Regulatory Analysis Form

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IRRC Number: 2443

(1) Agency

Department of Labor and Industry

(2) I.D. Number (Governor's Office Use)
12-58

(3) Short Title

Boiler and Unfired Pressure Vessel Regulation

(4) PA Code Cite
34 Pa. Code §§ 3.1- 3.171

(5) Agency Contacts & Telephone Numbers
Primary Contact: Edward Leister (717) 787-3323
Secondary Contact: Karen Galli (717)-787-4186

(6) Type of Rulemaking (Check One)

__X__ Proposed Rulemaking
_____ Final Order Adopting Regulation
_____ Final Order, Proposed Rulemaking Omitted

(7) Is a 120-Day Emergency Certification Attached? (Check One)

__X__ No
_____ Yes: By the Attorney General
_____ Yes: By the Governor

(8) Briefly explain the regulation in clear and nontechnical language.

This regulation provides detailed guidance for the construction, stamping, installation, maintenance, repair, inspection and operation of boilers and unfired pressure vessels under the "Boiler and Unfired Pressure Vessel Law," the act of June 18, 1998, P.L. 655, No. 85, 35 P.S. § 1331.1 *et seq.* (Act 85). This regulation is based upon generally accepted national standards, formulas and practices including: The American National Standard Institute/National Board Inspection Code (ANSI/NB23); The American Society of Engineers Code (ASME Code); The ASME Code for power piping (ASME B 31.1); The ASME standard for controls and safety devices for automatically fired boilers (ASME/CSD 1); The National Electric Code; and, The National Fire Protection Association Standard for Boiler Controls (NFPA 8501). It also contains requirements for the issuance and renewal of commissions to boiler inspectors and suspension/revocation of commissions for *due cause*. The regulation also enumerates required fees for commissions and renewal of commissions.

The purpose of the regulation is to update the standards for boilers and unfired pressure vessels in the Commonwealth and to ensure their safe installation and operation.

(9) State the statutory authority for the regulation and any relevant state or federal court decisions.

Section 14 of Act 85 provides that the Department may make, alter, amend or repeal regulations for the construction, stamping, installation, maintenance, repair, inspection and operation of boilers and unfired pressure vessels used or destined for use in the Commonwealth. (35 P.S. § 1331.14). Section 14 specifically gives the Department of Labor and Industry (Department) the authority to base this regulation on nationally accepted engineering standards, formulas and practices pertaining to boilers and unfired pressure vessels. Additionally, section 11 provides for the issuance, renewal, and suspension of commissions. 35 P.S. § 1331.11.

(10) Is the regulation mandated by any federal or state law or court order, or federal regulation? If yes, cite the specific law, case, or regulation, and any deadlines for action.

Federal law does not mandate this regulation. However, Act 85 does not provide adequate standards or guidance for the owners and operators of boilers and unfired pressure vessels. In order to give the law full force and effect and to provide for the safe and modern installation of boilers and unfired pressure vessels in this Commonwealth, regulations are required in accordance with section 14 of Act 85. 35 P.S. § 1331.14. The Department also has to set standards for the issuance, renewal, and suspension/revocation of commissions under section 11. 35 P.S. § 1331.11.

(11) Explain the compelling public interest that justifies the regulation. What is the problem it addresses?

The purpose of Act 85 is to protect the public from catastrophic loss from boiler and unfired pressure vessel explosion. Act 85 updates the law by allowing the Department to adopt current national standards. The last regulatory change was in 1986. There have been significant changes in technology and the national standards since 1986. This proposed regulation reflects those changes. Act 85 does not provide the specific standards for installation, inspection and maintenance of boilers and unfired pressure vessels. This regulation is necessary to provide those standards and practices including: The American National Standard Institute/National Board Inspection Code (ANSI/NB23); The American Society of Engineers Code (ASME Code); The ASME Code for power piping (ASME B 31.1); The ASME standard for controls and safety devices for automatically fired boilers (ASME/CSD 1); The National Electric Code; and, The National Fire Protection Association Standard for Boiler Controls (NFPA 8501). Standards for inspectors relating to their competency are essential to ensure proper enforcement of Act 85.

(12) State the public health, safety, environmental, or general welfare risks associated with non-regulation.

Act 85 requires the Department to promulgate this regulation. The major consequence of not promulgating this regulation is that there would be no current standards for the installation, maintenance, inspection and operation of boilers and unfired pressure vessels. Without these standards, catastrophic loss from explosion, including loss of life, is more likely. This regulation will provide uniform guidance to the regulated community. This regulation is also essential to ensure that commissioned inspectors are qualified and provide adequate inspections.

(13) Describe who will benefit from the regulation. (Quantify the benefits as completely as possible and approximate the number of people who will benefit.)

The general public will benefit from this regulation. The general public is exposed to boilers and unfired pressure vessels on a daily basis. This regulation will provide greater safety for the general public. Boiler operators, owners and users of boilers and unfired pressure vessels will also benefit from the regulation by having a safe environment in which to work and uniform standards to follow.

(14) Describe who will be adversely affected by the regulation. (Quantify the adverse effect as completely as possible and approximate the number of people who will be adversely affected.)

Owners and users of boilers and unfired pressure vessels will be adversely effected in that they must absorb the cost of compliance, if any. These costs are similar to the costs of compliance under the current regulation. This regulation is based on current national standards.

(15) List the persons, groups, or entities that will be required to comply with the regulation. (Approximate the number of people who will be required to comply.)

This regulation requires compliance by owners and users of boilers and unfired pressure vessels, except for boilers located on farms, apartments with four or less units and private residences. This includes approximately 300,000 boilers and unfired pressure vessels, most of which are currently registered with the Department.

This regulation also requires compliance by commissioned boiler inspectors. There are approximately 300 commissioned inspectors. The costs are similar to the current regulation's costs.

(16) Describe the communications with and input from the public in the development and drafting of the regulation. List the persons and/or groups who where involved, if applicable.

The Department's Boiler Advisory Board reviewed and commented on this regulation. The Boiler Advisory Board is established under § 2214 of the Administrative Code to advise the Industrial Board on boilers. 71 P.S. § 574(g). The Board consists of an insurance underwriter, insurance inspection service, boiler manufacturer, boiler and unfired pressure vessel engineer, organized labor representative, power generation engineer and representative from the Department's boiler division. There are currently seven members on the advisory board appointed by the Secretary of Labor and Industry.

The Department also met with the Pennsylvania Restaurant Association, the Pennsylvania Food Merchants Association, and Chart Industries concerning beverage-dispensing systems. The Pennsylvania Propane Gas Association has also reviewed the regulation.

(17) Provide a specific estimate of the costs and/or savings to the regulated community associated with compliance, including any legal, accounting, or consulting procedures which may be required.

The costs for the program will continue at the current amounts. The cost of a certificate of operation is $15 per year, for each piece of equipment. If the piece of equipment is not insured, the average annual cost of inspection is $12.50. If the piece of equipment is insured, the costs for inspection may be included in the insurance premium.

The initial cost for boiler inspector commission is $30 for the examination, and $10.00 for the credential card and commission. The annual credential card and commission renewal is $10.00. The renewal fee will be increased from $7.50 to $10.00 to help cover increased administrative costs.

(18) Provide a specific estimate of the costs and/or savings to local governments associated with compliance, including any legal, accounting, or consulting procedures which may be required.

Local governments will only incur costs when they own or operate boilers and unfired pressure vessels.

(19) Provide a specific estimate of the costs and/or savings to state government associated with the implementation of the regulation, including any legal, accounting, or consulting procedures which may be required.

The costs will be similar to the current costs incurred by the boiler and unfired pressure vessel registration and inspection program. The current program costs are $2,241,888. There will be no additional costs due to this proposed regulation.

Regulatory Analysis Form

(20) In the table below, provide an estimate of the fiscal savings and cost associated with implementation and compliance for the regulated community, local government, and state government for the current year and five subsequent years.

	Current FY Year	FY +1 Year	FY +2 Year	FY +3 Year	FY +4 Year	FY +5 Year
SAVINGS:	$	$	$	$	$	$
Regulated Community						
Local Government						
State Government						
Total Savings	0	0	0	0	0	0
COSTS:	$	$	$	$	$	$
Regulated Community	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000
Local Government						
State Government	2, 241,888	2,421,239	2,614,934	2,824,133	3,050,063	3,294,068
Total Costs						
REVENUE LOSSES:	$	$	$	$	$	$
Regulated Community	N/a	N/a	N/a	N/a	N/a	N/a
Local Government	N/a	N/a	N/a	N/a	N/a	N/a
State Government	N/a	N/a	N/a	N/a	N/a	N/a
Total Revenue Losses	N/a	N/a	N/a	N/a	N/a	N/a

(20a) Explain how the cost estimates listed above were derived.

There will be no significant change in the cost of inspection or the revenue generated based on these regulations. Boiler inspection fees and boiler inspector commission fees were increased by the Act of December 23, 2003, No. 47, which amended, section 613A of the Administrative Code. (71 P.S. § 240.13A).

There are no changes to the Department programs. The annual 8% increase shown represents annual salary and administrative increases.

(20b) Provide the past three-year expenditure history for programs affected by the regulation.

Program	FY –3	FY -2	FY -1	Current FY
	$2,710,183	$2,731,843	$2,506432	$2,241,888

(21) Using the cost-benefit information provided above, explain how the benefits of the regulation outweigh the adverse effects and costs.

The potential cost of a catastrophic loss due to explosion, including the loss of life and property, significantly outweighs the cost of regular registration, inspection and maintenance of boilers and unfired pressure vessels. The regulation will not lead to greater monetary costs than presently experienced.

(22) Describe the nonregulatory alternatives considered and the costs associated with those alternatives. Provide the reasons for their dismissal.

There is no effective non-regulatory alternative. Regulation is the only means to set state-of-the-art, uniform, and compulsory standards for boilers. Promulgation of this regulation is within the explicit authority of section 14 of Act 85. 35 P.S. § 1331.14.

(23) Describe alternative regulatory schemes considered and the costs associated with those schemes. Provide the reasons for their dismissal.

No alternatives were considered. This regulation is similar in format to the current regulation and adopts national standards used in most states and used by the industry. The major changes are in the technical requirements. This regulation updates the standards to the most current national code standards.

This regulation also increases the internal and external inspection cycle for low-pressure steam vapor boilers, and hot water heating and supply boilers from 12 months to 24 months. It increases the internal inspection cycle for low-pressure boilers in schools to 24 months and steel how water heating boilers to 48 months. It increases the inspection cycle for unfired pressure vessels to 36 months. It also allows the Department to increase the internal inspection cycle of power boilers to 24 months if certain maintenance conditions are met.

This change will save unnecessary inspection costs for boilers.

(24) Are there any provisions that are more stringent than federal standards? If yes, identify the specific provisions and the compelling Pennsylvania interest that demands stronger regulation.

There are no federal standards.

(25) How does the regulation compare with those of other states? Will the regulation put Pennsylvania at a competitive disadvantage with other states?

This regulation is similar to that of other states. It incorporates current national standards. It will not put Pennsylvania at a competitive disadvantage with other states.

(26) Will the regulation affect existing or proposed regulations of the promulgating agency or other state agencies? If yes, explain and provide specific citations.

This regulation does not affect other regulations of the Department or the regulations of other state agencies.

(27) Will any public hearings or informational meetings be scheduled? Please provide the dates, times, and locations, if available.

The Boiler Advisory Board several times. The Board currently consists of representatives from an insurance underwriter, insurance inspection service, boiler manufacturer, boiler and unfired pressure vessel engineer, organized labor, power generation engineer and Department's boiler division. The Department also met with the Pennsylvania Restaurant Association, the Pennsylvania Food Merchants Association, and Chart Industries concerning beverage-dispensing systems. The Department does not plan to hold additional public meetings.

(28) Will the regulation change existing reporting, record keeping, or other paperwork requirements? Describe the changes and attach copies of forms or reports which will be required as a result of implementation, if available.

This regulation will not require additional reporting or record keeping. The reporting and record keeping requirements are consistent with the current regulations.

(29) Please list any special provisions which have been developed to meet the particular needs of affected groups or persons including, but not limited to, minorities, elderly, small businesses, and farmers.

The Department changed section 3.3(d)(5) (relating to scope) because of litigation which was initiated against the Department. During this litigation, the Department determined that Act 85 and the ASME Code did not provide for inspection standards for hot, high-pressure washers and a steam cleaners (instantaneous water heaters) like those which can be rented at rental centers open to the public. To address this concern and resolve the litigation, the Department added an exemption to this section of the regulation to exclude certain instantaneous water heaters. Instantaneous water heaters are exempt from this regulation if the following limitations are not exceeded: (1) heat input of 200,000 B.T.U.'s /hr (58.6 kW); (2) water temperature of 210° F (99°C); and (3) a nominal water-containing capacity of 120 gallons (454 L).

The Department met with the Pennsylvania Restaurant Association, the Pennsylvania Association of Convenience Stores and Chart Industries concerning beverage-dispensing systems. This proposed regulation addresses clearance issue with these dispensing systems at section 3.38. This addresses the restaurant association's concerns.

Act 47 of 2003 amended section 613-A of the Administrative Code (71 P.S. § 240.13A) to place caps on the inspection fees on such systems. These fees are addressed in section 3.2 (relating to fees).

(30) What is the anticipated effective date of the regulation; the date by which compliance with the regulation will be required; and the date by which any required permits, licenses, or other approvals must be obtained?

This regulation will be effective upon its final publication in the *Pennsylvania Bulletin.*

(31) Provide the schedule for continual review of the regulation.

The regulation will be reviewed and updated as needed.

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By: _____ DEPUTY ATTORNEY GENERAL OCT 08 2004 DATE OF APPROVAL ☐ Check if applicable. Copy not approved. Objections attached.	**DEPARTMENT OF LABOR & INDUSTRY** (AGENCY) Document/Fiscal Note No. 12-58 Date of Adoption: _____ By: _____ Stephen M. Schmerin Title: Secretary of Labor & Industry (Executive Officer, Chairman or Secretary)	By: _____ 9.14.04 DATE OF APPROVAL EXECUTIVE Deputy General Counsel (~~Chief Counsel, Independent Agency~~) (~~Strike inapplicable title~~) ☐ Check if applicable. No Attorney General approval or objection within 30 days after submission.

PROPOSED RULEMAKING

DEPARTMENT OF LABOR AND INDUSTRY

34 PA. CODE, PART I, CHAPTER 3

BOILER AND UNFIRED PRESSURE VESSEL REGULATIONS

PROPOSED RULEMAKING
Title 34 Labor and Industry
Boiler and Unfired Pressure Vessel Regulations
Chapter 3
[34 Pa. Code, Part I, Chapter 3]

In accordance with Section 14 of the "Boiler and Unfired Pressure Vessel Law," the act of June 18, 1998 (P.L. 655, No. 85) (Act 85), the Department of Labor and Industry (Department) is submitting proposed rulemaking for boilers and unfired pressure vessels.

The Department proposes the following regulations for boilers and unfired pressure vessels under the "Boiler and Unfired Pressure Vessel Law," (35 P.S.§§ 1331.1 – 1331.19) as set forth in Annex A.

Statutory Authority

This proposed rulemaking is issued under the authority provided in section 14 of Act 85 (35 P.S. § 1331.14) which provides: "The department may make, alter, amend or repeal regulations for the construction, stamping, installation, maintenance, repair, inspection and operation of boilers and unfired pressure vessels used or destined for use in this Commonwealth. The regulation may be based upon generally accepted national or international engineering standard, formulas and practices...".

Section 11 of Act 85 also mandates that the department conduct commission examinations, renew commissions, and set fees for the issuance and renewal of commissions. The Department may also suspend or revoke a commission for due cause. 35 P.S. § 1331.11

Background

Boilers and Pressure Vessels are operated under conditions that produce and contain pressure. These vessels can pose a serious threat to life and property because a catastrophic failure of the vessel will release energy and shrapnel similar to the explosion of a bomb. The Commonwealth enacted several laws to ensure the safe manufacturing and operation of this equipment. These laws were consolidated into a single statute by the Act of May 2, 1929 (P.L. 1513, No. 451)(35 P.S. §§ 1301-1318.1, *repealed*) (Act 451). In 1998, the legislature replaced Act 451 with Act 85 and brought the boiler and pressure vessel program up to the current national standards of safety, construction and inspection. Act 85's primary improvement was ensuring that the Commonwealth's program is consistent with nationally and internationally accepted standards by requiring National Board of Boiler and Pressure Vessel Inspectors (National Board) registration of manufacturers'

documents, requiring nationally accepted standards for repairs, and providing for consistent application of safety inspections for boilers.

Compliance with Executive Order 1996-1, Regulatory Review and Promulgation

Since the passage of Act 85, the Department has sought input and approval from the Boiler Advisory Board. The Boiler Advisory Board was created under section 2214 of the Administrative Code, 71 P.S. § 574(g), to provide technical advice to the Industrial Board. The Board consists of representatives from insurance underwriters, insurance inspection services, boiler manufacturers, boiler and unfired pressure vessel engineers, power generation engineer, organized labor and Department's boiler division. The Board has reviewed several drafts of this regulation and provided comment and input on a number of substantive issues such as the Department's fees and the manner in which the regulations deals with beverage dispensing systems.

The Department also met with the Pennsylvania Restaurant Association, the Pennsylvania Food Merchants Association, and Chart Industries concerning beverage-dispensing systems.

Purpose

This regulation is necessary to implement the improvements to Pennsylvania's boiler and pressure vessel programs contained in Act 85. The regulation adopts "nationally recognized" standards, which bring Pennsylvania's program to the most current "state of the art" in technology and safety. The regulation identifies equipment in business locations that are included in the safety inspection program in Act 85 and does not pertain to boilers located in single-family dwellings, or multiunit dwellings with four or fewer units. It also implements the accident reporting provisions of section 16 of Act 85 (35 P.S. § 1331.16), provides requirements for testing and certification under section 11 (35 P.S. § 1331.11), provides for the revocation or suspension of commissions for due cause, and sets fees. The regulation clarifies the requirements for persons performing repairs on boilers and pressure vessels.

Summary of Proposed Rulemaking

Subchapter A – General Provisions.

§ 3.1. Definitions.

This section provides definitions for the terms provided in the regulation.

It provides the statutory citation for Act 85, 35 P.S. §§ 1331.1-1331.19.

This section identifies and provides addresses for the American Gas Association, the American National Standards Institute (ANSI), the American Society of Engineers (ASME), the National Board of Boiler Inspectors, and the National Fire Protection Association (NFPA).

It also provides information on the national standards adopted by this regulation, such as: ANSI/NB 23, the National Board Inspection Code; ASME Code, Rules for Construction of Power Boilers; ASME B 31.1, ASME Code for Pressure Piping; ASME/CSD1, Controls and Safety Devices for Automatically Fired Boilers; National Electric Code; and, Standard Qualification Procedures of the American Welding Society, D1.1, Structural Welding Code.

It contains definitions of apparatus such as "boiler," "heat exchanger," "instantaneous water heater," "locomotive boiler," "low pressure heating boiler," "miniature boiler," "nonstandard boiler," "nonstandard unfired pressure vessel," "Pennsylvania special boiler," "Pennsylvania special unfired pressure vessel," "portable boiler," "power boiler," "power boiler," "process boiler," "second hand boiler and unfired pressure vessel," "standard boiler and unfired pressure vessel," steam coil vessel," "storage water heater," " unfired pressure vessel," and "unfired steam boiler."

§ 3.2. Fees.

This section sets out the fees for references section 613-(A) of the Administration Code (71 P.S.§ 240.13A), which establishes fees for commissions, certificates of operation and inspections. The fees are enumerated because they were increased by statutory amendment to the Administrative Code, Act of December 23, 2003, No. 47. This section also establishes a fee for an application for an Industrial Board variance. The fee is consistent with the Uniform Construction Code variance application fee. 34 Pa. Code § 401.2(h) (relating to Department fees).

§ 3.3. Scope.

The regulation applies to the boiler and pipe connections up to the stop valves, and unfired pressure vessels. The regulation does not apply to residential occupancy; piping between reheaters connections; boiler and unfired pressure vessels owned and operated by the Federal Government; boilers on farms, certain storage water heaters and instantaneous water heaters; unfired pressure vessels used in interstate commerce; coil-type hot water boilers which meet ASME Code standards; and certain air tanks. These exemptions are based on the statute and ASME Code exemptions.

Boilers installed prior to July 1, 1916, and unfired pressure vessels and power boilers installed prior to September 1, 1937 are regulated by Subchapters E through G of

this regulation. These boilers and unfired pressure vessels were installed in the Commonwealth before the enactment of any applicable legislation.

§ 3.4. Adoption of national standards.

This section states that the Department adopts ANSI/NB23, ASME Code and its published cases and interpretations, ASME B 31.1, ASME/CSD1, National Electric Code, and NFPA 85 as part of this regulation.

§ 3.5. Examinations for inspector commissions.

This section establishes the examination cycle for National Board inspector examinations. This section further requires an applicant for a boiler inspection commission to meet National Board rules and regulations, and education and experience requirements.

This section also requires applicants to pass the Pennsylvania Certificate of Competency examination, which is based on the Act, this regulation and the ASME Codes, with a grade of 70% or more before conducting inspections of boilers and unfired pressure vessels in the Commonwealth. The Department will use the National Board application for the Pennsylvania Certificate of Competency application. An applicant must meet one of the following educational and experience requirements: A 4-year degree in mechanical or chemical engineering and 1-year experience in the design, construction, inspection, or repair of boiler or pressure vessels; a 2-year degree in mechanical or chemical engineering and 2 years experience in the design, construction, inspection, or repair of boilers or pressure vessels; or a high school diploma, or GED and 3 years as a high pressure boiler operator in charge or 3 years in the construction, repair, inspection of high pressure boilers or vessels.

§ 3.6. Certificates of competency, commissions, credential cards and renewal applications.

This section establishes the requirements for a certificate of competency, credential card and commission. In order to receive a certificate of competency and credential card, the applicant must meet the National Board of Boiler Inspectors standards, pass an examination and pay the appropriate fee. This section also establishes an annual renewal for commissions and credential cards. To renew a certificate and credential card, the applicant must submit a renewal application and pay the appropriate fee.

§3.7. Re-examination.

This section allows an applicant for examination to take the examination three times in a 1-year period. This section requires an additional application and examination fee after three failed examinations.

§ 3.8. Reciprocity.

This section allows the Department to grant a reciprocal commission to an inspector who holds a National Board commission and is currently employed by another state or an insurance company, upon passing a Department-administered written examination on the act.

§ 3.9. Suspension or revocation of boiler inspection commissions.

This section establishes that the Department may initiate an action to suspend or revoke a boiler inspector's commission for due cause. Due cause will consist of the following: practicing fraud or deceit or making untrue representations in obtaining a commission; failing to remit the required commission fee; violating the act or this chapter; incompetence or gross negligence; acting in a manner presenting a danger to public health and safety; having a commission or any other authorization to engage in the business of boiler inspection revoked or suspended or having other disciplinary action taken or an application for a commission or authorization to engage in the business of boiler inspection refused or denied by the National Board, the proper authority of another state or Federal district, territory, or insular possession of the United States; engaging in fraud, deceit or an act of moral turpitude while acting as a boiler inspector; failing to enforce the act or this chapter; and, engaging in activities of a commissioned boiler inspector without a current commission issued by the Department.

This section provides the Department's procedure for suspension or revocation, and the notice and hearing provisions for suspension or revocation according to Title 2 of the Pennsylvania Consolidates Statutes (relating to administrative law and procedure) and the General Rules of Administrative Practice and Procedure, 1 Pa. Code, Part II.

Subchapter B- Requirements for Boilers and Unfired Pressure Vessels.

§ 3.21. Stamping.

This section requires ASME stamping and a registration number on boilers and unfired pressure vessels destined for use in the Commonwealth. This section allows stamping of a Pennsylvania special number on boilers and unfired pressure vessels that are not built to ASME Code standards and which meet the requirements of section 7(b) of

Act 85. (35 P.S. § 1331.7(b)) This section also allows the use of boilers and unfired pressure vessels with a registration number from another state if a National Board inspector inspects the boiler or vessel during construction. Registration and stamping is not required for cast iron boilers constructed under ASME code provisions.

This section requires the stamping to be exposed. It may not be concealed by paint or lagging.

§ 3.22. Other state stamps.

This section allows a boiler with the stamp of another state to be installed and operated in the Commonwealth, if a National Board-commissioned inspector witnessed its construction and the stop data report is provided to the Department.

§ 3.23. Lap seam crack.

This section requires that a boiler or unfired pressure vessel in which a lap seam crack is discovered along a riveted joint be immediately taken out of service. Also, repairs may not be made without Department approval.

§ 3.24. Boiler controls.

This section provides that boilers must be installed in accordance with ASME/CSD 1, NFPA 8501 and maintained in accordance with ANSI/NB 23.

§ 3.25. Pressure reducing stations.

This section provides standards for installation and use of pressure reducing stations and valves. The provisions of ASME B 31.1 govern the installation of pressure reducing stations. This section allows hand-controlled by-passes to be used around reducing valves under certain circumstances. It also allows a pressure gauge to be installed at the low-pressure side of a reducing valve.

§ 3.26. Valves and safety devices.

This section requires that a boiler or unfired pressure vessel to comply with § 3.152 (relating to safety appliances) before it is placed in service.

This section provides standards for the use, resealing and repairs of valves and safety devices. This section requires a company holding a "VR" stamp to perform the resetting, resealing and repair of safety and relief valves. It provides that safety and relief valves may not be loaded to maintain working pressures in excess of certificate of operation maximum allowable working pressures. Additional or supplemental safety or relief

valves may exceed the maximum working pressure if the valves comply with the applicable code of construction or this regulation.

§ 3.27. Different working pressures.

This section provides for the range of settings for pressure valves on boilers. It requires that at least one safety valve on each boiler be set at or below the maximum allowable working pressure. This section also establishes safety requirements when a boiler has units with different maximum allowable working pressures which vary more than 6%.

§ 3.28. Blowoff tanks.

This section establishes standards for blowoff tanks. Blowoff tanks are required when conditions do not provide an adequate and safe open discharge. This section includes standards for discharge, piping, vents, valves and access openings. It also allows for the use of blowoff tanks that are not vented under certain circumstances. Metal blowoff tans must comply with ASME, Section VII, Division 1.

§ 3.29. Discharge outlets.

This section provides for the discharge outlets. The discharge of safety valves in boilers that generate in excess of 500 pounds of steam per hour must be piped to the outside atmosphere and to a safe point of discharge.

§ 3.30. Electric boilers.

This section establishes safety appliances requirements for electric boilers. It requires grounding cables, screen around high-tension bushings, safety or relief valve capacity, and boiler shell grounding connectors. It also requires that the power circuit and the power line be open during adjustments.

§ 3.31. Forced circulation boilers.

This section provides that forced circulation boilers and boilers with no fixed steam or waterline meet the requirements of the ASME Code, Section 1.

§ 3.32. Supports.

This section provides that boiler and unfired pressure vessels will be supported by masonry or structural supports. It also requires air compressor vessels to be shock mounted.

§ 3.33. Explosion doors.

This section requires stoker coal fired boilers under positive pressure to be equipped with explosion doors to relieve furnace pressure. The explosion doors must be in the wall setting within 7 feet of the firing floor or any platform. This section also requires that the explosion door be provided with substantial deflectors to divert the blast away from personnel.

§ 3.34. Ventilation for combustion equipment.

This section requires adequate air to support combustion for equipment.

§ 3.35. Ladders and runways.

This section provides standards for the construction of walkways, runways, platforms, stairways and ladders between, over and around boilers.

Walkways, runways and platforms must be made of metal by bolt, weld or rivet which must be constructed between or on top of boilers that are higher than 8 feet. The structures must have safety treads, standard grating or similar material of a 30-inch minimum width and 42-inch high handrails with an intermediate rail and a 6-inch toeboard.

This section provides that a stairway used as means of access to a walkway, runway or platform must not exceed an angle of 45 degrees.

This section provides that a ladder used as a means of access to a walkway, runway or platform must be metal. This section also provides rung construction standards. Only welders qualified under the Standard Qualification Procedures of the American Welding Society may weld walkways, runways, platforms and ladders.

§ 3.36. Clearances.

This section establishes minimum clearance requirements between and around boilers and unfired pressure vessels. It provides special clearance provisions for multiple boiler installations in new buildings, pressure vessels of factory assembled package units, wall hung boilers, modular systems, miniature boilers and commercial beverage dispensing systems.

§ 3.37. Special design.

This section requires owners and operators to submit construction specification and plans for Department approval prior to the installation of boilers and unfired pressure

vessels of special design. Specially designed boilers and unfired pressure vessels may not be operated in the Commonwealth without Department approval.

§ 3.38. Commercial Beverage Dispensing Systems.

This section reduces the clearance requirements for commercial beverage dispensing systems. Clearance of 18-inch is required for 50% of each vessel surface. The remaining portion of the vessel may have a 1-inch clearance.

§ 3.39. Manufactured parts.

This section requires that parts manufactured for boilers and pressure vessels be manufactured and stamped in accordance with the ASME Code. It also requires that data reports are to be furnished in accordance with the ASME Code.

INSTALLATIONS OF POWER BOILERS

§ 3.51. Compliance with the ASME Code for power boilers.

This section requires power boilers to comply with national standards, specifically, Section 1 of the ASME Code, ASME /CSD1 and NFPA 85.

INSTALLATIONS OF LOW- PRESSURE HEATING BOILERS

§ 3.61. Compliance with the ASME Code for low-pressure boilers.

This section requires low-pressure heating boilers to comply with national standards, specifically, Section IV of the ASME Code and ASME /CSD 1.

§ 3.62. Registration and installation.

This section provides the registration and installation requirements for low-pressure steel heating boilers and low-pressure cast iron boilers. It further requires that boilers be hydrostatically tested at the time of installation.

INSTALLATIONS OF UNFIRED PRESSURE VESSELS

§ 3.71. Compliance with the ASME Code for installations of unfired pressure vessels.

This section requires installations of unfired pressure vessels to comply with either Sections VIII or Section X of the ASME Code.

REPAIRS AND ALTERATIONS

§ 3.81. Major repairs and alterations.

This section establishes the requirements for repairs and alterations for boilers or unfired pressure vessels. It requires consultation with commissioned inspectors on major repairs. This section requires a manufacturer holding the appropriate ASME Code stamp to make alternations to a boiler or vessel. It also requires a manufacturer holding an ASNI/NB23 stamp to make alternations to a boiler or vessel.

This section requires that all welds must be documented on a Pennsylvania *Record of Welded Repair* form or an *R-1* form. It also requires vessel owners and users to immediately notify the Department when a safety defect is discovered.

§3.82. Reconstruction and repair.

This section requires the reconstruction or repair of boilers or unfired pressure vessels meet the requirements of ANSI/NB 23. It further requires that a commissioned inspector approve all repairs.

§ 3.83. Repairs by welding.

This section establishes the requirements for welded repairs on boilers and unfired pressure vessels. It requires the performance of welding in accordance with national standards. A commissioned inspector may pre-approve routine weld repairs.

Subchapter C- Administration

§ 3.91. Certificates of operation.

This section establishes the issuance and renewal of a boiler or unfired pressure vessel certificate of operation. This section also requires the owner or operator to post

the certificate in a visible location as close to the boiler or unfired pressure vessel as possible.

§ 3.92. Unsafe operation.

This section provides the Department will suspend a certificate of operation for any boiler or unfired pressure vessel that is unsafe to operate.

§ 3.93. Notification of insurance.

This section requires the owner or operator to notify the Department when insurance is written, cancelled, not renewed, or suspended on a boiler or unfired pressure vessel. It allows the owner or operator to submit this notification with the next required inspection report.

§ 3.94. Accident notification.

This section requires an owner or user to notify the Department within 24 hours after an accident occurs which renders the boiler or unfired pressure vessel inoperative, or when an explosion occurs. This section allows notification by telephone, fax, e-mail or messenger. It also prohibits the moving of the vessel or its parts until a Department inspection occurs, unless the moving is necessary to prevent harm to persons or property.

§ 3.95. Restamping.

This section establishes the requirements for restamping a boiler or unfired pressure vessel. This occurs when the original stamping becomes indistinct or detached. This section further requires that only a Department inspector may restamp a vessel.

§ 3.96. Condemnation.

This section establishes the stamping requirements for a boiler or unfired pressure vessel found unsafe for operation by a Department inspector. This section further provides that only a Department inspector may remove this stamping when the boiler or unfired pressure vessel has been restored or repaired to comply with this regulation.

§ 3.97. Removal from service

This section requires the vessel owner or user to notify the Department when a vessel is removed from service for repair or alteration.

§ 3.98. Reinstallation.

This section requires a boiler or unfired pressure vessel that is moved and reinstalled to comply with provisions of this regulation upon reinstallation. This section further requires the owner or user to notify the Department of the new location of boiler or unfired pressure vessel within 10days. It also requires inspection of the boiler or unfired pressure vessel be inspected before its placed into service.

§ 3.99. Approval of plans.

This section requires a boiler owner to submit an intent-to- install form or other data showing that the equipment complies with the act and this regulation before boiler installation. This section requires for Department plan approval before a boiler can be installed. The plans must show a floor plan, section of the boiler room, proposed location of boiler parts and devices, exit ways, walkways and all clearance dimensions.

§ 3.100. Notice of Deficiency.

This section establishes the procedures the Department will follow if an inspection reveals a violation of Act 85 or this regulation. The Department will first issue a written notice of deficiency a description of the violations and an order requiring correction of the violations and repairs within 30 days to the vessel owner. The Department will send a certification form with the notice and order. The owner shall complete the certification form and return it to the Department when the violations have been corrected.

If the unfired pressure vessel owner or operator does not correct the deficiency within the period of time allowed in the notice of deficiency, the Department may initiate action to seal the boiler or unfired pressure vessel by issuing an order to show cause to the boiler or unfired pressure vessel owner or operator. The owner or operator must submit a written answer within 30 days. The answer may contain a request for a variance or an extension of time for compliance. A timely filed request for variance or extension of time, or an appeal will act as a stay to an enforcement action.

The Department will inspect the boiler or unfired pressure vessel at the expiration of an extension of time or other time period granted for compliance under this section. If violations still exist, the Department may seal the boiler or unfired pressure vessel. The Department will serve the seal order upon the owner or operator by certified mail or personal service.

If the owner does not comply with the order within 30 days and does not appeal the order to show cause, the Department will issue a notice to discontinue operation of the vessel owner within 24 hours. The vessel cannot be returned to service until the violations have been corrected.

§ 3.101 Appeals.

This section states that appeals to a notice of deficiency or notice to discontinue must be appealed to the Industrial Board within 30 days of issuance. The Industrial Board is required to hold a hearing on the appeal within 45 days and establishes the standards under which an appeal, variance or extension of time may be granted

Subchapter D- Inspections.

§ 3.111. Field Inspections.

This section establishes the frequency of internal and external inspections for different types of boilers and unfired pressure vessels. External and internal inspection of power boilers and process boilers while not under pressure must be conducted every 12 months. Internal and external inspection of low-pressure steam vapor boilers that are not under pressure and of low–pressure boilers in schools must be conducted every 24 months. An inspector may require internal inspection because of a vessel's age or condition.

External inspection of hot water supply boilers must be conducted every 24 months. External inspection of hot water supply boilers will be conducted every 24 months. Internal inspections will be conducted every 48 months. External inspections of cast iron boiler will be conducted every 24 months and will include an internal inspection of the firebox. Unfired pressure vessels will be inspected every 36 months.

This section further allows for the extension of inspection periods for certain vessels if certain maintenance and operation criteria are met.

§ 3.112. Preparation for inspection.

This section requires that boilers and unfired pressure vessels will be prepared for internal inspection in accordance with the ANSI/NB23. It further provides that an inspector may decline inspection if the vessel is not properly prepared. The Department will issue a certificate of operation when a vessel passes an inspection.

§ 3.113. Accessibility for inspection.

This section requires that unfired pressure vessels installed or reinstalled underground after the effective date of this regulation will be installed in a manner that allows for external inspection of the vessel.

§ 3.114. Removal of covering for inspection.

This section requires that a portion of the jacket on a covered boiler or unfired pressure vessel will be removed so the inspector can view the size of the rivets, pitch of the rivets, and other data necessary to determine the safety of the boiler or unfired pressure vessel during inspection.

§3.115. Hydrostatic pressure tests.

This section establishes the maximum allowable pressures for the performance of hydrostatic pressure tests. It also requires that the pressure must be under proper control at all times during testing. This section further establishes the minimum and maximum allowable temperature of the water used to apply a hydrostatic test.

§ 3.116. Inspection during construction.

This section establishes that inspection during construction for cast iron boilers will be in accordance with ASME Code requirements.

§ 3.117. Inspection report.

This section establishes reporting requirements for commissioned inspectors. It requires that the inspector submit a copy of each boiler or unfired pressure vessel inspection report to the Department within 30 days of the inspection.

Subchapter E- Boilers Installed Prior to July 1, 1916, and Unfired Pressure Vessels and Power Boilers Installed Prior to September 1, 1937.

§ 3.131. Allowable working pressure.

This section states that the ASME Code will determine allowable working pressure.

§ 3.132. Fusible plugs.

This section requires that fire-actuated fusible plugs conform to the requirements of sections A19 - A21, Appendix A, Section 1 of the ASME Code. The plugs will be replaced annually.

§ 3.133. Repair and replacement.

This section requires that repairs or replacements to fittings or appliances comply with the requirements for installations in the ASME Code and ASME/CSD1.

§3.134. Weighted safety valves.

This section prohibits the use of weighted safety values.

Subchapter F – Low Pressure Heating Boilers Installed Prior to July1, 1916.

§ 3.141. Riveted boilers.

This section establishes that the ASME Code will determine the maximum allowable working pressure of the shell of a riveted heating boiler. It also establishes the maximum allowable working pressure of a steam heating boiler, 15 psig and of a hot water boiler, 160 psig at a temperature not exceeding 250° F.

§ 3.142. Welded boilers.

This section establishes that the maximum allowable working pressure on the shell of a welded steel or wrought iron heating boiler cannot exceed the requirements in ASME Code, Section IV.

§ 3.143. Cast iron boilers.

This section establishes the maximum allowable working pressure at psig on the shell of a cast iron boiler and a boiler having a cast iron shell or heads, and steel or wrought iron tubes.

§ 3.144. Safe pressure.

This section allows a commissioned inspector to reduce the operating pressure of an unsafe boiler based upon the remaining thickness of the pressure boundaries and the requirements of the code of construction.

§ 3.145. Stop steam valves.

This section requires that a boiler equipped with a steam stop valve contain a check valve in the return line. This section also requires that a heating system equipped with a steam stop valve should have a check valve in the condensate return pipe.

Subchapter G- Unfired Pressure Vessels Installed Prior to September 1, 1937.

§ 3.151. Maximum allowable working pressure.

This section provides the formula for the calculation of the maximum allowable working pressure on the shell of a pressure vessel installed prior to September 1, 1937. The Department placed the full equation in the regulation because it is not readily available in published materials. The formula for this calculation is based on the 1971 edition of section 1 of the ASME. This formula is also reprinted in Appendix C of the NBIC, 2001 edition.. This section also provides that the maximum allowable working pressure cannot be increased. This section sets values for tensile strength of steel shell plate and resistance of crushing of mild steel and other values to be used in calculating the maximum allowable working pressure.

This section also sets out the maximum permissible working pressure safety factors.

§3.152. Safety appliances.

This section requires pressure vessels to be protected by safety and relief devices, and indicating and controlling devices. It establishes the requirements for these devices. This section requires safety valves for vapors, other than noxious liquids or toxic vapors, to be direct spring-loaded type valves, designed with substantial lifting devices. It requires each safety valve to have a marking identifying the manufacturer, pipe size, pressure, blow down, and difference between the opening and closing pressures.

This section also allows existing valves bearing different stamping with equivalent construction and relieving capacity to be used. It allows the use of more than one safety valve and calculates the discharge capacity by the combining capacity of all safety valves.

This section requires a safety device to be connected to the vessel in a manner to prevent a rise in pressure beyond the maximum allowable pressure when the vessel's pressure is derived from an outside source.

This section also requires that when pressure may be generated in a vessels the vessel must have a safety device or devices connected directly to the vessel and meet the following requirements: (1) the safety valve or valves may be connected in a manner to avoid interference with the operation of the vessel or the safety valve; (2) An escape pipe may be used; and, (3) An elbow may be placed on an escape pipe if it is located close to the safety valve outlet or the escape pipe is securely anchored and supported.

This section requires that every safety valve which is exposed to a temperatures of 32 °F. or below have a drain at the lowest point where water can collect. It requires a spring in a safety or relief valve in service for pressures up of 250 psig or more. It requires that safety valves for compressed air tanks shall not be larger than 3-inches in diameter.

This section allows a rupture disk to be used as a pressure safety device on vessels containing nontoxic gases. It requires safety valves on systems using toxic gases to discharge in accordance with the ASME Code, Section VIII, Division 2.

This section prohibits the use of safety valves with a cast iron seat or disk.

§ 3.153. Pipe connections and fittings.

This section provides that the general arrangement of piping will be designed to reduce vibration, expansion and drainage, and provide adequate support at the proper points. This section also provides that the ASME code of construction governs repairs of existing high-pressure/temperature piping systems installed before 1998.

§ 3.154. Repair and renewal.

This section establishes that repairs made to fittings and controls be made in accordance the ASME Code and ASME/CSD1.

Subchapter H- Special Installations.

§ 3.161. Modular Boilers.

This section establishes the requirements for installations of modular boilers. It establishes clearance and boiler controls requirements. It further requires that high-pressure steam and high temperature hot water piping should be designed and installed in accordance with ASME B31.1

§ 3.162. Portable Boilers.

This section establishes the requirements for portable boilers. It provides stamping and clearance requirements for portable boilers. It provides that a portable boiler may be mounted in covered trailers if certain conditions are met. This section further provides that Department approval must be obtained before a portable boiler is moved and placed in service.

§ 3.163. Fired coil water heater and instanteous water heater.

This section establishes installation standards for fired coil water heaters.

§ 3.164. Storage water heaters.

This section establishes installation standards for storage water heaters. It requires that temperature controls be designed not to exceed 210° F.

§ 3.165. Steam/hot water coil storage water heater.

This section establishes design and construction standards and additional control requirements for steam/hot water coil storage water heaters. This section also provides that temperature controls must be designed to not exceed 210° F.

§ 3.166. Miniature boilers and kitchen equipment.

This section establishes manufacturing and boiler control standards for miniature boilers. A miniature boiler must be manufactured under the ASME "S", "H" or "M" Code. Those manufactured under ASME "S" and "H" Code must be stamped with a National Board registration number. This section also requires that a miniature boiler must be installed so that the sight glass and pressure gauge are always visible during operation. It requires that the discharge from safety valves be piped to a safe point.

§ 3.167. Hot water/steam heat exchangers.

This section requires that heater exchangers be manufactured to ASME Code requirements. Over-pressure protection must be adequate to protect both systems and set a maximum temperature for exchangers used in domestic hot water supply.

§ 3.168. Autoclaves and quick opening vessels.

This section establishes inspection standards for autoclaves and quick opening vessels. It also requires autoclaves and quick opening vessels to have interlocking systems to prevent the charging of the vessel until all openings and locking devices are fully in place.

This section further requires pressure-relieving devices to be sized in accordance with the data plate for pressure.

§ 3.169. Fuel trains and piping systems.

This section requires piping of low-pressure steam systems and hydronic piping systems in accordance with the "International Mechanical Code."

This section also requires high-pressure steam and high temperature hot water piping to be designed and installed in accordance with ASME B31.1. Fuel trains and piping must be installed in accordance with ASME/CSD1. It also establishes that the code of construction governs the repair of high pressure/temperature systems installed before 1998.

§ 3.151. Swimming pool heaters .

This section relates to swimming pool heaters as instantaneous water heater and requires the heaters to meet the construction requirements of ASME Code, Section IV and the control requirements of ASME/CSD1. This section allows piping of pool heaters with polyvinyl chloride material rated for the pressure and temperature of the heater after the isolation valves.

§ 3.171. Boilers of locomotives.

This section requires new installations for boilers of locomotives to meet the requirements of ASME Code, Section 1.

Affected Persons

This regulation affects boiler owners and operators and current and prospective boiler inspectors including Department inspectors. Pool owners utilizing boilers regulated under the Act will also be affected. The general public is also affected in that updating the regulation of boilers and unfired pressure vessels to current national standards will increase public safety.

Fiscal Impact

The Commonwealth will incur no additional cost under this regulation. The costs will be similar to costs now incurred by the Department's boiler and unfired pressure vessel inspection and inspector certification program. Increases in administrative, inspection and enforcement activities are not anticipated.

Reporting, Recordkeeping and Paperwork Requirements

This regulation will not require the creation of new forms and reporting requirements except for possible updates of the present forms.

Sunset Date

A sunset date is not appropriate for these regulations. However, the Department will continue to monitor the impact and effectiveness of the regulation.

Effective Date

This proposed regulation will take effect upon publication of the final-form regulations in the *Pennsylvania Bulletin*.

Contact Person

Interested persons are invited to submit written comments, suggestions or objections regarding the proposed regulation to Edward Leister, Administrator, Bureau of Occupational and Industrial Safety, Department of Labor and Industry, Room 16th floor Labor & Industry Bldg., 7th and Forster Streets, Harrisburg, Pennsylvania, 17120 or by electronic mail to eleister@state.pa.us within 30 days of publication in the *Pennsylvania Bulletin*.

Regulatory Review

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on October 21, 2004, the Department submitted a copy of this proposed rulemaking to the Chairpersons of the Senate Committee on Labor and Industry and the House Labor Relations Committee and to the Independent Regulatory Review Commission (IRRC). In addition to submitting the proposed rulemaking, the Department has provided the Committees and IRRC with a copy of a detailed Regulatory Analysis Form prepared by the Department. A copy of this material is available to the public upon request.

Under section 5(g) of the Regulatory Review Act, IRRC may convey any comments, recommendations or objections to the proposed rulemaking to the Department within 30 days of the close of the public comment period. The comments, recommendations or objections shall specify the regulatory review criteria which have not been met. The Regulatory Review Act specifies detailed procedures for review, prior to final publication of the proposed regulations, by the Department, the General Assembly and the Governor of comments, recommendations or objections raised.

Stephen M. Schmerin

STEPHEN M. SCHMERIN
Secretary

FISCAL NOTE:

Annex "A"

TITLE 34. LABOR AND INDUSTRY
PART 1. DEPARTMENT OF LABOR AND INDUSTRY
CHAPTER 3. BOILER AND UNFIRED PRESSURE VESSEL REGULATIONS

Subchapter A. GENERAL PROVISIONS.

Sec.

Subchapter B. REQUIREMENTS FOR BOILERS AND UNFIRED PRESSURE VESSELS.

INSTALLATIONS OF POWER BOILERS

INSTALLATIONS OF LOW-PRESSURE HEATING BOILERS

INSTALLATIONS OF UNFIRED PRESSURE VESSELS

REPAIRS AND ALTERATIONS

Subchapter C. ADMINISTRATION

Subchapter D. INSPECTIONS

Subchapter E. BOILERS INSTALLED PRIOR TO JULY 1, 1916 AND UNFIRED PRESSURE VESSELS AND POWER BOILERS INSTALLED PRIOR TO SEPTEMBER 1, 1937.

Subchapter F. LOW PRESSURE HEATING BOILERS INSTALLED PRIOR TO JULY 1, 1916

Subchapter G. UNFIRED PRESSURE VESSELS INSTALLED PRIOR TO SEPTEMBER 1, 1937

Subchapter H. SPECIAL INSTALLATIONS

Subchapter A. GENERAL PROVISIONS

§ 3.1. Definitions.

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

AGA- American Gas Association, 400 North Capital Street, NW, Washington, D.C. 2001.

ANSI- American National Standards Institute, 1430 Broadway, New York, New York 10018.

ANSI/NB23- National Board Inspection Code, 2001 Edition, issued by the National Board of Boiler and Pressure Vessel Inspectors.

ASME- The American Society of Mechanical Engineers, Three Park Avenue, New York, New York, 10016-5990.

ASME Code- "Rules for Construction of Power Boilers," 2001 edition and its published cases and interpretations issued by ASME.

ASME B 31.1- "The ASME Code for Pressure Piping," 2001 edition issued by ASME.

ASME/CSD1- "Controls and Safety Devices for Automatically Fired Boilers," 2002 edition issued by ASME.

Act- The Boiler and Unfired Pressure Vessel Law (35 P.S. §§ 1331.1- 1331.19).

Alteration- A change in the item described on the original manufacturer's data report, which affects the pressure containing capability of the pressure retaining item. The term also includes nonphysical changes such as an increase in maximum allowable working pressure or an increase in design temperature of a pressure-retaining item and a reduction in minimum temperature that requires additional mechanical tests.

American Welding Society- The American Welding Society, 550 N.W. Lejenuen Road, Miami, FL33126.

Boiler- A closed vessel in which water is heated, steam is generated, steam is superheated, or any combination of these actions, under pressure or vacuum, for use externally to itself, by the direct application of heat from the combustion of fuels, or from electricity. The term includes fired vessels for heating of liquids other than water where these vessels are separate from processing systems and are complete within themselves.

BTU - British thermal unit.

Certificate of competency- A Department certificate issued to an individual who passed the examination prescribed by the Department which grants the individual the authority to inspector boilers and unfired pressure vessels in this Commonwealth.

Code of construction- ASME Code in effect at the time the boiler or unfired pressure vessel was manufactured.

Condemned boiler or unfired pressure vessel- A boiler or unfired pressure vessel which was inspected and declared unsafe or disqualified for use by the Department.

Department- The Department of Labor and Industry of the Commonwealth.

External inspection -An inspection made when a boiler or an unfired pressure vessel is in operation or in condition to be operational.

Fusion welding- The process of welding metals in a molten, or molten and vaporous state, without the application of mechanical pressure of blows.

Heat exchanger- A device having a shell and head, and a method to exchange heat between steam, hot water, or any other liquid. This device may be fired or unfired.

ICC- International Code Council, 5203 Leesburg Pike, suite 600, Fall Church, Virginia 22041-3401.

Industrial Board- The Department's Industrial Board established under the Administrative Code (71 P.S. §§ 155, 574) which hears requests for variances, extensions of time, and appeals of Department decisions under the act.

Instantaneous water heater- A vessel in which water is heated as it passes through the vessel. Water is not stored in the vessel.

Internal inspection- An inspection made when a boiler or unfired pressure vessel is shut down and handholes, manholes, or other inspection openings are opened for inspection of the interior of the boiler or unfired pressure vessel.

IBC- The "International Building Code 2003"issued by the ICC.

IMC- The "International Mechanical Code 2003" issued by the ICC.

Inspector- An inspector commissioned by the Department to field-inspect boilers or unfired pressure vessels in this Commonwealth.

Lap seam crack- A crack found in a lap seam, extending parallel to the longitudinal joint and located between or adjacent to rivet holes.

Locomotive boiler- A boiler mounted on a self-propelled track locomotive and used to furnish motivating power for travel on rails. The term does not include locomotive cranes, tractors or other self-propelled apparatus.

Low pressure heating boiler- A steam boiler operated at a pressure not exceeding 15 psig or a hot water heating or hot water supply boiler operating at a pressure not exceeding 160 psig and a temperature not exceeding 250° F.

Miniature boiler- A boiler which is not more than 16 inches inside the diameter of the shell, 5 cubic feet gross volume, excluding casing and insulation; 100 psig maximum allowable working pressure; and, 20 square feet of heating surface.

National Board- National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Avenue, Columbus, Ohio 43229.

NEC – The "National Electric Code, National Fire Protection Association's Standard 70," 2002 Edition, issued by the NFPA.

NFPA- National Fire Protection Association, 1 Batterymarch Park, Quincy Massachusetts 02269.

NFPA 85- The "Boiler and Combustion System Hazard Code", 2001 edition, issued by the NFPA.

Nonstandard boiler- A boiler which does not bear ASME stamping.

Nonstandard unfired pressure vessel- An unfired pressure vessel which does not bear ASME stamping.

Owner or user- A person, firm, corporation or governmental body owning or operating any boiler or unfired pressure vessel within this Commonwealth.

Pennsylvania special boiler- A boiler which does not bear standard stamping and bears special Pennsylvania stamping and a Department-approved number.

Pennsylvania special unfired pressure vessel- An unfired pressure vessel which bears special Pennsylvania stamping and a Department-approved number and does not bear standard stamping.

Psig- Pounds per square inch gauge.

Psi Pounds per square inch.

Process boiler- A vessel in which steam is generated or superheated under pressure or vacuum for use external to itself by direct or indirect application of heat. The source of heat may come in part from a process other than the boiler. The boiler is directly tied to another process other than the generation of steam.

Portable boiler- A boiler which is designed to be moved from location to location and used on a temporary basis.

Power boiler- A closed vessel in which steam or other vapor is generated at a pressure of more than 15 psig by the direct application of heat.

R stamp- A National Board designation indicating that a company is authorized to repair boilers and vessels.

R-1 form- National Board report of repair form.

Reinstalled equipment- Equipment removed from its original setting and reinstalled in the same location or a new location without change of ownership.

Repair- The process of restoring a boiler or unfired pressure vessel component or system to a safe and satisfactory condition.

Secondhand boiler- A boiler whose location and ownership have been changed after primary use.

Secondhand unfired pressure vessel- An unfired pressure vessel whose location and ownership have been changed after primary use.

Secretary- The Secretary of the Department.

Standard boiler or unfired pressure vessel- A boiler or an unfired pressure vessel which bears stamping in accordance with this chapter.

Standard Qualification Procedures of the American Welding Society, D1.1, The "Structure Welding Code, Steel 2002" issued by the American Welding Society,

Steam coil vessel- A vessel that stores hot water that contains an internal steam coil with controls used to heat hot water.

Storage water heater- A fired or an electrically heated vessel for storing or furnishing hot water supply.

Unfired pressure vessel- A vessel in which pressure is obtained from an external source or from an indirect application of heat.

Unfired steam boiler- An unfired pressure vessel which generates steam for power or heat to be used externally to itself.

VR stamp- A National Board designation that a company is authorized to repair and set safety relief valves.

§ 3.2. Fees.

(a) The Department will charge commission, certificate of operation and inspection fees in accordance with section 613-A of the Administrative Code (71 P.S. § 240.13A).

(b) The following fees apply to unfired pressures vessels and boilers:

(1) Certificate of operation:

(i) Unfired pressure vessels	$ 44.00
(ii) Boilers	$ 22.00

(2) Internal inspection of power boilers, high pressure, high temperature water boilers and miniature boilers:

(i) Boilers of 50 square feet of heating surface or less	$ 22.00
(ii) Boilers over 50 square feet of heating surface and less than 4,000 square feet of heating surface	$ 36.00
(iii) Boilers over 4,000 square feet of heating surface or more and less than 10,000 square feet of heating surface	$ 51.00
(iv) Boilers over 10,000 square feet of heating surface	$ 58.00
(v) Miniature boilers	$ 15.00

(3) External inspection of power boilers, high pressure and high temperature water boilers:

(i) Boilers of 50 square feet of heating surface or less	$ 15.00
(ii) Boilers over 50 square feet of heating surface	$ 22.00

(4) Not more than $50 plus the annual certificate fee shall be collected for any and all inspections for boilers covered subsections (2) and (3) in any one year.

(5) Internal or external inspection of low pressure boilers:

(i) Heating boilers without a manhole	$ 18.00
(ii) Heating boilers with a manhole	$ 22.00
(iii) Hot water supply boilers	$15.00

(iv) Not more than $50 plus the annual certificate fee shall be collected for any and all inspections as above of any low pressure boiler in any required inspection period.

(6) Internal or external inspection of pressure vessels:

(i) Each pressure vessel subject to inspection having a cross sectional area of 50 square feet or less $ 15.00

(ii) Each additional 100 square feet of area in excess of 50 square feet $ 15.00

(iii) Not more than $75 shall be paid for each inspection on any one vessel.

(iv) A group of pressure vessels operating as a single machine or unit shall be considered one pressure vessel. Not more than $75 plus the annual certificate fee shall be collected for any and all inspections as above of any pressure vessel in any required inspection period, except in such cases where the vessel is moved.

(7) Plan approval:

(i) Complete mechanical room drawings-boilers and other vessels $ 73.00

(ii) High pressure boilers $ 29.00

(iii) Low pressure boilers $ 29.00

(8) Boiler inspectors commissions:

(i) Inspection's examination fee $ 44.00

(ii) Certificate of competency and commission fee $ 22.00

(iii)New credential card fee (annual) $ 15.00

(9) Hydrostatic test (witnessed) $ 22.00

(10) Onsite consultation fee per hour $29.00

(11) Inspection of repair fee $ 15.00

(12) ASME and National Board "R" Stamp Shop survey fees:

(i) Full day	$726.00
(ii)Half day	$363.00
(13) Copy of Department's regulations	$ 7.00
(14) Acceptance of boilers and pressure vessels not originally destined for use within the Commonwealth	$726.00
(c) Industrial Board variance request.	$100.00

§ 3.3. Scope.

(a) This chapter applies to:

(1) The boiler and the pipe connections up to and including the stop valve or valves nearest the boiler as required by the ASME Code and Power Piping, B31.1. Superheaters, reheaters, economizers, and other pressure parts connected directly to the boiler without intervening valves shall be considered as parts of the boiler and their construction shall conform to ASME Code and Power Piping, B31.1 requirements.

(2) Unfired pressure vessels and hot water storage vessels.

(b) Boilers installed before July 1, 1916 and unfired pressure vessels and power boilers installed before September 1, 1937, shall comply with §§ 3.131- 3.154 (relating to boilers installed prior to July 1, 1916 and unfired pressure vessels and power boilers installed prior to September 1, 1937).

(c) Heat exchangers shall comply with § 3.167 (relating to hot water/steam heat exchangers) when the heat exchanger operates at 16 psi or greater, and has 5 cubic feet of volume not allowing for channel or tube nest displacements.

(d) This chapter does not apply to:

(1) Piping between the reheater connections and the turbine or other prime mover.

(2) Boilers and unfired pressure vessels regulated under the Atomic Energy Act of 1954 (42 U.S.C.A. §§ 2011 – 2297h-13).

(3) Boilers and unfired pressure vessels owned or operated by the Federal Government.

(3) Boilers located on farms, except in sales areas which are accessible to the public.

(4) Boilers located in single-family dwellings and multi-unit dwellings with four or less units.

(5) Storage water heaters and instantaneous water heaters if all the following limitations are not exceeded:

(i) A heat input of 200,000 BTU's /hr (58.6 kW).

(ii) A water temperature of 210° F (99°C).

(iii) A nominal water-containing capacity of 120 gallons (454 L).

(6) Unfired pressure vessels used for the transportation of compressed gases that are operated in compliance with specifications and regulations of the United States Department of Transportation (49 CFR, Part 173).

(7) Air tanks located on vehicles operating under other Commonwealth agency regulations or rules and used for carrying passengers or freight.

(8) Air tanks installed on the right-of-way of railroads and used directly in the operation of switches and signals and under Federal or other Commonwealth agency jurisdiction.

(9) Vessels having an internal or external operating pressure of no more than 15 psi with no limitation on size when equipped with approved safety devices.

(10) Unfired pressure vessels designed to ASME Code section VIII, Division 1 which meet one of the following specifications:

(i) 5 cubic feet ($0.14m^3$) in volume and 250 psi (1720 kPa) design pressure.

(ii) 3 cubic feet ($0.08m^3$) in volume and 350 psi (2410 kPa) design pressure.

(iii) 1.5 cubic feet ($0.04m^3$) in volume and 600 psi (4140 kPa) design pressure.

(iv) Vessels having an inside diameter, width, height or cross section diagonal not exceeding 6 inches (152 mm), with no limitation on length of vessel or pressure.

(11) Unfired pressure vessels with a nominal water-containing capacity of up to 120 gallons containing water under pressure. These vessels include unfired pressure vessels that contain air, which is trapped in the system and where the compression air serves only as a cushion.

(12) Filters and softeners with a nominal water containing capacity of 120 gallons or less and pressures not exceeding 100 psi at ambient temperature.

(13) Air conditioner heat exchangers (chillers) with a design pressure not more than 300 psi and a water temperature not more than 210° F.

(14) Coil-type hot water boilers which meet the requirements of ASME Code, Section I, paragraph, PG 2.3.

§ 3.4. Adoption of national standards.

The Department adopts and incorporates by reference the following codes:

(1) ANSI/NB23.

(2) ASME Code.

(3) ASME Code published cases and interpretations that have been approved by the Industrial Board.

(4) ASME B 31.1.

(5) ASME/CSD1.

6) National Electric Code, NFPA 70.

(7) NFPA 85.

§ 3.5. Examination for inspector commission.

(a) The Department will conduct National Board examinations four times a year at a location determined by the Department.

(1) An applicant for examination as a boiler inspector shall meet the National Board rules and regulations, and its education and experience requirements.

(2) When the applicant successfully passes the National Board examination, the Department will issue a certificate of competency so the National Board Commission may be issued

(b) The Department will conduct a Pennsylvania certificate of competency examination based on the act, this chapter and the ASME Codes. An applicant must pass the examination with a grade of 70 % or more before conducting inspections of boiler and unfired pressure vessels in the Commonwealth.

(1) The National Board application shall be used to apply for a Pennsylvania certificate of competency.

(2) An applicant for the certificate of competency examination shall meet one of the following education and experience requirements:

(i) A four-year degree in mechanical or chemical engineering and one-year experience in the design, construction, inspection, or repair of boiler or pressure vessels.

(ii) A two-year degree in mechanical or chemical engineering and two years experience in the design, construction, inspection, or repair of boilers or pressure vessels.

(iii) A high school diploma, or Graduate Equivalent Development (GED) and 3 years experience as a high-pressure boiler operator in charge or 3 years experience in the construction, repair, inspection of high-pressure boilers or vessels.

§ 3.6. Certificate of competency, commission, credential card and renewal application.

(a) The Department will issue a certificate of competency, credential card and commission to an applicant who passes an examination for inspector, meets the requirements of this part and pays the required fee under § 3.2 (relating to fees).

(b) An inspector shall renew a certificate of competency and obtain a new credential card each year to continue to act as an inspector. The inspector shall complete and submit a Department-provided renewal application and pay the required fee under § 3.2 to renew the commission.

§3.7. Re-examination.

(a) An applicant may take the examination for inspector three times in a 1-year period without submitting a new application and fee.

(b) An applicant may take the examination a fourth time within a 1-year period if the applicant fails to obtain a passing grade by submitting a new application and the required fee under § 3.2 (relating to fees).

§ 3.8. Reciprocity.

(a) The Department may grant a reciprocal commission to an applicant who meets one of the following requirements:

(1) The applicant holds a current National Board Commission in good standing.

(2) The applicant is currently employed by another state or an insurance company in good standing if the applicant passes a written Department-administered examination on the act.

(b) An applicant for reciprocal commission shall submit a completed Department-provided application form, a copy of the inspector's national board commission, and the required fee under § 3.2 (relating to fees) to the Department.

§ 3.9. Suspension or revocation of boiler inspection commission.

(a) The Department may suspend or revoke a boiler inspector's commission for due cause under section 11(d) of the act (34 P.S. § 1331.11(d)). Due cause includes the following:

(1) Practicing fraud or deceit or making untrue representations in obtaining a commission.

(2) Failure to remit the required commission fee under § 3.2 (relating to fees).

(3) Violating a provision of the act or this chapter.

(4) Incompetence or gross negligence while acting as a boiler inspector.

(5) Acting in a manner presenting a danger to public health and safety.

(6) Having a commission or any other authorization to engage in the business of boiler inspection revoked or suspended or having other disciplinary action taken, surrendering a commission or other authorization in lieu of discipline, or having an application for a commission or authorization to engage in the business of boiler inspection refused or denied by the National Board, the proper authority of another state or Federal district, territory, insular possession of the United States, or Canada.

(7) Engaging in fraud, deceit, or other act of moral turpitude while acting as a boiler inspector.

(8) Failure to enforce the act or this chapter.

(9) Engaging in boiler inspection activities without a current commission issued by the Department.

(10) Pleading guilty, entering a plea of nolo contendere, being found guilty, receiving probation without verdict, disposition in lieu of trial or an Accelerated Rehabilitative Disposition for any felony or for any other crime relating to boiler inspection in the courts of this Commonwealth, a Federal court, a court of any other state, territory or insular possession of the United States, or a court of Canada.

(b) Notice and hearing. Actions of the Department relating to suspension or revocation under this section will be taken subject to the right of notice, hearing, and

adjudication in accordance with Title 2 of the Pennsylvania Consolidated Statutes (relating to administrative law and procedure). All suspension and revocation proceedings will be conducted under the General Rules of Administrative Practice and Procedure, 1 Pa. Code, Part II.

(c) Procedure for suspension or revocation.

(1) The Department will serve the boiler inspector with an order to show cause under 1 Pa Code § 35.14 (relating to orders to show cause). The order to show cause will contain notification that the certification may be subject to action and the grounds for the action. The order to show cause will require that the boiler inspector respond in writing within 30 days after the date of service of the order. The Department will also serve a copy of the order to show cause upon the boiler inspector's current employer, if any.

(2) The boiler inspector shall file an answer in writing to the allegations set forth in the order to show cause in accordance with 1 Pa. Code § 35.37 (relating to answers to orders to show cause). If made, answers shall be filed with the Department at the appropriate address within 30 days after the date of service of the order to show cause. Failure to file an answer will result in the entry of a default judgment against the inspector.

(3) At the request of any of the parties, the Department will hold a hearing on the matter. The Secretary will designate a presiding officer to preside at the hearing and to issue a proposed report under 1 Pa Code §§ 35.201-35.207 (relating to proposed reports). The Secretary may delegate final authority to the hearing examiner.

(4) The presiding officer will have the power to conduct hearings under 1 Pa Code §§ 35.185-35.190 (relating to presiding officers). The presiding officer will issue a proposed report that shall be served upon counsel of record or to the parties in the hearing. The presiding officer will transmit the proposed report and the certified record to the Secretary within 15-days after issuance of the proposed report.

(5) A participant desiring to appeal to the Secretary shall, within 30 days after the service of a copy of the proposed report, file exceptions to the proposed report under 1 Pa. Code § 35.211 (relating to procedure to except to proposed report). A response may be filed within 20 days to the exceptions.

(6) The Secretary or his designee will issue a final order under 1 Pa. Code § 35.226 (relating to final orders).

(d) The Department may not reinstate a commission that was revoked under this section unless ordered to do so by a court of competent jurisdiction. The Department will order the surrender of the commission documents following an order of revocation or suspension.

(e) Subsection (c) supplements 1 Pa. Code §§ 35.14, 35.37, 35.185—35.190 35.201—35.207, 35.211, and 35.226.

SUBCHAPTER B. REQUIREMENTS FOR BOILERS AND UNFIRED PRESSURE VESSELS.

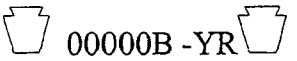
§ 3.21. Stamping.

(a) A boiler and unfired pressure vessel destined for use in the Commonwealth shall be built to the applicable ASME code of construction or meet the requirements of section 7 of the act (35 P.S. § 1331.7).

(b) A boiler and unfired pressure vessel built to the ASME Code shall be stamped with the appropriate ASME symbol, the manufacturer's information in accordance with stamping requirements of the code of construction, and its National Board registration number. The stamping may be applied to a nameplate in accordance with the code of construction.

(c) National Board registration and stamping requirements do not apply to cast iron boilers, which are constructed under ASME Code provisions and do not require final inspection by a National Board inspector.

(d) A new boiler or unfired pressure vessel installed in this Commonwealth shall be stamped with an identifying serial number consisting of the keystone symbol and figures, which shall not be less than 5/16 inches in height and arranged as follows:



(e) A boiler or unfired pressure vessel that is not built to the ASME Code may be stamped with a Pennsylvania special number if it meets the requirements of section 7(b) of the act (35 P.S. § 1331.7(b)).

(f) The Department may accept a boiler or unfired pressure vessel with a registration number from another state for use in this Commonwealth if a National Board

inspector inspected and approved the boiler or unfired pressure vessel during construction.

(g) Stamping required under this section shall be exposed at all times and may not be concealed by paint or lagging.

§ 3.22. Other state stamps.

A boiler or unfired pressure vessel stamped with the ASME symbol and another state stamp may be installed and operated if a National Board inspector witnessed its construction and the shop data report is provided to the Department with a completed Department-provided intent to install form.

§3.23. Lap seam crack.

The shell or drum of a boiler or unfired pressure vessel containing a lap seam crack along a longitudinal riveted joint shall be immediately taken out of service. Repairs may not be made without Department approval.

§ 3.24. Boiler controls.

(a) The installation of boiler controls shall comply with ASME CSD 1 and NFPA 85.

(b) The maintenance and inspection of boilers shall comply with ANSI/NB 23.

§ 3.25. Pressure reducing stations.

(a) The installation of pressure reducing stations shall comply with ASME B 31.1.

(b) Hand-controlled bypasses around reducing valves may be used if the bypass has no greater capacity than the reducing valve. Hand control bypasses may be used around reducing valves at greater capacity than the reducing valve if the system or unfired pressure vessel has adequate relief or safety valve protection, or meets the requirements of the high pressure system.

(c) A pressure gauge shall be installed on the low-pressure side of a reducing station.

§ 3.26. Valves and safety devices.

(a) A boiler or unfired pressure vessel may not be placed in service unless it complies with § 3.152 (relating to safety appliances).

(b) A company or organization holding a Department-issued certificate of authorization to reset and reseal safety valves and relief valves or a current VR stamp is required to reset and reseal safety valves and relief valves.

(c) A company or organization holding a current VR stamp is required to repair safety valves and relief valves.

(d) A safety valve or relief valve may not be loaded to maintain a working pressure in excess of the maximum working pressure stated on the boiler or unfired pressure vessel's certificate of operation.

(e) Additional or supplemental safety or relief valves installed on a boiler or unfired pressure vessel, may exceed maximum working pressure if the valves comply with the applicable code of construction or this chapter.

§ 3.27. Different working pressures.

(a) At least one safety valve on each boiler shall be set at or below the maximum allowable working pressure. All other valves may be set within a range of 3.0% above the maximum allowable working pressure. The range of setting of all of the saturated steam valves on the boiler may not exceed 10% of the saturated steam valve set at the highest pressure.

(b) When a boiler system is comprised of boilers with different maximum allowable working pressures having minimum safety valve settings varying more than 6 % and connected so that steam flows toward the lower pressure boiler, the boiler system shall meet one of the following requirements:

(1) A check valve shall be installed in the steam line to protect the lower pressure boilers.

(2) Additional safety valves on the low-pressure side of the boiler system shall protect lower pressure boilers and meet all of the following requirements:

(i) The additional safety valve capacity shall be based on the maximum amount of steam that can flow into the low-pressure system.

(ii) Additional safety valves shall have at least one valve set at a pressure that is not greater than the lowest maximum allowable pressure.

(iii) Other valves shall be set within a range of not more than 3% above the lowest allowable pressure.

§ 3.28. Blowoff tanks.

(a) Blowoff piping from a power boiler or a miniature boiler may not discharge directly into a sewer. A blowoff tank will be used if conditions do not provide an adequate and safe open discharge.

(b) ASME Section VIII, Division 1 governs the construction of metal blowoff tanks.

(c) The cross sectional area of the outlet from blowoff tanks shall be twice the area of the inlet. The outlet pipe shall be located to drain the blowoff tank to within 8-inches of the bottom of the tank.

(d) A vent pipe comprised of at least four times the area of the inlet pipe shall lead to the outer atmosphere.

(e) Vents shall lead as directly as possible to the outer air and discharge in a safe location. There shall be no valve or other obstructions such as water pockets between the tank and the discharge end of the vent pipe.

(f) All pipe connections between the boiler blowoff valves and the tank shall be as direct as possible and conform to the ASME Code.

(g) A manhole or an access opening shall be installed for cleaning the tank.

(h) A blowoff tank that is not vented as required in this section shall meet one of the following requirements:

(1) Constructed to withstand pressure equal to the pressure allowed on its attached boiler.

(2) Equipped with a safety valve or valves of sufficient capacity to prevent the pressure from exceeding the safe working pressure of the tank.

§ 3.29. Discharge outlets.

Discharge of safety valves of a boiler generating in excess of 500 pounds of steam per hour shall be piped to the outside atmosphere and to a safe point of discharge. Blowoff pipes and other outlets shall be located to prevent injury to personnel.

§ 3.30. Electric boilers.

Appliances required for electric boilers shall be attached to the boilers in accordance with all of the following requirements:

(1) A cable shall be provided for grounding the boiler shell and shall be the same gauge as the incoming power line to the boiler. The cable shall be permanently connected and grounded.

(2) A suitable screen or guard shall be placed around high-tension bushings with a sign containing a high voltage warning. The screen or guard shall be located to prevent a person from accidentally coming in contact with the high-tension circuit.

(3) The power circuit to the boiler shall be open when safety valves are adjusted.

(4) The power line shall be open when the boiler is under steam pressure and the operator is making a necessary adjustment.

(5) Safety or relief valves shall have a relieving capacity of 3½ pounds per hour for each kilowatt rating.

(6) Boiler shell grounding connectors shall be installed in accordance with all of the following:

(i) The NEC, Chapter 4, except that the cable gauge size shall comply with paragraph (1) of this section.

(ii) A conductor will be permanently attached to the boiler shell by suitable lugs, pressure connectors, clamps, or other Department-approved means. Connectors that depend on solder to maintain connection may not be used.

§ 3.31. Forced circulation boilers.

Forced circulation boilers and boilers with no fixed steam or waterline shall conform to the ASME Code, section 1.

§ 3.32. Supports.

(a) A boiler or unfired pressure vessel shall be supported by masonry or structural supports sufficient to safely support the boiler or vessel and its contents.

(b) An air compressor vessel shall be shock mounted.

§ 3.33. Explosion doors.

Stoker coal fired boilers under positive pressure shall be equipped with explosion doors to relieve furnace pressure. The explosion doors will be located in the setting wall within 7 feet of the firing floor or any platform, and provided with substantial deflectors to divert the blast away from personnel.

§ 3.34. Ventilation for combustion equipment.

Adequate air to support combustion shall be provided. The recommendations of the manufacturer of the equipment shall be utilized.

§ 3.35. Ladders and runways.

(a) Walkways, runways, and platforms are required between and on top of boilers, which are that are more than 8-feet high from the operating floor to afford accessibility for the operation and servicing.

(b) Walkways, runways, and platforms shall meet all of the following requirements:

(1) Constructed of metal.

(2) Constructed of safety treads, standard grating, or similar material with a minimum clear width of 30inches.

(3) Constructed by bolts, welds or rivets.

(4) Equipped with handrails that are 42-inches high with an intermediate rail and 6- inch toeboard.

(c) A stairway that is a means of access to the walkways, runways, or platforms shall not exceed an angle of 45 degrees.

(d) A ladder that serves as a means of access to walkways, runways, or platforms shall be constructed:

(1) Of metal.

(2) So the rungs extend through the side members and are permanently secured to the side rails.

(3) So the front of the rungs have a distance of at least 30 inches from the nearest permanent object on the climbing side of the ladder.

(4) So the back of the rungs have a distance of at least 6½ inches from the nearest permanent object.

(5) So there is a clear width of at least 15 inches from the centerline of the ladder on either side across the front of the ladder.

(e) A welder qualified under Standard Qualification Procedures of the American Welding Society is required for welding a walkway, runway, platform or ladder.

(f) A walkway, runway or platform exceeding 6- feet in length will have at least two means of exit access.

§ 3.36. Clearances.

(a) The following clearances apply for boilers installed after January 1, 1960:

(1) The minimum clearance around each boiler shall be 30 inches with at least 6feet clearance from the floor to overhead obstructions.

(2) The minimum clearance around each unfired pressure vessel shall be 18 inches. The minimum clearance in front of a manhole cover shall be 30 inches.

(3) A clearance of at least 12 inches shall be provided between the floor and lower head or the underside of the shell of an unfired pressure vessel. The clearance distance shall be the measurement from a vessel appendage to the next object.

(b) The following requirements apply to a single installation or assembly of storage water heaters or instantaneous water heaters, which operate as a unit:

(1) The unit may be arranged with a minimum clearance of 6 inches between components if an 18-inch clearance shall be maintained around the assembly. The clearance in front of a manhole opening is a minimum of 30 inches.

(2) An assembly may not exceed 9,000,000 BTU input.

(3) Casings shall be readily removable for inspection purposes, if casings are provided.

(c) A new building containing multiple boiler installations shall meet all of the following minimum overhead clearance requirements:

(1) Between the boiler platform and the ceiling: 7 feet.

(2) Between the top of the boiler proper and the ceiling for all installations: 3 ½ feet.

(3) Between the highest point of any valve or fitting and the ceiling: 6 inches.

(d) Subsections (a) and (b) do not apply to pressure vessels of factory assembled package units that are governed by § 3.111 (relating to field inspections) if there is adequate clearance for operation and inspection. Subsection (a) shall apply to the entire factory assembled unit.

(e) The minimum clearance around a wall-hung boiler shall be 30 inches except for the wall mount side.

(f) The clearance between modules in a modular system may be reduced to the manufacturer's recommendations if the entire modular boiler system meets the 30-inch clearance requirement of subsection (a)(1).

(g) This section does not apply to a miniature boiler if the boiler can be safely inspected as installed.

(h) Tripping hazards are not permitted.

§ 3.37. Special design.

(a) The owner or user of a new boiler or unfired pressure vessel having unusual features of special design intended for installation and operation in this Commonwealth shall submit all of the following to the Department for approval:

(1) Duplicate complete specifications.

(2) Drawings that show all details of the proposed construction and the method of computation used in determining the safe working pressure for each new boiler and unfired pressure vessel.

(b) A specially designed boiler or unfired pressure vessel shall not be operated until the Department approves its design.

§ 3.38. Commercial beverage dispensing systems.

(a) An unfired pressure vessel used in a commercial beverage dispensing system shall have clearance of 18inches for at least 50% of the vessel surface. The remaining vessel surface may have its clearance reduced to 1inch.

(b) The Department will issue one certificate of operation and charge one fee under § 3.2 (relating to fees) for all vessels used in a commercial dispensing system at a single business location at the same design maximum working pressure.

§ 3.39. Manufactured parts.

Parts manufactured for boilers or unfired pressure vessels constructed to the ASME Code shall be manufactured and stamped in accordance with the applicable section of the ASME Code. Data reports shall be furnished in accordance with the applicable section of the ASME Code.

INSTALLATIONS OF POWER BOILERS

§ 3.51. Compliance with the ASME Code for power boilers.

Installations of power boilers shall comply with the provisions of Section 1 of the ASME Code, ASME /CSD1 and NFPA 85.

INSTALLATIONS OF LOW- PRESSURE HEATING BOILERS

§ 3.61. Compliance with the ASME Code for low-pressure boilers.

Installations of low-pressure heating boilers shall comply with section IV of the ASME Code and ASME /CSD 1.

§ 3.62. Registration and installation.

(a) An installer of low-pressure steel heating boilers shall provide a copy of the manufacturer's data report to the inspector when the boiler is installed.

(b) A cast iron boiler shall be hydrostatically tested when it is installed. The inspector may accept the factory hydrostatic test.

(c) An installer of low-pressure cast iron boilers shall submit a "Cast Iron Installation Report" to the Department on a Department-provided form. The Cast Iron Installation report contains manufacturer, testing and installation information.

INSTALLATIONS OF UNFIRED PRESSURE VESSELS

§ 3.71. Compliance with the ASME Code for installations of unfired pressure vessels.

Installations of unfired pressure vessels shall comply with sections VIII or X of the ASME Code.

REPAIRS AND ALTERATIONS

§ 3.81. Major repairs and alterations.

(a) An owner or user of a boiler or unfired pressure vessel shall consult with an inspector on a repair that affects the working pressure or safety of a boiler or unfired pressure vessel.

(b) A repair to a boiler or unfired pressure vessel shall comply with the applicable provisions of the ASME Code or ASNI/NB 23. A manufacturer or repair company may not perform welded repairs and tube replacements without holding an "R" Stamp.

(c) An owner or user of a boiler or unfired pressure vessel shall consult with the inspector responsible for completing the report of welded repair before commencement of work or repairs that alter the original design of a boiler or unfired pressure vessel. A manufacturer holding the appropriate ASME Code stamp may alter a boiler or vessel. A manufacturer holding an ASNI/NB 23 "R" stamp may perform alterations to other vessels.

(d) All welds shall be documented on a Department-issued "Record of Welded Repair form" or a R-1 form. Hydrostatic testing of welded repairs may be conducted at the inspector's discretion in accordance with ANSI/NB23.

(e) An owner or user of a boiler or unfired pressure vessel that requires an inspection under this chapter shall immediately notify the Department when a defect affecting the safety of the boiler or unfired pressure vessel is discovered.

§3.82. Reconstruction and repair.

Workmanship, materials, fittings and attachments used in the reconstruction or repair of a boiler or unfired pressure vessel shall meet ANSI/NB 23. The boiler or unfired pressure vessel may not become operational until an inspector approves all repairs.

§ 3.83. Repairs by welding.

(a) Welding repairs shall comply with section IX of the ASME Code.

(b) A repair to a boiler or unfired pressure vessel that involves welding may be made if an inspector approves the repair and signs a record of welded repairs.

(c) Repairs by fusion welding shall comply with ANSI/NB 23.

(d) Repairs listed as routine in ANSI/NB 23 may be pre-approved by an inspector.

SUBCHAPTER C. ADMINISTRATION

§ 3.91. Certificates of operation.

(a) The Department will issue a certificate of operation for a boiler or unfired pressure vessel upon receipt of an inspection report indicating that the boiler or unfired pressure vessel is safe to operate at the pressure limit listed in the inspection report.

(b) The owner or user shall post the certificate in a visible location that is as close as possible to the boiler or unfired pressure vessel.

§ 3.92. Unsafe operation.

The Department will suspend the certificate of operation and seal a boiler or unfired pressure vessel that is unsafe. A person, firm, partnership, or corporation operating a boiler or unfired pressure vessel with a suspended certificate of operation is subject to the penalties of section 19 of the act. (35 P.S. § 1331.19)

§ 3.93. Insurance notification.

An owner or user shall notify the Department within 30 days when insurance is written, cancelled, not renewed, or suspended on a boiler or unfired pressure vessel. The owner or user shall notify the Department within 30 days of the cause of any suspension or refusal to renew insurance on a boiler or unfired pressured vessel.

§ 3.94. Accident notification.

(a) Under section 16 of the act (35 P.S. § 1331.16), the owner or user shall immediately notify the Department by telephone, facsimile transmission, electronic mail or messenger of an accident or explosion. The owner or user shall file a written report with the Department on a Department-prescribed form within 5 days of the accident.

(b) The boiler or unfired pressure vessel, its parts, or equipment involved in the accident or explosion may not be removed or disturbed before a Department inspection is made except to prevent harm to persons or property.

§ 3.95. Restamping.

(a) An inspector will instruct the owner or user to restamp a boiler or unfired pressure vessel when the stamping becomes indistinct or detached. The owner or user shall submit a request for restamping the boiler or unfired pressure vessel to the Department. The request shall be accompanied with proof of the original stamping consisting of a rubbing of the original stamping or a copy of the manufacturer's data sheet.

(b) A Department inspector has sole authorization to perform the Department restamping. The restamping will contain the same information, as the original stamping The Department will not restamp the ASME symbol.

§ 3.96. Condemnation.

(a) A Department inspector will stamp an unsafe boiler or unfired pressure vessel with the following designation:

Pa < XX >

(b) A Department inspector will place the stamping above the Commonwealth or National Board stamping. The stamping will at least 5/16 inch in height.

(c) A Department inspector will remove the stamping of subsection (b) when a boiler or unfired pressure vessel has been restored or repaired to comply with this chapter. No other person may remove the stamping.

§ 3.97. Removal from service.

An owner or user shall notify the Department when a boiler or unfired pressure vessel is removed from service for a repair or alteration within 10 days.

§ 3.98. Reinstallation.

(a) Fittings and appliances used for the reinstallation of a boiler and pressure vessel shall comply with this chapter.

(b) The owner or user of a boiler or unfired pressure vessel shall notify the Department within 10 days of the new location of a boiler or unfired pressure vessel that is moved.

(c) The owner or user may not place a reinstalled boiler or unfired pressure vessel into service until it passes a Department inspection.

§ 3.99. Plan approval.

(a) Installation of a boiler shall comply with all of the requirements of this section.

(b) A boiler owner shall submit an intent to install form or other data showing compliance with the provisions of the act and this chapter to the Department before a boiler is installed.

(c) A boiler owner shall submit drawings and a request for a variance to the Industrial Board if the installation clearances do not meet the requirements of § 3.36 (relating to clearances). Drawings shall be at least 18inches by 24inches in size drawn to scale of not less than 1/4inch equals one foot. Drawings for boiler installations shall include all of the following:

(1) A floor plan and section of the boiler room.

(2) The proposed location of all boilers, drums, headers, doors, steam, air and water gages, safety devices, blowoffs, all necessary piping, and all other parts and equipment.

(3) The exit ways from all of the following:

(i) Boiler rooms.

(ii) Blowoff pits and ashpits or alleys.

(iii) High pressure steam line tunnels.

(iv) All other places where there is danger to persons in confined space in case of explosion.

(v) Platforms.

(4) Walkways located over boilers.

(5) All clearance dimensions above, around, and between boilers, equipment, and other construction.

§ 3.100. Notice of Deficiency.

(a) The Department will use the following procedures if an inspection reveals any violation of the act or this chapter:

(1) The Department will issue a written notice of deficiency to the boiler or unfired pressure vessel owner or user. The notice shall contain a description of the violations and an order requiring correction of the violations and repairs within 30 days of the date of issuance. When a violation relates to the unsafe operation of a boiler, the Department will act under § 3.92 (relating to unsafe operation).

(2) The written notice of deficiency will include a certification requiring the boiler or unfired pressure vessel owner or user to sign, date and return the certification when the corrective action or repair has occurred. The Department may inspect the boiler or unfired pressure vessel to verify the corrective action or repair.

(3) If the unfired pressure vessel owner or user does not correct the deficiency within the period of time allowed in the notice of deficiency, the Department may initiate action to seal the boiler or unfired pressure vessel by issuing an order to show cause to the boiler or unfired pressure vessel owner or user.

(4) The order to show cause shall contain a statement of the grounds for the action, the alleged violations of the act and this chapter and notification that the boiler or unfired pressure vessel may be sealed. The order to show cause shall contain notification that the owner or user shall submit a written answer within 30 days. The Department shall serve the order to show cause upon the owner or user by certified mail or personal service.

(5) The owner or user may file a written answer to the order to show cause with the Department within 30 days following service of the order to show cause. The answer shall contain specific admissions or denials of the allegations contained in the order to show cause and set forth the specific facts, matters of law or regulation interpretation relied upon by the owner or user. The answer may contain a request for a variance or an extension of time for compliance.

(b) The Department will consider a timely-filed request for variance or extension of time, or a timely-filed appeal as a stay to an enforcement action unless the Department acts under § 3.92 (relating to unsafe operation) or the boiler constitutes a danger to life or property under section 11(e) of the act (35 P.S. § 1331.11(e)).

(c) The Department will inspect the boiler or unfired pressure vessel at the expiration of an extension of time or other time period granted for compliance under this section. If the boiler or unfired pressure vessel violates the act or this chapter following inspection, the Department may seal or condemn the boiler or unfired pressure vessel under section 13 of the act (35 P.S. § 1331.13). The Department will serve the seal order upon the owner or user by certified mail or personal service.

(d) Under section 13 of the act, the Department will issue a notice to discontinue operation to the boiler or unfired pressure vessel owner or user for a violation that was not corrected. The notice to discontinue operation will require the owner or user to discontinue the use of the boiler or unfired pressure vessel within 24 hours. The boiler or unfired pressure vessel may not be returned to service until the violations have been corrected, the repairs have been made and the Department notifies the owner or user that the boiler or unfired pressure vessel may be returned to service.

(e) Subsection (a) supplements 1 Pa. Code §§ 35.14 (relating to orders to show cause and 35.37 (relating to answers to orders to show cause).

§ 3.101. Appeals.

(a) A person aggrieved by a notice of deficiency or a notice to discontinue operation may appeal the order to the Industrial Board within 30 days of the issuance of the order.

(b) The Industrial Board will decide petitions for variances and extensions of time, and appeals of Department decisions.

(c) The Board may consider the following factors, among others, when reviewing and ruling upon a request for an extension of time or a variance or other appropriate relief:

(1) The reasonableness of the Department's rule and regulations as applied in the specific case.

(2) The extent to which an extension of time or a variance will subject occupants to unsafe conditions.

(3) The availability of professional or technical personnel needed to come into compliance.

(4) The availability of materials and equipment needed to come into compliance.

(5) The efforts being made to safeguard occupants against boiler and unfired pressure vessel hazards.

(6) The efforts being made to come into compliance as quickly as possible.

(7) Compensatory safety features which will provide an equivalent degree of protection for the occupants.

SUBCHAPTER D. - INSPECTIONS

§3.111. Field inspections.

The Department will conduct field inspections according to the following timetable:

(a) Power boilers and process boilers will be inspected internally and externally while not under pressure every 12 months except as provided under section 9(e) and (f) of the act (35 P.S. § 1331.9 (e) and (f)).

(b) The Department may extend power boiler internal inspections to 24 months and process boiler internal inspections to 60 months if the boiler passes an annual external inspection and all of the following requirements are met:

(1) There is continuous boiler water treatment under the direct supervision of a person trained and experienced in water treatment for controlling and limiting corrosion and deposits.

(2) The records are available for review and contain all of the following:

(i) The date and time the boiler was out of service and the reason for being taken out of service.

(ii) Daily analysis of water samples showing water conditions and elements or characteristics that produce corrosion or other deterioration to the boiler or its parts.

(3) An inspector performed annual inspections of the boiler, which included inspection of the items contained in subsections (b)(1) and (b)(2).

(4) The boiler is operated under direct supervision of a trained operator.

(5) Inspection records demonstrate no significant scaling, corrosion, erosion or overheating.

(c) Internal and external inspection of low-pressure steam vapor boilers that are not under pressure will be conducted every 24 months.

(d) External inspection of hot water supply boilers will be conducted every 24 months. An inspector may require internal inspection because of a vessel's age or condition.

(e) Internal inspection of steel hot water heating boilers will be conducted every 48 months. External inspections will be conducted every 24 months.

(f) Internal and external inspections of low–pressure boilers in schools will be conducted every 24 months.

(g) External inspections of cast iron boilers will be conducted every 24 months and will include an internal inspection of the firebox. The unit shall be flushed until clean if the watersides appear to contain sludge.

(h) Unfired pressure vessels will be inspected every 36 months. An inspector may require internal inspections because of a vessel's age or condition.

§ 3.112. Inspection preparation.

(a) An owner or user shall prepare a boiler or unfired pressure vessel for internal inspection in accordance with the ANSI/NB23 after a inspector provides notification.

(b) The inspector will not inspect a boiler or unfired pressure vessel that is not properly prepared for an internal inspection.

§ 3.113. Inspection accessibility.

Underground-unfired pressure vessels shall be install or reinstall in a manner that allows for external inspection of the vessel after [effective date of regulation].

§3.114. Removal of covering for inspection.

An owner or user shall remove a portion of the jacketing, setting wall, or other form of casing or housing so an inspector may view rivet size and pitch, and other data necessary to determine the safety of a boiler or unfired pressure vessel when a portion of the jacketing, setting wall or other form of casing or housing is not visible and there is no other means to obtain this information.

§3.115. Hydrostatic pressure test.

(a) A hydrostatic pressure test shall comply with all of the following requirements:

(1) A hydrostatic pressure test may not exceed the following pressures:

(i) For boilers or unfired pressure vessels in the field, 1.5 times the maximum allowable working pressure.

(ii) For boilers of locomotives, 1.25 times the maximum allowable working pressure.

(iii) For glass-lined unfired pressure vessels, the maximum allowable working pressure.

(iv) For unfired pressure vessels fabricated to ASME section VIII, division 1 after January 1, 2000, 1.3 times the maximum allowable working pressure.

(v) For unfired pressure vessels fabricated to ASME Section VIII, Divisions 2 and 3, the pressure that was pre-approved by an inspector.

(2) Pressure shall be controlled at all times and shall not be more than 106% of the test pressure allowed by the ASME Code at the time of construction.

(3) The temperature of the water used to apply the test shall be between 70° and 120°F. If the temperature of the surrounding atmosphere is below 70°F or above 120°F, the test may not be performed.

(4) A safety valve shall be removed or each valve shall be held to its seat by a testing clamp. Screwing down the compression screw upon the spring is prohibited. A VR stamp holder shall reseal the valves.

(5) Pressure shall be equal to or below the release pressure of the safety valve having the highest release setting when a test is applied to an existing installation to determine tightness.

(b) An inspector may require a hydrostatic test after the completion of a repair to insure the pressure containing boundaries hold design pressure.

§ 3.116. Inspection during construction.

An inspector shall comply with ASME requirements for inspections of cast iron boilers in construction.

§ 3.117. Inspection report.

An inspector shall submit a copy of each boiler or unfired pressure vessel inspection to the Department no more than 30 days after the inspection.

SUBCHAPTER E. BOILERS INSTALLED PRIOR TO JULY 1, 1916, AND UNFIRED PRESSURE VESSELS AND POWER BOILERS INSTALLED PRIOR TO SEPTEMBER 1, 1937.

§ 3.131. Allowable working pressure.

The ASME Code governs calculation of allowable working pressure.

§ 3.132. Fusible plugs.

Fire-actuated fusible plugs may be used if the plugs conform to the requirements of Sections A19 - A21, Appendix A, section I of the ASME Code. The plugs shall be replaced annually.

§ 3.133. Repair and replacement.

Repairs or replacements to fittings or appliances shall comply with the requirements for installations in the ASME Code and ASME/CSD1.

§3.134. Weighted safety valves.

Weighted safety values may not be used on boilers or unfired pressure vessels.

SUBCHAPTER F. LOW PRESSURE HEATING BOILERS INSTALLED PRIOR TO JULY 1, 1916.

§ 3.141. Riveted boilers.

(a) The ASME Code governs the determination of the maximum allowable working pressure on the shell of a riveted heating boiler.

(b) The maximum allowable working pressure of a steam heating boiler may not exceed 15 psig.

(c) The maximum allowable working pressure of a hot water boiler may not exceed 160 psig at a temperature not exceeding 250° F.

§ 3.142. Welded boilers.

The maximum allowable working pressure on the shell of a welded steel or wrought iron heating boiler may not exceed the requirements of ASME Code, section IV.

§ 3.143. Cast iron boilers.

(a) The maximum allowable working pressure on the shell of a cast iron boiler may not exceed 15 psig for a steam boiler and the stamped working pressure for a hot water boiler.

(b) The maximum allowable working pressure for a boiler having a cast iron shell or heads, and steel or wrought iron tubes may not exceed 15 psig for a steam boiler and the stamped working pressure for a hot water boiler.

§ 3.144. Safe pressure.

An inspector may reduce the operating pressure of a heating boiler if the inspector determines that the boiler is unsafe for operation at the approved pressure and the boiler is not properly repaired. The inspector may reduce the operating pressure based upon the remaining thickness of the pressure boundaries and code of construction requirements.

§ 3.145. Steam stop valves.

(a) A boiler equipped with a steam stop valve shall contain a check valve in the condensate return line between the boiler and the system.

(b) A heating system equipped with a steam stop valve shall have a check valve in the condensate return pipe from the part of the system equipped with the steam stop valve.

Subchapter G. UNFIRED PRESSURE VESSELS INSTALLED PRIOR TO SEPTEMBER 1, 1937.

§ 3.151. Maximum allowable working pressure.

(a) The maximum allowable working pressure on the shell of an unfired pressure vessel is determined by all of the following:

(1) The strength of the weakest course completed from the thickness of the plate.

(2) The tensile strength of the plate.

(3) The efficiency of the longitudinal joint.

(4) The inside diameter of the course.

(5) The safety factor allowed by the ASME Code.

(b) The equation for computing the maximum allowable working pressure is:

$$\frac{TS \times T \times E}{R \times FS} = \text{Maximum allowable working pressure in psi}$$

where:

(1) TS equals the ultimate strength of the shell plates in psi. If the tensile strength is not known, 55,000 psi shall be used for temperatures not exceeding 700° F.

(2) T equals the maximum thickness of shell plates of weakest course in inches.

(3) E equals the efficiency of longitudinal joint depending upon construction.

(i) ANSI/NB 23, Appendix C, sections A-1 to A-9 shall be used to calculate efficiency for a riveted joint.

(ii) Fusion welded joints shall have the flowing E values:

(A) Single lap weld is 40%.

(B) Double lap weld is 60%.

(C) Single butt weld is 60%.

(D) Double butt weld is 75%.

(E) Forge weld is 70%.

(F) Brazed steel and brazed copper is 80%.

(4) R equals the inside radius of the weakest course of the shell in inches if the thickness of the shell does not exceed 10% of the radius. The outer radius is used in the equation if the thickness is over 10% of the radius.

(5) FS equals the minimum safety factor allowed by this section. The minimum allowable safety factors are as follows:

(i) For unfired pressures vessels, except those of lap seam construction, the minimum safety factor is five.

(ii) For unfired pressure vessels with longitudinal lap joints the minimum safety factor is 5 ½.

(iii) For unfired pressure vessels with reinstalled or secondhand lap seamed construction the minimum safety factor is six.

(iv) For unfired pressure vessels with reinstalled or secondhand butt strap or welded construction the minimum safety factor is 5½.

(c) The ASME Code, Section VIII, Division 1 is incorporated as the maximum allowable working pressure for cylindrical unfired pressure vessels subjected to external or collapsing pressure.

(d) The formulas in ASME Code, section VIII, divisions 1 and 2 or ASME section X are incorporated and shall be used to calculate the maximum allowable pressure for the head of an existing unfired pressure vessel that was not constructed in accordance with this chapter.

(e) The effect of static head shall be considered in checking an existing vessel's maximum allowable working pressure.

§3.152. Safety appliances.

(a) An unfired pressure vessel shall be protected by safety relief devices, and indicating and controlling devices sufficient to insure their safe operation which meet all of the following requirements:

(1) Constructed, located, installed and maintained to prevent the devices from becoming inoperative.

(2) Having sufficient relieving capacity to prevent a rise of pressure in the vessel of more than 10% above the maximum allowable working pressure, taking into account the effect of static head.

(3) The discharge from safety devices shall be carried to a safe place away from the unfired pressure vessel.

(b) Safety valves for other than noxious liquids or toxic vapors shall be direct spring-loaded type valves, designed with substantial lifting devices so that the disk can be lifted from its seat by the spindle of at least 1/8 the diameter of the valve if the pressure of the vessel is at 75% of the safety valve setting.

(c) Each safety valve shall have clear manufacturer markings that are 1/4-inch, or larger. The markings shall contain all of the following information stamped on the valve, cast on the valve body, or cast on a plate securely fastened to the valve:

(1) Name or identifying trade mark of the manufacturer.

(2) Pipe size, in inches, of the valve inlet.

(3) Pressure, in pounds, at which the valve is set to open.

(4) Blow down, in pounds.

(d) If the valve inlet is not threaded, the initial diameter of the inlet shall not be less than the inside diameter of a standard pipe of the same size.

(e) The difference between the opening and closing pressures of a safety valve shall be a minimum of 20%.

(f) Existing valves bearing ASME stamping different from the requirements in subsection (c) are permitted if the valves have equivalent construction and relieving capacity.

(g) Safety valves with a cast iron seat or a disk shall not be used.

(h) If more than one safety valve is used, the discharge capacity shall be the combined capacity of all safety valves.

(i) A vessel in which pressure is not generated and is derived from an outside source shall have a safety device connected to the vessel, vessels or system which it protects in a manner to prevent a rise in pressure beyond the maximum allowable pressure.

(j) A vessel in which pressure may be generated shall have a safety device or devices connected directly to the vessel and in accordance with the following:

(1) When the contents of a vessel may cause interference with the operation of the vessel or safety valve when the safety value is directly attached, the safety valve or valves may be connected in a manner to avoid the interference.

(2) An escape pipe may be used. The pipe shall be full sized and fitted with an open drain to prevent liquid from lodging in the upper part of the safety valve. A valve may not be placed on the escape pipe between the safety valve and the atmosphere.

(3) An elbow may be placed on an escape pipe if it is located close to the safety valve outlet or the escape pipe is securely anchored and supported. If two or more safety devices are placed on one connection, the connection shall have a cross sectional area at least equal to the combined area of the safety devices' inlets.

(k) Every safety valve which is exposed to a temperatures of 32 °F. or less shall have a drain of at least 3/8 inch in diameter at the lowest point where water can collect.

(l) A spring in a safety or relief valve in service for pressures 250 psi and less shall not be reset for a pressure more than 10% above or 19% below the pressure at which the

valve is marked. For pressures higher than 250 psi, the spring shall not be reset for any pressure more than 5% above or 50% below the pressure at which the safety or relief valve is marked.

(m) Safety valves for compressed air tanks cannot be larger than 3-inch diameter. The valves shall be proportioned for the maximum number of cubic feet of free air that may be applied per minute.

(n) A rupture disk may be used as a pressure safety device on vessels containing nontoxic gases, when it is designed to fail at not more than the design pressure of the vessel.

(o) Safety valves on systems using toxic gases shall discharge in accordance with the ASME Code, Section VIII, Division 1, 2 or 3.

§ 3.153. Pipe connections and fittings.

(a) The general arrangement of piping shall be designed to reduce vibration, expansion and drainage, and provide adequate support at the proper points.

(b) The code of construction governs repairs of existing high-pressure/temperature piping systems installed before 1998.

§ 3.154. Repair and renewal.

Repairs to fittings and controls shall comply with the ASME Code and ASME/CSD1 requirements for installations.

SUBCHAPTER H. SPECIAL INSTALLATIONS.

§3.161. Modular boilers.

(a) A modular boiler as defined in ASME Code section IV shall be installed in accordance with § 3.36 (relating to clearances). The distance between modules may be reduced to the manufacturer's recommendations if the entire modular boiler system meets the 30-inch clearance requirements.

(b) A modular boiler shall have only one inlet and one outlet valve, as required by ASME Code, section IV. The boiler controls shall comply with ASME Code, section IV and ASME/CSD1.

§3.162. Portable boilers.

(a) A portable boiler shall meet the requirements of § 3.21 (relating to stamping).

(b) A portable boiler may be mounted in covered trailers if all of the following conditions are met:

(1) A 30-inch clearance is provided on both ends of the boiler.

(2) The boiler's trailer is provided with chocks and is anchored to prevent movement during operation.

(3) The boiler is anchored to the trailer.

(4) The trailer provides a means or area to remove boiler tubes.

(5) The roof or the ceiling of the trailer provides space to allow proper operation of all valves and appurtenances.

(c) The clearance on one side of a boiler mounted in a covered trailer may be reduced to 3 inches if the trailer has access panels for removal of handhole plugs for inspection and maintenance.

(d) The user or user shall notify the Department in writing and obtain written Department approval before a portable boiler is moved and placed in service.

§ 3.163. Fired coil water heaters and instantaneous water heaters.

(a) A fired coil water heaters and instantaneous water heater shall be installed in accordance with ASME Code, section IV, articles HLW 700, HLW 800 and HG 614.

(b) A storage vessel may be used with a fired coil water heater and instantaneous water heater, if its controls comply with ASME CSD1, and it meets the ASME Code over-pressure protection requirements. The vessel shall be ASME Code constructed if the BTU input exceeds 200,000 BTU.

(c) Temperature controls shall be designed to not exceed 210° F.

§ 3.164. Storage water heaters.

(a) A storage water heater shall be installed in accordance with ASME Code, section IV, articles HLW 700 and HLW 800, and shall comply with safety valve requirements of ASME CSD1.

(b) Temperature controls shall be designed to not exceed 210° F.

§ 3.165. Steam/hot water coil storage water heater.

(1) The design and construction of a steam/ hot water coil storage water heater shall comply with ASME Code, section VIII and the additional control requirements of ASME CSD1.

(b) Temperature controls shall be designed to not exceed 210° F.

§ 3.166. Miniature boilers and kitchen equipment.

(a) A miniature boiler shall be manufactured under the ASME "S", "H" or "M" Code. A boiler manufactured under ASME "S" and "H" Code shall be stamped with a National Board registration number.

(b) Clearance requirements contained in § 3.36 (relating to clearances) do not govern a miniature boiler or kitchen equipment if all pressure containing parts with appurtenances are visible for inspection.

(c) Miniature boiler controls shall comply with ASME/CSD1.

(d) The sight glass and pressure gauge of a miniature boiler installed in a cabinet shall always be visible during operation.

(e) Discharge from safety valves shall be piped to a safe point.

(f) Burners for gas-fired installations shall be AGA approved.

§ 3.167. Hot water/steam heat exchangers.

(a) Heater exchangers shall be manufactured under the ASME Code.

(b) Heat exchangers shall have adequate over-pressure protection to protect both systems.

(c) Heat exchangers used for domestic hot water supply shall have a high temperature limit switch designed not to exceed 210° F.

§ 3.168. Autoclaves and quick opening vessels.

(a) An inspector shall inspect autoclaves and quick opening vessels with close examination of all moving parts, locking devices, pins and interlocking devices, in accordance with ANSI/NB 23.

(b) An autoclave and quick opening vessel shall have interlocking systems to prevent charging the vessel until all openings and locking devices are fully in place.

(c) A pressure-relieving device shall be sized in accordance with the data plate for pressure. The capacity shall be based on the pressure and pipe size or the total BTU valve of the boiler.

§ 3.169. Fuel trains and piping systems.

(a) The piping of low-pressure steam systems, except PVC materials, shall comply with chapters 10 and 12 of the IMC.

(b) The piping of low-pressure hydronic piping systems, except PVC materials, shall comply with chapter 12 of the IMC.

(c) The design and installation of high-pressure steam and high temperature hot water piping shall comply with ASME B31.1.

(d) The repair of high pressure/temperature piping systems installed before 1998 shall comply with the code of construction.

(e) The installation of fuel trains and associated piping shall comply with ASME/CSD1.

§ 3.170. Swimming pool heaters.

(a) A swimming pool heater is an instantaneous water heater. The heater shall meet the construction requirements of ASME Code, section IV and the control requirements of ASME/CSD1 except if exempt under § 3.3(d) (relating to scope).

(b) A pool heater may be piped with polyvinyl chloride material rated for the pressure and temperature of the heater after the isolation valves.

§ 3.171. Locomotive boilers.

New installations for boilers of locomotives shall comply with ASME Code, section I.

DEPARTMENT OF
LABOR & INDUSTRY
COMMONWEALTH OF PENNSYLVANIA

THE SECRETARY
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October 21, 2004

The Honorable John R. McGinley
Independent Regulatory Review Commission
14th Floor, Harristown II
333 Market Street
Harrisburg, PA 17120

Re: Proposed Rulemaking: Labor & Industry
Boiler and Unfired Pressure Vessel Regulations
No. 12-58

Dear Chairman McGinley:

Enclosed is proposed rulemaking that will implement improvements to Pennsylvania's boiler and pressure vessel program contained in the Boiler and Unfired Pressure Vessel Law (35 P.S. §§ 1331.1-1331.19). The regulation will update the standards for boilers and unfired pressure vessels and utilize generally accepted national standards. It contains requirements for the issuance and renewal of commissions to boiler inspectors and related fees. The regulation pertains to boilers in commercial settings and in multi-unit dwellings that have five or more units.

The proposed rulemaking will amend the *Pennsylvania Code* (34 Pa. Code, Chapter 3).

Written comments, suggestions or comments should be directed to Edward Leister, Administrator, Bureau of Occupational and Industrial Safety, 1613 Labor and Industry Building, Seventh and Forster Streets, Harrisburg, PA 17120 (Telephone: 717-783-3323: Fax: 717-787-8363; E-mail: eleister@state.pa.us).

The Department's staff will provide your staff with any assistance required to facilitate a thorough review of this proposal. Thank you.

Sincerely,

Stephen M. Schmerin

SMS/

cc: Roger H. Caffier, Chief Counsel
Edward Leister, Administrator

TRANSMITTAL SHEET FOR REGULATIONS SUBJECT TO THE REGULATORY REVIEW ACT

RECEIVED
2004 OCT 21 PM 12: 33
INDEPENDENT REGULATORY REVIEW COMMISSION

I.D. NUMBER:	12-58
SUBJECT:	Boiler and Unfired Pressure Vessel Regulations
AGENCY:	DEPARTMENT OF LABOR & INDUSTRY

TYPE OF REGULATION

X Proposed Regulation

Final Regulation

Final Regulation with Notice of Proposed Rulemaking Omitted

120-day Emergency Certification of the Attorney General

120-day Emergency Certification of the Governor

Delivery of Tolled Regulation
a. With Revisions b. Without Revisions

FILING OF REGULATION

DATE	SIGNATURE	DESIGNATION
10/21/04	Ashleigh Clabaugh	HOUSE COMMITTEE ON LABOR RELATIONS
10/21	M. Eckhart	
10/21	K Bolton	SENATE COMMITTEE ON LABOR & INDUSTRY
10/21/04	L Hess	
10/21/04	J Gelnett	INDEPENDENT REGULATORY REVIEW COMMISSION
		ATTORNEY GENERAL (for Final Omitted only)
Dara Mantese 10/21/04		LEGISLATIVE REFERENCE BUREAU (for Proposed only)

October 12, 2004