

AMENDATORY SECTION (Amending WSR 06-24-042, filed 11/30/06, effective 1/1/07)

WAC 296-104-010 Administration--What are the definitions of terms used in this chapter? "Agriculture purposes" shall mean any act performed on a farm in production of crops or livestock, and shall include the storage of such crops and livestock in their natural state, but shall not be construed to include the processing or sale of crops or livestock.

"Attendant" shall mean the person in charge of the operation of a boiler or unfired pressure vessel.

"Automatic operation of a boiler" shall mean automatic unattended control of feed water and fuel in order to maintain the pressure and temperature within the limits set. Controls must be such that the operation follows the demand without interruption. Manual restart may be required when the burner is off because of low water, flame failure, power failure, high temperatures or pressures.

"Board of boiler rules" or "board" shall mean the board created by law and empowered under RCW 70.79.010.

"Boiler and unfired pressure vessel installation/reinstallation permit," shall mean a permit approved by the chief inspector before starting installation or reinstallation of any boiler and unfired pressure vessel within the jurisdiction of Washington.

Owner/user inspection agency's, and Washington specials are exempt from "boiler and unfired pressure vessel installation/reinstallation permit."

"Boilers and/or unfired pressure vessels" - below are definitions for types of boilers and unfired pressure vessels used in these regulations:

- **"Condemned boiler or unfired pressure vessel"** shall mean a boiler or unfired pressure vessel that has been inspected and declared unsafe or disqualified for further use by legal requirements and appropriately marked by an inspector.
- **"Expansion tank"** shall mean a tank used to absorb excess water pressure. Expansion tanks installed in closed water heating systems and hot water supply systems shall meet the requirements of ASME Section IV, HG-709.
- **"Hot water heater"** shall mean a closed vessel designed to supply hot water for external use to the system. All vessels must be listed by a nationally recognized testing agency and shall be protected with an approved temperature and pressure safety relief valve and shall not exceed any of the following limits:
 - * Pressure of 160 psi (1100 kpa);

- * Temperature of 210 degrees F (99°C);
- * Capacity of 120 U.S. gallons (454 liters);
- * Input of 200,000 BTU/hr (58.58 kw). Note that if input exceeds 200,000 BTU/hr (58.58 kw), other terms defined in this section may apply.
- * Hot water heaters exceeding 200,000 BTU/hr (58.58 kw) must be ASME code stamped.
- **"Low pressure heating boiler"** shall mean a steam or vapor boiler operating at a pressure not exceeding 15 psig or a boiler in which water or other fluid is heated and intended for operation at pressures not exceeding 160 psig or temperatures not exceeding 250 degrees F by the direct application of energy from the combustion of fuels or from electricity, solar or nuclear energy, excluding lined hot water heaters supplying potable hot water for external use to the system.
- **"Nonstandard boiler or unfired pressure vessel"** shall mean a boiler or unfired pressure vessel that does not bear marking of the codes adopted in WAC 296-104-200.
- **"Power boiler"** shall mean a boiler in which steam or other vapor is generated at a pressure of more than 15 psig for use external to itself or a boiler in which water (~~or other fluid~~) is heated and intended for operation at pressures in excess of 160 psig and/or temperatures in excess of 250 degrees F by the direct application of energy from the combustion of fuels or from electricity, solar or nuclear energy.
- **"Reinstalled boiler or unfired pressure vessel"** shall mean a boiler or unfired pressure vessel removed from its original setting and reset at the same location or at a new location without change of ownership.
- **"Rental boiler"** shall mean any power or low pressure heating boiler that is under a rental contract between owner and user.
- **"Second hand boiler or unfired pressure vessel"** shall mean a boiler or unfired pressure vessel of which both the location and ownership have changed after primary use.
- **"Standard boiler or unfired pressure vessel"** shall mean a boiler or unfired pressure vessel which bears the marking of the codes adopted in WAC 296-104-200.
- **"Unfired pressure vessel"** shall mean a closed vessel under pressure excluding:
 - * Fired process tubular heaters;
 - * Pressure containers which are integral parts of components of rotating or reciprocating mechanical devices where the primary design considerations and/or stresses are derived from the functional requirements of the device;
 - * Piping whose primary function is to transport fluids from one location to another;
 - * Those vessels defined as low pressure heating boilers or

power boilers.

- **"Unfired steam boiler"** shall mean a pressure vessel in which steam is generated by an indirect application of heat. It shall not include pressure vessels known as evaporators, heat exchangers, or vessels in which steam is generated by the use of heat resulting from the operation of a processing system containing a number of pressure vessels, such as used in the manufacture of chemical and petroleum products, which will be classed as unfired pressure vessels.

"Certificate of competency" shall mean a certificate issued by the Washington state board of boiler rules to a person who has passed the tests as set forth in WAC 296-104-050.

"Certificate of inspection" shall mean a certificate issued by the chief boiler inspector to the owner/user of a boiler or unfired pressure vessel upon inspection by an inspector. The boiler or unfired pressure vessel must comply with rules, regulations, and appropriate fee payment shall be made directly to the chief boiler inspector.

"Code, API-510" shall mean the Pressure Vessel Inspection Code of the American Petroleum Institute with addenda and revisions, thereto made and approved by the institute which have been adopted by the board of boiler rules in accordance with the provisions of RCW 70.79.030.

"Code, ASME" shall mean the boiler and pressure vessel code of the American Society of Mechanical Engineers with addenda thereto made and approved by the council of the society which have been adopted by the board of boiler rules in accordance with the provisions of RCW 70.79.030.

"Code, NBIC" shall mean the National Board Inspection Code of the National Board of Boiler and Pressure Vessel Inspectors with addenda and revisions, thereto made and approved by the National Board of Boiler and Pressure Vessel Inspectors and adopted by the board of boiler rules in accordance with the provisions of RCW 70.79.030.

"Commission" shall mean an annual commission card issued to a person in the employ of Washington state, an insurance company or a company owner/user inspection agency holding a Washington state certificate of competency which authorizes them to perform inspections of boilers and/or unfired pressure vessels.

"Department" as used herein shall mean the department of labor and industries of the state of Washington.

"Director" shall mean the director of the department of labor and industries.

"Domestic and/or residential purposes" shall mean serving a private residence or an apartment house of less than six families.

"Existing installations" shall mean any boiler or unfired pressure vessel constructed, installed, placed in operation, or contracted for before January 1, 1952.

"Inspection certificate" see "certificate of inspection."

"Inspection, external" shall mean an inspection made while a boiler or unfired pressure vessel is in operation and includes the

inspection and demonstration of controls and safety devices required by these rules.

"Inspection, internal" shall mean an inspection made when a boiler or unfired pressure vessel is shut down and handholes, manholes, or other inspection openings are open or removed for examination of the interior. An external ultrasonic examination of unfired pressure vessels less than 36" inside diameter shall constitute an internal inspection.

"Inspector" shall mean the chief boiler inspector, a deputy inspector, or a special inspector.

- **"Chief inspector"** shall mean the inspector appointed under RCW 70.79.100 who serves as the secretary to the board without a vote.
- **"Deputy inspector"** shall mean an inspector appointed under RCW 70.79.120.
- **"Special inspector"** shall mean an inspector holding a Washington commission identified under RCW 70.79.130.

"Nationwide engineering standard" shall mean a nationally accepted design method, formulae and practice acceptable to the board.

"Operating permit" see "certificate of inspection."

"Owner" or **"user"** shall mean a person, firm, or corporation owning or operating any boiler or unfired pressure vessel within the state.

"Owner/user inspection agency" shall mean an owner or user of boilers and/or pressure vessels that maintains an established inspection department, whose organization and inspection procedures meet the requirements of a nationally recognized standard acceptable to the department.

"Place of public assembly" or **"assembly hall"** shall mean a building or portion of a building used for the gathering together of 50 or more persons for such purposes as deliberation, education, instruction, worship, entertainment, amusement, drinking, or dining or waiting transportation. This shall also include child care centers (those agencies which operate for the care of thirteen or more children), public and private hospitals, nursing and boarding homes.

"Special design" shall mean a design using nationwide engineering standards other than the codes adopted in WAC 296-104-200 or other than allowed in WAC 296-104-230.

AMENDATORY SECTION (Amending WSR 04-21-069, filed 10/19/04, effective 1/1/05)

WAC 296-104-050 Administration--What are the requirements for a boiler inspector? (~~In order to qualify as a prospective National Board Commissioned Inspector an applicant shall meet the minimum requirements as set forth in the national board's "Rules~~

~~for Commissioned Inspectors," NB263, Revision 8 (4/02).)~~
Application for examination for a Washington state certificate of competency shall be in writing upon a form to be furnished by the chief inspector stating the school and education of the applicant, a list of employers, period of employment and position held with each employer. Applications containing willful falsification or untruthful statements shall be rejected.

In order to qualify as a prospective inspector, an applicant shall meet the minimum requirements as set forth in the national board's "Rules for Commissioned Inspectors," NB263, Revision 17 (02/07) or API-510 (eighth edition), as appropriate.

If the applicant's history and experience meet with the approval of the chief inspector based on the board of boiler rules approved criteria, the candidate shall be given the ~~((national board examination and the))~~ Washington state examination. If the applicant is accepted on the merits of these examinations or as provided for in WAC 296-104-065, and the applicant is in possession of a national board commission or API-510 certification, as appropriate, a Washington state certificate of competency will be issued by the chief inspector.

For those applicants sitting for the national board examination in conjunction with the Washington state examination, a certificate of competency will be issued by the chief inspector upon receipt of a valid national board commission.

Examinations shall be held at locations and times when considered necessary by the ~~((board of boiler rules))~~ chief inspector. The examinations may be offered four times each year, namely, the first Wednesday and following Thursday of the months of March, June, September and December. Special examinations may be held when considered necessary by the ~~((board of boiler rules))~~ chief inspector.

AMENDATORY SECTION (Amending WSR 04-21-069, filed 10/19/04, effective 1/1/05)

WAC 296-104-100 Inspection--How often must boilers and unfired pressure vessels be inspected? In accordance with RCW 70.79.080, 70.79.090, and 70.79.240 the following inspection requirements shall apply:

(1) **Power boilers** shall be inspected:

(a) Internally and externally while not under pressure - Annually.

(b) Externally while under pressure - Annually, except as noted in the following paragraph.

A power boiler in a national board accredited owner-user inspection program may have the internal inspection intervals extended by the owner-user inspection organization to five years maximum under the following conditions:

(i) The boiler water treatment and specific chemical limits are prescribed and monitored by an individual or company that specializes in the water treatment field;

(ii) Nondestructive examination (NDE) is performed along with the internal inspections;

(iii) The boiler is monitored within a manned operating facility;

(iv) Inspection, maintenance, and water treatment records are maintained;

(v) There is sufficient inspection history for the boiler or a boiler in similar service to justify the increase in the inspection interval; and

(vi) This provision shall not apply to a black liquor recovery boiler or any boiler with an unsuitable corrosion rate, remaining life, and/or repair history.

(2) **Organic vapor boilers** shall be inspected:

(a) (~~Internally and externally while not under pressure - Biennially.~~) Externally while under pressure - Annually.

(b) (~~Externally while under pressure - Annually.~~) Internally and externally while not under pressure - Biennially.

(3) **Low pressure heating boilers** shall be inspected:

(a) Externally while in operation and under pressure - Biennially.

(b) Where construction permits, internally while not under pressure. Also, as a minimum, an internal of their low water fuel cutoff(s) must be completed, where construction permits - Biennially.

(4) **Hot water heaters** shall be inspected:

(a) Externally - Biennially.

(b) Internally - None required.

(5) **Unfired pressure vessels** shall be inspected:

(a) Externally - Biennially.

(b) Internally:

(i) When subject to corrosion and construction permits - Biennially. Vessels in an owner(+) - user inspection program may follow intervals established by the NBIC or API-510 (~~eighth~~) ninth edition with addenda, provided nondestructive examination (NDE) is performed at the biennial external inspection.

(ii) Pulp or paper dryer rolls may be inspected on a five-year basis in accordance with TAPPI TIP 0402-16 2001 edition, provided the owner has established a written inspection program accepted by the inspector that meets the minimum requirements of TAPPI TIP 0402-16 2001 edition.

(iii) Vessels not subject to corrosion do not require an internal.

AMENDATORY SECTION (Amending WSR 02-23-036, filed 11/13/02, effective 12/14/02)

WAC 296-104-155 Inspection--What preparations are necessary prior to internal inspections? The owner or user has the responsibility to prepare a pressure-retaining item for internal inspection. Requirements of occupational safety and health regulations (federal, state, local, or other), as well as the owner or user's own safety program and the safety program of the inspector's employer are applicable. In the absence of such rules, prudent and generally accepted engineering safety procedures satisfactory to the inspector shall be employed by the owner or user.

The owner or user shall prepare a boiler for internal inspection in the following manner or as required by the inspector:

(1) Water shall be drawn off and the boiler thoroughly washed (when a boiler is being prepared for internal inspection, the water should not be withdrawn until it has been sufficiently cooled).

(2) All manhole and handhole plates and wash-out plugs and water column connections shall be removed, the furnace and combustion chambers thoroughly cooled and cleaned.

(3) All grates of internally fired boilers shall be removed.

(4) At each annual inspection brickwork shall be removed as required by the inspector in order to determine the condition of the boiler headers, drums, furnace, supports, or other parts.

(5) The steam gauge shall be removed for testing or evidence of testing shown.

(6) Any leakage of steam or water into the boiler shall be prevented by either disconnecting the pipe or block valve at the most convenient point or installing isolation blinds. The owner or user must ensure that an effective energy isolation program (lock out and/or tag out) is in place and in effect that will prevent the unexpected energizing, start up, or release of stored energy.

The inspector shall determine that a safe atmosphere exists before entering the boiler or pressure-retaining item is inspected.

(7) The low water cutout shall be disassembled to such a degree as the inspector shall require.

(8) Pressure Relief devices shall be removed and tested if required by the inspector.

Unfired pressure vessels shall be prepared for internal inspection to the extent deemed necessary by the inspector.

AMENDATORY SECTION (Amending WSR 06-24-042, filed 11/30/06, effective 1/1/07)

WAC 296-104-200 Construction--What are the standards for new construction? The standards for new construction are:

(1) ASME Boiler and Pressure Vessel Code, (~~(2004)~~) 2007

edition, with addenda Sections I, III, IV, VIII, Division 1, 2, 3, X, XII;

(2) ASME PVHO-1 ((2002-2003)) 2007 Safety Standard for Pressure Vessels for Human Occupancy; and

(3) ASME CSD-1 2004 edition with addenda (as referenced in WAC 296-104-302); and

(4) NFPA 85 Boiler and Combustion Systems Hazards Code 2004 edition (for use with boilers with fuel input ratings of 12, 500,000 BTU/hr) or greater; and

(5) Standards of construction approved by the chief inspector and meeting the National Board Criteria for Registration of Boilers, Pressure Vessels and Other Pressure Retaining Items.

These codes and standards may be used on or after the date of issue and become mandatory twelve months after adoption by the board as specified in RCW 70.79.050(2). ASME Code Cases may be approved for use when accepted by the chief inspector. The board recognizes that the ASME Code states that new editions of the code become mandatory on issue and that subsequent addenda become mandatory six months after the date of issue. For nuclear systems, components and parts the time period for addenda becoming mandatory is defined in the Code of Federal Regulations.

AMENDATORY SECTION (Amending WSR 97-20-109, filed 9/30/97, effective 10/31/97)

WAC 296-104-330 Installation--What are the relief or safety valve requirements when pressure reducing valves are used? (1) Where pressure reducing valves are used, one or more relief or safety valve(s) and pressure gauge(s) shall be provided on the low pressure side of the reducing valve. The relief or safety valve(s) shall be located as close as possible to the reducing valve. The combined discharge capacity of the relief valves shall be such that the pressure rating of the lower pressure piping or equipment shall not be exceeded in case the reducing valve sticks open. Discharge lines shall comply with WAC ((296-104-310)) 296-104-320.

(2) The use of hand-controlled bypasses around reducing valves is permissible. The bypass shall not be greater in capacity than the reducing valve unless the piping or equipment is adequately protected by a relief valve(s) or meets the requirements of the high pressure system.

WAC 296-104-700 What are the inspection fees--Examination fees--Certificate fees--Expenses? The following fees shall be paid by, or on behalf of, the owner or user upon the completion of the inspection. The inspection fees apply to inspections made by inspectors employed by the state.

Heating boilers:		Internal	External
Cast iron--All sizes		\$((33.00))	\$((26.40))
		<u>34.80</u>	<u>27.80</u>
All other boilers less than 500 sq. ft.		\$((39.60))	\$((26.40))
		<u>27.80</u>	<u>27.80</u>
500 sq. ft. to 2500 sq. ft.		\$((65.80))	\$((33.00))
		<u>69.40</u>	<u>34.80</u>
Each additional 2500 sq. ft. of total heating surface, or any portion thereof		\$((26.40))	\$((13.00))
		<u>27.80</u>	<u>13.70</u>
Power boilers:		Internal	External
Less than 100 sq. ft.		\$((33.00))	\$((26.40))
		<u>34.80</u>	<u>27.80</u>
100 sq. ft. to less than 500 sq. ft.		\$((39.90))	\$((26.40))
		<u>42.10</u>	<u>27.80</u>
500 sq. ft. to 2500 sq. ft.		\$((65.80))	\$((33.00))
		<u>69.40</u>	<u>34.80</u>
Each additional 2500 sq. ft. of total heating surface, or any portion thereof		\$((26.40))	\$((13.00))
		<u>27.80</u>	<u>13.70</u>
Pressure vessels:			
Automatic utility hot water supply heaters per RCW 70.79.090			\$((6.20)) <u>6.50</u>
All other pressure vessels:			
Square feet shall be determined by multiplying the length of the shell by its diameter.			
		Internal	External
Less than 15 sq. ft.		\$((26.40))	\$((19.70))
		<u>27.80</u>	<u>20.70</u>
15 sq. ft. to less than 50 sq. ft.		\$((39.20))	\$((19.70))
		<u>41.30</u>	<u>20.70</u>
50 sq. ft. to 100 sq. ft.		\$((45.60))	\$((26.40))
		<u>48.10</u>	<u>27.80</u>
For each additional 100 sq. ft. or any portion thereof		\$((45.60))	\$((13.00))
		<u>48.10</u>	<u>13.70</u>

Certificate of inspection fees: For objects inspected, the certificate of inspection fee is ~~\$((19.70))~~ 20.00 per object.

Boiler and pressure vessel
installation/reinstallation permit
(excludes inspection and certificate
of inspection fee) \$50.00

Nonnuclear shop inspections, field construction inspections,
and special inspection services:

For each hour or part of an
hour up to 8 hours \$((~~39.90~~)) 42.10

For each hour or part of an
hour in excess of 8
hours \$((~~59.60~~)) 62.80

Nuclear shop inspections, nuclear field construction
inspections, and nuclear triennial shop survey and audit:

For each hour or part of an
hour up to 8 hours \$((~~59.60~~)) 62.80

For each hour or part of an
hour in excess of 8
hours \$((~~93.10~~)) 98.20

Nonnuclear triennial shop survey and audit:

When state is authorized inspection agency:

For each hour or part of an
hour up to 8 hours \$((~~39.90~~)) 42.10

For each hour or part of an
hour in excess of 8
hours \$((~~59.60~~)) 62.80

When insurance company is authorized inspection
agency:

For each hour or part of an
hour up to 8 hours \$((~~59.60~~)) 62.80

For each hour or part of an
hour in excess of 8
hours \$((~~93.10~~)) 98.20

Examination fee: A fee of \$((~~73.70~~)) 77.70 will be charged
for each applicant sitting for an inspection examination(s).

Special inspector commission: An initial fee of \$((~~25~~)) 26.30
and an annual renewal fee of \$((~~10~~)) 10.50 along with an annual
work card fee of \$((~~15~~)) 15.80.

Expenses shall include:

Travel time and mileage: The department shall charge for its
inspectors' travel time from their offices to the inspection
sites and return. The travel time shall be charged for at the
same rate as that for the inspection, audit, or survey. The
department shall also charge the current Washington office of
financial management accepted mileage cost fees or the actual
cost of purchased transportation. Hotel and meals: Actual
cost not to exceed the office of financial management approved
rate.

Requests for Washington state specials and extensions of inspection frequency: For each vessel to be considered by the board, a fee of \$((~~370.10~~) 390.50) must be paid to the department before the board meets to consider the vessel. The board may, at its discretion, prorate the fee when a number of vessels that are essentially the same are to be considered.