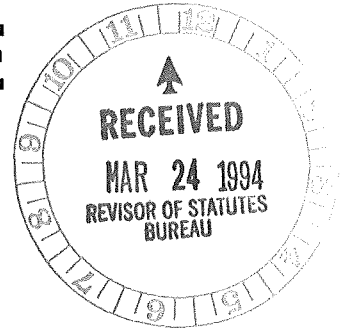


CR 93-205

RULES CERTIFICATE



STATE OF WISCONSIN)
) SS
DEPT. OF INDUSTRY,)
LABOR & HUMAN RELATIONS)

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, Carol Skornicka, Secretary of the Department of Industry,

Labor and Human Relations, and custodian of the official records of said department, do hereby certify that the annexed rule(s) relating to boilers and pressure vessels

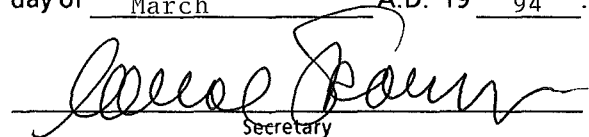
(Subject)

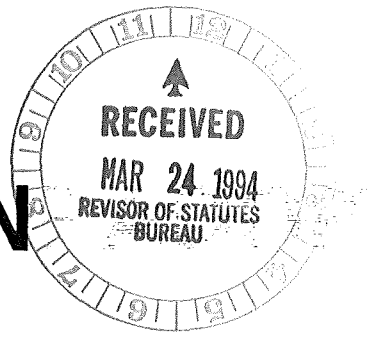
were duly approved and adopted by this department on March 24, 1994.

(Date)

I further certify that said copy has been compared by me with the original on file in the department and that the same is a true copy thereof, and of the whole of such original.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the official seal of the department at 8:00 a.m. in the city of Madison, this 24th day of March A.D. 19 94.


Secretary



ORDER OF ADOPTION

Pursuant to authority vested in the Department of Industry, Labor and Human Relations by section(s)

101.02 (1) and (15)(h) to (j) and 101.17

Stats., the Department of Industry, Labor and Human Relations creates; amends;

repeals and recreates; repeals and adopts rules of Wisconsin Administrative Code chapter(s):

ILHR 41-42 Boiler and Pressure Vessel
(Number) (Title)

The attached rules shall take effect on the first day of the month following publication
in the Wisconsin Administrative Register pursuant to section 227.22, Stats.

Adopted at Madison, Wisconsin this

date: March 24, 1994

DEPARTMENT OF INDUSTRY, LABOR AND HUMAN
RELATIONS

[Signature]
Secretary



RULES in FINAL DRAFT FORM

Rule No.: Chapters ILHR 41-42

Relating to: Boilers and Pressure Vessels

Clearinghouse Rule No.: 93-205

The Wisconsin Department of Industry, Labor and Human Relations proposes an order to amend ILHR 41.04 (29), ILHR Table 41.10, ILHR 41.16 (2)(d), ILHR 41.17 (5), ILHR 41.33 (title) and (intro.), ILHR 41.33 (1) (title) and (intro.), ILHR 41.33 (2), ILHR 41.48 and ILHR 42.51 (1); and to repeal and recreate ILHR 41.16 (2)(e) and ILHR 41.33 (1)(a) and (b), relating to boilers and pressure vessels.

* * * * *

Analysis of Proposed Rules

Statutory Authority: ss. 101.02 (1) and (15)(h) to (j) and 101.17, Stats.
Statutes Interpreted: s. 101.17, Stats.

The Division of Safety and Buildings within the Department of Industry, Labor and Human Relations is responsible for adopting and enforcing administrative rules relative to the protection of the life, health, safety and welfare of employees and frequenters of public buildings and places of employment. The rules of chapters ILHR 41-42 contain safety and health requirements relating to the design, construction, installation, operation and inspection of boilers and pressure vessels.

The proposed rules consist of miscellaneous changes in chapters ILHR 41-42 in order to clarify intent and address new products and technology. Under the proposed rules, the definition of "power piping" is revised by including piping systems that use an organic thermal fluid as a heat transfer media. The rules relating to power piping inspections are revised by requiring the authorized inspector to sign the installation registration form when the piping system is inspected and approved, and by clarifying that prefabricated piping must receive a shop inspection. The proposed rules also change the extension of periods between inspections from 3 months to 6 months. The rules relating to pressure reducing stations are revised to clarify terminology and provide accurate data to select the proper size safety valve capacity.

In order to keep the Wisconsin boiler and pressure vessel code up-to-date with national standards, the proposed rules include the adoption by reference of the latest editions of the national standards currently incorporated by reference in chapters ILHR 41-42. Approval of the Revisor of Statutes and the Attorney General to incorporate the updated standards has been received, in accordance with section 227.21 of the Wisconsin Statutes.

The department is also updating the material in the Appendix of chapters ILHR 41-42, but the proposed rules do not include those changes. In Appendix A, form SBD-5204 is being revised. In Appendix B, the excerpts from the ASME Boiler and Pressure Vessel Code and the ANSI Power Piping Code are being updated to the 1992 editions.

* * * * *

SECTION 1. ILHR 41.04 (29) is amended to read:

ILHR 41.04 (29) "Power piping" means any steam piping system beyond the scope of ASME code section I and having an operating pressure in excess of 15 psig or, any hot water piping system beyond the scope of ASME code section I and subject to temperatures in excess of 250° F, or any piping system using an organic thermal fluid as a heat transfer media and subject to temperatures in excess of 250° F.

SECTION 2. ILHR Table 41.10 is amended to read:

TABLE 41.10

ASME Boiler and Pressure Vessel Code (1989/1992 edition)	
1. Section	I Power Boilers
2. Section	II Material Specifications
	a. Part A - Ferrous Material
	b. Part B - Nonferrous Material
	c. Part C - Welding Rods, Electrodes and Filler Metals
	d. Part D - Properties
3. Section	III Nuclear Power Plant Components, Divisions 1 and 2
	a. Subsection NCA - General Requirements
	Division 1
	a. Subsection NB - Class 1 Components
	b. Subsection NC - Class 2 Components
	c. Subsection ND - Class 3 Components
	d. Subsection NE - Class MC Components
	e. Subsection NF - Component Supports
	f. Subsection NG - Core Support Structures
	g. Appendices
	Division 2
	a. Concrete Reactor Vessels and Containments
4. Section	IV Heating Boilers
5. Section	V Nondestructive Examination
6. Section	VIII Pressure Vessels
	a. Division 1 - Pressure Vessels
	b. Division 2 - Alternative Rules
7. Section	IX Welding and Brazing Qualifications
8. Section	X Fiberglass-Reinforced <u>Fiber-Reinforced</u> Plastic Pressure Vessels
9. Section	XI Rules for Inservice Inspection of Nuclear Power Plant Components, Division 1
ANSI/ASME Standards	
10. Power Piping,	(ANSI/ASME B31.1 - 1986, 1992 edition, including addenda B31.1a---1986, B31.1b---1987 and B31.1c---1988)

SECTION 3. ILHR 41.16 (2)(d) is amended to read:

ILHR 41.16 (2) (d) A power piping inspection shall be made after the piping material is delivered to the job site and prior to the start of construction of the power piping system. The installer shall complete form SBD-5204 and retain it at the job site prior to the power piping inspection. The authorized inspector shall indicate acceptance of the power piping system design by signing form SBD-5204. Power piping systems may not be insulated or placed in service without receiving an inspection.

Note: See Appendix A for a copy of form SBD-5204.

SECTION 4. ILHR 41.16 (2)(e) is repealed and recreated to read:

ILHR 41.16 (2)(e) Prefabricated piping that is part of a power piping system shall be inspected by an authorized inspector at the fabrication shop. The shop fabricator shall provide a copy of the authorized inspector's report to the installer at the job site verifying that the prefabricated piping complies with the ANSI standard for power piping adopted under s. ILHR 41.10.

SECTION 5. ILHR 41.17 (5) is amended to read:

ILHR 41.17 (5) EXTENSION OF PERIOD BETWEEN INSPECTIONS. If operating conditions require, an extension of periods not to exceed 3 6 months between inspections of boilers, pressure vessels, safety valves and safety relief valves may be approved by the department upon written request from the owner or user for an extension. The authorized inspection agency shall concur with the owner's or user's request for extension by letter to the department.

SECTION 6. ILHR 41.33 (title) and (intro.) are amended to read:

ILHR 41.33 (title) PROTECTION OF VESSELS SUPPLIED THROUGH PRESSURE REDUCING STATIONS. The following requirements shall be used for determining the sizes of safety valves on pressure vessels such as, but not limited to pressure cookers, indirect hot water heaters and equipment in heating systems, which are supplied through pressure reducing valves stations from boilers carrying a higher steam pressure. Where a pressure reducing valve station is supplied from a boiler, the capacity of the safety valves on the low pressure side of the system need not exceed the capacity of the boiler.

SECTION 7. ILHR 41.33 (1) (title) and (intro.) are amended to read:

ILHR 41.33 (1) (title) REDUCING STATION CAPACITY. The following formula shall be used to determine the steam flow rate through the pressure-reducing valve station.

$$W = 1/3 \times OC \times VSPA$$

Where W = steam flow in pounds of steam per hour through the pressure reducing valve

OC = orifice capacity in pounds of steam per hour per square inch from Table 41.33-1

$VSPA$ = reducing valve size pipe area in square inches from Table 41.33-2

SECTION 8. ILHR 41.33 (1)(a) and (b) are repealed and recreated to read:

ILHR 41.33 (1)(a) The critical flow capacity data supplied by the safety valve manufacturer may be used in place of the above formula to select the required safety valve capacity. The capacity calculations shall be the largest obtainable by internal trim change of the safety valve.

(b) In using Table 41.33-1, the pressure reducing station inlet pressure is the lowest set pressure of any safety valve on the high pressure side of the pressure reducing station.

SECTION 9. ILHR 41.33 (2) is amended to read:

ILHR 41.33 (2) BYPASS CAPACITY. The following formula shall be used to determine the steam flow rate through the bypass when pressure reducing valves stations are arranged with a valved bypass which also acts as a potential steam source hazard in case the bypass is left open.

$$W = 1/2 \times OC \times BPA$$

Where W = steam flow in pounds of steam per hour through the bypass valve

OC = orifice capacity in pounds of steam per hour per square inch from Table 41.33-1

BPA = bypass pipe area in square inches from Table 41.33-2

SECTION 10. ILHR 41.48 is amended to read:

ILHR 41.48 ORGANIC FLUID HEAT TRANSFER SYSTEMS. Boilers and coil type heaters which utilize organic thermal fluids as a heat transfer media shall be designed, constructed and installed in accordance with the ASME standards adopted under s. ILHR 41.10. Piping for organic thermal fluids used as a heat transfer media and subject to temperatures in excess of 250° F shall be installed in accordance with the ANSI standard for power piping adopted under s. ILHR 41.10.

Note: See s. ILHR 41.16 for inspection requirements.

SECTION 11. ILHR 42.51 (1) is amended to read:

ILHR 42.51 (1) CONSENT TO INCORPORATE. Pursuant to s. 227.21, Stats., the attorney general and the revisor of statutes have consented to the incorporation by reference of the American Petroleum Institute (API) Pressure Vessel Inspection Code, ANSI/API 510-1985 1992.

SECTION 12. Chapters ILHR 41-42 Appendix A form SBD-5204 is replaced with a revised form dated 02/94.

SECTION 13. Chapters ILHR 41-42 Appendix B is replaced in its entirety with excerpts from the 1992 editions of the ASME and ANSI standards.

NOTE TO REVISOR: The updated Appendix material is available from the department.

(END)

* * * * *

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.

* * * * *

CODES6:94

Tommy G. Thompson
Governor

Carol Skornicka
Secretary



Mailing Address:
201 E. Washington Avenue
Post Office Box 7946
Madison, WI 53707-7946
Telephone (608) 266-7552

State of Wisconsin
Department of Industry, Labor and Human Relations

March 24, 1994

Gary Poulson
Assistant Revisor of Statutes
Suite 800
131 W. Wilson St.
Madison, Wisconsin 53703-3233

Douglas LaFollette
Secretary of State
10th Floor
30 West Mifflin Street
Madison, Wisconsin 53703

Dear Messrs. Poulson and LaFollette:

TRANSMITTAL OF RULE ADOPTION

CLEARINGHOUSE RULE NO. 93-205

RULE NO. Chapters ILHR 41-42

RELATING TO: Boilers and Pressure Vessels

Pursuant to section 227.20, Stats., agencies are required to file a certified copy of every rule adopted by the agency with the offices of the Secretary of State and the Revisor of Statutes.

At this time, the following material is being submitted to you:

1. Order of Adoption.
2. Rules Certificate Form.
3. Rules in Final Draft Form.

Pursuant to section 227.114, Stats., a summary of the final regulatory flexibility analysis is included for permanent rules. A fiscal estimate and fiscal estimate worksheet is included with an emergency rule.

Respectfully submitted,

Handwritten signature of Carol Skornicka in cursive.

Carol Skornicka
Secretary