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Chapter SPS 341

BOILERS AND PRESSURE VESSELS

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Note: Chapter ILHR 41 as it existed on February 29, 1988 was repealed and a new chapter ILHR 41 was created effective March 1, 1988. Chapter ILHR 41 was renumbered chapter Comm 41 under s. 13.93 (2m) (b) 1., Stats., and corrections made under s. 13.93 (2m) (b) 6. and 7., Stats., Register, March, 1999, No. 519. Chapter Comm 41 was renumbered chapter SPS 341 under s. 13.92 (4) (b) 1., Stats., Register December 2011 No. 672.

Subchapter I — Scope, Definitions and Administration

SPS 341.01 Purpose. Pursuant to ss. 101.02 (15), 101.17 and 101.63, 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, pressure vessels, power piping and solid-fuel-fired water-heating appliances.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. Register, February, 2000, No. 530, eff. 3-1-00; CR 08-028: am. Register November 2008 No. 635, eff. 12-1-08; CR 11-047: am. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.02 Scope. (1) BOILERS AND PRESSURE VESSELS. (a) Except as provided in par. (b), this chapter applies to boilers and piping components associated with boilers, pressure vessels, power piping, and solid-fuel-fired water-heating appliances in use at places of employment, in public buildings and at one- or 2-family dwellings.

Note: The Wisconsin Commercial Building Code (WCBC), chapters SPS 361 to 366, likewise applies this chapter to the installation, alteration and repair of boilers and pressure vessels in public buildings and places of employment. The WCBC 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*® (IMC) as adopted by reference under the WCBC contains requirements relating to hydronic piping.

Note: Wisconsin Administrative Codes are available at https://docs.legis.wisconsin.gov/code/prefaces/toc. Official copies may be obtained for a nominal fee at the Department of Administration, Document Sales and Distribution, 4622 University Avenue, Madison, Wisconsin 53705-2156, telephone 800-DOC-SALES or Contact Through Relay, or at docsales@doa.state.wi.us.

(b) 1. Subchapters V, VIII and IX do not apply to one- or 2-family dwellings.

2. Only subch. VI applies to a pressure vessel in a mechanical refrigeration system.

Note: Chapter SPS 345 contains additional requirements for pressure vessels in mechanical refrigeration systems.

3. This chapter does not apply to the gas systems that are within the scope of ch. SPS 340.

Note: The gas systems addressed in chapter SPS 340 include pressurized vessels and piping for gases that are used for fueling purposes, such as for heating appliances or engines.

(2) OTHER VESSELS. The provisions of this chapter shall apply to vessels used for the storage and transportation of flammable liquids, liquefied petroleum gas, liquefied natural gas, compressed natural gas, anhydrous ammonia and refrigerants, unless these vessels are covered by other Wisconsin administrative codes or federal codes.

Note: See chapters SPS 310 and 314 for related Departmental requirements for

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storage and transportation of flammable, combustible and hazardous liquids. See chapter SPS 343 for related Departmental requirements for anhydrous ammonia.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. Register, February, 2000, No. 530, eff. 3-1-00; CR 08-028: r. and recr. (1) Register November 2008 No. 635, eff. 12-1-08; CR 10-011: renum. (1) (b) to be (1) (b) 1., cr. (1) (b) 2. Register August 2010 No. 656, eff. 9-1-10; CR 11-047: am. (1) (a), (b) 1., cr. (1) (b) 3. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.03 Application. (1) RETROACTIVITY. (a) The operation, testing, maintenance and inspection requirements of this chapter apply to all boilers, pressure vessels, power piping, solid-fuel-fired water-heating appliances, and their components, that exist on or after June 1, 2012.

(b) A design, construction or installation rule of this chapter, including the applied criteria from the standards adopted in s. SPS 341.10, does not apply retroactively to boilers, pressure vessels, power piping, solid-fuel-fired water-heating appliances, and their components, that were installed prior to the effective date of the rule unless specifically stated in the rule or standard.

(c) The design, construction and installation requirements of this chapter apply to any alterations, repairs, and replacement parts or components for all boilers, pressure vessels, power piping, solid-fuel-fired water-heating appliances, and their components, that exist on or after June 1, 2012.

Note: A proposed alteration for an existing boiler, pressure vessel or power piping may necessitate modifying other components in order to make the proposed alteration comply with this chapter – and some alterations may necessitate modifying other features of a building, such as an automatic fire sprinkler system, that must comply with requirements in chapters SPS 361 to 366, the Wisconsin Commercial Building Code.

(2) DIFFERING RULES. (a) Where any department-written rule in this chapter differs from a requirement within a standard referenced in this chapter, the department-written rule shall govern, except as provided in sub. (3).

(b) Where a provision of this chapter prescribes a general requirement and another provision of this chapter prescribes a specific or more detailed requirement regarding the same subject, the specific or more detailed requirement shall govern, except as provided in par. (a).

(c) Where different sections of this chapter specify conflicting requirements, the most restrictive requirement, as determined by the department, shall govern, except as provided in pars. (a) and (b).

(3) EXCLUSIONS. The department-written rules in this chapter do not nullify any exclusions specified in the standards adopted under s. SPS 341.10.

(4) INTERPRETATIONS. Under s. 101.02 (1), Stats., the department reserves the right to interpret the requirements in this chapter and in all adopted codes and standards.

Note: Section 101.02 (1) of the Statutes reads as follows: "The department shall adopt reasonable and proper rules and regulations relative to the exercise of its powers and authorities and proper rules to govern its proceedings and to regulate the mode and manner of all investigations and hearings."

(5) LOCAL REQUIREMENTS. This chapter does not limit the power of cities, villages and towns to make or enforce additional or more stringent requirements, provided the requirements do not conflict with this chapter, any other rule of the department, or law.

History: CR 08-028: cr. Register November 2008 No. 635, eff. 12-1-08; correction in (3) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: r. and recr. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.04 Definitions. In this chapter:

(1) (a) "Alteration," for a boiler or pressure vessel, has the meaning given in NBIC part 3 section 9.1.

(b) "Alteration," for power piping or a solid-fuel-fired water-heating appliance, means a change that involves an extension or addition to, or involves the arrangement, type or purpose of, an existing installation or component.

(2) "Approved" means acceptable to the department.

Note: The Department will ordinarily accept items approved by a nationally recognized testing laboratory.

(3) "ASME code" means the boiler and pressure vessel code published by the American society of mechanical engineers.

(4) "Authorized agent" means any of the following or their authorized representatives:

(a) A certified inspector who is referred to as enforcing this chapter, in a written contract between an inspection provider and the department.

(b) A first class city that has accepted the responsibility to administer and enforce this chapter.

Note: As of June 1, 2012, only the City of Milwaukee had accepted the responsibility to administer and enforce this chapter.

(5) "Boiler" means a vessel intended for use in heating water or other fluids or for generating steam or other vapors by the application of heat.

(6) "Boiler external piping" means piping that is within the scope of section I of the ASME code and is required by section I to have ASME code symbol stamping.

(7) "Certified inspector" means a person who holds a valid credential issued by the department under ch. SPS 305 as a certified boiler-pressure vessel inspector or a certified in-service field inspector.

(8) "Condemned" means a boiler or pressure vessel declared to be unsafe and that has an applied stamping designating its condemnation.

(9) "Department" means the department of safety and professional services.

(10) "Dwelling" and "dwelling unit" have the meanings given in s. 101.61 (1), Stats.

Note: Under s. 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.

(11) "External inspection" means an inspection made while the boiler or pressure vessel is in operation.

(12) "First class city" means a city established with that class under s. 62.05, Stats.

Note: As of June 1, 2012, only the City of Milwaukee had become a first class city.

(13) "High temperature water boiler" means a boiler completely filled with water intended for operation at pressures in excess of 160 psig or temperatures in excess of 250°F.

(14) "Historical boiler" means a steam boiler that is typically of riveted construction and which is preserved, restored or maintained for hobby or demonstration use.

Note: Steam locomotives, traction engines, hobby boilers and steam cars are examples of historical boilers.

(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.

(16) "Hot-water storage tank" means a tank used to store water that is heated indirectly by a circulating water heater, by steam or hot water circulating through coils, or by other heat exchange methods internal or external to the tank.

(17) "Hot-water supply boiler" means a boiler completely filled with water that furnishes hot water to be used externally to itself at pressures not exceeding 160 psig or at temperatures not exceeding 250°F at or near the boiler outlet.

(18) "Internal inspection" means an inspection made when the boiler or pressure vessel is shut down and handholes and man-

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holes or other inspection openings are opened or removed for inspection of the interior as required by the inspector.

(19) "Low-pressure steam boiler" means a boiler on which the safety valves are set at pressures not exceeding 15 psig.

(20) "Maximum allowable working pressure" means the maximum gage pressure permissible at the top of a completed vessel in its operating position for a designated temperature.

(21) "Miniature boiler" means a power boiler or high temperature water boiler that does not exceed any of the following limits:

(a) Inside shell diameter of 16 inches.

(b) Heating surface of 20 square feet, except for electric boilers.

(c) Gross volume of 5 cubic feet, exclusive of casing and insulation.

(d) Maximum allowable working pressure of 100 psig.

(22) "National Board" means the National Board of Boiler and Pressure Vessel Inspectors.

(23) "NRC" means the United States nuclear regulatory commission.

(24) "Owner or user" means any person, firm or corporation legally responsible for the safe operation of a boiler or pressure vessel, power piping or a solid-fuel-fired water-heating appliance.

(25) "Place of employment" has the meaning given in s. 101.01 (11), Stats.

Note: Under s. 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 (1g), which serves 20 or fewer residents who are not related to the operator or administrator.

(26) "Portable boiler" means an internally fired boiler primarily intended for temporary location and whose construction and usage is of a movable nature.

(27) "Power boiler" means a boiler in which steam or other vapor is generated at a pressure of more than 15 psig.

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

(29) "Pressure vessel" means a container for the containment of pressure, either internal or external. This pressure may be obtained from an external source or by the application of heat from a direct or indirect source, or any combination thereof.

(30) "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).

(31) "Relief valve" means a pressure-actuated valve which is normally held closed by a spring or other means and which is designed to automatically open enough when needed to prevent internal pressure from exceeding a predetermined level.

Note: A relief valve is used primarily for liquid service.

(32) "Repair" means work and materials necessary to restore a boiler, pressure vessel, power piping or solid-fuel-fired water-heating appliance to a safe operating condition.

(33) "Rupture disk" means a nonmechanical overpressure relief device that releases pressure when its preestablished rating is attained.

(34) "Safety relief valve" means an automatic pressure-actuated relieving device suitable for use either as a safety valve or relief valve, depending upon application.

(35) "Safety valve" means an automatic pressure relieving device actuated by the static pressure upstream of the valve and characterized by full-opening pop action.

Note: A safety valve is used for gas or vapor service.

(36) "Secondhand vessel" means a boiler or pressure vessel that has changed location subsequent to the original installation.

(37) "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.

(38) "Uniform dwelling code" or "UDC" means chs. SPS 320 to 325.

(39) "Water heater" means a closed vessel in which water is heated by the combustion of fuels, electricity or other energy source, and withdrawn for use external to the system at pressures not exceeding 160 psig, including the apparatus by which heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210°F.

(40) "Welding" means the melting together of filler metal and base metal, or of base metal only, that results in coalescence.

Note: For further explanation of definitions, see the ASME code section VIII, scope and appendix 3.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. (37), Register, February, 1990, No. 410, eff. 3-1-90; am. (29), Register, May, 1994, No. 461, eff. 6-1-94; r. (4), (17), (23), (25), r. and recr. (7), Register, October, 1996, No. 490, eff. 11-1-96; am. (intro.) and (29), Register, February, 2000, No. 530, eff. 3-1-00; CR 05-025: cr. (13m) Register October 2005 No. 598, eff. 11-1-05; CR 08-028: renum. (10) to (22), (26), and (32) to (38) to be (11) to (23), (25), (33) to (38) and (40) and am. (16), cr. (10), (26), (32) and (39) Register November 2008 No. 635, eff. 12-1-08; correction in (7), (9) made under s. 13.92 (4) (b) 6., 7., Stats., Register December 2011 No. 672; CR 11-047: am. (intro.), renum. (1) to be (1) (a) and am., cr. (1) (b), (4), am. (6) to (8), (10), r. (11), renum. (12) to be (11), cr. (12), renum. (13), (14) to (18) to be (40), (13) to (17) and am. (40), r. (19), renum. (20) to (24) to be (18) to (22) and am. (19), (21), (22), cr. (23), renum. (25) to (29) to be (24) to (28) and am. (24), (28), r. (30), renum. (31) to (39) to be (29) to (37) and am. (29), (31), (32), (37), cr. (38), renum. (40) to be (39) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.05 Petition for variance. The department shall consider and may grant a variance to a provision of this chapter in accordance with ch. SPS 303. The petition for variance shall include, where applicable, a position statement from the fire department having jurisdiction, and from any first class city having jurisdiction to enforce this chapter.

Note: Chapter SPS 303 requires the submittal of a petition for variance form (SBD-9890X) and a fee, and that an equivalency is established in the petition for variance which meets the intent of the rule being petitioned. Chapter SPS 303 also requires the Department to process regular petitions within 30 business days and priority petitions within 10 business days.

Note: The Department forms required in this chapter are available for a nominal fee at telephone 800-DOC-SALE or 411 (Telecommunications Relay), or at docsales@doa.state.wi.us, or at no charge at the Department's Web site at www.dsps.wi.gov through links to Division of Industry Services forms.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; r. and recr. Register, February, 2000, No. 530, eff. 3-1-00; correction made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: am. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.06 Penalties. Penalties for violations of this chapter shall be assessed in accordance with s. 101.02 (12) and (13) (a), Stats.

Note: Section 101.02 (13) (a), Stats., indicates penalties will be assessed against any employer, employee, owner or other person who fails or refuses to perform any duty lawfully enjoined, within the time prescribed by the Department, for which no penalty has been specifically provided, or who fails, neglects or refuses to comply with any lawful order made by the Department, or any judgment or decree made by any court in connection with ss. 101.01 to 101.25, Stats. For each such violation, failure or refusal, such employee, owner or other person must forfeit and pay into the state treasury a sum not less than $10 nor more than $100 for each violation.

Note: Section 101.02 (12), Stats., indicates that every day during which any person, persons, corporation or any officer, agent or employee thereof, fails to observe and comply with an order of the Department will constitute a separate and distinct violation of such order.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. Register, February, 2000, No. 530, eff. 3-1-00; CR 11-047: am. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.07 Appeals. (1) APPEAL OF DEPARTMENT ORDER. Pursuant to s. 101.02 (6) (e), Stats., any person who owns or occupies a property that is affected by an order of the department may petition the department for a hearing on the reasonableness of the order.

(2) APPEAL OF LOCAL ORDER. Pursuant to s. 101.02 (7) (b), Stats., any person affected by a local order that is in conflict with an order of the department may petition the department for a hearing on the local order.

Note: Section 101.01 (8), Stats., defines local order as any ordinance, order, rule or determination of any common council, board of alderpersons, board of trustees or the village board, of any village or city, a regulation or order of the local board of health, as defined in s. 250.01 (3), or an order or direction of any official of a municipality, upon any matter over which the Department has jurisdiction.

(3) PETITION OF ADMINISTRATIVE RULE. Pursuant to s. 227.12, Stats., any municipality, corporation or any 5 or more persons having an interest in an administrative rule may petition the department requesting the adoption, amendment or repeal of that rule.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; CR 11-047: renum. (1), (2) to be (2), (3) and am. (2)., cr. (1) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.08 Fees. Fees for inspections and other services performed by the department shall be submitted to the department as specified in ch. SPS 302.

Note: A first class city may charge the same or other fees for their services. Service contractors who are authorized agents of the Department charge fees that are established in a contract with the Department.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. Register, December,1992, No. 444, eff. 1-1-93; correction made under s. 13.93 (2m) (b) 7., Stats., Register, October, 1996, No. 490; CR 08-028: renum. to (1), cr. (2) Register November 2008 No. 635, eff. 12-1-08; correction in (1), (2) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: renum. (1) to be 341.08 and am., r. (2) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.09 Enforcement. (1) This chapter shall be enforced by the department and its authorized agents, except as provided in s. SPS 341.16 (1) (b) 2. and (3) (b) for one- and 2-family dwellings.

(2) Where a first class city administers and enforces this chapter, a regulated item or activity shall be directed to or addressed by the city before requesting input from the department.

Note: Under section SPS 341.03 (4), the Department reserves the right to interpret the requirements in this chapter and in all codes and standards adopted herein.

History: CR 11-047: cr. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.10 Adoption of standards by reference. The following standards, as produced by each listed organization, are hereby incorporated by reference into this chapter, subject to the modifications specified in this chapter:

(1) American Petroleum Institute, 1220 L Street, Northwest, Washington, D.C. 20005, telephone 202/682-8000, www.api.org. Pressure Vessel Inspection Code, API 510, 9th edition, June 2006.

(2) American Society of Mechanical Engineers (ASME), Order Department, P.O. Box 2900, Fairfield, NJ 07007-2900, telephone 800/843-2763, www.asme.org, which produces each of the following:

(a) ASME Boiler and Pressure Vessel Code, 2010 edition: Section I – Rules for Construction of Power Boilers, Section II –Materials, Section IV – Rules for Construction of Heating Boilers, Section V – Nondestructive Examination, Section VIII – Rules for Construction of Pressure Vessels, Section IX – Welding and Brazing Qualifications, and Section X – Fiber-Reinforced Plastic Pressure Vessels.

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

(b) Power Piping, ASME B31.1–2010.

(c) Safety Standard for Pressure Vessels for Human Occupancy, ASME PVHO-1–2007.

(d) Safety Standard for Pressure Vessels for Human Occupancy: In-Service Guidelines for PVHO Acrylic Windows, ASME PVHO-2–2003.

(e) Controls and Safety Devices for Automatically Fired Boilers, ASME CSD-1–2009.

Note: See section SPS 341.11 (2) for modifications of ASME CSD-1.

(3) National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Avenue, Columbus, OH 43229-1183, telephone 614/888-8320, www.nationalboard.org. National Board Inspection Code (NBIC), ANSI/NB-23, 2011 edition.

Note: See section SPS 341.11 (1) for modifications of the NBIC.

(4) National Fire Protection Association®, 1 Batterymarch Park, Quincy, MA 02169-7471, telephone 800-344-3555. *C*ompressed Gases and Cryogenic Fluids Code, NFPA® 55, 2010 edition.

Note: Copies of the listed standards are on file in the offices of the Department and the legislative reference bureau. Copies for personal use may be obtained, at a cost, from the organizations listed.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; r. and recr. Table 41.10, Register, February, 1990, No. 410, eff. 3-1-90; am. Table 41.10, Register, May, 1994, No. 461, eff. 6-1-94; am. Table 41.10, Register, June, 1996, No. 486, eff. 7-1-96; r. and recr. Register, February, 2000, No. 530, eff. 3-1-00; CR 05-025: am. (2) (a), (b) and (c) Register October 2005 No. 598, eff. 11-1-05; CR 08-028: am. (2) (a) 1., 2., (b) and (c) Register November 2008 No. 635, eff. 12-1-08; CR 11-047: r. and recr. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.11 Application of standards. (1) NBIC OMISSIONS. The requirements in the following portions of the NBIC are not included as part of this chapter:

(a) In part 1 – sections 1, 2.4.1, 2.5.4, 2.10.2, 2.10.6, 3.2.3, 3.4.1, 3.5.3, 3.5.4, 3.7.5.2, 3.7.7.2, 3.7.9.2, 3.8.3, 3.9.4, 3.10, and 5; Figures 3.7.5-d and 3.5.7-e; and Table 3.7.9.2.

(b) In part 2 – sections 1.1, 1.2, 1.3, 1.4, 1.4.1, 2.2.12.5, 2.2.12.6, 2.3.5.4, 2.3.6.4, 2.4, 2.5.3, 5.3 and supplement 6.

(c) In parts 1 and 2 – any reference to using an NBIC form.

(2) MODIFICATIONS OF ASME CSD-1. (a) *Sections CG-120 and CG-140.* ASME CSD-1 does not apply to boilers and burner assemblies with fuel input ratings of 400,000 Btu per hour or less.

(b) *Shutdown switch.* The requirement in ASME CSD-1 section CE-110 (a) to locate a shutdown switch or circuit breaker just outside the boiler room door is changed to include an alternative of locating the switch or breaker just inside the principal entrance into the room, where approved by the department or authorized agent.

(3) SECONDARY REFERENCES. Any codes or standards referenced in the standards adopted in s. SPS 341.10 shall apply to the prescribed extent of each such reference, except as modified by this chapter.

(4) ALTERNATE STANDARDS. Any alternate standard that is equivalent to or more stringent than a standard incorporated by reference or otherwise referenced under this chapter may be used in lieu of the incorporated or referenced standard if the alternate standard is accepted in writing by the department.

History: CR 11-047: cr. Register May 2012 No. 677, eff. 6-1-12.

Published under s. 35.93, Wis. Stats., by the Legislative Reference Bureau.

Subchapter II — Inspections

SPS 341.15 General inspection requirements. (1) ALL INSPECTIONS. Certified inspectors, upon presenting appropriate credentials to the owner or user, may do any of the following:

(a) Enter without delay and at reasonable times any factory, plant, establishment, construction site, or other area, workplace or environment where work is performed by an employee.

(b) Inspect and investigate during regular working hours and at other reasonable times, and within reasonable limits and in a reasonable manner, any place of employment and all pertinent conditions, structures, machines, apparatus, devices, equipment, and materials therein, and to question privately any employer, owner, operator, agent or employee.

Note: Section 101.02 (15) (g) of the Statutes authorizes the Department and its deputies to "enter any place of employment or public building, for the purpose of collecting facts and statistics, examining the provisions made for the health, safety and welfare of the employees, frequenters, the public or tenants therein and bringing to the attention of every employer or owner any law, or any order of the department, and any failure on the part of such employer or owner to comply therewith."

(2) REPRESENTATION. The certified inspector, before making an inspection, shall contact the employer or employer's representative who shall be given an opportunity to accompany the inspector during the physical inspection of any workplace under sub. (1).

Note: The department procedure is not to give advance notice, but in the scheduling and in the act of inspecting it may not always be possible to avoid advance notice or to obtain accompaniment, but otherwise these rules will be diligently observed.

(3) An insurance company may provide the inspection services specified in this chapter, in lieu of those services being provided by the department or an authorized agent, only if the company meets all of the following conditions:

(a) It is authorized by this state to provide boiler and machinery insurance.

(b) It is actively engaged in writing boiler and machinery insurance for the general public.

(c) It uses only certified inspectors to perform the inspections.

(4) REPORTING CHANGES. (a) The certified inspector's employer shall report to the department not later than 30 calendar days after inspection service is started or discontinued on a boiler or pressure vessel. The reason for discontinuing the service shall be given on the report. If the boiler or pressure vessel is installed in a first class city that provides boiler and pressure vessel inspections, the report shall also be provided to the city.

(b) The certified inspector's employer shall report to the department after a boiler or pressure vessel under a service contract becomes inactive or non-existent. Failure to make this report may result in assessment of a fee in accordance with ch. SPS 302.

(5) COMPLIANCE RESPONSIBILITIES. (a) 1. The certified inspector shall provide any inspection report describing any noncompliance with this chapter to the owner or user within 5 business days after completing the inspection.

2. The certified inspector shall leave a copy of the inspection report on site if a life-safety violation is indicated.

(b) The owner or user shall correct any aspects that do not comply with applicable requirements of this chapter, within any time period prescribed by the certified inspector or the department.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. (1) (intro.), (2), Register, October, 1996, No. 490, eff. 11-1-96; cr. (3), Register, February, 2000, No. 530, eff. 3-1-00; CR 05-025: renum. (3) to be (3) (a), cr. (3) (b) Register October 2005 No. 598, eff. 11-1-05; correction in (3) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: am. (1) (intro.), (a), renum. (3) to be (4) and am., cr. (3), (5) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.16 Installation inspections. (1) BOILER AND PRESSURE VESSEL INSPECTIONS. (a) 1. Except as provided in par. (b), boilers and pressure vessels shall be inspected by a certified inspector before they are placed in operation.

2. Inspections under this section shall be conducted in accordance with the NBIC.

3. Inspections under this section where equipment is installed under ASME CSD-1 shall include verification of whether all of the following are available:

a. The manufacturer's instructions that are required in ASME CSD-1 sections CG-430 and 510 (c).

b. The manufacturer's and contractor's reports that are required in ASME CSD-1 sections CG-510 (a) and (b).

c. The operator's checklist that is required in ASME CSD-1 section CM-130.

Note: See section SPS 341.41 for installation registration requirements.

(b) 1. The inspections specified in par. (a) are not required for boilers and pressure vessels exempted from periodic inspections in s. SPS 341.18 (1) (a) and (c) to (n).

2. Installation 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.

(c) Where the boilers or pressure vessels specified in par. (a) are installed in a first class city and inspections are made by the city, the city shall keep a record of the inspections and shall submit a copy to the department.

(d) Where the inspections specified in par. (a) are performed by a certified inspector other than a department inspector, the certified inspector shall file an inspection report with the department and shall affix the Wisconsin registration number as required in s. SPS 341.36. The inspection report shall be filed with the department within 30 calendar days after completion of the boiler or pressure vessel installation. If the report is not filed within the 30-day period, the department shall perform the inspection.

(e) 1. Except as provided in subd. 2., reports of required installation inspections shall be sent to the department in accordance with the department's electronic data interchange transfer guidelines, within 5 business days after completing the inspection, unless additional time is authorized by the department.

Note: The Department will provide assistance at no charge regarding the use of the electronic data interchange system. The guidelines are available at the Department's Web site at www.dsps.wi.gov/sb/docs/sb-BoilerEdiGuidelines.pdf.

2. a. The department's 10663-E inspection form may be used in lieu of the electronic data interchange system where approved in advance by the department.

b. No reports to the department are required for the inspections performed under par. (b) 2.

Note: The Department forms required in this chapter are available for a nominal fee at telephone 800-DOC-SALE or 411 (Telecommunications Relay), or at docsales@doa.state.wi.us, or at no charge at the Department's Web site at www.dsps.wi.gov through links to Division of Industry Services forms.

(2) POWER PIPING INSPECTIONS. (a) Except as provided in par. (b), all power piping systems not covered by ASME code section I and required to be constructed in accordance with ASME B31.1, shall receive an installation inspection by the department or authorized agent or a certified inspector.

(b) The inspections specified in par. (a) are not required for any of the following:

1. Power piping of 2 inches nominal pipe size and smaller.

2. Power piping replacements, modifications and alterations to existing systems and for new installations, any of which do not exceed 50 feet in length.

3. Underground power piping systems that are not located in a walk-in tunnel.

(c) The installer shall notify the department or authorized agent or a certified inspector prior to the start of construction of the power piping system so that inspections may be arranged. The department or authorized agent or certified inspector shall be given a minimum of 5 business days notice to arrange for inspection.

(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 or an in-state shop fabricator shall complete department form SBD-5204-E prior to the inspection, and the form shall be retained at the job site for reference during the inspection. The department or authorized agent or certified inspector shall indicate acceptance of the power piping system design and installation by signing form SBD-5204-E. Power piping systems may not be insulated or placed in service without receiving that acceptance.

Note: The Department forms required in this chapter are available for a nominal fee at telephone 800-DOC-SALE or 411 (Telecommunications Relay), or at docsales@doa.state.wi.us, or at no charge at the Department's Web site at www.dsps.wi.gov through links to Division of Industry Services forms.

(e) Prefabricated piping that is part of a power piping system shall be inspected at the fabrication shop by the department or authorized agent or a certified inspector or an active National Board commissioned inspector for out-of-state manufacturers. The shop fabricator shall provide a copy of the certified inspector's report or a copy of the completed department form SBD-5204-E to the installer at the job site verifying that the prefabricated piping complies with ASME B31.1. The owner or installer shall provide design calculations for the prefabricated piping if requested by an inspector.

Note: The Department forms required in this chapter are available for a nominal fee at telephone 800-DOC-SALE or 411 (Telecommunications Relay), or at docsales@doa.state.wi.us, or at no charge at the Department's Web site at www.dsps.wi.gov through links to Division of Industry Services forms.

Note: For inspection fees, see chapter SPS 302.

(3) INSTALLATION 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 or authorized agent 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.

Note: Under section SPS 341.15, certified inspectors may conduct whatever number of inspections are needed in addition to the inspections required in this section, to verify compliance with this chapter. Also, owners or users may request additional inspections beyond the number established by the certified inspector.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. (1) (d) and (2) (c),cr. (1) (e), Register, December, 1992, No. 444, eff. 1-1-93; am. (2) (d),r. and recr. (2) (e), Register, May, 1994, No. 461, eff. 6-1-94; am. (1) (a), (d), (2) (a), (c) to (e), Register, October, 1996, No. 490, eff. 11-1-96; am. (2) (c), Register, March, 1998, No. 507, eff. 4-1-98; am. (2) (a) and (e), Register, February, 2000, No. 530, eff. 3-1-00; CR 05-025: am. (2) (b) Register October 2005 No. 598, eff. 11-1-05; CR 08-028: renum. (1) (b) to be (1) (b) 1., cr. (1) (b) 2. and (3), r. and recr. (1) (e), am. (2) (c) and (e) Register November 2008 No. 635; correction in (1) (b) 1., (d) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: am. (title), renum. (1) (a) to be (1) (a) 1., cr. (1) (a) 2., 3., am. (1) (b), (c), renum. (1) (e) to be (1) (e) 1. and am., cr. (1) (e) 2., am. (2) (a), (c) to (e), r. (2) (f), (g), am. (3) (title), (a) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.17 Periodic Inspections.

(1) INSPECTION OF POWER BOILERS, MINIATURE BOILERS AND ORGANIC- OR SYNTHETIC-FLUID HEAT-TRANSFER BOILERS. (a) Except as provided in s. SPS 341.18, power boilers, miniature boilers and organic- or synthetic-fluid heat-transfer boilers shall be subjected to either a regular internal or external inspection at least once every 12 months by a certified inspector.

(b) Where an internal inspection of a power boiler is not possible because of the construction of the boiler, an external inspection shall be acceptable.

(2) INSPECTION OF PRESSURE VESSELS. Except as provided in s. SPS 341.18, pressure vessels shall be subjected to a regular internal or external inspection at least once every 36 months by a certified inspector.

(3) INSPECTION OF LOW-PRESSURE STEAM AND HOT-WATER HEATING BOILERS. Except as provided in s. SPS 341.18, low-pressure steam boilers and hot-water heating boilers shall be subjected to a regular internal or external inspection at least once every 36 months by a certified inspector.

(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 NBIC part 2 section 2.5.8 relating to testing of safety relief valves.

Note: See chapters SPS 381 to 387, Plumbing, for requirements relating to combination temperature and pressure relief valves.

(5) INSPECTION OF RUPTURE DISKS. Except as provided in s. SPS 341.18, rupture disks shall be subjected to a visual inspection at least once every 36 months by a certified inspector.

(6) EXTENSION OF PERIOD BETWEEN INSPECTIONS. If operating conditions require, an extension of periods not to exceed 6 months between inspections of boilers, pressure vessels, safety valves and safety relief valves may be approved by the department upon a written request from the owner or user for an extension. Concurrence with the owner's or user's request for an extension shall be obtained from the certified inspector in writing to the department.

(7) INSPECTION STANDARDS. (a) *NBIC.* Inspections under this section shall be conducted in accordance with the NBIC.

(b) *ASME CSD-1.* Inspections under this section where equipment is installed under ASME CSD-1 shall include verification of whether all of the following are available:

1. The manufacturer's instructions that are required in ASME CSD-1 sections CG-430 and 510 (c).

2. The manufacturer's and contractor's reports that are required in ASME CSD-1 sections CG-510 (a) and (b).

3. A boiler log, maintenance record, service invoice or other written record that shows the results of periodic testing, as required in ASME CSD-1 sections CM-110 and CM-130.

4. The operator's checklist that is required in ASME CSD-1 section CM-130.

Note: For inspection fees, see chapter SPS 302.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. (1) (a), Register,December, 1992, No. 444, eff. 1-1-93; am. (5), Register, May, 1994, No. 461, eff. 6-1-94; am. (1) (a), (2) to (5), Register, October, 1996, No. 490, eff. 11-1-96; am. (4) and (5), Register, February, 2000, No. 530, eff. 3-1-00; CR 08-028: am. (4) Register November 2008 No. 635, eff. 12-1-08; correction in (1) (a), (2), (3) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: am. (1) (title), (a), (4), renum. (5) to be (6), cr. (5), (7) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.18 Exemptions from periodic inspections.

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

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

(b) Heating boilers located in dwelling 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.

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(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 that 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 dwellings.

(2) EXCEPTIONS. In individual cases, the boilers and pressure vessels exempted in sub. (1) shall be subject to inspection by or on order of the department upon the complaint of any person or upon the initiative of the department when there is reasonable cause to suspect that the construction, installation, maintenance or operation of the vessel is not in keeping with the general purpose and intent of this chapter.

(3) EXEMPTED POWER BOILERS. A power boiler, excluding a chemical recovery boiler, with a rated steam output capacity of 100,000 pounds per hour or greater may be exempted from internal inspection each 12 months, but not to exceed 24 months, provided all the following conditions are met:

(a) A documented boiler maintenance program is available.

(b) A documented boiler water treatment program is available.

(c) The certified inspector has verified in writing to the department that the maintenance and treatment programs are adequate for the boiler.

(d) If the internal inspection is completed during the 12 to 24 month period, the boiler shall be subjected to an external inspection at 12 months.

History: Register, February, 1988, No. 386, eff. 3-1-88; cr. (3), Register, June, 1996, No. 486, eff. 7-1-96; am. (2) and (3) (c), Register, February, 2000, No. 530, eff. 3-1-00; CR 05-025: cr. (1) (n) Register October 2005 No. 598, eff. 11-1-05; CR 08-028: r. and recr. (1) Register November 2008 No. 635, eff. 12-1-08; CR 11-047: am. (1) (a) to (c), (i), (k), (o) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.19 Preparation for internal inspection.

(1) GENERAL REQUIREMENTS. The owner or user of a boiler or a pressure vessel subject to inspection shall prepare the vessel for internal inspection after due notice from the certified inspector. To prepare a vessel for an internal inspection, all manhole plates, all wash-out plugs, and a sufficient number of handhole plates to permit a satisfactory inspection shall be removed. The shell and heads shall be thoroughly cleaned and exposed when so requested. Each steam boiler shall be thoroughly drained of water and all fire-side surfaces cleaned before an internal inspection is made.

(2) PREPARATION PROCEDURE. The following procedure shall be required for preparation for inspection:

(a) Before entering any part of a boiler that is connected to a common header with other boilers, the required steam or water system stop valves shall be closed, tagged and preferably padlocked, and drain valves or cocks between the 2 closed stop valves shall be opened. The feed valves shall be closed, tagged, and preferably padlocked, and drain valves or cocks located between the 2 valves shall be opened.

(b) After draining the boiler, the blowoff valves shall be closed, tagged and preferably padlocked. Blowoff lines, where practicable, shall be disconnected between pressure parts and valves. All drains and vent lines shall be opened.

(3) RIGHT TO REFUSE ENTRY. The certified inspector shall have the right to refuse to enter a boiler or pressure vessel if in the inspector's judgement it is unsafe to do so.

Note: Confined space rules are contained in chapter SPS 332 for public sector employees and in section 29 CFR 1910.146 of the federal Occupational Safety and Health Administration for private sector employees.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. (1), (3), Register, October, 1996, No. 490, eff. 11-1-96; CR 11-047: am. (1), (2) (a) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.23 Reporting of periodic inspections.

(1) REPORTING PROCESSING TIME. (a) Except as provided in par. (b) and s. SPS 341.55 (4), reports of periodic internal or external inspections of boilers and pressure vessels shall be sent to the department in accordance with the department's electronic data interchange transfer guidelines, within 5 business days after completing the inspection, unless additional time is authorized by the department.

Note: The Department will provide assistance at no charge regarding the use of the electronic data interchange system. The guidelines are available at the Department's Web site at www.dsps.wi.gov/sb/docs/sb-BoilerEdiGuidelines.pdf.

(b) The department's 10663-E inspection form may be used in lieu of the electronic data interchange system where approved in advance by the department.

Note: The Department forms required in this chapter are available for a nominal fee at telephone 800-DOC-SALE or 411 (Telecommunications Relay), or at docsales@doa.state.wi.us, or at no charge at the Department's Web site at www.dsps.wi.gov through links to Division of Industry Services forms.

(2) INSPECTION REPORT FORMS. (a) A verification that a periodic inspection has been performed shall be posted on or near the inspected item.

(b) A group of pressure vessels of the same design and use that are interconnected or are operated so as to form a unit, machine or apparatus may be included in a single inspection report. The report shall contain the number, description and use of the vessel.

(c) The inspection report shall explain any violation or unsafe condition with references to code section numbers. Recommendations to the owner or user of the vessel, relating to code violations, shall be included in the report to the department.

(d) The inspection report shall be legible and complete.

(3) EXTERNAL INSPECTIONS. External inspections shall be reported only when either of the following conditions is found:

(a) An internal inspection is not possible because of the construction of the vessel. In these cases the external inspection shall be reported to the department in the same manner as an internal inspection. The report shall be marked external, and the reason for making an external inspection instead of an internal shall be given.

(b) When violations of this chapter or unsafe conditions involving the safety of the vessel are found.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. (1), (2) (a) and (3) (b), Register, February, 2000, No. 530, eff. 3-1-00; CR 05-025: am. (1) and (2) (a), cr. (2) (a) 2. Register October 2005 No. 598, eff. 11-1-05; CR 11-047: r. and recr. (1), (2) (a), am. (3) (a) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.24 Permit to operate.

(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 or user of a boiler or pressure vessel installed at

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a one- or 2-family dwelling 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.

(2) ISSUANCE. After each installation or periodic inspection for boilers and pressure vessels found to be in compliance with this chapter, a permit to operate shall be issued by the department to the owner or user of the boiler or pressure vessel. The department shall issue the permit within 30 business days of determination of compliance.

(3) INFORMATION. The permit to operate shall give the maximum allowable working pressure as determined using the regulations of this chapter, the certified inspector's name and telephone number, and the expiration date.

(4) EXPIRATION. The permit to operate shall be valid until the next required periodic inspection or until rescinded due to code violations.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. Register, February, 2000, No. 530, eff. 3-1-00; CR 05-025: am. (1) (b) and (4) Register October 2005 No. 598, eff. 11-1-05; CR 08-028: r. and recr. (1) Register November 2008 No. 635, eff. 12-1-08; CR 11-047: am. (1) (a) 2., (2) Register May 2012 No. 677, eff. 6-1-12.

Subchapter III — All Installations

SPS 341.27 Application. Except as specified under s. SPS 341.29 (2), this subchapter applies to all boilers and pressure vessels existing on or after June 1, 2012.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; correction made under s. 13.93 (2m) (b) 14, Stats., Register, May, 1994, No. 461; CR 08-028: am. Register November 2008 No. 635, eff. 12-1-08; correction made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: am. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.28 Safety rules. (1) MAXIMUM ALLOWABLE WORKING PRESSURE. No boiler or pressure vessel may be operated at a pressure in excess of the maximum allowable working pressure stated on its current permit to operate.

(2) ALTERATION TO SAFETY DEVICES. No unauthorized person may remove or tamper with any connected safety device.

(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 gages. When boilers are installed or replaced, clearance shall be provided to allow access for inspection, maintenance and repair. Passageways around all sides of boilers shall have an unobstructed width of not less than 18 inches unless otherwise approved by the department or authorized agent.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. (1), Register, February, 2000, No. 530, eff. 3-1-00; CR 08-028: r. and recr. (3) Register November 2008 No. 635, eff. 12-1-08; CR 11-047: am. (3) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.29 Safety controls. (1) GENERAL. Oil-fired, gas-fired and electrically heated boilers shall be equipped with primary safety controls, safety limit switches, and burners or electric elements that bear the stamp, monogram or other evidence of compliance with a nationally recognized standard.

Note: Typical acceptable stamps are the American Gas Association (AGA) and the Underwriters Laboratories (UL).

(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 for organic- or synthetic-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. SPS 341.42 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.

e. No shut-off valve of any type may be placed in the piping between a boiler and its high-temperature-limit control device.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. (2) (a), Register, June, 1996, No. 486, eff. 7-1-96; am. (2) (intro.), Register, February, 2000, No. 530, eff. 3-1-00; CR 08-028: r. and recr. (2) Register November 2008 No. 635, eff. 12-1-08; correction in (2) (b) (intro.) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: am. (1), (2) (a), cr. (2) (b) 2. e., am. (1) (a), (c), (2) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.30 Low-water cutoff, water feeder and fusible plug. (1) GENERAL REQUIREMENTS. (a) Every automatically fired power boiler that does not have a full-time attendant and every automatically fired low-pressure steam boiler shall be equipped with an automatic low-water fuel cutoff or other device which will perform a similar function, so located as to automatically cut off the fuel supply when the surface of the water falls to the lowest safe water line.

(b) If a water-feeding device is installed, it shall be so constructed that the water inlet valve cannot feed water into the boiler through the float chamber and so located as to supply requisite feed water. The lowest safe water line shall be not lower than the lowest visible part of the water glass.

(c) Boilers that are manually fired and have a residual heat source shall have a fusible plug installed which will extinguish the fire in the event of low water. Fire doors shall be provided with secure latches on manually fired boilers having fusible plugs.

(2) BOWL DESIGNS. Designs embodying a float and float bowl, or probe control installed in a bowl or chamber external to

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the boiler, shall have a vertical, straight-run, valved drain pipe at the lowest point in the water-equalizing pipe connections, by which the bowl or chamber and the equalizing pipe can be flushed and the device tested.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; cr. (1) (c), Register, June, 1996, No. 486, eff. 7-1-96; am. (1) (c), Register, February, 2000, No. 530, eff. 3-1-00; CR 11-047: am. (1) (a), (c), (2) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.31 Boiler blowoff equipment. (1) PRESSURE-TEMPERATURE LIMITS. The blowdown from a boiler that enters a sewer system or blowdown which is considered a hazard to life or property shall pass through some form of blowoff equipment that will reduce pressure and temperature as specified in pars. (a) and (b).

(a) The temperature of the water leaving the blowoff equipment may not exceed 160°F.

(b) The pressure of the blowdown leaving the blowoff equipment may not exceed 5 psig.

(2) PIPING AND FITTINGS. The blowoff piping and fittings between the boiler and the blowoff tank shall comply with ASME B31.1 or the code in effect at the time of construction.

(3) TANKS AND SEPARATORS. The blowoff tank or separator shall be designed in accordance with s. SPS 341.42 or the code in effect at the time of construction for a maximum allowable working pressure of at least 50 psig.

(4) GENERAL REQUIREMENTS. All blowoff equipment, except centrifugal blowdown separators, shall be fitted with openings to facilitate cleaning and inspection and shall have all of the following:

(a) A pressure gage graduated from 0-50 psi.

(b) A thermometer well located near the water outlet connection and in contact with the retained water in the tank.

(c) A gage glass at least one-half inch in diameter with the lower connection to the glass at a point about 6 inches below the water line and the upper connection at a point about 6 inches above the water line.

(d) A drain connection of at least 2-inch standard pipe size.

(e) Connections designed so that freezing will not close the inlet, the outlet or the vent.

(5) VENT PIPING. All blowoff equipment shall have vent piping, full size, piped to the outside atmosphere and discharged to a safe location.

Note: Blowoff equipment designed in accordance with the boiler blowoff equipment rules issued by the National Board of Boiler and Pressure Vessel Inspectors will meet the requirements of this section. Other methods of designing blowoff equipment may be used if approved by the Department.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. (4) (d) and (e), r. (4) (f), cr. (5), Register, December, 1992, No. 444, eff. 1-1-93; am. (2), (3), (4) (a), Register, June, 1996, No. 486, eff. 7-1-96; am. (2), Register, February, 2000, No. 530, eff. 3-1-00; CR 05-025: am. (1) (a) Register October 2005 No. 598, eff. 11-1-05; correction in (3) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: am. (1) (b), (2), (4) (intro.) to (d) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.32 Pressure gages for air receivers. (1) GAGE LOCATION. Air receivers shall be equipped with an indicating pressure gage so located as to be readily visible.

(2) GAGE DIAL. The dial of the pressure gage shall be graduated to approximately double the pressure at which the safety valve is set, but may not be less than one and one-half times that pressure.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88.

SPS 341.33 Protection of vessels supplied through pressure-reducing stations. (1) SIZING SAFETY VALVES. The requirements in this section shall be used for determining the sizes of safety valves on pressure vessels such as pressure cookers, indirect hot water heaters and equipment in heating systems, that are supplied through pressure-reducing stations from boilers carrying a higher steam pressure. Where a pressure-reducing 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.

(2) REDUCING-STATION CAPACITY. (a) The following formula shall be used to determine the steam flow rate through the pressure-reducing 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 341.33-1

VSPA = reducing valve size pipe area in square inches from Table 341.33-2

(b) The critical flow capacity data supplied by the reducing 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 reducing valve.

(c) In using Table 341.33-1, 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.

(3) BYPASS CAPACITY. The following formula shall be used to determine the steam flow rate through the bypass when pressure-reducing stations are arranged with a valved bypass that 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 341.33-1

BPA = bypass pipe area in square inches from Table 341.33-2

(4) SELECTING SAFETY VALVE. The larger of the steam flow rates calculated by the formulas in subs. (2) and (3) shall be used for selecting the safety valve on the low-pressure side of the system.

TABLE 341.33-1
ORIFICE RELIEVING CAPACITIES
(Pounds per hour per square inch)

OUTLET PRESSURE PSIG	PRESSURE-REDUCING VALVE INLET PRESSURE, PSIG											
	1500	1450	1400	1350	1300	1250	1200	1150	1100	1050	1000	950
1000	76560	72970	69170	64950	60540	55570	49930	43930	35230	25500	——	——
950	77430	74180	70760	67000	63100	58770	53920	48610	42380	34890	24910	——
900	77750	74810	71720	68340	64870	61040	56820	52260	47050	41050	33490	23960
850	77830	74950	72160	69130	66020	62610	58900	54930	50480	45470	39660	29080
800	——	75070	72330	69490	66700	63680	60390	56910	53060	48800	43980	38340
750	——	——	——	69610	66880	64270	61260	58200	54840	51170	47080	42420

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TABLE 341.33-1 (Continued)
ORIFICE RELIEVING CAPACITIES
(Pounds per hour per square inch)

OUTLET PRESSURE PSIG	PRESSURE-REDUCING VALVE INLET PRESSURE, PSIG											
	1500	1450	1400	1350	1300	1250	1200	1150	1100	1050	1000	950
700	——	——	——	——	66900	64270	61520	58820	55870	52670	49170	45230
650	——	——	——	——	——	——	61550	58860	56260	53480	50440	47070
600	——	——	——	——	——	——	——	58980	56270	53660	51020	48470
550	——	——	——	——	——	——	——	——	——	53810	51040	48470
500	——	——	——	——	——	——	——	——	——	——	——	——
450	——	——	——	——	——	——	——	——	——	——	——	——
400	——	——	——	——	——	——	——	——	——	——	——	——
350	——	——	——	——	——	——	——	——	——	——	——	——
300	——	——	——	——	——	——	——	——	——	——	——	——
250	——	——	——	——	——	——	——	——	——	——	——	——
200	——	——	——	——	——	——	——	——	——	——	——	——
175	——	——	——	——	——	——	——	——	——	——	——	——
150	——	——	——	——	——	——	——	——	——	——	——	——
125	——	——	——	——	——	——	——	——	——	——	——	——
110	——	——	——	——	——	——	——	——	——	——	——	——
100	——	——	——	——	——	——	——	——	——	——	——	——
85	——	——	——	——	——	——	——	——	——	——	——	——
75	——	——	——	——	——	——	——	——	——	——	——	——
60	——	——	——	——	——	——	——	——	——	——	——	——
50	——	——	——	——	——	——	——	——	——	——	——	——
40	——	——	——	——	——	——	——	——	——	——	——	——
30	——	——	——	——	——	——	——	——	——	——	——	——
25	——	——	——	——	——	——	——	——	——	——	——	——
15	——	——	——	——	——	——	——	——	——	——	——	——
10	——	——	——	——	——	——	——	——	——	——	——	——
5	——	——	——	——	——	——	——	——	——	——	——	——

Where capacities are not shown for inlet and outlet conditions, use the highest capacity shown under the applicable inlet pressure column.

TABLE 341.33-1 (continued)
ORIFICE RELIEVING CAPACITIES
(Pounds per hour per square inch)

OUTLET PRESSURE PSIG	PRESSURE-REDUCING VALVE INLET PRESSURE, PSIG												
	900	850	800	750	700	650	600	550	500	450	400	350	300
1000	——	——	——	——	——	——	——	——	——	——	——	——	——
950	——	——	——	——	——	——	——	——	——	——	——	——	——
900	——	——	——	——	——	——	——	——	——	——	——	——	——
850	23190	——	——	——	——	——	——	——	——	——	——	——	——
800	31610	22550	——	——	——	——	——	——	——	——	——	——	——
750	37110	30600	21800	——	——	——	——	——	——	——	——	——	——
700	40860	35730	29420	21020	——	——	——	——	——	——	——	——	——
650	43400	39200	34250	28260	20190	——	——	——	——	——	——	——	——
600	45010	41500	37470	32800	27090	19480	——	——	——	——	——	——	——
550	45800	42840	39850	35730	31310	25940	18620	——	——	——	——	——	——
500	45850	43330	40530	37610	33880	29760	24630	17720	——	——	——	——	——
450	45870	43330	40730	38150	35260	31980	28080	23290	16680	——	——	——	——
400	——	——	40760	38220	35680	33050	29980	26380	21870	15760	——	——	——
350	——	——	——	——	——	33120	30690	27910	24570	20460	14790	——	——
300	——	——	——	——	——	33240	——	28140	25610	22620	18860	13630	——
250	——	——	——	——	——	——	——	28150	25650	23200	21000	17100	10800
200	——	——	——	——	——	——	——	——	——	——	21350	18250	15350
175	——	——	——	——	——	——	——	——	——	——	——	18250	16000
150	——	——	——	——	——	——	——	——	——	——	——	18250	16200
125	——	——	——	——	——	——	——	——	——	——	——	18780	——
110	——	——	——	——	——	——	——	——	——	——	——	——	——
100	——	——	——	——	——	——	——	——	——	——	——	——	——
85	——	——	——	——	——	——	——	——	——	——	——	——	——
75	——	——	——	——	——	——	——	——	——	——	——	——	——
60	——	——	——	——	——	——	——	——	——	——	——	——	——
50	——	——	——	——	——	——	——	——	——	——	——	——	——
40	——	——	——	——	——	——	——	——	——	——	——	——	——
30	——	——	——	——	——	——	——	——	——	——	——	——	——
25	——	——	——	——	——	——	——	——	——	——	——	——	——
15	——	——	——	——	——	——	——	——	——	——	——	——	——
10	——	——	——	——	——	——	——	——	——	——	——	——	——
5	——	——	——	——	——	——	——	——	——	——	——	——	——

Where capacities are not shown for inlet and outlet conditions, use the highest capacity shown under the applicable inlet pressure column.

TABLE 341.33-1 (continued)
ORIFICE RELIEVING CAPACITIES
(Pounds per hour per square inch)

OUTLET PRESSURE PSIG	PRESSURE-REDUCING VALVE INLET PRESSURE, PSIG												
	250	200	175	150	125	100	85	75	60	50	40	30	25
1000	——	——	——	——	——	——	——	——	——	——	——	——	——
950	——	——	——	——	——	——	——	——	——	——	——	——	——
900	——	——	——	——	——	——	——	——	——	——	——	——	——
850	——	——	——	——	——	——	——	——	——	——	——	——	——
800	——	——	——	——	——	——	——	——	——	——	——	——	——
750	——	——	——	——	——	——	——	——	——	——	——	——	——
700	——	——	——	——	——	——	——	——	——	——	——	——	——
650	——	——	——	——	——	——	——	——	——	——	——	——	——
600	——	——	——	——	——	——	——	——	——	——	——	——	——
550	——	——	——	——	——	——	——	——	——	——	——	——	——
500	——	——	——	——	——	——	——	——	——	——	——	——	——
450	——	——	——	——	——	——	——	——	——	——	——	——	——
400	——	——	——	——	——	——	——	——	——	——	——	——	——
350	——	——	——	——	——	——	——	——	——	——	——	——	——
300	——	——	——	——	——	——	——	——	——	——	——	——	——
250	——	——	——	——	——	——	——	——	——	——	——	——	——
200	10900	——	——	——	——	——	——	——	——	——	——	——	——
175	12600	7250	——	——	——	——	——	——	——	——	——	——	——
150	13400	9540	6750	——	——	——	——	——	——	——	——	——	——
125	13600	10800	8780	6220	——	——	——	——	——	——	——	——	——
110	13600	11000	9460	7420	4550	——	——	——	——	——	——	——	——
100	13600	11000	9760	7970	5630	——	——	——	——	——	——	——	——
85	13600	11000	——	8480	6640	4070	——	——	——	——	——	——	——
75	13600	11000	——	——	7050	4980	3150	——	——	——	——	——	——
60	13630	11000	——	——	7200	5750	4540	3520	——	——	——	——	——
50	——	11000	——	——	——	5920	5000	4230	2680	——	——	——	——
40	——	11000	——	——	——	——	5140	4630	3480	2470	——	——	——
30	——	11050	——	——	——	——	——	——	3860	3140	2210	——	——
25	——	——	——	——	——	——	——	——	——	3340	2580	1485	——
15	——	——	——	——	——	——	——	——	——	——	2830	2320	1800
10	——	——	——	——	——	——	——	——	——	——	——	——	2060
5	——	——	——	——	——	——	——	——	——	——	——	——	——

Where capacities are not shown for inlet and outlet conditions, use the highest capacity shown under the applicable inlet pressure column.

TABLE 341.33-2
INTERNAL PIPE AREA

Nominal pipe size, inches	STANDARD WEIGHT PIPE		
	Actual External Diameter, Inches	Approx. Internal Diameter, Inches	Approx. Internal Area, Square Inches
3/8	0.675	0.49	0.19
1/2	0.840	0.62	0.30
3/4	1.050	0.82	0.53
1	1.315	1.05	0.86
1-1/4	1.660	1.38	1.50
1-1/2	1.900	1.61	2.04
2	2.375	2.07	3.36
2-1/2	2.875	2.47	4.78
3	3.5	3.07	7.39
3-1/2	4.0	3.55	9.89
4	4.5	4.03	12.73
5	5.563	5.05	19.99
6	6.625	6.07	28.89
8	8.625	8.07	51.15
10	1.750	10.19	81.55
12	12.750	12.09	114.80

Note: In applying Table 341.33-2, the area of the pipe is always based upon standard weight pipe and the inlet size of the pressure-reducing valve.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. intro., (1)(intro.), (2), r. and recr. (1) (a) and (b), Register, May, 1994, No. 461, eff.6-1-94; am. (1) (a), Register, June, 1996, No. 486, eff. 7-1-96; correction in (1) (intro.), (b), (2) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: (intro.), (1) (intro.) to (c), (2), (3) renum. to be (1), (2) (intro.) to (b), (3), (4) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.34 Portable boilers. (1) PERMIT REQUIRED. The owner or user of a portable boiler located in Wisconsin or brought into Wisconsin for use, shall possess a permit to operate issued by the department prior to use.

(2) BOILER REQUIREMENTS. The permit to operate shall be issued only after all of the following requirements are met:

(a) The boiler complies with s. SPS 341.42.

(b) The boiler is installed according to the applicable requirements of this chapter.

(c) An internal or external inspection of the boiler has been made that is acceptable to the department.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. Register, February, 2000, No. 530, eff. 3-1-00; correction in (2) (a) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: am. (2) (c) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.35 Interconnected boilers. When boilers of different maximum allowable working pressures with minimum safety valve settings varying more than 6% are so connected that steam can flow toward the lower pressure units, the latter shall be protected by additional safety valve capacity, if necessary, on the lower pressure side of the system. The additional safety valve capacity shall be based upon the maximum amount of steam that can flow into the lower pressure system. The additional safety valves shall have at least one valve set at a pressure not to exceed the lowest allowable pressure and the other valves shall be set within a range not to exceed 3% above that pressure.

History: History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; CR 11-047: am. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.36 Identification of boilers and pressure vessels. Boilers and pressure vessels subject to periodic in-

spections shall be identified by a registration number supplied by the department. The registration number shall be affixed to the vessel by a certified inspector at a location that can be easily viewed.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. (2), Register, October, 1996, No. 490, eff. 11-1-96; r. (1), Register, February, 2000, No. 530, eff. 3-1-00; CR 11-047: r. (2) (title), renum. (2) to be 341.36 and am. Register May 2012 No. 677, eff.6-1-12.

SPS 341.37 Maintenance. (1) CORROSION PREVENTION. All boilers and pressure vessels shall be installed and maintained in such a manner as to prevent excessive corrosion and deterioration.

(2) SAFE CONDITIONS. The certified inspector shall note conditions during internal inspection, external inspection, or hydrostatic pressure test and shall order changes or repairs that will place the boiler or pressure vessel in a safe working condition.

Note: Sections VI and VII of the ASME boiler and pressure vessel code, Recommended Rules for Care and Operation of Heating Boilers and Recommended Rules for Care of Power Boilers, are excellent guides for boiler owners and operators.

(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 section SPS 341.38 for Department reporting requirements relating to fuel conversions and to modifications for increasing heat input.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. (2), Register, October, 1996, No. 490, eff. 11-1-96; CR 08-028: cr. (3) Register November 2008 No. 635, eff. 12-1-08; CR 11-047: am. (2) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.38 Reporting accidents, repairs and alterations. (1) ACCIDENTS. (a) If a component of a boiler or pressure vessel or power piping fails and causes an injury that needs more than first aid treatment, the owner or user shall report the facts involved to the department on form SBD-10787-E within 24 hours after the accident.

(b) After a failure under par. (a), the owner or user may not remove or disturb the boiler or pressure vessel or power piping or any of the components nor permit any such removal or disturbance prior to receiving authorization from the department or first class city, except for the purpose of saving human life or preventing further property damage.

(c) Any accidents under par. (a) that occur during the department's non-business hours shall also be reported to the state division of emergency management.

Note: The address for reporting accidents to the Department is the Division of Industry Services, Boiler Program, P.O. Box 7302, Madison, WI 53707-7302; and the fax number is 608-283-7420.

Note: The Department can be contacted at 262/548-8617 during normal business hours. The state Division of Emergency Management can be contacted at (800) 943-0003 during non-business hours.

(2) REPAIRS AND ALTERATIONS. The owner or user shall report to the department any repairs or alterations of a boiler or pressure vessel as required in subch. VI.

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

Note: The Department forms required in this chapter are available for a nominal fee at telephone 800-DOC-SALE or 411 (Telecommunications Relay), or at docsales@doa.state.wi.us, or at no charge at the Department's Web site at www.dsps.wi.gov through links to Division of Industry Services forms.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. (1) to (3), cr. (4), Register, February, 2000, No. 530, eff. 3-1-00; CR 08-028: r. and recr. (1), am. (3) and (4) Register November 2008 No. 635, eff. 12-1-08; CR 11-047: r. and recr. (1), am. (3), (4) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.39 Condemnation. (1) AUTHORITY. Only the department may condemn a boiler or pressure vessel. Any boiler or pressure vessel declared by a certified inspector to be unsafe and beyond repair shall be referred to the department for condemnation proceedings.

(2) SYMBOL. (a) Any boiler or pressure vessel confirmed by the department to be unsafe for further use shall be stamped as follows:

"CONDEMNED"

"Arrowhead Stamp x Wisconsin x Arrowhead Stamp"

(b) Letters used for the stamp shall be at least 3/8-inch high and arrowheads shall be at least 1/2-inch wide.

(3) UNLAWFUL USE. It shall be unlawful for any person, firm, partnership or corporation to use, operate, or offer for sale for operation within the state any condemned boiler or pressure vessel.

History: Register, February, 1988, No. 386, eff. 3-1-88; am. (1), Register, October, 1996, No. 490, eff. 11-1-96.

Subchapter IV — New Installations

SPS 341.40 Application. This subchapter applies to all boilers and pressure vessels, or components thereof, that are installed on or after June 1, 2012.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; correction made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: am. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.41 Installation registration. (1) BOILER OR PRESSURE VESSEL INSTALLATION REGISTRATION. (a) Except as provided in par. (b), the installation of any boiler or pressure vessel shall be registered with the department by the installer before the operation of the boiler or pressure vessel. Registration shall be on form SBD-6314-E.

Note: The Department forms required in this chapter are available for a nominal fee at telephone 800-DOC-SALE or 411 (Telecommunications Relay), or at docsales@doa.state.wi.us, or at no charge at the Department's Web site at www.dsps.wi.gov through links to Division of Industry Services forms.

(b) Registration with the department is not required for any of the following:

1. Boilers and pressure vessels exempted from periodic inspections in s. SPS 341.18.

2. Installations in cities of the first class if an installation registration form has been filed with the appropriate city official.

(2) POWER PIPING INSTALLATION REGISTRATION. (a) Except as provided in par. (b), the installation of any power piping system shall be registered with the department by the installer before the operation of the piping system. Registration shall be on form SBD-5204-E.

Note: The Department forms required in this chapter are available for a nominal fee at telephone 800-DOC-SALE or 411 (Telecommunications Relay), or at docsales@doa.state.wi.us, or at no charge at the Department's Web site at www.dsps.wi.gov through links to Division of Industry Services forms.

(b) Registration is not required for any of the following:

1. Power piping of 2 inches nominal pipe size and smaller.

2. Installations in cities of the first class if an installation registration form has been filed with the appropriate city official.

3. Underground power piping systems that are not located in a walk-in tunnel.

4. Power piping replacements, modifications and alterations to existing systems and for new installations, any of which do not exceed 50 feet in length.

5. Installations at one- or 2-family dwellings.

Note: Section SPS 341.16 (2) (c) requires the piping installer to notify the Department or authorized agent or a certified inspector at least 5 business days prior to the installation to schedule an inspection.

(3) PIPING ON SINGLE POWER BOILERS. ASME form P-4B is not required to be completed for boiler piping on any single ASME "S", "M" or "E" stamped boiler rated at 50 boiler horse-

power or less and 150 psig or less maximum allowable working pressure, if applicable pressure and temperature rated valves and at least schedule 80 pipe and fittings are used.

(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-E for the registration.

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

Note: The Department forms required in this chapter are available for a nominal fee at telephone 800-DOC-SALE or 411 (Telecommunications Relay), or at docsales@doa.state.wi.us, or at no charge at the Department's Web site at www.dsps.wi.gov through links to Division of Industry Services forms.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. (1) (a) and (2) (a), Register, December, 1992, No. 444, eff. 1-1-93; CR 05-025: am. (2) (b), cr. (3) Register October 2005 No. 598, eff. 11-1-05; CR 08-028: cr. (2) (b) 5., (c) and (4) Register November 2008 No. 635, eff. 12-1-08; correction in (1) (b) 1. made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: am. (1) (a), (b) (intro.), 1., (2) (a), renum. (2) (c) to be (2) (b) 5. (note) and am., am. (4) (b) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.42 ASME code vessels. (1) ASME CODE COMPLIANCE. Except as provided in ss. SPS 341.43 to 341.45 and 341.53 (2), boilers and pressure vessels shall be constructed, installed, operated and maintained in accordance with the ASME code, ASME CSD-1 and the NBIC. Boilers and pressure vessels designed to other national or international standards may be approved if the design has been accepted by a nationally recognized independent third party and the department, or if the standard has been accepted by the department.

Note: Section SPS 341.43 also allows construction of boilers and pressure vessels that do not comply with the ASME code, if they comply with criteria in a variance issued by the Department. As referenced in section SPS 341.05, any such variance must comply with chapter SPS 303, which requires establishing an equivalency that meets the intent of the rule.

Note: The Department will recognize the applicable case interpretations of the ASME boiler and pressure vessel code as being acceptable.

Note: The ASME code specifies that persons installing boiler external piping by welding are required to possess the appropriate ASME credentials.

Note: Design and construction complying with Canadian standard CSA B51 is accepted by the Department under this section.

(2) REGISTERING WITH NATIONAL BOARD. (a) Except as provided in par. (b), all boilers and pressure vessels, including any that are constructed and installed in accordance with Canadian standard CSA B51, 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.

(3) HUMAN OCCUPANCY. (a) Pressure vessels for human occupancy shall be constructed and installed in accordance with ASME PVHO-1.

(b) Inspection, care, repair, replacement, testing and recertification of PVHO acrylic windows in pressure vessels for human occupancy shall comply with ASME PVHO-2.

(4) COMPRESSED GASES AND CRYOGENIC FLUID VESSELS. In addition to complying with subs. (1) and (2), vessels and piping and other components for compressed gases and cryogenic fluids, including for gaseous hydrogen and liquefied hydrogen, shall also comply with NFPA 55, except as provided in s. SPS 341.44.

Note: Under section SPS 341.02 (1) (b) 3., pressure vessels and piping for gases that are used for fueling purposes, such as for heating appliances or engines, must comply with chapter SPS 340 instead of this chapter.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. (1), Register, June, 1996, No. 486, eff. 7-1-96; am. (1) and (2), cr. (3), Register, February, 2000, No. 530, eff. 3-1-00; CR 05-025: renum. (2) to be (2) (a) and am., cr. (2) (b) Register October 2005 No. 598, eff. 11-1-05; CR 08-028: am. (2) Register November 2008 No. 635, eff. 12-1-08; correction in (1) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: am. (1), (2) (a), renum. (3) to be (3) (a) and am., cr. (3) (b), (4) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.43 Wisconsin special vessels. Where it is not possible or practical to construct a boiler or pressure vessel in strict compliance with s. SPS 341.42, the department may grant a variance to the owner or user to permit the installation of the boiler or pressure vessel as a Wisconsin special within the state of Wisconsin. The department shall consider a variance request upon receipt of a completed petition for variance form and the required fee. The variance may be granted under the following conditions:

Note: See section SPS 341.05 for further explanatory information.

(1) COMPARABLE SAFETY. (a) When the method of designing or constructing the boiler or pressure vessel is not covered by the ASME code, the department may approve the installation provided adequate proof of comparable safety of the design or construction is shown.

(b) Complete plans, calculations and specifications in duplicate shall be submitted to and approved by the department before installation.

(c) The boiler or pressure vessel shall be stamped "Wisconsin Special" if approved by the department.

(d) All other applicable requirements of the ASME code shall be met.

(2) OWNER-BUILT. (a) When the boiler or pressure vessel is to be built by an owner for the owner's use, the department may waive the stamping required by the ASME code.

(b) Complete plans, calculations and specifications in duplicate shall be submitted to and approved by the department before installation.

(c) The boiler or pressure vessel shall be stamped "Wisconsin Special" if approved by the department.

(d) All other applicable requirements of the ASME code shall be met.

(3) LIMITED QUANTITY. (a) When a small number of boilers or pressure vessels is to be built by a manufacturer, the department may waive the stamping required by the ASME code.

(b) Complete plans, calculations and specifications in duplicate shall be submitted to and approved by the department before installation.

(c) The boiler or pressure vessel shall be stamped "Wisconsin Special" if approved by the department.

(d) All other applicable requirements of the ASME code shall be met.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. (1) (a), (d), (2) (a), (d), (3) (a) and (d), Register, February, 2000, No. 530, eff. 3-1-00; correction in (intro.) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

SPS 341.44 U.S. department of transportation vessels. Pressure vessels bearing the stamping of the United States department of transportation are not permitted as permanent storage containers, except they may be used as replaceable service cylinders.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; CR 11-047: am. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.45 Noncode vessels. (1) EXEMPTED VESSELS. The following vessels are not required to be constructed and installed in accordance with the ASME code:

(a) Water heaters and hot-water storage tanks, provided water temperatures do not exceed 210°F.

Note: See chapter SPS 384 for requirements relating to water heaters and hot-water storage tanks.

(b) Vessels for containing water under pressure for domestic supply, including those having an air space for expansion.

(c) Pressure vessels used for the processing or storage of water at water temperatures not exceeding 210°F. These vessels may contain a steam or hot water coil or heat exchanger, provided the steam is at or below a pressure of 15 psig and the hot water is at or below a pressure of 160 psig and a temperature of 250°F.

(d) Pressure vessels used for water conditioning and filtration.

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

(2) VESSEL IDENTIFICATION. The vessels listed in sub. (1) (b) to (e) shall be identified with the manufacturer's name, a serial number, the allowable working pressure, and the year fabricated.

(3) PRESSURE RELIEF REQUIREMENTS. (a) Except as provided in par. (b), the vessels listed in sub. (1) shall meet the pressure relief device requirements of the ASME code.

Note: Pressure relief devices are not required on each vessel of a system if the system is properly equipped with pressure relief devices. For systems containing unheated water storage tanks, a pressure relief device is needed when the pressure-inducing source is capable of imposing a pressure greater than the design pressure of the tanks.

(b) Water heaters and hot-water storage tanks shall be equipped with combination temperature and pressure relief valves in accordance with chs. SPS 381 to 387.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; r. and recr. (1) (a) and(3) (b), Register, December, 1992, No. 444, eff. 1-1-93; correction in (3) (b) made under s. 13.93 (2m) (b) 7., Stats., Register, March, 1998, No. 507; am. (1) (intro.) and (3) (a), Register, February, 2000, No. 530, eff. 3-1-00; correction in (3) (b) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: am. (1) (a) to (d), (3) (b) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.46 Power piping. (1) GENERAL. Power piping shall be installed in accordance with ASME B31.1. The use of slip-on flanges shall be limited in applications to no higher than Class 300 primary pressure service rating. Slip-on flanges shall be installed with double fillet welds in accordance with ASME B31.1.

(2) BOILER EXTERNAL PIPING. Boiler external piping within the scope of section I of the ASME code shall be installed in accordance with ASME B31.1.

(3) APPLICATION. This section applies to new systems as well as all replacements, modifications, and alterations to existing systems.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; r. and recr. Register, February, 1990, No. 410, eff. 3-1-90; am. (1) and (2), Register, February, 2000, No. 530, eff. 3-1-00; CR 11-047: am. (1), (2) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.47 Multi-boiler installations. When hot-water heating boilers are installed in multiples with a common header and a common return, isolation valves may be eliminated between units and the units may be considered as one boiler provided all of the following conditions are met:

(1) OUTPUT LIMIT. No single unit exceeds 500,000 Btu per hour output.

(2) PRESSURE RELIEF. Each unit has a pressure relief device as required by the ASME code, or the common header has a pressure relief device with sufficient relieving capacity for all units in the installation.

(3) CONTROLS. Each unit has operating controls and safety controls acceptable to the department.

(4) LOW-WATER CUTOFF. The fuel supply to each unit is shut off by a low-water cutoff in the event of low water in the system.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; CR 11-047: am. (intro.), (1) to (3) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.48 Organic- or synthetic-fluid heat-transfer systems. Boilers and coil-type heaters that utilize organic or synthetic fluids as a heat-transfer media shall be designed, constructed and installed in accordance with the ASME code. Piping for organic or synthetic fluids used as a heat-transfer media and subject to temperatures in excess of 250°F shall be installed in accordance with ASME B31.1.

Note: See sections SPS 341.41 (1) and (2) for requirements relating to registering these installations with the Department.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. Register, May, 1994,No. 461, eff. 6-1-94; am. Register, February, 2000, No. 530, eff. 3-1-00; CR 05-025: am. Register October 2005 No. 598, eff. 11-1-05; CR 11-047: am. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.49 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 occupiable structures in accordance with the manufacturer's recommendation. If provided, a canopy shall be open on all sides and constructed of substantially nonflammable materials, and may 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) Any automatic fuel-feeding system for a solid-fuel-fired water-heating appliance shall be designed or approved by the manufacturer of the appliance.

(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.

History: Cr. Register, December, 1992, No. 444, eff. 1-1-93; r. and recr. (2), (3) (a), am. (4) (a), Register, June, 1996, No. 486, eff. 7-1-96; correction in (4) (b) made under s. 13.93 (2m) (b) 7., Stats., Register, October, 1996, No. 490; correction in (4) (b) made under s. 13.93 (2m) (b) 7., Stats., Register, May, 2001, No. 545; CR 01-139: am. (5) (b) Register June 2002 No. 558, eff. 7-1-02; CR 08-028: r. and recr. Register November 2008 No 635, eff. 12-1-08; CR 11-047: am. (3) (a), (c) Register May 2012 No. 677, eff. 6-1-12.

Subchapter V — Nuclear Power Plants

SPS 341.53 Application. (1) GENERAL. This subchapter applies to all nuclear power facilities existing on or after June 1, 2012.

(2) NRC REQUIREMENTS. Construction, installation, operation, alterations and repairs for nuclear facility components that are regulated by the NRC shall comply with all applicable NRC regulations.

Note: See 10 CFR 50.55a to 50.57 for applicable NRC regulations.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; correction made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: renum. 341.53 to be (1) and am., cr. (1) (title), (2) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.54 Installation registration. (1) OWNER-REPORT FILING BEFORE OPERATION. The owner or user of any nuclear class pressure vessel within the scope of applicable NRC regulations, except those vessels exempted from periodic inspections in s. SPS 341.18, shall file a copy of ASME form N-3, as required by the NRC, with the department before operating the pressure vessel.

Published under s. 35.93, Wis. Stats., by the Legislative Reference Bureau.

Note: Form N-3, Owner's Data Report for Nuclear Power Plant Components, is available from the American Society of Mechanical Engineers (ASME), at P.O. Box 2300, Fairfield, NJ 07007-2300, or telephone 800/843-2763, or www.asme.org.

(2) REGISTRATION OF BOILERS, PRESSURE VESSELS AND POWER PIPING. All non-nuclear class boilers, pressure vessels and power piping at nuclear power plants shall be registered with the department as required by s. SPS 341.41. The installation inspection shall meet the requirements of s. SPS 341.16.

Note: Large groups of vessels may be reported in summary form in lieu of individual reports for each vessel.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; correction in (1), (2) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: am. (1) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.55 Periodic inspections. (1) IN-SERVICE INSPECTION PROGRAM. (a) *Inspection plan.* The owner or user shall file with the department an in-service inspection plan as required by the NRC. The department shall be notified at least 10 business days prior to all planned shutdowns that include in-service inspections.

Note: A copy of the in-service inspection plan accepted by the nuclear regulatory commission will be acceptable to the Department in satisfying the filing of an in-service inspection plan.

(b) *Code of record.* In-service inspections shall comply with all applicable NRC regulations.

Note: Under 10 CFR 50.55a(g)(4), in-service inspections conducted during successive 120-month inspection intervals generally must comply with the requirements of Section XI of the latest edition and addenda of the ASME Code that were incorporated by reference in 10 CFR 50.55a 12 months before the start of the 120-month inspection interval.

(2) STATEMENT OF INSPECTION-SERVICE CONTRACT. The owner or user shall file a statement with the department indicating possession of an arrangement with a certified inspector to provide inspection services under applicable NRC regulations. The statement shall include the name and address of the certified inspector.

(3) IN-SERVICE INSPECTION REPORT. Within 90 calendar days after each refueling outage, the owner or user shall submit to the department a copy of the in-service inspection form accepted by the NRC.

Note: The in-service inspection forms accepted by the NRC include NIS-1, Owner's Report for Inservice Inspections. It is available from the American Society of Mechanical Engineers (ASME) at P.O. Box 2900, Fairfield, NJ 07007-2900, or telephone 800/843-2763, or www.asme.org.

(4) FREQUENCY OF INSPECTION. (a) Pressure vessels and low-pressure steam or hot-water heating boilers located within a nuclear containment may be inspected as part of the in-service inspection. Except as provided in s. SPS 341.18, these vessels and boilers shall be inspected at least once every 36 months by a certified inspector, and these inspections shall be reported to the department on form 10663-E.

(b) Power boilers located within a nuclear containment may be inspected as part of the in-service inspection. Except as provided in s. SPS 341.18, these boilers shall be inspected at least once every 12 months by a certified inspector, and these inspections shall be reported to the department on form 10663-E.

Note: Section SPS 341.17 (5) prescribes the steps for extending the period between inspections.

Note: The Department forms required in this chapter are available for a nominal fee at telephone 800-DOC-SALE or 411 (Telecommunications Relay), or at docsales@doa.state.wi.us, or at no charge at the Department's Web site at www.dsps.wi.gov through links to Division of Industry Services forms.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; am. (2), (4), Register, October, 1996, No. 490, eff. 11-1-96; am. (2), Register, February, 2000, No. 530, eff. 3-1-00; CR 08-028: r. and recr. (3) Register November 2008 No. 635, eff. 12-1-08; CR 11-047: renum. (1) to be (1) (a) and am., cr. (1) (a) (title), (b), am. (2), r. (3) (a) (title), (b), renum. (3) (a), (4) to be (3), (4) (a) and am., cr. (4) (b) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.56 Welded repairs and alterations. The owner or user shall furnish the department, within 90 calendar days of a refueling outage, a record of all repairs and alterations in accordance with NRC regulations, or with the NBIC and forms R-1, R-2 and NR-1, as applicable, when any ASME stamped component within the scope of the NRC regulations is repaired by welding. If used, the NBIC "R" or "NR-1" forms shall be registered with the National Board in accordance with the NBIC.

Note: The ASME repair forms accepted by the NRC include NIS-2, Owner's Report for Repair/Replacement Activity. It is available from the American Society of Mechanical Engineers (ASME) at P.O. Box 2900, Fairfield, NJ 07007-2900, or telephone 800/843-2763, or www.asme.org.

Copies of the National Board forms are available from the National Board, at 1055 Crupper Avenue, Columbus, OH 43229-1183, or telephone 614/888-8320, or www.nationalboard.org.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; CR 05-025: r. and recr. Register October 2005 No. 598, eff. 11-1-05; CR 08-028: r. and recr. Register November 2008 No. 635, eff. 12-1-08; CR 11-047: r. (1) (title), (2), renum. (1) to be 341.56 and am. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.57 Report of incidents. The owner or user shall report to the department any incident involving pressure-retaining components that are within the scope of the NRC regulations, if the incident must be reported to the NRC. The report shall be filed coincident with the report to the NRC.

Note: It is the intent of the Department to avoid conflicts with the requirements of the U.S. nuclear regulatory commission.

History: Cr. Register, February, 1988, No. 386, eff. 3-1-88; CR 11-047: am. Register May 2012 No. 677, eff. 6-1-12.

Subchapter VI — Repairs and Alterations

SPS 341.60 General requirements. Welded repairs, repair parts or alterations to any boiler or pressure vessel or their fittings, settings or appurtenances shall comply with the NBIC.

History: Cr. Register, February, 2000, No. 530, eff. 3-1-00; CR 05-025: am. Register October 2005 No. 598, eff. 11-1-05; CR 11-047: am. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.61 General rules for repairs and alterations. (1) Repairs and alterations to boilers and pressure vessels shall be performed by an organization in possession of a valid National Board repair "R" certificate of authorization for the intended scope of work.

History: Cr. Register, February, 2000, No. 530, eff. 3-1-00; CR 05-025: am. (1), r. (2) Register October 2005 No. 598, eff. 11-1-05.

SPS 341.62 Reports and stamping. (1) NATIONAL BOARD PROGRAM. (a) Anyone performing repairs or alterations under the National Board "R" stamp program shall register the repairs and alterations with the National Board on the appropriate NBIC "R" forms.

(b) 1. Stamping of or attaching a nameplate to a repaired or altered pressure-retaining item under NBIC part 3 section 5.7 shall be completed and then verified by a certified inspector before the NBIC "R" form is signed by the inspector.

2. Any stamping or attaching of a nameplate under this section shall be in accordance with the NBIC, except as provided in subd. 3.

3. If the stamping or attaching cannot be placed in accordance with the NBIC, the substitute placement shall be described on the appropriate NBIC "R" form, and the description shall be verified by the inspector.

(2) ADDITIONAL REPORTING REQUIREMENTS. (a) 1. Anyone performing routine repairs as defined in the NBIC shall register the repairs with the National Board on NBIC form R-1 and shall stamp or attach a nameplate to the repaired item.

2. Any stamping or attaching of a nameplate under this section shall be in accordance with the NBIC, and shall be completed and then verified by the certified inspector before the inspector signs the NBIC R-1 form, except as provided in subd. 3.

3. If the stamping or attaching cannot be placed in accordance with the NBIC, the substitute placement shall be described

on the NBIC R-1 form, and the description shall be verified by the inspector.

(b) Anyone performing seal welding of 6 or more boiler tubes shall register the repair with the National Board on form R-1.

Note: Copies of the National Board forms are available from the National Board, at 1055 Crupper Avenue, Columbus, OH 43229-1183, or telephone 614/888-8320, or www.nationalboard.org.

History: Cr. Register, February, 2000, No. 530, eff. 3-1-00; CR 05-025: r. and recr. (2) October 2005 No. 598, eff. 11-1-05; CR 11-047: am. (title), renum. (1) to be (1) (a) and am., cr. (1) (b), renum. (2) (a) to be (2) (a) 1. and am., cr. (2) (a) 2., 3. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.63 Riveted repairs. (1) GENERAL. When riveted patches are used, they shall be designed and applied using methods acceptable to the department.

Note: Information regarding the use of riveted patches is available from the Department.

(2) MATERIALS FOR RIVETED PATCHES. Patch material shall meet the applicable requirements of the NBIC.

(3) PRESSURE TEST. The certified inspector may require a pressure test, as specified in the NBIC, after completion of a riveted repair.

History: Cr. Register, February, 2000, No. 530, eff. 3-1-00; CR 11-047: am. (2), (3) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.64 Safety and safety relief valve repairs. (1) DEFINITIONS. In this section:

(a) "Repair of a safety valve or safety relief valve" means the replacement, re-machining or cleaning of any critical part; lapping of seat and disc or any other operation that may affect the flow passage, capacity, function or pressure-retaining integrity; and disassembly, re-assembly and adjustments which affect the safety valve or safety relief valve function.

(b) "Repair of a safety valve or safety relief valve" does not include the initial adjustments of a new safety valve or safety relief valve on a boiler or pressure vessel if made by the manufacturer or assembler of the valve.

(2) BROKEN SEALS. Safety valves and safety relief valves on which the seals have been broken shall be subject to the requirements for repairs.

(3) AUTHORIZED REPAIRS. Repair of a safety valve or safety relief valve shall be performed by an organization in possession of one or more of the following:

(a) ASME V, HV or UV code symbol stamp.

(b) National Board VR stamp covering the work to be performed.

(4) NAMEPLATES. (a) When repair of a safety valve or safety relief valve occurs, a metal repair nameplate stamped with the information required by par. (b) shall be welded or otherwise permanently attached to the valve either above, adjacent to or below the original stamping. On small valves, a metal tag showing the repair nameplate information may be securely attached to the repaired valve.

(b) The information on the valve nameplate shall include the name of the repair organization, the symbol stamp and symbol stamp number, and the date of repair. If the set pressure has been changed, the new set pressure and capacity shall be indicated and the original nameplate or stamping shall be modified by marking out, although leaving legible, the prior set pressure and capacity. The new capacity shall be based on that for which the valve was originally certified. Only the current repair nameplate need be attached to the valve with the original or duplicate nameplate.

History: Cr. Register, February, 2000, No. 530, eff. 3-1-00; CR 11-047: am. (1) (a), (3) (intro.), (4) (a) Register May 2012 No. 677, eff. 6-1-12.

Subchapter VII — Secondhand Vessels

SPS 341.70 Application. This subchapter applies to secondhand boilers and secondhand pressure vessels.

History: Cr. Register, February, 2000, No. 530, eff. 3-1-00; correction made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: am. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.71 Existing vessels. Secondhand boilers and secondhand pressure vessels, originally installed in Wisconsin and not constructed and stamped according to some edition of the ASME code, may be reinstalled if the maximum allowable working pressure is recalculated with a factor of safety of 6.

Note: The pressure calculation formula for shells is as follows:

P = (T.S. x t x E)/(R x F.S.)
where P = maximum allowable working pressure, pounds per square inch
T.S. = tensile strength of shell plate, pounds per square inch
t = minimum thickness of shell plates, inches
E = efficiency of longitudinal joint
R = inside radius of the outside course of the shell, inches
F.S. = factor of safety

Note: The pressure calculation formula for flat heads and flat surfaces is as follows:

$P = (T.S. \times t^2)/(0.5 \times d^2 \times F.S.)$
where P = maximum allowable working pressure, pounds per square inch
T.S. = tensile strength of shell plate, pounds per square inch
t = thickness of plate, inches
d = diameter of head or shortest unsupported span of head or maximum pitch between stays, inches
F.S. = factor of safety

History: Cr. Register, February, 2000, No. 530, eff. 3-1-00.

SPS 341.72 Vessels from out-of-state. Secondhand boilers and secondhand pressure vessels, from out-of-state, shall be constructed and stamped according to some edition of the ASME code. A copy of the manufacturer's data report shall be furnished to the department for each vessel indicating that it was manufactured originally to the requirements of an earlier edition of the applicable ASME code. If a vessel has been repaired or altered since its fabrication, a copy of the manufacturer's data report, welded repair report or alteration report shall be furnished to the department.

History: Cr. Register, February, 2000, No. 530, eff. 3-1-00.

SPS 341.73 Lap seam boilers. Secondhand boilers which have lap seam construction and which are larger than 36 inches in diameter shall be limited to a maximum allowable working pressure of not more than 15 psig.

History: Cr. Register, February, 2000, No. 530, eff. 3-1-00; CR 11-047: am. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.74 Prohibited boilers. The installation of secondhand boilers that have the longitudinal joint exposed to the intense heat of the furnace is prohibited. The locomotive or inside butt strap may not be considered as strengthening or changing the original type of boiler joint.

History: Cr. Register, February, 2000, No. 530, eff. 3-1-00; CR 11-047: am. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.75 Inspection and testing. (1) HYDROSTATIC PRESSURE TEST. Every secondhand vessel shall be inspected and given a hydrostatic pressure test at one and one-half times the maximum allowable working pressure at its new point of installation location before it is placed in operation. The test shall be witnessed by a certified inspector.

(2) ALTERNATIVE TESTS. When the certified inspector determines that a hydrostatic test at one and one–half times the maximum allowable working pressure is not possible or desirable, the certified inspector may accept alternative means to determine if the vessel is safe for its intended use.

Note: Where water is used in a hydrostatic test, the temperature of the water should not be less than 70°F and the maximum temperature during inspection should not exceed 120°F. If a test is conducted at 1.5 times the maximum allowable working pressure (MAWP) and the owner specifies a temperature higher than 120°F, the pressure should be reduced to the MAWP and the temperature should be reduced to 120°F for the close examination.

(3) EXEMPT VESSELS. Boilers and pressure vessels used for portable or emergency use shall be exempt from secondhand vessel test requirements.

History: Cr. Register, February, 2000, No. 530, eff. 3-1-00.

SPS 341.76 Installation. Except for vessels exempted in s. SPS 341.18, all secondhand vessels when reinstalled, shall comply with the ASME code in regard to fittings, appliances, valves, connections, settings and supports. These vessels shall also comply with the installation and permit to operate requirements in this chapter.

History: Cr. Register, February, 2000, No. 530, eff. 3-1-00; correction made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672.

Subchapter VIII — Pressure Vessels in Petroleum Refineries

SPS 341.80 General requirements. Pressure vessels in petroleum refineries shall comply with the standards specified in API 510.

History: Cr. Register, February, 2000, No. 530, eff. 3-1-00.

Subchapter IX — Historical Boilers

SPS 341.90 Application. This subchapter applies to all historical boilers in operation for demonstration purposes at fairs, museums, steam shows, historical attractions or any other locations frequented by the public.

History: CR 05-025: cr. Register October 2005 No. 598, eff. 11-1-05; correction made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: am. Register May 2012 No. 677, eff. 6-1-12.

SPS 341.91 General requirements. (1) Historical boilers shall be inspected in accordance with NBIC part 2 section 6-supplement 2, Historical Boilers.

(2) The owner or user shall obtain and maintain a valid permit to operate in accordance with s. SPS 341.24.

(3) The permit to operate shall be displayed on the historical boiler near the controls during operation at any public location.

(4) Welded repairs or alterations shall comply with subch. VI.

History: CR 05-025: cr. Register October 2005 No. 598, eff. 11-1-05; CR 08-028: am. (title) and (1), r. (2) and (3), renum. (4) to (6) to be (2) to (4) Register November 2008 No. 635, eff. 12-1-08; correction in (2) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: am. (title), (1) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.92 Testing, maintenance and out-of-state boilers. (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. SPS 341.43.

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. SPS 341.30 (1) (c).

Note: The owner or user may use the NBIC form C-1: Initial Boiler Certification Report. The form is available for a nominal fee at telephone 800-DOC-SALE or 411 (Telecommunications Relay), or at docsales@doa.state.wi.us, or at no charge at the Department's Web site at www.dsps.wi.gov through links to Division of Industry Services forms.

(2) RECIPROCITY WITH OTHER STATES. (a) The owner or user of an out-of-state historical boiler shall provide ultrasonic thickness test and pressure-calculation documentation in accordance with NBIC part 2 section 6-supplement 2, Historical Boilers.

(b) The owner or user of an out-of-state historical boiler shall provide copies of welded repair or alteration documentation as required in s. SPS 341.38 (2).

(c) The owner or user of an out-of-state historical boiler shall provide a copy of the valid jurisdictional certificate of operation or permit to operate from another state.

(d) The owner or user of an out-of-state historical boiler shall arrange for an inspection after the certified inspector receives, reviews and accepts the documentation as required in pars. (a) and (b). Inspectors shall be given at least 5 business days advance notice to arrange for the inspection.

(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. SPS 341.91 (3) prior to operation.

History: CR 05-025: cr. Register October 2005 No. 598, eff. 11-1-05; CR 08-028: r. and recr. (title) and (1), r. (2) and (3), renum. (4) to be (2) and am. (2) (a) and (e) Register November 2008 No. 635, eff. 12-1-08; correction in (1) (a) 1. b., (c), (2) (b), (e) made under s. 13.92 (4) (b) 7., Stats., Register December 2011 No. 672; CR 11-047: am. (title), (2) (a) Register May 2012 No. 677, eff. 6-1-12.

SPS 341.93 Interruption of inspection cycle. If an inspection cycle under NBIC part 2 section 6 S2.7.3.2 is interrupted by delaying a required inspection for more than 1 year, the subsequent inspection cycle shall restart from the beginning of the sequence in NBIC part 2 section 6 S2.7.3., which is the initial inspection under NBIC part 2 section 6 S2.7.3.1.

History: CR 11-047: cr. Register May 2012 No. 677, eff. 6-1-12.