



State of Wisconsin \ Department of Commerce

# RULES IN FINAL DRAFT FORM

**Rule No.:** Chapters Comm 41 and 45

**Relating to:** Boilers and Pressure Vessels and Mechanical  
Refrigeration

**Clearinghouse Rule No.:** 08-028

The Department of Commerce proposes an order to:

repeal ss. Comm 41.91 (2) and (3), Comm 41.92 (2) and (3);  
renumber ss. Comm 41.04 (10) to (22), Comm 41.04 (26), Comm 41.04 (38), Comm 41.04 (32) to (37), Comm 41.08, Comm 41.16 (1) (b), Comm 41.91 (4) to (6), Comm 41.92 (4), Comm 45.31 (intro.), (a) and (b);

renumber and amend ss. Comm 41.04 (16), Comm 41.92 (2) (a) and (e);  
amend ss. Comm 23.04 (3), Comm 41.01, Comm 41.05 Note 2, Comm 41.10 (2) (a) 1. and 2., (b) and (c), 41.16 (2) (c), Comm 41.16 (2) (e), Comm 41.17 (4), Comm 41.27, Comm 41.38 (3) and (4), Comm 41.42 (2) (a) and (b), Comm 41.91 (title) and (1), Comm 41.92 (2) (a) and (e);

repeal and recreate ss. Comm 41.02 (1), Comm 41.16 (1) (e) and the Note, Comm 41.18 (1), Comm 41.23 (2) (a) Note, Comm 41.24 (1), Comm 41.28 (3) and Note 1, Comm 41.29 (2), Comm 41.38 (1), Comm 41.41 (2) (a) Note, Comm 41.48 Note, Comm 41.49, Comm 41.55 (3) and Note, Comm 41.56, Comm 41.92 (1); and

create ss., Comm 41.03, Comm 41.04 (10), Comm 41.04 (26), Comm 41.04 (32) and (39), Comm 41.08 (2), Comm 41.16 (1) (b) 2., Comm 41.16 (3), Comm 41.38 (1) Note, Comm 41.41 (2) (b) 5., Comm 41.41 (2) (c) and (4) and Comm 45.31 (4) (b), relating to boilers, pressure vessels and mechanical refrigeration and affecting small businesses.

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## ANALYSIS OF PROPOSED RULES

### 1. Statutes Interpreted.

Sections 101.02 (15) (h) to (j) and 101.17, Stats.

### 2. Statutory Authority.

Sections 101.02 (15) (h) to (j) and 101.17, Stats.

### 3. Related Statute or Rule.

Chapters Comm 60 to 66, Wisconsin Commercial Building Code  
Chapters Comm 20 to 25, Wisconsin Uniform Dwelling Code

#### **4. Explanation of Agency Authority.**

Section 101.02 (15) (h) to (j), Stats., grants the Department of Commerce general authority for protecting the health, safety and welfare of the public by establishing reasonable and effective safety standards for the construction, repair and maintenance of public buildings and places of employment. Section 101.17, Stats., indicates that machines and boilers cannot be installed or used in Wisconsin unless they comply with the rules of the department.

#### **5. Summary of Proposed 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 bring the state boiler and pressure vessel code up to date with current technology and nationally recognized standards and clarify existing rules. The proposed revision in chapter 45 clarifies the requirement for mechanical relief discharge piping. The following is a summary of the major proposed changes to this chapter:

- 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)]
- b. Define 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 manual solid-fuel feed system to be converted to an automatic feed system. [Comm 41.04 (38) and 41.49]
- c. 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)]
- d. Update 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]
- e. Clarify the requirements relating to temperature controls for automatically-fired hot water boiler or a system of commonly connected hot water heating boilers. [Comm 41.29 (2) (b)]

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

## **6. Summary of, and Comparison with, Existing or Proposed Federal Regulations.**

An Internet-based search of the *Code of Federal Regulations* (CFR) found the following existing federal regulations relating to the activities to regulated by this rule:

Title 10 CFR Part 50 – Domestic Licensing of Production and Utilization Facilities. This regulation of the Nuclear Regulatory Commission applies to systems and components of boiling and pressurized water-cooled nuclear power reactors. This regulation adopts portions of the ASME Boiler and Pressure Vessel Code.

An Internet-based search of the 2005 through 2008 issues of the *Federal Register* found a final rule published September 29, 2005, concerning Title 10 CFR Part 50, the Nuclear Regulatory Commission (NRC). The rule amends the NRC regulations to incorporate by reference the latest edition of the ASME Boiler and Pressure Vessel Code pertaining to construction and in-service inspection of nuclear power plant components.

## **7. Comparison with Rules in Adjacent States.**

Originating in 1914, the ASME Boiler and Pressure Vessel Code is now adopted in part or in its entirety, by 49 states, numerous municipalities and territories of the United States, and all the provinces of Canada.

An Internet-based search found that all adjacent states adopt by reference various editions and addenda of the ASME Boiler and Pressure Vessel Code. These states also create amendments to the adopted standard similar to Wisconsin’s administrative rules for boilers and pressure vessels.

The following states and their respective departments have adopted and enforced the following ASME code editions:

- a. The Illinois Office of the State Fire Marshal, Division of Boiler and Pressure Vessel Safety regulates the construction, installation, operation, inspection and repair of boilers and pressure vessels throughout the state of Illinois. The Illinois

Boiler and Pressure Vessel Safety Rules and Regulations are similar to the requirements in the Wisconsin Boiler and Pressure Vessel Code, including the Illinois incorporation by reference of the ASME Boiler and Pressure Vessel Code (2001 with 2003 addenda) the National Board Inspection Code (2001 with 2003 addenda) and the API 510 standard (8<sup>th</sup> edition).

- b. The Iowa Department of Workforce Development, Division of Labor Services administers and enforces the Boilers and Unfired Pressure Vessels Chapter of the Iowa Code. That chapter requires new installations of boilers and pressure vessels to be designed, manufactured, installed, inspected and stamped in accordance with the applicable requirements of the ASME Boiler and Pressure Vessel Code (2004 with 2005 addenda).
- c. The Michigan Department of Labor and Economic Growth administers the Michigan Boiler Law and rules. The rules are similar to the Wisconsin rules and establish minimum standards of safety for the use, construction, installation, inspection, alteration and repair of boilers with limited rules for specified pressure vessels. The rules adopt the National Board Inspection Code (2004 with addenda), the ASME Boiler and Pressure Vessel Code (2004 with addenda) and the ASME B31.1 Power Piping standard (2004 with addenda).
- d. The Minnesota Department of Labor and Industry, Division of Boiler Inspection administers rules that address the manufacture, installation, repair, operation, safety and inspection of boilers, pressure vessels and appurtenances. The rules contain provisions for licensing of boiler operations and include minimal requirements for hobby boilers (steam traction engines). The rules are similar to Wisconsin rules and incorporate the most recent editions and addenda of the ASME Boiler and Pressure Vessel Code and the National Board Inspection Code.

## **8. Summary of Factual Data and Analytical Methodologies.**

The primary methodology for updating the Wisconsin Boilers and Pressure Vessels Code, chapter Comm 41 has been a review and assessment of the latest editions of the national model codes that serve as the basis for Wisconsin codes. The department's review and assessment process involved the participation of the Boiler and Pressure Vessel Code Advisory Council. The members of that Council represent the many stakeholders involved in the boilers and pressure vessels industry including manufacturers, inspectors, building contractors, regulators, labor, insurance and the public. A listing of the Boiler and Pressure Vessel Code Advisory Council is provided at the end of this analysis.

The department believes the national model codes reflect current societal values with respect to protecting public health, safety and welfare in the design, construction, use, operation and maintenance of boilers and pressure vessels in commercial and public buildings and places of employment.

The ASME Boiler and Pressure Vessel Code is kept current by the Boiler and Pressure Committee, a volunteer group of more than 950 engineers. The Committee meets regularly to consider requests for interpretations, revision and to develop new rules. In the formulation of its rules and in the establishment of maximum design and operating pressures, the Committee considers technological advances including materials, construction, methods of fabrication, inspection, certification and overpressure protection. More information on the development of these standards may be obtained from the ASME web site at [www.asme.org](http://www.asme.org).

#### **9. Analysis and Supporting Documents Used to Determine Effect on Small Business or in Preparation of Economic Impact Report.**

The department used the Boiler and Pressure Vessel Code Advisory Council to gather and analyze information on potential impacts in complying with both the technical and administrative requirements of the codes. A responsibility of council members is to bring forth concerns that their respective organizations may have with the requirements including economic impact.

In addition to posting rule development and council activities on the department's web site, the department offers an Email subscription service, which is available to all small businesses. This service provides Email notification of council meetings, meeting agendas and council meeting progress reports so small businesses can follow proposed code changes.

Adopting the most current edition of the ASME national standards will not impose a significant impact on small businesses involved in the inspection, maintenance, servicing, and reporting requirements for boilers and pressure vessels.

#### **10. Effect on Small Business.**

The department believes the rules will not increase the effect on small businesses from what the current rules impose on them. An economic impact report is not required pursuant to s. 227.137, Stats.

#### **11. Agency contact person.**

Joe Hertel, Program Manager, [joe.hertel@wi.gov](mailto:joe.hertel@wi.gov), (608) 266-5649.

**12. Public Hearing Comments.**

A public hearing has been scheduled for Wednesday, May 21, 2008. The hearing record on this proposed rulemaking will remain open until June 4, 2008 to permit submittal of written comments from persons who are unable to attend the hearing or who wish to supplement testimony offered at the hearing. Written comments should be submitted to Joe Hertel, at the Department of Commerce, P.O. Box 2689, Madison, WI 53701-2689, or Email at [joe.hertel@wisconsin.gov](mailto:joe.hertel@wisconsin.gov).

**Council Members and Representation**

The proposed rules have been developed with the assistance of the Boiler and Pressure Vessel Code Advisory Council. The members of that citizen advisory Council are as follows:

<u>Name</u>	<u>Representing</u>
William Andrae	Boiler and Pressure Vessel Repairers Association
Joe Bena	Wisconsin Manufacturers and Commerce
Peter Burno	Wisconsin Historical Steam Engine Association
Jay Ehrfurth	Wisconsin Department of Administration
Daniel Hegyi	American Insurance Association
Don Mathes	Wisconsin Boiler Inspectors Association
Michael Mamayek	Mechanical Contractors Association of Wisconsin
Paul Prill	Wisconsin Pipe Trades Association
Randy Pucek	City of Milwaukee

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SECTION 1. Comm 23.04 (3) is amended to read:

**Comm 23.04 (3) BOILERS.** Boilers and solid fuel-fired water-heating appliances that serve a one-or 2-family dwelling, whether located inside or outside the dwelling, shall comply with ch. Comm 41, Boilers and Pressure Vessels, ss. Comm 41.10 and 41.42 through 41.45.

SECTION 2. Comm 41.01 is amended to read:

**Comm. 41.01 Purpose.** ~~Pursuant to s. 101.17, Stats., the~~ The purpose of this chapter is to protect the health, safety and welfare of the public and employees by establishing minimum standards for the design, construction, installation, operation, inspection, testing, maintenance, alteration and repair of boilers and pressure vessels in stalled in all public buildings and places of employment.

SECTION 3. Comm 41.02 (1), excluding the note, is repealed and recreated to read.

**Comm 41.02 (1) BOILERS AND PRESSURE VESSELS.** (a) Except as provided in par. (b), the provisions of this chapter apply to boilers and piping components associated with boilers, and to pressure vessels and power piping in use at places of employment, in public buildings and at one-or 2-family dwellings.

(b) The provisions of subchs. V, VIII and IX shall not apply to one-or 2-family dwellings.

SECTION 4. Comm 41.03 is created to read:

**Comm 41.03 Application. (1) RETROACTIVITY.** A rule of this code does not apply retroactively to boilers and piping components associated with boilers, and to pressure vessels and power piping installed in public buildings, places of employment or one-or 2-family dwellings existing prior to the effective date of the rule unless specifically stated in the administrative rule.

**(2) CONFLICTS.** Where different sections of this chapter specify different requirements, the most restrictive requirement shall govern.

**(3) DEPARTMENT AUTHORITY.** Pursuant to s. 101.02 (1), Stats., the department reserves the right to interpret the requirements in this chapter and in all codes and standards adopted under s. Comm 41.10.

SECTION 5. Comm 41.04 (10) to (22) are renumbered (11) to (23).

SECTION 6. Comm 41.04 (10) is created to read:

**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.

SECTION 7. Comm 41.04 (16) as renumbered is amended to read:

**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.

SECTION 8. Comm 41.04 (26) is renumbered 41.04 (25) :

SECTION 9. Comm 41.04 (26) is created to read:

**Comm 41.04 (26)** “Place of employment” has the meaning given in s. 101.01 (11), Stats.

**Note:** Section 101.01 (11), Stats., “place of employment” includes every place, whether indoors or out or underground and the premises appurtenant thereto where either temporarily or permanently and any industry, trade or business is carried on, or where any process or operation, directly or indirectly related to any industry, trade or business, is carried on, and where any person is, directly or indirectly, employed by another for direct or indirect gain or profit, but does not include any place where persons are employed in private domestic service which does not involve the use of mechanical power or in farming. “Farming” includes those activities specified in s. 102.04 (3), and also includes the transportation of farm products, supplies or equipment directly to the farm by the operator of said farm or employees for the use thereon, if such activities are directly or indirectly for the purpose of producing commodities for market, or as an accessory to such production. When used with relation to building codes “place of employment” does not include an adult family home, as defined in s. 50.01 (1), or, except for the purposes of s. 101.11, a previously constructed building used as a community-based residential facility, as defined in s. 50.01 (g), which serves 20 or fewer residents who are not related to the operator or administrator.

SECTION 10. Comm 41.04 (38) is renumbered 41.04 (40).

SECTION 11. Comm 41.04 (32) to (37) are renumbered 41.04 (33) to (38).

SECTION 12. Comm 41.04 (32) and (39) are created to read:

**Comm 41.04 (32)** “Public building” has the meaning given in s. 101.01 (12), Stats.

**Note:** Under s. 101.01 (12), Stats., “public building” means any structure, including exterior parts of such building, such as a porch, exterior platform or steps providing means of ingress or egress, used in whole or in part as a place of resort, assemblage, lodging, trade, traffic, occupancy, or use by the public or by 3 or more tenants. When used in relation to building codes, “public building” does not include a previously constructed building used as a community-based residential facility as defined in s. 50.01 (1g) which serves 20 or fewer residents who are not related to the operator or administrator or an adult family home, as defined in s. 50.01 (1).

**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.

SECTION 13. Comm 41.05 Note 2 is amended to read:

**Comm 41.05 Note:** ~~Form~~ Department form SBD 9890 is available at no charge from the department at the Safety and Buildings Division, P.O. Box 2509, Madison, WI 53701, telephone ~~608/266-4848~~ 608/267-9706, or on the Internet at [www.commerce.wi.gov/SB](http://www.commerce.wi.gov/SB).

SECTION 14. Comm 41.08 is renumbered 41.08 (1).

SECTION 15. Comm 41.08 (2) is created to read:

**Comm 41.08 (2)** Fees for inspections of solid fuel-fired water-heating appliance performed by the department shall be charged in accordance with s. Comm 2.04.

SECTION 16. Comm 41.10 (2) (a) 1. and 2., (b) and (c) are amended to read:

**Comm 41.10 (2)** (a) 1. ASME Boiler and Pressure Vessel Code, ~~2004~~ 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 – ~~2004~~ 2007.

(b) National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Avenue, Columbus, OH 43229-1183, telephone (614) 888-8320. National Board Inspection Code (NBIC), ANSI/NB-23, Part 2 section 2.5.8 and section 6-Supplement 2, and Part 3, ~~2004~~ 2007 edition.

(c) American Petroleum Institute, 1220 L Street, Northwest, Washington, D.C. 20005, telephone 202/682-8375. Pressure Vessel Inspection Code, API 510, ~~8<sup>th</sup> edition, June 1997 with Addendum 4, August 2003~~ 9<sup>th</sup> edition, June 2006.

SECTION 17. Comm 41.16 (1) (b) is renumbered 41.16 (1) (b) 1.

SECTION 18. Comm 41.16 (1) (b) 2. is created to read:

**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.

SECTION 19. Comm 41.16 (1) (e) and the Note are repealed and recreated read:

**Comm 41.16 (1) (e)** Required initial inspections shall be reported to the department on form SBD-10633 or other approved forms.

**Note:** Copies of department form SBD-10633 are available at no charge from the department at the Safety and Buildings Division, P.O. Box 2509, Madison, WI 53701, telephone 608/267-9706, or on the Internet at [www.commerce.wi.gov/SB](http://www.commerce.wi.gov/SB).

SECTION 20. Comm 41.16 (2) (c) is amended to read:

**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 ~~2~~ 5 business days notice to arrange for inspection.

SECTION 21. Comm 41.16 (2) (e) is amended to read:

**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.

Note: Department form SBD 5204 is available at no charge from the department at the Safety and Buildings Division, P.O. Box 2509, Madison, WI 53701, telephone 608/267-9706, or on the Internet at [www.commerce.wi.gov/SB](http://www.commerce.wi.gov/SB).

SECTION 22. Comm 41.16 (3) is created to read:

**Comm 41.16 (3) INITIAL INSPECTION OF SOLID FUEL-FIRED WATER-HEATING APPLIANCES.** (a) Except as specified in par. (b), the installation of a solid fuel-fired water-heating appliance shall be inspected by the department for compliance with this section before the appliance is placed in operation.

(b) Installation inspections of solid fuel-fired water-heating appliances at one- and 2-family dwellings shall be performed by the municipality in accordance with local ordinances or by a registered UDC inspection agency administering and enforcing the UDC.

SECTION 23. Comm 41.17 (4) is amended to read:

**Comm 41.17 (4) INSPECTION OF SAFETY VALVES AND SAFETY RELIEF VALVES.** The certified inspectors shall ~~satisfy themselves~~ 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.

SECTION 24. Comm 41.18 (1) is repealed and recreated to read:

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

(a) Boilers or pressure vessels which receive regular inspections by United States government inspectors.

(b) Heating boilers located in private residences or in apartment buildings having less than 3 living units.

(c) Expansion tanks for hot water heating boilers.

(d) Boilers used exclusively for agricultural purposes.

(e) Pressure vessels having an inside diameter not exceeding 6 inches with no limit on pressure.

(f) Pressure vessels having a volume of less than 5 cubic feet and an operating pressure of less than 250 psig.

(g) Pressure vessels with a volume of less than 1-1/2 cubic feet with no limit on pressure.

(h) Pressure vessels having an internal or external operating pressure of not more than 15 psig with no limitation on size.

(i) Hot water supply boilers and water heaters, and hot water storage tanks in which the temperature does not exceed 210° F.

(j) Vessels used for the storage or processing of cold water, including those with air cushions.

(k) Pressure vessels which are used in accordance with the regulations of the United States department of transportation.

(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.

(m) Pressure vessels used in processing and storing of fermented beverages at temperatures not exceeding 140° F.

(n) Any pressure vessel used as an integral part of an electrical circuit breaker.

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

SECTION 25. Comm 41.23 (2) (a) Note is repealed and recreated to read:

**Comm 41.23 (2) (a) Note:** Copies of department form SBD-10633 are available at no charge from the department at the Safety and Buildings Division, P.O. Box 2509, Madison, WI 53701, telephone 608/267-9706, or on the Internet at [www.commerce.wi.gov/SB](http://www.commerce.wi.gov/SB).

SECTION 26. Comm 41.24 (1) is repealed and recreated to read:

**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.

(b) *Posting.* The permit to operate shall be posted near the boiler or pressure vessel by the owner or user of the boiler or pressure vessel.

SECTION 27. Comm 41.27 is amended to read:

**Comm 41.27 Application.** ~~The~~ Except as specified under s. Comm 41.29 (2), the provisions of ss. Comm 41.27 to 41.39 shall apply to all boilers and pressure vessels existing prior to, or installed after March 1, 1988.

SECTION 28. Comm 41.28 (3) and Note 1 are repealed and recreated to read:

**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.

**Note:** The Wisconsin Commercial Building Code (WCBC) chapters Comm 60 to 66 may have other requirements relating to the installation, alteration or repair of a boiler or pressure vessel, such as requirements relating to enclosures, location, safety controls, combustion air, and venting. The *International Mechanical Code*<sup>®</sup> (IMC) as adopted by reference under the WCBC contains requirements relating to hydronic piping.

SECTION 29. Comm 41.29 (2) is repealed and recreated to read:

**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.* 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.

SECTION 30. Comm 41.38 (1) is repealed and recreated to read:

**Comm 41.38 (1) ACCIDENTS.** Whenever a boiler or pressure vessel fails and causes injury to any person, the owner or user shall do all of the following:

(a) Notify the department during normal business hours or notify the state division of emergency management during non-business hours within 24 hours of the accident.

**Note:** The department may be contacted at (608) 266-7548 during normal business hours (7:45 am to 4:30 pm) or the state division of emergency management may be contacted at (800) 943-0003 during non-business hours.

(b) Shall not remove or disturb the boiler or pressure vessel or any of its parts and shall not permit any such removal or disturbance prior to receiving authorization from the department, except for the purpose of saving human life or further property damage.

SECTION 31. Comm 41.37 (3) is created to read:

**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.

SECTION 32. Comm 41.38 (3) and (4) are amended to read:

**Comm 41.38 (3) FUEL CONVERSIONS.** The owner or user shall report to the department conversions of ~~boilers~~ the boiler's primary fuels to other fuels and shall use department form SBD-6314 for this notification.

(4) HEAT INPUT. The owner or user shall report to the department any modification that increases the heat input capacity of the boiler and shall use department form SBD- 6314 for this notification.

**Note:** Department form SBD 6314 is available at no charge from the department at the Safety and Buildings Division, P.O. Box 2509, Madison, WI 53701, telephone 608/267-9706, or on the Internet at [www.commerce.wi.gov/SB](http://www.commerce.wi.gov/SB).

SECTION 33. Comm 41.41 (2) (a) Note is repealed and recreated to read:

**Comm 41.41 (2) (a) Note:** Copies of department form SBD-5204 are available at no charge from the department at the Safety and Buildings Division, P.O. Box 2509, Madison, WI 53701, telephone 608/267-9706, or on the Internet at [www.commerce.wi.gov/SB](http://www.commerce.wi.gov/SB).

SECTION 34. Comm 41.41 (2) (b) 5. is created to read:

**Comm 41.41 (2) (b) 5.** Installations at one-or 2-family dwellings.

SECTION 35. Comm 41.41 (2) (c) and (4) are created to read:

**Comm 41.41 (2) (c)** The piping installer shall notify the certified inspector prior to the start of construction of the power piping system to schedule an inspection. The certified inspector shall be given a minimum of 5 business days notice to arrange for an inspection.

**Comm 41.41 (4) INSTALLATION REGISTRATION FOR SOLID FUEL-FIRED WATER-HEATING APPLIANCES.** (a) Except as specified in par. (b), the installer of a solid fuel-fired water-heating appliance shall register the unit with the department and shall use department form SBD-6314 for the registration.

(b) Registration of a solid fuel-fired water-heating appliance installed at a one- and 2-family dwelling is not required.

**Note:** Copies of form SBD-6314 are available at no charge from the department at the Safety and Buildings Division, P.O. Box 2509, Madison, WI 53701, telephone 608/267-9706, or on the Internet at [www.commerce.wi.gov/SB](http://www.commerce.wi.gov/SB).

SECTION 36. Comm 41.42 (2) (a) and (b) are amended to read:

**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.

SECTION 37. Comm 41.48 Note is repealed and recreated to read:

**Comm 41.48 Note:** Copies of department form SBD-6314 are available at no charge from the department at the Safety and Buildings Division, P.O. Box 2509, Madison, WI 53701, telephone 608/267-9706, or on the Internet at [www.commerce.wi.gov/SB](http://www.commerce.wi.gov/SB).

SECTION 38. Comm 41.49 is repealed and recreated to read:

**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.

(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.

SECTION 39. Comm 41.55 (3) including the note is repealed and recreated to read:

**Comm 41.55 (3) IN-SERVICE INSPECTION REPORT.** (a) *General requirements.* Except as specified in par. (b), within 90 calendar days after each refueling outage, the owner or user shall submit to the department a copy of form NIS-1, owner's data report for in-service inspection, describing the inspections performed under section XI of the ASME code.

(b) *Alternate reporting form.* An owner may use the alternate forms described under the ASME section XI, Code Case N-532, to report in-service inspection activity. The alternate forms include the Owner's Activity Report (OAR) -1 and the Nuclear In-service Summary (NIS)-2A.

**Note:** Forms NIS-1, OAR-1 and NIS-2A are available from the American Society of Mechanical Engineers (ASME). See s. Comm 41.10 for ASME address and contact information.

SECTION 40. Comm 41.56 is repealed and recreated to read:

**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.

SECTION 41. Comm 41.91 (title ) and (1) are amended to read:

**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.

SECTION 42. Comm 41.91 (2) and (3) and are repealed.

SECTION 43. Comm 41.91 (4) to (6) are renumbered 41.91 (2) to (4).

SECTION 44. Comm 41.92 (1) is repealed and recreated to read:

**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).

**Note:** The owner or user may use the department form SBD-10759, Hobby Boiler Inspection Checklist that includes equations, formulae and nomenclature for calculations. 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).

SECTION 45. Comm 41.92 (2) and (3) are repealed.

SECTION 46. Comm 41.92 (4) is renumbered 41.92 (2).

SECTION 47. Comm 41.92 (2) (a) and (e), as renumbered, are amended to read.

**Comm 41.92 (2)** (a) The owner or user of an out-of-state historical boiler shall provide ultrasonic thickness test and pressure calculation documentation in accordance with ANSI/NB-23, ~~Appendix C 4000~~ Part 2, section 6-Supplement 2, Historical Boilers.

**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 ~~(5)~~ (3) prior to operation.

SECTION 48. Comm 45.31 (4) (intro.) (a) and (b) are renumbered 45.31 (4) (a) 1. and 2.

SECTION 49. Comm 45.31 (4) (b) is created to read:

**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 non-combustible or self-extinguishing material and shall be compatible with the refrigerant used.

**END**

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**EFFECTIVE DATE**

Pursuant to s. 227.22 (2) (intro.), Stats., these rules shall take effect on the first day of the month following publication in the Wisconsin Administrative Register.

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*File ref: boilers/Adoption Rules*