

Below are the specific changes to Comm 41 and comments. If you have questions please feel free to call me.

### Summary of changes to the rules.

Chapter Comm 41 currently contains the minimum safety standards for the design, construction, installation, operation, inspection, testing, maintenance, repair and alteration of boilers and pressure vessels installed in public buildings and at places of employment. The proposed revisions to chapter Comm 41 is to bring the state boiler and pressure vessel code up to date with current technology, national standards and clarify existing rules. The proposed revision in chapter Comm 45, Mechanical Refrigeration clarifies the requirement for mechanical relief valve discharge piping. The following is a summary of the major proposed changes to these chapters:

a. Modify the scope of chapter Comm 41 to include equipment covered by this code and installed at one-or 2-family dwelling units and include a cross-reference to Comm 41 from the Uniform Dwelling Code. [Comm 23.04 (4), 41.02 (1), 41.16(1) (b) 2., 41.16 (3) (b), 41.18 (l) (o), and 41.24 (1) (b)]

This will require all boiler installations, including solid fuel-fired Burning appliances (better known as Wood Burning Boilers) to be installed per Comm 41.

b. Definition for solid fuel-fired water heating appliance: Solid fuel-fired water-heating appliances to include any equipment that heats water by burning solid fuels for the purpose of providing space or process heating.

The rules will also permit a manually fired solid-fuel feed system to be converted to an automatic feed system. [Comm 41.04 (38) and 41.49]

#### Additional definitions added

**Comm 41.04 (10)** "Dwelling" has the meaning given in s. 101.61 (1), Stats.

**Note:** Under 101.61, (1) Stats., "dwelling" means any building that contains one or 2 dwelling units.

"Dwelling unit" means a structure or that part of a structure which is used or intended to be used as a home, residence or sleeping place by one person or by 2 or more persons maintaining a common household, to the exclusion of all others.

**Comm 41.04 (15)** "Hot water heating boiler" means a boiler in which no steam is generated, from which hot water is circulated for heating or process purposes and then returned to the boiler, and which operates at a pressure not exceeding 160 psig or a temperature of 250° F at or near the boiler outlet.

**Comm 41.04 (39)** "Solid fuel-fired water-heating appliance" means atmospherically vented equipment used to heat water by burning solid fuels for the purpose of providing space or process heat. (This definition replaces the old Wood Burning Boiler definition)

Adopt by reference the most current edition of the national standards relating to boilers and pressure vessels and include correct cross-references to these standards. [Comm 41.10 (2), Comm 41.91 (1) and Comm 41.92 (2) (a)]

#### Adoption of the new ASME Codes;

**Comm 41.10 (2)** (a) 1. ASME Boiler and Pressure Vessel Code, 2007 edition, Section I-Power Boilers, Section II-Material Specifications, Section III-Nuclear Power Plant Components, Section IV-Heating Boilers, Section V-Nondestructive Examination, Section VIII, Division 1 and 2-

Pressure Vessels, Section IX-Welding and Brazing Qualifications, Section X Fiber-Reinforced Plastic Pressure Vessel, Section XI-In-service Inspection of Nuclear Power Plant Components.

**Note:** ASME section VI, Recommended Rules for the Care and Operation of Heating Boilers and ASME VII, Recommended Guidelines for the Care of Power Boilers may be used as a reference guide.

2. Power Piping, ANSI/ASME B31.1 – 2007.

(b) (NBIC), ANSI/NB-23, Part 2 section 2.5.8 and section 6-Supplement 2, and Part 3, 2007 edition.

(c) API 510, 9th edition, June 2006.

d. Updated the department contact information in several informational notes.

[Comm 41.05 Note 2, Comm 41.16 (1) (a) Note, Comm 41.23 (2) (a), Comm 41.41 (2) (a) Note, and Comm 41.48 Note]

**Comm 41.16 (1)** (b) 2. Initial inspections for boilers and pressure vessels installed at one- and 2-family dwellings shall be performed by the municipality in accordance with local ordinances or by the registered Uniform Dwelling Code (UDC) inspection agency administering and enforcing the UDC. This covers the Installation of Boilers inside dwelling and Solid Fuel-Fired Burning appliances exterior of the dwellings

**Comm 41.16 (2)** (c) The installer shall notify the certified inspector prior to the start of construction of the power piping system so that inspections may be arranged. The certified inspector shall be given a minimum of 5 business days notice to arrange for inspection. (This was changed from 2 day to 5 day notification) Include requirements that a piping installer must notify the certified inspector before starting construction of a power piping system and give the inspector a minimum of 5 business days notice to schedule the inspection. [Comm 41.16 (2) (c) and 41.41 (2) (c)]

**Comm 41.16 (2)** (e) Prefabricated piping that is part of a power piping system shall be inspected by a certified inspector or an active National Board commissioned inspector for out-of state manufacturers at the fabrication shop. The shop fabricator shall provide a copy of the certified inspector's report or a copy of the completed department form SBD-5204 to the installer at the job site verifying that the prefabricated piping complies with ASNI/ASME B31.1. The owner or installer shall provide design calculations of the prefabricated piping if requested by an inspector. (Added new languages to allow out of state piping manufacturers to use a National Board Commissioned Inspectors vise a Certified Wisconsin Inspector. We also added language for design calculations shall be made available upon request to inspector.)

**Comm 41.17 (4)** INSPECTION OF SAFETY VALVES AND SAFETY RELIEF VALVES.

The certified inspectors shall determine that safety valves and safety relief valves have been operated or tested at least once every 12 months or an owner or user may provide proof that testing is in compliance with the NBIC Part 2 section 2.5.8 relating to testing of safety relief valves. (We have included a provision to allow the owner/user some alternatives for testing of relief valves and safety relief valves per the NBIC Part 2 section 2.5.8. We also removed satisfy themselves and added shall determine by the inspector)

**Comm 41.18 (1)** EXEMPTED EQUIPMENT. Except as provided in sub. (2), periodic inspections are not required for any of the following:

(L) Air receivers having a volume of less than 90 gallons and a working pressure less than 200 psig as stamped on the manufacturer's nameplate.

**Note:** Ninety gallons equals 12.033 cubic feet.

(o) Installations at one- or 2-family dwelling units.

(Removed 12 cu ft and changed to gallons and less than 200 Psig, also added a note what 90 gallons = to cu.ft. We added a new exemption for inspections at one- or 2-family dwelling units.)

**Comm 41.24 (1) RESPONSIBILITY.** (a) *Owner or user.* 1. Except as specified in subd. 2., the owner or user of the boiler or pressure vessel shall be responsible for obtaining and maintaining a valid permit to operate.

2. An owner of a boiler or pressure vessel installed at a one- or 2-family dwelling unit is not required to apply for a permit to operate as specified in this section.

(Added a exemption for a permit and posting requirements for one- or 2-family dwellings)

**Comm 41.28 (3) INSTALLATION LOCATION.** (a) Except as specified in par. (b), boilers and pressure vessels shall be installed in accordance with the manufacturer's installation specifications:

(b) Clearances shall be maintained around boilers, generators, heaters, tanks and related equipment and appliances to permit inspection, servicing, repair, replacement and visibility of all gauges.

(Clarified the clearance requirements for inspection of units)

**Comm 41.29 (2) PRESSURE AND TEMPERATURE CONTROLS.** (a) *Boilers installed prior to 1957.* Boilers installed prior to January 1, 1957 shall have at least one pressure control for steam boilers or one temperature control for hot water boilers or organic fluid heat transfer systems. Compliance with par. (b) is optional for boilers installed prior to January 1, 1957.

(b) **Boilers installed on or after January 1, 1957** shall comply with s. Comm 41.42 and with all of the following:

1. 'Pressure controls.' a. Each automatically-fired steam boiler or system of commonly connected steam boilers shall have at least one steam pressure control device that will shut off the fuel supply to each boiler or system of commonly connected boilers when the steam pressure reaches a preset maximum operating pressure.

b. Each individual automatically-fired steam boiler shall have a high steam pressure limit control that will prevent generation of steam pressure in excess of the maximum allowable working pressure.

c. Each limit control and operating control shall be clearly separated, and have its own sensing element and operating switch.

d. No shut-off valve of any type may be placed in the steam pressure connection between the boiler and high pressure limit control device.

2. 'Temperature controls.' a. Each automatically-fired hot water heating boiler shall have at least one water temperature-actuated control to shut off the fuel supply when the system boiler water reaches a preset operating temperature.

b. Each system of commonly connected automatically-fired hot water heating boilers shall have at least one temperature-actuated control to shut off the fuel supply to all units when the system boiler water reaches a preset operating temperature.

c. Each individual automatically-fired hot water heating boiler unit shall have a high temperature limit control that prevents the boiler water temperature from exceeding the maximum allowable temperature of the boiler.

d. Each limit control and operating control shall be clearly separated, and shall have its own sensing element and operating switch.

(Clarify the requirements relating to temperature controls for automatically-fired hot water boilers or a system of commonly connected hot water heating boilers. [Comm 41.29 (2) (b)]...If installations are new then ASME Section IV shall apply.)

**Comm 41.37 (3) MODIFICATION OF BOILER BURNER ASSEMBLY.** Any modification to or installation of a boiler burner assembly may not exceed the original stamping of the boiler rated output capacity.

**Note:** See s. Comm 41.38 for department reporting requirements for modifications to fuel conversions or increase in heat input

(New addition to Comm 41.37(3) contractors will be required to report modifications of Boiler Burner Assembly on SBD-6314. The form has been updated and is available on the web.)  
<http://commerce.wi.gov/SB/SB-DivForms.html#Boilers>

**Comm 41.42 (2)** (a) Except as provided in par. (b), all boilers and pressure vessels shall be constructed and installed in accordance with the ASME code or the Canadian standard, CSA B51, and shall have the manufacturer's data report registered with the National Board and shall bear a National Board number. Copies of the registration shall be provided to the department when requested.

(b) Cast iron sectional boilers and cast aluminum boilers stamped "H" and pressure vessels stamped "UM" are exempt from National Board registration.

(Changed the wording to require "all" boilers and pressure vessels "Shall Be" constructed to ASME and now will allow construction to CSA B51, Canadian Standard and register with National Board. Also, Cast Aluminum boilers are exempt from National Board registration requirements.)

**Comm 41.49 Solid fuel-fired water-heating appliances. (1) GENERAL.** This section applies to solid fuel-fired water-heating appliances that are not constructed and installed in accordance with the ASME code.

**(2) DESIGN** (a) A solid fuel-fired water-heating appliance shall be constructed with self contained weather proofing or other weather protection acceptable to the department.

(b) A solid fuel-fired water-heating appliance shall be listed by a nationally recognized testing laboratory acceptable to the department. **Note:** Examples of acceptable testing laboratories include, but are not limited to, Underwriters' Laboratory (UL) and Factory Mutual (FM).

(c) A solid fuel-fired water-heating appliance shall be designed and constructed for operation at atmospheric pressure and shall be properly vented to prevent a positive pressure condition.

**(3) INSTALLATION.** (a) A solid fuel-fired water-heating appliance shall be located away from other normally occupied structures in accordance with the manufacturer's recommendation. If provided, a canopy shall be open on all sides, constructed of substantially non flammable materials and shall not fully cover the unit.

(b) A solid fuel-fired water-heating appliance shall be enclosed by fencing or other barriers to prevent access and tampering by unauthorized persons.

(c) Automatically fuel-fired water-heating appliance shall use a fuel feed system designed or approved by the unit manufacturer.

(d) The installation of a solid fuel-fired water-heating appliance shall be provided with means to prevent freezing of the supply and return lines.

**(4) REPAIRS.** Repairs to the boiler shall be made in accordance with the manufacturer's recommendation.

[\(This section was changed from Wood - Burning Boilers to Solid Fuel-Heating Heating Appliances and requires only to be installed out doors and allows for manually fired solid-fuel feed system to be converted to an automatic feed system\)](#)

### **Nuclear Boiler Plants**

**Comm 41.56 Welded repairs and alterations. (1) GENERAL.** Except as specified in sub. (2), the owner or the owner's agent shall furnish the department, within 90 calendar days of a refueling outage, a record of all repairs and alterations in accordance with ASME section XI, NIS-2, or the National Board Inspection Code, R-1, R-2, NR-1, as applicable, when any ASME stamped component within the scope of ASME code, section XI is repaired by welding. If used, the National Board "R" or "NR" forms shall be registered with the National Board in accordance with the National Board Inspection Code requirements.

**(2) ALTERNATE REPORTING FORMS.** An owner may use the alternate forms OAR-1 and NIS-2A as described under the ASME section XI, Code Case N-532, to record all repairs and alterations.

**Note:** Copies of the National Board forms are available from the National Board. See s. Comm 41.10 for the National Board address and contact information.

[\(Comm 41.56 was changed to allow alternate reporting forms for the Nuclear Industry and per the code case\)](#)

**Comm 41.91 General Inspection requirements. (1)** Historical boilers shall be inspected in accordance with the requirements of NBIC ANSI/NB-23, Appendix C Part 2 section 6-Supplement 2, Historical Boilers.

**Comm 41.92 Testing and maintenance. (1) TESTING.** (a) 1. Except as specified in subd. 2., historical boilers complying with any of the following are exempt from the required ultrasonic testing and calculation requirements:

- a. Historical boilers bearing an ASME "S" stamp.
- b. Historical boilers complying with the Wisconsin special vessel requirements specified under s. Comm 41.43.

2. A certified inspector may require ultrasonic testing and calculations for any historical boiler based on conditions observed during visual or hydrostatic examination.

(b) The owner or user of a historical boiler shall maintain the initial and subsequent ultrasonic thickness test grid map and pressure calculations in the permanent boiler records to verify fitness for service and to be used as a reference for future repair analysis.

(c) Historical boilers shall comply with s. Comm 41.30 (1) (c).

(A new note was added...to describe the NBIC form C-1)

(Note)

The owner or user may use the NBIC Form C-1: Initial Boiler Certification Report. The form is available at no charge from the department at the Safety and Buildings Division, P.O. Box 2509, Madison, WI 53701, telephone 608/261-7730, or on the Internet at [www.commerce.wi.gov/SB](http://www.commerce.wi.gov/SB).

**Comm 41.92 (2) (e)** Upon satisfactory inspection, the owner or user of the out-of-state historical boiler shall obtain a valid permit to operate and post the permit as required in s. Comm 41.91(3) prior to operation.

(Eliminate the testing and maintenance requirements for historical boilers since the national standard that includes these requirements will be adopted by reference. [Comm 41.92] We will be using the NBIC, ANSI/NB- 23, Part 2, section 6-Supplement 2, Historical Boilers)

**\*\*\*\*Mechanical Refrigeration...this is only for Wisconsin State employed Boiler Inspectors and State Contractor Inspectors**

**Comm 45.31 (4) (b)** This is a department rule in addition to the requirements in ASHRAE 15 section 9.1: All mechanical refrigeration safety relief valve piping shall be of noncombustible or self-extinguishing material and shall be compatible with the refrigerant used.

(Clarify that mechanical refrigeration relief valve discharge piping must be compatible with the refrigerant used. [Comm 45.31 (4) (b)])

This concludes the changes for Comm 41. Please look at the adopted ASME codes for these changes, as I mentioned above Comm 41 will have the current excerpts from the codes but one should review all adopted standards in their entirety.

If you have any questions please call me or Mike Verhagen.