SEATTLE FIRE DEPARTMENT

Administrative Rule 26.02.09

SUBJECT: **DESIGNATED MARINE HOT WORK FACILITIES AND SHIPYARDS**	EFFECTIVE DATE: January 12, 2009
29 CFR 1915 **2006 Seattle Building Code Section 421.5.2** **NFPA 307, *Construction and Fire Protection of Marine Terminals, Piers, and Wharves***,	SUPERSEDES: Administrative Rule 26.02.07 Effective October 21, 2007
	FCAB REVIEW DATE: January 6, 2009
NOTICE: Administrative Rules are established per Seattle Fire Code Sections 102.7 and 104.1, and they are subject to the Administrative Sections 104.8, Modifications, 104.9, Alternative Materials and Methods, and 108, Appeals.	APPROVED: Signature on File KENNETH L. TIPLER, FIRE MARSHAL

SECTION 1
SCOPE

1.1 General. The purpose of this regulation is to minimize personal injuries and property loss stemming from fires initiated by *hot work* activities on *vessels* located at marine related facilities by making safety inspections and issuing permits, with the least possible adverse impact on the maritime business community. This Administrative Rule shall be used in conjunction with Administrative Rule 26.01.09, that establishes specific requirements for *hot work* activities conducted on *vessels*.

The provisions of this Administrative Rule shall apply to all *hot work* on *vessel*s within the corporate city limits of Seattle.

This regulation is an Administrative Rule and as such is adopted into Seattle City Ordinance through the 2006 Seattle Fire Code Section 102.7. The Rule is published as provided for in Seattle Municipal Code Chapter 3.02. Public compliance with the requirements set forth in this Rule is mandatory. The City of Seattle in coordination with members of Seattle's marine business community developed this Rule. Violations of this regulation may be investigated and prosecuted in accordance with the procedures of the Seattle Law Department. Violators are subject to criminal and civil penalties, and may be subject to the recovery costs of extinguishing marine fires due to a violation of requirements set forth in this Rule.

1.2 Definitions. For the purpose of this Rule, certain terms are defined as follows:

DESIGNATED HOT WORK FACILITY. Those piers, designated by the fire code official, and by virtue of their construction, location, fire protection, emergency vehicle access and fire hydrant availability, that are suitable to permit certain repairs to *vessels*.

HOT WORK. Any activity involving riveting, welding, burning, brazing, soldering, heating, use of powder-actuated fastening tools or similar fire-producing operations, including any operation that raises the temperature of the work piece to 204ºC (400ºF) or above. Grinding, drilling, abrasive blasting, or similar spark-producing operations are also considered *hot work* unless deemed otherwise by a *Marine Chemist* or when such operations are *physically isolated* from any atmosphere containing more than 10 percent of the lower explosive limit of a flammable or combustible substance, as determined by a *Shipyard Competent Person***.**

LENGTH OF VESSEL. The length overall (LOA) of the vessel as measured along the centerline.

SHIP REPAIR. Ship repair or ship repairing means any repair of a vessel including, but not limited to alterations, modification, conversion, installations, cleaning, painting, and maintenance work.

SHIPYARD. A pier, wharf, or series of piers and related onshore facilities, designated by the fire code official, which by virtue of the pier construction, location, emergency vehicle access, fire protection, hydrant availability and onsite safety personnel, is suitable to permit repairs, including major conversions, on marine vessels of any length.

VESSEL. Every description of watercraft or other artificial contrivance used or capable of being used as a means of transportation on water, including special purpose floating structures(dry docks, caissons, bridge pontoons, buoys, pipe piles) not primarily designed for or used as a means of transportation on water.

Ship. Any ***vessel*** propelled by power or sail.

Barge. Any ***vessel*** not equipped with a means of self-propulsion.

Coiled Vessel. Tank ***vessel*** using a closed system or heating coils that use thermal oil as the heating medium.

Tank Vessels. Any ***vessel*** especially constructed or converted to carry liquid bulk cargo in tanks.

SECTION 2
PERMITS

2.1 General. Facilities where *hot work* activities are conducted on *vessels* temporarily moored or located in the corporate city limits of Seattle must obtain an annual permit from the Seattle Fire Department.

> **EXCEPTION:** Facilities where Level I (see Administrative Rule 26.01.09 Section 2.2.2) *hot work* is conducted exclusively.

The fire code official's authority to require and issue such permits is set forth in the 2006 Seattle Fire Code, Chapter 1 Section 105.

2.2 Permit Types.

2.2.1 Type I Designated Hot Work Facility. Facilities where *hot work* on *vessels*, regardless of length, is conducted shall obtain an annual Type I *Designated Hot Work Facility* permit. Such facilities shall be in accordance with Section 4.1 of this Rule before a temporary activity permit to conduct *hot work* on a *vessel* at this location will be issued.

2.2.2 Type II Designated Hot Work Facility. Facilities where *hot work* on *vessels*, 200 feet in *length of vessel* or less, is conducted shall obtain an annual Type II *Designated Hot Work Facility* permit. Such facilities shall be in accordance with Section 4.2 of this Rule before a temporary activity permit to conduct *hot work* on a *vessel* at this location will be issued.

2.2.3 Shipyards. *Shipyards* where *hot work* for *ship repair*, shipbreaking and alterations of *vessels* is conducted shall obtain an annual *Shipyard* permit and comply with requirements set forth in Section 4.3 and 4.4 of this Rule.

SECTION 3
LOCATIONS NOT ELIGIBLE TO BE DESIGNATED HOT WORK FACILITIES

3.1 Prohibited locations. Some locations, by virtue of their primary or secondary use, are prohibited from being a *Designated Hot Work Facility*.

Level I *hot work* shall not be conducted at

- Fuel terminals or piers
- Passenger terminals unless under special temporary permit.
- Grain terminals
- Piers where primary use is residential or recreational in nature
- Piers not possessing the required Fire Department permits.
- *Vessels* which are not immediately adjacent to the dock or pier. See also Section 3.5 of SFD Administrative Rule 26.01.09.

Level II *hot work* shall not be conducted at:

- Fuel terminals or piers
- Passenger terminals unless under special temporary permit.
- Grain terminals
- Piers where primary use is residential or recreational in nature
- Piers not possessing the required Fire Department permits.
- Vessels not positioned immediately adjacent to the dock or pier.
- Combustible piers, floats or wharves which are not equipped with suitable access for apparatus, availability of hydrant supply, or fire protection systems, as determined by the fire code official, or his appointed representative.

SECTION 4
DESIGNATED HOT WORK FACILITY REQUIREMENTS

4.1 General. Piers, wharves, floats where Level II *hot work* on *vessels* is conducted shall be in accordance with Section 4.1.1.1 through 4.1.1.4.

4.1.1 Signage and Labeling.

4.1.1.1 "Permit required" signage. Signs shall be posted to alert boat owners and other users of the facility that a Seattle Fire Department permit is required prior to conducting any *hot work* on *vessels* at the site. Such signage shall be placed in conspicuous locations at the site and shall display the following warning:

THE SEATTLE FIRE DEPARTMENT REQUIRES A PERMIT TO PERFORM ANY HOT WORK ON VESSELS IN SEATTLE.

HOT WORK INCLUDES BUT IS NOT LIMITED TO - ANY USE OF A TORCH OR OPEN FLAME, ANY TYPE OF WELDING AND ANY SPARK-PRODUCING GRINDING IN HAZARDOUS LOCATIONS.

> **EXCEPTION:** When approved by the fire code official after demonstrating that other satisfactory safeguards and controls are in place to alert users of the site that a permit is required.

4.1.1.2 Address and vehicle weight limit signage. At the shore end of piers, wharves and floats conspicuous signage shall be located indicating the address and, for those structures that are designed to support vehicles, the weight limit. Numbers and letters shall be easily legible and have high contrast with the color of the sign background. Numbers and letters shall not be less than 5 inches (127 mm) in height.

4.1.1.3 Electrical disconnects. All required disconnects shall comply with the Seattle Electrical Code. Disconnects shall be readily accessible, clearly labeled and indicate the areas they service.

4.1.1.4 Emergency Plan. Owners of piers, wharves, floats and marinas shall prepare an emergency plan for the facility that is in an approved location and readily available to the fire department at all times. The plan shall include procedures for fire department notification, fire evacuation, and include location of portable fire extinguishers and hose cabinets, sprinkler and standpipe system control valves, fire department connections and electrical disconnects. (2006 SFC 4601.4)

Point of Information

For examples of emergency plans, see information bulletins located at www.seattle.gov/fire titled Emergency Procedures for Public Occupancies and Fire Evacuation Planning.

4.2 Type I Designated Hot Work Facility Requirements.

4.2.1 General. *Hot work* activities may be performed at Type I *Designated Hot Work Facilities* on *vessels* of any length when such facilities are in accordance with Section 4.1 and 4.2 of this Rule.

4.2.2 Required Number of Hydrants. At least two fire hydrants shall be provided. One hydrant shall be located within 500 feet of the most remote portion of the approved fire department access lane. The second fire hydrant shall be located within 1000 feet of the first hydrant. Additional hydrants shall be required for each 100 feet of vessel length over 300 feet up to a maximum of five (5) hydrants. When additional hydrants are required, they shall not be more than 1000 feet apart.

> **EXCEPTION:** A Class I Standpipe, in accordance with Section 4.2.4.3 of this Rule, may be provided in lieu of a fire hydrant within 500 feet of the most remote portion of the fire department apparatus access lane.

4.2.3 Minimum Hydrant Flow Capacity. Each of the two hydrants located closest to the most remote portion of the fire department access lane shall be capable of delivering not less than 2,000 gpm at a minimum residual pressure of 20 psi each.

> **EXCEPTION:** The requirements for fire hydrants may be modified when alternate arrangements are approved by the fire code official.

Point of Information

While alternative arrangements will be considered by the fire code official, drafting is not an acceptable substitute for a primary fire suppression water supply.

4.2.4 Fire Protection on Piers.

4.2.4.1 Automatic Sprinklers. A complete automatic sprinkler system shall be designed and installed in accordance with Sections 4.3.3.1.2 and 4.3.3.1.3 of National Fire Protection Association Standard NFPA 307 "Construction and Fire Protection of Marine Terminals, Piers, and Wharves" for the protection of all combustible piers.

> **EXCEPTION:** When approved, an automatic sprinkler system is not required for existing piers when deck openings and revolving nozzles, as specified in Section 5 of this Rule, in conjunction with draft stops, in accordance with Section 6 of this Rule are provided.

4.2.4.2 Standpipes. When required by the fire code official, due to:

- the nature of the work conducted,
- length, area, and construction of the pier or bulkhead,
- fire department apparatus access,
- size of the tenant vessel(s), or
- the available water supply and hydrant location,

Type I *Designated Hot Work Facilities* shall be provided with an approved Class I standpipe system: All standpipe systems shall be installed under permit from the Department of Planning and Design.

4.2.4.3 Class I Standpipe Requirements. Class I standpipes shall consist of piping, with 2½ inch fire hose outlets, for fire department use.

4.2.4.3.1 Pipe Size. Piping shall be 4-inch minimum for lengths up to 100 feet and 6 inch piping for lengths greater than 100 feet with 4 inch piping for the last 100 feet, in accordance with NFPA 14.

4.2.4.3.2 Fire Department Connections. A minimum two-way 2½-inch fire department connection must be provided within 500 feet of a fire hydrant.

4.2.4.3.3 Outlets. A 2½-inch fire hose outlet shall be provided every 100 feet along the length of the pier.

4.2.4.4 Standpipe system confidence testing. Standpipe systems shall be inspected and hydrostatically tested at least every five years. Reports of inspections and tests shall be submitted to the Seattle Fire Department Confidence Testing Unit in accordance with Administrative Rule 9.02.09 Confidence Test Requirements for Life Safety Systems. Notwithstanding fire department inspections, maintenance and periodic testing are the owner's responsibility. All persons performing such work shall have a certificate from the fire department to perform such work. See Administrative Rule 9.01.09 Certification for Installing, Maintaining and Testing Life Safety Systems and Equipment.

4.2.4.5 Plans. Plans for pier, wharf and float fire protection shall be approved prior to installation. The work shall be subject to final inspection and approval after installation. (2006 SFC 4603.1)

4.2.5 Fire Department Apparatus Access. Fire Department apparatus access lanes in accordance with Chapter 5 of the Seattle Fire Code shall be provided and so located as to provide fire department apparatus access to within 75 feet of all portions of the pier.

> **EXCEPTION:** When the access requirement cannot be met due to practical difficulties, a Class I standpipe system shall be installed in accordance with Section 4.2.4.3 of this Rule.

4.2.6 Fire Protection on Dry Docks.

The need for a manual standpipe system to protect dry docks will be determined on a case by case basis.

4.3 Type II Designated Hot Work Facility Requirements.

4.3.1 General. *Hot work* activities may be performed at Type II *Designated Hot Work Facilities* on *vessels* 200 feet in *length of vessel* or less when such facilities are in accordance with Section 4.1 and 4.3 of this Rule.

4.3.2 Required Number of Hydrants. At least two fire hydrants shall be provided. One hydrant shall be located within 500 feet of the most remote portion of the approved fire department access lane. The second fire hydrant shall be located within 1000 feet of the first hydrant.

> **EXCEPTION:** A Class I Standpipe, in accordance with Section 4.2.4.3 of this Rule, may be provided in lieu of a fire hydrant within 500 feet of the most remote portion of the approved fire department apparatus access lane.

4.3.3 Minimum Hydrant Flow Capacity. Each of the two hydrants located closest to the most remote portion of the fire department access lane shall be capable of delivering not less than 2,000 gpm at a minimum residual pressure of 20 psi.

> **EXCEPTION:** The requirements for fire hydrants may be modified when alternate arrangements are approved by the fire code official.

Point of Information

While alternative arrangements will be considered by the fire code official, drafting is not an acceptable substitute for a primary fire suppression water supply.

4.3.4 Fire Protection on Piers. Fire protection shall be provided in accordance with Section 4.2.4 of this Rule.

4.4 Shipyard Requirements.

4.4.1 General. *Hot work* activities, including *ship repair,* shipbreaking and alterations, on *vessels* of any length may be performed at *Shipyard*s when such facilities are in accordance with Section 4.3 and 4.4 of this Rule.

4.4.2 Required Number of Hydrants. Hydrants shall be provided in accordance with Section 4.2.2 of this Rule.

4.4.3 Minimum Hydrant Flow Capacity. Each of the two hydrants located closest to the most remote portion of the fire department access lane shall be capable of delivering not less than 2,000 gpm at a minimum residual pressure of 20 psi.

> **EXCEPTION:** The requirements for fire hydrants may be modified when alternate arrangements are approved by the fire code official.

Point of Information

While alternative arrangements will be considered by the fire code official, drafting is not an acceptable substitute for a primary fire suppression water supply.

4.4.4 Fire Protection on the Pier. Fire protection shall be provided in accordance with Section 4.2.4 of this Rule.

4.4.5 Fire Department Apparatus Access. Fire Department apparatus access shall be provided in accordance with Section 4.2.5 of this Rule.

4.4.6 Safety Officer. A full-time fire marshal or safety officer shall be on-site.

4.4.7 Shipyard Competent Person. At least one full-time employee shall be trained as a S*hipyard Competent Person* in accordance with Administrative Rule 26.01.09.

4.4.8 Certified Marine Chemist. A certified *Marine Chemist* shall be on staff or on call.

4.4.9 Emergency Operations Plan. The emergency operations plan for each *shipyard* shall be approved and readily available on site. The site safety officer shall be accountable for adequate training of personnel to ensure that all *shipyard* employees are familiar with the requirements and responsibilities set forth in the emergency operations plan.

4.4.10 Prohibited Uses. The *shipyard* shall **not**:

- Be used for general moorage of *vessels*
- Be used for handling of cargo
- Have publicly accessible restaurants, assembly areas or passenger terminals on site

SECTION 5
DECK OPENINGS AND REVOLVING NOZZLES

5.1 Deck Openings. When deck openings are provided to permit the use of revolving nozzles and other fire fighting devices in lieu of automatic sprinklers on combustible piers, such openings shall be in accordance with Section 5.1 of this Rule.

5.1.1 Spacing of Deck Openings. Openings in the pier deck shall be provided at intervals not exceeding 25 feet on center. Openings shall be over clear spaces to avoid interference by the substructure of the effective operation of nozzles and other extinguishing devices. The net clear opening shall not exceed 100 square inches with a minimum dimension of 9 inches.

5.1.2 Covers for Deck Openings. Deck openings shall be provided with covers that can be readily removed. Covers shall be constructed of such material or so insulated that they will resist the passage of heat and fire in a manner equivalent to that of the pier deck.

5.1.3 Identification of Openings. Deck openings shall be conspicuously identified.

5.1.4 Integrity of the Deck. All parts of the deck, including aprons, upon which fire fighters may be expected to work shall be solid, continuous and have no uncovered openings

5.2 Revolving Nozzles. When revolving nozzles and deck openings are provided in lieu of automatic sprinklers on combustible piers, there shall be a sufficient number of revolving nozzles provided to permit establishing two complete water curtains across the pier. Such nozzles shall be in a readily accessible location on the shore end of the pier. Revolving nozzles shall be 2½-inches with a minimum rating of 250 gallons per minute.

SECTION 6

DRAFT STOPS FOR COMBUSTIBLE PIERS

Draft stops shall be installed in all substructures constructed of combustible materials in accordance with 2006 Seattle Building Code Section 421.5.2, exclusive of piling and pile bracing. They shall be placed not more than 100 feet apart measured along the main axis of the pier or wharf. They shall fit tightly around all joists, beams, etc., and extend from the underside of the deck to city datum if over salt water, or to low water if over fresh water. Substructure draft stops shall be constructed of at least two layers of lumber not less than 2 inches nominal in thickness laid with broken joints or materials of equal fire resistance.