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**CITY OF SEATTLE**

**ORDINANCE \_\_\_\_\_**

**COUNCIL BILL \_\_\_\_\_**

..title  
AN ORDINANCE relating to the Seattle Boiler and Pressure Vessel Code, Seattle Municipal Code, Chapter 22.450, and the regulations affecting the installation, operation and maintenance of boilers and pressure vessels

..body

NOW, THEREFORE,

**BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:**

Section 1. The Seattle Boiler and Pressure Vessel Code, last amended by Ordinance 124919, is amended as follows:

Section 1 Administrative

1.1 Title. These regulations shall be known as the “Seattle Boiler and Pressure Vessel Code”, may be cited as such, and will be referred to herein as “this code.”

~~((Section 10))~~ 1.2 Purpose. The purpose of this code is to establish and provide minimum standards for the protection of public health, safety and property by regulating and controlling the quality, location and installation of boilers and pressure vessels, piping and appurtenances. It is not intended to create or otherwise establish or designate any particular class or group of persons who will or should be especially protected or benefited by the terms of this code.

~~((Section 20))~~ 1.3 Scope. ~~((Other than the exemptions listed in Section 100, the))~~ The requirements of this code shall apply to the construction, erection, installation, operation, inspection, repair and alteration, relocation, replacement, addition to, use or maintenance of all boilers and pressure vessels. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable.

~~((Section 30))~~ 1.4 Powers and duties of the ~~((Director))~~ code official

~~((30.1))~~ 1.4.1 General. The Director of the Seattle Department of Construction and Inspections ~~((Department))~~ is the code official and is ~~((hereby))~~ authorized and directed to enforce all the provisions of this code. Compliance with the requirements of this code ~~((shall be))~~ is the obligation of the owner of the building, structure or premises, the duly authorized agent of the owner, or any other person responsible for the condition or work, and not of the City or any of its officers or employees.

1 ~~((30.2 Deputies))~~ 1.4.2 Designees. The ~~((Director))~~ code official may authorize the Chief  
2 Pressure Systems Inspector and other ~~((such))~~ qualified inspectors, ~~((or))~~ employees and other  
3 designees as ~~((may be necessary))~~ needed to carry out the functions specified in this code.

4 ~~((30.3))~~ 1.4.3 Right of entry. With the consent of the owner or occupier of a building or  
5 premises, or pursuant to a lawfully issued warrant, the ~~((Director))~~ code official may enter a  
6 building or premises at any reasonable time to perform the duties imposed by the code.

7 ~~((30.4 Stop Orders. Whenever any work is being done contrary to the provisions of this code, or  
8 in the event of dangerous or unsafe conditions related to construction or demolition, the Director  
9 may order the affected work stopped by a notice describing the violation in writing, posted on  
10 the premises or served on any person responsible for the condition or work. It shall be unlawful  
11 for any person to engage in or to cause such work to be done until authorization from the  
12 Director is received.~~

13 ~~30.5 Authority to Disconnect Utilities in Emergencies. The Director shall have the authority to  
14 disconnect fuel gas utility service or other energy supplies to a building, structure, premises or  
15 equipment regulated by this code in case of emergency where necessary to eliminate an  
16 immediate hazard to life or property. The Director may enter any building or premises to  
17 disconnect utility service. The Director shall, whenever possible, notify the serving utility, the  
18 owner and occupant of the building, structure or premises of the decision to disconnect prior to  
19 taking such action, and shall notify such serving utility, owner and occupant of the building,  
20 structure or premises in writing of such disconnection immediately thereafter.~~

21 ~~30.6 Authority to Condemn Equipment. Whenever the Director ascertains that equipment, or  
22 portion thereof, regulated by this code has become hazardous to life, health or property, the  
23 Director shall order in writing that such equipment may either be removed or restored to a safe  
24 condition, as appropriate. The written notice shall fix a time limit for compliance with such  
25 order. Persons shall not use or maintain defective equipment after receiving a notice.~~

26 ~~When such equipment or installation is to be disconnected, written notice of the disconnection  
27 and causes therefor shall be given within 24 hours to the serving utility, the owner and occupant  
28 of the building, structure or premises. When any equipment is maintained in violation of this  
29 code, and in violation of a notice issued pursuant to the provisions of this section, the Director  
30 shall institute an appropriate action to prevent, restrain, correct or abate the violation.~~

31 ~~30.7 Connection after Order to Disconnect. Persons shall not make connections from an energy,  
32 fuel or power supply nor supply energy or fuel to any equipment regulated by this code which  
33 has been disconnected or ordered to be disconnected by the Director, or the use of which has  
34 been ordered to be discontinued by the Director until the Director authorizes the reconnection  
35 and use of such equipment.~~

36 ~~30.8))~~ 1.4.4 Liability. Nothing ~~((contained))~~ in this code is intended to be nor shall be construed  
37 to ~~((create or))~~ form the basis for any liability on the part of the City, or its officers, employees or  
38 agents, for any injury or damage resulting from the failure of equipment to conform to the  
39 provisions of this code, or ~~((by reason or in consequence))~~ as a result of any inspection, notice,  
40 order, certificate, permission or approval authorized or issued, or done in connection with the  
41 implementation or enforcement of this code, or by reason of any action or inaction on the part of  
42 the City related in any manner to the enforcement of this code by its officers, employees or  
43 agents.

1 This code shall not be construed to relieve (~~from~~) or lessen the responsibility of any person  
2 owning, operating or controlling any equipment, building or structure for any damages to  
3 persons or property caused by defects, nor shall the Department (~~of Planning and~~  
4 ~~Development~~) or the City of Seattle be held (~~as assuming~~) to have assumed any such liability  
5 by reason of the inspections, permits or certificates (~~(authorized by)~~) issued under this code (~~(or~~  
6 ~~any permits or certificates issued under this code)~~).

7 (~~(30.9)~~) 1.4.5 Cooperation of other officials and officers. The (~~Director~~) code official may  
8 request, and shall receive, (~~so far as is required in the discharge of the Director's duties,~~) the  
9 assistance and cooperation of other officials of the City of Seattle.

10 (~~Section 40—Unsafe Equipment and Hazard Correction Order~~

11 ~~40.1 Unsafe Equipment. Any equipment regulated by this code, which constitutes a fire or health~~  
12 ~~hazard or is otherwise dangerous to human life is, for the purpose of this section, unsafe. Any use~~  
13 ~~of equipment regulated by this code constituting a hazard to safety, health or public welfare by~~  
14 ~~reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, disaster, damage or~~  
15 ~~abandonment is, for the purpose of this section, an unsafe use. Any such unsafe equipment is~~  
16 ~~hereby declared to be a public nuisance and may be abated.~~

17 ~~40.2 Hazard Correction Order. Whenever the Director finds that unsafe equipment exists, the~~  
18 ~~Director may issue a hazard correction order specifying the conditions causing the equipment to~~  
19 ~~be unsafe and directing the owner or other persons responsible for the unsafe equipment to~~  
20 ~~correct the condition. In lieu of correction, the owner may submit a report or analysis to the~~  
21 ~~Director analyzing said conditions and establishing that the equipment is, in fact safe. The~~  
22 ~~Director may require that the report or analysis be prepared by a licensed engineer. It shall be~~  
23 ~~unlawful for any person to fail to comply with a hazard correction order as specified in this~~  
24 ~~subsection.~~

25 ~~Section 50—Notices~~

26 ~~It shall be unlawful for any person to remove, mutilate, destroy or conceal any lawful notice~~  
27 ~~issued or posted by the Director pursuant to the provisions of this code.~~

28 ~~The Director may record a copy of any order or notice with the Department of Records and~~  
29 ~~Elections of King County.~~

30 ~~The Director may record with the Department of Records and Elections of King County a~~  
31 ~~notification that a permit has expired without a final inspection after reasonable efforts have been~~  
32 ~~made to provide a final inspection.~~

33 ~~Section 60—Appeals~~

34 ~~Appeals from decisions or actions pertaining to the administration and enforcement of this code~~  
35 ~~shall be addressed to the Director. The appellant may request a review by three or more members~~  
36 ~~of the Construction Codes Advisory Board, convened by the Chair. The issue of the appeal shall~~  
37 ~~be taken into account by the Chair when selecting members to hear an appeal. The results of this~~  
38 ~~appeal shall be advisory only.~~

39 ~~Section 70))~~ 1.4.6 Rules of the Director.

40 (~~(70.1 Authority)~~) The Director (~~(shall have the power)~~) has authority to (~~(render interpretations~~  
41 ~~of)~~) interpret this code and to adopt and enforce rules and regulations supplemental to this code as

1 may be ~~((deemed))~~ necessary ~~((in order))~~ to clarify the ~~((application of the provisions))~~ use of this  
2 code. Such interpretations, rules and regulations shall ~~((be in conformity with))~~ conform to the  
3 intent and purpose of this code. ~~((The Director is authorized to promulgate, adopt and issue the~~  
4 ~~following rules:~~

5 ~~1. “Building Construction Standards” to promulgate standards which are acceptable as a method~~  
6 ~~or as an alternative design for meeting code required performance criteria, to recognize new~~  
7 ~~technical data affecting code requirements, and to eliminate conflicts among code requirements.~~

8 ~~2. “Code Interpretations” to interpret and clarify conditions or language expressed in this code.~~

9 ~~3. Any other rule necessary for the administration of the purpose and intent of this code.~~

10 ~~70.2))~~ 1.4.6.1 Procedure for adoption of rules. The Director shall ~~((promulgate,))~~ adopt ~~((and~~  
11 ~~issue))~~ rules according to the procedures ~~((as))~~ specified in Chapter 3.02 of the Administrative  
12 Code, Seattle Municipal Code.

13 1.4.7 Notices. The code official may record with the King County Recorder’s Office:

14 1. A copy of any issued order or notice; or,

15 2. Any notification that an issued permit expired without a final inspection and after reasonable  
16 efforts were made to provide a final inspection.

17 1.4.8 Administrative review by the code official. Applicants may request administrative review  
18 of decisions or actions by the code official pertaining to the administration and enforcement of  
19 this code. All requests for review shall be addressed to the code official.

20 ~~((Section 80))~~ 1.5 Construction Codes Advisory Board. A committee of the Construction Codes  
21 Advisory Board may examine proposed administrative rules~~((, appeals))~~ and amendments  
22 relating to the boiler and pressure vessel code and related provisions of other codes and make  
23 recommendations to the Director and to the City Council for changes in the boiler and pressure  
24 vessel code. The committee will be called on an as needed basis by the Construction Codes  
25 Advisory Board.

26 1.5.1 Administrative review by Construction Codes Advisory Board. Applicants may request the  
27 Construction Codes Advisory Board review department decisions or actions related to applying  
28 or interpreting this code. Three or more members of the Board, who are chosen by the Board  
29 Chair, shall perform the review. The Chair shall consider the subject of the review and the  
30 members’ expertise when selecting members to conduct a review. The decision of the review  
31 panel is advisory only; the final decision is made by the code official.

32 Exception: Construction Codes Advisory Board will not review decisions of the code official  
33 found in Section 1.6 of this code.

34 1.6 Orders by the code official.

35 1.6.1 Stop work orders. The code official may issue a stop work order when work is done  
36 contrary to the provisions of this code, or in the event of dangerous or unsafe conditions related  
37 to equipment, construction or demolition of boilers or pressure vessels.

38 1.6.1.1 Issuance. The stop work order shall identify the violation or unsafe condition and may  
39 prohibit work or other activity on the site.

1 1.6.1.2 Service. The code official may serve the stop work order by posting it on the premises in  
2 a conspicuous place, if posting is physically possible. If posting is not physically possible, the  
3 stop work order may be served in the manner set forth in Revised Code of Washington (RCW)  
4 4.28.080 for service of a summons or by sending it by first class mail to the last known address  
5 of the property owner, the person doing or causing the work to be done, or the holder of a permit  
6 if the work being stopped is related to an issued permit. For purposes of this section, service is  
7 complete at the time of posting or personal service or, if mailed, three days after the date of  
8 mailing. When the last day of the period so computed is a Saturday, Sunday or city holiday, the  
9 period runs until 5 p.m. on the next business day.

10 1.6.1.2.1 Effective date. Stop work orders are effective when posted, or if posting is not  
11 physically possible, when one of the persons identified in this subsection 1.6.1.2 is served. It is  
12 unlawful for any person to engage in or to cause work to continue until authorization from the  
13 code official is received.

14 1.6.1.3 Review by code official. Any person aggrieved by a stop work order may obtain a review  
15 of the order by delivering to the code official a written request for review within two business  
16 days of the date of service of the stop work order.

17 1.6.1.3.1 Review procedure. The review shall occur within two business days after receipt by the  
18 code official of the request for review unless otherwise agreed by the person making the request.  
19 Any person affected by the stop work order may submit additional information to the code  
20 official for consideration as part of the review at any time prior to the review. The review will be  
21 made by a representative of the code official who will review all additional information received  
22 and may also request a site visit.

23 1.6.1.3.2 Decision. After the review, the code official may:

24 1. Sustain the stop work order;

25 2. Withdraw the stop work order;

26 3. Modify the stop work order; or

27 4. Continue the review to a date certain.

28 1.6.1.3.3 Order. The code official shall issue an order containing the decision within two  
29 business days after the review is completed and shall have the order sent by regular first class  
30 mail to the person or persons requesting the review, to any person on whom the stop work order  
31 was served, and to any other person who requested a copy before issuance of the order,  
32 addressed to their last known address.

33 1.6.2 Disconnect utilities in emergencies. In emergency situations where it is necessary to  
34 eliminate an immediate hazard to protect life or property, the code official has the authority to:

35 1. Enter any building or premises to disconnect utility service, and

36 2. Disconnect fuel-gas utility service or other energy supplies to any building, structure, premises  
37 or equipment regulated by this code.

38 The code official shall, whenever possible, notify the serving utility, the owner and occupant of  
39 the building, structure or premises of the decision to disconnect prior to taking such action. The  
40 code official shall provide written notice to the serving utility and the owner and occupant  
41 immediately after disconnecting the utility.

1 1.6.2.1 Disconnection order. If, at any time, the equipment or installation is determined to be  
2 unsafe, the code official may order immediate disconnection of the equipment or installation.  
3 The code official shall, within 24 hours, give written notice of the disconnection order to the  
4 serving utility, the owner and occupant of the building, structure or premises; and the notice shall  
5 include the conditions determined to be unsafe.

6 1.6.2.2 Reconnection after order to disconnect. Until the code official authorizes reconnection of  
7 equipment, persons shall:

8 1. Not make connections from an energy, fuel or power supply nor supply energy or fuel to  
9 any equipment regulated by this code that is disconnected or ordered to be disconnected by the  
10 code official, and

11 2. Not use the equipment ordered to be disconnected, until the code official authorizes the  
12 reconnection and use of such equipment.

13 1.6.3 Unsafe equipment. Any equipment regulated by this code, that is a fire, a health hazard, or  
14 is otherwise dangerous to human life is, for the purpose of this code, unsafe and may be  
15 condemned. Unsafe equipment is declared a public nuisance and may be abated.

16 1.6.3.1 Emergency order. If the code official determines that equipment regulated by this code is  
17 so unsafe as to constitute an imminent hazard to life or limb, the code official may issue an  
18 emergency order. An emergency order shall state, in writing, that the equipment shall be  
19 disconnected, removed or restored to a safe or sanitary condition. The written order shall specify  
20 the conditions determined to be unsafe and shall state a date certain for compliance with such  
21 order. It is a violation to use or maintain defective equipment after an emergency order is issued.

22 A. Service of emergency order. The emergency order shall be posted on the premises or  
23 personally served in the manner prescribed in subsection 1.6.1.2 of this code.

24 B. Effect of emergency order. When any equipment is operated in violation of this code, or in  
25 violation of an order issued pursuant to the provisions of this section, the code official shall  
26 begin an action to prevent, restrain, correct or abate the violation.

27 1.6.3.2 Hazard correction order. If the code official finds that unsafe equipment exists, the code  
28 official may issue a hazard correction order. The order shall state:

29 1. The conditions causing the equipment to be unsafe,

30 2. Direct the owner or other persons responsible for the unsafe equipment to correct the  
31 condition, and

32 3. Give a date certain for completing the required corrections.

33 In lieu of correction, the owner may submit a report or analysis of the conditions to the code  
34 official establishing that the equipment is, in fact, safe. The code official may require that the  
35 report or analysis be prepared by a licensed engineer; and the code official may accept the report  
36 as adequate or may reject the report as insufficient.

37 A. Service of hazard correction order. The hazard correction order shall be posted on the  
38 premises, observed on the owner of the building or premises or on any person responsible for the  
39 condition by sending the order certified mail with return receipt requested.

1 1.6.3.3 Appeals. Orders of the Director are not appealable to CCAB pursuant to Section 1.5.1 of  
2 this code. Appeals of technical decisions or actions relating to permits issued by the Department  
3 and to the administration of this code shall be addressed to the code official.

4 ~~((Section 90))~~ 1.7 Violations and Penalties

5 ~~((90.1))~~ 1.7.1 Violations. It is a violation of this code for any person~~((, firm or corporation))~~ to:

6 1. ~~((install))~~ Install, erect, construct, enlarge, alter, repair, replace, remodel, move, improve,  
7 remove, convert or demolish, equip, occupy, use or maintain any boiler or pressure vessel system  
8 or equipment or cause or permit the same to be done in the City, contrary to or in violation of  
9 any ~~((of the))~~ provision~~((s))~~ of this code~~((-))~~;

10 ~~((It is a violation of this code for any person, firm or corporation to use))~~ 2. Use any material or  
11 to install any device, appliance or equipment which does not comply with the applicable  
12 standards of this code or which has not been approved by the ~~((Director.))~~ code official;

13 ~~((It is a violation of this code to have))~~ 3. Have charge of or operate or permit anyone to have  
14 charge of, or operate, any boiler or steam engine regulated by this code without a license to do so  
15 ~~((issued by the Director under))~~ as prescribed by SMC Chapter 6.420~~((-))~~;

16 4. Remove, mutilate, destroy or conceal any lawful notice issued or order issued or posted by the  
17 code official pursuant to the provisions of this code, or any notice or order issued or posted by  
18 the code official in response to a natural disaster or other emergency;

19 5. Conduct work under permit without requesting an inspection required by this code;

20 6. Knowingly aid, abet, counsel, encourage, hire, induce or otherwise procure another to violate  
21 or fail to comply with this code; or

22 7. Fail to comply with any order issued by the code official, including but not limited to  
23 emergency or hazard correction orders.

24 ~~((90.2))~~ 1.7.2 Notice of violation. If, after investigation, the ~~((Director))~~ code official determines  
25 that standards or requirements of this code ~~((have been))~~ were violated, or that orders or  
26 requirements were not complied with, the ~~((Director))~~ code official may serve a notice of  
27 violation upon the owner, agent or other person responsible for the action or condition. The  
28 notice of violation shall state:

29 1. The ~~((the))~~ standards or requirements violated, ~~((shall state what))~~

30 2. What corrective action~~((, if any,))~~ is necessary to comply ~~((with the standards or~~  
31 requirements)), and

32 ~~((shall set))~~ 3. Set a reasonable ~~((time))~~ date certain for compliance.

33 A. Service of notice of violation. The notice shall be served upon the owner, agent or other  
34 responsible person by personal service~~((, registered mail or certified mail with return receipt~~  
35 requested)) or regular first class mail, addressed to the last known address of such person, or if  
36 no address is available after reasonable inquiry, the notice may be posted in a conspicuous place  
37 on the premises. The notice may also be posted if served by personal service or first class mail.  
38 ~~((The notice of violation shall be considered an order of the Director.))~~ Nothing in this  
39 subsection ~~((shall be deemed to))~~ limits or precludes any action or proceeding ~~((pursuant to~~  
40 Sections 30 or 120 of)) to enforce this code, and nothing in this section ~~((shall be deemed to))~~

1 obligates or requires the ~~((Director))~~ code official to issue a notice of violation prior to the  
2 imposition of civil or criminal penalties ~~((in this section))~~.

3 B. Review of notice of violation by the code official. Any person affected by a notice of  
4 violation issued pursuant to this section may obtain a review of the notice by making a request in  
5 writing within 10 days after service of the notice. When the last day of the period computed is a  
6 Saturday, Sunday, or city holiday, the period runs until 5 p.m. of the next business day.

7 C. Review procedure. The review shall occur within two business days after receipt by the code  
8 official of the request for review unless otherwise agreed by the person making the request. Any  
9 person affected by the stop work order may submit additional information to the code official for  
10 consideration as part of the review at any time prior to the review. The review will be made by a  
11 representative of the code official who will review all additional information received and may  
12 also request a site visit.

13 D. Decision. After the review, the code official may:

14 1. Sustain the stop work order;

15 2. Withdraw the stop work order;

16 3. Modify the stop work order; or

17 4. Continue the review to a date certain.

18 E. Order. The code official shall issue an order containing the decision within two business days  
19 after the review is completed and shall cause the order to be sent by regular first class mail to the  
20 person or persons requesting the review, to any person on whom the stop work order was served,  
21 and to any other person who requested a copy before issuance of the order, addressed to their last  
22 known address.

23 ~~((90.3))~~ 1.7.3 Civil penalties. Any person~~((, firm or corporation))~~ violating or failing to comply  
24 with the provisions of this code ~~((shall be))~~ is subject to a cumulative civil penalty in an amount  
25 not to exceed \$500 per day for each violation from the date the violation occurs or begins until  
26 compliance is achieved. In cases where the ~~((Director))~~ code official has issued a notice of  
27 violation, the violation will be deemed to begin, for purposes of determining the number of days  
28 of violation, on the date compliance is required by the notice of violation.

29 A. Enforcement in Municipal Court. Civil actions to enforce Title 22 of the Seattle Municipal  
30 Code (SMC) shall be brought exclusively in Seattle Municipal Court, except as otherwise  
31 required by law or court rule. In any civil action for a penalty, the City has the burden of proving  
32 by a preponderance of the evidence that a violation exists or existed; the issuance of a notice of  
33 violation or of an order following review by the code official is not itself evidence that a  
34 violation exists.

35 B. Judicial review. Because civil actions to enforce Title 22 SMC must be brought exclusively in  
36 Seattle Municipal Court pursuant to Section 1.7.3.1, orders of the code official including notices  
37 of violation issued under this chapter are not subject to judicial review pursuant to Chapter  
38 36.70C of the Revised Code of Washington (RCW).

39 ~~((90.4))~~ 1.7.4 Alternative criminal penalty. Anyone ~~((violating or failing))~~ who violates or fails  
40 to comply with any notice of violation or order issued by the ~~((Director))~~ code official pursuant  
41 to this code or who removes, mutilates, destroys or conceals a notice or order issued or posted by

1 the ~~((Director))~~ code official shall, upon conviction thereof, be punished by a fine of not more  
2 than ~~(((\$1,000))~~ \$5,000 or by imprisonment for not more than ~~((360))~~ 365 days, or by both  
3 ~~((such))~~ fines and imprisonment for each separation violation. If the violation continues to exist,  
4 each ~~((Each))~~ day~~((s violation or failure to comply shall constitute))~~ is a separate offense.

5 ~~((Anyone violating or failing to comply with any of the provisions of this code and who within the~~  
6 ~~past five years has a judgment against them pursuant to Section 90.3, shall upon conviction thereof,~~  
7 ~~be fined in a sum not to exceed \$500 or by imprisonment for not more than 180 days, or by both~~  
8 ~~such fine and imprisonment. Each day's violation or failure to comply shall constitute a separate~~  
9 ~~offense.~~

10 ~~90.5))~~ 1.7.5 Additional Relief. The ~~((Director))~~ code official may seek legal or equitable relief to  
11 enjoin any acts or practices and abate any condition ~~((which constitutes a violation of this code~~  
12 ~~when civil or criminal penalties are inadequate to effect))~~ when necessary to achieve compliance.

13 ~~((Section 100—Exemptions from this Code~~

14 ~~The following boilers and pressure vessels and other equipment shall not be required to comply~~  
15 ~~with this code:~~

16 ~~A. In other than Group A, E, and I occupancies, listed potable hot water heaters, listed combination~~  
17 ~~hot water heaters, (fired, electric, thermal, solar, and indirect) and listed pool heaters, provided~~  
18 ~~none of the following limitations are exceeded:~~

19 ~~A heat input of 200,000 Btu/h, or~~

20 ~~A water temperature of 210°F, or~~

21 ~~A nominal water containing capacity of 120 gallons, or~~

22 ~~A pressure of 160 pounds per square inch.~~

23 ~~B. In Groups A, E, and I occupancies, listed potable water heaters, listed combination hot water~~  
24 ~~heaters, (fired, electric, thermal, solar, and indirect) and listed pool heaters are required to comply~~  
25 ~~with only Section 230 of this code.~~

26 ~~C. Portable unfired pressure vessels subject to regular inspection by State of Washington (RCW~~  
27 ~~70.79).~~

28 ~~D. I.C.C. and D.O.T. regulated containers and/or pressure vessels.~~

29 ~~E. Containers for liquefied petroleum gases which are regulated by the Seattle Fire Code.~~

30 ~~F. Unfired pressure vessels located in Groups B, F, H, M, R, S, and U Occupancies having a~~  
31 ~~volume of 5 cubic feet or less and operated at pressures not exceeding 250 psi.~~

32 ~~Exceptions:~~

33 ~~a. Expansion tanks exempted for size in Section 100 of this code shall conform to the requirements~~  
34 ~~of ASME Section IV, HG-709 applicable edition together with applicable addenda.~~

35 ~~b. Unfired pressure vessels containing lethal substances are not exempted.~~

36 ~~G. Unfired pressure vessels and potable hot water heaters when they are:~~

37 ~~1. less than 1 ½ cubic feet (11.25 gallons) in volume with safety valve setting of 150 psi or less,~~  
38 ~~or~~

1 ~~2. less than 6 inches in internal diameter, and less than 5 cubic feet (37.5 gallons) in volume with~~  
2 ~~a safety valve set at any pressure.~~

3 ~~Exception: Unfired pressure vessels containing lethal substances are not exempted.~~

4 ~~H. Unfired pressure vessels of any size that are protected by approved pressure relief devices set~~  
5 ~~to operate at a pressure not exceeding 15 psi.~~

6 ~~Exception: Pressure vessels receiving condensate capable of flashing to high pressure steam shall~~  
7 ~~comply with Section 350 of this code.~~

8 ~~I. Any boiler or pressure vessel subject to regular inspection by federal inspectors or licensed by~~  
9 ~~federal authorities.~~

10 ~~J. Electric boilers that meet all of the following criteria:~~

11 ~~1. Having a vessel volume not exceeding one and one half cubic feet; and~~

12 ~~2. Having a maximum allowable working pressure of one hundred (100) psi; and~~

13 ~~3. If constructed after June 10, 1994, constructed to the American Society of Mechanical~~  
14 ~~Engineers Boiler and Pressure Vessel Code, or listed or otherwise certified by a nationally~~  
15 ~~recognized testing agency or recognized foreign testing laboratory.~~

16 ~~K. Water storage tanks with no air cushion and no energy or heat source.~~

#### 17 ~~Section 110—Workmanship~~

18 ~~All equipment, appurtenances, devices and piping shall be installed in a workmanlike manner, in~~  
19 ~~accordance with recognized engineering practice and in conformity with the provisions and~~  
20 ~~intent of this code.~~

#### 21 ~~Section 120—Application to Existing Boiler and Pressure Vessel Systems~~

22 ~~120.1))~~

#### 23 1.8 Existing Installations.

24 1.8.1 Existing boilers and pressure vessels. Boiler and pressure vessel systems lawfully in  
25 existence at the time of the adoption of this code may continue to be used, maintained or repaired  
26 if the use, maintenance or repair is in accordance with the original design and location and no  
27 hazard to life, health or property ~~((has been))~~ is created by ~~((such))~~ the continued use of the  
28 boiler and pressure vessel system.

29 ~~((120.2))~~ 1.8.2 Maintenance of existing installations. All boiler and pressure vessel systems,  
30 materials and appurtenances and parts, both existing and new, ~~((and all parts thereof,))~~ shall be  
31 maintained in proper operating condition in accordance with the original design and in a safe and  
32 hazard-free condition. All devices or safeguards ~~((which are))~~ required by ~~((this code))~~ the  
33 Seattle Boiler Code shall be maintained in conformance with the code edition ~~((under which))~~ in  
34 effect when the system was installed; and, boilers and pressure vessels shall be maintained  
35 according to the manufacturer's instructions or nationally recognized standards. The owner or  
36 the owner's designated agent ~~((shall be))~~ is responsible for maintenance of boiler and pressure  
37 vessel systems and equipment. ~~((Boilers and pressure vessels shall be maintained in accordance~~  
38 ~~with the manufacturer's instructions or nationally recognized standards.))~~ To determine  
39 compliance with this subsection, the ~~((Director))~~ code official may ~~((cause))~~ require a boiler or  
40 pressure vessel or equipment to be inspected or re-inspected.

1 ~~((120.3))~~ 1.8.3 Changes in existing building or occupancy. ~~((Boiler))~~ Existing boiler and pressure  
2 vessel systems ~~((which are a part of any))~~ may require a new permit if the ~~((building or))~~  
3 structure housing the vessel is undergoing a change in use or occupancy, as defined in the current  
4 edition of the Seattle Building Code~~((;)).~~ If the use of the boiler or pressure vessel changes, the  
5 equipment shall comply with all requirements of this code ~~((which may be))~~ that are applicable  
6 to the new use or occupancy.

7 ~~((120.4 Historic))~~ 1.8.4 Landmark buildings and structures. The ~~((Director))~~ code official may  
8 modify the specific requirements of this code as it applies to buildings and structures designated  
9 as landmarks ~~((of historical or cultural importance and require in lieu thereof alternate~~  
10 ~~requirements which))~~ if, in the opinion of the ~~((Director))~~ code official, the modifications will  
11 result in a reasonable degree of safety to the public and the occupants of those buildings. For  
12 purposes of this section a landmark is a building or structure:

13 1. Subject to certificate of approval requirements from the City Landmarks Preservation  
14 Board before altering or making changes to specific features or characteristics, or

15 2. Is nominated for designation or was designated for preservation by the City Landmarks  
16 Preservation Board, or

17 3. Was designated for preservation by the State of Washington, or

18 4. Is listed or determined eligible to be listed in the National Register of Historic Places.

19 ~~((A historic building or structure is one which has been designated for preservation by the City~~  
20 ~~Landmarks Preservation Board or the State of Washington, has been listed, or has been~~  
21 ~~determined eligible to be listed, on the National Register of Historic Places, has been officially~~  
22 ~~nominated for such status, or is a structure contributing to the character of a designated landmark~~  
23 ~~or special review district.))~~

24 1.9 Workmanship. All equipment, appurtenances, devices and piping shall be installed in a  
25 workman-like manner, in accordance with recognized engineering practice, and in conformity  
26 with the provisions and intent of this code.

27 ~~((Section 130))~~ 1.10 Alternate materials and methods of construction. This code does not prevent  
28 the use of any material, ~~((alternate))~~ design or method of construction not specifically allowed or  
29 prohibited by this code, provided the alternate ~~((has been))~~ is approved and its use is authorized  
30 by the ~~((Director))~~ code official.

31 The ~~((Director))~~ code official may approve an alternate, ~~((provided))~~ if the ~~((Director finds that~~  
32 ~~the))~~ proposed alternate complies with the intent of this code and that the alternate, when  
33 considered together with other safety features of the building or other relevant circumstances,  
34 ~~((will))~~ provides at least an equivalent level of strength, effectiveness, fire resistance, durability,  
35 sanitation, and safety.

36 The ~~((Director))~~ code official may require that sufficient evidence or proof be submitted to  
37 reasonably substantiate any claims regarding the use or suitability of the alternate. The  
38 ~~((Director))~~ code official may, but is not required to, record the approval of modifications and  
39 any relevant information in the files of the ~~((Director))~~ code official or on the approved permit  
40 plans.

41 ~~((Section 140))~~ 1.11 Modifications. The ~~((Director))~~ code official may modify the  
42 ~~((requirements))~~ provisions of this code for individual cases provided ~~((the Director finds))~~:

1 1. There are practical difficulties ~~((involved))~~ in ~~((carrying out the provisions))~~ complying  
2 with the requirements of this code;

3 2. The modification is in conformity with the intent and purpose of this code; and

4 3. The modification ~~((will))~~ provides a reasonable level of strength, effectiveness, fire  
5 ~~((protection and structural integrity))~~ resistance, durability, sanitation and safety when  
6 considered together with other safety features of the building or other relevant circumstances.

7 The ~~((Director))~~ code official may, but is not required to, record the approval of modifications  
8 and any relevant information in the files of the ~~((Director))~~ code official or on the approved  
9 permit plans.

10 ~~((Section 150))~~ 1.12 Tests. ~~((Whenever))~~ If there is insufficient evidence of compliance with the  
11 ~~((provisions))~~ requirements of this code or evidence that a material or method does not conform  
12 to the requirements of this code, ~~((or in order to substantiate claims for alternate materials or~~  
13 ~~methods))~~ the ~~((Director))~~ code official may require that tests, as evidence of compliance, ~~((to))~~  
14 be made at no expense to the City.

15 Test methods shall be ~~((as))~~ those specified in this code or by other recognized test standards. In  
16 the absence of recognized and accepted test methods, the ~~((Director))~~ code official shall specify  
17 the required testing ~~((or examination methods and))~~ procedures.

18 Tests shall be performed by an agency approved by the ~~((Director))~~ code official. The agency  
19 shall provide a report ~~((Reports))~~ of tests or examination results and those results shall be  
20 retained by the ~~((Director))~~ code official for the period required for retention of public records.

21 Section ~~((460))~~ 2 – Definitions. Certain words and terms used in this code, unless clearly  
22 inconsistent with their context, shall have the meanings given below. ~~((When a definition is not~~  
23 ~~found below, the definitions of American Society of Mechanical Engineers’ CSD-1 1998,~~  
24 ~~Controls and Safety Devices for Automatically Fired Boilers (CSD-1, see Section 170) shall be~~  
25 ~~used. When a definition is found here and in CSD-1, the definition given in this code shall~~  
26 ~~govern.))~~ When a definition is not found below, the definitions of terms found in the codes and  
27 standards listed in Section 3.1 of this code shall govern.

28 “A” OCCUPANCIES are places of public assembly. Details can be found in the ~~((International))~~  
29 Seattle Building Code ~~((Section 303.1))~~ Chapter 3.

30 ACCESSIBLE ~~((is))~~ means having access to ~~((but which first may require))~~ and includes the  
31 removal of an access panel, door or similar obstruction ~~((covering the item described))~~ designed  
32 for removal.

33 ACCESSIBLE, READILY ~~((is))~~ means capable of being reached safely and quickly for  
34 operation, repair or inspection without ~~((requiring those to whom ready access is requisite to~~  
35 ~~climb))~~ climbing over or ~~((remove))~~ removing obstacles, or ~~((to resort))~~ without resorting to the  
36 use of portable access equipment.

37 APPLIANCE ~~((is))~~ means a device which utilizes fuel or other forms of energy to produce light,  
38 heat, power, refrigeration or air conditioning~~((.- This definition includes)),~~ including vented  
39 decorative appliances.

40 APPROVED ~~((is approval))~~ means accepted by the ~~((Director))~~ code official.

1 APPROVED AGENCY (~~(is an established and recognized)~~) means an agency approved by the  
2 code official that is regularly engaged in conducting tests, examinations, or furnishing inspection  
3 services (~~(when such agency has been approved by the Director)~~).

4 ASME is the acronym for American Society of Mechanical Engineers.

5 ATTENDANT means the person in charge of the operation of a boiler or unfired pressure vessel.

6 AUTOMATIC CERTIFICATION PERMIT means a permit used to modify the licensed  
7 attendance requirements for a specific boiler. (See Steam Engineer and Boiler Fireman License  
8 Law, Seattle Municipal Code Chapter 6.420.)

9 “B” OCCUPANCIES are business uses, such as offices. Details can be found in the  
10 (~~(International)~~) Seattle Building Code (~~(Section 304.1)~~) Chapter 3.

11 BOILER ((is)) means a closed vessel in which water is heated, steam is generated, steam is  
12 superheated, or any combination thereof, under pressure or vacuum by the direct application of  
13 heat(~~(. The term boiler shall also include)~~), including fired units for heating or vaporizing liquids  
14 other than water where these systems are complete within themselves.

15 BOILER ROOM ((is)) means any room primarily used to house a boiler.

16 BOILER, CERTIFIED AS AUTOMATIC ((is either a boiler installed prior to the adoption of  
17 CSD-1 which complies with Section 320 and Table 320-A of this code and for which an  
18 automatic certification installation permit has been finalized, or any other boiler installed after  
19 the adoption of CSD-1 for which an automatic certification permit has been finalized which is  
20 used to modify the licensed attendance requirements for specific boiler(s).)) means a boiler that  
21 complies with Section 4.24 of this code, has an automatic certification permit that passed final  
22 inspection and is used to modify the licensed attendant requirements for a specific boiler. (See  
23 “Steam Engineer and Boiler Fireman License Law”, Seattle Municipal Code Chapter 6.420).

24 BOILER, CERTIFIED AS MONITORED ((is)) means a boiler ((which)) that complies with  
25 ((the provisions of Section 320 and Section 330)) Section 4.25 of this code ((which)) and is used  
26 to modify the licensed ((attendance)) attendant requirements for a specific boiler((s)) (See  
27 “Steam Engineer and Boiler Fireman License Law”, Seattle Municipal Code Chapter 6.420.)

28 (~~(BOILER, CONDENSING is a boiler which condenses part of the water vapor generated by the~~  
29 ~~burning of hydrogen in fuels.)~~)

30 BOILER, HOT-WATER SUPPLY ((is)) means a listed potable water boiler, exceeding ((any  
31 of)) the limitations of ((Section 100 paragraph A)) a potable hot water heater, but that does not  
32 ((exceeding)) exceed a pressure of 160 psi (1100 kPa) or a temperature of 250 degrees F. (121  
33 degrees C), that provides hot water to be used externally to itself.

34 BOILER, LOW-PRESSURE HOT-WATER-HEATING ((is)) means a boiler ((from which hot  
35 water is circulated)) that circulates hot water for heating purposes at pressures not exceeding 160  
36 pounds per square inch (1100 kPa) and at temperatures not exceeding 250 degrees F. (121  
37 degrees C) and the water is then typically returned to the boiler.

38 BOILER, LOW-PRESSURE STEAM-HEATING ((is)) means a boiler furnishing steam for  
39 heating purposes at pressures not exceeding 15 pounds per square inch (103 kPa).

40 (~~(BOILER, NON-CODE is a boiler not constructed in accordance with the codes listed in Section~~  
41 ~~170 of this code.~~)

1 ~~BOILER, PACKAGE is any class of boiler defined herein and shall be a boiler equipped and~~  
2 ~~shipped listed as a boiler burner unit complete with fuel burning equipment, automatic controls~~  
3 ~~and accessories, and mechanical draft equipment, if used.)~~

4 BOILER, POWER HOT-WATER (HIGH-TEMPERATURE WATER BOILER) ~~((is))~~ means a  
5 boiler used for heating water or liquid to a pressure exceeding 160 psi (1100 kPa) or to a  
6 temperature exceeding 250 degrees F. (121 degrees C).

7 BOILER, POWER ~~((is))~~ means a boiler ~~((in which))~~ that generates steam or vapor ~~((is~~  
8 ~~generated))~~ at pressures exceeding 15 psi.

9 BOILER, RENTAL ~~((is))~~ means any type of boiler that is owned by an entity for the purpose of  
10 renting to other entities for temporary or long-term usage.

11 BOILER, USED ~~((shall mean))~~ means any boiler ~~((that is to be))~~ installed in Seattle that ~~((has~~  
12 ~~been))~~ was in ~~((any))~~ previous service.

13 BUILDING CODE ~~((is))~~ means the Seattle Building Code.

14 BURNER ~~((is))~~ means a device ~~((to))~~ that conveys fuel and air~~((/))~~ or steam into the combustion  
15 chamber of a boiler ~~((and))~~ to cause and maintain stable combustion.

16 CHIMNEY ~~((is))~~ means a primarily vertical structure containing one or more flues, for the  
17 purpose of carrying gaseous products of combustion and air from a fuel-burning appliance to the  
18 outside atmosphere.

19 CODE OFFICIAL is the Director of the Seattle Department of Construction and Inspections and  
20 the Director's designees which include the Chief Pressure Systems Inspector and other  
21 authorized representatives.

22 COMBUSTION AIR ~~((is))~~ means the air necessary for complete combustion of a fuel, including  
23 theoretical air and excess air.

24 ~~((CONFINED SPACE is a room or space having a volume less than 50 cubic feet per 1,000~~  
25 ~~Btu/h (4.83 L/W) of the aggregate input rating of all fuel burning appliances installed in that~~  
26 ~~space.))~~

27 DEPARTMENT means the Seattle Department of Construction and Inspections.

28 ~~((DIRECT VENT APPLIANCES are appliances which are constructed and installed so that all air~~  
29 ~~for combustion is derived from the outside atmosphere and all flue gases are discharged to the~~  
30 ~~outside atmosphere.~~

31 ~~DIRECTOR is the Director of the Department of Planning and Development and the Director's~~  
32 ~~authorized representatives.)~~

33 DRAFT HOOD ~~((is))~~ means a nonadjustable device built into an appliance or made a part of the  
34 vent connector from an appliance, which is designed to:

- 35 1. Provide for the ready escape of the flue gases in the event of no draft, backdraft or  
36 stoppage beyond the draft hood;
- 37 2. Prevent a backdraft from entering the appliance; and
- 38 3. Neutralize the effect of stack action of the chimney or gas vent upon the operation of the  
39 appliance.

1 DUCT ~~((is))~~ means a tube or conduit for ~~((transmission of))~~ conveying air. ~~((This definition shall not include the air passages of listed self-contained systems.))~~ The air passages of listed self-contained systems are not to be construed as air ducts.

4 “E” OCCUPANCIES are educational facilities. Details can be found in ~~((International))~~ Seattle Building Code ((Section 305)) Chapter 3.

6 ELECTRICAL CODE is the Seattle Electrical Code.

7 EXTERNAL INSPECTION means an inspection of the outside and fireside of the boiler, including safety controls.

9 “F” OCCUPANCIES are factory and industrial uses. Details can be found in ~~((International))~~ Seattle Building Code ((Section 306)) Chapter 3.

11 FIRE CODE is the Seattle Fire Code.

12 FUEL TRAIN ~~((is))~~ means a series of valves, regulators and controls, between the burner and the source of fuel, ~~((which))~~ that regulates and controls the flow of fuel to the burner.

14 “H” OCCUPANCIES are high hazard uses. Details can be found in ~~((International))~~ Seattle Building Code ((Section 307)) Chapter 3.

16 HOT WATER HEATER, COMBINATION means a closed vessel that is used to produce both space heat and potable hot water. Heat source for the equipment may be fired, electric, thermal, solar, or indirect.

19 HOT WATER HEATER, POTABLE (FIRED, ELECTRIC, THERMAL, SOLAR, AND INDIRECT) means a closed vessel, listed by an agency approved by the code official and having an installation permit issued by King County Plumbing Program. These vessels heat potable water by the combustion of fuels, electricity, or any other source for use outside of the boiler system and shall not exceed any of the following:

24 1. A heat input of 200,000 Btu/h;

25 2. A water temperature of 210°F;

26 3. A nominal water-containing capacity of 120 gallons; or

27 4. A pressure of 160 pounds per square inch.

28 “I” OCCUPANCIES are medical and institutional facilities. Details can be found in ~~((International))~~ Seattle Building Code ((Section 308)) Chapter 3.

30 INSPECTOR ~~((depending on context, is))~~ means any of the inspector types defined by this code, ~~((as appropriate))~~ who examine internal and external boiler and pressure vessel parts and surfaces and who test the function of operating controls and safety devices for correct operation.

33 INSPECTOR, CHIEF ~~((is))~~ means the chief pressure systems inspector appointed by the ~~((Director))~~ code official.

35 INSPECTOR, CITY ~~((is))~~ means an inspector employed by the ~~((city of Seattle))~~ Department.

36 INSPECTOR, INSURANCE ~~((is))~~ means an inspector employed by an authorized insurance company as defined in this code.

1 INSURANCE COMPANY, AUTHORIZED ((is)) means an insurance company that has been  
2 authorized by the State of Washington to write and provide insurance coverage for loss of boilers  
3 or unfired pressure vessels.

4 INTERNAL INSPECTION means an inspection requiring that the water side of the boiler be  
5 looked at visually.

6 JACKETED STEAM KETTLE means a pressure vessel, with inner and outer walls, that is  
7 subject to steam pressure and is used to boil or heat liquids or to cook food. Vessels that are  
8 equal to or greater than 1<sup>1</sup>/<sub>2</sub> cubic feet in volume (11.22 gals capacity), shall be ASME code  
9 stamped. Jacketed steam kettles shall be measured in square feet by multiplying the external  
10 diameter by the length (size determines the permit fee).

11 ~~((JOINT, BRAZED, is a joint obtained by joining of metal parts with alloys which melt at~~  
12 ~~temperatures higher than 1000°F. (538°C.) but lower than the melting temperature of the parts~~  
13 ~~being joined.~~

14 ~~JOINT, SOLDERED is a gas tight joint obtained by the joining of metal parts with metallic~~  
15 ~~mixtures of alloys which melt at a temperature below 1000°F. (538°C.) and above 400°F.~~  
16 ~~(204°C.;))~~

17 LETHAL SUBSTANCES ((are)) means poisonous ~~((gases or liquids of such a nature))~~ gas or  
18 liquid that in a very small amount is dangerous to life when inhaled or absorbed through the skin  
19 or membranes. It is the responsibility of the user or his designated agent to determine and declare  
20 if contents are lethal substances.

21 LANDMARK means a building or structure designated or nominated for preservation by the  
22 City Landmarks Preservation Board.

23 LICENSED OPERATOR ((is)) means a person licensed to operate boilers in accordance with  
24 the Seattle Steam Engineer and Boiler Fireman License Law, SMC 6.420.

25 LISTED ((is)) means that equipment, ~~((appliances, or))~~ materials, products or services are  
26 included in a list published by ((a nationally recognized testing laboratory, inspection agency or  
27 other organization concerned with product evaluation that maintains periodic inspection of  
28 production of listed equipment, appliances or materials, and whose listing states either that the  
29 equipment, appliances or material meets nationally recognized standards or has been tested and  
30 found suitable for use in a specified manner. Not all testing laboratories, inspection agencies and  
31 other organizations concerned with product evaluation use the same means for identifying listed  
32 equipment, appliances or materials. Some do not recognize equipment, appliances or materials as  
33 listed unless they are also labeled. The authority having jurisdiction shall utilize the system  
34 employed by the listing organization to identify a listed product.)) an organization acceptable to  
35 the code official. The listing organization provides an evaluation of products or services by  
36 performing periodic inspection during production of equipment or materials, or periodic  
37 evaluation of services. The resulting listing states either that the equipment, material, product or  
38 service meets identified standards, or was tested and found suitable for use in a specified manner.

39 "M" OCCUPANCIES are retail and wholesale facilities. Details can be found in  
40 ~~((International))~~ Seattle Building Code ((Section 309)) Chapter 3.

1 MANUALLY OPERATED (FIRED) BOILER ((is)) means a boiler that requires constant  
2 attendance by an operator with no (~~other~~) duties other than the proper and safe operation of the  
3 boiler and its related equipment when the boiler is in operation.

4 (~~(NONCOMBUSTIBLE MATERIALS are materials that, when tested in accordance with ASTM~~  
5 ~~E 136, have at least three of four specimens tested meeting all of the following criteria:~~

6 1. ~~The recorded temperature of the surface and interior thermocouples shall not at any time during~~  
7 ~~the test rise more than 54°F (30°C) above the furnace temperature at the beginning of the test.~~

8 2. ~~There shall not be flaming from the specimen after the first 30 seconds.~~

9 3. ~~If the weight loss of the specimen during testing exceeds 50 percent, the recorded temperature~~  
10 ~~of the surface and interior thermocouples shall not at any time during the test rise above the furnace~~  
11 ~~air temperature at the beginning of the test, and there shall not be flaming of the specimen.)~~

12 PERSON means an individual, receiver, administrator, executor, assignee, trustee in bankruptcy,  
13 trust, estate, firm, partnership, joint venture, club, company, joint stock company, business trust,  
14 municipal corporation, political subdivision of the State of Washington, corporation, limited  
15 liability company, association, society or any group of individuals acting as a unit, whether  
16 mutual, cooperative, fraternal, nonprofit or otherwise, and the United States or any  
17 instrumentality thereof.

18 PILOT ((is)) means a small burner that is used to light (~~off~~) (ignite) the main burner.

19 PILOT, CONTINUOUS (also known as constant burning pilot) (~~is~~) means a pilot that burns  
20 without turndown during the entire time the boiler is in service, whether the main burner is firing  
21 or not.

22 PILOT, INTERMITTENT ((is)) means a pilot that is automatically lighted each time there is a  
23 call for heat(~~it~~) and burns during the entire period the main burner is firing.

24 PILOT, INTERRUPTED ((is)) means a pilot that is automatically lighted each time there is a  
25 call for heat. The pilot fuel is cut off automatically (~~at the end of the~~) once main burner  
26 flame(~~establishing period~~) is ignited.

27 (~~(POTABLE WATER HEATERS (FIRED, ELECTRIC, THERMAL, SOLAR, AND~~  
28 ~~INDIRECT) are closed vessels, listed to a recognized listing agency, in which potable water is~~  
29 ~~heated by the combustion of fuels, electricity, or any other source, and withdrawn for use~~  
30 ~~external to the system and which do not exceed any of the following: A heat input of 200,000~~  
31 ~~Btu/h, or a water temperature of 210°F, or a nominal water containing capacity of 120 gallons, or~~  
32 ~~a pressure of 160 pounds per square inch.)~~

33 PRESSURE VESSEL ((is)) means a closed unfired container under internal pressure.

34 (~~(PRESSURE VESSEL, NON CODE, is a pressure vessel not constructed in accordance with the~~  
35 ~~codes listed in Section 170 of this code.)~~

36 PRESSURE VESSEL, USED ((shall)) means any pressure vessel that is (~~to be~~) installed in  
37 Seattle that (~~has been~~) was in (~~any previous~~) service at a previous time.

38 PURGE ((is)) means to (~~clear of~~) blow air, fuel, water or other foreign substances out of a  
39 container or confined space.

1 “R” OCCUPANCIES are residential facilities. Details can be found in ~~((International))~~ Seattle  
2 Building Code ~~((Section 310))~~ Chapter 3.

3 “S” OCCUPANCIES are storage facilities. Details can be found in ~~((International))~~ Seattle  
4 Building Code ~~((Section 311))~~ Chapter 3.

5 “U” OCCUPANCIES are accessory utility facilities such as private garages and ~~((sheds))~~  
6 greenhouses. Details can be found in ~~((International))~~ Seattle Building Code ~~((Section 312))~~  
7 Chapter 3.

8 ~~((UNCONFINED SPACE is a room or space having a volume equal to at least 50 cubic feet per~~  
9 ~~1,000 Btu/h (4.831 L/W) of the aggregate input rating of all appliances installed in that space.~~  
10 ~~Rooms communicating directly with the space in which the appliances are installed, through~~  
11 ~~openings not furnished with doors, are considered a part of the unconfined space.))~~

12 VENT ~~((is))~~ means a pipe or other conduit composed of factory-made components, containing a  
13 passageway for conveying combustion products and air to the atmosphere, listed and labeled for  
14 use with a specific type or class of appliance.

15 VENT CONNECTOR ~~((is))~~ means the pipe that connects an approved fuel-fired appliance to a  
16 vent.

17 Section ~~((170))~~ 3 ~~((Construction and))~~ Installation ~~((Code Requirements))~~ Standards

18 3.1 Required Codes of Construction.

19 ~~((170.1))~~ A. The construction and installation of boilers and pressure vessels ~~((and the~~  
20 ~~installation thereof))~~ shall conform to the minimum requirements for safety from structural and  
21 mechanical failure and excessive pressures. ~~((When any conflict exists))~~ Where differences occur  
22 between ~~((referenced codes in this section and))~~ provisions of this code and the codes and  
23 standards referenced in this section, the ~~((requirements))~~ provisions of this code ~~((shall prevail))~~  
24 apply.

25 ~~((170.2))~~ B. Boilers and pressure vessels installed in the City of Seattle shall ~~((comply with))~~  
26 be constructed to the following codes, including any addenda in effect on the date of  
27 construction:

28 1. The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel  
29 Code, Sections I, III, IV, VIII, X, and PVHO-1 ~~((of the American Society of Mechanical~~  
30 ~~Engineers’ (A.S.M.E.) Boiler and Pressure Vessel Code and the))~~

31 2. The American National Standards Institute ~~((A.N.S.I.))~~ ANSI B31.1.0 Power Piping  
32 ~~((Code, together with addenda thereto. Boilers and pressure vessels shall comply with the edition~~  
33 ~~of the code in effect at the time the equipment was manufactured. Where this code calls for~~  
34 ~~construction in accordance with any Section of the A.S.M.E. Boiler and Pressure Vessel Code,~~  
35 ~~the exemptions listed in Section 100 of this code shall prevail over any and all exemptions listed~~  
36 ~~in any Section of the A.S.M.E. Code. Appurtenances that are not within the scope of the~~  
37 ~~A.S.M.E. codes may be constructed to a nationally recognized standard of construction that has~~  
38 ~~been approved by the Director)).~~

39 3. Boilers with burner fuel input ratings of 12,500,000 Btu/hour or more shall comply with  
40 the fuel train requirements set forth in NFPA 85.

1 4. Appurtenances that are not within the scope of the ASME construction codes may be  
2 constructed to a nationally recognized standard of construction approved by the code official.

3 3.2 Listing. Appurtenances such as safety controls, operating controls, burner assemblies, and  
4 fuel trains shall bear the mark of a recognized listing agency or the appropriate certifications as  
5 listed by the manufacturer. They shall be installed and operated in accordance with the  
6 requirements of the listing or the manufacturer's certification and written instructions. Electrical  
7 components and wiring shall bear the mark of a recognized listing agency and have a listing  
8 appropriate for the environment of the installation.

9 ~~((170.3 A.S.M.E. CSD-1-2002. Except as otherwise stated herein, all fossil fuel fired boiler~~  
10 ~~installations with fuel input ratings of less than 12,500,000 Btu/hr shall comply with the fuel~~  
11 ~~train requirements of A.S.M.E. CSD-1-2002, Controls and Safety Devices for Automatically~~  
12 ~~Fired Boilers (CSD-1), which requirements are hereby adopted and incorporated by reference.~~  
13 ~~Alterations/modifications of existing burner controls require compliance of the entire fuel train~~  
14 ~~with CSD-1.~~

15 ~~170.4 Seattle Modifications to CSD-1. CSD-1 is modified as follows:~~

16 ~~A. CG-110 Scope, paragraph (b). Chapter 100-A of this code exempts some pool heaters. Those~~  
17 ~~not exempted are not required to comply with CSD-1, but shall comply with all other~~  
18 ~~requirements of this code.~~

19 ~~B. CG-130 Exclusions. Installations of potable hot water heaters and lined hot water supply~~  
20 ~~boilers are not required to comply with CSD-1. However, installation of lined hot water supply~~  
21 ~~boilers shall comply with all other requirements of this code.~~

22 ~~C. CG-220 Installation. CG-220 is adopted with the following modifications or clarifications:~~

23 ~~1. Installation of boilers and burners, and certification of boilers as automatic or monitored shall~~  
24 ~~be done only under permit in compliance with the requirements of Sections 220, 320, and 330 of~~  
25 ~~this code.~~

26 ~~2. When the burner of an existing installation is replaced, or the existing controls of a boiler have~~  
27 ~~been altered or modified, the entire fuel train shall comply with CSD-1.~~

28 ~~3. The requirements of Section 360 of this code shall apply in full.~~

29 ~~4. Under paragraph (d): when modules of a modular boiler are replaced, the replacement shall~~  
30 ~~also comply with the requirements of this code.~~

31 ~~D. CG-260 Combustion Air. CG-260 is replaced in its entirety by the requirements of Section~~  
32 ~~290 of this code and the Seattle Mechanical Code. The following shall apply when combustion~~  
33 ~~air is provided by means other than natural air circulation:~~

34 ~~1. Louvers and grilles that are not fixed in the full open position shall be interlocked with the~~  
35 ~~boiler(s) so that the boiler(s) will not start the pre-purge cycle unless the louvers/grilles are in the~~  
36 ~~full open position. The interlock shall be placed on the driven member.~~

37 ~~2. Fans supplying air to the boiler room for combustion shall be interlocked with the burner so~~  
38 ~~that air flow is proven during boiler operation.~~

39 ~~3. Fire dampers shall not be installed in the combustion air supply to the boiler room.~~

1 ~~E. CG 320 Installation. CG 320 is adopted with the following modification: Installation of~~  
2 ~~boilers and burners, and certification of boilers as automatic or monitored for the purpose of~~  
3 ~~modifying licensed operator attendance shall be done only under permit in compliance with the~~  
4 ~~requirements of Section 220, Section 320, and Section 330 of this code.~~

5 ~~F. CG 610 Lockout. CG 610 is adopted with the following addition to the end of paragraph CG-~~  
6 ~~610: Resetting of safety controls from a place other than the boiler on which the safety device is~~  
7 ~~installed is prohibited.~~

8 ~~G. Part CF—Combustion Side Control. Part CF is adopted with the following additions:~~

9 ~~1. Fuel Piping: The fuel piping requirements of the Seattle Mechanical Code shall take~~  
10 ~~precedence over the requirements of CSD-1.~~

11 ~~2. Boilers Certified as Automatic shall comply with the requirements of Sections 220 and 320 of~~  
12 ~~this code.~~

13 ~~170.5 NFPA 85. Boilers with fuel input ratings of 12,500,000 btu/hour or more shall comply~~  
14 ~~with the fuel train requirements of NFPA 85 2004 edition together with applicable addenda.~~

15 ~~170.6 Appurtenances such as safety controls, operating controls, burner assemblies, and boiler-~~  
16 ~~burner assemblies shall be listed by a nationally recognized testing agency and shall be installed~~  
17 ~~in accordance with the requirements of the listing.~~

18 ~~170.7 Boilers and pressure vessels shall comply with applicable requirements of the Seattle~~  
19 ~~Energy Code.~~

20  
21 ~~Section 180—Registration Requirements~~

22 ~~All boilers and pressure vessels)) 3.3 Symbol of Construction and Registration. Boilers and~~  
23 ~~pressure vessels shall bear the appropriate symbol of construction required by ASME Boiler and~~  
24 ~~Pressure Vessel Code, and shall be registered with the National Board of Boiler and Pressure~~  
25 ~~Vessel Inspectors.~~

26 ~~Exception((s)): ((1)) Cast iron boilers and ((2)) pressure vessels bearing the ((A.S.M.E.))~~  
27 ~~ASME ((“))UM((“)) stamp~~

28 ~~Section ((190 Permits Required)) 4 – Installation Permits~~

29 ~~((190.1)) 4.1 Installation Permits Required. An installation permit shall be obtained from the~~  
30 ~~((Director)) code official prior to:~~

- 31 1. Installation or replacement of new or used boilers and pressure vessels.
- 32 2. Installation of rental boilers.
- 33 3. Certification of boilers as Automatic.
- 34 4. Certification of boilers as Monitored.
- 35 5. Alteration or modification of existing control systems on boilers certified as Automatic or
- 36 Monitored.
- 37 6. Replacement or modification of fuel burner((s)), changing fuels, or adding different fuel
- 38 combinations.

1 4.1.1 Exemption from installation permits.

2 A. The following boilers, pressure vessels and other equipment are not required to obtain a City  
3 installation permit:

4 1. Portable unfired pressure vessels that are inspected by State of Washington (RCW 70.79).

5 2. Containers for liquefied petroleum gases regulated by the Seattle Fire Code.

6 3. Any boiler or pressure vessel subject to regular inspection by federal inspectors or  
7 licensed by a federal authority, such as the Department of Transportation (DOT).

8 4. Water storage tanks with no air cushion and no energy or heat source.

9 5. Boilers and pressure vessels under the direct ownership and operation of the State of  
10 Washington that are inspected in accordance with Washington State Boiler and Pressure Vessel  
11 rules (RCW 70.79) and have a current Washington State Certificate to Operate, and

12 6. Potable hot water heaters.

13 B. Potable hot water heaters and combination hot water heaters (as defined in Section 2 of  
14 this code and require King County installation permits) and listed pool heaters shall not exceed  
15 the following ratings:

16 1. A heat input  $\leq$  200,000 Btu/h, or

17 2. A water temperature  $\leq$  210°F, or

18 3. A nominal water-containing capacity  $\leq$  120 gallons, or

19 4. A pressure  $\leq$  160 psig (pounds per square inch gauge).

20 C. In a Group A, E and I occupancies, an annual in-service inspection of all potable hot  
21 water heaters is required by Section 5 of this code regardless of the installation permit  
22 jurisdiction, unless specifically exempted by another provision of this code.

23 ~~((190.2))~~ 4.2 Application for installation permit. To obtain an installation permit, the applicant  
24 shall ~~((first file))~~ submit an application ~~((in writing))~~ on a form furnished by the ~~((Director))~~  
25 Department ~~((for that purpose))~~. Every application shall:

26 1. Identify and describe the work to be covered by the permit for which application is made.

27 2. Describe the land on which the proposed work is to be done by ~~((legal description,))~~  
28 property address, parcel number, or similar description ~~((that will))~~ to readily identify and  
29 definitely locate the proposed building or work.

30 3. Be accompanied by plans ~~((and/))~~ or specifications in the standard ~~((A.S.M.E.))~~ ASME

31 form (Manufacturer's Data Report).

32 4. Be signed by the owner of the property or building, or their authorized agent ~~((, who may~~  
33 be required to submit evidence to indicate such authority)). An applicant may be required to  
34 submit evidence to indicate delegated authority.

35 5. ~~((Indicate))~~ List the names, address and contact number of the boiler owner, general  
36 contractor, and ~~((contractor and the name, address and phone number of a))~~ contact person.

37 6. Give such other supporting data and information, including manufacturer and serial  
38 number, ~~((as may be))~~ required by the ~~((Director))~~ code official.

1 ~~((190.3))~~ 4.3 Plans and Specifications. The ~~((Director))~~ code official may require that plans,  
2 computations and specifications ~~((to be))~~ are prepared and submitted to the ~~((Director))~~ code  
3 official with a permit application. Plans and specifications shall be ~~((of sufficient clarity))~~  
4 sufficiently clear ~~((to))~~ and show that the proposed installation ~~((will))~~ conforms to the  
5 provisions of this code and to the provisions of all applicable laws, ordinances, rules, regulations  
6 and orders.

7 ~~((190.4))~~ 4.4 Emergency Repairs. In the case of an emergency, the installation, alteration or  
8 repair of any boiler or pressure vessel system or equipment may be made without a permit;  
9 ~~((provided that))~~ and the code official shall be given notice of the work ~~((being))~~ performed  
10 ~~((shall be given to the Director))~~ within twenty-four hours ~~((or within one working day))~~  
11 from the time when the emergency work ~~((was started))~~ began. The notice of emergency repair may be  
12 sent via email and voicemail to the code official. ~~((Depending on the nature of the emergency,~~  
13 appropriate permits)) Permits shall be obtained within five days of the start of the emergency  
14 work or as directed by the ~~((Director))~~ code official.

15 ~~((190.5))~~ 4.5 Permit Issuance.

16 ~~((190.5.1 General.))~~ The application, plans, specifications, and other data filed by ~~((an))~~ a permit  
17 applicant ~~((for permit))~~ shall be reviewed by the ~~((Director))~~ code official. Such plans may also  
18 be reviewed by other departments of the City to check compliance with the laws and ordinances  
19 under their jurisdiction. If the ~~((Director))~~ code official finds that the work ~~((as))~~ described in  
20 ~~((an))~~ the permit application, ~~((for permit and the))~~ plans, specifications and other data ~~((filed~~  
21 therewith)) substantially conforms to the requirements of this code and other pertinent laws and  
22 ~~((ordinances and))~~ that the permit fees specified in ~~((the Permit Fee Subtitle))~~ Section 4.10 have  
23 been paid, then the ~~((Director))~~ code official shall issue a permit ~~((therefor))~~ to the applicant~~((,~~  
24 who)). When the permit is issued, the applicant or the applicant's authorized agent becomes the  
25 permit holder ~~((or authorized agent)).~~

26 ~~((190.5.2))~~ 4.6 Validity of permit. ~~((The issuance or granting of))~~ Issuing a permit or ~~((approval~~  
27 of)) approving plans shall not be construed ~~((to be))~~ as a permit for, or an approval of, any  
28 violation ~~((of any))~~ of the provisions of this code or any other pertinent ~~((laws and ordinances))~~  
29 law. No permit presuming to give authority to violate or cancel the provisions of this code shall  
30 be valid, except ~~((insofar as))~~ for the lawful and approved work or use ~~((which it authorizes is~~  
31 lawful)).

32 The issuance of a permit shall not prevent the ~~((Director))~~ code official from ~~((thereafter))~~  
33 requiring ~~((the))~~ correction of errors or from ~~((preventing))~~ stopping building operations ~~((being~~  
34 carried on thereafter when in violation of)) that violate this code or ~~((of))~~ other pertinent laws  
35 ~~((and ordinances of the City)).~~

36 ~~((The issuance of a permit shall not prevent the Director from requiring correction of conditions~~  
37 found to be in violation of this code or other pertinent laws of the City, nor)) Nor shall the period  
38 of time for which any permit is issued be construed to extend or otherwise affect any period of  
39 time for compliance specified in any notice or order issued by the ~~((Director))~~ code official ~~((or~~  
40 other administrative authority requiring the correction of any such conditions)).

41 ~~((190.6))~~ 4.7 Permit Expiration. ~~((190.6.1 Expiration.))~~ Every permit issued by the ~~((Director))~~  
42 code official under the provisions of this code shall expire 18 months from the date of issuance.

1 Permits ~~((which))~~ that expire in less than eighteen months may be issued ~~((where))~~ when the  
2 ~~((Director))~~ code official determines a shorter period is appropriate.

3 ~~((190.6.2))~~ 4.8 Renewal of Installation Permits. Each permit may be renewed one time, provided  
4 the following conditions are met:

5 1. Application for renewal is made within the thirty-day period immediately preceding the  
6 expiration date of the permit; and

7 2. The work authorized by the permit has ~~((been))~~ started and is progressing at a rate  
8 approved by the ~~((Director))~~ code official((-)); and

9 3. Permits may also be renewed ~~((where))~~ when commencement or completion of the work  
10 authorized by the permit is delayed by litigation, appeals, strikes or other causes related to the  
11 work authorized by the permit~~((;))~~ that are beyond the permit holder's control.

12 ~~((190.6.3))~~ 4.9 Suspension or Revocation of Installation Permits. The ~~((Director))~~ code official  
13 may, by written order, suspend or revoke a permit issued under the provisions of this code  
14 ~~((whenever))~~ when the permit ~~((is))~~ was issued in error or on the basis of incorrect information  
15 supplied or in violation of any ordinances or regulations or any provisions of this code.

16 ~~((Section 200))~~ 4.10 Fees. ~~((200.1 General. A fee for each permit and for other activities related~~  
17 ~~to the enforcement of this code shall be paid as set forth in the Permit Fee Subtitle.))~~ All fees are  
18 set forth in the Seattle Municipal Code, Title 22, Subtitle IX, Permit Fees.

19 1. A fee for each installation permit shall be paid when application is made. A permit fee  
20 includes inspection verifying the installation is done according to the permit.

21 2. Fees for the inspection of repairs or alterations of boilers and pressure vessels are charged in  
22 half hour increments ~~((at the rate set in the Permit Fee Subtitle. DPD will send an invoice for the~~  
23 repair following completion of the work.)) of the base rate, including any additional inspections  
24 that may be necessary to secure a final approval.

25 ~~((Section 210 Inspections—General.~~

26 ~~210.1 General.))~~ 4.11 Inspection of new installations. Boilers and pressure vessels and systems  
27 ~~((for which a))~~ required to have an installation permit ~~((is required by this code))~~ shall be  
28 ~~((subject to inspection by the Director))~~ inspected by the code official. City-employed inspectors  
29 holding a current inspector's commission with the National Board of Boiler and Pressure Vessel  
30 Inspectors may conduct the required inspections and use the current edition of the National  
31 Board Inspection Code (NBIC), Part 1, as a guide for conducting the inspection. When  
32 differences occur between the requirements of this code and codes and standards, this code shall  
33 apply.

34 A. Applicant request. It ~~((shall be))~~ is the duty of the permit applicant to ~~((cause))~~ request an  
35 inspection and ensure the boiler ~~((and))~~ or pressure vessel, and its systems, ~~((to))~~ remain accessible  
36 and exposed for inspection purposes. Neither the ~~((Director))~~ code official nor the City shall be  
37 liable for expenses ~~((entailed))~~ incurred in the removal or replacement of any material ~~((required~~  
38 to permit inspection)) impeding the access necessary to perform required inspections. ~~((When the~~  
39 installation of a boiler and pressure vessel system is complete, an additional and final inspection  
40 shall be made. Boiler and pressure vessel systems regulated by this code shall not be connected to  
41 the energy fuel supply lines until authorized by the Director.

1 ~~Approval as a result of an inspection shall not be construed to be an approval of a violation of the~~  
2 ~~provisions of this code or of other ordinances of the City. Inspections presuming to give~~  
3 ~~authority to violate or cancel the provisions of this code or of other ordinances of the City shall~~  
4 ~~not be valid.~~

5 ~~210.2 Reinspections. The Director may require a reinspection when work for which inspection is~~  
6 ~~called is not complete, corrections called for are not made, the inspection record is not properly~~  
7 ~~posted on the work site, the approved plans are not readily available to the inspector, deviations~~  
8 ~~from plans which require the approval of the Director have been made without proper approval, or~~  
9 ~~for failure to provide access on the date for which inspection is requested.~~

10 ~~The Director may assess a reinspection fee as set forth in the Permit Fee Subtitle for any action~~  
11 ~~listed above for which reinspection may be required, whether or not a reinspection is actually~~  
12 ~~performed.~~

13 ~~In instances where reinspection fees have been assessed, no additional inspection of the work~~  
14 ~~shall be performed until the required fees have been paid.))~~

15 B. Energy connection. Boiler and pressure vessel systems regulated by this code shall not be  
16 connected to energy- or fuel-supply lines until authorized by the code official.

17 C. Final Inspection. When the installation of a boiler and pressure vessel or system is complete, a  
18 final inspection shall approve the boiler, pressure vessel or system as ready for service. Approval  
19 as a result of an inspection shall not be construed to be an approval of a violation of the  
20 provisions of this code or of other ordinances of the City. Inspections presuming to give  
21 authority to violate or cancel the provisions of this code or of other ordinances of the City shall  
22 not be valid.

23 4.12 Additional inspections. The code official may require additional inspections when:

24 1. Work for which inspection is called is not complete; or

25 2. Corrections called for are not made; or

26 3. The inspection record is not properly posted on the work site; or

27 4. The approved plans are not readily available to the inspector; or

28 5. Deviations from plans which require the approval of the code official were made without  
29 proper approval; or

30 6. For failure to provide access on the date requested for the inspection.

31 The code official may assess an inspection fee for additional inspections as set forth in Section  
32 4.10 of this code. In instances where additional inspection fees were assessed, no additional  
33 inspection of the work shall be performed until the required fees are paid.

34 ~~((Section 220 Inspection))~~ 4.13 Requirements for New Installations.

35 ~~((220.1))~~ A. Onsite. The code official shall require:

36 1. Boiler installations, upon completion, shall have controls set, adjusted and tested by the  
37 installing contractor.

38 2. ((Documentation)) The following documentation ((consisting of City of Seattle)) shall be  
39 onsite and available for the inspector: the Department issued installation permit, National Board

1 or ASME Data Report(s), ~~((CSD-1 Report(s), complete control diagram of a permanent legible~~  
2 ~~type, together with complete boiler operating)) and manufacturers installation and operation~~  
3 ~~instructions, ((, shall be furnished by the installer for each installation. Rental boilers and used~~  
4 ~~boilers are subject to hydrostatic testing, non-destructive testing, or other special testing as may~~  
5 ~~be required by the Director.~~

6 ~~220.2 It shall be the duty of the person or entity doing the work or installation authorized by a~~  
7 ~~permit to notify the Director that such work or installation is ready for inspection and to prevent~~  
8 ~~unauthorized use of equipment until such use has been authorized by the Director. The Director~~  
9 ~~shall require such tests as he/she deems))~~

10 3. Tests deemed necessary to determine that the installation complies with the provisions of this  
11 code. Such tests shall be made in the presence of the ~~((Director's authorized representative))~~  
12 code official.

13 4. ~~((It shall be the duty of the person requesting inspections required by this code to provide~~  
14 ~~access)) Access to, and the means for, ~~((the))~~ safe inspection of the installation.~~

15 B. Pre-installation inspection. When the owner or ~~((his))~~ the owner's authorized representative  
16 requests inspection of a boiler prior to its installation, the ~~((Director))~~ code official shall make  
17 ~~((such))~~ the inspection. ~~((Additional))~~ Any additional inspection~~((s), or inspections))~~ outside the  
18 scope of the permit may be subject to additional fees in accordance with Section ~~((200))~~ 4.10 of  
19 this code.

20 4.14 Testing rental and used boilers. Rental boilers and used boilers are subject to hydrostatic  
21 testing, non-destructive testing, or other special testing as may be required by the code official.

22 ~~((Section 230 – Existing Installations – Reinspection~~

23 ~~The Director shall inspect all boilers and pressure vessels operated under permit at such intervals~~  
24 ~~as deemed necessary but in no event less frequently than noted below:~~

25 ~~Exception: Boilers and pressure vessels under the direct ownership and operation of the State of~~  
26 ~~Washington shall be installed in accordance with section 190 of this code, but are exempt from~~  
27 ~~the re-inspection requirements of this code.~~

28 ~~230.1 Inspection of boilers, boiler controls, and boiler safety devices shall be as follows:~~

29 ~~A. External Inspections: All boilers shall be inspected externally annually. All required boiler~~  
30 ~~controls and safety devices shall be tested during the external inspection to determine that they~~  
31 ~~are operating properly.~~

32 ~~B. Internal Inspections: Where construction and operating conditions permit, boilers shall also be~~  
33 ~~subject to an internal inspection as follows:~~

34 ~~1. Low pressure hot water heating boilers not using corrosion inhibitors shall be inspected~~  
35 ~~internally at least every two years.~~

36 ~~2. Low pressure hot water heating boilers using corrosion inhibitors, glycol, or oil shall be~~  
37 ~~inspected at a frequency determined by the inspector depending upon such factors as history of~~  
38 ~~the installation, adequacy of corrosion inhibitors, tightness of the system, and other factors~~  
39 ~~observed and considered by the inspector; and~~

40 ~~3. All other boilers shall be inspected every year.~~

1 C. For steam boilers, an internal inspection of the low water cutoff chamber and connecting  
2 piping is required in all cases.

3 ~~230.2 Unfired pressure vessels shall be inspected externally biennially. When subject to~~  
4 ~~corrosion and construction permits, they shall, in addition, be subject to inspection internally~~  
5 ~~biennially. At the discretion of the inspector, an ultrasonic examination of the external side of the~~  
6 ~~pressure vessel may substitute for an internal inspection.~~

7 ~~230.3 In Group A, E, or I Occupancies, potable water heaters, combination hot water heaters,~~  
8 ~~(fired, electric, thermal, solar, and indirect) and pool heaters shall be inspected externally~~  
9 ~~biennially for safe condition. As a minimum, the safety inspection shall consist of an actual~~  
10 ~~lifting of the safety relief try lever to determine free flow of the safety relief valve and a visual~~  
11 ~~inspection of the exterior of the vessel for leakage or physical damage.~~

12 ~~230.4 Inspection Results—Corrections Required. The inspector shall notify the owner or~~  
13 ~~authorized representative of the found defects or deficiencies which shall be promptly and~~  
14 ~~properly corrected. If such corrections are not made, or if the operation of the boiler or pressure~~  
15 ~~vessel is deemed unsafe by the Director, the permit to operate the boiler or pressure vessel shall~~  
16 ~~be withheld until corrections have been made.~~

17 ~~230.5 Inspection by Authorized Insurance Companies. Inspection of boilers and pressure vessels~~  
18 ~~may be made by employees of an authorized insurance company. Such inspections shall be~~  
19 ~~conducted in accordance with the requirements of this code and by persons holding an active~~  
20 ~~commission from the National Board of Boiler and Pressure Vessel Inspectors.~~

21 ~~1. Authorized insurance companies must notify the Director in writing, annually, of those~~  
22 ~~inspectors that will be conducting inspections within the City of Seattle. Notification shall~~  
23 ~~include the National Board Commission number and expiration of the inspectors current~~  
24 ~~National Board Commission. Notification in writing may be on company letter head or by email.~~  
25 ~~Authorization is subject to the approval of the Director.~~

26 ~~2. Authorized inspectors shall make their reports to the Director on forms prescribed by the~~  
27 ~~Director.~~

28 ~~3. Authorized Insurance company inspectors shall notify the Director immediately of any~~  
29 ~~suspension of insurance coverage due to dangerous conditions.~~

30 ~~4. Authorized insurance companies providing insurance coverage of jurisdictional objects in the~~  
31 ~~City of Seattle shall notify this office within 30 days for any new insurance in effect or any~~  
32 ~~discontinuance of insurance coverage of jurisdictional objects.~~

33 ~~230.6 Preparation for Internal Inspection.~~

34 ~~230.6.1 The owner or user shall prepare a boiler or pressure vessel for internal inspection by~~  
35 ~~either the Director or insuring company to the extent deemed necessary by the inspector. For~~  
36 ~~boilers, a typical preparation may include the following:~~

37 ~~a) Water shall be drawn off and the boiler thoroughly washed.~~

38 ~~b) Manhole and handhole plates and wash-out plugs and water column connections shall be~~  
39 ~~removed, the furnace and combustion chambers thoroughly cooled and cleaned.~~

40 ~~c) All grates of internally fired boilers shall be removed.~~

1 ~~d) As required by the inspector, at each annual inspection, brickwork and/or refractory shall be~~  
2 ~~removed in order to determine the condition of the boiler headers, furnace, supports or other~~  
3 ~~parts.~~

4 ~~e) Any leakage of steam or hot water into the boiler shall be cut off by disconnecting the pipe or~~  
5 ~~valve at the most convenient point.~~

6 ~~f) The low water cutout shall be disassembled to such a degree as the inspector shall require.~~

7 ~~g) Compliance with applicable lock-out / tag-out and confined space entry procedures as~~  
8 ~~required.~~

9 ~~230.6.2 If a boiler or unfired pressure vessel has not been properly prepared for an internal~~  
10 ~~inspection, the inspector may decline to make the inspection or test and the certificate of~~  
11 ~~inspection shall be withheld or canceled until the owner or user complies with the requirements.~~

#### 12 ~~Section 240—Certificate of Inspection~~

13 ~~It shall be unlawful to operate any boiler or pressure vessel without first obtaining a valid~~  
14 ~~certificate of inspection from the Director. Certificates of Inspection shall be displayed in a~~  
15 ~~conspicuous place adjacent to boiler or vessel. The Certificate of Inspection shall not be issued~~  
16 ~~until the equipment has been inspected and approved by the Director. A grace period of no~~  
17 ~~longer than sixty (60) days beyond the expiration date of any Certificate of Inspection may be~~  
18 ~~granted.~~

#### 19 ~~Exceptions:~~

20 ~~1. The operation of steam heating boilers, low pressure hot water heating boilers, hot~~  
21 ~~water supply boilers and pressure vessels in Group R Occupancies of less than six units and~~  
22 ~~in Group U occupancies.~~

23 ~~2. Boilers and pressure vessels under the direct ownership and operation of the State of~~  
24 ~~Washington, and that are inspected in accordance with Washington State Boiler and Pressure~~  
25 ~~Vessel rules, (RCW 70.79) and in possession of a current Washington State Certificate to~~  
26 ~~Operate.~~

#### 27 ~~Section 250—Repairs and Alterations~~

28 ~~250.1 Where a repair is necessary or an alteration as defined in the National Board Inspection~~  
29 ~~Code is desired, a City inspector shall be called for authorization prior to starting any work on~~  
30 ~~the alteration or the repair. Completed repairs and alterations shall be subject to the approval of~~  
31 ~~the inspector and the approval of the inspector responsible for in-service inspection, as~~  
32 ~~applicable.~~

33 ~~250.2 Repairs and/or alterations to all boilers, unfired pressure vessels, and their appurtenances~~  
34 ~~shall conform to the rules contained in the National Board Inspection Code (A.N.S.I. NB-23)~~  
35 ~~wherever they apply. Repairs or alterations outside the scope of the National Board Inspection~~  
36 ~~Code are subject to the prior approval of the director.~~

#### 37 ~~Section 260—Removal from Service—Dangerous Conditions~~

38 ~~If the operation of a boiler or pressure vessel is deemed by the Director to constitute an~~  
39 ~~immediate danger, the pressure on such boiler or pressure vessel shall be relieved and the boiler~~

1 or pressure vessel secured at the owner's expense. Such unsafe boiler or pressure vessel shall be  
2 declared a nuisance and shall not be operated without approval of the Director.

3 ~~Section 270—Accidents to be Reported~~

4 ~~In case of serious accident, such as explosion or an event which renders a boiler or pressure~~  
5 ~~vessel unsafe to return to operation, notice shall be given immediately to the Director and neither~~  
6 ~~the boiler nor unfired pressure vessel nor any parts thereof shall be removed or disturbed before~~  
7 ~~an inspection has been made by a City inspector unless for the purpose of saving life.~~

8 ~~Section 280—Operation~~

9 ~~280.1 General. Boilers and pressure vessels shall be operated and maintained in conformity with~~  
10 ~~requirements for adequate protection of the public established by the Director in accordance with~~  
11 ~~nationally recognized standards.~~

12 ~~280.2 Licensed Operator Requirements. Boilers and pressure vessels shall be operated and~~  
13 ~~maintained by an appropriately licensed boiler operator in accordance with the City of Seattle~~  
14 ~~Steam Engineer and Boiler Fireman License Law, Seattle Municipal Code Chapter 6.420.~~

15 ~~Section 290)) 4.15 Combustion air. Combustion air shall be provided in accordance with Chapter~~  
16 ~~7 of the Seattle Mechanical Code.~~

17 ~~((Section 300)) 4.16 Venting. ((Except as noted below, venting)) Venting of the products of~~  
18 ~~combustion shall be in accordance with Chapter 8 of the Seattle Mechanical Code. Stack~~  
19 ~~dampers on boilers fired with oil or solid fuel shall not close off more than 80 percent of the~~  
20 ~~stack area when closed((, except on automatic boilers with pre-purge, automatic draft control and~~  
21 ~~interlock)). Operative dampers shall not be placed within any stack, flue or vent of a gas-fired~~  
22 ~~boiler ((, except on automatic)).~~

23 Exception: Automatic boilers with pre-purge, automatic draft control and interlock.

24 ~~((Exception: Baffles, draft restrictors or regulators and dampers which are supplied by the~~  
25 ~~manufacturer as part of a boiler design and which are welded into position or otherwise~~  
26 ~~permanently affixed when adjusted at installation.))~~

27 ~~((Section 310)) 4.17 Controls, Safety Devices, and Instrumentation. No valve shall be placed~~  
28 ~~between a safety device and the boiler or pressure vessel.~~

29 ~~((310.1 General. Required electrical, mechanical, safety and operating controls shall carry~~  
30 ~~approval of an approved testing agency. Electrical controls shall be of such design and~~  
31 ~~construction as to be suitable for installation in the environment in which they are located.~~

32 ~~310.2 Burners—Listing Required. Fuel burners shall be listed by a nationally recognized testing~~  
33 ~~agency. Burners that are integral parts of boilers shall be listed as part of the overall boiler-~~  
34 ~~burner assembly.~~

35 ~~310.3)) 4.17.1 Burners: fuel selector switches. Burners installed on or after June 1, 1987 that are~~  
36 ~~capable of burning two or more fuels shall be equipped with a fuel selector switch that is~~  
37 ~~designed and constructed to prevent switching from one fuel to a different fuel without a~~  
38 ~~physical stop between fuels, such as a switch with a ((in the)) center((/))\_off position. The~~  
39 ~~neutral should be designed to prevent the accidental firing of both fuels at once.~~

1 ~~((310.4))~~ 4.17.2 Gauges~~(, General))~~. ~~((Required))~~ The following gauges are required and shall  
2 be kept in good working ~~((order.))~~ condition:

3 1. All steam boilers shall be provided with a pressure gauge and a water level glass.

4 2. All ~~((hot))~~ water ~~((supply/storage tanks))~~ boilers shall be provided with a pressure gauge  
5 and a temperature ~~((gauge))~~ indicator.

6 ~~((310.5))~~ 4.17.3 Pressure and Temperature Relief.

7 ~~((310.5.1))~~ A. Liquid discharge. The discharge from liquid relief valves shall be piped to within  
8 18 inches of the floor or to an open receptacle; and, when the operating temperature ~~((is in excess~~  
9 ~~of))~~ exceeds 140°F~~(;))~~ the liquid relief valve shall be equipped with a means of tempering and  
10 cooling the discharge prior to entering the drainage system (see Uniform Plumbing Code,  
11 ~~((Section 810))~~ Chapter 8).

12 ~~((310.5.2))~~ B. Steam discharge. Safety valve discharge from boilers and pressure vessels  
13 containing steam shall be directed upward to a minimum of 6 feet above the boiler room floor or  
14 horizontally to an inaccessible area of the boiler room. ~~((When))~~ If the discharge from safety  
15 valves would result in a hazardous discharge of steam inside the boiler room, or ~~((when))~~ if the  
16 discharge of ~~((multiple))~~ safety valves on boilers exceeds the capacity of 1,000 pounds of steam  
17 per hour, ~~((such))~~ the steam discharge shall be extended outside the boiler room to a safe  
18 location.

19 ~~((310.5.3))~~ 4.17.4 Emergency shutdown switch. ~~((Boilers in the boiler room shall be provided~~  
20 ~~with an))~~ The emergency shutdown switch shall be located outside the boiler room, or ~~((other))~~  
21 in a location approved by the ~~((Director))~~ code official. The ~~((purpose of such a))~~ switch ~~((is to))~~  
22 shall allow ~~((the))~~ shutdown of all boilers~~((s))~~ in the boiler room without having to enter the  
23 boiler room. ~~((The emergency shutdown switch shall be suitable for the intended use.))~~

24 ~~((310.5.4 No valve of any description shall be placed between the safety relief valve and the~~  
25 ~~boiler, nor on the discharge pipe between the safety relief valve and the atmosphere.~~

26 ~~310.6))~~ 4.17.5 Low-water cutoff or flow-sensing devices.

27 ~~((310.6.1))~~ A. Manual reset. ~~((Every water))~~ Water boilers~~(, other than manually fired,))~~ shall be  
28 equipped with a manual-reset type low-water cutoff device. In installations where two or more  
29 low-water cutoffs are installed, the cutoffs shall be separately piped where feasible. ~~((except that~~  
30 ~~a boiler which requires forced circulation to prevent overheating shall have a flow-sensing~~  
31 ~~device installed in lieu of the low-water cutoff. The required flow switch (if applicable) or the~~  
32 ~~required manual reset type low-water cutoff shall be mounted in such a manner so as to prevent~~  
33 ~~damage to the boiler and to permit testing of the low-water cutoff))~~

34 1. The required device shall be mounted so that activation of the device does not damage the  
35 boiler or reset the device.

36 2. The device shall be located to allow testing of the device without draining the boiler system.

37 3. Manually-operated and power-actuated isolation valves between the low-water cutoff and the  
38 boiler are prohibited.

39 4. Delay functions incorporated in any low-water cut-off or flow-sensing ~~((switch))~~ device  
40 ~~((will))~~ require ~~((the pre-))~~ approval of the ~~((Director))~~ code official and approved delay ~~((-~~

1 ~~Delay~~) functions (~~(not)~~) shall be installed in accordance with the manufacturer's instructions  
2 (~~approvals shall not be used~~).

3 (~~Exception: Vertical tube hot water supply boilers, such as those bearing the A.S.M.E. "HLW"~~  
4 ~~stamp, that are directly connected to, and pressurized by the public water supply, need not be~~  
5 ~~equipped with a low water cutoff or flow switch.~~)

6 (~~(310.6.2)~~) B. Low-water cut-off. Every steam boiler(~~(, other than manually fired,)~~) shall be  
7 equipped with two low-water cutoffs. The lower of the two cutoffs shall be equipped with a  
8 manual reset device. In installations where two or more low-water cutoffs are installed, the  
9 cutoffs shall be separately piped where feasible.

10 (~~(310.6.3 In installations where two or more low-water cutoffs are installed, the cutoffs shall be~~  
11 ~~separately piped where feasible.)~~)

12 C. Flow sensing device. Boilers that require forced circulation to prevent overheating shall have  
13 a flow-sensing device installed instead of the low-water cutoff. The required flow-sensing device  
14 shall be mounted in a way that prevents damage to the boiler and allows testing of the device  
15 without draining the boiler system.

16 Exceptions to A through C:

17 1. Manually fired water and steam boilers.

18 2. Hot water supply boilers, such as those bearing the ASME "HLW" stamp, that are  
19 directly connected to and pressurized by the public water supply.

20 4.17.6 Required safety controls.

21 A. Temperature controls. All water and liquid boilers shall be equipped with two temperature  
22 controls, one of which shall have a manual reset device.

23 B. Pressure controls. All steam and vapor boilers shall be equipped with two pressure controls,  
24 one of which shall have a manual reset device.

25 (~~(310.6.4 Water feeding devices)~~) C. Automatic water feed. All steam, vapor (~~(or)~~) and water  
26 boilers shall be equipped with an automatic water feeding device. For steam boilers and boilers  
27 having an operating water level, the water feeder shall be controlled by the actual water level in  
28 the boiler.

29 Exception: Manually operated (fired) boilers that have a qualified person in constant attendance  
30 of the boiler while it is in operation.

31 D. Blowoff tank. All steam boilers shall be equipped with a blowoff tank fabricated in  
32 accordance with the National Board of Boilers and Pressure Vessels Blowoff Equipment  
33 Standard NB-27. Blowoff tanks shall collect and temper water and steam discharged from safety  
34 relief valves and, as applicable, from blowoff and blowdown effluent and low-water fuel cut-off  
35 drains. Effluent shall not exceed 140 degrees F prior to entering building drains. (See Seattle  
36 Plumbing Code, Section 810).

37 Exception: An alternate means for safe discharge may be approved by the code official.

38 E. Expansion tanks. All closed hot water heating systems shall be provided with an expansion  
39 tank. Expansion tanks shall be fabricated to ASME Section IV Standard HG-709. Expansion

1 tanks shall be sized appropriately and securely fastened to supports that are adequate to support  
2 twice the weight of the tank filled with water without placing strain on connecting piping.

3 ~~((310.7 Pressure and Temperature Controls.~~

4 ~~310.7.1 Water / Liquid. All water or liquid boilers shall be equipped with two temperature~~  
5 ~~controls one of which will be equipped with a manual reset device.~~

6 ~~310.7.2 Steam / Vapor. All steam or vapor boilers shall be equipped with two pressure controls,~~  
7 ~~one of which will be equipped with a manual reset device. 310.8 Retroactive Requirements.~~

8 ~~The following requirements shall be retroactive:~~

9 ~~310.8.1 Every hot water boiler, other than manually fired, shall be equipped with two~~  
10 ~~temperature controls wired in series. Every steam heating boiler, other than manually fired, shall~~  
11 ~~be equipped with two pressure controls and a low water cutoff. Each temperature or pressure~~  
12 ~~control shall have an independent sensing element. Shutoff valves of any type shall not be~~  
13 ~~installed between a boiler and any pressure or temperature control.~~

14 ~~310.8.2)) F. Safety relief valves. Boilers and pressure vessels shall be provided with safety relief~~  
15 ~~valves to ensure positive relief of overpressure in accordance with ((nationally recognized~~  
16 ~~standards)) the code in effect when the vessel was manufactured; if those codes do not address~~  
17 ~~safety relief valves, then other nationally recognized standards can be used.~~

18 1. No valve shall be placed between a safety device and the boiler or pressure vessel.

19 Exception: If ASME Section VIII, Division I, or circumstances approved by the code official,  
20 allows a valve to be placed between the safety device and the pressure vessel there shall be  
21 written procedures governing the use of the valve. Those procedures shall be made available to  
22 the inspector for approval.

23 2. No valve shall be placed on the discharge pipe between the safety relief valve and the  
24 atmosphere.

25 ~~((310.8.3)) G. Mechanically fired boiler. Every mechanically fired boiler which requires manual~~  
26 ~~ignition or lighting of the burner shall have a manual reset device to prevent automatic recycling~~  
27 ~~in the event of any shut down.~~

28 ~~((310.9)) H. Energy management systems. Energy management systems ((of any description))~~  
29 ~~shall not have the ability to override any control or safety device required by this code. Such~~  
30 ~~systems may only connect to a boiler control system at points provided by the manufacturer~~  
31 ~~((and intended)) for such use.~~

32 4.18 Location of Boilers and Pressure Vessels.

33 4.18.1 Clearance Requirements. When boilers are installed or replaced, clearance shall be provided to  
34 allow access for inspection, maintenance, and repair. Passageways around all sides of boilers shall have  
35 an unobstructed width of not less than 18 inches. Clearance for repair and cleaning may be provided  
36 through a door or access panel into another area, provided the opening is of sufficient size.

37 Exception: When approved by the code official, boilers and pressure vessels may be installed with a side  
38 clearance of less than 18 inches provided that the lesser clearance does not inhibit inspection, maintenance,  
39 and repair or violate the terms of the listing or the manufacturer's installation instructions.

1 A. Power boiler. Power boilers having a steam generating capacity in excess of 5000 pounds per  
2 hour or having a heating surface in excess of 1000 square feet or input in excess of 5,000,000 Btu/h shall  
3 have a minimum clearance of 7 feet from the top of the boiler to the ceiling.

4 B. Steam and hot water heating boilers. Steam heating boilers and hot water heating boilers  
5 which exceed one of the following limits: 5,000,000 Btu/h input; 5000 pounds steam-per-hour  
6 capacity or 1000 square-foot heating surface; and power boilers which do not exceed one of the  
7 following limits: 5,000,000 Btu/h input; 5000 pound-steam-per-hour capacity or 1000 square-  
8 foot heating surface; and all boilers with manholes on top of the boiler, except those described in  
9 paragraphs A and C shall have a minimum clearance of 3 feet from the top of the boiler to the  
10 ceiling.

11 C. Boilers without manhole on top. Package boilers, steam heating boilers and hot-water heating  
12 boilers with no manhole on top of shell and not exceeding one of the limits contained in 4.18.1B  
13 shall have a minimum clearance of 2 feet from the ceiling.

14 D. Manhole clearance. Manhole openings shall have a minimum of five feet clearance from any  
15 outside obstruction.

16 4.18.2 Underground Installations. Boilers and pressure vessels installed underground shall be  
17 enclosed in a concrete or masonry pit. A covered pit shall be equipped with a removable cover so  
18 that adequate inspection can be made. Requirements for clearances shall be the same as 4.18.1.

19 4.18.3 Boiler Rooms.

20 A. Construction. Boiler rooms shall be constructed in accordance with the current edition of the  
21 Seattle Building or Residential Code. Equipment shall be mounted to adequately support the  
22 vessel and its contents, keep the equipment level and safely anchored to prevent unwanted  
23 movement, and safe from damage due to vibration. Floors shall be of noncombustible materials  
24 or listed as appropriate for the equipment being mounted. Floors shall have an adequate drain  
25 system or legal method of catching and holding liquid wastes incidental to cleaning, recharging,  
26 or discharging of safety relief valves.

27 B. Access platform. Platforms to conduct maintenance and inspection shall be provided to allow  
28 safe access and egress to each boiler or pressure vessel.

29 4.18.4 Garage or warehouse locations. Boilers and pressure vessels installed in garages,  
30 warehouses or other locations where damage from moving vehicles is possible shall be protected  
31 with barriers or shall be elevated or located outside the path of vehicles. Boilers, if fuel-fired and  
32 installed in garages shall be at least 18" above the floor level. (See Seattle Mechanical Code  
33 Section 304.)

34 Exception: Boilers and pressure vessels installed within a garage may be enclosed in a separate  
35 approved compartment having access only from outside the garage if the required combustion air  
36 is taken from and discharged to the exterior of the garage.

37 4.19 Pressure Reducing Valves.

38 A. Working Pressure. All the equipment downstream of the boiler or pressure vessel shall meet  
39 the pressure requirements for the maximum allowable working pressure of the boiler or pressure  
40 vessel; or

1 B. Pressure reduction. Equipment shall have a pressure reducing system installed to protect the  
2 downstream piping or equipment installed in the system meeting the following requirements:

3 1. Safety relief valves. The low pressure side of the pressure reducing valve shall be  
4 protected by one or more safety valves having adequate volume capacity, and the set pressure  
5 shall not exceed the maximum allowable working pressure of equipment or piping installed  
6 downstream of the pressure reducing valve.

7 2. Pressure gauges. Pressure gauges shall be installed on the high and low pressure side of  
8 the pressure reducing valve.

9 3. Venting. Proper protection shall be provided to prevent injury or damage caused by the  
10 escaping steam from the discharge of safety valves when vented to the atmosphere.

11 4. Bypass valve. The use of a hand-controlled bypass around the reducing valves is allowed.  
12 The capacity of the bypass valve shall not exceed the capacity of the reducing valve.

#### 13 4.20 Fuel Piping

14 A. Manual shutoff valves. An approved manual shutoff valve shall be installed upstream of all  
15 control devices on the main burner of a gas-fired boiler. The takeoff point for the gas supply to  
16 the pilot shall be valved separately and be upstream of the gas shutoff valve for the main burner.  
17 A union or other approved means of disconnect shall be provided immediately downstream from  
18 these shutoff valves.

19 B. Gas pressure regulators. An approved gas-pressure regulator shall be installed on gas-fired  
20 boilers if the gas supply pressure is higher than that at which the main burner is designed to  
21 operate. A separate approved gas-pressure regulator shall be installed to regulate the gas pressure  
22 to any pilot.

23 Exceptions: A separate regulator is not required:

24 1. If the pilot is part of a manufacturer-assembled boiler-burner unit approved by the code  
25 official.

26 2. If the pilot serves a gas-fired boiler in Group R Occupancies of less than six units, or,

27 3. If the pilot serves a gas-fired boiler in Group U Occupancies.

28 C. Code compliant. Fuel piping installation shall conform to the provisions of the current edition  
29 of the Seattle Fuel Gas Code.

30 Informational Note: The Seattle Fuel Gas Code regulates fuel piping beginning at the gas meter  
31 and ending at the connection to the fuel train of the appliance.

32 4.21 Steam and Hydronic Piping. Steam and hydronic piping systems that are part of a boiler or  
33 heating system shall comply with the requirements of the Seattle Mechanical Code, Chapter 12,  
34 and the requirements of this code. When piping falls outside the scope of the applicable sections  
35 of the above codes, a standard approved by the code official may be used.

#### 36 4.21.1 Materials and Construction.

37 A. Quality. All piping, tubing, valves, joints, fittings, devices and materials shall be free of  
38 defects and shall comply with nationally recognized standards of construction listed in Section 3  
39 of this code or as approved by the code official.

1 B. Prohibited. Galvanized piping and fittings are prohibited.

2 4.22 Elevator Machine Rooms/Spaces and Hoistways. No pipes conveying gases, vapors or  
3 liquids, that are not specifically used in the operation of the elevator shall be installed in any  
4 hoistway, machine room or machinery space.

5 4.23 Alarms. Alarms such as CO detectors, smoke detectors, CO<sub>2</sub> detectors, or other alarms  
6 required by this code or other codes are subject to inspection by the code official. Alarms shall  
7 be properly maintained and upon request by the code official shall be demonstrated to be in good  
8 working order.

9 ~~((Section 320))~~ 4.24 Boilers Certified as Automatic ~~((320.1 Boilers certified as automatic shall~~  
10 ~~be equipped with controls and limit devices as set forth in Table 320-A, or ASME CSD-1,~~  
11 ~~whichever is more restrictive.))~~ The Seattle Steam Engineer and Boiler Fireman License Law,  
12 Seattle Municipal Code Chapter 6.420, provides for reduced attendance requirements for boilers  
13 that are certified as automatic. Boilers certified as automatic are required to:

14 A. Control and limit devices. Be equipped with controls and limit devices as set forth in Table  
15 4.24 or as certified by the manufacturer if approved by the code official to be adequately  
16 equivalent, and

17 ~~((320.2))~~ B. Feed water. ~~((Boilers certified as automatic shall))~~ Shall not require any manual  
18 operation of the feed water system, and

19 C. Gauges. Shall ~~((shall also))~~ be equipped with the following gauges, as applicable:

- 20 1. Oil temperature and oil suction pressure gauges;
- 21 2. High and low gas pressure gauges; and
- 22 3. Stack temperature gauge.

23 ~~((320.3))~~ D. Operation Manual. ~~((A copy of the approved wiring diagram for a boiler certified as~~  
24 ~~automatic shall be permanently and prominently displayed, under protective covering, in the~~  
25 ~~boiler room, or within the official log book in an approved fashion. If the safety devices are~~  
26 ~~wired or in some fashion digital in nature, a schematic with sufficient detail for a repair or~~  
27 ~~service person to effectively restore the boiler to service will be acceptable. Such diagram shall~~  
28 ~~include the coding of the actual wiring by color or by number to permit a ready check of the~~  
29 ~~system.))~~ The original equipment manufacturer's operating and installation manual, together  
30 with electrical schematics or diagrams that aid in troubleshooting the system and are used to  
31 maintain the boiler to safe operation, shall be available in the boiler room for use by authorized  
32 personnel.

33 ~~((320.4))~~ E. 12.5 MM BTU/H. All boilers certified as automatic of 12,500,000 Btu/h input and  
34 ~~((over))~~ greater shall also comply with the installation requirements of the current edition of  
35 ~~((N.F.P.A.))~~ NFPA 85, ((2004 edition)) Boiler and Combustion Systems Hazards Code.

36 ~~((320.5))~~ F. Solid fuel boilers. The ~~((Director))~~ code official may approve solid-fuel-fired boilers  
37 that ~~((can))~~ meet the safety requirements for automatic gas- or oil-fired boilers.

38 Table 4.24-A, Part 1 and 2 are below.

Table ((320-A)) 4.24-A (Part 1 of 2)

| Boiler Group |          | Fuel Input <sup>1</sup><br>Range in<br>BTU/hr.<br>(inclusive) | Type of<br>Pilot <sup>2</sup>     | Safety Control Timing |                                |                 |   | Assured Fuel<br>Supply Control <sup>4</sup> | Assured Fuel<br>Supply Control <sup>5</sup> |
|--------------|----------|---|-----------------------------------|-----------------------|--------------------------------|-----------------|---|---|---|
|              |          |   |                                   | Trial for<br>Pilot    | Trial for Main Burner<br>Flame |                 | Main Burner<br>Flame Failure <sup>3</sup> |   |   |
|              |          |   |                                   |                       | Direct<br>Electric<br>Ignition | Flame<br>Pilot  |   |   |   |
| A            | Gas      | 0 – 400,000   | Any type                          | 90                    | Not<br>required                | 90              | 90  | Not required                                | Required                                    |
| B            | Gas      | 400,001 –<br>2,500,000  | Any type                          | 15                    | 15                             | 15              | 2 - 4                                     | Not required                                | Required                                    |
| C            | Gas      | 2,500,001 –<br>12,500,000                                     | Interrupted<br>or<br>intermittent | 15                    | 15                             | 15              | 2 - 4                                     | Required                                    | Required                                    |
| D            | Gas      | Over<br>12,500,000  | Interrupted                       | 15                    | 15                             | 15              | 2 - 4                                     | Required                                    | Required                                    |
| E            | Oil      | 0 – 400,000   | Any type                          | Not<br>required       | 90                             | 90              | 90  | Not required                                | Required                                    |
| F            | Oil      | 400,001 -<br>3,000,000  | Interrupted                       | Not<br>required       | 30                             | 30              | 2 - 4                                     | Required                                    | Required                                    |
| G            | Oil      | 3,000,001 –<br>12,500,000                                     | Interrupted                       | Not<br>required       | 15                             | 15              | 2 - 4                                     | Required                                    | Required                                    |
| H            | Oil      | Over<br>12,500,000  | Interrupted                       | 15                    | 15                             | 60              | 2 - 4                                     | Required                                    | Required                                    |
| K            | Electric | All   | Not<br>required                   | Not<br>required       | Not<br>required                | Not<br>required | Not required                              | Not required                                | Not required                                |

Table ((320-A)) 4.24-A (Part 2 of 2)

| Boiler Group | Fuel     | Fuel Input Range in BTU/hr. (inclusive) <sup>1</sup> | Low Fire Start Up Control <sup>6</sup> | Pre-purging Control <sup>7</sup> | Hot Water Temperature and Low Water Limit Controls <sup>8</sup> | Steam Pressure and Low Water Limit Controls <sup>9</sup> | Approved Fuel Shutoff <sup>10</sup> | Control and Limit Device System Design <sup>11</sup> |
|--------------|----------|--|--|----------------------------------|---|--|-------------------------------------|--|
| A            | Gas      | 0 – 400,000  | Not Required                           | Not Required                     | Required  | Required   | Not Required                        | Required   |
| B            | Gas      | 400,001 – 2,500,000                                  | Not Required                           | Not Required                     | Required  | Required   | Not Required                        | Required   |
| C            | Gas      | 2,500,001 – 12,500,000                               | Required                               | Required                         | Required  | Required   | Required                            | Required   |
| D            | Gas      | Over 12,500,000                                      | Required                               | Required                         | Required  | Required   | Required                            | Required   |
| E            | Oil      | 0 – 400,000  | Not Required                           | Not Required                     | Required  | Required   | Not Required                        | Required   |
| F            | Oil      | 400,001 – 3,000,000                                  | Not Required                           | Not Required                     | Required  | Required   | Not Required                        | Required   |
| G            | Oil      | 3,000,001 – 12,500,000                               | Required                               | Required                         | Required  | Required   | Required                            | Required   |
| H            | Oil      | Over 12,500,000                                      | Required                               | Required                         | Required  | Required   | Required                            | Required   |
| K            | Electric | All  | Not Required                           | Not Required                     | Required  | Required   | Not Required                        | Required   |

1 Footnotes for Table ~~((320-A))~~ 4.24.

2 1. Fuel input shall be determined by one of the following:

3 (a) The maximum burner input as shown on the burner nameplate or as otherwise identified  
4 by the manufacturer.

5 (b) The nominal boiler rating, as determined by the ~~((Director))~~ code official, plus 25  
6 percent.

7 (c) A permanently affixed meter to indicate fuel consumption, timed to determine the rate of  
8 fuel input.

9 2. Automatic boilers shall have one flame failure device on each burner which shall prove the  
10 presence of a suitable ignition source at the point where it will reliably ignite the main burner,  
11 except that boiler groups A, B, E, ~~((and))~~ F and G which are equipped with direct electric  
12 ignition shall monitor the main burner, and all boiler groups using interrupted pilots shall  
13 monitor only the main burner after the prescribed limited trial and ignition periods. Continuous  
14 pilots used in boiler groups A and B shall accomplish 100 percent shutoff upon pilot flame  
15 failure. Intermittent pilots may be used in group C for atmospheric burners only, provided the  
16 input per combustion chamber does not exceed 5,000,000 Btu/h and modulating or high-low  
17 firing is not employed.

18 3. Continuous pilots provided on manufacturer assembled boiler-burner units must be  
19 ~~((approved))~~ tested by ~~((a testing))~~ an approved agency complying with nationally recognized  
20 standards and approved by the ~~((Director))~~ code official.

21 4. Boiler groups C and D shall have controls interlocked to accomplish a non-recycling fuel  
22 shutoff upon detecting high or low gas pressure~~((, and boiler))~~. Boiler groups F, G and H using  
23 steam or air for fuel atomization shall have controls interlocked to accomplish a non-recycling  
24 fuel shutoff upon detecting low atomizing steam or air pressure. Boiler groups F, G and H  
25 equipped with a preheated oil system shall have controls interlocked to provide fuel shutoff upon  
26 detecting low oil temperature.

27 5. Automatic boilers shall have controls interlocked to shut off the fuel supply in the event of  
28 draft failure if forced or induced draft fans are used or, in the event of low combustion air flow,  
29 if a gas power burner is used. In boiler groups C, D, G and H failure to prove the air flow  
30 required shall result in a safety shutdown. Where a single motor directly driving both the fan and  
31 the oil pump is used, a separate control is not required.

32 6. Boiler groups C, D, G and H, when firing in excess of 400,000 Btu per combustion chamber,  
33 shall be provided with low fire start of its main burner system to permit smooth light-off. This  
34 will normally be a rate of approximately one third of its maximum firing rate.

35 7. Boiler groups B, C, D, G and H shall not permit pilot or main burner trial for ignition  
36 operation before a purging operation of sufficient duration to ~~((permit))~~ allow a minimum of four  
37 complete air changes through the furnace, including combustion chamber and the boiler passes.  
38 Where this is not readily determinable, five complete air changes of the furnace, including  
39 combustion chamber up to the first pass, ~~((will be))~~ are considered equivalent. An atmospheric  
40 gas burner with no mechanical means of creating air movement or an oil burner which obtains  
41 two-thirds or more of the air required for combustion without mechanical means of creating air  
42 movement shall not require purge by means of four air changes so long as its secondary air

1 openings are not provided with means of closing. If such burners have means of closing  
2 secondary air openings, a time delay (~~((must))~~) shall be provided which puts these closures in a  
3 normally open position for four minutes before ~~((an attempt for))~~ attempting ignition. An  
4 installation with a trapped combustion chamber shall ~~((in every case))~~ always be provided with a  
5 mechanical means of creating air movement for purging. Purge air flow in boiler groups C, D, G  
6 and H shall be proved. Proof of purge air flow may be accomplished by providing:

7 (1) Air pressure and "open damper" interlocks for all dampers in the flow path, or

8 (2) Air flow interlock.

9 8. ~~((See Section 310))~~ Shall comply with Section 4.17 of this code.

10 9. ~~((See Section 310))~~ Shall comply with Section 4.17 of this code.

11 10. Automatic boilers firing gas or using gas pilots shall be equipped with an approved safety  
12 shutoff valve(s) in the main gas burner supply line ~~((and/))~~ or pilot gas burner supply line. The  
13 safety shutoff valve(s) shall be interlocked to the required programming control devices  
14 ~~((required))~~. Boilers in group C having an input per combustion chamber which does not exceed  
15 5,000,000 Btu/h shall have two safety shutoff valves in series or one safety shutoff valve of the  
16 type incorporating a valve seal over travel interlock. Boilers in group C having an input per  
17 combustion chamber exceeding 5,000,000 Btu/h and boilers in group D shall have two safety  
18 shutoff valves in series ~~((, of which))~~ and the downstream valve shall be of the type incorporating  
19 a valve seal over travel interlock. Boilers in groups C and D using gas in excess of one-half  
20 pound per square inch ( $1/2$  lb/in<sup>2</sup>) pressure shall be provided with a permanent and ready means  
21 for making periodic tightness checks of the main fuel safety shutoff valves. Boilers in group D  
22 shall have a normally open electrically operated valve in a vent line between the two safety  
23 shutoff valves. This vent shall be sized in accordance with an approved vent sizing table but shall  
24 not be less than three-quarters ( $3/4$ ) inch pipe size. On oil burners where the safety shutoff valve  
25 will be subjected to pressures in excess of 10 psi, a second safety shutoff valve shall be provided  
26 in series with the first. In boiler group H where a second safety shutoff valve is required, the  
27 upstream valve shall be of the 3-way bypass or recirculating type.

28 11. Control and limit device systems shall be grounded with operating voltage not to exceed 150  
29 volts, except that upon approval by the ~~((Director))~~ code official, existing control equipment to  
30 be reused in an altered boiler control system may use 220-volt single phase with one side  
31 grounded, provided such voltage is used for all controls. Control and limit devices shall interrupt  
32 the ungrounded side of the circuit. A readily accessible means of manually disconnecting the  
33 control circuit shall be provided with controls ~~((sø))~~ arranged so that when they are de-energized  
34 the burner shall be inoperative.

35 ~~((Section 330 Monitored boilers~~

36 ~~Note: The Seattle Steam Engineer and Boiler Fireman License Law, Seattle Municipal Code~~  
37 ~~Chapter 6.420, provides for reduced attendance requirements for boilers that are certified as~~  
38 ~~monitored.))~~

39 4.25 Boilers certified as monitored. Boilers certified as monitored shall comply with the reduced  
40 attendance requirements allowed by the Seattle Steam Engineer and Boiler Fireman License  
41 Law, Seattle Municipal Code Chapter 6.420. The boiler owner or lessee is responsible for  
42 compliance with this Section 4.25.

1 ~~((330.1 Definitions))~~ 4.25.1 Definitions related to monitored boiler systems. For the purposes of  
2 this section, certain terms, phrases, words and their derivatives shall be defined as follows:

3 CENTRAL STATION AGENCY~~((:-A))~~ means a ‘Class A’ Central Station Agency as defined  
4 and approved by the Seattle Fire Department.

5 MONITORING SYSTEM~~((:-An approved))~~ means a protective alarm signaling system used for  
6 surveillance of controls and limit devices required on certain automatic boilers and the system  
7 has approval from a nationally recognized testing agency.

8 ON-SITE DESIGNATED POINT OF CONTACT means person qualified to respond to alarm  
9 signals and to take all necessary action to assure safe shut-down, repair or operation of the  
10 monitored boiler system.

11 PROPRIETARY SYSTEM~~((:-A))~~ means a monitoring system with constant supervision by  
12 competent and experienced personnel in a central supervising station ((at the property protected)  
13 located on the site where the boiler is installed. The system ((is to include)) includes equipment  
14 and ((other)) facilities required to ((permit)) allow the boiler and monitoring system operators to  
15 test and operate the system and, upon receipt of a signal, to take ((such)) required action ((as is  
16 required)).

17 PROTECTIVE SIGNALING SYSTEMS~~((:-Electrically))~~ means electrically operated circuits,  
18 instruments and devices, together with the necessary electrical energy designed to transmit  
19 alarms and trouble signals((- necessary for)) to the monitoring system operators to effectively  
20 ((monitoring)) monitor boilers.

21 ~~((330.2))~~ 4.25.2 Approval of monitoring systems. Monitored boiler status is available only to  
22 boilers certified by the code official as automatic boilers.

23 A. Certification. An installation permit is required to certify a boiler as monitored. The annual  
24 fee for such certification ~~((shall be as))~~ is established in the Permit Fee Subtitle, Seattle  
25 Municipal Code Section 22.900E ((as applicable. Monitored Boiler status is available only to  
26 boilers certified by the Director as Automatic Boilers)).

27 B. Acceptance tests. Upon completion of ~~((a))~~ system installation, a satisfactory test of the entire  
28 installation shall be made in the presence of the ~~((department))~~ city inspector. It shall be the  
29 responsibility of the applicant to demonstrate ~~((in the presence of the department inspector by~~  
30 ~~testing of the apparatus, or such other means as may be appropriate,))~~ the operation and  
31 reliability of the ((subject)) monitoring system during the test of the apparatus. The  
32 ~~((department))~~ city inspector may require additional tests ((as he/she deems)) if deemed  
33 necessary for the safe operation and proper maintenance of the monitoring system and the boiler  
34 plant((s)) served by such system.

35 C. Inspection. An inspection by a ~~((department))~~ city inspector ((is required)) may be conducted  
36 annually for certification renewal.

37 D. Equipment. All monitoring system devices shall be ~~((approved))~~ listed by a nationally  
38 recognized testing agency.

39 ~~((330.3))~~ 4.25.3 Alarm((s)) signals, personnel, and reporting.

40 A. Required alarms. ~~((A monitoring system shall sense low water level and flame failure on all~~  
41 ~~boilers, steam pressure at the upper limit setting on steam boilers or water temperature at the~~

1 ~~upper limit setting on hot water boilers. Upon sensing any of the above conditions, a manually~~  
2 ~~reset relay device shall shut off the fuel supply to the boiler and shall relay an alarm signal to the~~  
3 ~~monitoring system. The monitoring system shall sense existing limit controls and flame failure~~  
4 ~~devices.)) The following alarms are required:~~

5 1. Sense low water level; and

6 2. Flame failure on all boilers;

7 3. Steam pressure at the upper limit setting on steam boilers; or

8 4. Water temperature at the upper limit setting on hot water boilers.

9 B. Monitoring system personnel. The monitoring station shall have sufficient personnel  
10 ~~((constantly))~~ on duty to assure immediate attention to all alarm signals received. ~~((The~~  
11 ~~minimum age of all monitoring station operators shall be eighteen years. Operation and~~  
12 ~~supervision shall be the primary functions of the monitoring station operators and no other~~  
13 ~~interest or activity shall take precedence over the protective service.))~~

14 C. Report availability. Reports of all alarm signals received by the monitoring station shall be  
15 made available ~~((upon request to the Director))~~ when requested by the code official.

16 D. Disposition of alarm signals.

17 1. ~~((Upon receipt of trouble signals or other signals pertaining solely to matters of~~  
18 ~~equipment maintenance of the signaling systems, the monitoring station operating company shall~~  
19 ~~immediately investigate and, if possible, assure that the trouble is remedied at once.))~~ In all cases  
20 where service of the alarm signaling system is interrupted and is not corrected within 12 hours,  
21 the property owner shall be notified ~~((immediately. This notification shall be confirmed by~~  
22 ~~written notice with a copy sent to the Director)).~~

23 2. Upon receipt of an alarm signal, the monitoring station personnel shall notify the on-site  
24 ~~((boiler operating engineer, if any, or the boiler supervisor by telephone or by the quickest~~  
25 ~~method available))~~ designated point of contact as soon as possible.

26 3. ~~((Upon receipt of an alarm signal not caused by routine inspection and maintenance, the~~  
27 ~~designated boiler supervisor shall notify the Director.~~

28 ~~4. Definite instructions))~~ Procedures for ~~((the))~~ handling ~~((of))~~ alarm(s) signals shall be  
29 ~~((posted for the guidance of the operators of the monitoring system))~~ readily available to the on-  
30 site designated point of contact and shall include procedures for notifying the boiler supervisor.

31 4. Upon receipt of an alarm signal not caused by routine inspection and maintenance, the  
32 designated boiler supervisor shall notify the code official.

33 E. Maintenance and repair of monitoring equipment.

34 1. The monitoring station operating company shall have a person available within two-hours  
35 travel who is competent to inspect, maintain and repair the monitoring equipment.

36 2. Maintenance. All monitoring station systems shall be under the supervision of qualified  
37 persons. These persons shall cause proper tests and inspection to be made at prescribed intervals  
38 and shall have general charge of all alterations and additions to the monitoring system under  
39 their supervision or a satisfactory agreement on the maintenance, operation and efficiency of the  
40 system shall be provided.

1 Section 5 –In-service inspection.

2 5.1 Duty to inspect. The code official shall inspect or have inspected all boilers and pressure  
3 vessels operating in the city of Seattle. After satisfactory completion of inspections and upon  
4 receipt of fees as set forth in Seattle Municipal Code, Title 22, Subtitle IX, Permit Fees, the code  
5 official shall issue a Certificate of Inspection. Inspectors conducting in-service inspections must  
6 have current commissions issued by the National Board of Boiler and Pressure Vessel Inspectors.  
7 Inspectors can be either City inspectors or insurance company inspectors.

8 5.2 In-service inspection. In-service inspections are conducted in accordance with the current  
9 edition of the National Board Inspection Code, (NBIC), Part 2. If differences occur between  
10 provisions of this code and referenced codes or standards, the provisions of this code apply. The  
11 code official shall keep a complete record of the type, dimensions, maximum allowable working  
12 pressure, age, condition, location and date of the last recorded internal and external inspections  
13 of all boilers and pressure vessels regulated by this code.

14 Exemptions from in-service inspection. The following boilers, pressure vessels and other  
15 equipment shall not be required to comply with in-service inspection requirements:

16 A. Potable hot water and pool heaters. Listed potable hot water heaters as defined in Section 2,  
17 listed combination hot water heaters, (fired, electric, thermal, solar, and indirect) and listed pool  
18 heaters, not located in Group A, E and I building occupancies, are exempt from in-service  
19 inspection if they do not exceed the following:

20 1. A heat input 200,000 Btu/h or less, or

21 2. A water temperature 210°F or less, or

22 3. A nominal water-containing capacity 120 gallons or less, or

23 4. A pressure 160 pounds per square inch gauge (Psig) or less, and

24 5. Potable hot water heaters that are less than 1 ½ cubic feet (11.25 gallons) in volume with  
25 safety valve setting of 150 psi or less, regardless of occupancy.

26 B. Portable. Portable unfired pressure vessels subject to regular inspection by State of  
27 Washington (RCW 70.79).

28 C. LPG containers. Containers for liquefied petroleum gases regulated by the Seattle Fire Code.

29 D. Specific unfired vessels. Unfired pressure vessels located in Groups B, F, H, M, R, S, and U  
30 occupancies having a volume of 5 cubic feet or less and operated at pressures not exceeding 250  
31 psi.

32 E. Small unfired vessels. Regardless of occupancy, unfired pressure vessels that are less than 1½  
33 cubic feet in volume, (approx. 11.25 gallons), or 6 inches in internal diameter with no limit as to  
34 length or pressure.

35 F. Pressure relief protected. Unfired pressure vessels of any size that are protected by approved  
36 pressure relief devices set to operate at a pressure not exceeding 15 psi or otherwise open to  
37 ambient atmospheric pressure.

38 G. DOT inspected. Any boiler or pressure vessel subject to regular inspection by federal  
39 inspectors or licensed by federal authorities, such as D.O.T.

40 H. Certain electric boilers. Electric boilers that meet all of the following criteria:

- 1 1. Having a vessel volume not exceeding 1 ½ cubic feet; and
- 2 2. Having a maximum allowable working pressure of one hundred (100) psi; and
- 3 3. If constructed after June 10, 1994, the boiler was constructed to American Society of
- 4 Mechanical Engineers Boiler and Pressure Vessel Code standards, or listed or otherwise certified
- 5 by a nationally recognized testing agency or recognized foreign testing laboratory.
- 6 I. Storage tanks. Water storage tanks with no air cushion and no energy or heat source.
- 7 J. State Owned. Boilers and pressure vessels under the direct ownership and operation of the
- 8 State of Washington, and that are inspected in accordance with Washington State Boiler and
- 9 Pressure Vessel rules (RCW 70.79) and in possession of a current Washington State Certificate
- 10 to Operate.
- 11 K. Group R and U occupancies. Steam heating boilers, low-pressure hot-water heating boilers,
- 12 hot-water-supply boilers and pressure vessels in Group R occupancies of less than six units and
- 13 in Group U occupancies.
- 14 5.3 In-service inspection frequency. Inspection frequency shall, at a minimum, be as required by
- 15 this Section 5.3. At the discretion of the inspector and as warranted by equipment conditions, the
- 16 internal, external, or U/T inspection frequency may be increased until the inspector is satisfied
- 17 that conditions are corrected and that the minimum prescribed frequencies of inspection may
- 18 resume.
- 19 A. External Inspections.
- 20 1. Annual. All boilers are inspected externally annually. All required boiler controls and
- 21 safety devices are tested during the external inspection to determine that they are operating
- 22 properly.
- 23 2. Biennial. Unfired pressure vessels are inspected externally biennially.
- 24 3. Potable water heaters and pool heaters. In Group A, E, and I occupancies, potable water
- 25 heaters, combination hot water heaters, (fired, electric, thermal, solar, and indirect), and pool
- 26 heaters shall be inspected externally biennially for safe condition. The safety inspection consists
- 27 of lifting the safety relief try-lever to verify free flow of the safety relief valve and of a visual
- 28 inspection of the exterior of the vessel for leakage or physical damage.
- 29 B. Internal Inspections. Where construction and operating conditions allow, boilers are subject
- 30 to internal inspection as follows:
- 31 1. Annually. High pressure boilers are inspected internally annually.
- 32 2. Biennial.
- 33 a. Low pressure hot water heating boilers not using corrosion inhibitors are inspected
- 34 internally at least once every two years.
- 35 b. Low pressure steam boilers shall be inspected internally at least once every two years.
- 36 c. Unfired pressure vessels, when subject to corrosion and where construction permits, are
- 37 inspected internally at least once every two years. Subject to approval of the inspector, an
- 38 ultrasonic examination of the external side of the pressure vessel may substitute for an internal
- 39 inspection.

1 3. Discretionary. Low pressure hot water heating boilers using corrosion inhibitors, glycol,  
2 or oil are inspected internally at a frequency determined by the inspector. The inspector shall  
3 consider factors including, but not limited to, history of the installation, adequacy of corrosion  
4 inhibitors, and tightness of the system.

5 5.4 Preparation for Inspection.

6 A. Boiler preparation. The owner or user shall prepare a boiler or pressure vessel for internal  
7 inspection as necessary to allow for a meaningful inspection. For boilers, the preparation shall  
8 include the following unless directed otherwise by the boiler inspector:

9 1. Water shall be drained and the boiler shall be thoroughly cleaned.

10 2. Manhole and handhole plates and wash-out plugs and water column connections shall be  
11 removed.

12 3. Furnace and combustion chambers shall be thoroughly cooled and cleaned.

13 4. All grates of internally fired boilers shall be removed.

14 5. Brickwork or refractory shall be removed, if needed to determine the condition of the  
15 boiler headers, furnace, supports or other parts.

16 6. Leakage of steam or hot water into the boiler shall be prevented while it is open for  
17 inspection.

18 7. Low water cutout shall be disassembled as necessary to allow for inspection.

19 8. Compliance with any lock-out or tag-out and confined space entry procedures shall be  
20 followed if required by the owner, operator, OSHA, WDOSH rules and other regulations  
21 applying to the safety of personnel.

22 B. Unprepared. If a boiler or unfired pressure vessel has not been properly prepared for an  
23 internal inspection, the inspector may decline to make the inspection or test. The Certificate of  
24 Inspection will be withheld until the owner or user complies with the inspector's requirements.  
25 At the discretion of the inspector, an additional inspection fee may be charged.

26 5.5 Inspection Results - Corrections Required. The inspector shall notify the owner or authorized  
27 representative of defects and deficiencies. It is the responsibility of the owner to promptly and  
28 properly make the corrections required by the inspector. If such corrections are not made, or if  
29 the operation of the boiler or pressure vessel is deemed unsafe by the inspector, the Certificate of  
30 Inspection for the boiler or pressure vessel may be withheld until the corrections are made.

31 5.6 Inspection by Authorized Insurance Companies. Inspection of boilers and pressure vessels  
32 may be made by employees of an authorized insurance company. Such inspection shall be  
33 conducted in accordance with the requirements of this code by persons holding an active  
34 commission from the National Board of Boiler and Pressure Vessel Inspectors.

35 A. Inspector list. Authorized Insurance companies must annually notify the code official, in  
36 writing, of those inspectors that will be conducting inspections within the City of Seattle.  
37 Notification shall include the National Board Commission number and expiration date of the  
38 inspectors' current National Board Commission. Notification in writing may be on company  
39 letter head or by email. Authorization is subject to the approval of the code official.

1 B. Reports. Authorized insurance inspectors shall make their reports to the code official on forms  
2 or as prescribed by the Department.

3 C. Suspension of coverage. Authorized insurance inspectors shall immediately notify the code  
4 official of any suspension of insurance coverage.

5 D. New or discontinued coverage. Authorized insurance companies providing insurance  
6 coverage of equipment subject to inspection by the code official shall notify the code official  
7 within 30 days of any new insurance in effect or any discontinuance of insurance coverage of  
8 that equipment.

9 5.7 Certificate of Inspection. It is unlawful to operate any boiler or pressure vessel without first  
10 obtaining a valid Certificate of Inspection from the code official. Certificates of Inspection shall  
11 be displayed in a conspicuous place adjacent to the boiler or vessel. The Certificate of Inspection  
12 shall not be issued until the equipment passes inspection and is approved by the code official. A  
13 grace period of no longer than 60 days past the expiration date of a Certificate of Inspection may  
14 be granted.

15 5.8 Removal from service due to dangerous conditions. If the operation of a boiler or pressure  
16 vessel is deemed by the code official to constitute an immediate danger, the pressure on such  
17 boiler or pressure vessel shall be relieved and the boiler or pressure vessel shall be secured at the  
18 owner's expense. The unsafe boiler or pressure vessel shall be declared a nuisance and shall not  
19 be operated without the approval of the code official.

20 5.9 Operation of Boilers and Pressure Vessels.

21 A. Operation. Boilers and pressure vessels shall be operated and maintained by an appropriately  
22 licensed boiler operator as required by the Seattle Steam Engineer and Boiler Fireman License  
23 Law, Seattle Municipal Code Chapter 6.420.

24 B. Maintenance. Boilers and pressure vessels shall be operated and maintained in a safe  
25 condition as required by the code official and in accordance with this code and nationally  
26 recognized standards. All safety devices, controls, and appurtenances shall be maintained and  
27 cared for throughout the life of the boiler or pressure vessel. When the devices are deemed to be  
28 non-functioning, they shall be immediately replaced or repaired and the vessel made whole and  
29 safe to operate.

30 5.10 Accidents are required to be reported. In case of an explosion or other event rendering a  
31 boiler or pressure vessel unsafe to return to operation, notice shall be given immediately to the  
32 code official. No boiler or unfired pressure vessel nor any parts shall be removed or disturbed  
33 before an inspection is made by a city inspector, except as necessary to prevent injury. The code  
34 official shall conduct an investigation to determine the cause of the accident and to recommend  
35 actions to prevent future occurrences.

36 Section 6 – Repairs and Alterations

37 6.1 Repairs and alterations of boilers and pressure vessel systems.

38 A. Pre-approval. Repairs and alterations to in-service boilers and pressure vessels must be  
39 approved by the code official prior to proceeding with the repair or alteration. An installation  
40 permit may be required before proceeding with the repair or alteration if required by Section 4 of  
41 this code.

1 B. Code compliance. Repairs or alterations to pressure-retaining portions of the boiler or  
2 pressure vessel shall comply with the current edition of this code and the National Board  
3 Inspection Code (NBIC) Part 3, Repairs and Alterations. If there are conflicts between the two  
4 codes, this code applies.

5 C. Significant repair. If the repair or alteration is outside the scope of the NBIC, Part 3, then the  
6 boiler or pressure vessel shall be repaired to the satisfaction of the in-service inspector. The in-  
7 service inspector shall make a written report to the code official describing the repair or  
8 alteration, how it was completed, and whether it is satisfactory. If the code official determines  
9 the repair is satisfactory, a Certificate of Inspection is issued.

10 D. Replacement. Replacement of any boiler or pressure vessel shall comply with the  
11 requirements of this code for the type of boiler or pressure vessel being installed. The code  
12 official may agree to a variance that is equivalently safe when existing circumstances on site  
13 justify a variance.

14 E. Notification. The in-service inspector shall be notified of the nature of the repair or alteration  
15 and kept apprised of the progress until the inspector completes the required documentation. Once  
16 completed, the code official shall be notified that the boiler or pressure vessel is repaired, altered  
17 or otherwise made whole again, and is ready to return to service.

18 F. Approval. A copy of all required documentation shall be sent to the code official before the  
19 boiler or pressure vessel system is returned to service.

## 20 Section 7 – Retroactive Requirements

21 7.1 Retroactive Requirements. The following requirements apply to all boilers and pressure  
22 vessels whether new or existing.

23 a. Every hot-water boiler, other than manually fired, shall be equipped with at least two  
24 temperature controls wired in series.

25 b. Every steam heating boiler, other than manually fired, shall be equipped with at least two  
26 pressure controls and a low-water cutoff.

27 c. Each temperature or pressure control shall have an independent sensing element.

28 d. Every mechanically fired boiler that requires manual ignition of the burner shall have a  
29 manual reset device to prevent automatic recycling of the ignition in the event of any shut down.

30 ~~((330.4 Maintenance and Repair.~~

31 ~~A. The monitoring station operating company shall have a person available within two hours~~  
32 ~~travel who is competent to inspect, maintain and repair the monitoring system.~~

33 ~~B. Maintenance. All monitoring station systems shall be under the supervision of qualified~~  
34 ~~persons. These persons shall cause proper tests and inspection to be made at prescribed intervals~~  
35 ~~and shall have general charge of all alterations and additions to the system under their~~  
36 ~~supervision or a satisfactory agreement on the maintenance, operation and efficiency of the~~  
37 ~~system shall be provided.~~

1 ~~Section 340—Expansion Tanks~~

2 ~~All hot water heating systems shall be provided with an air expansion tank securely fastened to~~  
3 ~~the structure. Supports shall be adequate to carry twice the weight of the tank filled with water~~  
4 ~~without placing any strain on connecting piping. Expansion tanks exempted for size in Section~~  
5 ~~100 of this code shall conform to the requirements of ASME Section IV, HG-709.~~

6 ~~Section 350—Blow-off Tanks~~

7 ~~The discharge from boilers shall not exceed a temperature of 140oF before entering the drainage~~  
8 ~~system. Some means of tempering and cooling the discharge prior to entering the drainage~~  
9 ~~system shall be provided. Proper care shall be made to prevent discharge of liquids or chemicals~~  
10 ~~that could damage drainage systems. (Reference Uniform Plumbing Code, Section 810).~~

11 ~~A. Blow-off tanks, when used, shall be designed in accordance with the National Board of~~  
12 ~~Boilers and Pressure Vessels Blow-off Equipment Standard NB-27.~~

13 ~~B. For power boilers, blow-off tanks shall be used to receive effluent from the bottom blow-off~~  
14 ~~and low water cutoff drains unless an alternate means of safe discharge can be provided. Any~~  
15 ~~alternate method shall be approved by the Director prior to installation.~~

16 ~~C. Blow-off tanks, being open vessels, are not required to have valid inspection certificates. They~~  
17 ~~are, however, included in the inspection of the boiler or boilers that they serve.~~

18 ~~Section 360—Clearance Requirements~~

19 ~~When boilers are installed or replaced, clearance shall be provided to allow access for inspection,~~  
20 ~~maintenance and repair. Passageways around all sides of boilers shall have an unobstructed~~  
21 ~~width of not less than 18 inches. Clearance for repair and cleaning may be provided through a~~  
22 ~~door or access panel into another area, provided the opening is of sufficient size.~~

23 ~~Exception: Subject to the approval of the Director, boilers and pressure vessels may be~~  
24 ~~installed with a side clearance of less than 18 inches, provided that the lesser clearance does~~  
25 ~~not inhibit inspection, maintenance, and repair or violate the terms of the listing or the~~  
26 ~~manufacturer's installation instructions.~~

27 ~~A. Power boilers having a steam generating capacity in excess of 5000 pounds per hour or~~  
28 ~~having a heating surface in excess of 1000 square feet or input in excess of 5,000,000 Btu/h shall~~  
29 ~~have a minimum clearance of 7 feet from the top of the boiler to the ceiling.~~

30 ~~B. Steam heating boilers and hot water heating boilers which exceed one of the following~~  
31 ~~limits: 5,000,000 Btu/h input; 5000 pounds steam per hour capacity or 1000 square foot heating~~  
32 ~~surface; and power boilers which do not exceed one of the following limits: 5,000,000 Btu/h~~  
33 ~~input; 5000 pound steam per hour capacity or 1000 square foot heating surface; and all boilers~~  
34 ~~with manholes on top of the boiler, except those described in paragraphs A and C shall have a~~  
35 ~~minimum clearance of 3 feet from the top of the boiler to the ceiling.~~

36 ~~C. Package boilers, steam heating boilers and hot water heating boilers with no manhole on top~~  
37 ~~of shell and not exceeding one of the above limits shall have a minimum clearance of 2 feet from~~  
38 ~~the ceiling.~~

39 ~~D. Adequate clearance for access and to permit entry shall be provided for pressure vessels.~~  
40 ~~Pressure vessels equipped with manhole openings shall have a minimum of five feet clearance~~

1 ~~from any obstruction. All other inspection openings shall be at least 18 inches from any~~  
2 ~~obstruction.~~

3 ~~Section 370—Underground Installations~~

4 ~~Where necessary to install a pressure vessel underground, it shall be enclosed in a concrete or~~  
5 ~~masonry pit. If the pit is to be covered, it shall be equipped with a removable cover so that~~  
6 ~~inspection of the entire shell and heads of the vessel can be made. Clearance requirements shall~~  
7 ~~be in accordance with Section 360 of this code.~~

8 ~~Section 380—Boiler Rooms / Enclosures~~

9 ~~Boiler rooms shall comply with Seattle Mechanical Code and Seattle Fire Code requirements for~~  
10 ~~machinery rooms.~~

11 ~~380.1 Mounting.~~

12 ~~A. All equipment shall be set or mounted on a level base capable of supporting and distributing~~  
13 ~~the weight contained thereon.~~

14 ~~B. All boilers, tanks and equipment shall be securely anchored to the structure. This requirement~~  
15 ~~does not prohibit the use of flexible mounts for vibration isolation or mounting devices that~~  
16 ~~allow for thermal expansion.~~

17 ~~C. Equipment requiring vibration isolation shall be installed as designed by a registered engineer~~  
18 ~~to the satisfaction of the Director.~~

19 ~~380.2 Floors.~~

20 ~~Boilers shall be mounted on floors of non-combustible construction unless listed for mounting on~~  
21 ~~combustible flooring.~~

22 ~~380.3 Drainage.~~

23 ~~For heating or hot water supply boiler applications, the boiler room shall be equipped with a~~  
24 ~~floor drain or other means suitable for disposing of the accumulation of liquid wastes incident to~~  
25 ~~cleaning, recharging and routine maintenance.~~

26 ~~380.4 Installation in Garages and Warehouses.~~

27 ~~A. Boilers and pressure vessels installed in garages, warehouses or other areas where they may~~  
28 ~~be subjected to mechanical damage shall be suitably guarded against such damage by being~~  
29 ~~installed behind protective barriers or by being elevated or located out of the normal path of~~  
30 ~~vehicles.~~

31 ~~B. Boilers located in a garage and which have an ignition source shall be installed with sources~~  
32 ~~of ignition at least 18 inches above the floor level. See also Seattle Mechanical Code Section~~  
33 ~~304.3.~~

34 ~~Exception: Installations within a garage enclosed in a separate approved compartment~~  
35 ~~having access only from outside of the garage provided the required combustion air is taken~~  
36 ~~from and discharged to the exterior of the garage.~~

37 ~~380.5 Platforms Around Boilers and Pressure Vessels.~~

1            Platforms shall be provided allowing safe access to each boiler or pressure vessel when  
2            the boiler controls, valves, manholes, or casing openings are over ten feet above the floor,  
3            including boilers and pressure vessels mounted in false ceilings.

#### 4    ~~Section 390 – Fuel Piping~~

5    ~~A. Shutoff Valves. An approved manual shutoff valve shall be installed upstream of all control~~  
6    ~~devices on the main burner of a gas-fired boiler. The takeoff point for the gas supply to the pilot~~  
7    ~~shall be upstream of the gas shutoff valve of the main burner and shall be valved separately. A~~  
8    ~~union or other approved means of disconnect shall be provided immediately downstream of these~~  
9    ~~shutoff valves.~~

10 ~~B. Gas Pressure Regulators. An approved gas pressure regulator shall be installed on gas-fired~~  
11 ~~boilers where the gas supply pressure is higher than that at which the main burner is designed to~~  
12 ~~operate. A separate approved gas pressure regulator shall be installed to regulate the gas pressure~~  
13 ~~to the pilot or pilots. A separate regulator shall not be required for the pilot or pilots on~~  
14 ~~manufacturer-assembled boiler burner units which have been approved by the Director and on~~  
15 ~~gas-fired boilers in Group R Occupancies of less than six units and in Group U Occupancies.~~

16 ~~C. Fuel piping installation shall conform to the provisions of the Seattle Fuel Gas Code.~~

#### 17 ~~Section 400 – Steam and Hydronic Piping~~

18 ~~400.1 General. Steam and hydronic piping systems which are part of a boiler or heating system~~  
19 ~~shall conform to the requirements of the International Mechanical Code Chapter 12, and the~~  
20 ~~codes listed in Section 170 of this code. When piping falls outside the scope of the applicable~~  
21 ~~sections of the above codes, a standard approved by the Director may be used.~~

#### 22 ~~400.2 Materials and Construction.~~

23 ~~A. All piping, tubing, valves, joints, fittings, devices and materials shall be free of defects and~~  
24 ~~comply with nationally recognized standards approved by the Director.~~

25 ~~B. Galvanized piping and fittings are prohibited.~~

#### 26 ~~Section 410 – Pressure Reducing Valves~~

27 ~~A. Where pressure reducing valves are used, one or more relief or safety valves and pressure~~  
28 ~~gauges shall be provided on the low pressure side of the reducing valve. The relief or safety~~  
29 ~~valves shall be located adjoining to or as close as possible to the reducing valve. Proper~~  
30 ~~protection shall be provided to prevent injury or damage caused by the escaping steam from the~~  
31 ~~discharge of relief or safety valves if vented to the atmosphere. The combined discharge capacity~~  
32 ~~of the relief valves shall be such that the pressure rating of the lower pressure piping or~~  
33 ~~equipment shall not be exceeded in case the reducing valve sticks open.~~

34 ~~B. The use of a hand-controlled bypass around a reducing valves is permissible. The capacity of~~  
35 ~~the bypass shall not exceed the capacity of the reducing valve. Unless all the equipment~~  
36 ~~downstream of the reducing station meets the requirements of the high pressure system, the low~~  
37 ~~pressure side shall be protected by one or more safety valves having adequate capacity.~~

#### 38 ~~Section 420 – Elevator Machine Rooms / Spaces and Hoistways~~

39 ~~Pipes conveying gases, vapors or liquids which are not used in connection with the operation of~~  
40 ~~the elevator shall not be installed in any hoistway, machine room or machinery space.))~~



