Fire Protection in Shipyards

For years, the shipyard industry was regulated by the "General Duty Clause" when fire protection issues were noted in a shipyard. OSHA's Subpart L (1910.155) exempted shipyard employment from coverage. This left enforcement for fire protection under the General Duty Clause. As it was, the existing OSHA fire protection standards did not adequately address the unique nature, technology and hazards of shipbuilding, ship repairing and ship breaking activities. That changed with the publication of the Fire Protection in Shipyard Employment standard in the Federal Register in September 2004. This Toolbox Talk provides an overview of this standard for the shipyard industry.

Overview

The final rule **29 CFR 1915 Subpart P – Fire Protection in Shipyard Employment** standard was developed through the negotiated rulemaking process that included industry participation and input. The intent of the standard is to better protect employees from shipyard-related fire hazards, since those hazards differ greatly from general industry hazards. The law went into effect on Dec. 14, 2004.

The Code of Federal Regulations (CFR) requirements are set forth in **29 CFR 1915 Subpart P, sections 501 through 509.** These sections are summarized individually within this paper. There are two major written documents that a shipyard, or "the employer", must implement:

- **Fire Protection Policies and Procedures**
- **A Fire Safety Plan.** A sample plan outline is attached to this document as a reference of what is required.

General Provisions (Section 501)

The purpose of this new standard is to require employers to protect all employees from fire hazards in shipyard employment, including fire response activities. The scope of the standard includes employees aboard vessels and vessels sections and "land-side" operations, regardless of location. If the operation is a shipyard, then the management of the facility or site of the organization is defined as the "host employer". If the "host employer" facility employs one or more contractor companies in shipbuilding, ship repair or ship breaking, the facility is defined as a "multi-employer worksite".

The new standard also requires that all employees (regular and contract) in any facility participate in developing, reviewing and amending as needed, the fire protection programs and policies of the facility. The purpose is to require that contract companies be knowledgeable in the fire policies and procedures, in all facilities in which the companies work. Contract companies must also be kept current with any changes and updates in facility policy, procedures and plan.

Responsibilities

The standard sets forth what responsibilities are required of the "host employer," "contract employer," and "multi-employer worksites." They are:

A host employer must:

- Inform all employers at the worksite about the plan including hazards, controls, fire safety and health rules and emergency procedures;
- Assign fire safety and health responsibilities, as appropriate, to other employers

(NOTE): if a vessel owner temporarily directs work activity on a vessel, at a facility, and/or hires contractors, the vessel owner becomes a host employer and the site or facility becomes a *multi-employer worksite.*

A contract employer must:

- Confirm that the host employer is knowledgeable in the fire-related hazards of the current work and how the hazards are being addressed.
- Notify the host employer of any newly identified fire-related hazards (that were previously unidentified).
- Write and implement a plan that complies with the host employer's plan, for each specific site (facility).

The Fire Safety Plan (Section 502)

The employer must develop and implement a plan that covers all related activity to assure employee safety in the event of a fire, and must include:

- Identification of significant fire hazards
- Recognition and reporting of fire hazards
- Alarm procedures
- Notification of employees and response organizations in a fire emergency
- Evacuation procedures and employee accounting after evacuation
- Persons within the organization who can be contacted about the plan
- Review of the plan with new employees, when hired, and with all employees when jobs/duties or plan changes occur
- Plan accessibility for employees, employee representatives, OSHA
- Guidelines to review and update the plan as needed (at a minimum annually)
- Providing plan to response organizations

Hot Work and Fire Watches (Sections 503 and 504)

All hot work must be in designated areas, free from fire hazards. Hot work can be done only in these areas (free from fire hazards, controlled by physical isolation and have a fire watch). Hot work may be done in non-designated areas; however, these areas must be inspected and made free from fire hazards (unless a Marine Chemist certificate or competent person log is used for authorization). These areas must be maintained free from fire hazards during work.

Important Note Regarding Hot Work and Fire Watches

Sections 503 and 504 do not apply to 1915.14 - Confined and Enclosed Spaces and other Dangerous atmospheres, which has specific regulatory requirements.

The standard requires that fire watch activity is governed by a written fire watch policy, which "must be kept current," based on changes in conditions and/or operations in a facility or site. Provisions include training for all fire watch employees, including authority of the fire watch, specific duties, and the equipment that is required, including Personal Protective Equipment (PPE). Assigning fire watch duties has specific requirements for designated employees, including training. There are eight defined conditions of hot work under which having a fire watch is mandatory.

1. Slag, weld splatter or sparks might pass through an opening and cause a fire.
2. Fire-resistant guards or curtains are not used to prevent ignition of combustible materials on or near decks, bulkheads, partitions or overheads.
3. Combustible material closer than 35 feet (10.7 meters) to the hot work in either the horizontal or vertical direction cannot be removed, protected with flame-proof covers, or otherwise shielded with metal or fire-resistant guards or curtains.
4. The hot work is carried out on or near insulation, combustible coatings, or sandwich-type construction that cannot be shielded, cut back or removed, or in a space within a sandwich-type construction that cannot be inerted.
5. Combustible materials adjacent to the opposite sides of bulkheads, decks, overheads, metal partitions, or sandwich-type construction may be ignited by conduction or radiation.
6. The hot work is close enough to cause ignition through heat radiation or conduction on the following:
    a. Insulated pipes, bulkheads, decks, partitions or overheads
    b. Combustible materials and/or coatings.
7. The work is close enough to unprotected combustible pipe or cable runs to cause ignition.
8. A Marine Chemist, a Coast Guard-authorized person, or a shipyard competent person, as defined in 29 CFR Part 1915, Subpart B, requires that a fire watch be posted.

Fire Response (Section 505)

A written policy is required to be developed and implemented for a shipyard's Fire Response. The policy must include as a minimum the following:

- Procedures for reporting emergencies
- Definitions of internal and external fire response actions
- Must set policy for employee training, including medical evaluation of fire-fighting personnel
- Must set a policy for standardization and compatibility of equipment that is available for use (i.e., hoses and hose couplings)
- Policy regarding communicating for responses

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- Must define internal and external fire response actions
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- Policy regarding communicating for responses

- Procedures for access into controlled areas
- Provisions for cooperative internal and external fire responses
- Procedures for emergency rescue
- Employee evacuation procedures

For internal fire response, the employer must have a written commitment for resources and assign personnel with responsibilities to respond to fires. This includes properly trained employees with proper equipment, furnished at no cost to the affected employees, and includes NFPA-sanctioned Personal Alert Safety System (PASS) Devices. (These are devices that sound an alarm when a wearer becomes motionless for 30 seconds.) There are provisions for equipment readiness, inspection and maintenance, i.e., respiratory protection equipment maintenance requirements.

Fixed Extinguishing Systems On Board Vessels and Vessel Sections (Section 506)

Automatic extinguishing systems:

Fixed automatic extinguishing systems can create dangerous atmospheres when activated. When automatic systems are present, employees must be trained about these systems. Specifically, training is required on the activation of alarms, dangers of disturbing piping and other components of a system and the escape routes from these work areas in the event the system activates. Isolating these automatic systems, prior to beginning work in a protected area, is an option. Doors, hatches and other means of egress should not interfere with escape from an area protected by automatic systems.

These automatic systems must be functional during dock and sea trials. Provisions for testing these systems include employee evacuation from the affected areas and isolating the systems prior to maintenance to prevent accidental activation. The affected area atmosphere must be tested prior to allowing employees to return.

Manual extinguishing systems:

If a manual extinguishing system is used in which employees are working, the employer is required to let only qualified (trained) and authorized employees activate a system with defined evacuation procedures followed.

Land-side Fire Protection Systems – Portable and Fixed (Section 507)

Fixed and portable fire systems, in buildings, structures and equipment, must meet current and future OSHA standards and other requirements of this section.

- Portable systems and hose systems must be installed, inspected, maintained and tested in compliance with NFPA 10-1998. Class II or III hose systems may be used as portable systems, provided that they are installed, maintained, tested in accordance with NFPA 14-2000.
- Fixed systems must be used in compliance with various OSHA and NFPA standards, which are referenced in the standard. This includes 29 CFR 1910.7, which requires all components and extinguishing agents be designed and adequate for the expected hazards of the specific area in which they are used. In the event an extinguishing system stops functioning, employees must be so notified, and precautions taken to ensure that all

employees remain safe from fire, until the system becomes functional again. Qualified technicians must do all repairs. Employees who enter areas of discharge must wear proper PPE, in accordance with the characteristics of the extinguishing agent. If concentrations of extinguishing agents can be harmful to employees when released within an area, warning signs must be posted near the entrance and inside these protected areas.

Training (Section 508)

Employer is responsible for training all employees who are within the scope of the standard. Immediate training is required for all new employees. Re-training is required to provide proficiency in carrying out the plan and updates and changes in the plan. There are specific requirements for training of incipient (beginning fires) firefighters, responders to fires and fire watch personnel. Training records must be retained for one year, or when replaced by new training, whichever is sooner.

The following page contains a sample fire safety plan outline

Sample Fire Safety Plan

Table of Contents

I. Purpose

The purpose of this fire safety plan is to inform our employees of how we will control and reduce the possibility of fire in the workplace and to specify what equipment employees may use in case of fire.

II. Work Site Fire Hazards and How to Properly Control Them

A. Measures to contain fires

B. Teaching selected employees how to use fire protection equipment

C. What to do if you discover a fire

D. Potential ignition sources for fires and how to control them

E. Types of fire protection equipment and systems that can control a fire

F. The level of firefighting capability present in the facility, vessel or vessel section

G. Description of the personnel responsible for maintaining equipment, alarms, and systems that are installed to prevent or control fire ignition sources, and to control fuel source hazards.

III. Alarm Systems and How to Report Fires

A. A demonstration of alarm procedures, if more than one type exists.

B. The work site emergency alarm system.

C. Procedures for reporting fires.

IV. How to Evacuate in Different Emergency Situations

A. Emergency escape procedures and route assignments.

B. Procedures to account for all employees after completing an emergency evacuation.

C. What type of evacuation is needed and what the employee's role is in carrying out the plan.

D. Helping physically impaired employees.

V. Employee Awareness

Names, job titles or departments of individuals who can be contacted for further information about this plan

Topic:	
Date:	
Presented by:	

Attendee Signature	Attendee Printed Name

If more space is needed for attendance, use back of sheet.

Comments or Notes: