Ordinance No. 121865

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Council Bill No. 115305

An ordinance relating to the Seattle Boiler and Pressure Vessel Code, Seattle Municipal Code, Chapter 22.450, amending Section 22.450.010 of the Seattle Municipal Code, and the Seattle Boiler and Pressure Vessel Code regulations affecting the installation, operation and maintenance of boilers and pressure vessels.

CF No. _____

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The City of Seattle - Legislative Department

Council Bill/Ordinance sponsored by: Peter Steinbrueck

Councilmember

Committee Action:

1-0 TR

7-18-05 Passed 8-0

(Excused: Della)

This file is complete and ready for presentation to Full Council. Committee: _____ (initial/date)

Law Department

Law Dept. Review	OMP Review	City Clerk Review	Electronic Copy Loaded	Indexed
		✓	✓	

Maureen Traxler/MT
boiler code ordinance
May 5, 2005
version #1

ORDINANCE 121865

AN ORDINANCE relating to the Seattle Boiler and Pressure Vessel Code, Seattle Municipal Code, Chapter 22.450, amending Section 22.450.010 of the Seattle Municipal Code, and the Seattle Boiler and Pressure Vessel Code regulations affecting the installation, operation and maintenance of boilers and pressure vessels.

BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:

Section 1. Section 22.450.010 of the Seattle Municipal Code is amended as follows:

SMC 22.450.010 Adoption of Seattle Boiler and Pressure Vessel Code.

The Seattle Boiler and Pressure Vessel Code is hereby adopted and by this reference made a part of this subtitle. A copy of the Seattle Boiler and Pressure Vessel Code, with ((~~April 1999~~)) amendments, is kept on file at the Department of Planning and Development.

Section 2. Section 30 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 30 — Powers and Duties of the Director ((~~of the Department of Design, Construction and Land Use~~))

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

30.2 Deputies. ((~~The Director may appoint such officers and inspectors and other employees as shall be authorized from time to time.~~)) The Director may ((~~deputize~~)) <u>authorize</u>

such qualified inspectors or employees as may be necessary to carry out ((~~its~~)) the functions specified in this Code.

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

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

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

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

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

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

30.8 Liability. Nothing contained in this code is intended to be nor shall be construed to create or form the basis for any liability on the part of the City, or its officers, employees or agents, for any injury or damage resulting from the failure of equipment to conform to the provisions of this code, or by reason or in consequence of any inspection, notice, order,

certificate, permission or approval authorized or issued or done in connection with the implementation or enforcement of this code, or by reason of any action or inaction on the part of the City related in any manner to the enforcement of this code by its officers, employees or agents.

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

30.9 Cooperation of Other Officials and Officers. The Director may request, and shall receive, so far as is required in the discharge of the Director's duties, the assistance and cooperation of other officials of the City of Seattle.

Section 3. Subsection 90.1 of the Seattle Boiler Code and Pressure Vessel is amended as follows:

Section 90 — Violations and Penalties

90.1 Violations. It ((~~shall be~~)) is a violation of this code for any person, firm or corporation to install, erect, construct, enlarge, alter, repair, replace, remodel, move, improve, remove, convert or demolish, equip, occupy, use or maintain any boiler or pressure vessel system or equipment or cause or permit the same to be done in the City, contrary to or in violation of any of the provisions of this code.

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

It is a violation of this code to have charge of, or operate or permit anyone to have charge of, or operate, any boiler or steam engine regulated by this Code without a license to do so issued by the Director under SMC Chapter 6.420.

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Section 4. Section 100 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 100 — Exemptions from this Code

The following boilers and pressure vessels and other equipment ((~~described~~)) shall not be required to comply with this code:

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

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

A water temperature of 210°F, or

A nominal water-containing capacity of 120 gallons, or

A pressure of 160 pounds per square inch.

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

C. Portable unfired pressure vessels subject to regular inspection by State of Washington inspectors, (RCW 70.79). ((~~and I.C.C./D.O.T. containers.~~))

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

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

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

Exceptions:

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

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

((~~E~~)) G. Unfired pressure vessels and potable hot water heaters ((~~located in Group A, E, and I occupancies~~)) when they are:

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

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

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

((~~F~~)) H Unfired pressure vessels of any size((~~, other than those containing steam,~~)) that are protected by approved pressure relief devices set to operate at a pressure not exceeding 15 psi.

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

((~~G~~)) I. Any boiler or pressure vessel subject to regular inspection by federal inspectors or licensed by federal authorities.

((~~H Combination water heaters listed for both potable water supply and space heating listed under ANSI Z21.10.3, "Gas Water Heaters", 1988 Addenda or later, that are used for both potable water and space heating.~~))

((~~I~~)) J. Electric boilers that meet all of the following criteria:

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

2. Having a maximum allowable working pressure of ((~~eighty (80)~~)) one hundred, (100) psi; and

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

((~~J~~)) K. Water storage tanks with no air cushion and no energy or heat source.

Section 5. Subsection 120.4 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 120 — Application to Existing Boiler and Pressure Vessel Systems

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120.4 Historic Buildings and Structures. The Director may modify the specific requirements of this code as it applies to buildings and structures designated as landmarks of historical or cultural importance and require in lieu thereof alternate requirements which in the opinion of the Director will result in a reasonable degree of safety to the public and the occupants of those buildings.

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

Section 6. Section 150 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 150 — Tests

Whenever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternate materials or methods, the Director may require tests as evidence of compliance to be made at no expense to the City.

Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the Director shall specify the required testing or examination methods and procedures.

Tests shall be performed by an ((~~approved~~)) agency approved by the Director. Reports of tests or examination shall be retained by the Director for the period required for retention of public records.

Section 7. Section 160 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 160 — Definitions

Certain words and terms used in this code, unless clearly inconsistent with their context, shall have the meanings given below. When a definition is not found below, the definitions of the American Society of Mechanical Engineers' CSD-1-1998, Controls and Safety Devices for Automatically Fired Boilers (CSD-1, see Section 170) shall be used. When a definition is found here and in CSD-1, the definition given in this code shall govern.

"A" OCCUPANCIES are places of public assembly. Details can be found in International Building Code Section 303.1.

ACCESSIBLE is having access to but which first may require the removal of an access panel, door or similar obstruction covering the item described.

ACCESSIBLE, READILY, is capable of being reached safely and quickly for operation, repair or inspection without requiring those to whom ready access is requisite to climb over or remove obstacles, or to resort to the use of portable access equipment.

APPLIANCE is a device which utilizes fuel or other forms of energy to produce light, heat, power, refrigeration or air conditioning. This definition ((~~also shall~~)) includes ((a)) vented decorative appliances.

APPROVED((~~, as to materials, equipment and method of construction,~~)) is approval by the Director ((~~as the result of investigation and tests by the Director, or by reason of accepted principles or tests by national authorities, technical or scientific organizations~~)).

APPROVED AGENCY is an established and recognized agency regularly engaged in conducting tests, examinations or furnishing inspection services, when such agency has been approved by the Director.

((~~**ASSEMBLY BUILDING** is a building or a portion of a building used for the gathering together of 50 or more persons for such purposes as deliberation, education, instruction, worship, entertainment, amusement, drinking or dining or awaiting transportation.~~))

"B" OCCUPANCIES are business uses, such as offices. Details can be found in International Building Code Section 304.1.

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

BOILER ROOM is any room ((~~containing~~)) primarily used to house a boiler.

BOILER, CERTIFIED AS AUTOMATIC is either a boiler installed prior to the adoption of CSD-1 which complies with Section 320 and Table 320-A of this code and for which an automatic certification installation permit has been finalized, or any other boiler installed after the adoption of CSD-1 for which an automatic certification permit has been finalized which is used to modify the licensed attendance requirements for specific boiler(s). (See "Steam Engineer and Boiler Fireman License Law", Seattle Municipal Code Chapter 6.420.)

BOILER, CERTIFIED AS MONITORED is a boiler which complies with the provisions of Section 320 and Section 330 of this Code which is used to modify the licensed attendance requirements for specific boiler(s). (See "Steam Engineer and Boiler Fireman License Law", Seattle Municipal Code Chapter 6.420.)

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

BOILER, HOT-WATER SUPPLY is a boiler exceeding any of the limitations of Section 100 paragraph A, but not exceeding a pressure of 160 psi (1100 kPa), or a temperature of 250°F (121°C), that provides hot water to be used externally to itself.

BOILER, LOW–PRESSURE HOT–WATER–HEATING is a boiler from which hot water is circulated for heating purposes at pressures not exceeding 160 pounds per square inch (1100 kPa) and at temperatures not exceeding 250°F. (121°C), then returned to the boiler.

BOILER, LOW–PRESSURE STEAM–HEATING is a boiler furnishing steam at pressures not exceeding 15 pounds per square inch (103 kPa).

BOILER, NON CODE is a boiler not constructed in accordance with the codes listed in Section 170((~~.1~~)) of this code.

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

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

BOILER, POWER is a boiler in which steam or vapor is generated at pressures exceeding 15 psi.

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

BOILER, USED shall mean any boiler that is to be installed in Seattle that has been in any previous service.

BUILDING CODE is the Seattle Building Code.

BURNER is a device to convey fuel and air/steam into the combustion chamber of a boiler and cause and maintain stable combustion.

CHIMNEY is a ((~~vertical shaft enclosing one or more flues for conveying flue gases to the outside atmosphere.~~)) primarily vertical structure containing one or more flues, for the

purpose of carrying gaseous products of combustion and air from a fuel-burning appliance to the outside atmosphere.

~~((**Factory-built Chimney** is a listed chimney.~~

~~**Masonry Chimney** is a chimney of solid masonry units, bricks, stones, listed masonry units or reinforced concrete, lined with suitable flue liners.~~

~~**Metal Chimney** is a chimney constructed of metal with a minimum thickness not less than 0.127 inch (No. 10 manufacturer's standard gage) (3.2 mm) steel sheet.~~

~~**CHIMNEY CLASSIFICATIONS:**~~

~~**Chimney, High-heat Appliance-type,** is a factory-built, masonry or metal chimney suitable for removing the products of combustion from fuel-burning high-heat appliances producing combustion gases exceeding 2,000°F. (1093°C.) measured at the appliance flue outlet.~~

~~**Chimney, Low-heat Appliance-type,** is a factory-built, masonry or metal chimney suitable for removing the products of combustion from fuel-burning low-heat appliances producing combustion gases not exceeding 1,000°F. (538°C.) under normal operating conditions but capable of producing combustion gases of 1,400°F. (759°C.) during intermittent forced firing for periods up to one hour. All temperatures are measured at the appliance flue outlet.~~

~~**Chimney, Medium-heat Appliance-type,** is a factory-built, masonry or metal chimney suitable for removing the products of combustion from fuel-burning medium-heat~~

~~appliances producing combustion gases not exceeding 2,000°F. (1093°C.) measured at the appliance flue outlet.~~

~~**Chimney, Residential Appliance type,** is a factory built or masonry chimney suitable for removing products of combustion from residential type appliances producing combustion gases not exceeding 1,000°F. (538°C.), measured at the appliance flue outlet. Factory built Type H.T. chimneys have high temperature thermal shock resistance.~~

~~**CHIMNEY CONNECTOR** is the pipe which connects a fuel burning appliance to a chimney.~~))

COMBUSTION AIR is ((~~the total amount of air provided to the space which contains fuel burning equipment; it includes air for fuel combustion, for draft hood dilution and for ventilation of the equipment enclosure~~)) air necessary for complete combustion of a fuel, including theoretical air and excess air.

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

((~~**DEPARTMENT** is the Department of Design, Construction and Land Use or a representative of the Director.~~))

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

DIRECTOR is the Director of the Department of ((~~Design, Construction and Land Use,~~)) Planning and Development and the Director's authorized representatives.

DRAFT HOOD is a nonadjustable device built into an appliance or made a part of the vent connector from an appliance, which is designed to:

1. ((~~Assure~~)) Provide for the ready escape of the flue gases in the event of no draft, back draft or stoppage beyond the draft hood((~~.~~)) ;

2. Prevent a back draft from entering the appliance((~~.~~)) ; and

3. Neutralize the effect of stack action of the chimney or gas vent upon the operation of the appliance.

DUCT is a tube or conduit for transmission of air. This definition shall not include((~~:~~

~~1. A vent, a vent connector or a chimney connector.~~

~~2. A tube or conduit wherein the pressure of the air exceeds 1 pound per square inch (6.9 Pa).~~

~~3. T~~))the air passages of listed self-contained systems.

"E" OCCUPANCIES are educational facilities. Details can be found in International Building Code Section 305.

ELECTRICAL CODE is the Seattle Electrical Code.

"F" OCCUPANCIES are factory and industrial uses. Details can be found in International Building Code Section 306.

FIRE CODE is the Seattle Fire Code.

FUEL TRAIN is a series of valves, regulators, and controls, between the burner and the source of fuel, that regulates and controls the flow of fuel to the burner.

"H" OCCUPANCIES are high hazard uses. Details can be found in International Building Code Section 307.

"I" OCCUPANCIES are medical facilities and institutional facilities. Details can be found in International Building Code Section 308.

INSPECTOR, depending on context, is any of the inspectors types defined by this code, as appropriate.

INSPECTOR, CHIEF is the chief ((~~boiler~~)) pressure systems inspector ((~~of~~)) appointed by the Director.

INSPECTOR, CITY ((~~DEPARTMENT~~)) is an inspector employed by the City of Seattle ((~~Department of Design, Construction and Land Use.~~))

INSPECTOR, INSURANCE is an inspector employed by an ((~~Insuring~~)) Authorized Insurance Company as ((~~described in Section 230.5 of~~)) defined in this code.

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

JOINT, BRAZED, is a joint obtained by joining of metal parts with alloys which melt at temperatures higher than ((~~800~~)) 1000°F. (((~~427~~)) 538°C.) but lower than the melting temperature of the parts being joined.

JOINT, SOLDERED is a gas-tight joint obtained by the joining of metal parts with metallic mixtures ((~~or~~)) of alloys which melt at a temperature below ((~~800~~)) 1000°F. (((~~427~~)) 538°C.) and above 400°F. (204°C.).

LETHAL SUBSTANCES are poisonous gases or liquids of such a nature that a very small amount is dangerous to life when inhaled or absorbed through the skin or membranes. It is the responsibility of the user or his designated agent to determine and declare if contents are lethal substances.

LISTED ((~~and **LISTING are terms referring to equipment or materials included in a list published by an approved testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of current productions of listing equipment or materials and which listing states that the material or equipment complies with approved nationally recognized codes, standards or tests and has been tested or evaluated and found suitable for use in a specific manner.~~)) is equipment, appliances or materials included in a list published by a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of production of listed equipment, appliances or materials, and whose listing states either that the equipment, appliances or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner. Not all testing laboratories, inspection agencies and other organizations concerned with product evaluation use the same means for identifying listed equipment, appliances or materials. Some do not recognize equipment, appliances or materials as

listed unless they are also labeled. The authority having jurisdiction shall utilize the system employed by the listing organization to identify a listed product.

LICENSED OPERATOR is a person licensed to operate boilers in accordance with the Seattle Steam Engineer and Boiler Fireman License Law, SMC 6.230.

"M" OCCUPANCIES are retail and wholesale facilities. Details can be found in International Building Code Section 309.

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

NONCOMBUSTIBLE MATERIALS((~~, as applied to building construction material, is a material which, in the form in which it is used, is either one of the following:~~

~~1. Material of which no part will ignite and burn when subjected to fire. Any material conforming to U.B.C. Standard 2-1 shall be considered noncombustible within the meaning of this section.~~

~~2. Material having a structural base of noncombustible material as defined in Item 1 above, with a surfacing material not exceeding 1/8 inch (3.2 mm) thick which has a flame-spread index not higher than 50.~~

~~"Noncombustible" does not apply to surface finish materials. Material required to be noncombustible for reduced clearances to flues, heating appliances or other sources of high temperature shall refer to material conforming to Item 1. No material shall be classed as~~

~~noncombustible which is subject to increase in combustibility or flame spread index beyond the limits herein established, through the effects of age, moisture or other atmospheric condition.~~

~~Flame spread index as used herein refers to results obtained according to tests conducted as specified in U.B.C. Standard 8-1.~~)) are materials that, when tested in accordance with ASTM E 136, have at least three of four specimens tested meeting all of the following criteria:

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

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

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

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

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

PILOT, INTERMITTENT is a pilot that is automatically lighted each time there is a call for heat. It burns during the entire period the main burner is firing.

PILOT, INTERRUPTED is a pilot that is automatically lighted each time there is a call for heat. The pilot fuel is cut off automatically at the end of the main burner flame-establishing period.

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

PRESSURE VESSEL is a closed unfired container under internal pressure.

PRESSURE VESSEL, NON CODE, is a pressure vessel not constructed in accordance with ((~~the requirements of~~)) the codes listed in Section 170((~~.1~~)) of this code.

PRESSURE VESSEL, USED shall mean any pressure vessel that is to be installed in Seattle that has been in any previous service.

PURGE ((~~is an acceptable method of scavenging the combustion chamber, boiler passes and breeching to remove all combustible gases~~)) is to clear of air, water or other foreign substances.

"R" OCCUPANCIES are residential facilities. Details can be found in International Building Code Section 310.

"S" **OCCUPANCIES** are storage facilities. Details can be found in International Building Code Section 311.

"U" **OCCUPANCIES** are accessory utility facilities such as private garages and sheds. Details can be found in International Building Code Section 312.

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

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

((~~**Type B Gas Vent** is a factory-made gas vent listed by a nationally recognized testing agency for venting listed or approved appliances equipped to burn only gas.~~

~~**Type BW Gas Vent** is a factory-made gas vent listed by a nationally recognized testing agency for venting listed or approved gas-fired vented wall furnaces.~~

~~**Type L** is a venting system consisting of listed vent piping and fittings for use with oil-burning appliances listed for use with Type L or with listed gas appliances.~~))

VENT CONNECTOR((~~, **GAS,** is that portion of a gas venting system which connects a listed gas appliance to a gas vent and is installed within the space or area in which the appliance is located~~)) is the pipe that connects an approved fuel-fired appliance to a vent.

((~~**VENTING COLLAR** is the outlet opening of an appliance provided for connection of the vent system.~~

~~**VENTING SYSTEM** is the vent or chimney and its connectors assembled to form a continuous open passageway from an appliance to the outside atmosphere for the purpose of removing products of combustion. This definition also shall include a venting assembly which is an integral part of an appliance.~~

~~**VENTING SYSTEM—GRAVITY TYPE** is a system which depends entirely on the heat from the fuel being used to provide the energy required to vent an appliance.~~

~~**VENTING SYSTEM—POWER TYPE** is a system which depends on a mechanical device to provide a positive draft within the venting system.~~))

Section 8. Section 170 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 170 — Construction and Installation Code Requirements

170.1 The construction of boilers and pressure vessels and the installation thereof shall conform to minimum requirements for safety from structural and mechanical failure and excessive pressures. When any conflict exists between referenced codes in this section and this code, the requirements of this code shall prevail. ((~~Compliance with the applicable section of the~~

~~American Society of Mechanical Engineers' (A.S.M.E.) Boiler and Pressure Vessel Code and the American National Standards Institute (A.N.S.I.) B31.1.0 Power Piping Code, together with addenda thereto is required.~~))

170.((~~1.1~~)) 2 Boilers and pressure vessels installed in the city of Seattle shall comply with Sections I, III, IV, VIII, X, and PVHO-1 of the American Society of Mechanical Engineers' (A.S.M.E.) Boiler and Pressure Vessel Code and the American National Standards Institute (A.N.S.I.) B31.1.0 Power Piping Code, together with addenda thereto. Boilers and pressure vessels shall comply with the edition of the code in effect at the time the equipment was manufactured. Where this code calls for construction in accordance with any Section of the ((~~American Society of Mechanical Engineers' (~~)) A.S.M.E.((~~)~~)) Boiler and Pressure Vessel Code, the exemptions listed in Section 100 of this code shall prevail over any and all exemptions listed in any Section of the A.S.M.E. Code. Appurtenances that are not within the scope of the A.S.M.E. codes may be constructed to a nationally recognized standard of construction that has been approved by the Director.

170.((~~1.2~~))3 ((~~Adoption of~~)) A.S.M.E. CSD-1-((~~1998~~)) 2002. Except as otherwise stated herein, all fossil fuel fired boiler installations with fuel input ratings of less than 12,500,000 Btu/hr shall comply with the fuel train requirements of A.S.M.E. CSD-1-((~~1998~~)) 2002, Controls and Safety Devices for Automatically Fired Boilers (CSD-1), which requirements are hereby adopted and incorporated by reference. ((~~When any conflict exists between CSD-1 and this code, the requirements of this code shall prevail.~~)) Alterations/modifications of existing burner controls require compliance of the entire fuel train with CSD-1.

170.((~~1.2.1~~)) 4 Seattle Modifications to CSD-1. CSD-1 is modified as follows:

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

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

C. **CG-220 Installation**((~~. This chapter~~)) CG-220 is adopted with the following modifications or clarifications:

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

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

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

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

D. **CG-260 Combustion Air**((.((~~. Not adopted. This chapter~~)) CG-260 is replaced in its entirety by the requirements of Section 290 of this code and the ((~~1997~~)) Seattle Mechanical

Code ((~~Chapter 7 (see Appendix A), as amended~~)). The following shall apply when combustion air is provided by means other than natural air circulation:

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

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

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

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

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

G. **Part CF - Combustion Side Control.** Part CF is adopted with the following additions:

1. **Fuel Piping:** The fuel piping requirements ((~~of Chapters 13~~)) of the ((~~1997~~)) Seattle Mechanical Code (((~~see Appendix D), as amended,~~)) shall take precedence over the requirements of CSD-1.

2. **Boilers Certified as Automatic** ((~~must~~)) shall comply with the requirements of Sections 220 and 320((~~.2 through 320.5~~)) of this code.

((~~**170.2** Non-code boilers and non-code unfired pressure vessels shall not be installed or reinstalled.~~))

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

170.((~~3~~)) 6 ((~~Boilers~~)) Appurtenances such as safety controls, operating controls, burner assemblies, and boiler-burner assemblies shall be listed by a nationally recognized testing agency and shall be installed in accordance with the requirements of the listing.

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

Section 9. Subsections 190.1, 190.2 and 190.4 of the Seattle Boiler and Pressure Vessel Code are amended as follows:

Section 190 — Permits Required - Installation Permits

190.1 A((~~n installation~~)) permit shall be obtained from the Director prior to:

1. Installation or replacement of new or used boilers and pressure vessels.

2. Installation of rental boilers.

3. Certification of boilers as Automatic.

4. Certification of boilers as Monitored.

5. Alteration or modification of existing control systems on boilers certified as Automatic or Monitored.

6. Replacement or modification of fuel burner(s), changing of fuels, or adding different fuel combinations.

((~~the installation or replacement of new and used boilers and pressure vessels, the installation of rental boilers, and to apply for the certification of a boiler as Automatic or Monitored. Alteration or modification of existing control systems on automatic boilers, replacement of a fuel burner, changing fuels or adding a different fuel to a combination burner previously operated on a single fuel, and the conversion of solid-fuel-fired boilers as permitted by Section 320.5 shall also require a permit.~~))

190.2 Application for Permit. To obtain a permit, the applicant shall first file an application in writing on a form furnished by the Director ((~~of Design, Construction and Land Use~~)) for that purpose. Every ((~~such~~)) application shall:

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

2. Describe the land on which the proposed work is to be done by legal description, property address or similar description that will readily identify and definitely locate the proposed building or work.

3. Be accompanied by the plans and/or specifications in the standard A.S.M.E. form (Manufacturers Data Report).

4. Be signed by the owner of the property or building, or authorized agent, who may be required to submit evidence to indicate such authority.

5. Indicate the name of the owner and contractor and the name, address and phone number of a contact person.

6. Give such other data and information as may be required by the Director.

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190.4 Emergency Repairs. In the case of an emergency, the installation, alteration or repair of any boiler or pressure vessel system or equipment may be made without a permit provided that notice of the ((~~emergency installation, alteration or repair~~)) work being performed shall be given to the Director within twenty-four hours or within one working day from the time when the emergency work was started. Depending on the nature of the emergency, appropriate permits shall be obtained within five days of the start of the work or as directed by the Director.

***

Section 10. Section 200 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 200 — Fees

200.1 General. A fee for each permit and for other activities related to the enforcement of this code shall be paid as set forth in the Permit Fee Subtitle. Fees for the inspection of repairs or alterations of boilers and pressure vessels are charged in half hour increments at the rate set in the Permit Fee Subtitle. DPD will send an invoice for the repair following completion of the work.

Section 11. Section 210 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 210 — Inspections - General

210.1 General. Boiler and pressure vessel systems for which a permit is required by this code shall be subject to inspection by the Director.

It shall be the duty of the permit applicant to cause the boiler and pressure vessel systems to remain accessible and exposed for inspection purposes. Neither the ((~~Department~~)) Director nor the City shall be liable for expense entailed in the removal or replacement of any material required to permit inspection. When the installation of a boiler and pressure vessel system is complete, an additional and final inspection shall be made. Boiler and pressure vessel systems regulated by this code shall not be connected to the energy fuel–supply lines until authorized by the Director.

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

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

The Director may assess a reinspection fee as set forth in the Permit Fee Subtitle for any action listed above for which reinspection may be required, whether or not a reinspection is actually performed. ((~~A reinspection fee shall not be assessed the first time the work subject to inspection is rejected for failure to comply with the requirements of this code.~~))

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

Section 12. Section 220 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 220 — Inspection Requirements - New Installations

220.1 Boiler installations upon completion shall have controls set, adjusted and tested by the installing contractor. ((~~A~~)) Documentation consisting of City of Seattle Installation Permit, National Board or ASME Data Report(s), CSD-1 Report(s), complete control diagram of a permanent legible type, together with complete boiler operating instructions, shall be furnished by the installer for each installation. Rental boilers and used boilers are subject to hydrostatic testing, non-destructive testing, or other special testing as may be required by the Director.

((~~**220.2** An installation for which a permit is required shall not be put into service until it has been inspected and approved by the Director.~~))

220.((~~3~~)) **2** It shall be the duty of the person or entity doing the work or installation authorized by a permit to notify the Director that such work or installation is ready for inspection and to ((~~post, in a conspicuous position on the installation, a notice in substantially the following form: "Warning! This installation has not been inspected and approved by the Department of~~

~~Design, Construction and Land Use and shall not be covered or concealed until so inspected and approved," and it shall be unlawful for anyone other than the Department to remove such notice.~~)) prevent the unauthorized use of the equipment until such use has been authorized by the Director. The ((~~department inspector~~)) Director shall require such tests as he/she deems necessary to determine that the installation complies with the provisions of this code. Such tests shall be made in the presence of the ((~~department inspector~~)) Director's authorized representative. It shall be the duty of the person requesting inspections required by this code to provide access to, and the means for the safe inspection of the ((~~work~~)) installation.

220.((4)) 3 When the owner or his authorized representative requests inspection of a boiler prior to its installation, the Director shall make such inspection. Additional inspection(s), or inspections outside the scope of the permit may be subject to additional fees in accordance with Section 200 of this code.

Section 13. Section 230 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 230 — Existing Installations - Reinspection.

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

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

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

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

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

1. Low pressure hot water heating boilers not using corrosion inhibitors shall((÷)) be inspected internally at least every ((~~four~~)) two years;

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

3. All other boilers((,)) shall be inspected every year.

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

230.2 Unfired pressure vessels shall be inspected externally biennially. When subject to corrosion and construction permits, they shall, in addition, be subject to inspection internally biennially. ((~~An external ultrasonic examination of pressure vessels that are 36 inches inside diameter and under, shall constitute an internal inspection.~~)) At the discretion of the inspector, an ultrasonic examination of the external side of the pressure vessel may substitute for an internal inspection.

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

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

230.5 - Inspection by ((~~Insuring~~)) Authorized Insurance Companies. Inspection of boilers and pressure vessels may be made by employees of ((~~the insuring~~)) an authorized insurance company. Such inspections shall be conducted in accordance with the requirements of this code and by persons holding an active commission((s)) from the National Board of Boiler and Pressure Vessel Inspectors((~~, subject to approval of the Director~~)).

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

2. ((~~Approved insuring company~~)) Authorized inspectors (((~~Insurance Inspectors~~))) shall make their reports to the Director on ((~~prescribed forms on inspections authorized by the Director~~)) forms prescribed by the Director. ((~~The reports shall be filed with the Department. Insurance inspectors shall notify the Director immediately of suspension of insurance because of dangerous conditions and within 30 days for new insurance in effect and discontinuance of insurance coverage.~~))

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

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

230.6 - Preparation for Internal Inspection

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

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

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

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

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

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

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

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

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

Section 14. Section 240 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 240 — Certificate of Inspection

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

Exceptions:

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

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

Section 15. Section 250 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 250 — Repairs and Alterations

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

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

((~~Exceptions / Revisions to National Board Inspection Code Chapter III:~~

~~In addition to repair organizations holding a National Board "R" Certificate of Authorization, organizations holding an A.S.M.E. Certificate of Authorization may make repairs provided repairs are covered in the organization's Quality Control Manual.~~

~~**250.3** In all cases the material and workmanship shall comply with the rules contained in the appropriate sections of the A.S.M.E. Boiler and Pressure Vessel Code.~~))

Section 16. Section 260 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 260 — Removal from Service - Dangerous Conditions

If the operation of a boiler or pressure vessel is deemed by the Director to constitute an immediate danger, the pressure on such boiler or pressure vessel shall be relieved and the boiler or pressure vessel secured at the owner's expense ((~~cost~~)). Such unsafe boiler or pressure vessel shall be declared a nuisance and shall not be operated without approval of the Director.

Section 17. Section 270 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 270 — Accidents to be Reported

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

Section 18. Section 280 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 280 — Operation

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

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

Section 19. Section 290 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 290 — Combustion Air

Combustion air shall be provided in accordance with Chapter 7 of the Seattle Mechanical Code (((~~see Section 170 and Appendix A of this code~~))).

Section 20. Section 300 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 300 — Venting

Except as noted below, venting of the products of combustion shall be in accordance with Chapter 8 of the Seattle Mechanical Code (((~~see Appendix B~~))).

Stack dampers on boilers fired with oil or solid fuel shall not close off more than 80 percent of the stack area when closed, except on automatic boilers with pre-purge, automatic

draft control and interlock. Operative dampers shall not be placed within any stack, flue or vent of a gas-fired boiler, except on an automatic boiler with pre-purge, automatic draft control and interlock.

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

Section 21. Subsections 310.4, 310.5, and 310.6 of the Seattle Boiler and Pressure Vessel Code are amended as follows:

Section 310 — Controls, Safety Devices, and Instrumentation

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310.4 Gauges, General. Required gauges shall be kept in good working order. All steam boilers shall be provided with a pressure gauge and a water level glass. All water boilers shall be provided with a pressure gauge and a temperature indicator. All hot water supply/storage tanks shall be provided with a pressure gauge and temperature gauge.

310.5 - Pressure and Temperature Relief.

310.5.1 The discharge from liquid relief valves shall be piped to within 18 inches of the floor or to an open receptacle, and when the operating temperature is in excess of ((~~212~~)) 140°F, shall be equipped with ((~~a splash shield or centrifugal separator~~)) a means of tempering and cooling the discharge prior to entering the drainage system. (See Uniform Plumbing Code, Section 810.)

310.5.2 Safety valve discharge from boilers and pressure vessels containing steam shall be directed upward to a minimum of 6 feet above the boiler room floor or horizontally to an inaccessible area of the boiler room. When the discharge from safety valves would result in a hazardous discharge of steam inside the boiler room, or when the discharge of multiple safety valves on boilers exceeds the capacity of ((~~5,000~~)) 1,000 pounds of steam per hour, such discharge shall be extended outside the boiler room to a safe location.

310.5.3 ((~~When 310.5.2 cannot be met, the boilers~~)) Boilers in the ((~~particular~~)) boiler room shall be provided with an emergency shutdown switch located outside the boiler room, or other location approved by the Director. The purpose of such a switch is to allow the shutdown of boiler(s) without having to enter the boiler room. The emergency shutdown switch shall be suitable for the intended use.

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

310.6 - Low Water Cutoff

310.6.1 Every water boiler, other than manually fired, shall be equipped with a manual reset type low-water cutoff except that a ((~~coil-type boiler or a water-tube~~)) boiler which requires forced circulation to prevent overheating ((~~of the coils or tubes~~)) shall have a flow-sensing device installed ((~~in the outlet piping~~)) in lieu of the low-water cutoff. The required flow switch (if applicable) or the required manual reset type low-water cutoff shall be mounted in such a manner so as to prevent damage to the boiler and to permit testing of the low-water cutoff

without draining the boiler system. Manually operated and power actuated isolation valves between the low water cutoff and the boiler are prohibited. Delay functions incorporated in any low water cut-off or flow switch device will require the pre-approval of the Director. Delay functions not installed in accordance with the manufacturer's approvals shall not be used.

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

310.6.2 Every steam boiler, other than manually fired, shall be equipped with two low-water cutoffs. The lower of the two cutoffs shall be equipped with a manual reset device.

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

310.6.4 Water Feeding Devices. All steam, vapor or water boilers shall be equipped with an automatic water feeding device. For steam boilers and boilers having an operating water level, the water feeder shall be controlled by the actual water level in the boiler.

Exception: ((~~Boilers which have a constant attendant who has no other duties while the boiler is in operation.~~)) Manually operated (fired) boilers that have a qualified person in constant attendance of the boiler while it is in operation.

***

Section 22. Section 320 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 320 — Boilers Certified as Automatic.

320.1 Boilers certified as automatic shall be equipped with controls and limit devices as set forth in Table 320-A, or ASME CSD-1, whichever is more restrictive.

320.2 Boilers certified as automatic shall not require any manual operation of the feed water system and shall also be equipped with the following gauges, as applicable:

1. oil temperature((,)) and oil suction pressure gauges((,)) ;
2. high and low gas pressure gauges((,)); and
3. stack temperature gauge ((~~and wind box pressure gauge~~. ~~Feedwater systems for automatic boilers shall not require any manual operation.~~))

320.3 A copy of the approved wiring diagram for a boiler certified as automatic shall be permanently and prominently displayed, under protective covering, in the boiler room, or within the official log book in an approved fashion. If the safety devices are wired or in some fashion digital in nature, a schematic with sufficient detail for a repair or service person to effectively restore the boiler to service will be acceptable. Such diagram shall include the coding of the actual wiring by color or by number to permit a ready check of the system.

320.4 All boilers certified as automatic of 12,500,000 Btu/h input and over shall also comply with the installation requirements of N.F.P.A. ((~~8501, 8502, 8503, 8504~~)) 85, 2004 edition.

320.5 The Director may approve solid-fuel-fired boilers that can meet the safety requirements for automatic gas- or oil-fired boilers.

Table 320-A (Part 1 of 2)

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

Table 320-A (Part 2 of 2)

Boiler Group	Fuel	[1]Fuel Input Range in BTU/hr (inclusive)	Low Fire Start Up Control [6]	Pre-purging Control [7]	Hot Water Temperature and Low Water Limit Controls [8]	Steam Pressure and Low Water Limit Controls [9]	Approved Fuel Shutoff [10]	Control and Limit Device System Design [11]
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

Footnotes for Table 320-A

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

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

(b) The nominal boiler rating, as determined by the Director, plus 25 percent.

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

2 Automatic boilers shall have one flame failure device on each burner which shall prove the presence of a suitable ignition source at the point where it will reliably ignite the main burner, except that boiler groups A, B, E and F and G which are equipped with direct electric ignition shall monitor the main burner, and all boiler groups using interrupted pilots shall monitor only the main burner after the prescribed limited trial and ignition periods. Continuous pilots used in boiler groups A and B shall accomplish 100 percent shutoff upon pilot flame failure. Intermittent

pilots may be used in group C for atmospheric burners only, provided the input per combustion chamber does not exceed 5,000,000 Btu/h and modulating or high-low firing is not employed.

3 Continuous pilots provided on manufacturer assembled boiler-burner units must be approved by a testing agency complying with nationally recognized standards approved by the Director.

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

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

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

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

with means of closing. If such burners have means of closing secondary air openings, a time delay must be provided which puts these closures in a normally open position for four minutes before an attempt for ignition. An installation with a trapped combustion chamber shall in every case be provided with a mechanical means of creating air movement for purging.

Purge air flow in boiler groups C, D, G and H shall be proved. Proof of purge air flow may be accomplished by providing:

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

(2) Air flow interlock.

8 See section 310. ((~~Every automatic hot-water-heating supply boiler, low-pressure hot-water heating boiler, and power hot-water boiler shall be equipped with two high-temperature-limit controls with a manual reset on the control with the higher setting interlocked to shut off the main fuel supply, except that manual reset on the high-temperature-limit control shall not be required on any automatic package boiler not exceeding 400,000 Btu/h input and which has been approved by an approved testing agency. Every automatic hot water heating, power boiler and package hot-water supply boiler shall be equipped with one low-water level limit control with a manual reset interlocked to shut off the fuel supply so installed as to prevent damage to the boiler and to permit testing of the control without draining the heating system. However, a low-water flow limit control installed in the circulating water line may be used instead of the low-water level limit control for the same purpose on coil-type boilers.~~))

9 See section 310. ((~~Every automatic low-pressure steam-heating boiler, small power boiler and power steam boiler shall be equipped with two high-steam pressure limit controls interlocked to shut off the fuel supply to the main burner with manual reset on the control with the higher setting and two low-water-level limit controls, one of which shall be provided with a manual reset device and shall be independent of the feed water controller. Coil-type flash steam boilers~~

~~may use two high temperature limit controls, one of which shall be manually reset in the hot water coil section of the boiler instead of the low water level limit control.~~))

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

11 Control and limit device systems shall be grounded with operating voltage not to exceed 150 volts, except that upon approval by the Director, existing control equipment to be reused in an altered boiler control system may use 220-volt single phase with one side grounded, provided such voltage is used for all controls. Control and limit devices shall interrupt the ungrounded side of the circuit. A readily accessible means of manually disconnecting the control circuit shall be

provided with controls so arranged that when they are de-energized the burner shall be inoperative.

Section 23. Section 330 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 330 — Monitored Boilers

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

330.1 Definitions. For the purposes of this section, certain terms, phrases, words and their derivatives shall be defined as follows:

CENTRAL STATION AGENCY: A 'Class A' Central Station Agency as defined and approved by the Seattle Fire Department.

MONITORING SYSTEM: An approved protective signaling used for surveillance of controls and limit devices required on certain automatic boilers.

PROPRIETARY SYSTEM: A monitoring system with constant supervision by competent and experienced personnel in a central supervising station at the property protected. The system is to include equipment and other facilities required to permit the boiler and monitoring system operators to test and operate the system and, upon receipt of a signal, to take such action as is required.

PROTECTIVE SIGNALING SYSTEMS: Electrically operated circuits, instruments and devices, together with the necessary electrical energy designed to transmit alarms and trouble signals, necessary for effectively monitoring boilers.

330.((1)) 2 - Approval of Monitoring Systems

A. An installation permit is required to certify a boiler as Monitored. The annual fee for such certification shall be as established in the Permit Fee Subtitle, Seattle Municipal Code ((~~Chapter 22.901~~)) Section 22.900E as applicable. Monitored Boiler status is available only to boilers certified by the Director as Automatic Boilers.

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

C. ((~~Annual Inspection and Permits Required. Monitoring system permits expire at midnight on December 31st of the year of issuance.~~)) An inspection by a department inspector is required annually for certification ((~~permit~~)) renewal.

D. Equipment. All Monitoring System devices shall be approved by a nationally recognized testing agency.

330.((~~2~~)) 3 - Alarms / Signals, Personnel and Reporting

A. Required Alarms. A monitoring system shall sense low water level and flame failure on all boilers, steam pressure at the upper limit setting on steam boilers or water temperature at the upper limit setting on hot water boilers. Upon sensing any of the above conditions, a manually reset relay device shall shut off the fuel supply to the boiler and shall relay an alarm signal to the monitoring system. The monitoring system shall sense existing limit controls and flame failure devices.

B. Monitoring System Personnel. The monitoring station shall have sufficient personnel (((~~a minimum of two persons~~))) constantly on duty to assure immediate attention to all

signals received. ((~~In the monitoring station of a proprietary system, the Director may permit a minimum of one person to be on constant duty, provided there are approved means, such as a watchman's service, to maintain a check at intervals of not less than two hours to assure that the operator is on duty.~~)) The minimum age of all monitoring station operators shall be eighteen years. Operation and supervision shall be the primary functions of the monitoring station operators and no other interest or activity shall take precedence over the protective service.

C. Report Availability. Reports of all signals received shall be made available upon request to the Director.

D. Disposition of Signals.

1. Upon receipt of trouble signals or other signals pertaining solely to matters of equipment maintenance of the signaling systems, the monitoring station operating company shall immediately investigate and, if possible, assure that the trouble is remedied at once.

In all cases where service of the signaling system is interrupted and is corrected within 12 hours, the property owner shall be notified immediately. This notification shall be confirmed by written notice with a copy sent to the Director.

2. Upon receipt of an alarm signal, the monitoring station shall notify the on-site boiler operating engineer, if any, or the boiler supervisor by telephone or by the quickest method available.

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

4. Definite instructions for the handling of alarms shall be posted for the guidance of the operators of the monitoring system.

330.((~~3~~)) 4- Maintenance and Repair

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

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

Section 24. Section 340 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 340 — Expansion Tanks

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

((~~B. Systems with Open Expansion Tank. Systems, equipped with an open expansion tank to satisfy thermal water expansion, shall be provided with an indoor overflow from the upper portion of the expansion tank in addition to an open vent. The indoor overflow shall be carried within the building to a suitable plumbing fixture or to the basement.~~

~~C. Closed-type Systems. Systems of the closed type shall have an airtight tank or other suitable air cushion that will be consistent with the volume and capacity of the system, and shall be suitably designed for a hydrostatic test pressure of two and one half times the allowable working pressure of the system. Expansion tanks for systems designed to operate above 30 psig shall be constructed in accordance with nationally recognized standards approved by the Director. Provisions shall be made for draining the tank without emptying the system, except for tanks pressurized by/from an external source.~~))

Section 25. Section 350 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 350 — Blowoff Tanks

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

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

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

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

Section 26. Section 360 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 360 — Clearance Requirements

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

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

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

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

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

D. Adequate clearance for access and to permit entry shall be provided for pressure vessels. Pressure vessels equipped with manhole openings((,)) shall have a minimum of five feet clearance from any obstruction. All other inspection openings shall be at least 18 inches from any obstruction.

Section 27. Section 380 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 380 — Boiler Rooms/Enclosures

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

((~~Fuel-fired boilers may not be installed in refrigeration machinery rooms.~~))

380.1 - Mounting

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

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

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

380.2 - Floors

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

380.3 - Drainage

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

380.4 - Installation in Garages and Warehouses

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

B. Boilers ((~~and pressure vessels~~)) located in a garage and which ((~~generate a glow, spark or flame capable of igniting flammable vapors~~)) <u>have an ignition source</u> shall be installed with sources of ignition at least 18 inches above the floor level. <u>See also Seattle Mechanical Code Section 304.3.</u>

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

380.5 - Platforms Around Boilers and Pressure Vessels

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

Section 28. Section 390 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 390 — Fuel Piping

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

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

C. Fuel piping installation shall conform to the provisions of the Seattle Fuel Gas Code. ((~~referenced in Appendix D and E of this code.~~))

Section 29. Section 400 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 400 — Steam and ((~~Water~~)) Hydronic Piping

400.1 General. Steam and ((~~water~~)) hydronic piping systems which are part of a boiler ((~~other than potable water piping regulated by the Seattle/King County Plumbing Code~~))), or heating system, shall conform to the requirements of International Mechanical Code Chapter 12, and the codes listed in Section 170 of this code. When piping falls outside the scope of the applicable sections of the above codes, a standard approved by the Director may be used. ((~~shall comply with the following requirements:~~

~~A. Those portions of piping systems in which the steam pressure exceeds 15 psig or water pressure exceeds 160 psig or the temperature (water or steam) exceeds 250°F, shall comply with Section 170.1 as applicable. Where Section 170.1 is not applicable, piping systems shall comply with the requirements of this Section.~~))

400.((~~1~~)) 2 - Materials and Construction

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

((~~B. Other materials. Other materials and construction may be installed as provided in this code or in accordance with the terms of their approval by the Director, provided that they are first acceptable to the Director and are equivalent, for the use intended, to those specified in this code.~~

~~C. Marking. Materials and devices shall be suitably identified. In addition to the incised marking required in the standards, all hard-drawn copper tubing shall be marked by means of a continuous and indelible colored stripe, at least 1/4 inch in width, as follows:~~

~~1. Type L - Blue~~

~~2. Type K - Green~~

~~3. Type M - Red~~

~~D. Protective Coatings. Protective coatings shall be watertight, durable, heat resistant, electrically non-conductive, and tightly adherent to the pipe.~~

~~E. Insulation. Coverings or insulation used on hot water or steam pipes shall be of materials suitable for the operating temperature of the system. The insulation, jackets and lap-seal adhesives shall be tested as a composite product and shall have a flame spread of not more than 25 and a smoke-developed rating of not more than 50 when tested in accordance with U.B.C. Standard 8-1.~~

~~F. Hangers and anchors. Hangers and anchors shall be suitable for the use intended.~~))

((~~G~~)) B. ((~~Galvanized Piping and Fittings.~~)) Galvanized piping and fittings are prohibited.

((~~H. Plastic Air Piping. Certain plastic pipes, limited to those so labeled and/or certified by the manufacturer for such use, are acceptable for compressed air service. Due to the effect of temperature, lubricants, and other physical factors on the allowable pressure, some restrictions may be imposed and their use requires case by case approval by the Director. CPVC or PVC piping for compressed air service is not allowed.~~))

Section 30. Section 410 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 410 — Pressure Reducing Valves

A. Where pressure reducing valves are used, one or more relief or safety valves and pressure gauges shall be provided on the low pressure side of the reducing valve. The relief or safety valves shall be located adjoining to or as close as possible to the reducing valve. Proper protection shall be provided to prevent injury or damage caused by the escaping steam from the discharge of relief or safety valves if vented to the atmosphere. The combined discharge capacity

of the relief valves shall be such that the pressure rating of the lower pressure piping or equipment shall not be exceeded in case the reducing valve sticks open.

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

Section 31. Section 500 of the Seattle Boiler and Pressure Vessel Code is repealed.

Section 32. This ordinance shall take effect and be in force thirty (30) days from and after its approval by the Mayor, but if not approved and returned by the Mayor within ten (10) days after presentation, it shall take effect as provided by Municipal Code Section 1.04.020.

Passed by the City Council the 18th day of July, 2005, and signed by me in open session in authentication of its passage this 18th day of July, 2005.

President _____ of the City Council

Approved by me this 25th day of July, 2005.

Gregory J. Nickels, Mayor

Filed by me this 25th day of July, 2005.

City Clerk

(Seal)

Maureen Traxler:
May 5, 2005
DPD Boiler Code
Version #1

Form revised December 9, 2004

FISCAL NOTE FOR NON-CAPITAL PROJECTS

Department:	Contact Person/Phone:	DOF Analyst/Phone:
Planning and Development	Maureen Traxler/233-3892	Amanda Allen/684-8894

Legislation Title:
An ordinance relating to the Seattle Boiler and Pressure Vessel Code, Seattle Municipal Code, Chapter 22.450, amending Section 22.450.010 of the Seattle Municipal Code, and the Seattle Boiler and Pressure Vessel Code regulations affecting the installation, operation and maintenance of boilers and pressure vessels.

Summary of the Legislation:
This legislation updates the Seattle Boiler and Pressure Vessel Code. The proposed changes coordinate Seattle's code with current state boiler regulations and with the International Building and Mechanical codes that were adopted by the City in 2004.

Background:

Boilers and pressure vessels are regulated by the Washington Department of Labor and Industries. Seattle is one of a few jurisdictions in the state with its own boiler inspection program. The Seattle Boiler and Pressure Vessel Code supplements the state regulations and adopts national standards for installation and operation of boilers and pressure vessels. Seattle's regulations are required to be at least as stringent as those of the state.

_X___ This legislation does not have any financial implications.

City of Seattle

Gregory J. Nickels, Mayor

Office of the Mayor

May 24, 2005

Honorable Jan Drago
President
Seattle City Council
City Hall, 2nd Floor

Dear Council President Drago:

I am pleased to transmit the attached proposed Council Bill that updates the Seattle Boiler and Pressure Vessel Code. The proposed changes coordinate Seattle's code with current state boiler regulations and with the International Building and Mechanical codes that were adopted by the City in 2004.

Boilers and pressure vessels are regulated by the Washington Department of Labor and Industries. Seattle is one of a few jurisdictions in the state with its own boiler inspection program. The Seattle Boiler and Pressure Vessel Code supplements the state regulations and adopts national standards for installation and operation of boilers and pressure vessels. Seattle's regulations are required to be at least as stringent as those of the state.

The revisions made by this proposed legislation will make Seattle's regulations consistent with current state and national standards. Thank you for your consideration of this legislation. Should you have questions, please contact Maureen Traxler at 233-3892.

Sincerely,

GREG NICKELS
Mayor of Seattle

cc: Honorable Members of the Seattle City Council

600 Fourth Avenue, 7th Floor, P.O. Box 94749, Seattle, WA 98124-4749
Tel: (206) 684-4000, TDD: (206) 684-8811 Fax: (206) 684-5360, E:mail: mayors.office@seattle.gov

STATE OF WASHINGTON – KING COUNTY

--ss.

188530 No.
CITY OF SEATTLE,CLERKS OFFICE

Affidavit of Publication

The undersigned, on oath states that he is an authorized representative of The Daily Journal of Commerce, a daily newspaper, which newspaper is a legal newspaper of general circulation and it is now and has been for more than six months prior to the date of publication hereinafter referred to, published in the English language continuously as a daily newspaper in Seattle, King County, Washington, and it is now and during all of said time was printed in an office maintained at the aforesaid place of publication of this newspaper. The Daily Journal of Commerce was on the 12th day of June, 1941, approved as a legal newspaper by the Superior Court of King County.

The notice in the exact form annexed, was published in regular issues of The Daily Journal of Commerce, which was regularly distributed to its subscribers during the below stated period. The annexed notice, a

CT:121865 ORDINANCE

was published on

08/02/05

The amount of the fee charged for the foregoing publication is the sum of $2,987.88, which amount has been paid in full.

Subscribed and sworn to before me on

08/02/05

Notary public for the State of Washington,
residing in Seattle

Affidavit of Publication

the same to be done in the City, contrary to or in violation of any of the provisions of this code.

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

It is a violation of this code to have charge of, or operate or permit anyone to have charge of, or operate, any boiler or steam engine regulated by this Code without a license to do so issued by the Director under SMC Chapter 6.420.

***

Section 4. Section 100 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 100 - Exemptions from this Code

The following boilers and pressure vessels and other equipment ((~~described~~)) shall not be required to comply with this code:

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

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

A water temperature of 210°F, or

A nominal water-containing capacity of 120 gallons, or

A pressure of 160 pounds per square inch.

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

C. Portable unfired pressure vessels subject to regular inspection by State of Washington inspectors, (RCW 70.79). ((~~and I.C.C./D.O.T. containers.~~))

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

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

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

Exceptions:

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

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

((~~E~~)) G. Unfired pressure vessels and potable hot water heaters ((~~located in Group A, E, and I occupancies~~)) when they are:

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

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

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

((~~F~~)) H Unfired pressure vessels of any size ((~~, other than those containing steam,~~)) that are protected by approved pressure relief devices set to operate at a pressure not exceeding 15 psi.

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

((~~G~~)) I. Any boiler or pressure vessel subject to regular inspection by federal inspectors or licensed by federal authorities.

((~~H Combination water heaters listed for both potable water supply and space heating listed under ANSI Z21.10.3, "Gas Water Heaters", 1986 Addenda or later, that are used for both potable water and space heating.~~))

((~~I~~)) J. Electric boilers that meet all of the following criteria:

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

2. Having a maximum allowable working pressure of ((~~eighty (80)~~)) one hundred (100) psi; and

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

((~~J~~)) K. Water storage tanks with no air cushion and no energy or heat source.

Section 5. Subsection 120.4 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 120 - Application to Existing Boiler and Pressure Vessel Systems

***

120.4 Historic Buildings and Structures. The Director may modify the specific requirements of this code as it applies to buildings and structures designated as landmarks of historical or cultural importance and require in lieu thereof alternate requirements which in the opinion of the Director will result in a reasonable degree of safety to the public and the occupants of those buildings.

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

Section 6. Section 150 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 150 - Tests

Whenever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternate materials or methods, the Director may require tests as evidence of compliance to be made at no expense to the City.

Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the Director shall specify the required testing or examination methods and procedures.

Tests shall be performed by an ((~~approved~~)) agency approved by the Director. Reports of tests or examination shall be retained by the Director for the period required for retention of public records.

Section 7. Section 160 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 160 - Definitions

Certain words and terms used in this code, unless clearly inconsistent with their context, shall have the meanings given below. When a definition is not found below, the definitions of the American Society of Mechanical Engineers' CSD-1-1998, Controls and Safety Devices for Automatically Fired Boilers (CSD-1, see Section 170) shall be used. When a definition is found here and in CSD-1, the definition given in this code shall govern.

"A" OCCUPANCIES are places of pressure or vacuum by the direct application of heat. The term boiler shall also include fired units for heating or vaporizing liquids other than water where these systems are complete within themselves.

BOILER ROOM is any room ((~~containing~~)) primarily used to house a boiler.

BOILER, CERTIFIED AS AUTOMATIC is either a boiler installed prior to the adoption of CSD-1 which complies with Section 320 and Table 320-A of this code and for which an automatic certification installation permit has been finalized, or any other boiler installed after the adoption of CSD-1 for which an automatic certification permit has been finalized which is used to modify the licensed attendance requirements for specific boiler(s). (See "Steam Engineer and Boiler Fireman License Law", Seattle Municipal Code Chapter 6.420.)

BOILER, CERTIFIED AS MONITORED is a boiler which complies with the provisions of Section 320 and Section 330 of this Code which is used to modify the licensed attendance requirements for specific boiler(s). (See "Steam Engineer and Boiler Fireman License Law", Seattle Municipal Code Chapter 6.420.)

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

BOILER, HOT-WATER SUPPLY is a boiler exceeding any of the limitations of Section 100 paragraph A, but not exceeding a pressure of 160 psi (1100 kPa), or a temperature of 250°F (121°C), that provides hot water to be used externally to itself.

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

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

BOILER, NON CODE is a boiler not constructed in accordance with the codes listed in Section 170((~~.1~~)) of this code.

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

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

BOILER, POWER is a boiler in which steam or vapor is generated at pressures exceeding 15 psi.

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

BOILER, USED shall mean any boiler that is to be installed in Seattle that has been in any previous service.

BUILDING CODE is the Seattle Building Code.

BURNER is a device to convey fuel and air/steam into the combustion chamber of a boiler and cause and maintain stable combustion.

CHIMNEY is a ((~~vertical shaft enclosing one or more flues for conveying flue gases to the outside atmosphere.~~)) primarily vertical structure containing one or more flues, for the purpose of carrying gaseous products of combustion and air from a fuel-burning appliance to the outside atmosphere.

((~~**Factory-built Chimney** is a listed chimney.~~

~~**Masonry Chimney** is a chimney of solid masonry units, bricks, stones, listed masonry units or reinforced concrete, lined with suitable flue liners.~~

~~**Metal Chimney** is a chimney constructed of metal with a minimum thickness not less than 0.127 inch (No. 10 manufacturer's standard gage) (3.2 mm) steel sheet.~~

~~**CHIMNEY CLASSIFICATIONS:**~~

~~**Chimney, High-heat Appliance type,** is a factory-built, masonry or metal chimney suitable for removing the products of combustion from fuel-burning high-heat appliances producing combustion gases exceeding 2,000°F. (1093°C.) measured at the appliance flue outlet.~~

~~**Chimney, Low-heat Appliance type,** is a factory-built, masonry or metal chimney suitable for removing the products of combustion from fuel-burning low-heat appliances producing combustion gases not exceeding 1,000°F. (538°C.) under normal operating conditions but capable of producing combustion gases of 1,400°F. (759°C.) during intermittent forced firing for periods up to one hour. All temperatures are measured at the appliance flue outlet.~~

~~**Chimney, Medium-heat Appliance-type,** is a factory-built, masonry or metal chimney suitable for removing the products of combustion from fuel-burning medium-heat appliances producing combustion gases not exceeding 2,000°F. (1093°C.) measured at the appliance flue outlet.~~

~~**Chimney, Residential Appliance-type,** is a factory-built or masonry chimney suitable for removing products of combustion from residential-type appliances producing combustion gases not exceeding 1,000°F. (538°C.), measured at the appliance flue outlet. Factory-built Type H-T chimneys have high-temperature thermal shock resistance.~~

~~**CHIMNEY CONNECTOR** is the pipe which connects a fuel-burning appliance to a chimney.~~))

COMBUSTION AIR is ((~~the total amount of air provided to the space which contains fuel-burning equipment; it includes air for fuel combustion, for draft hood dilution and for ventilation of the equipment enclosure~~)) air necessary for complete combustion of a fuel, including theoretical air and excess air.

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

((~~**DEPARTMENT** is the Department of Design, Construction and Land Use or a representative of the Director.~~))

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

DIRECTOR is the Director of the Department of ((~~Design, Construction and Land Use.~~)) Planning and Development and the Director's authorized representatives.

DRAFT HOOD is a nonadjustable device built into an appliance or made a part of the vent connector from an appliance, which is designed to:

1. ((~~Assure~~)) Provide for the ready escape of the flue gases in the event of no draft, back draft or stoppage beyond the draft hood((~~.~~)) ;

2. Prevent a back draft from entering the appliance((~~.~~)) ; and

3. Neutralize the effect of stack action of the chimney or gas vent upon the operation of the appliance.

DUCT is a tube or conduit for transmission of air. This definition shall not include((~~:~~

~~1. A vent, a vent connector or a chimney connector.~~

~~2. A tube or conduit wherein the pressure of the air exceeds 1 pound per square inch (6.9 Pa).~~

City of Seattle

ORDINANCE 121165

AN ORDINANCE relating to the Seattle Boiler and Pressure Vessel Code, Seattle Municipal Code, Chapter 22.450, amending Section 22.450.010 of the Seattle Municipal Code, and the Seattle Boiler and Pressure Vessel Code regulations affecting the installation, operation and maintenance of boilers and pressure vessels.

BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:

Section 1. Section 22.450.010 of the Seattle Municipal Code is amended as follows:

SMC 22.450.010 Adoption of Seattle Boiler and Pressure Vessel Code.

The Seattle Boiler and Pressure Vessel Code is hereby adopted and by this reference made a part of this subtitle. A copy of the Seattle Boiler and Pressure Vessel Code, with ((~~April 1999~~)) amendments, is kept on file at the Department of Planning and Development.

Section 2. Section 30 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 30 - Powers and Duties of the Director ((~~of the Department of Design, Construction and Land Use~~))

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

30.2 Deputies. ((~~The Director may appoint such officers and inspectors and other employees as shall be authorized from time to time.~~)) The Director may ((~~deputize~~)) authorize such qualified inspectors or employees as may be necessary to carry out ((~~its~~)) the functions specified in this Code.

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

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

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

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

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

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

City of Seattle

ORDINANCE 121 165

AN ORDINANCE relating to the Seattle Boiler and Pressure Vessel Code, Seattle Municipal Code, Chapter 22.450, amending Section 22.450.010 of the Seattle Municipal Code, and the Seattle Boiler and Pressure Vessel Code regulations affecting the installation, operation and maintenance of boilers and pressure vessels.

BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:

Section 1. Section 22.450.010 of the Seattle Municipal Code is amended as follows:

SMC 22.450.010 Adoption of Seattle Boiler and Pressure Vessel Code.

The Seattle Boiler and Pressure Vessel Code is hereby adopted and by this reference made a part of this subtitle. A copy of the Seattle Boiler and Pressure Vessel Code, with ((~~April 1999~~)) amendments, is kept on file at the Department of Planning and Development.

Section 2. Section 30 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 30 - Powers and Duties of the Director ((~~of the Department of Design, Construction and Land Use~~))

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

30.2 Deputies. ((~~The Director may appoint such officers and inspectors and other employees as shall be authorized from time to time.~~)) The Director may ((~~deputize~~)) authorize such qualified inspectors or employees as may be necessary to carry out ((~~its~~)) the functions specified in this Code.

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

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

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

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

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

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

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

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

30.9 Cooperation of Other Officials and Officers. The Director may request, and shall receive, so far as is required in the discharge of the Director's duties, the assistance and cooperation of other officials of the City of Seattle.

Section 3. Subsection 90.1 of the Seattle Boiler Code and Pressure Vessel is amended as follows:

Section 90 - Violations and Penalties

90.1 Violations. It ((~~shall be~~)) is a violation of this code for any person, firm or corporation to install, erect, construct, enlarge, alter, repair, replace, remodel, move, improve, remove, convert or demolish, equip, occupy, use or maintain any boiler or pressure vessel system or equipment or cause or permit

a. Unfired pressure vessels in Section 100 of this code shall conform to the requirements of ASME Section IV, HG-709 applicable edition together with applicable addenda.

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

((~~E~~)) G. Unfired pressure vessels and potable hot water heaters ((~~located in Group A, E, and I occupancies~~)) when they are:

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

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

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

((~~F~~)) H Unfired pressure vessels of any size ((~~, other than those containing steam,~~)) that are protected by approved pressure relief devices set to operate at a pressure not exceeding 15 psi.

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

((~~G~~)) I. Any boiler or pressure vessel subject to regular inspection by federal inspectors or licensed by federal authorities.

((~~H Combination water heaters listed for both potable water supply and space heating listed under ANSI Z21.10.3, "Gas Water Heaters", 1988 Addenda or later, that are used for both potable water and space heating.~~))

((~~I~~)) J. Electric boilers that meet all of the following criteria:

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

2. Having a maximum allowable working pressure of ((~~eighty (80)~~)) one hundred (100) psi; and

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

((~~J~~)) K. Water storage tanks with no air cushion and no energy or heat source.

Section 5. Subsection 120.4 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 120 - Application to Existing Boiler and Pressure Vessel Systems

***

120.4 Historic Buildings and Structures. The Director may modify the specific requirements of this code as it applies to buildings and structures designated as landmarks of historical or cultural importance and require in lieu thereof alternate requirements which in the opinion of the Director will result in a reasonable degree of safety to the public and the occupants of those buildings.

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

Section 6. Section 150 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 150 - Tests

Whenever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternate materials or methods, the Director may require tests as evidence of compliance to be made at no expense to the City.

Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the Director shall specify the required testing or examination methods and procedures.

Tests shall be performed by an ((~~approved~~)) agency approved by the Director. Reports of tests or examination shall be retained by the Director for the period required for retention of public records.

Section 7. Section 160 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 160 - Definitions

Certain words and terms used in this code, unless clearly inconsistent with their context, shall have the meanings given below. When a definition is not found below, the definitions of the American Society of Mechanical Engineers' CSD-1-1998, Controls and Safety Devices for Automatically Fired Boilers (CSD-1, see Section 170) shall be used. When a definition is found here and in CSD-1, the definition given in this code shall govern.

"A" OCCUPANCIES are places of public assembly. Details can be found in International Building Code Section 303.1.

ACCESSIBLE is having access to but which first may require the removal of an access panel, door or similar obstruction covering the item described.

ACCESSIBLE, READILY, is capable of being reached safely and quickly for operation, repair or inspection without requiring those to whom ready access is requisite to climb over or remove obstacles, or to resort to the use of portable access equipment.

APPLIANCE is a device which utilizes fuel or other forms of energy to produce light, heat, power, refrigeration or air conditioning. This definition ((~~also shall~~)) includes ((~~a~~)) vented decorative appliances.

APPROVED((~~, as to materials, equipment and method of construction,~~)) is approval by the Director ((~~as the result of investigation and tests by the Director, or by reason of accepted principles or tests by national authorities, technical or scientific organizations~~)).

APPROVED AGENCY is an established and recognized agency regularly engaged in conducting tests, examinations or furnishing inspection services, when such agency has been approved by the Director.

((~~**ASSEMBLY BUILDING** is a building or a portion of a building used for the gathering together of 50 or more persons for such purposes as deliberation, education, instruction, worship, entertainment, amusement, drinking or dining or awaiting transportation.~~))

"B" OCCUPANCIES are business uses, such as offices. Details can be found in International Building Code Section 304.1.

BOILER is a closed vessel in which water is heated, steam is generated, steam is superheated, or any combination thereof, under

BOILER, POWER is a boiler in which steam or vapor is generated at pressures exceeding 15 psi.

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

BOILER, USED shall mean any boiler that is to be installed in Seattle that has been in any previous service.

BUILDING CODE is the Seattle Building Code.

BURNER is a device to convey fuel and air/steam into the combustion chamber of a boiler and cause and maintain stable combustion.

CHIMNEY is a ((~~vertical shaft enclosing one or more flues for conveying flue gases to the outside atmosphere.~~)) primarily vertical structure containing one or more flues, for the purpose of carrying gaseous products of combustion and air from a fuel-burning appliance to the outside atmosphere.

((~~**Factory-built Chimney** is a listed chimney.~~

~~**Masonry Chimney** is a chimney of solid masonry units, bricks, stones, listed masonry units or reinforced concrete, lined with suitable flue liners.~~

~~**Metal Chimney** is a chimney constructed of metal with a minimum thickness not less than 0.127 inch (No. 10 manufacturer's standard gage) (3.2 mm) steel sheet.~~

~~**CHIMNEY CLASSIFICATIONS.**~~

~~**Chimney, High-heat Appliance-type,** is a factory-built, masonry or metal chimney suitable for removing the products of combustion from fuel-burning high-heat appliances producing combustion gases exceeding 2,000°F. (1093°C.) measured at the appliance flue outlet.~~

~~**Chimney, Low-heat Appliance-type,** is a factory-built, masonry or metal chimney suitable for removing the products of combustion from fuel-burning low-heat appliances producing combustion gases not exceeding 1,000°F. (538°C.) under normal operating conditions but capable of producing combustion gases of 1,400°F. (759°C.) during intermittent forced firing for periods up to one hour. All temperatures are measured at the appliance flue outlet.~~

~~**Chimney, Medium-heat Appliance-type,** is a factory-built, masonry or metal chimney suitable for removing the products of combustion from fuel-burning medium-heat appliances producing combustion gases not exceeding 2,000°F. (1093°C.) measured at the appliance flue outlet.~~

~~**Chimney, Residential Appliance-type,** is a factory-built or masonry chimney suitable for removing products of combustion from residential-type appliances producing combustion gases not exceeding 1,000°F. (538°C.), measured at the appliance flue outlet. Factory-built Type H.T. chimneys have high-temperature thermal shock resistance.~~

~~**CHIMNEY CONNECTOR** is the pipe which connects a fuel-burning appliance to a chimney.~~))

COMBUSTION AIR is ((~~the total amount of air provided to the space which contains fuel-burning equipment; it includes air for fuel combustion, for draft hood dilution, and for ventilation of the equipment enclosure~~)) air necessary for complete combustion of a fuel, including theoretical air and excess air.

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

((~~**DEPARTMENT** is the Department of Design, Construction and Land Use or a representative of the Director.~~))

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

DIRECTOR is the Director of the Department of ((~~Design, Construction and Land Use,~~)) Planning and Development and the Director's authorized representatives.

DRAFT HOOD is a nonadjustable device built into an appliance or made a part of the vent connector from an appliance, which is designed to:

1. ((~~Assure~~)) Provide for the ready escape of the flue gases in the event of no draft, back draft or stoppage beyond the draft hood((~~.~~)) ;

2. Prevent a back draft from entering the appliance((~~.~~)) ; and

3. Neutralize the effect of stack action of the chimney or gas vent upon the operation of the appliance.

DUCT is a tube or conduit for transmission of air. This definition shall not include((:

~~1. A vent, a vent connector or a chimney connector.~~

~~2. A tube or conduit wherein the pressure of the air exceeds 1 pound per square inch (6.9 Pa).~~

~~3. T~~))the air passages of listed self-contained systems.

"E" OCCUPANCIES are educational facilities. Details can be found in International Building Code Section 305.

ELECTRICAL CODE is the Seattle Electrical Code.

"F" OCCUPANCIES are factory and industrial uses. Details can be found in International Building Code Section 306.

FIRE CODE is the Seattle Fire Code.

FUEL TRAIN is a series of valves, regulators, and controls, between the burner and the source of fuel, that regulates and controls the flow of fuel to the burner.

"H" OCCUPANCIES are high hazard uses. Details can be found in International Building Code Section 307.

"I" OCCUPANCIES are medical facilities and institutional facilities. Details can be found in International Building Code Section 308.

INSPECTOR, depending on context, is any of the inspectors types defined by this code, as appropriate.

INSPECTOR, CHIEF is the chief ((~~boiler~~)) pressure systems inspector ((~~of~~)) appointed by the Director.

INSPECTOR, CITY ((~~**DEPARTMENT**~~)) is an inspector employed by the City of Seattle ((~~Department of Design, Construction and Land Use.~~))

INSPECTOR, INSURANCE is an inspector employed by an ((~~Insuring~~)) Authorized Insurance Company as ((~~described in Section 230.5 of~~)) defined in this code.

INSURANCE COMPANY, AUTHORIZED is an insurance company

that has been authorized by the State of Washington to write and provide insurance coverage for loss of boilers or unfired pressure vessels.

JOINT, BRAZED, is a joint obtained by joining of metal parts with alloys which melt at temperatures higher than ((800)) 1000°F. (((427)) 538°C.) but lower than the melting temperature of the parts being joined.

JOINT, SOLDERED is a gas-tight joint obtained by the joining of metal parts with metallic mixtures ((or)) of alloys which melt at a temperature below ((800)) 1000°F. (((427)) 538°C.) and above 400°F. (204°C.).

LETHAL SUBSTANCES are poisonous gases or liquids of such a nature that a very small amount is dangerous to life when inhaled or absorbed through the skin or membranes. It is the responsibility of the user or his designated agent to determine and declare if contents are lethal substances.

LISTED ((~~and "LISTING" are terms referring to equipment or materials included in a list published by an approved testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of current productions of listing equipment or materials and which listing states that the material or equipment complies with approved nationally recognized codes, standards or tests and has been tested or evaluated and found suitable for use in a specific manner.~~)) is equipment, appliances or materials included in a list published by a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of production of listed equipment, appliances or materials, and whose listing states either that the equipment, appliances or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner. Not all testing laboratories, inspection agencies and other organizations concerned with product evaluation use the same means for identifying listed equipment, appliances or materials. Some do not recognize equipment, appliances or materials as listed unless they are also labeled. The authority having jurisdiction shall utilize the system employed by the listing organization to identify a listed product.

LICENSED OPERATOR is a person licensed to operate boilers in accordance with the Seattle Steam Engineer and Boiler Fireman License Law, SMC 6.230.

"M" OCCUPANCIES are retail and wholesale facilities. Details can be found in International Building Code Section 309.

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

NONCOMBUSTIBLE MATERIALS((~~, as applied to building construction material, is a material which, in the form in which it is used, is either one of the following:~~

~~1. Material of which no part will ignite and burn when subjected to fire. Any material conforming to U.B.C. Standard 2-1 shall be considered noncombustible within the meaning of this section.~~

~~2. Material having a structural base of noncombustible material as defined in Item 1 above, with a surfacing material not exceeding 1/8 inch (3.2 mm) thick which has a flame-spread index not higher than 50.~~

~~"Noncombustible" does not apply to surface finish materials. Material required to be noncombustible for reduced clearances to flues, heating appliances or other sources of high temperature shall refer to material conforming to Item 1. No material shall be classed as noncombustible which is subject to increase in combustibility or flame-spread index beyond the limits herein established, through the effects of age, moisture or other atmospheric condition.~~

~~Flame-spread index as used herein refers to results obtained according to tests conducted as specified in U.B.C. Standard 8-1.~~)) are materials that, when tested in accordance with ASTM E 136, have at least three of four specimens tested meeting all of the following criteria:

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

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

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

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

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

170.1 The construction of boilers and pressure vessels and the installation thereof shall conform to minimum requirements for safety from structural and mechanical failure and excessive pressures. When any conflict exists between referenced codes in this section and this code, the requirements of this code shall prevail. ((~~Compliance with the applicable section of the American Society of Mechanical Engineers' (A.S.M.E.) Boiler and Pressure Vessel Code and the American National Standards Institute (A.N.S.I.) B31.1.0 Power Piping Code, together with addenda thereto is required.~~))

170.((~~1~~)) 2 Boilers and pressure vessels installed in the city of Seattle shall comply with Sections I, III, IV, VIII, X, and PVHO-1 of the American Society of Mechanical Engineers' (A.S.M.E.) Boiler and Pressure Vessel Code and the American National Standards Institute (A.N.S.I.) B31.1.0 Power Piping Code, together with addenda thereto. Boilers and pressure vessels shall comply with the edition of the code in effect at the time the equipment was manufactured. Where this code calls for construction in accordance with any Section of the ((~~American Society of Mechanical Engineers'~~)) A.S.M.E.((~~)~~)) Boiler and Pressure Vessel Code, the exemptions listed in Section 100 of this code shall prevail over any and all exemptions listed in any Section of the A.S.M.E. Code. Appurtenances that are not within the scope of the A.S.M.E. codes may be constructed to a nationally recognized standard of construction that has been approved by the Director.

170.((~~1~~))3 ((~~Adoption of~~)) A.S.M.E. CSD-1-((~~1998~~)) 2002. Except as otherwise stated herein, all fossil fuel fired boiler installations with fuel input ratings of less than 12,500,000 Btu/hr shall comply with the fuel train requirements of A.S.M.E. CSD-1-((~~1998~~)) 2002, Controls and Safety Devices for Automatically Fired Boilers (CSD-1), which requirements are hereby adopted and incorporated by reference. ((~~When any conflict exists between CSD-1 and this code, the requirements of this code shall prevail.~~)) Alterations/modifications of existing burner controls require compliance of the entire fuel train with CSD-1.

170.((~~1.1~~)) 4 Seattle Modifications to CSD-1. CSD-1 is modified as follows:

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

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

C. CG-220 Installation((~~. This chapter~~)) CG-220 is adopted with the following modifications or clarifications:

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

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

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

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

D. CG-260 Combustion Air((~~((Not adopted. This chapter~~)) CG-260 is replaced in its entirety by the requirements of Section 290 of this code and the ((~~1997~~)) Seattle Mechanical Code ((~~Chapter 7 (see Appendix A), as amended~~)). The following shall apply when combustion air is provided by means other than natural air circulation:

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

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

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

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

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

G. Part CF - Combustion Side Control. Part CF is adopted with the following addi-

Section 200 - Fees

200.1 General. A fee for each permit and for other activities related to the enforcement of this code shall be paid as set forth in the Permit Fee Subtitle. Fees for the inspection of repairs or alterations of boilers and pressure vessels are charged in half hour increments at the rate set in the Permit Fee Subtitle. DPD will send an invoice for the repair following completion of the work.

Section 11. Section 210 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 210 - Inspections - General

210.1 General. Boiler and pressure vessel systems for which a permit is required by this code shall be subject to inspection by the Director.

It shall be the duty of the permit applicant to cause the boiler and pressure vessel systems to remain accessible and exposed for inspection purposes. Neither the ((~~Department~~)) Director nor the City shall be liable for expense entailed in the removal or replacement of any material required to permit inspection. When the installation of a boiler and pressure vessel system is complete, an additional and final inspection shall be made. Boiler and pressure vessel systems regulated by this code shall not be connected to the energy fuel-supply lines until authorized by the Director.

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

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

The Director may assess a reinspection fee as set forth in the Permit Fee Subtitle for any action listed above for which reinspection may be required, whether or not a reinspection is actually performed. ((~~A reinspection fee shall not be assessed the first time the work subject to inspection is rejected for failure to comply with the requirements of this code.~~))

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

Section 12. Section 220 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 220 - Inspection Requirements - New Installations

220.1 Boiler installations upon completion shall have controls set, adjusted and tested by the installing contractor. ((~~A~~)) Documentation consisting of City of Seattle Installation Permit, National Board or ASME Data Report(s), CSD-1 Report(s), complete control diagram of a permanent legible type, together with complete boiler operating instructions, shall be furnished by the installer for each installation. Rental boilers and used boilers are subject to hydrostatic testing, non-destructive testing, or other special testing as may be required by the Director.

~~((220.2 An installation for which a permit is required shall not be put into service until it has been inspected and approved by the Director.))~~

220.((~~3~~)) 2 It shall be the duty of the person or entity doing the work or installation authorized by a permit to notify the Director that such work or installation is ready for inspection and to ((~~post, in a conspicuous position on the installation, a notice in substantially the following form: "Warning! This installation has not been inspected and approved by the Department of Design, Construction and Land Use and shall not be covered or concealed until so inspected and approved." and it shall be unlawful for anyone other than the Department to remove such notice.~~)) prevent the unauthorized use of the equipment until such use has been authorized by the Director. The ((~~department inspector~~)) Director shall require such tests as he/she deems necessary to determine that the installation complies with the provisions of this code. Such tests shall be made in the presence of the ((~~department inspector~~)) Director's authorized representative. It shall be the duty of the person requesting inspections required by this code to provide access to, and the means for the safe inspection of the ((~~work~~)) installation.

220.((~~4~~)) 3 When the owner or his authorized representative requests inspection of a boiler prior to its installation, the Director shall make such inspection. Additional inspection(s), or inspections outside the scope of the permit may be subject to additional fees in accordance with Section 200 of this code.

Section 13. Section 230 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

230.6 - Preparation for Internal Inspection

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

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

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

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

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

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

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

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

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

Section 14. Section 240 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 240 - Certificate of Inspection

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

Exceptions:

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

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

Section 15. Section 250 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 250 - Repairs and Alterations

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

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

~~((Exceptions / Revisions to National Board Inspection Code Chapter III:~~

~~In addition to repair organizations holding a National Board "R" Certificate of Authorization, organizations holding an A.S.M.E. Certificate of Authorization may make repairs provided repairs are covered in the organization's Quality Control Manual.~~

~~250.3 In all cases the material and~~ shall notify the Director immediately of suspension of insurance because of dangerous conditions and within 30 days for new insurance in effect and discontinuance of insurance coverage.~~))~~

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

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

230.6 - Preparation for Internal Inspection

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

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

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

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

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

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

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

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

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

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

Exceptions:

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

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

Section 15. Section 250 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

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

~~((Exceptions / Revisions to National Board Inspection Code Chapter III:~~

~~In addition to repair organizations holding a National Board "R" Certificate of Authorization, organizations holding an A.S.M.E. Certificate of Authorization may make repairs provided repairs are covered in the organization's Quality Control Manual.~~

~~250.3 In all cases the material and~~ 140°F, shall be equipped with ((~~a splash shield or centrifugal separator~~)) a means of tempering and cooling the discharge prior to entering the drainage system. (See Uniform Plumbing Code, Section 810.)

310.6.2 Safety valve discharge from boilers and pressure vessels containing steam shall be directed upward to a minimum of 6 feet above the boiler room floor or horizontally to an inaccessible area of the boiler room. When the discharge from safety valves would result in a hazardous discharge of steam inside the boiler room, or when the discharge of multiple safety valves on boilers exceeds the capacity of ((5,000)) 1,000 pounds of steam per hour, such discharge shall be extended outside the boiler room to a safe location.

310.5.3 ((~~When 310.5.2 cannot be met, the boilers~~)) Boilers in the ((~~particular~~)) boiler room shall be provided with an emergency shutdown switch located outside the boiler room, or other location approved by the Director. The purpose of such a switch is to allow the shutdown of boiler(s) without having to enter the boiler room. The emergency shutdown switch shall be suitable for the intended use.

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

310.6 - Low Water Cutoff

310.6.1 Every water boiler, other than manually fired, shall be equipped with a manual reset type low-water cutoff except that a ((~~coil-type boiler or a water-tube~~)) boiler which requires forced circulation to prevent overheating ((~~of the coils or tubes~~)) shall have a flow-sensing device installed ((~~in the outlet piping~~)) in lieu of the low-water cutoff. The required flow switch (if aplicable) or the required manual reset type low-water cutoff shall be mounted in such a manner so as to prevent damage to the boiler and to permit testing of the low-water cutoff without draining the boiler system. Manually operated and power actuated isolation valves between the low water cutoff and the boiler are prohibited. Delay functions incorporated in any low water cut-off or flow switch device will require the pre-approval of the Director. Delay functions not installed in accordance with the manufacturer's approvals shall not be used.

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

310.6.2 Every steam boiler, other than manually fired, shall be equipped with two low-water cutoffs. The lower of the two cutoffs shall be equipped with a manual reset device.

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

310.6.4 Water Feeding Devices. All steam, vapor or water boilers shall be equipped with an automatic water feeding device. For steam boilers and boilers having an operating water level, the water feeder shall be controlled by the actual water level in the boiler.

Exception: ((~~Boilers which have a constant attendant who has no other duties while the boiler is in operation.~~)) Manually operated (fired) boilers that have a qualified person in constant attendance of the boiler while it is in operation.

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Section 22. Section 320 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 320 - Boilers Certified as Automatic.

320.1 Boilers certified as automatic shall be equipped with controls and limit devices as set forth in Table 320-A, or ASME CSD-1, whichever is more restrictive.

320.2 Boilers certified as automatic shall not require any manual operation of the feed water system and shall also be equipped with the following gauges, as applicable:

1. oil temperature((~~,~~)) and oil suction pressure gauges((~~,~~)) ;

2. high and low gas pressure gauges((~~,~~));

and

3. stack temperature gauge ((~~and wind box pressure gauge. Feedwater systems for automatic boilers shall not require any manual operation.~~))

320.3 A copy of the approved wiring diagram for a boiler certified as automatic shall be permanently and prominently displayed, under protective covering, in the boiler room, or within the official log book in an approved fashion. If the safety devices are wired or in some fashion digital in nature, a schematic with sufficient detail for a repair or service person to effectively restore the boiler to service will be acceptable. Such diagram shall include the coding of the actual wiring by color or by number to permit a ready check

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

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

7 Boiler groups B, C, D, G and H shall not permit pilot or main burner trial for ignition operation before a purging operation of sufficient duration to permit a minimum of four complete air changes through the furnace, including combustion chamber and the boiler passes. Where this is not readily determinable, five complete air changes of the furnace, including combustion chamber up to the first pass, will be considered equivalent. An atmospheric gas burner with no mechanical means of creating air movement or an oil burner which obtains two thirds or more of the air required for combustion without mechanical means of creating air movement shall not require purge by means of four air changes so long as its secondary air openings are not provided with means of closing. If such burners have means of closing secondary air openings, a time delay must be provided which puts these closures in a normally open position for four minutes before an attempt for ignition. An installation with a trapped combustion chamber shall in every case be provided with a mechanical means of creating air movement for purging.

Purge air flow in boiler groups C, D, G and H shall be proved. Proof of purge air flow may be accomplished by providing:

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

(2) Air flow interlock.

8 See section 310. ((~~Every automatic hot-water-heating supply boiler, low-pressure hot-water heating boiler, and power hot-water boiler shall be equipped with two high-temperature limit controls with a manual reset on the control with the higher setting interlocked to shut off the main fuel supply, except that manual reset on the high-temperature limit control shall not be required on any automatic package boiler not exceeding 400,000 Btu/h input and which has been approved by an approved testing agency. Every automatic hot water heating, power boiler and package hot-water supply boiler shall be equipped with one low-water level limit control with a manual reset interlocked to shut off the fuel supply so installed as to prevent damage to the boiler and to permit testing of the control without draining the heating system. However, a low-water flow limit control installed in the circulating water line may be used instead of the low-water level limit control for the same purpose on coil-type boilers.~~))

9 See section 310. ((~~Every automatic low-pressure steam-heating boiler, small power boiler and power steam boiler shall be equipped with two high-steam pressure limit controls interlocked to shut off the fuel supply to the main burner with manual reset on the control with the higher setting and two low-water-level limit controls, one of which shall be provided with a manual reset device and shall be independent of the feed water controller. Coil-type flash steam boilers may use two high-temperature limit controls, one of which shall be manually reset in the hot-water coil section of the boiler instead of the low-water level limit control.~~))

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

11 Control and limit device systems shall

Code ((~~Chapter 22.901~~)) Section 22.900E as applicable. Monitored Boiler status is available only to boilers certified by the Director as Automatic Boilers.

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

C. ((~~Annual Inspection and Permits Required. Monitoring system permits expire at midnight on December 31st of the year of issuance.~~)) An inspection by a department inspector is required annually for certification ((~~permit~~)) renewal.

D. Equipment. All Monitoring System devices shall be approved by a nationally recognized testing agency.

330.((~~2~~)) 3 - Alarms / Signals, Personnel and Reporting

A. Required Alarms. A monitoring system shall sense low water level and flame failure on all boilers, steam pressure at the upper limit setting on steam boilers or water temperature at the upper limit setting on hot water boilers. Upon sensing any of the above conditions, a manually reset relay device shall shut off the fuel supply to the boiler and shall relay an alarm signal to the monitoring system. The monitoring system shall sense existing limit controls and flame failure devices.

B. Monitoring System Personnel. The monitoring station shall have sufficient personnel ((~~(a minimum of two persons)~~)) constantly on duty to assure immediate attention to all signals received. ((~~In the monitoring station of a proprietary system, the Director may permit a minimum of one person to be on constant duty, provided there are approved means, such as a watchman's service, to maintain a check at intervals of not less than two hours to assure that the operator is on duty.~~)) The minimum age of all monitoring station operators shall be eighteen years. Operation and supervision shall be the primary functions of the monitoring station operators and no other interest or activity shall take precedence over the protective service.

C. Report Availability. Reports of all signals received shall be made available upon request to the Director.

D. Disposition of Signals.

1. Upon receipt of trouble signals or other signals pertaining solely to matters of equipment maintenance of the signaling systems, the monitoring station operating company shall immediately investigate and, if possible, assure that the trouble is remedied at once.

In all cases where service of the signaling system is interrupted and is corrected within 12 hours, the property owner shall be notified immediately. This notification shall be confirmed by written notice with a copy sent to the Director.

2. Upon receipt of an alarm signal, the monitoring station shall notify the on-site boiler operating engineer, if any, or the boiler supervisor by telephone or by the quickest method available.

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

4. Definite instructions for the handling of alarms shall be posted for the guidance of the operators of the monitoring system.

330.((~~3~~)) 4 Maintenance and Repair

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

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

Section 24. Section 340 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 340 - Expansion Tanks

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

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

PILOT, INTERMITTENT is a pilot that is automatically lighted each time there is a call for heat. It burns during the entire period the main burner is firing.

PILOT, INTERRUPTED is a pilot that is automatically lighted each time there is a call for heat. The pilot fuel is cut off automatically at the end of the main burner flame-establishing period.

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

PRESSURE VESSEL is a closed unfired container under internal pressure.

PRESSURE VESSEL, NON CODE, is a pressure vessel not constructed in accordance with ((~~the requirements of~~)) the codes listed in Section 170((~~.1~~)) of this code.

PRESSURE VESSEL, USED shall mean any pressure vessel that is to be installed in Seattle that has been in any previous service.

PURGE ((~~is an acceptable method of scavenging the combustion chamber, boiler passes and breeching to remove all combustible gases~~)) is to clear of air, water or other foreign substances.

"R" OCCUPANCIES are residential facilities. Details can be found in International Building Code Section 310.

"S" OCCUPANCIES are storage facilities. Details can be found in International Building Code Section 311.

"U" OCCUPANCIES are accessory utility facilities such as private garages and sheds. Details can be found in International Building Code Section 312.

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

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

((~~Type B Gas Vent is a factory-made gas vent listed by a nationally recognized testing agency for venting listed or approved appliances equipped to burn only gas.~~

~~Type BW Gas Vent is a factory-made gas vent listed by a nationally recognized testing agency for venting listed or approved gas-fired vented wall furnaces.~~

~~Type L is a venting system consisting of listed vent piping and fittings for use with oil-burning appliances listed for use with Type L or with listed gas appliances.~~))

VENT CONNECTOR((~~, GAS, is that portion of a gas-venting system which connects a listed gas appliance to a gas vent and is installed within the space or area in which the appliance is located)~~) is the pipe that connects an approved fuel-fired appliance to a vent.

((~~VENTING COLLAR is the outlet opening of an appliance provided for connection of the vent system.~~

~~VENTING SYSTEM is the vent or chimney and its connectors assembled to form a continuous open passageway from an appliance to the outside atmosphere for the purpose of removing products of combustion. This definition also shall include a venting assembly which is an integral part of an appliance.~~

~~VENTING SYSTEM-GRAVITY-TYPE is a system which depends entirely on the heat from the fuel being used to provide the energy required to vent an appliance.~~

~~VENTING SYSTEM-POWER-TYPE is a system which depends on a mechanical device to provide a positive draft within the venting system.~~))

Section 8. Section 170 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 170 - Construction and Installation Code Requirements

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

G. Part CF - Combustion Side Control. Part CF is adopted with the following additions:

1. **Fuel Piping:** The fuel piping requirements ((~~of Chapters 13~~)) of the ((~~1997~~)) Seattle Mechanical Code (((~~see Appendix D), as amended,~~)) shall take precedence over the requirements of CSD-1.

2. **Boilers Certified as Automatic** ((~~must~~)) shall comply with the requirements of Sections 220 and 320((~~.2 through 320.5~~)) of this code.

((~~170.2 Non-code boilers and non-code unfired pressure vessels shall not be installed or reinstalled.~~))

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

170.((~~3~~)) 6 ((~~Boilers~~)) Appurtenances such as safety controls, operating controls, burner assemblies, and boiler-burner assemblies shall be listed by a nationally recognized testing agency and shall be installed in accordance with the requirements of the listing.

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

Section 9. Subsections 190.1, 190.2 and 190.4 of the Seattle Boiler and Pressure Vessel Code are amended as follows:

Section 190 - Permits Required - Installation Permits

190.1 A((~~n installation~~)) permit shall be obtained from the Director prior to:

1. Installation or replacement of new or used boilers and pressure vessels.

2. Installation of rental boilers.

3. Certification of boilers as Automatic.

4. Certification of boilers as Monitored.

5. Alteration or modification of existing control systems on boilers certified as Automatic or Monitored.

6. Replacement or modification of fuel burner(s), changing of fuels, or adding different fuel combinations.

((~~the installation or replacement of new and used boilers and pressure vessels, the installation of rental boilers, and to apply for the certification of a boiler as Automatic or Monitored. Alteration or modification of existing control systems on automatic boilers, replacement of a fuel burner, changing fuels or adding a different fuel to a combination burner previously operated on a single fuel, and the conversion of solid-fuel-fired boilers as permitted by Section 320.5 shall also require a permit.~~))

190.2 Application for Permit. To obtain a permit, the applicant shall first file an application in writing on a form furnished by the Director ((~~of Design, Construction and Land Use~~)) for that purpose. Every ((~~such~~)) application shall:

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

2. Describe the land on which the proposed work is to be done by legal description, property address or similar description that will readily identify and definitely locate the proposed building or work.

3. Be accompanied by the plans and/or specifications in the standard A.S.M.E. form (Manufacturers Data Report).

4. Be signed by the owner of the property or building, or authorized agent, who may be required to submit evidence to indicate such authority.

5. Indicate the name of the owner and contractor and the name, address and phone number of a contact person.

6. Give such other data and information as may be required by the Director.

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190.4 Emergency Repairs. In the case of an emergency, the installation, alteration or repair of any boiler or pressure vessel system or equipment may be made without a permit provided that notice of the ((~~emergency installation, alteration or repair~~)) work being performed shall be given to the Director within twenty-four hours or within one working day from the time when the emergency work was started. Depending on the nature of the emergency, appropriate permits shall be obtained within five days of the start of the work or as directed by the Director.

***

Section 10. Section 200 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

boiler prior to its installation, the Director shall make such inspection. Additional inspection(s), or inspections outside the scope of the permit may be subject to additional fees in accordance with Section 200 of this code.

Section 13. Section 230 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 230 - Existing Installations - Reinspection.

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

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

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

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

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

1. Low pressure hot water heating boilers not using corrosion inhibitors shall((~~:~~)) be inspected internally at least every ((~~four~~)) two years;

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

3. All other boilers((~~,~~)) shall be inspected every year.

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

230.2 Unfired pressure vessels shall be inspected externally biennially. When subject to corrosion and construction permits, they shall, in addition, be subject to inspection internally biennially. ((~~An external ultrasonic examination of pressure vessels that are 36 inches inside diameter and under, shall constitute an internal inspection.~~)) At the discretion of the inspector, an ultrasonic examination of the external side of the pressure vessel may substitute for an internal inspection.

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

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

230.5 - Inspection by ((~~Insuring~~)) Authorized Insurance Companies. Inspection of boilers and pressure vessels may be made by employees of ((~~the insuring~~)) an authorized insurance company. Such inspections shall be conducted in accordance with the requirements of this code and by persons holding an active commission((~~s~~)) from the National Board of Boiler and Pressure Vessel Inspectors((~~, subject to approval of the Director~~)).

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

2. ((~~Approved insuring company~~)) Authorized inspectors (((~~Insurance Inspectors~~))) shall make their reports to the Director on ((~~prescribed forms on inspections authorized by the Director~~)) forms prescribed by the Director. ((~~The reports shall be filed with the Department. Insurance inspectors~~

~~In addition to repair org... ing a National Board "R" ...ations holding Authorization, organizations holding ...cate of A.S.M.E. Certificate of Authorization an make repairs provided repairs are covered ...ay the organization's Quality Control Manual.~~

~~250.3 In all cases the material and workmanship shall comply with the rules contained in the appropriate sections of the A.S.M.E. Boiler and Pressure Vessel Code.~~))

Section 16. Section 260 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 260 - Removal from Service - Dangerous Conditions

If the operation of a boiler or pressure vessel is deemed by the Director to constitute an immediate danger, the pressure on such boiler or pressure vessel shall be relieved and the boiler or pressure vessel secured at the owner's expense ((~~cost~~)). Such unsafe boiler or pressure vessel shall be declared a nuisance and shall not be operated without approval of the Director.

Section 17. Section 270 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 270 - Accidents to be Reported

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

Section 18. Section 280 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 280 - Operation

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

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

Section 19. Section 290 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 290 - Combustion Air

Combustion air shall be provided in accordance with Chapter 7 of the Seattle Mechanical Code (((~~see Section 170 and Appendix A of this code~~))).

Section 20. Section 300 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 300 - Venting

Except as noted below, venting of the products of combustion shall be in accordance with Chapter 8 of the Seattle Mechanical Code (((~~see Appendix B~~))).

Stack dampers on boilers fired with oil or solid fuel shall not close off more than 80 percent of the stack area when closed, except on automatic boilers with pre-purge, automatic draft control and interlock. Operative dampers shall not be placed within any stack, flue or vent of a gas-fired boiler, except on an automatic boiler with pre-purge, automatic draft control and interlock.

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

Section 21. Subsections 310.4, 310.5, and 310.6 of the Seattle Boiler and Pressure Vessel Code are amended as follows:

Section 310 - Controls, Safety Devices, and Instrumentation

***

310.4 Gauges, General. Required gauges shall be kept in good working order. All steam boilers shall be provided with a pressure gauge and a water level glass. All water boilers shall be provided with a pressure gauge and a temperature indicator. All hot water supply/storage tanks shall be provided with a pressure gauge and temperature gauge.

310.5 - Pressure and Temperature Relief.

310.5.1 The discharge from liquid relief valves shall be piped to within 18 inches of the floor or to an open receptacle, and when the operating temperature is in excess of ((~~212~~))

or within the official log book in an approved fashion. If the safety devices are wired or in some fashion digital in nature, a schematic with sufficient detail for a repair or service person to effectively restore the boiler to service will be acceptable. Such diagram shall include the coding of the actual wiring by color or by number to permit a ready check of the system.

320.4 All boilers certified as automatic of 12,500,000 Btu/h input and over shall also comply with the installation requirements of N.F.P.A. ((~~8501, 8502, 8503, 8504~~)) 85, 2004 edition.

320.5 The Director may approve solid-fuel-fired boilers that can meet the safety requirements for automatic gas- or oil-fired boilers.

Table 320-A (Part 1 of 2)

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

Boiler Group	Fuel	[1]Fuel Input Range in BTU/hr (inclusive)	Low Fire Start Up Control [6]	Pre-purging Control [7]	Hot Water Temperature and Low Water Limit Controls [8]	Steam Pressure and Low Water Limit Controls [9]	Approved Fuel Shutoff [10]	Control and Limit Device System Design [11]
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

Footnotes for Table 320-A

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

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

(b) The nominal boiler rating, as determined by the Director, plus 25 percent.

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

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

3 Continuous pilots provided on manufacturer assembled boiler-burner units must be approved by a testing agency complying with nationally recognized standards approved by the Director.

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

...burners where the safety shutoff valve will be subjected to pressures in excess of 10 psi a second safety shutoff valve shall be provided in series with the first. In boiler group H where a second safety shutoff valve is required the upstream valve shall be of the 3-way by-pass or recirculating type.

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

Section 23. Section 330 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 330 - Monitored Boilers

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

330.1 Definitions. For the purposes of this section, certain terms, phrases, words and their derivatives shall be defined as follows:.

CENTRAL STATION AGENCY: A 'Class A' Central Station Agency as defined and approved by the Seattle Fire Department.

MONITORING SYSTEM: An approved protective signaling used for surveillance of controls and limit devices required on certain automatic boilers.

PROPRIETARY SYSTEM: A monitoring system with constant supervision by competent and experienced personnel in a central supervising station at the property protected. The system is to include equipment and other facilities required to permit the boiler and monitoring system operators to test and operate the system and, upon receipt of a signal, to take such action as is required.

PROTECTIVE SIGNALING SYSTEMS: Electrically operated circuits, instruments and devices, together with the necessary electrical energy designed to transmit alarms and trouble signals, necessary for effectively monitoring boilers.

330.((~~1~~)) 2 - Approval of Monitoring Systems

A. An installation permit is required to certify a boiler as Monitored. The annual fee for such certification shall be as established in the Permit Fee Subtitle, Seattle Municipal

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

((~~B. Systems with Open Expansion Tank. Systems, equipped with an open expansion tank to satisfy thermal water expansion, shall be provided with an indoor overflow from the upper portion of the expansion tank in addition to an open vent. The indoor overflow shall be carried within the building to a suitable plumbing fixture or to the basement.~~

~~C. Closed-type Systems. Systems of the closed type shall have an airtight tank or other suitable air cushion that will be consistent with the volume and capacity of the system, and shall be suitably designed for a hydrostatic test pressure of two and one half times the allowable working pressure of the system. Expansion tanks for systems designed to operate above 30 psig shall be constructed in accordance with nationally recognized standards approved by the Director. Provisions shall be made for draining the tank without emptying the system, except for tanks pressurized by/from an external source.~~))

Section 25. Section 350 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 350 - Blowoff Tanks

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

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

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

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

Section 26. Section 360 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 360 - Clearance Requirements

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

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

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

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

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

D. Adequate clearance for access and to permit entry shall be provided for pressure vessels. Pressure vessels equipped with manhole openings((~~,~~)) shall have a minimum of five feet clearance from any obstruction. All other inspection openings shall be at least 18 inches from any obstruction.

Section 27. Section 380 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 380 - Boiler Rooms/ Enclosures

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

((~~Fuel-fired boilers may not be installed in refrigeration machinery rooms.~~))

380.1 - Mounting

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

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

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

380.2 - Floors

Boilers shall be mounted on floors of noncombustible construction unless listed for mounting on combustible flooring.

380.3 - Drainage

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

380.4 - Installation in Garages and Warehouses

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

B. Boilers ((~~and pressure vessels~~)) located in a garage and which ((~~generate a glow, spark or flame capable of igniting flammable vapors~~)) have an ignition source shall be installed with sources of ignition at least 18 inches above the floor level. See also Seattle Mechanical Code Section 304.3.

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

380.5 - Platforms Around Boilers and Pressure Vessels

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

Section 28. Section 390 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 390 - Fuel Piping

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

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

C. Fuel piping installation shall conform to the provisions of the Seattle Fuel Gas Code. ((~~referenced in Appendix D and E of this code.~~))

Section 29. Section 400 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 400 - Steam and ((~~Water~~)) Hydronic Piping

400.1 General. Steam and ((~~water~~)) hydronic piping systems which are part of a boiler ((~~other than potable water piping regulated by the Seattle/King County Plumbing Code~~)), or heating system, shall conform to the requirements of International Mechanical Code Chapter 12, and the codes listed in Section 170 of this code. When piping falls outside the scope of the applicable sections of the above codes, a standard approved by the Director may be used. ((~~shall comply with the following requirements:~~

GREGORY J. NICKELS,

Mayor.

Filed by me this 25th day of July, 2005.

(Seal) JUDITH PIPPIN,

City Clerk.

Publication orderd by JUDITH PIPPIN, City Clerk.

Date of publication in the Seattle Daily Journal of Commerce, August 2, 2005.

8/2(188530)

~~listed by the Seattle/King County Plumbing Code))~~, or heating system, shall conform to the requirements of International Mechanical Code Chapter 12, and the codes listed in Section 170 of this code. When piping falls outside the scope of the applicable sections of the above codes, a standard approved by the Director may be used. ((~~shall comply with the following requirements:~~

~~A. Those portions of piping systems in which the steam pressure exceeds 15 psig or water pressure exceeds 160 psig or the temperature (water or steam) exceeds 250oF, shall comply with Section 170.1 as applicable. Where Section 170.1 is not applicable, piping systems shall comply with the requirements of this Section.~~))

400.((~~1~~)) 2 - Materials and Construction

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

((~~B. Other materials. Other materials and construction may be installed as provided in this code or in accordance with the terms of their approval by the Director, provided that they are first acceptable to the Director and are equivalent, for the use intended, to those specified in this code.~~

~~C. Marking. Materials and devices shall be suitably identified. In addition to the incised marking required in the standards, all hard drawn copper tubing shall be marked by means of a continuous and indelible colored stripe, at least 1/4 inch in width, as follows:~~

~~1. Type L - Blue~~

~~2. Type K - Green~~

~~3. Type M -- Red~~

~~D. Protective Coatings. Protective coatings shall be watertight, durable, heat resistant, electrically non-conductive, and tightly adherent to the pipe.~~

~~E. Insulation. Coverings or insulation used on hot water or steam pipes shall be of materials suitable for the operating temperature of the system. The insulation, jackets and lap seal adhesives shall be tested as a composite product and shall have a flame spread of not more than 25 and a smoke-developed rating of not more than 50 when tested in accordance with U.B.C. Standard 8-1.~~

~~F. Hangers and anchors. Hangers and anchors shall be suitable for the use intended.~~))

((~~G~~)) B. ((~~Galvanized Piping and Fittings.~~)) Galvanized piping and fittings are prohibited.

((~~H. Plastic Air Piping. Certain plastic pipes, limited to those so labeled and/or certified by the manufacturer for such use, are acceptable for compressed air service. Due to the effect of temperature, lubricants, and other physical factors on the allowable pressure, some restrictions may be imposed and their use requires case by case approval by the Director. CPVC or PVC piping for compressed air service is not allowed.~~))

Section 30. Section 410 of the Seattle Boiler and Pressure Vessel Code is amended as follows:

Section 410 - Pressure Reducing Valves

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

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

Section 31. Section 500 of the Seattle Boiler and Pressure Vessel Code is repealed.

Section 32. This ordinance shall take effect and be in force thirty (30) days from and after its approval by the Mayor, but if not approved and returned by the Mayor within ten (10) days after presentation, it shall take effect as provided by Municipal Code Section 1.04.020.

Passed by the City Council the 18th day of July, 2005, and signed by me in open session in authentication of its passage this 18th day of July, 2005.

JAN DRAGO,

President of the City Council.

Approved by me this 25th day of July,