiler inspector for an owner or user authorized to inspect his own boilers and pressure vessels;
2. Has passed the examination prescribed by division; and
3. Is continuously employed as an boiler inspector by an owner or user inspection organization authorized by the division to inspect his own boilers and pressure vessel.

Sec. 22. *"Internal inspection" defined. "Internal inspection" means 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 all plates for a manhole or handhole or other closures of openings used for an inspection are removed.*

Sec. 23. *"Jurisdiction" defined. "Jurisdiction" Division of Industrial Relations, of the Department of Business and Industry, of the State of Nevada.*

Sec. 24. *"Lined potable water heater" defined. "Lined potable water heater" means a fired heater for storage of water with a corrosion resistant lining used to supply potable hot water.*

Sec. 25. *"Mine Safety and Training Section" defined. "Mine Safety and Training Section" means the Mine Safety and Training Section of the Division of Industrial Relations of the Department of Business and Industry of the State of Nevada.*

Sec. 26. *"Miniature boiler" defined. "Miniature boiler" means a power boiler or high-pressure, high-temperature water boiler which 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. 27. *"National Board" defined. "National Board" means The National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Avenue, Columbus, Ohio 43229.*

Sec. 28. *"National Board Inspection Code" defined. "National Board Inspection Code" means the Manual for Boiler and Pressure Vessel Inspectors published by The National Board.*

Sec. 29. *"New boiler or pressure vessel installation" defined. "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 effective date of this regulation.*

Sec. 30. *"Owner/user inspection organization" defined. "Owner/user inspection organization" means an owner/ user of boilers and pressure vessels that maintains a regularly established inspection department, whose organization and inspection procedures meet the requirements of the National Board rules and are acceptable to the jurisdiction.*

Sec. 31. *"Owner or user" defined. "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. 32. *"Portable boiler" defined. "Portable boiler" means a boiler which is primarily intended for temporary use and whose construction permits it to be readily moved from one location to another.*

Sec. 33. *"Power boiler" defined. "Power boiler" means a boiler in which steam or other vapor is generated at a pressure of more than 15 PSIG. Also see "High-pressure, high-temperature water boiler" defined.*

Sec. 34. *"Pressure vessel" defined. "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.*

Sec. 35. *"Reinstalled boiler or pressure vessel" defined. "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. 36. *"Secondhand boiler or pressure vessel" defined. "Secondhand boiler or pressure vessel" means a boiler or pressure vessel which has been moved since its original installation.*

Sec. 37. *"Standard boiler and pressure vessel" defined. "Standard boiler and pressure vessel" means a boiler or pressure vessel which bears the stamp of this state, the American Society of Mechanical Engineers, the American Petroleum Institute in conjunction with the American Society of Mechanical Engineers, The National Board, a Standard of Construction approved by The National Board and acceptable to the Jurisdiction, a Province or Territory of Canada or any state or political subdivision of a state which has adopted a standard of construction equivalent to that required by the Division of Industrial Relations of the Department of Business and Industry.*

Sec. 38. *"Unfired steam boiler" defined. "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 boilers which heat water with waste heat.*

Sec. 39. *"Water heater" defined. "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 includes all controls and devices necessary to prevent water temperatures from exceeding 210°F (99°C).*

Sec. 40. *Adoption by reference of National Board Inspection Code. The Division of Industrial Relations of the Department of Business and Industry 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.*

Sec. 41. *Adoption by reference of certain publication, codes and sections of code.*
1. The Division of Industrial Relations of the Department of Business and Industry hereby adopts by reference the following sections of the ASME Boiler and Pressure Vessel Code 1998 edition, which are available from the American Society of Mechanical Engineers, 345 East 47th Street, New York, NY 10017 for the cost indicated.

(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 & 3 ..... $1,065
(h) Section IX, Welding and Brazing Qualifications $215
(I) Section X, Fiberglass Reinforced Plastic Pressure Vessels $185

2. The Division of Industrial Relations hereby adopts by reference Controls and Safety Devices for Automatically Fired Boilers, CSD-1, 1995 edition and addenda, published by the American Society of Mechanical Engineers. This publication and its addenda apply to automatically fired boilers which are directly fired with gas, oil, a combination of gas and oil or electricity, and are available from the American National Standards Institute, 1430 Broadway, New York, NY 10018 for the cost of $54.
3. The Division of Industrial Relations 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, 345 East 47th Street, New York, NY 10017, for a cost of $164.
4. The Division of Industrial Relations hereby adopts by reference the National Fuel Gas Code, Z223.1, 1996 edition, which is available from the American National Standards Institute, 1430 Broadway, New York, NY 10018, for a cost of $40.
5. The Division of Industrial Relations hereby adopts by reference the National Electrical Code 1996. This publication is are available from the American National Standards Institute, 1430 Broadway, New York, NY 10018 for the cost of $ 65.00.
6. The Division of Industrial Relations hereby adopts by reference the Uniform Building Code 1997 Volumes 1, 2 and 3 which are available from the International Conference of Building Officials, 5360 South Workman Mill Road, Whittier, CA 90601 for the cost of $61.25 - Volume 1, $61.25 - Volume 2, and $68.75 - Volume 3.
7. The Division of Industrial Relations hereby adopts by reference the Uniform Mechanical Code 1997 which is available from the International Conference of Building Officials, 5360 South Workman Mill Road, Whittier, CA 90601 for the cost of $42.00.
8. The Division of Industrial Relations hereby adopts by reference the Uniform Plumbing Code 1997 which is available from the International Association of Plumbing and Mechanical Officials, 20001 Walnut Drive South, Walnut, CA 91789-2825.
9. The Division of Industrial Relations hereby adopts by reference the Uniform Fire Code 1997 Volumes 1 and 2 which is available International Conference of Building Officials, 5360 South Workman Mill Road, Whittier, CA 90601 for the cost of Volume 1 - $55.65 and Volume 2 - $88.20.

Sec. 42. *Exemptions from requirements. The following hot water heaters and pressure vessels are exempt from the requirements of these regulations:*
1. Unfired pressure vessels meeting the requirements of the United States Department of Transportation for the shipment of liquids or gases under pressure.
2. Unfired pressure vessels having an inside diameter not exceeding 6 inches (152 millimeters).
3. Unfired pressure vessels used for domestic purposes and containing cold water under pressure, including those containing air, the compression of which serves only as a cushion.
4. Pressure vessels containing 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.).
(c)A water capacity of 120 gallons (450 liters).

5. Fired storage water heaters which are 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).
(c) A water capacity of 120 gallons (450 liters).
6. Unfired pressure vessels that do not exceed 5 cubic feet in volume and 250 PSIG.
7. An unfired pressure vessel which 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, 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.
9. Unfired pressure vessels and piping containing liquid petroleum gas and liquid natural gas.
10. Vessels having an internal or external operating pressure not exceeding 15 psi with no limitation on size.

Sec. 43. *Frequency and scope of inspections; authority to require preparation for inspection.*
1. Power boilers must be inspected internally, if the construction and design of the power boiler so permits, at least once each year and externally approximately 6 months after the date of the internal inspection while in operation. If an internal inspection is not possible, a power boiler must be inspected externally at least once every 6 months.
2. A high-pressure, high-temperature water boiler must be inspected internally, if the construction and design of the boiler so permits, at least once each year and externally approximately 6 months after the date of the internal inspection, while in operation. If an internal inspection is not possible, a high-pressure, high temperature water boiler must be inspected externally at least once every 6 months.
3. Low-pressure steam heating boilers must be inspected externally at least every 12 months and internally, if the construction and design of the boiler so permits, at least once every 2 years.
4. Hot water heating boilers and hot water supply boilers must be inspected externally at least once every 2 years and internally, if the construction and design of the boiler so permits, at the request of the boiler inspector.
5. Lined potable water heaters must be inspected externally at least once every 2 years. The inspection must include operational testing of all controls and safety devices.
6. Other fired pressure vessels 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 permits, at least once each year.
7. Except as otherwise provided in subsection 5, pressure vessels must be inspected internally, if the construction and design of the pressure vessel so permit, at least once every 3 years.

8. A boiler inspector employed by the division or by an authorized inspection entity may require any boiler or pressure vessel be prepared for inspection when, in his opinion, an inspection is necessary to determine the operational safety of the boiler or pressure vessel.
9. An owner/user inspection organization who has been authorized by the division to inspect boilers or pressure vessels may request approval from the Mine Safety and Training Section to alter the inspection frequency of those objects.
10. Upon application from a mine having a program acceptable to the Chief for preventive maintenance and examination, an extension of time between required internal inspections may be granted for a period not to exceed 24 months, if the boilers are inspected externally at intervals of approximately 6 months. The application for 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, or a similar boiler, substantiating that there is no significant deterioration from scaling, corrosion, erosion or overheating. Points of reference established by the owner 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 which need correction must be sent to the Mine Safety and Training Section.

***Sec. 44.** Boiler inspector: Procedure upon discovery of defects;*
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 an unsafe condition, the boiler inspector shall immediately notify the owner or user and submit a report on the defects. If the special inspector finds a boiler or pressure vessel to be unsafe for further operation, he shall immediately notify the owner or user in writing, stating what repairs or other corrective measures are required. Until the corrections have been made, the boiler or pressure vessel involved must not be operated

***Sec. 45.** Notification of accidents. If an accident occurs which renders a boiler or pressure vessel inoperative, the owner or user shall immediately notify the Mine Safety and Training Section in writing and submit a detailed report of the accident. In case of a serious accident such as an explosion, notice must be given immediately by telephone, telegraph or messenger. Neither the boiler nor pressure vessel, nor any parts thereof, may be removed or disturbed before an inspection has been made by the inspector unless human life is endangered or except to limit further damage.*

***Sec. 46.** Condemned boilers or pressure vessels.*
1. Any boiler or pressure vessel which has been inspected and declared unsafe by an inspector will be stamped by the inspector with the letters "XXX" on each side of the number designated by the state.
2. No person may use or offer for sale a condemned boiler or pressure vessel for operation in this state.

***Sec. 47.** Acceptance of boiler or pressure vessel for installation. A boiler or pressure vessel constructed in a manner which meets the standards of this state, the American Society of*

Mechanical Engineers or The National Board, may be accepted for installation in this state by the Mine Safety and Training Section if the contractor installing the boiler or pressure vessel submits to the Mine Safety and Training Section for a notice of installation before the construction or installation begins. The notice must include the American Society of Mechanical Engineer's data report of the manufacturer concerning the construction of the boiler or pressure vessel, or the equivalent if the construction code used was other than A.S.M.E. and is acceptable to The National Board and the Jurisdiction, unless the boiler is constructed of cast iron.

***Sec. 48.** Requirements for installation.*
1. A contractor must submit a notice of installation to the mine safety and training section before installing a new boiler or pressure vessel in this state.
2. A request for a notice of installation must be submitted to the mine safety and training section in writing and include:
(a) The American Society of Mechanical Engineers data report of the manufacturer; and
(b) The plans and specifications of the boiler room, which designate the location of the boilers and pressure vessels.
3. Except for an existing 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.
4. Before a secondhand portable boiler or pressure vessel may be installed or shipped for installation into this state, the owner, user or contractor must submit to the mine safety and training section a notice of installation. The request for a notice of installation must include a report of inspection by an boiler inspector holding a current commission issued by the national board. 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.

***Sec. 49.** Requirements for reinstallation.*
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 apply to the mine safety and training section for 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 boiler or pressure vessel which is stamped by the American Society of Mechanical Engineers is to be moved to another state for temporary use or repair, the owner or user must apply to the mine safety and training section for approval to reinstall the boiler or pressure vessel within this state.

***Sec. 50.** Ladders and runways.*
1. If valves and other appurtenances require frequent manipulation and are so located that they 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 toe boards and have at least 7 feet and 6 inches of head room. All runways must have at least two means of exit remotely located from one another and 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. All runways must have at least two means of exit, remotely located from one another.

Sec. 51. *Repairs or alterations of boilers and pressure vessels.*
1. Repairs and alterations to all boilers and pressure vessels must conform to the applicable provisions of The National Board Inspection Code.
2. If a repair or alteration to a boiler or pressure vessel is necessary, a boiler inspector must be consulted about the best method of 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 an appropriate National Board R form to the mine safety and training section within 30 days after completion of the repair or alteration.
3. The contractor who makes repairs or alterations must be qualified pursuant to The National Board Inspection Code and hold a current C-1 contractors license.
4. The contractor who makes repairs or alterations by fusion welding to the pressure parts of a boiler or pressure vessel must hold a valid certificate of authorization and stamp designated as issued by the National Board.
5. Repairs by fusion welding. Repairs by fusion welding may not be made to the pressure parts of a boiler constructed of cast iron.

Sec. 52. *Supervision of boilers.*
1. Except as otherwise provided in subsection 5, a high- pressure, high-temperature water boiler and a power boiler must be attended by an operator who meets the qualifications set forth in "Qualifications of Attendant."
2. A steam boiler must be attended by an operator, unless the boiler is equipped with each of the following functioning safety devices:
(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 operator shall personally check the operation of the boiler, the necessary auxiliaries and the level of water in the boiler at intervals necessary to ensure the boilers safe operation. The boiler and its auxiliaries must be checked at least once every 60 minutes and must not be left unattended for periods 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 which has been approved by the chief.
5. High-pressure, high-temperature water boilers and power boilers do not need to be attended, if the boiler is equipped with the following functioning protective devices, as required by the applicable provisions of Controls and Safety Devices for Automatically Fired Boilers, CSD-1 1998:

(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 PSI and/or 705□F), it must include all the devices described in paragraph (a) and:
(1) A cutoff device for high temperature or fuel; and
(2) An audible alarm to indicate high temperature.

Sec. 53. *Qualifications of attendant: A person is qualified to attend a power boiler or a high-pressure, high-temperature water boiler, where such attendance is required, if he has the technical training, experience and knowledge necessary to start, operate and shut down the boiler.*

Sec. 54. *Safety appliances. Each pressure vessel must be protected by safety or relief valves and indicating and controlling devices which will ensure its safe operation. These valves and devices must be so constructed, located and installed that they cannot readily be rendered inoperative. 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. 55. *Safety appliances; Capacity. Capacity ratings for over pressure relieving devices on boilers or unfired pressure vessels. Safety valves are designed primarily for steam or vapor service and shall be rated in pounds per hour for capacity. Relief valves are designed primarily for liquid service and shall be rated in BTU's per hour for capacity. Safety relief valves are designed for use in vapor or liquid service. When used for steam or vapor service they shall be rated in pounds per hour and when used in heated liquid service they shall be rated in BTU's per hour for capacity. Cold water relief valves may be rated in gallons per hour for capacity. Pressure relief valves for air service shall be rated in pounds per square inch gage for capacity.*

Sec. 56. *Contractor's license required for certain activities;*
1. 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 C-1 contractor's license issued pursuant to Chapter 624 of NRS, which authorizes him to install boilers or pressure vessels.

Sec. 57. *Requirements for operation.*
A new boiler, pressure vessel or water heater must not be operated in this state unless it is

designed, constructed, inspected, stamped and installed in accordance with these regulations. Sections 1 thru 57 inclusive.

Sec. 58. *In accordance with NRS 512.220 Serious Accident means:*
1. A death of an individual at a mine;
2. Reserved;
3. An entrapment of an individual for more than thirty minutes;
4. An unplanned inundation of a mine by a liquid or gas;
5. An unplanned ignition or explosion of gas or dust;
6. An unplanned mine fire not extinguished within 30 minutes of discovery;
7. An unplanned ignition or explosion of a blasting agent or an explosive;
8. An unplanned roof fall at or above the anchorage zone in active workings where roof bolts are in use; or, an unplanned roof or rib fall in active workings that impairs ventilation or impedes passage;
9. A coal or rock outburst that causes withdrawal of miners or which disrupts regular mining activity for more than one hour;
10. An unstable condition at an impoundment, refuse pile, or culm bank which requires emergency action in order to prevent failure, or which causes individuals to evacuate an area; or, failure of an impoundment, refuse pile, or culm bank;
11. Damage to hoisting equipment in a shaft or slope which endangers an individual or which interferes with use of the equipment for more than thirty minutes; or
12. An event at a mine which causes death or bodily injury to an individual not at the mine at the time the event occurs.