



DEPARTMENT OF THE NAVY

COMMANDER  
NAVY REGION MID-ATLANTIC  
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NORFOLK, VA 23511-2737

IN REPLY REFER TO:  
COMNAVREGMIDLANTINST 11320.11B  
N3

SEP 05 2018

COMNAVREG MIDLANT INSTRUCTION 11320.1B

From: Commander, Navy Region Mid-Atlantic

Subj: FIRE PREVENTION AND PROTECTION REGULATIONS

Ref: (a) UFC 1-200-01  
(b) UFC 3-600-01  
(c) UFC 3-601-02  
(d) UFC 4-152-01  
(e) UFC 3-600-10N  
(f) NFPA Fire Codes and Standards (current edition)  
(g) International Building Code  
(h) ASME/ANSI A17.1B  
(i) DoDI 6055.06  
(j) DoDI 6055.06M  
(k) OPNAVINST 11320.23G  
(l) DoDI 6055.01  
(m) 40 CFR 112  
(n) SECNAVINST 5100.13E  
(o) 29 CFR 1910  
(p) OPNAVINST 1700.9E  
(q) NAVAIR OP-5 VOL 1  
(r) OPNAVINST 5210.20  
(s) NAVSEA SW020-AC-SAF-010  
(t) 49 CFR 180  
(u) UFC 4-451-10N  
(v) NAVSEA S0570-AC -CCM-010/8010  
(w) NAVSEA 00-80T-109  
(x) NAVAIR 01-1A-35  
(y) OPNAVINST 5100.19E  
(z) CNRMA F&ES Fire and Explosive Investigation Directive  
(aa) SECNAV M-5210.1 of Jan 2012  
(bb) OPNAVINST 5215.17A

Encl: (1) Definitions

1. Purpose. To promulgate Fire Prevention and Protection regulations for the Commander, Navy Region Mid-Atlantic (CNRMA) Area of Responsibility (AOR) in order to minimize the loss of life and property as a result of a fire.

2. Cancellation. COMNAVREGMIDLANTINST 11320.11A.

3. Policy.

a. The provisions of this instruction apply to all areas, buildings, structures, aircraft, and all ships undergoing availabilities within the CNRMA AOR, which include: Naval Station (NS) Norfolk, Naval Support Activity (NSA) Hampton Roads, Northwest Annex, Naval Medical Center Portsmouth, Joint Expeditionary Base Little Creek-Fort Story, Norfolk Naval Shipyard, St. Juliens Creek Annex, Naval Air Station Oceana, Dam Neck Annex, Naval Auxiliary Landing Field Fentress, Naval Weapons Station (NWS) Yorktown, Cheatham Annex, NSA Mechanicsburg, NSA Philadelphia, Philadelphia Navy Yard Annex, NWS Earle, NSA Saratoga Springs, Naval Submarine Base New London, NS Newport, Portsmouth Naval Shipyard, Naval Computer and Telecommunications Area Master Station Atlantic Detachment Cutler, NS Great Lakes, NSA Crane, and the surrounding installations and areas under their jurisdictions, including identified Navy Reserve Forces Command Navy Operational Support Centers (NOSCs).

b. The purpose of this instruction is to clarify and direct implementation of specific methods and strategies by which CNRMA complies with direction by higher authority, standards, regulations, and laws. This instruction shall not be construed as amending or altering any regulation, instruction, or directive promulgated by higher authority. If conflicts arise between the listed references, the most stringent requirement shall apply, unless otherwise directed in regulation, policy, or instruction. Upon promulgation of this instruction, local policies and procedures shall be adopted or updated to meet the requirements of this instruction, at a minimum.

4. Discussion. This instruction is issued in support of references (a) through (z) in order to protect life and property. The chapters define the functions, duties, and responsibilities of CNRMA Fire and Emergency Services and other supporting organizations responsible for fire protection at the above listed facilities.

5. Responsibilities.

a. The CNRMA Operations Director is assigned as the authority having jurisdiction for the implementation of the Regional Fire Prevention and Protection requirements. The program shall be planned and administered by the Fire Chief (FC).

b. The FC is responsible for the management, control, and coordination of the Fire Prevention Program (FPP), and shall develop and promote a comprehensive FPP to meet the requirements of this instruction. The FC shall establish a Fire Prevention Division (N304), which in turn shall be responsible for fire awareness training and education of personnel within the CNRMA AOR. This training and education process shall use a pro-active, helpful approach rather than relying exclusively on the inspection process as a means of compliance. This process includes, but is not limited to, training classes and seminars, demonstrations and presentations, indoctrinations, fire drills, building and area inspections, active participation in pre-construction

conferences, provision of technical assistance, inspections prior to hot work, and support to any activity that provides an awareness of the dangers of fire.

c. Installation Commanding Officers (COs), Officers-in-Charge (OICs), Department Heads (DHs), N-Codes, Special Assistants (SAs), and supervisors who have responsibility for control over personnel, operations, facilities, and equipment within the various installations of the CNRMA AOR are responsible for compliance and implementation of these regulations. They shall be held accountable for fire incidents that occur in areas under their control. However, this requirement in no way relieves individuals of their responsibility to strictly observe all established fire prevention practices and report any and all fire hazards or unsafe operations to their immediate supervisor.

6. Action.

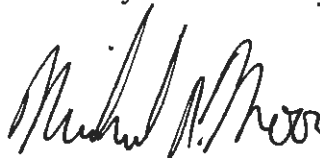
a. All COs and OICs of tenant commands within the CNRMA AOR shall ensure their commands comply with, and implement, regulations contained herein.

b. All personnel attached to, employed on, using, or performing work on any of the installations within the CNRMA AOR shall comply fully with this instruction.

c. These regulations cannot, and are not, expected to cover every contingency or phase of fire prevention. However, these regulations shall be sufficiently comprehensive to specifically or generally identify fire, life safety obligations and duties of everyone. For answers to more complex fire prevention scenarios than those covered by this instruction, information is available at the Fire Prevention Office that supports each installation.

7. Records Management. Records created as a result of this directive, regardless of media and format, shall be managed according to reference (aa).

8. Review and Effective Date. Under reference (bb), CNRMA will review this instruction annually on the anniversary of its effective date to ensure applicability, currency, and consistency with Federal, DoD, SECNAV, and Navy policy and statutory authority using OPNAV 5215/40 review of instruction. This instruction will automatically expire 5 years after effective date unless reissued or canceled prior to the 5-year anniversary date, or an extension has been granted.



M. R. MOORE  
Captain, U.S. Navy  
Chief of Staff

Releasability and distribution: This instruction is cleared for public release and is available electronically only via CNIC G2 Portal/Organization/Mid-Atlantic Website, <https://g2.cnice.navy.mil/CNRMA/Pages/Default.aspx>

## DEFINITIONS

1. Purpose. Words defined in this instruction are intended only for use with sections of this instruction. Definitions set forth in any document referenced by this instruction shall be the acceptable definition for use of that document only. Where terms are not defined, they shall have their ordinary accepted meanings within the context by which they are used.
2. Addition. An increase in the building area, aggregate floor area, building height, or number of stories of a structure.
3. Approved. Acceptable to the authority having jurisdiction.
4. Authority Having Jurisdiction (AHJ). The organization, office, or individual responsible for enforcing the requirements of a code or standard, approving equipment or materials, an installation, or a procedure.
5. Building. Any structure used or intended for support, shelter, or occupancy.
6. Combustible (material). In the form of which it is used, while under those conditions it's anticipated that it will ignite and burn. Material that does not meet the definition of non-combustible or limited combustible.
7. Combustible Liquid. Any liquid that has a closed-cup flash point at or above 100 degrees Fahrenheit (37.8 degrees Celsius), as determined by test procedures outlined in the National Fire Protection Association Code 30.
8. Combustion. A chemical process of oxidation that occurs at a rate fast enough to produce heat and usually light in the form of either a glow or flame.
9. District Fire Chief. A Senior Fire Representative at site-specific locations that encompasses one or more installations.
10. Department of Defense (DoD). A department of the federal executive branch entrusted with formulating military policies and maintaining American military forces.
11. Emergency. A fire, explosion, or hazardous condition that poses an immediate threat to the safety of life or damage to property.
12. Enterprise Safety Application Management System (ESAMS). The software designated by Commander, Navy Installations Command to manage Fire and Emergency Services program data.
13. Exit. The portion of a means of egress, that is separated from all other spaces of the building or structure by construction, location, or equipment as required to provide a protected way of travel to the exit discharge.

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14. Exit Access. The portion of a means of egress that leads to an exit.
15. Exit Discharge. That portion of a means of egress between the termination of an exit and a public way.
16. Fire Dispatch. A telecommunication center that receives emergency and non-emergency calls for assistance and dispatches emergency and non-emergency resources (see Regional Dispatch Center).
17. Fire Door. The door component of a fire door assembly.
18. Fire Door Assembly. Any combination of a fire door, a frame, hardware, and other accessories that together provide a specific degree of fire protection to the opening.
19. Fire Hazard. Any situation, process, material, or condition that on the basis of applicable data can cause a fire or explosion or that can provide a ready fuel supply to augment the spread or intensity of the fire or explosion, all of which poses a threat to life or property.
20. Fire Protection System. Any fire alarm device or system, or fire extinguishing device or system, or combination thereof, designed and installed for detecting, controlling, or extinguishing a fire or otherwise alerting occupants, the fire department, or both, that a fire has occurred.
21. Fire Wall. A wall of sufficient fire resistance, durability, and stability to withstand the effects of an uncontrolled fire exposure for a prescribed period of time.
22. Fire Watch. The assignment of a person or persons to an area for the express purpose of notifying the fire department, the building occupants, or both, of an emergency; preventing a fire from occurring; extinguishing small fires; or protecting the public from fire or life safety dangers.
23. Flammable Liquid. Any liquid that has a closed-cup flash point below 100 degrees Fahrenheit (37.8 degrees Celsius), as determined by test procedures outlined in National Fire Protection Association Code 30.
24. Factory Mutual (FM). A mutual insurance company organized for the purpose of insuring factories and factory properties exclusively.
25. Fire Safety Council (FSC). Is the largest distributor of comprehensive fire and burn prevention and life safety materials in the United States.
26. Hazardous Location. The location of any situation, process, material, or condition that on the basis of applicable data may cause a fire or explosion or provide a ready fuel supply to augment the spread or intensity of the fire or explosion and that poses a threat to life or property.

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27. Incident Commander. The individual responsible for all incident activities including the development of strategies and tactics, and the ordering and release of resources (see Senior Fire Officer).

28. Listed. Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products and services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of whose listing states either that the equipment, material, or services meets appropriate designated standards or has been tested and found suitable for a specified purpose.

29. Liquefied Petroleum Gas (LPG). A mixture of light gaseous hydrocarbons (ethane, propane, butane, etc.) made liquid by pressure and used as fuel.

30. Liquid Oxygen (LOX). A pale blue transparent mobile magnetic liquid obtained by compressing gaseous oxygen and used chiefly in liquid-oxygen explosives and as the oxidizer in rocket propellants.

31. May. To state permissive use or alternative method to a specific requirement.

32. Means of Egress. A continuous and unobstructed way of travel from any point in a building or structure to a public way consisting of three separate and distinct parts:

- a. (1) The exit access.
- b. (2) The exit.
- c. (3) The exit discharge.

33. Must. Indicates a mandatory requirement.

34. National Fire Protection Association (NFPA). Is a United States trade association, albeit with some international members, that creates and maintains private, copyrighted standards and codes for usage and adoption by local governments.

35. Non-combustible Material. A material that, in the form in which it is used, and under the conditions anticipated, will not ignite, burn, support combustion or release flammable vapors when subjected to fire or heat.

36. Occupancy. The purpose for which a building or other structure, or part thereof, is used or intended to be used.

37. Occupant Load. The total number of persons that might occupy a building or portion thereof at any one time.

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38. Occupational Safety and Health Administration (OSHA). Government organization that exists to assure safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance.
39. Permit. A document issued by the authority having jurisdiction for the purpose of authorizing performance of a specified activity.
40. Permit Required Confined Space (permit space). A confined space that has one or more of the following characteristics: contains or has a potential to contain a hazardous atmosphere; contains a material that has the potential for engulfing an entrant; has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or contains any other recognized serious safety or health hazard.
41. Process or Processing. An integrated sequence of operations.
42. Regional Dispatch Center (RDC). Commander, Navy Region Mid-Atlantic's regional telecommunication center that receives emergency and non-emergency calls for assistance and dispatches emergency and non-emergency resources (see Fire Dispatch).
43. Senior Fire Officer. The individual responsible for all incident activities including the development of strategies and tactics, and the ordering and release of resources (see Incident Commander).
44. Shall. Indicates a mandatory requirement.
45. Should. Indicates a recommendation or that which is advised but not required.
46. Site-Specific. Relating exclusively to a particular Fire District.
47. Ship Repair and/or Construction Activity (SRCA). Building, remodeling, and repairing the Navy's ships.
48. System. Several items of equipment assembled, grouped, or otherwise interconnected for the accomplishment of a purpose or function.
49. Temporary Wiring. Approved wiring for power and lighting during a period of construction, remodeling, maintenance, repair, or demolition, and decorative lighting, carnival power and lighting, and similar purposes, not to exceed 90 days.
50. Underwriters Laboratories (UL). A global independent safety science company with more than a century of expertise innovating safety solutions.
51. Will. Used and defined as the word shall.

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**CHAPTER 1**  
**ADMINISTRATION AND ENFORCEMENT**

1. Authority.

a. Commander, Navy Region Mid-Atlantic's Regional Operations Director (N3) shall be assigned as the Authority Having Jurisdiction (AHJ) for the implementation of the Fire Protection and Prevention (FPP) Program and all matters regarding fire protection/prevention requirements. The program will be planned and administered by Navy Region Mid-Atlantic Fire and Emergency Services through the FC.

b. Authority to take appropriate steps for the prevention of fires is further delegated to COs, OICs, DHs, N-Codes, Special Assistants, and those who have responsibility for control over personnel, operations, and equipment, and shall be held accountable for incidents that occur in areas under their control. This in no way relieves individuals of their responsibility to strictly observe all fire precautions and to immediately report any unsafe fire conditions to their supervisor. Supervisors shall halt any operation that places personnel, facilities, or equipment in imminent danger, and shall take immediate, corrective action and notify the Fire Department (FD).

c. The COs and OICs may establish additional or more stringent site-specific regulations as necessary to control hazards unique to their activity.

2. Scope. The provisions of this instruction are applicable to:

a. Inspection of buildings, processes, equipment, systems, and other Fire Life Safety (FLS) initiatives.

b. Investigation of fires, explosions, Hazardous Material (HAZMAT) incidents, and other related emergency incidents handled by the FD.

c. Review of construction plans, drawings, and specifications for life safety systems, fire protection systems, access, water supplies, processes, HAZMAT, and other FLS issues.

d. FLS education of employees, responsible parties, and the general public.

e. Existing occupancies and conditions, including: the design and construction of new buildings, remodeling of existing buildings, and additions to existing buildings.

f. Design, alteration, modification, construction, maintenance, and testing of fire protection systems and equipment.

g. Access requirements for FD operations.

h. Hazards from outside fires in vegetation, trash, building debris, and other materials.

i. Regulation and control of special events including, but not limited to, exhibits, trade shows, and other similar special occupancies.

j. Interior finish, decorations, furnishings, and other combustibles that contribute to fire spread, fire load, and smoke production.

3. Application.

a. These regulations apply to all activities within CNRMA's area of responsibility.

b. Each location may have site-specific instructions in addition to this directive. These additional site-specific instructions require submittal, review, and approval by the FC to ensure that they are in accordance with the region-wide regulations and references (a) through (z).

c. This instruction applies to both new and existing conditions. Within this instruction, specific provisions for existing facilities may differ from those of new facilities.

d. Additions, alterations, or repairs shall not cause an existing building to become unsafe or adversely affect the performance of the building. Additions, alterations, or repairs to buildings shall be reviewed by Naval Facilities Engineering Command Mid-Atlantic via the installation Public Works Officer or a delegated subordinate command shall be assigned as the "Building Official," "Code Official," or AHJ under reference (a).

e. Where two or more classes of occupancy occur in the same building or structure, and are so intermingled that separate safeguards are impracticable, means of egress, construction, protection, and other safeguards shall comply with the most restrictive fire safety requirements of the occupancies involved.

4. Fire Protection Standards. All activities are required to comply with the regulations contained in this instruction, Department of Defense, and references (a) through (f), as minimum fire protection criteria.

5. Occupancy.

a. Existing buildings that are occupied at the time of adoption of this instruction shall remain in use, provided:

(1) The occupancy classification remains the same, as approved by the applicable Fire Protection Engineer (FPE).

(2) There exist no conditions deemed hazardous to life or property that would constitute an imminent danger.

b. Buildings or portions of buildings shall not be occupied during construction, repair, or alteration if the required means of egress are impaired, or required fire protection systems are out of service, unless suitable arrangements can be made and approved by the FD and FPE.

c. Changes of Occupancy. In any building or structure, whether necessitating a physical alteration or not, a change from one occupancy classification to another, or from one occupancy sub-classification to another sub-classification of the same occupancy, shall be permitted only if such building or structure conforms with the requirements of references (a), (b), (f), and (g).

6. Maintenance and Testing.

a. Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, or any other feature is required for compliance with the provisions of this instruction such device, equipment, system, condition, arrangement, level of protection, or other feature shall thereafter be permanently maintained unless this instruction exempts such maintenance.

b. Every required fire suppression system, fire detection and alarm system, fire extinguisher, smoke control system, emergency lighting system, egress marking systems (exit lighting), fire door, and other item of equipment required by this instruction, shall be continuously maintained in proper operating condition as specified in references (c) and (f).

c. Any equipment requiring test or periodic operation to assure its maintenance shall be tested or operated as specified in references (c) and (f).

(1) Alarm and Fire Detection Systems. Fire alarm signaling equipment shall be restored to service as promptly as possible after each test or alarm and shall be kept in normal condition for operation. Equipment requiring rewinding or replenishing shall be rewound or replenished as promptly as possible after each test or alarm.

(2) Periodic Testing of Emergency Lighting Systems. Each activity Fire Warden shall ensure a monthly functional test is conducted on every required emergency lighting system with a minimum of 3 weeks and a maximum of 5 weeks between tests, for a minimum of 30 seconds. An annual test shall be conducted for a 90-minute duration. Equipment shall be fully operational for the duration of the test. Written records of testing shall be kept by the activity.

(3) Periodic Testing of Egress Marking Systems. An annual 90-minute duration test shall be conducted for battery back-up egress marking systems. Equipment shall be fully operational for the duration of the test. Written records of testing shall be kept by the activity.

(4) Elevator Testing. Elevators shall be subject to routine and periodic inspections and tests, as specified in reference (h).

7. Administration. The FC is responsible for administration of the FPP program. This program encompasses fire prevention inspections; FLS education; providing structural, aircraft, and shipboard fire protection; and directing fire suppression, rescue, and fire investigative service operations.

8. Records and Reports.

a. The FD shall keep a record of all fire prevention inspections, including the date of such inspections, and a summary of any discrepancies found to exist, the date notices are served, and a record of the final disposition of all discrepancies.

b. All records required shall be maintained until their usefulness has been served, or required by law, rule, instruction, or regulation.

9. False Alarms and Fires.

a. No person shall deliberately or through negligence, set fire to, or cause the burning of, any combustible material in such a manner as to endanger the safety of any person or property.

b. No person shall deliberately or maliciously turn in an alarm of fire when in fact that person knows that no fire exists.

c. It shall be a violation of this instruction for any person to willfully make any false, fraudulent, misleading, or unfounded report or statement to the FD, or to willfully misrepresent any fact for the purpose of interfering with the orderly operation of the FD, or with the intention of misleading FD personnel.

d. Occupants of buildings involved in a fire shall assist in the evacuation of personnel and property and render such help as requested by the Senior Fire Officer (SFO) or FD representative.

10. Tampering with Fire Safety Equipment.

a. No person shall render any portable or fixed fire extinguishing system, or device, or any fire warning system inoperative or inaccessible, except as may be necessary during emergencies, maintenance, drills, or prescribed testing.

b. No person shall render a system or device inoperative during an emergency unless by direction of the SFO or FD representative.

c. No person shall reset or silence any fire alarm or fire protection system unless qualified to do so (e.g. Naval Facilities Engineering Command Mid-Atlantic's Fire Protection Engineers or the FD).

11. Permits and Approvals.

a. The FD is authorized to issue permits, certificates, notices, and approvals or orders pertaining to fire control and fire hazards as established in this instruction.



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b. The FD may revoke a permit or approval issued if any violation is found upon inspection or in case there have been any false statements or misrepresentations submitted in the application or plans, on which the permit or approval was based.

c. A permit issued shall continue until revoked or for the period of time designated on the permit.

d. A copy of the permit shall be posted or otherwise readily accessible at each place of operation.

e. Fire prevention offices have the authority to issue permits for the following operations within their jurisdiction:

(1) Bonfires and Outdoor Rubbish Fires. Instructions and stipulations of a permit shall be adhered to for any open fires or a fire in any public street, alley, road or other public or private grounds. Outdoor cooking fires in FD designated and approved locations (e.g., permanent outdoor grills), are exempt and do not require a permit.

(2) Deep fat frying, to include turkey frying, is not exempt and must be approved by the FD. Training will be provided for their safe use and a permit shall be issued.

(3) Bowling lane, pin refinishing and/or resurfacing.

(4) Hot work.

(5) Ship fuel on-load and off-load operations.

(6) Aircraft on-load/off-load operations pier side.

(7) Aircraft fly-on/fly-off operations pier side.

(8) Special events (fairs, festivals, and shows).

(9) Heat shrink-wrapping.

(10) Fireworks displays.

(11) Tents.

**CHAPTER 2**  
**GENERAL FIRE SAFETY REQUIREMENTS**

1. Introduction.

a. To ensure an adequate level of fire protection and fire prevention is achieved, general fire safety requirements have been established by reference (i).

b. All activities, regardless of occupancy classification, shall adhere to these requirements.

2. Fire Warden Program.

a. Activities shall establish a Fire Warden Program following reference (j) to serve as the primary point of contact for the FD concerning fire prevention matters. This requirement includes accompanying Fire Prevention Representatives during facility inspection tours, signing receipt for FD inspection deficiency reports and ensuring corrective action is taken. Fire Wardens shall coordinate fire evacuation drills and fire safety training with their Fire Prevention Office (FPO).

(1) Fire Wardens are instrumental to the success of this program. A Fire Warden shall be assigned at each facility. Copies of the appointment letter shall be sent to the individual, their immediate supervisor, and to the FPO at the installation or as assigned.

(2) Activity Building Monitors shall provide the Chief Fire Inspector or District Fire Chief with at least a 30-day notice of the transfer, separation, or retirement of a Fire Warden and the name and contact information of his/her replacement.

(3) Personnel assigned as Fire Wardens shall attend indoctrination by the FPO prior to assuming their duties and shall be provided access to ESAMS as determined appropriate by the assigned the FPO.

b. Duties of the Fire Warden shall be determined and disseminated by each FPO during the training module.

3. Fire Reporting.

a. The person discovering any fire, regardless of magnitude or even if extinguished shall:

(1) Immediately notify all occupants and guests in the immediate vicinity of the fire.

(2) Notify the FD by using the nearest fire alarm box, and notify the Emergency Dispatcher. All fires are to be reported including extinguished fires. Fire alarm pull boxes may not always be operational due to maintenance or malfunction, therefore, when reporting a fire, always activate the pull station/box and follow-up with a telephone call to the Emergency Dispatcher.

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(3) If time permits, close doors and windows to confine the fire and prevent drafts. Do not endanger yourself or others in this effort.

(4) Use portable fire extinguishers to extinguish the fire pending arrival of the FD, only if trained and such action does not endanger you or others.

b. No person shall make, issue, post, or maintain any regulation or order, written or verbal, that would require any person to take any unnecessary delaying action prior to reporting a fire to the FD.

#### 4. Frequency of Fire Inspections.

a. Qualified personnel shall manage the fire inspection program and ensure inspection of all required buildings and identified target hazards are performed by qualified fire inspectors, certified according to reference (j). FD personnel shall ensure that prompt correction of fire hazards are initiated as part of the Installation Hazard Abatement Plan according to reference (k), chapter 8. Inspection frequency shall be based on occupancy classification, fire life safety hazards, fire loading, and the importance of normal activity. All facilities shall be inspected at least annually with more frequent inspections occurring when directed by statute, regulation, instruction, or when supported by a written operational risk management analysis. Additional follow-up inspections are authorized to ensure prompt correction of life hazards and facilities deficiencies.

b. Family housing may be inspected when requested by the occupants, during changes in occupancy, or when directed by the installation CO. Inspections shall include fossil fuel-fired heating systems and operational readiness of carbon monoxide detectors and smoke alarms.

#### 5. Hazard Abatement Inspection Reports.

a. Hazard Abatement Inspection Reports shall be provided to all facilities inspected when deficiencies are found. This report shall indicate types of deficiencies found and recommended corrective action.

b. Activities shall respond via ESAMS to the FD representative within 30 days of receipt of a fire deficiency notice, indicating corrective action taken on each deficiency and including work order numbers submitted to correct deficiencies that are beyond the scope of activity personnel. Corrective Action Reply Reports shall be provided to the FD, and all deficiencies shall be tracked until closure following reference (l).

c. Hazard priorities shall be assigned to inspection deficiencies according to the Risk Assessment Code (RAC) scale in ESAMS. A RAC code of 1 or 2 shall be reported to the Chief Fire Inspector and/or the District Fire Chief immediately.

d. Activity Hazard Abatement Plans.

(1) Each activity shall maintain an installation hazard abatement plan of all facility-related RAC 1, 2, or 3 hazards that will not be corrected within 60 calendar days for risk mitigation according to reference (I).

(2) Prioritization of fire hazard abatement shall be accomplished using the RAC matrix, (see Appendix A).

6. Life Safety/Fire Hazard Notices.

a. Life Safety Hazard. Any condition that represents an extreme risk or hazard to the life safety of personnel shall be considered as a life safety hazard.

b. Fire Hazard. Any situation, process, material or condition that, on the basis of applicable data, may cause a fire or explosion or provide a ready fuel supply to augment the spread or intensity of the fire or explosion and that poses a threat to life or property.

c. FD Representatives who discover life safety/fire hazards during inspections or at any other time constituting immediate danger to personnel and/or property shall notify the Chief Fire Inspector and/or District Fire Chief or their designee immediately.

d. The Chief Fire Inspector and/or District Fire Chief or their designee shall conduct an on-site inspection to validate the FD Representative's findings and determine what corrective action is required. A Fire Hazard Notice will be issued and the activity shall take immediate steps to stop the process/work and/or eliminate the hazard.

e. Upon issuance of a Fire Hazard Notice, immediate corrective action is required. However, at the discretion of the FD, a specified amount of time may be allowed in order to achieve compliance, not to exceed three work days (72 hours). When the third day falls on a Saturday, Sunday, or holiday, the time period will be extended to the next work day.

7. Fire Bills. Fire Bills shall be conspicuously posted in all buildings, one on each floor, and at the discretion of the FPO (see Appendix B).

8. Fire Evacuation Drills.

a. A minimum of one fire evacuation drill shall be conducted annually by all activities, except for occupancies requiring additional drills as specified by chapter 6 of this instruction.

b. Drills shall be conducted in cooperation with the FD. A copy of all fire drill documentation shall be provided to the facility.

9. Fire Prevention/Safety Training.

- a. All activity personnel shall receive annual FLS and prevention training. This training shall include general fire safety and on-the-job fire prevention information according to reference (k).
- b. Additional training shall be provided to include, but not be limited to, fire safety orientation for new personnel; home fire safety and prevention; holiday fire safety; and hands-on portable fire extinguisher demonstrations.
- c. The FD shall administer FLS and prevention training.

10. Fire Protection Markings.

a. Premises Identification. New and existing buildings shall have address/building numbers placed in a position to be plainly legible and visible from the street or road fronting the property. These numbers shall contrast with their background. Address numbers shall be Arabic numerals or alphabet letters.

b. Shaft Way Marking. Every outside opening accessible to the FD that opens directly on any hoist way or shaft way communicating between two or more floors in a building shall be plainly marked with the word "SHAFT WAY" in red letters at least 6 inches high on a white background. Such warning signs shall be so placed as to be readily discernible from the outside of the building.

c. Stairway Marking.

(1) Signs. New enclosed stairways serving 3 or more stories and existing enclosed stairways serving five or more stories shall be provided with special signage within the enclosure at each floor landing as required by reference (f). The sign shall indicate the floor level, the terminus of the top and bottom of the stair enclosure, and the identification of the stair. The sign shall also state the floor level of, and the direction to, exit discharge (see Appendix C). The sign shall be inside the enclosure located between a minimum of 48 inches above the floor landing and the top of the signage shall be located a maximum of 84 inches above the floor landing in a position that is readily visible when the door is in the open or closed position.

(2) The sign shall be painted or stenciled on the wall or on a separate backing securely attached to the wall.

(3) Letters and numerals shall be of bold type and of a contrasting color to the background.

(4) The stairway identification letter shall be placed at the top of the sign in minimum one-inch high bold block lettering.

(5) Roof access or no roof access shall be designated by the words "Roof Access" or "No

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Roof Access” and placed under the stairway identification letter. Lettering shall be a minimum of 1-inch high bold block lettering.

(6) The floor-level number shall be placed in the middle of the sign in minimum five-inch high bold block lettering. Mezzanine levels shall have the letter “M” preceding the floor number, while basement levels shall have the letter “B” preceding the floor level number.

(7) The lower and upper terminus of the stairway shall be placed at the bottom of the sign in minimum one-inch high bold block lettering.

(8) Stairway signs shall be properly maintained.

#### 11. Street Closures.

a. Any street or road that is completely or partially closed, blocked, or otherwise made inaccessible to vehicular traffic.

b. Street closures will be reported to the Fire Dispatcher in advance of the closure by the command, activity, department, or in the case of contract work, by the Facilities Engineering/Acquisition Division official responsible for the closure.

c. When reporting street closures, the following information will be given:

(1) Exact street name and area affected.

(2) Whether or not completely or partially blocked.

(3) Duration of closure.

(4) Reason for closure.

(5) Name and phone number of responsible party.

d. Upon receiving a report of a street closure, the Fire Dispatcher shall immediately notify the FD.

#### 12. Fire Lanes.

a. Fire lanes shall be provided, as specified in references (b) and (f) and NFPA Code 1.

b. Fire lanes shall extend to within 50 feet of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. Further, fire lanes shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet from the fire lanes as measured by an approved route around the exterior of the building or facility.

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c. Fire lanes shall be not less than 20 feet of unobstructed width, able to withstand live loads of fire apparatus, and have a minimum of 13 feet 6 inches of vertical clearance. An approved turnaround for fire apparatus shall be provided where a dead-end exists, and is in excess of 150 feet in length. The turnaround shall have a minimum centerline radius of 50 feet.

d. Fire lanes shall be maintained free of obstructions at all times.

e. Suitable gates, access roads, and/or bridges shall be maintained to all facilities to ensure FD access in case of fire.

f. Parking of motor vehicles or obstructing fire lanes is prohibited.

g. Fire lanes shall be marked with freestanding signs and marked curbs, sidewalks, or other traffic surfaces that have the words "FIRE LANE-NO PARKING" painted in contrasting colors of size and spacing approved by the authority having jurisdiction in accordance with local state motor vehicle laws.

h. Pier fire lane requirements are established in chapter 11 and 13 of this instruction.

i. Aircraft hangar fire lane requirements are established in chapter 12 of this instruction.

### 13. Parking Around Fire Equipment and Egress Paths.

a. Parking shall not be permitted near buildings that would prevent or obstruct egress from an exit.

b. Parking shall not be permitted within 15 feet of fire hydrants, including underground fire hydrants.

c. Parking shall not be permitted within 3 feet of fire alarm boxes or sprinkler system post indicator valves.

d. A 15-foot access clearance shall be provided to all FD sprinkler and standpipe connections.

### 14. Electrical Fire Safety.

a. This section applies to new, existing, permanent (90 calendar days or more), or temporary (less than 90 calendar days) electrical appliances, fixtures, or wiring.

b. All new electrical wiring, appliances, fixtures, equipment, and wiring shall be installed, maintained, and labeled according to reference (f) and the NFPA Code 70. All electrical equipment shall be labeled/marked and/or listed/approved by a nationally recognized testing laboratory. Further, unless determined to present an imminent danger, the above shall be permitted to be maintained in accordance with the edition of NFPA Code 70 at the time of the installation.

c. Defective electrical equipment can result in short circuits and therefore should be checked frequently and repaired as necessary by an authorized electrician. Activity personnel can accomplish replacing of outlet and light switch covers.

d. Permanently installed electrical equipment requiring electricity shall be installed using permanent wiring. An over-floor electrical cord protector shall be used whenever wiring crosses a "path of travel."

e. The use of temporary wiring shall be kept to less than 90 calendar days and never be substituted for permanent wiring.

f. All appliances containing heating elements (coffee makers, cooking appliances, curling irons, etc.) shall be plugged directly into a wall receptacle.

g. The use of surge protectors/power strips for multiple outlet applications is recommended. However, the temporary use of standard, grounded extension cords is acceptable provided use is kept to a minimum, extension cords are not overloaded, i.e., multiple outlet application, and extension cords are not routed beneath floor coverings or over drop ceilings, etc.

h. Circuits shall not be overloaded or over-fused. Surge protectors/power strips shall not be connected together. When a blown fuse has interrupted a circuit or tripped a breaker, the source of the problem shall be located and corrected prior to restoring power.

i. A working space of a minimum of 3 feet shall be maintained in reference to depth and width in front of electrical equipment. Electrical breakers in panel boards shall be properly labeled to indicate circuits/devices that they control. Unused openings are prohibited and shall be covered with a blank plate. Breaker panel doors shall remain closed and latched.

j. Substantial conductors, having low resistance to ground, shall be used to ground all stationary and portable machines, equipment, and other devices in which static charges may be generated in the vicinity of flammable gases or vapors.

k. Extension cord lights shall not be used as temporary lighting unless equipped with proper globe and guards.

l. Unguarded electrical lamps shall be kept clear of combustible materials and shall not be allowed to rest against walls, wooden benches, or other combustibles.

m. Fluorescent lights shall not be used as "standing lights."

n. Extension cords or lights, and electrically operated tools or devices, together with their connections and fittings, shall be properly grounded, inspected frequently, and maintained in safe working order. All extension cords shall be kept dry and free from oil and grease. They also shall not be spliced or damaged in accordance with the factory design.



o. All vending machines using electrical power shall be properly grounded. Motors, compressors, etc., shall be kept free from grease and lint. Vending machines, window air conditioners, refrigerators, and other compressor-equipped units shall be connected directly into a wall receptacle. These types of units shall not use extensions cords or temporary wiring.

p. All television and FM-type antennas shall be grounded.

q. Flexible electrical cords, when authorized, shall not be run through holes in walls, ceilings, floors, doorways, windows, or similar openings.

r. All wiring shall be removed when no longer in service.

#### 15. Vacant Buildings.

a. Activities having charge or control of any vacant building or premises shall remove all combustible waste or refuse thereto, and lock, or otherwise secure, all windows, doors, and other openings in the building to prohibit entry by unauthorized persons.

b. All vacant buildings becoming inhabited with a change of occupancy shall require the facility to meet the requirement of new construction for the new occupancy as specified in references (a), (b), and (f).

c. All required fire protection and fire alarm systems shall remain in service. Provisions shall be made to protect wet-pipe sprinkler systems from freezing during cold seasons. The FD may require an inspection and test of any fire protection system or fire alarm system that has been out of service for 30 days or more before returned back into service.

d. Fire protection suppression and alarm systems may be discontinued in vacant buildings scheduled for demolition or determined to have no value, provided that adequate separation exists from other potential exposures and the system discontinuance is approved by the FD and NAVFAC MIDLANT or delegated subordinate command.

e. Electrical service shall be maintained only to the extent that meets minimum essential power requirements.

f. Gas service shall be shut-off outside the building, gas lines bled, and secured.

#### 16. General Housekeeping.

a. All combustible waste material shall be collected regularly, at least daily, at the end of each workday or end of shift, and placed in approved containers or removed from the building to avoid significant accumulation of trash.

b. Combustible waste or refuse shall be properly stored or disposed of to prevent unsafe conditions.

c. Smoking areas (i.e., gazebos) shall be maintained in a clean and presentable manner. All smoking areas shall have an approved noncombustible smoking material receptacle. This receptacle shall be emptied on a weekly basis once all smoking material is cold. All smoking materials shall be disposed of in the proper receptacle.

d. Residue of all tobacco products shall only be discharged in non-combustible containers provided for that specific purpose and should be available in all designated tobacco use areas. All trash (i.e., cigarette packs, paper) shall be disposed of separately. Trash containers shall be constructed of metal and kept closed with lids at all times when not in use.

e. Clothes dryer vents and all exhaust fans shall be kept free of dust and dirt accumulations.

f. Trash containers, with less than a seven-gallon capacity, may be of rubber or plastic construction if used in a designated non-smoking buildings or structures with sprinklers.

g. Trash containers having a capacity greater than seven gallons shall be constructed of metal or fire resistive materials and kept closed with lids at all times when not in use with the following exceptions:

(1) Lids are not required for trash baskets used in administrative business occupancies or offices.

(2) Plastic trash containers may be used in galleys or restaurants for wet garbage only.

17. Personnel Service Rooms. Lockers serving as clothing lockers shall be made of metal and maintained in a clean, orderly condition with adequate ventilation. No materials shall be stored on top or underneath the lockers, and work clothes that have been saturated with contaminants shall be cleaned immediately. Flammable liquids, chemicals, paints, rags, and similar materials shall not be stored in clothes lockers.

18. Attics and Concealed Spaces.

a. Attic spaces shall be kept clean and shall not be used for storage of any type of material.

b. Scuttle holes and other openings leading to attics or concealed spaces shall be fitted with doors constructed of material with an equivalent or greater fire rating and secured when not in use. These doors, hatches, etc., shall not be used for ventilation.

19. Cooking Equipment.

a. Commercial cooking equipment that produces smoke or grease-laden vapors shall be equipped with an exhaust system as specified in references (a), (b), and (f).

b. Exhaust systems shall be in operation whenever cooking equipment is in use. Use of cooking equipment shall be discontinued immediately if any component of the exhaust system (fire extinguishing system, fans, filters, ducts, etc.) becomes inoperable or is removed.

c. Hoods, grease-removal devices, fans, ducts, and other related equipment shall be cleaned to bare metal at frequent intervals prior to surfaces becoming heavily contaminated with grease or oily sludge. These devices shall be inspected at a minimum of every six months for certification by a qualified mechanic for cleanliness and operation. The FD Representative shall secure the system if found to be not properly maintained and a life safety hazard exists. If a life safety hazard exists, the Chief Fire Inspector and/or the District Fire Chief or designee shall be notified immediately. All paperwork of inspection/cleaning of hood system shall be forwarded to the FD.

d. Cooking equipment operating instructions shall be posted conspicuously in the kitchen and reviewed with all employees by management.

e. Fire extinguishers shall be compatible with the hood system and shall be mounted near the hood system area, as specified in reference (f).

f. The following precautions shall be observed when cleaning:

(1) Flammable solvents or other flammable cleaners shall not be used.

(2) At the start of the cleaning process, electrical switches that may be accidentally activated shall be locked out.

(3) Cleaning chemicals shall not be applied on fusible links or other detection devices of the automatic fire extinguishing system.

(4) When cleaning procedures are completed, all electrical switches and system components shall be returned to an operable state. All access panels (doors) and cover plates shall be restored to their normal operating condition. Dampers and diffusers shall be positioned for proper airflow.

g. Activities shall maintain records of the dates of inspection and cleaning of exhaust vent systems. The certification shall be posted on the hood system, showing when it was cleaned and next inspection date.

h. Deep fat fryers shall be equipped with a separate high limit control in addition to the adjustable operating control (thermostat) to shut-off fuel or energy when the oil temperature reaches 475 degrees Fahrenheit at 1 inch.

i. All deep fat fryers shall be installed with at least a 16-inch space between the fryer and surface flames from adjacent cooking equipment. If the fryer and surface flames are at different horizontal planes, the minimum height of 8 inches shall be measured from the height of the two.

j. Fire extinguishing systems shall be inspected, tested, and maintained following chapter 5 of this instruction.

j. Fire extinguishing systems shall be inspected, tested, and maintained following chapter 5 of this instruction.

k. Cooking oil tanks in commercial kitchens shall be installed and maintained following reference (f) and specifically NFPA Code 30. Cooking oil containers with a capacity of 55 gallons or greater is required secondary containment according to reference (m).

l. Residential cooking equipment in other than residential structures shall comply with reference (b).

20. Smoking/Tobacco Use Restrictions.

a. Use of tobacco products is prohibited in all Department of the Navy (DoN)-controlled spaces except as provided in reference (n). Further, smoking (including vaping and use of electronic cigarettes) is specifically prohibited as identified below:

- (1) Explosive areas.
- (2) On any pier, unless authorized by the CO for designated locations, at specified times under specified conditions allowed by reference (n).
- (3) Any interior space, owned, rented, or leased by DoN. This restriction includes any Navy-owned/controlled/leased/rented space building, facility, floating unit, aircraft, or vehicle.
- (4) Barges and lighters loaded with flammable/combustible liquids or materials, in or near cargo holds of ships, on loading ramps, in railroad cars, in beds of trucks, or trailers while loading or unloading combustible materials.
- (5) Within 500 feet of a ship engaged in explosive transfer operations or in any hazardous refueling area.
- (6) In all areas where chemicals or highly combustible materials are stored or handled.
- (7) Smoking shall be prohibited within 50 feet of:
  - (a) Gasoline dispensing operations.
  - (b) Where bituminous and plastic coatings are being applied.
  - (c) Flammable/combustible liquid handling or storage areas.
  - (d) Aircraft parking or hangar areas.
- (8) In any other area considered a fire hazard by the FD.

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b. In areas where smoking is permitted, an approved noncombustible smoking receptacle shall be provided. Smoking areas shall be kept clean and presentable. The smoking receptacle will be emptied at least weekly.

21. Open/Cooking Fires.

a. Open burning of any type (including turkey fryers) shall be prohibited without written approval from the FD. A request for site inspection shall be submitted and approved to the FD prior to beginning cooking operations.

b. Permitted open fires shall be located not less than 50 feet from any structure. Recreational fires shall not be located within 25 feet of a structure or combustible material unless contained in an approved manner.

c. A competent person shall constantly attend open fires and cooking fires until such fire is extinguished. This person shall have approved fire extinguishing equipment readily available for use. The use of a fire extinguisher from a Government facility for this purpose is prohibited.

d. The FD may prohibit any or all open fires when weather conditions or local circumstances make such fires increasingly dangerous.

e. For other than one- and two-family dwellings, no hibachi, gas-fired grill, charcoal grill, turkey fryer, or other similar devices used for cooking, heating, or any other purpose shall be used or kindled on any balcony or under any overhanging portion or within 10 feet of any structure. Listed or approved electric ranges, grills, or similar electrical apparatus shall be permitted.

f. Only approved charcoal lighter fluids shall be used following manufacturer directions.

22. Dumpster Units. Dumpsters and containers with an individual capacity of 1.5 cubic yards or more shall not be stored in buildings or placed within 10 feet of combustible walls openings, or combustible roof eave lines. Doors or hatches of dumpsters shall be kept closed.

23. Outdoor Areas.

a. General Requirements.

(1) A 20-foot fire lane shall be maintained in open storage areas to allow free passage of firefighting vehicles.

(2) Combustible storage in the open shall not exceed 20 feet in height and outside storage of combustible materials shall not be located within 10 feet of a property line. The separation distance from a property line shall be allowed to be reduced to 3 feet for storage not exceeding 6 feet in height.

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(3) Open yard stacking shall be located with not less than 15 feet clear space to buildings and property lines. Boundary posts with signs designating stacking limits shall be provided to designate 50 feet of clear space to buildings without sprinklers buildings in which hazardous manufacturing or other operations take place.

(4) Outdoor storage may be preferred to storage in combustible buildings lacking fire protection. In such cases, special precautions shall be taken for fire safety, as required.

(5) Stacks of idle pallets present a severe fire hazard and shall be stored according to reference (f), and NFPA Standard 230, chapter 12.

(6) Combustible material shall not be stored beneath a building or structure unless specifically constructed or protected for that purpose.

b. Vegetation such as grass, weeds, and other growth shall be kept cut regularly within 50 feet of all buildings, open storage areas, storage piles, or stowed vehicle areas.

c. Trash and debris shall not be allowed to accumulate, shall be kept 50 feet away from around buildings, open storage areas, storage piles, loading docks, loading ramps, or stowed vehicle areas.

#### 24. Holiday Decorations.

##### a. General.

(1) Christmas trees or similar decorations shall not be placed in a position that would obstruct corridors, exit ways, or other means of egress.

(2) All electrical equipment/wiring shall conform to paragraph 14 of this chapter.

(3) Open flames such as candles or lanterns shall not be placed on or near Christmas trees, curtains, or other similar combustible materials. Candles shall be kept in stable, non-combustible candleholders and shall not be left burning unattended. Ensure candles are extinguished by wetting the wicks prior to leaving the area.

b. Natural-Cut Decorations. Natural-cut Christmas trees shall not be permitted.

c. Artificial Decorations. Artificial Christmas trees, or other similar decorations, shall be labeled, identified, or certified by the manufacturer as being "flame retardant" or "flame resistive."

#### 25. Special Events.

a. A special event is defined as any ceremony, concert, fair, festival, or any other event characterized by large groups of people gathered for a common purpose.

b. General.

(1) Special events shall require a site inspection by the FD prior to the start of, and if deemed necessary, during, any such event to ensure adequate fire prevention and life safety precautions have been taken.

(2) A Special Event Authorization Permit shall be issued by the FD upon completion of the site inspection.

(3) This permit shall indicate whether the site is approved or disapproved for the event. If disapproved, deficiencies shall be indicated on the permit and must be corrected and re-inspected before the event begins.

(4) To ensure an adequate level of fire safety is maintained, the following precautions shall be taken:

(a) All fire protection systems and equipment are accessible and in service.

(b) Exit and emergency lighting is functional.

(c) Closed-top enclosures or the hanging of parachutes, canvas, or other decorative items from ceilings in sprinkled buildings is prohibited.

(d) All designated exits must allow unrestricted egress during the event. Exit access aisles shall be at least 36 inches in clear width, and remain unobstructed by chairs, tables, or other objects.

(e) Posted maximum occupant load shall not be exceeded. Seating shall follow reference (f) and the NFPA Code 1, chapter 25.

(f) Ensure approved structural membranes and sites are cleaned and inspected prior to securing each day.

(g) The use of pyrotechnic special effects, torches, etc., shall require a permit by the FD prior to use. The use of Sterno fuel cans, candles on tables, portable cooking equipment, etc., shall follow chapter 6 and chapter 7 of this instruction.

(h) Where smoking is permitted, suitable ashtrays shall be provided.

(i) Tents. All tent fabric shall meet the flame propagation performance criteria contained in Test Method 2 of NFPA Standard 701 and the tent supplier shall provide a certificate or other evidence of acceptance by an approved organization that such fabric meets fire safety testing requirements.

1. Gasoline, gas, charcoal, or other cooking devices or any unapproved open

flame shall not be permitted inside of or located within 20 feet of a tent. A separate tent or canopy over the cooking area may be acceptable with FD approval.

2. Combustible materials, hay, straw, shavings, etc., shall not be located in any tent and shall not be permitted within 10 feet of any tent. Ensure approved structural membranes and sites are cleaned and inspected prior to securing each day.

3. Where smoking is permitted, suitable ashtrays shall be provided.

4. A rated Class K fire extinguisher shall be placed in the area where cooking is taking place.

5. Precautions shall be taken to keep the public away from open flames or cooking areas.

6. All compressed gas cylinders, including LPG tanks, shall be secured in the upright position and protected from vehicular traffic.

7. LPG tanks shall be stored for use at least 5 feet from any tent and placed on a flat, level, firm surface.

8. All LPG tanks and associated hardware, i.e., tubing, piping, and metal braided hoses, shall be rated as specified in reference (f). All connections shall be tested for leaks prior to lighting burners. Twenty-pound capacity tanks or greater must be equipped with a regulator.

26. Truss Construction Signs. Truss signs (see Appendix D) are required for buildings that use either a floor or roof assembly consisting of truss construction or an engineered wood I-beam. A truss sign gives early warning to fire and emergency service members that the roof and/or floor may be subject to early collapse in the event of a fire condition. Naval Facilities Engineering Command shall be required to identify all buildings using truss construction.

a. Emblems shall be of a bright and reflective color, or made of reflective material. The shape of the emblem shall be an isosceles triangle and the size shall be 12 inches horizontally by 6 inches vertically. Letters of a size and color to make them conspicuous shall be printed on the emblem.

b. Emblems shall be permanently affixed to the left of the main entrance door at the height of between 4 feet and 6 feet above the ground, and shall be installed and maintained by the owner of the building. Identification of truss construction shall be completed within 36 months to allow for compliance for new and existing buildings.

27. Heat Shrink-Wrapping.

a. Due to fire hazards involving heat shrink-wrapping, the following fire safety procedures shall be required:



(1) Proper training or experience on heat shrink-wrapping techniques shall be obtained prior to performing heat shrink wrapping operations.

(2) "Flame Retardant" shrink-wrap film shall be approved/required by reference (1) and the NFPA Standard 701.

(3) Approved flame retardant shrink-wrap film shall self-extinguish within 2 seconds after a flame is removed from contact with the material.

(4) Heat guns for applying heat to shrink-wrap are available in both propane fired and electric models and each shall be listed/approved, if used.

(5) A fire watch shall remain on-site during the heat shrink-wrapping process and for a minimum period of thirty minutes after the process is completed.

(6) A minimum of one 2-A:20-B:C multi-purpose dry chemical extinguisher shall be required during heat shrink-wrapping operations.

(7) In the case of vehicles, watercraft, or other fueled equipment, fuel tank filler caps shall be tightly sealed before heat shrink-wrapping begins.

(8) A Hot Work Permit shall be required for all heat shrink-wrapping operations outside of industrial areas designated for such use.

(9) Competency shall be demonstrated through documented training or experience.

b. Heat shrink-wrapping by individuals without documented training and/or experience to safely conduct this process is prohibited.

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**CHAPTER 3**  
**MEANS OF EGRESS**

1. General. Means of egress in new and existing buildings shall follow references (a), (b), and (f).

2. Fundamental Requirements.

a. Every building or structure, new or old, designed for human occupancy shall be provided with exits sufficient to permit prompt escape of occupants in case of fire or other emergency.

b. In every building or structure, exits shall be so arranged and maintained as to provide free and unobstructed egress from all parts of the building or structure at all times when occupied.

c. No lock or fastening device shall be installed to prevent free escape from the inside of any building with the following exception: locks shall be permitted in mental health, detention, or correctional facilities where supervisory personnel are continually on duty and effective provisions are made to remove occupants in case of fire or other emergency.

d. Exits shall be accessible to the extent necessary to assure reasonable safety for occupants having impaired mobility.

e. Every exit shall be clearly visible or the route to reach every exit shall be conspicuously indicated in such a manner that every occupant of every building or structure shall readily know the direction of escape from any point.

f. Each means of egress, in its entirety, shall be so arranged or marked that the way to a place of safety is indicated in a clear manner.

g. Any doorway or passageway that is not an exit or a way to reach an exit, but is capable of being confused with an exit, shall be so arranged or marked "Not an Exit" to prevent confusion with acceptable exits.

h. As required, the appropriate number of means of egress, shall be provided in every building or structure, section, or area where their size, occupancy, and arrangement endanger occupants attempting to use a single means of egress that is blocked by fire or smoke. However, some occupancies may require only one means of egress according to reference (a).

i. The two means of egress shall be arranged to minimize the possibility that both may be rendered impassable by the same fire or emergency condition.

j. Every vertical way of exit, or other vertical opening between floors of a building, shall be suitably enclosed or protected, as necessary. This requirement shall afford reasonable safety to occupants while using exits and to prevent spread of fire, smoke, or fumes through vertical openings from floor-to-floor before occupants have entered exits. Ceiling tiles, where installed, shall be kept in place at all times.

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k. Where artificial illumination is required in a building or structure, exit facilities shall be included in the lighting design in an adequate and reliable manner.

1. Stairwell Usable Space. There shall be no enclosed, usable space within an exit enclosure, including under stairs, nor shall any open space within the enclosure be used for any purpose that has the potential to interfere with egress. The use of exit enclosures for storage or for installation of equipment not necessary for safety is prohibited. Occupancy is prohibited other than for egress, refuge, and access. The intent is that the exit enclosure essentially be "sterile" with respect to fire safety hazards. Useable space shall be permitted under stairs, provided that both of the following criteria are met:

(1) The space shall be separated from the stair enclosure by the same fire resistance as the exit enclosure.

(2) Entrance to the enclosed, usable space shall not be from within the stair enclosure.

3. Emergency Exits.

a. According to reference (f), no unapproved locks or other fastening devices shall be installed on any emergency exit door for security areas.

b. Emergency exit doors shall not be blocked, tied, or propped open at any time.

c. Fire exit doors shall swing in the direction of exit travel when serving a high hazard area or an occupant load of 50 or more.

d. Panic hardware, where required, shall be maintained in proper working order at all times.

e. Self-closing devices, where required, shall be maintained in proper working order at all times. When required to be self-closing, the door shall be self-latching upon closing.

4. Illumination of Means of Egress. Where illumination of means of egress is required, it shall be installed and maintained as specified in references (a), (b), and (f).

5. Marking of Exits. Where the marking of an exit is required, such markings shall follow references (a), (b), and (f).

6. Factors Affecting Egress.

a. Every required exit, exit access, or exit discharge shall be continuously maintained free of all obstructions or impediments.

b. No furnishings, decorations, or other objects shall be so placed as to obstruct exits.

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c. Hangings or draperies shall not be placed over exit doors or otherwise be located to conceal or obscure any exit unless stated by reference (f) and the National Fire Protection Association Code 1, Chapter 14.

d. Mirrors shall not be placed on exit doors, adjacent to any exit, exit access, or exit discharge.

e. There shall be no obstruction by railings, barriers, or gates that divide the open space into individual rooms, apartments, or other uses of space.

f. Where furniture or other movable objects obstruct the required path of travel, such obstructions may be required to be fastened out of the way using railings or other permanent barriers to protect the path of travel against encroachment.

g. Clothing and other personal effects shall not be stored in corridors or lobbies in such a way as to obstruct any part of an exit.

h. Cubicles and other modular office furniture shall be installed as to not to impede or affect the egress.

7. Overcrowding.

a. Premises are deemed overcrowded when the occupant load exceeds the exit capacity or the posted occupant load.

b. No person shall fail to leave any overcrowded premises when told to do so by the management of the premises or the fire department.

8. Emergency Lighting. Emergency lighting, when required, shall be installed, tested, and maintained according to chapter one and references (a), (b), and (f).

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**CHAPTER 4**  
**CONSTRUCTION, RENOVATION, PLANS REVIEW**

1. Introduction. The proper planning, design, and review of new construction projects and alterations to facilities to incorporate adequate fire protection features is essential in order to maintain an effective fire protection program, to reduce property loss, and to provide maximum safety for building occupants. Commander, Naval Facilities Engineering Command, Mid-Atlantic (NAVFAC MIDLANT) FPE shall be assigned responsibility to review plans, inspect, test, and recommend for approval all fire protection system installations before final acceptance by the Navy.

2. Criteria. Fire protection criteria for all new construction and alterations to facilities shall follow references (b) and (f).

3. Fire Protection Engineering Review Requirements.

a. All activities located within CNRMA shall have all plans reviewed by a qualified FPE from NAVFAC MIDLANT primarily including, but not limited to:

(1) New construction projects.

(2) Major renovations to facilities of 50 percent or greater of the cost of the building.

(3) Installation of, changes to, or modifications of installed fire alarm, detection, and suppression systems, to include a provision for acceptance tests of systems upon completion of installation.

(4) Changes or modifications to water distribution systems.

b. NAVFAC FPEs shall notify the FPO and Chief Fire Inspector of major construction projects prior to the start of the review of such projects. The FD shall furnish information that may affect future FD operations, such as fire lane requirements, fire department connection location, fire hydrant location, apparatus access etc.

c. The FPO may review drawings of minor alterations or modifications to facilities and self-help projects, but shall do so in cooperation with NAVFAC FPEs.

4. Facilities Engineering/Acquisition Division (FEAD) Responsibilities.

a. The FEAD shall provide liaison with the FD and contractors working on base to ensure proper fire prevention and protection requirements are followed within the scope of the contractor's responsibility to the government.

b. The FEAD shall notify the FD at least 72 hours in advance of all new construction projects and dates of pre-construction conferences. A FD Representative shall attend all pre-construction meetings.

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c. The FD shall provide the contractor with information containing fire prevention instructions and fire safety precautions. This information shall be maintained at the construction site.

5. NAVFAC MIDLANT Public Works Officer Construction Responsibilities.

a. The NAVFAC MIDLANT Public Works Officer shall provide liaison with the FD and contractors, or NAVFAC MIDLANT maintenance personnel working on base with NAVFAC MIDLANT construction projects. This liaison is to ensure proper fire prevention and protection requirements are followed within the project scope for the contractor's or NAVFAC MIDLANT maintenance personnel's responsibility to the government.

b. The NAVFAC MIDLANT Public Works Officer shall notify the FD of all new construction projects and dates of pre-construction conferences. A FD Representative shall attend all pre-construction meetings, as available.

c. The FD shall provide the contractor or NAVFAC MIDLANT maintenance personnel with information containing fire prevention instructions and fire safety precautions. This information shall be maintained at the construction site.

6. Construction Battalion Unit (CBU) Officer Responsibilities.

a. The CBU Officer shall provide liaison with the FD Representative and CBU personnel working on base with CBU projects to ensure proper fire prevention and protection requirements are followed within the project scope for responsibilities to the Government.

b. The CBU Officer shall notify the FD of all new construction or renovation projects, and dates of pre-construction conferences. A FD Representative shall attend all pre-construction meetings.

c. The FD Representative shall provide CBU personnel with information containing fire prevention instructions and fire safety precautions. This information shall be maintained at the construction site.

7. Contractor Responsibilities.

a. Past experience emphasizes the necessity for coordination and cooperation between construction personnel and operating forces. On a lump sum contract, contractors have, by the terms of the contract, primary responsibility for the protection of their work. The contractor is responsible for all damage to persons, or to other property that occurs as a result of negligence in connection with the prosecution of the work. Contractors have absolute responsibility with regard to their own work, and must exercise reasonable care in the protection of other base property.

b. In addition, the contractor shall be required to comply with this instruction and its references concerning fire prevention and safety.

8. Construction/Alteration/Renovation.

a. Construction projects pose many fire prevention and protection problems. During construction operations, many transient fire hazards are present. Fires that are not extinguished in the incipient stage are likely to spread more rapidly than they would in finished structures. In order to minimize the potential for fire, it is essential that proper fire prevention and safety practices be followed.

b. It is essential that provisions be made for the early detection of fire and prompt notification to the Fire Dispatcher. Additional precautions are required for the protection of projects that are remote from the location.

c. In such cases, it may be necessary to resort to adding temporary or emergency measures in order to provide for fire protection. This requirement dictates the necessity for indoctrination of all supervisory personnel in the fundamentals of fire protection and prevention measures necessary to create a safe environment during construction projects.

9. Construction/Alteration/Renovation Safeguards.

a. When new buildings are constructed and the fire main system must be extended to provide adequate protection, it is highly desirable that the fire main extension, together with hydrant installation, be provided prior to the actual construction of the building. In the event that such a procedure is not possible, a temporary extension of the fire main system shall be made in order to provide a water supply adequate for firefighting operations according to reference (1).

b. During construction operations, temporary ladders and catwalks shall be installed in such a manner as to afford safe and rapid access for firefighters, as well as an exit for workers. As the work progresses, completion of permanent stairway enclosures and other structural features that help to prevent the horizontal and/or vertical spread of fire is of great importance.

c. If an automatic sprinkler system is to be permanently installed, the water supply for the system shall be ready and the sprinkler heads promptly installed after completion of the interior finish. Blank flanges, used to permit sprinkler protection by sections as construction progresses, shall have gaskets conspicuously marked to assure removal as the sprinkler system is extended.

d. During alteration or renovation projects, where the building is protected by fire protection systems, such systems shall be maintained operational at all times during alteration/renovation, if feasible. Where alteration/renovation requires modification of a portion of the fire protection system, the remainder of the system shall be kept in service and the FD shall be notified.

e. When necessary to shut down the system, the FD shall have the authority to require alternate measures of protection, not limited to requiring a roving fire watch until the system is returned to service. The FD shall be notified when the system is shut down and when returned to service.

f. Notification of fire protection system shut-down or return to service shall be made to the Fire Dispatcher. This notification shall be made before systems are shut down or returned to service. Shutting down or returning to service any fire protection system shall be the responsibility of a certified NAVFAC MIDLANT mechanic, activity mechanic, or a certified contractor.

g. Twenty-foot fire lanes shall be provided at the start of a construction project and be maintained throughout construction for access. Temporary fire lanes shall be conspicuously marked.

**Note:** Permanent fire lane street markings are not required until completion of the building project.

h. Traffic control measures shall be provided when required by the FD.

#### 10. Fire Prevention Measures During Construction, Alteration, and Renovation.

a. To ensure adequate fire prevention measures are taken at construction sites, they shall be inspected weekly or sooner as required by the FD.

b. Working spaces and repair areas shall be policed daily to maintain order and cleanliness to reduce fire hazards. All areas shall be cleaned and free of rubbish/debris prior to work crews departing each day.

c. Proper clearance from buildings or structures shall be maintained, taking care to ensure that piles of lumber and other materials to be used in construction do not interfere with the right-of-way of emergency vehicles or the blocking of fire hydrants and/or FD connections.

d. Designated areas shall be established for the dumping of refuse materials upon the approval of the FD.

e. Paint rags and other materials subject to spontaneous combustion require proper disposal and shall be stored in metal cans with self-closing lids.

f. Small quantities (i.e., five-gallon individual units) of flammable or combustible liquids shall be carried/stored in either the manufacturer's container or in an approved marked safety container.

g. Bulk quantities of flammable or combustible liquids shall be stored in approved storage containers with a self-closer. Capabilities for the containment of any leakage or spillage of contents shall follow reference (f). NFPA placarding shall be used on the storage space. All safety data sheets of used and stored products shall be kept on the work site in the office or trailer.

h. Liquid fuel powered equipment such as air compressors, hoists, and pumps shall be located so that exhausts are directed away from combustible materials. Liquid fueled engines



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shall be shut off during refueling operations to prevent ignition of gasoline vapors or liquid from possible spills or overflow.

i. Combustible refuse/litter such as scrap lumber, paper, cement sacks, and other building debris shall be removed daily and properly disposed of. Bonfires or burning of rubbish is strictly prohibited.

j. Welding and cutting equipment, rivet forges, and other spark-producing equipment shall be properly used and protected. A hot work permit is required according to chapter 7 of this instruction.

k. Temporary wiring for construction operations shall be carefully installed by a competent electrician.

l. Temporary electrical wiring shall be protected from cranes, shovels, trucks, traffic, and other construction equipment.

m. Permanent wiring systems shall replace temporary systems as soon as removal of form work shall permit.

n. Temporary heating devices shall be properly used and situated so that they are not likely to overturn or come in contact with combustibles. Temporary heating devices shall be labeled, marked, and/or listed/approved by a nationally recognized testing laboratory. Temporary heating devices should be equipped with an automatic tip over safety device.

o. Liquid fuel-fired heaters are commonly used for temporary heating, however, combustible material such as canvas weather protection, is frequently ignited by liquid fuel-fire heaters that are improperly installed or supervised. Safe arrangements, however, are possible and the provisions for permanent heating plants or a temporary heating system can often be substituted for the more hazardous liquid fuel-fired heaters. When liquid fuel heaters are used indoors, carbon monoxide levels shall be within Occupational Safety Health Administration and industrial hygiene levels.

p. A roving Fire Watch shall be maintained if the fire evacuation alarm system is required to be disconnected during alteration or renovation projects.

q. At least one approved 4-A:80-B:C (10 pound) fire extinguisher shall be provided in plain sight on each floor at each usable stairway and/or exit. The extinguishers shall not be taken from a building for use by fire watch personnel.

r. Suitable fire extinguishers shall be provided on manned equipment using liquid fuel.

#### 11. Self-Help Projects.

a. Construction, alterations, repair, and renovations performed as a self-help project shall follow instructions, activity self-help regulations, and references (a) and (b).

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b. Approval shall be obtained from the FD prior to the start of any self-help project. This approval shall be in the form of a permit/request for authorization and issued by the FD subject to project plans review and a completed materials list.

c. The activity shall be responsible for contacting the FD at least three work days (72 hours) in advance to schedule a plans review.

12. New Facility Occupancy. Personnel shall not occupy newly constructed facilities until all fire protection features are incorporated and completed, including the installation and testing of all fire protection alarm, detection and suppression systems.

13. Demolition Safeguards. Fire prevention requirements for buildings undergoing demolition operations follow the guidance in this instruction.

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**CHAPTER 5**  
**FIRE PROTECTION SYSTEMS/EQUIPMENT**

**1. Portable Fire Extinguishers.**

**a. Policy.**

(1) The installation, maintenance, and testing of portable fire extinguishers shall be performed as specified in references (b) and (f).

(2) The FD or Fire Protection Engineering shall be responsible for determining the type, location, and number of fire extinguishers required. This requirement shall include special hazard requirements whereby an ABC extinguisher would not be warranted.

(3) The standard fire extinguisher shall be a multi-purpose ABC dry chemical 4-A:80-B:C to extinguish Class A, B, and C fires. Activities and facilities requiring specialized fire extinguishers, e.g. Class K extinguishers, shall purchase and obtain this equipment at their expense.

(4) Fire extinguisher maintenance, repair, recharging, and/or servicing shall be conducted by qualified personnel.

(5) The initial purchase and normal replacement shall be provided by the FD for standard issue fire extinguishers. The FD shall not be responsible for the removal or disposal of specialized fire extinguishers not provided by the FD.

(6) According to UFC 3-600-01 or as otherwise approved, general purpose portable fire extinguishers are not required when the facility is provided with complete automatic sprinkler protection and a fire alarm system as specified in reference (b). Existing fire extinguishers shall not be removed without the approval of the Fire Chief.

**b. General.**

(1) Activation or tampering with any fire extinguisher for any reason other than fire extinguishing is strictly prohibited. Personnel found to have activated or tampered with any portable fire extinguisher are subject to appropriate disciplinary action. Each activity occupying a building shall be financially responsible for the repair or replacement of portable fire extinguishers damaged or missing as a result of vandalism.

(2) Any person finding indications that a fire extinguisher has been used and/or is not fully-operational shall report that fact immediately to the facility's Fire Warden.

(3) Fire suppression equipment shall not be used or removed from its assigned location for any reason, except for firefighting, fire drills, repairs, or maintenance.

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(a) Anytime the activity has removed an extinguisher from service to be checked or repaired, alternate equivalent protection must be provided.

(b) Alternate equivalent protection could include replacing the extinguisher with one or more units having equivalent or equal ratings, posting a fire watch, restricting the unprotected area from employee exposure, or providing a hose system ready to operate.

(4) Fire extinguishers shall not be blocked or otherwise obscured from view.

c. Responsibilities.

(1) The FD shall review activity fire extinguisher inspection programs during scheduled fire prevention inspections.

(2) Occupants of the Navy's family housing are responsible for furnishing, maintaining, and inspecting fire extinguishers in their own residential units.

(3) Activity commanders, subordinate commanders, tenant commanders, and Officers in Charge are responsible for:

(a) Installation of fire extinguishers, as determined by the FD.

(b) The repair or replacement of fire extinguishers due to damage, theft or loss.

(c) Conducting a visual inspection program of all fire extinguishers to ensure the seal and pin are intact, the gauge pressure is operational, and no physical damage is apparent. This inspection shall be performed on a monthly basis by the Fire Warden. They shall sign and date the fire extinguisher inspection tag, log, or sheet after completion of the visual inspection.

(d) Immediately correcting any deficiencies of their fire extinguishers, including a 10 percent agent loss on CO<sup>2</sup> fire extinguishers.

2. Fixed Fire Extinguishing, Detection, and Alarm Systems.

a. The installation, maintenance, testing, and inspection of all fire extinguishing systems (CO<sub>2</sub>, foam, sprinklers, etc.) and fire alarm systems shall be accomplished as specified in references (b), (c), and (f).

b. Plan, review, and acceptance tests for newly installed fixed fire extinguishing and fire alarm systems shall follow chapter 4 of this instruction.

c. The FD shall be notified at least 3 work days prior to the start of any system acceptance test. A FD Representative shall be present for all system acceptance tests. Upon completion of the final acceptance test, a copy of the certificate of compliance will be forwarded to the Fire Prevention Office where it shall be kept in the building folder.

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d. Fire extinguishing, detection, and alarm systems shall not be placed out of service except for repairs or maintenance. Prior to placing systems out of service, and when returning systems back to service, activities shall notify the Fire Dispatcher, who shall in turn notify the Fire Prevention Office during normal working hours. After hours and weekends, the Fire Dispatcher shall notify the on-duty Senior Fire Officer. Restoration of the systems shall be given highest priority for repairs. If the fire alarm/sprinkler system is out of service for more than four hours in a 24-hour period, then a roving fire watch shall be required until the system is fully back in service. Building occupants shall implement contingency plans as appropriate until service is restored.

e. Activities are responsible for having all fire extinguishing, detection, and alarm systems tested, inspected, maintained, and/or repaired according to references (f) and (o). This requirement shall either be performed by a certified NAVFAC MIDLANT mechanic, certified activity mechanic, or on contract basis through a company certified to perform these services. Copies of test and inspection certification reports shall be forwarded to the FPO where they shall be kept in the building folder.

f. To maintain integrity of the fire alarm system, fire alarm systems shall not be used to monitor or transmit alarms for purposes other than fire extinguishing, fire detection, and fire drills.

g. Activities shall maintain a location map of all under-floor/above-ceiling detectors, or have a smoke-detector enunciator in the affected area. A map or enunciator showing the locations of each of the under-floor/above-ceiling detectors shall be maintained in each affected area.

h. Activation of any fire extinguishing, detection, or alarm system for any purpose other than the intended purpose is strictly prohibited, with the exception of those stated above.

i. When a fire extinguishing, detection, or alarm system is to be tested or repaired, and the accidental activation of the system is possible, the activity shall notify NAVFAC MIDLANT maintenance or contracts to service the alarm system to prevent accidental alarm transmission to the FD. Adequate notification shall be made to NAVFAC MIDLANT to allow time to secure the system. The FD shall be notified anytime an alarm system is secured.

(1) Fire Sprinkler Systems.

(a) Sprinkler control valves shall be kept in the open position. Activated sprinkler heads from an actual fire, shall not be closed until directed by the on-scene SFO.

(b) Certified NAVFAC MIDLANT mechanics, certified activity mechanics, or certified contractors are responsible for testing and maintaining sprinkler systems, including replacement of sprinkler heads and restoration to service after activation.

(c) Sprinkler systems shall be inspected, tested, and maintained according to reference (c).

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(d) Hanging any object from sprinkler piping or heads is prohibited.

(e) In storing any low hazard materials, a clearance of at least 18 inches between the material and the sprinkler heads shall be maintained. A clearance of at least 36 inches shall be maintained between sprinkler heads and any stored high hazard materials.

(f) Dropped ceilings or any other obstruction that would impede the operation of the system shall not obstruct sprinkler heads. Painting of sprinkler heads is prohibited. According to references (b) and (f), sprinkler and standpipe connections and control valves shall be painted red.

(g) FD sprinkler, standpipe connections, and control valves shall not be obscured. Clearances for the connections are specified in chapter two of this instruction.

(2) Fire Alarm Systems, Master Fire Alarm Boxes, and Circuits.

(a) NAVFAC MIDLANT mechanics or contractors are responsible for maintenance and repair of all fire alarm systems, master fire alarm boxes, and circuits.

(b) NAVFAC MIDLANT mechanics or contractors shall notify the Fire Dispatcher when any fire alarm system, master fire alarm boxes, or circuits are placed out of service for repairs or maintenance, and when returned to service.

(c) The Fire Dispatcher is responsible for notifying the FD and all activities affected by fire alarm systems, master fire alarm boxes, or circuit outages, and when they are returned to service. The Fire Dispatcher shall notify the FPO during normal working hours and the on-duty SFO on nights, weekends, and holidays. The Fire Dispatcher shall provide a report of actual fire alarms, smoke detector activations, etc., particularly where some firefighter action and prevention follow-up was required.

(d) Fire alarm systems shall be inspected, tested, and maintained as specified in reference (c). A record of these tasks shall be provided annually to the FPO.

(e) Street fire alarm boxes shall be painted red.

(f) All fire alarm box numbers shall be assigned by the FD. Requests for fire alarm box number assignments shall be made in writing to the FD.

(g) NAVFAC MIDLANT shall coordinate with the FPO on the installation of coded wheels into fire alarm boxes.

(3) Standpipe Systems.

(a) Each activity shall ensure that standpipe systems are properly inspected, tested, and maintained as specified in reference (c). This requirement shall be performed by either a

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certified NAVFAC MIDLANT mechanic, certified activity mechanic, or on contract basis through a company certified to perform these services.

(b) A record of these tasks shall be provided annually to the FPO.

(4) Fire Pumps.

(a) Each activity shall ensure fire pumps are properly inspected, tested, and maintained as specified in reference (c). This requirement shall be performed by either a certified NAVFAC MIDLANT mechanic, certified activity mechanic, or on contract basis through a company certified to perform these services.

(b) A record of these tasks shall be provided annually to the FPO.

3. Fire Hydrant Inspections, Flushing, and Maintenance.

a. NAVFAC MIDLANT is responsible for the maintenance and repairs to all fire hydrants and sectional control valves by references (c) and (f). A record of maintenance performed along with a current list of hydrants shall be provided annually to the FPO.

b. NAVFAC MIDLANT is responsible for inspecting, flushing and flow testing of all fire hydrants annually. A record of these annual tasks shall be provided annually to the FPO. If the required maintenance is not performed, the Chief Fire Inspector or District Fire Chief shall be notified in writing by NAVFAC MIDLANT and the reason why the maintenance was not performed.

c. NAVFAC MIDLANT maintenance or contractors are responsible for notifying the Fire Dispatcher when fire hydrants are placed out of service for repairs or maintenance and when they are returned back into service. The Fire Dispatcher shall notify the FD of all outages and repairs.

d. "OUT OF SERVICE" signs shall be placed on all fire hydrants that are inoperable or otherwise out of service.

e. Blue reflective highway markers shall be installed in the centerline of roadways and adjacent to all fire hydrants to assist in locating fire hydrants. Activities that experience large accumulations of snow are encouraged to install reflective fire hydrant identification rods on hydrants, as funding is available.

f. No vehicles are permitted to be parked within 15 feet of any fire hydrant. Fire hydrants shall be kept free of all obstructions.

g. Use of fire hydrants for any purpose other than firefighting can only be authorized by NAVFAC MIDLANT. NAVFAC MIDLANT sites shall notify the Fire Dispatcher and shall give locations of affected fire hydrants and duration of use. The Fire Dispatcher shall relay this information to the FD.

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#### 4. Fire Hydrant Classification and Markings.

a. Classification of Fire Hydrants. Fire hydrants are classified according to their rated capacities (at 20 psi), residual pressure, or other designated value specified reference (f):

(1) Class AA: Rated capacity of 1,500 gpm or greater.

(2) Class A: Rated capacity of 1,000-1,499 gpm.

(3) Class B: Rated capacity of 500-999 gpm.

(4) Class C: Rated capacity of less than 500 gpm.

b. Marking of Fire Hydrants.

(1) Fire hydrant bonnets shall be painted with the following capacity-indicating color scheme:

(a) Class AA: Light Blue.

(b) Class A: Green.

(c) Class B: Orange.

(d) Class C: Red.

**Note:** For rapid identification at night, capacity colors shall be of reflective-type paint.

c. Fire hydrant barrels shall be painted yellow for potable water and red for non-potable water according to reference (b).

d. Fire hydrants rated at less than 20 psi shall have the rated pressure stenciled in black on the hydrant top.

e. Each fire hydrant is required to be numbered for identification purposes. The number and feed size should be either stamped on a plate attached to the fire hydrant barrel or stenciled on the fire hydrant barrel. Such hydrant markings shall be clearly visible at all times.

#### 5. System Out of Service Warning.

a. Building occupants, users, and the public shall be notified whenever any of the fire protection systems are either out of service or impaired to a degree that presents an increased risk to any occupants according to reference (e). The maintenance activity must regularly inform installation and operational commanders, not less than twice a year, of the system impairments, compensatory measures in place, projected correction completions, and corrections completed since the last report. The Appendix E sign shall be posted by the facility owner, manager, or



custodian at all principal public and employee entrances to the building. The sign shall be 7 inches high by 10 inches wide in an American National Standards Institute (ANSI) Z535.2-2007 compliant format using safety orange background color, black type and graphic, and Arial font (ANSI Z535.1-2006).

b. Signs complying with this format may be ordered from commercial safety sign manufacturers on a wide variety of materials. Computer software is commercially available to print this and other safety signs on color printers.

6. Repair or Correction of Impairments to System or Feature Performance and Reporting.

a. Facilities, as they exist, must meet the requirements of NFPA Life Safety Code 101, for existing occupancies. Facilities that do not meet the requirements of NFPA Life Safety Code 101 for existing occupancies must conform to one of the following:

(1) Upgrade the deficiency to meet the existing occupancy requirements.

(2) Establish alternative protocols to provide a level of life safety equivalent to that required by NFPA Life Safety Code 101 for existing occupancies until an upgrade project can be completed.

(3) Alternative protocols must be in writing and approved by Commander, Naval Facilities Engineering Command Headquarters, Code Chief Engineer or delegated subordinate command.

(4) Life safety hazards shall be abated or mitigated within the time identified below per reference (y):

(a) RAC 1: 10 days from hazard identification.

(b) RAC 2: 30 days from hazard identification.

(c) RAC 3: 90 days from hazard identification.

b. Impairments affecting the performance of installed fire protection features shall be corrected immediately when identified using the highest priority in the appropriate work identification and management system. These processes meet the OSHA general industry standards requirements for repair or correction of impairments (29 CFR Part 1910.160(b)(2) and 160(b)(6)). In addition, 10 USC § 1794 requires that deficiencies within military child care activities that are not corrected within 90 days must have an approved waiver from the service secretary, without which the facility shall be closed. Waivers must be approved prior to the conclusion of the 90-day period to prevent closure of the facility.

c. The maintenance activity must notify the FD, Fire Dispatcher, and the facility or area user when impairments cannot be corrected immediately when identified. The maintenance

activity must also advise the facility or area user of the need to post the signs specified in paragraph

d. The FD Representative shall advise and consult with the facility or area user to determine the immediate measures that must be taken to ensure personnel safety and mission continuity.

e. When the impairment will exist for more than 72 hours, the maintenance activity, the FD Representative, the safety activity, and the facility or area user shall jointly develop written compensatory measures to ensure personnel safety and, to the maximum degree possible, mission continuity.

f. Implementation of compensatory measures shall not reduce the priority of the correction of the impairment. In some cases, where compensatory measures cannot be established in a timely manner, buildings may need to be evacuated by a case-by-case basis.

g. This requirement considers the building, occupancy type, nature and duration of impairment, building occupancy level during the impairment period, active work being conducted on the fire protection features during the impairment, condition of other fire protection systems and features (e.g., sprinklers, structural compartmentation), and hazards and assets at risk.

h. Appropriate mitigating measures could range from simple occupant notification to increased fire safety checks or inspections by user or installation fire and safety personnel to full-time fire watch. In other words, measures could range from minor operational changes to completely ceasing operations. Determining factors vary from testing-related impairments and maintenance activities during normal business through extensive impairments to high-value, high-hazard situations.

i. The maintenance activity must inform installation and operational commanders of new impairments not corrected within 72 hours, of the jointly developed compensatory measures being recommended, and of the remaining mission risk exposure.

j. Commanders may also limit operations and have an emergency action plan that specifies evacuation actions (OSHA general industry standard 29 CFR Part 1910 Subpart L App A).

k. Implementation of a Roving Fire Watch. A fire watch is a dedicated function, whereas individual(s) are assigned fire watch responsibilities as mitigating or compensatory measures. Fire watch personnel should not be expected to perform other duties beyond fire safety, occupational safety, or security. Normally, dedicated fire safety, occupational safety, or security personnel may be assigned to conduct mitigating or compensatory fire watch activities as part of their normal functions.

7. System Impairments, Repairs, Corrections, and Reporting. NAVFAC MIDLANT shall regularly inform Installation and Operational Commanders, not less than twice a year, of the system impairments, compensatory measures in place, projected correction completions, and corrections completed since the last report.

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**CHAPTER 6**  
**OCCUPANCY CLASSIFICATIONS**

1. Classification of Occupancy. All buildings or structures shall be classified by occupancy types according to references (a), (b), (f), and (g).

2. General.

a. According to the United Facilities Criteria 1-200-01, the International Building Code shall be used to determine occupancy classification as it relates to allowable construction type, building height, building area, building separation distance, occupancy separation, and associated requirements.

b. The NFPA Life Safety Code 101 shall be used to determine the occupancy classification as it relates to fire/smoke resistance rating of interior non-load partitions (other than occupancy separation, means of egress, interior finish, features of fire protection (including vertical openings, and associated requirements).

c. Facilities, as they exist, must meet the requirements of NFPA Life Safety Code 101, for existing occupancies. Facilities that do not meet the requirements for existing occupancies must conform to one of the following:

(1) Upgrade the deficiency to meet the existing occupancy requirements.

(2) Facility managers shall establish facility protocols to provide a level of life safety equivalent to that required by NFPA Life Safety Code 101 for existing occupancies, until an upgrade project can be completed. Management protocols must be in writing and approved by Commander, Naval Facilities Engineering Command Chief Engineer or a delegated subordinate command.

d. Repair, renovation, modification, reconstruction, addition, and change in use shall follow references (a) and (b).

e. Mixed Occupancies. A multiple occupancy facility where the occupancies are intermingled so that separate safeguards are impracticable, the means of egress facilities, construction, protection, and other safeguards shall comply with the most restrictive life safety requirements of the occupancies involved.

f. Changes of Occupancy. In any building or structure, whether necessitating a physical alteration or not. A change from one occupancy classification to another, or from one occupancy sub-classification to another sub-classification of the same occupancy, shall be permitted only if such building or structure conforms with the requirements of this instruction applying to new construction for the proposed new use following references (a), (b), (f), and (g).

g. Whenever or wherever, any device, equipment, system, condition, arrangement, level of protection, or any other feature is required for compliance with this instruction, such device,

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equipment, system, condition, arrangement, level of protection, or other feature shall thereafter be permanently maintained unless this instruction exempts such maintenance.

h. Nothing in this instruction shall be construed to prohibit a better type of building construction, additional exits, or otherwise safer conditions than are specified by the minimum requirements of this instruction.

3. Assembly Occupancies.

a. All assembly occupancies shall be sub-classified according to its occupant load as specified in reference (a).

b. The occupant load permitted in any assembly building, structure, or portion thereof, shall be determined on the basis of the occupant load factors specified in reference (a). A fire department representative shall calculate occupant load and issue a maximum occupancy permit.

c. The employees and/or attendants of places of public assembly shall be trained and drilled in the duties they are to perform in case of fire, panic, or other emergency.

d. In theaters, motion picture theaters, auditoriums, and other similar assembly occupancies where there are non-continuous programs, an audible announcement shall be made prior to the start of each program. This announcement shall notify occupants of the location of the exits to be used in case of a fire or other emergency.

e. Operating Requirements.

(1) Facility managers shall be trained in proper fire prevention responsibilities because of the high life loss potential at these facilities. Managers shall notify the fire department when planning large social events involving extensive decorations, large attendance, or unusual arrangements.

(2) Facility managers shall be responsible for training employees in the following areas:

(a) Procedures for pre-opening operations and daily closing inspections.

(b) Maximum occupant capacity information.

(c) Emergency evacuation, crowd control and direction in case of fire, panic, or other emergency.

(d) Other actions to be taken in the event of a fire, including fire department notification procedures.

(e) And other requirements as provided in reference (f), including NFPA 101.

(3) Facility Managers shall have the responsibility of ensuring daily pre-opening inspections, inspections during operations, and closing inspections are conducted. A completed list of these inspections shall be maintained and available to the fire prevention office for inspection.

(4) Daily pre-opening, and during operation inspections, shall be performed to ensure the following (as a minimum):

- (a) All exit doors are unlocked and unobstructed.
- (b) All fire extinguishers are in place and operational.
- (c) Fire alarm system and all pull boxes are unobstructed and operational.
- (d) All fire lanes are clear.
- (e) Exit and emergency lights are operational.
- (f) The maximum occupancy load is not exceeded.

(g) A fire department representative shall perform spot checks of club facilities during peak hours of occupant load and initial the custodian's daily checklist.

(5) Daily closing inspection shall be performed to ensure the following (as a minimum):

- (a) All trash is collected and removed from the building and properly disposed of.
- (b) All heat producing equipment and other appliances are secured.

(6) Facility management and operational plans shall be developed following reference (f) and the NFPA Life Safety Code 101.

(7) Records of facility management and operational plans shall be maintained according to reference (f), and the NFPA Life Safety Code 101.

(8) A building systems reference guide shall be developed and maintained using reference (f), and the NFPA Life Safety Code 101.

f. Open Flame Devices. Open flame devices shall not be used in any assembly occupancy except as authorized by the fire department and by reference (f).

g. Special Food Service Devices. Portable cooking equipment that is not flue connected shall only be permitted as noted in references (b) and (f).

h. Furnishings, Decorations, and Stage Materials.

(1) Draperies, curtains, and other similar furnishings and decorations shall be flame resistant. Proof of flame resistance shall be provided to the fire department upon request.

(2) Highly combustible furnishings and/or decorations shall not be used.

(3) The fire department shall impose controls on the amount and arrangement of combustible content in assembly occupancies to provide an adequate level of safety to life from fire.

i. Seating. Seats in assembly occupancies shall be installed and arranged following references (a), (b), and (f).

4. Educational Occupancies.

a. Day Care Centers/Youth Centers.

(1) Fire prevention inspections shall be conducted monthly by a fire department representative.

(2) Fire exit drills shall be held monthly and shall be conducted by a fire department representative.

(3) In the conduct of drills, emphasis shall be placed upon orderly evacuation under proper discipline rather than upon speed.

(4) Draperies, curtains, and other similar furnishings and decorations shall be flame resistant.

(5) Child-prepared artwork and teaching materials shall be permitted to be attached directly to the walls, if not exceeding 20 percent of the wall area.

b. Child Development Home/Home Care Providers.

(1) Fire protection and FLS requirements for child development homes shall follow references (f) and (p).

(2) Under reference (p), child development home providers shall have their home inspected by the fire department before child care certification is granted. An annual inspection shall be conducted thereafter.

5. Health Care Occupancies.

a. All health care facilities shall be so designed, constructed, maintained, and operated as to minimize the possibility of fire requiring the evacuation of occupants. Because the safety of

occupants cannot be assured adequately by dependence on evacuation of the building, their protection from fire shall be provided by appropriate arrangement of facilities, adequate staffing, and careful development of operating and maintenance procedures composed of the following:

(1) Proper design, construction, and compartmentation.

(2) Provision for detection, alarm, and extinguishment.

(3) Planning, training, and drilling, focusing on: isolating the fire, transferring occupants to areas of refuge, sheltering in place, and evacuation of the building.

b. Fire exit drills shall be conducted according to reference (f).

6. Detention and Correctional Occupancies.

a. The administration of every detention or correctional facility shall have in effect, and provide to all supervisory personnel, written copies of a plan for the protection of all persons in the event of fire, including their evacuation to areas of refuge, and for evacuation from the building when necessary. All employees shall be instructed and drilled with respect to their duties under this plan. The plan shall be coordinated with and reviewed by the fire department.

b. Employees shall be instructed in the proper use of portable fire extinguishers and other manual, fire-suppression equipment that they may be called upon to use.

c. Fire exit drills shall be conducted according to reference (f).

7. Residential Occupancies.

a. Personnel Housing and Similar Lodging Facilities.

(1) No door in any means of egress shall be locked against egress when the building is occupied.

(2) All employees of hotels shall be instructed and drilled in the duties they are to perform in the event of fire, panic, or other emergency.

(3) A floor diagram reflecting the actual floor arrangement, exit locations, and room identification shall be posted in a location and manner acceptable to the fire department, on or immediately adjacent to, every guest/resident room door.

(4) Fire safety information shall be provided to allow guests/residents to make a decision to evacuate either to the outside, evacuate to an area of refuge, or remain in place.

(5) Complete automatic sprinkler protection must be provided, regardless of floor area or construction type according to reference (b).

(6) A smoke detector must be provided for each sleeping room and the shared/common spaces of a suite regardless of occupancy or the presence of other detection or protection systems according to reference (b).

(7) Smoke detectors must activate in all sleeping room and shared/common spaces and signal the fire alarm control panel according to reference (b).

b. Apartments, One and Two Family Dwellings.

(1) In any dwelling or living unit of two rooms or more, every sleeping room and every living area shall have at least one primary means of escape and one secondary means of escape.

(2) Fuel fired portable space heating devices are strictly prohibited.

(3) Electrical portable space heating devices are to be equipped with a tip over safety switch and be either Underwriters Laboratories listed or FM Approved.

(4) Multiple stations, interconnected, hard-wired smoke detectors must be provided inside each sleeping room and at least one on each floor, including basements according to reference (b).

(5) During change of occupancy, smoke alarms shall be thoroughly cleaned and tested. Cleaning shall include removal of the smoke alarm cover and vacuum to dislodge dust, lint, and insect debris.

(6) Carbon monoxide detectors shall be provided and installed according to references (b) and (f).

(7) The batteries in smoke alarms and detectors shall be changed every 6 months by the facility operator.

**Note:** In some cases, alarm/detector batteries may not require 6 month change out due to longer definitive life cycles, (e.g., 10 year-life smoke alarm battery components).

(8) Sprinkler protection shall be provided, designed and installed according to references (b), (f), and the NFPA Standards 13R and 13D.

8. Mercantile and Business Occupancies.

a. Mercantile occupancies shall be classified as specified in reference (a).

b. Employees of mercantile and business occupancies shall be trained in emergency evacuation procedures for the occupancy by managers and supervisors.



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**CHAPTER 7**  
**HAZARDOUS PROCESSES**

1. Hot Work. Hot work is defined as any work involving general heating by any means at or above 400 Degrees Fahrenheit. This work includes welding, flame cutting, use of open flame equipment, and tar kettle operations. In addition, grinding, abrasive blasting, drilling, or any cold work involving the probability of producing sparks will be considered hot work.

**Note:** Work requiring soldering, melting of asphalt or use of blow torches or other heat or spark producing devices that develop temperatures higher than 288 degrees Fahrenheit shall not be performed around a potential explosive site without proper and continuous supervision to ensure all necessary precautions and regulations are strictly observed, following references (q) and (f).

2. General.

a. All hot work operations shall be inspected by the FD prior to the start of hot work operations, except as specified in this section. Fire Inspectors shall verify and note each requirement on the hot work permit Commander, Navy Region Mid-Atlantic Fire and Emergency Services form 11320P-14A (current version) prior to approval. A written permit shall be provided for approved hot work and signed by a fire department representative. Hot work permits may be obtained by calling the Fire Dispatcher.

**Note:** For facilities designed and classified as an "Industrial Occupancy" under NFPA Life Safety Code 101, where it is expected that welding, flame cutting or other normally accepted hot work operations are to occur on a regular and reoccurring basis, a hot work permit is not required, however, a Life Safety Code Inspection by the Fire Department shall be conducted at least annually to verify operating conditions and practices meet all requirements. In the event there is uncertainty as to whether a permit is required, the FD representative shall be contacted for determination. Fire Inspectors reserve the right to conduct random, unannounced life safety inspections to assure hot work operations are occurring in accordance with accepted practices and procedures and take necessary action if operations are found to be in violation.

b. All individuals performing hot work operations shall be fully qualified and trained in the safe use and operation of all equipment, and aware of fire safety requirements.

c. Hot work permits shall be valid for a period not to exceed 12 hours and be posted on the work site.

**Note:** At the discretion of the FD, a hot work permit can be written for up to one week (Monday through Friday, 0700 to 1900) if the work is being done at one specific location and will not lessen any life safety codes. However, a daily inspection of the hot work site shall be conducted by a FD representative.

d. If conditions under which the hot work permit was issued changes, the permit shall be considered invalid and all hot work shall cease.

3. Operations Requiring Permit. A hot work permit shall be required for the following:

a. On all piers or on ships or other areas where molten slag or sparks may fall on piers, or in adjacent water near the piers. Wooden areas shall be soaked with water prior to and after the hot work operation.

b. Adjacent to, or in proximity of, flammable or combustible liquid storage areas, containers or equipment, pipelines or fuel dispensing equipment, or other operations involving flammable or combustible liquids.

c. In areas that present the possibility of impeding or slowing the exit of personnel performing hot work, or any other operation that presents unusual, special, or questionable circumstances.

d. Pertaining to aircraft or aircraft engines, aircraft ground support equipment, or fuel/oil tanks. In addition, hot work performed aboard aircraft shall require an Aircraft Welding Fire Safety Checklist be issued.

e. When work is performed by Naval Facilities Engineering Command MIDLANT, contractors, or military personnel, except as indicated in paragraph 2 of this chapter.

f. For all other hot work operations, except as indicated in paragraph 2 of this chapter.

4. Operations within Permit-Required Confined Spaces and Below Grade Excavation.

a. In a non-emergency status, the safety activity has the responsibility to recognize and identify permit-required confined spaces. The Confined Space Program Manager duties and responsibilities include, but are not limited to: ensuring to the extent feasible that surveys of the installation are conducted to identify existing and potential permit-required confined spaces.

b. Once a space has been determined to be a permit-required confined space, and upon receipt of a gas free certification, the FD shall issue a hot work permit according to this instruction. The permit shall only be written not to exceed the time as indicated on the gas free certificate. A copy of the gas free certificate will be provided to the FD.

c. The estimated location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during excavation work, shall be determined prior to opening an excavation.

d. Where oxygen deficiency (atmospheres containing less than 19.5 percent oxygen) or a hazardous atmosphere exists or could reasonably be expected to exist, such as in excavations in landfill areas or excavations in areas where hazardous substances are stored nearby, a gas free certification shall be required in accordance with 29 CFR 1926.651(g) for excavations greater than 4 feet in depth.

e. When dealing with other excavations of 4 feet or less below grade, a gas free certification may be required, if site plans are not available identifying hazards or if the excavation is in close proximity to suspected/known tanks, piping, landfills, or involves tie-ins to sewer pipes. Final determination in these matters shall be made by the Chief Fire Inspector and/or District Fire Chief in conjunction with the safety activity.

5. Hot Work Safeguards. The following safety precautions shall be observed for all hot work operations:

a. Equipment shall be handled, operated, and maintained at a level that precludes the possibility of a fire/safety hazard.

b. Hot work areas shall be kept clean and free of combustible materials.

c. Fully charged and operable fire extinguishers that are appropriate for the type of hazard shall be available at the immediate work area of the operation at all times and provided by the individuals responsible for hot work operation. The use of any extinguishers assigned to a facility is prohibited.

d. A fire watch shall be provided for all hot work operations and shall be responsible for the following:

(1) Ensuring that fire extinguishing equipment is operable, readily available and that the operator knows how to properly use the equipment.

(2) Attempting to extinguish incipient fires, provided the fire can be controlled by the fire extinguishing equipment available.

(3) Becoming familiar with the facilities and knowing the procedures for sounding an alarm and reporting a fire, i.e., auxiliary pull station, fire alarm master box, and telephone.

(4) Remaining on the job site for at least one-half hour after completion of hot work operations to ensure that there are no smoldering fires or other hazards and as prescribed by the FD.

(5) Ensuring all combustibles are relocated 35 feet from the work site.

(6) Notifying the FD of all fires, even if the fire has been extinguished.

6. Tar Kettles.

a. Prior to use, a FD representative shall inspect tar kettle operations. An authorization permit shall be issued to a qualified operator who shall ensure that a minimum of one employee who is knowledgeable of the operations and hazards remains with the tar kettle at all times during its use. An employee shall be within 25 feet of the tar kettle and have the kettle in sight.

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b. Lids that can be gravity operated shall be provided on all roofing kettles. Any device used to open or close the lid of a tar kettle shall be positioned in such a way that shall enable the operator to open or close the lid without standing in front of the opening.

c. Tar kettles used for heating materials shall be equipped with proper heating controls, including a means of agitation to assure controlled, uniform temperature of the contents to prevent spot heating.

d. The material shall not be heated above the temperature necessary to produce workable fluidity of the material and in no case shall it be heated above its flash point.

e. Open flames in a tar kettle while in transit are prohibited.

f. Heating devices or melting kettles shall be placed on level, firm foundations, and protected from traffic, accidental tipping, or similar hazards.

g. The kettle shall be operated in a controlled area. The area shall be identified by approved cones, barriers, etc.

h. Three approved 4-A:40-B:C fire extinguishers shall be provided according to reference (f). Two fire extinguishers shall be provided and maintained within 25 feet of the operating kettle. A third fire extinguisher shall be provided and maintained on the roof in close proximity to the roofing operations, while the roofing material is being applied.

i. Tar kettles shall not be operated inside or on the roof of any building.

j. Tar kettles shall not be closer than 10 feet from exits or means of egress.

k. Torch applied roofing systems shall be installed following reference (f), including NFPA Standard 241, Chapter 9.

#### 7. Application of Tar Kettle Materials.

a. When the material is applied within buildings or other enclosed areas, the atmosphere shall be free of dust and adequate ventilation shall be provided to completely remove smoke and fumes.

b. All smoking, flame devices, and other sources of ignition are prohibited in or near the area of application.

c. Hot substances shall not be permitted to be carried up or down ladders.

d. Mops, brushes, and other applicators shall be stored in a safe isolated place when not in use.

8. Spray Application/Operations.

a. Spray application of flammable or combustible liquids shall be confined to properly designated and constructed spray booths, spray rooms, or other areas according to reference (f), including NFPA Code 1, Chapter 43.

b. Spray application operations shall not be conducted in any of the following occupancies while occupied:

(1) Assembly.

(2) Educational.

(3) Institutional.

(4) Residential.

**Note:** The exception to the above prohibited occupancies is for work located in a room that is separated vertically and horizontally from all surrounding areas by construction having a fire resistive rating of not less than 2 hours. The room shall also be protected by an approved automatic sprinkler system.

c. Each spray booth shall be separated from other operations by not less than 3 feet and shall be kept free of storage or combustible materials.

d. There shall be no open flame or other ignition source within 50 feet of spray application operations.

e. Only explosion-proof equipment shall be permitted for use in any spraying area.

f. Spray booth, spray rooms, and properly designated spray areas shall be protected by an approved automatic suppression system. Sprinkler heads shall be covered according to reference (f).

g. There shall be sufficient ventilation to remove flammable vapors, mists, or powders. Combustible residues shall be confined and controlled and exhaust systems shall be cleaned as needed to prevent build-up of residue.

9. Cleaning of Floors and Bowling Lanes. When cleaning floors or bowling lanes, the following fire-prevention precautions shall be observed:

a. Use only approved, noncombustible liquids having a flash point above 100 degrees Fahrenheit.

b. Clean one small area at a time.

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c. Provide as much natural ventilation as possible.

d. Provide self-closing metal cans for used cleaning rags. Cleaning rags shall be removed from the building upon completion of the cleaning operation and/or prior to the close of the workday.

10. Refinishing of Floors and Bowling Lanes.

a. Open flames and smoking are prohibited during application of flammable finishes and at least one hour thereafter.

b. Combustible dust and residue from sanding machines shall be placed in metal cans and promptly removed from the building.

c. Provide as much natural ventilation as possible.

d. The FD shall be notified and shall conduct an inspection of the facility prior to any refinishing operation.

**CHAPTER 8**  
**FLAMMABLE AND COMBUSTIBLE LIQUIDS**

1. General.

a. The use, storage, and classification of flammable and combustible liquids shall follow the guidance in reference (f).

b. The storage of liquids shall not physically obstruct a means of egress. Class I liquids shall be so placed that a fire in the liquid storage would not prevent egress from the area.

c. Tools, metal fan blades, etc., used in the vicinity of flammable gases and liquids or hazardous material, shall be a non-ferrous or non-sparking type. Non-sparking or non-conductive shoes (as appropriate) shall be worn when necessary.

2. Classification of Flammable/Combustible Liquids.

a. Class I: flammable liquids shall be classified as follows:

(1) Class IA: is any liquid that has a flash point below 73 degrees (°) Fahrenheit (F) (22.8°Celsius (C)) and a boiling point below 100°F (37.8°C).

(2) Class IB: is any liquid that has a flash point below 73°F (22.8°C) and a boiling point at or above 100°F (37.8°C).

(3) Class IC: is any liquid that has a flash point at or above 73°F (22.8°C) but below 100°F (37.8°C).

b. Combustible liquids shall be classified as follows:

(1) Class II: is any liquid that has a flash point at or above 100°F (37.8°C) and below 140°F (60°C).

(2) Class III: is any liquid that has a flash point at or above 140°F (60°C).

(3) Class IIIA: is any liquid that has a flash point at or above 140°F (60°C), but below 200°F (93°C).

(4) Class IIIB: is any liquid that has a flash point at or above 200°F (93°C).

3. Day-To-Day Use of Flammable/Combustible Liquids. Day-to-day stocks of flammable/combustible liquids shall be kept only in areas approved by the FD for such storage. Amounts of stored materials shall be procured as needed and kept in an approved, labeled, and closed container. Any surplus material shall be returned to storage prior to the close of the workday, or when not in use. Storage areas for flammable/combustible liquids shall be plainly

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marked to indicate such storage. A minimal amount of flammable/combustible liquids, i.e., lighter fluid, shoe polish, etc., shall be permitted in residences for personal use.

4. Cleaning Operations Using Flammable/Combustible Liquids.

- a. The use of gasoline, naphtha, thinners, or other flammable or combustible liquids for cleaning parts, floors, decks, etc., is strictly prohibited.
- b. Certain combustible liquids shall be allowed for cleaning if authorized by Naval Supply Systems Command's (NAVSUP's) Authorized Use List (AUL) process.

5. Storage Cabinets.

- a. Only approved storage cabinets shall be used.
- b. The design and construction of storage cabinets shall follow the guidance found in reference (f).
- c. A maximum of 120 gallons of flammable or combustible liquids shall be allowed for storage in an approved storage cabinet. The total aggregate volume of Class I, II, and III in a group of storage cabinets shall not exceed the maximum allowable quantity of flammable and combustible liquids per control area based of the occupancy where the cabinets are located.
- d. Storage cabinets shall be labeled in conspicuous lettering: "FLAMMABLE – KEEP AWAY." The word FLAMMABLE shall be a minimum of 2.0 inches and KEEP AWAY, shall be 1.0 inch.
- e. Storage cabinets shall be kept neat, orderly, and clean at all times.
- f. Storage of other materials such as paper, rags, or other chemicals with flammable or combustible liquids is prohibited.
- g. Storage cabinets placed outside shall be properly protected from impact and ignition sources.

6. Storage in Containers and Portable Tanks.

- a. Containers used for dispensing flammable/combustible liquids shall be of a type labeled/marked and/or listed/approved by a nationally recognized testing laboratory. Containers for flammable/combustible liquids shall be maintained in good condition and equipped with flame arresters and a spring-loaded cap.
- b. Bungs, caps, or stoppers shall not be left out of drums, barrels, tanks, empty containers, or flammable lockers.
- c. Stored containers shall be kept closed and each labeled with its contents.



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d. Flammable/combustible liquid containers shall not be repaired until all hazardous vapors have been thoroughly removed.

e. Each portable tank shall be equipped with approved and sufficient venting following guidance from references (f), (m), and the NFPA Code 30.

f. Tanks having a capacity of 55 gallons or greater are required to have secondary containment following guidance in references (f), (m), and the NFPA Code 30.

7. Bulk General Storage of Flammable/Combustible Liquids.

a. Bulk flammable liquids shall be stored in fire-resistant buildings containing firewalls and equipped with an approved automatic sprinkler system.

b. Lubricating oils, paints, grease, and petroleum products shall be stored in separate, fire-resistant buildings protected by an approved automatic sprinkler system.

c. Bulk flammable liquids shall not be stored with acids or oxidizers.

8. Disposal of Flammable/Combustible Liquids. Gasoline, oil, or any other flammable/combustible liquid shall not be discharged into sewers, drains, or any waterway. Disposal shall follow approved environmental methods.

9. Flammable/Combustible Liquid Leaks and Spills.

a. Each activity, squadron, or ship having a fuel spill shall be responsible for the containment and removal of the spill.

b. Automotive vehicles and other gasoline or electric motors shall not be started within 50 feet of a gasoline spill until the exposed area has been thoroughly cleaned. The operation of any vehicle leaking fuel is prohibited until the necessary repairs are made.

c. Contents of leaking containers shall be transferred to serviceable containers.

10. Flammable/Combustible Motor Fuels at Dispensing Facilities and Repair Garages.

a. Class I or II flammable/combustible liquids shall not be dispensed into portable containers unless the container is constructed of metal or is approved by the authority having jurisdiction, has a tight closure, and is fitted with a spout or so designed that the contents can be poured without spilling. The hose nozzle valve shall be manually held open during the dispensing operation.

b. Not more than one container of 120 gallons or less of Class I liquid shall be permitted with a dispensing pump inside a building at any one time. The number of tanks or containers of Class II or IIIA liquids fitted for dispensing at any one time shall not be limited.

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c. Class I, II, and IIIA liquids shall not be dispensed in a building by applying pressure to tanks or containers. Listed pumps that take suction from the top of the tank or container or listed self-closing faucets shall be used.

d. Splash loading of flammable or combustible liquids is prohibited.

e. All dispensing operations and dispenser tank installations shall follow the guidance in reference (f) and NFPA Code 30A.

#### 11. Fuel Dispensing Equipment.

a. Class I and II liquids shall be transferred from tanks by means of fixed pumps designed and equipped to allow control of the flow and prevent leakage or accidental discharge.

b. Fuel dispensing device and nozzles for Class I and II liquids shall be listed/approved.

(1) Only approved protected tanks are authorized to be equipped with tank mounted dispensers according to reference (f) and NFPA Code 30A.

(2) Unapproved tanks (outside of their listing) must meet proper separation distances between dispenser and tank according to reference (f), and NFPA Code 30A.

c. Fuel dispensing hoses for Class I and II liquids shall be listed/approved.

(1) A listed emergency breakaway device designed to retain liquid on both sides of the breakaway point shall be installed on each hose dispensing Class I and II liquids.

(2) Such devices shall be installed and maintained in accordance with the manufacturer's instructions.

d. A control shall be provided that will permit the pump to operate only when a dispensing nozzle is removed from its bracket or normal position with respect to the dispensing device and the switch on the dispensing device is manually actuated. This control shall also stop the pump when all nozzles have been returned to their brackets or to their normal non-dispensing position.

e. Operators dispensing flammable/combustible liquids shall not leave nozzles or valves unattended while in use.

f. Where an automatic closing-type dispensing nozzle is used, the nozzle valve shall include a feature that causes or requires the closing of the hose nozzle valve before product flow can be resumed or before the hose nozzle valve can be replaced in the normal position in the dispenser.

**Note:** A listed, automatic closing-type hose nozzle valve with a latch-open device shall be permitted to be used if the hose nozzle valve will close automatically in the event the valve is released from a fill opening or upon impact.

g. The use of portable communication devices (radios, cell phones, pagers, etc.) shall not be used within 20 feet of a fueling operation.

12. Flammable/Combustible Liquid Incidental Operations.

a. This section shall apply to areas where the use, handling, and storage of liquids is only a limited activity to the established occupancy classification.

b. Class I, II and III liquids that are heated up to or above their flash points shall be drawn from or transferred into vessels, containers, or portable tanks as follows:

(1) From original shipping containers with a capacity of 5.3 gallons or less.

(2) From safety cans.

(3) Through a closed piping system.

(4) From portable tanks or containers by means of a device that has anti-siphoning protection and that draws through an opening in the top of the tank or container.

(5) By gravity through a listed self-closing valve or self-closing faucet.

c. Liquid storage areas where dispensing is conducted shall be provided with either a gravity system or continuous mechanical exhaust ventilation system. Mechanical ventilation shall be used if Class I liquids are dispensed within the room.

d. Exhaust ventilation discharge shall be to a safe location outside the building.

e. Additional requirements shall follow guidelines in reference (f) and NFPA Code 30.

f. Splash loading of flammable or combustible liquids is prohibited.

13. Personnel Operating Flammable/Combustible Fueling Equipment.

a. Only authorized and qualified personnel shall operate fueling equipment and they shall have a thorough knowledge of the hazards involved and know the regulations for handling flammable/combustible liquids. In addition, they shall be familiar with:

(1) The location and operation of the nearest alarm box.

(2) The emergency fire reporting number.

(3) The location and operation of firefighting equipment.

b. Operators of vehicles or equipment shall turn off engine and vehicle lights before taking on fuel.

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c. During fueling of vehicles, operators shall not smoke or light a match or strike a lighter, and there shall be no other open flames in the vicinity of the fueling operation. Cell phones shall not be used in the area of fueling.

d. If, upon inspection by a representative of the FD, it is determined that any other operation would impact on, or interfere with, a fueling operation, either the fueling operation or the other operation shall be stopped immediately at the FD's request.

e. Portable fuel cans shall not be filled while in a vehicle.

#### 14. Flammable/Combustible Liquid Tank Vehicles.

a. Safety, design, and operating features of tank vehicles used for the transportation of flammable/combustible liquids shall follow guidance in reference (f) and NFPA Standards 385 and 407.

b. Every tank vehicle used for the transportation of flammable or combustible liquids, regardless of the quantity being transported or whether loaded or empty, shall be conspicuously and legibly marked according to the requirements of the U.S. Department of Transportation regulations in 49 CFR 171-179, "Hazardous Materials Regulations."

c. All closures for filling, manhole, or inspection openings shall be protected from damage that would result in leakage of lading in the event of overturning of the vehicle by being enclosed within the body of the tank or dome attached to the tank or by guards.

d. Gasoline tank trucks, whether loaded or empty, shall not enter or be stored in any building not designed for such purposes. Tank vehicles shall be parked in open areas at least 50 feet from any parked aircraft or buildings (other than maintenance facilities and garages for fuel servicing tank vehicles).

e. Tank vehicles used for the transportation of flammable/combustible liquids shall be equipped with at least one 4-A:40-B:C or with more than 1 portable fire extinguisher, each having a rating of 2-A:20-B:C. Dry chemical extinguishers having an agent discharge rate of 1 pound/second or more shall be used.

f. During the transfer of Class I liquids, motors of tank vehicles or motors of auxiliary or portable pumps shall be shut down during the making and breaking of hose connections.

g. Tank vehicles shall not be operated unless they are in proper repair; are devoid of accumulations of grease, oil, or other flammables; and are free of leaks.

h. Each cargo tank compartment shall be provided with safety relief devices that communicate with the vapor space of the cargo tank. Shutoff valves shall not be installed between the tank opening and any safety device.

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- i. Safety relief devices shall be mounted, shielded or drained so as to eliminate the accumulation of water, the freezing of which could impair the operation or discharge capability of the device.
- j. Each cargo tank compartment shall be provided with normal pressure and vacuum vents.
- k. Pressure and vacuum vents shall be designed to prevent loss of liquid in the event of vehicle overturn.
- l. Every cargo tank shall be provided with a rear bumper to protect the tank and piping in the event of a rear-end collision and to minimize the possibility of any part of the colliding vehicle striking the tank. The bumper shall be located at least 6 inches to the rear of any vehicle component that is used for loading or unloading purposes or might at any time contain lading while in transit.
- m. When dispensing flammable/combustible liquids from tank trucks, grounding cables shall be in place and in good condition, unless otherwise specified in references (p) and (r).
- n. Where a cargo tank is filled through a top opening; the cargo tank shall be bonded to the fill stem or to some part of the rack structure that is electrically interconnected with the fill stem piping. Bonding shall not be required for tank vehicles used exclusively for transporting Class II or III liquids when loaded at locations where no Class I liquids are handled.
- o. No external bond-wire connection or bond-wire integral with a hose shall be required for the unloading of flammable and combustible liquids into underground tanks nor when a tank vehicle is loaded or unloaded through tight connections such as to an aboveground tank or through bottom connections.
- p. The bond-wire connection shall be made prior to the opening of the dome covers and shall be maintained in place during the entire filling operation.
- q. The dome covers shall be securely closed before the bond wire is disconnected from the cargo tank.
- r. Smoking on or about any tank vehicle while loading or unloading any flammable or combustible liquid is prohibited.
- s. Splash loading of flammable or combustible liquids is prohibited.
- t. Under reference (m), tank vehicles shall be equipped with a spill kit (to include absorbent material).

15. Use of Flammable Liquids in Radio/Radar Areas. Fueling operations or transfer of liquids having a flash point below 100 °F is prohibited in the vicinity of operating high intensity radar equipment, high frequency radio antenna, or antenna down-leads. Aircraft fueling operations

shall not be conducted within 100 feet of antennas of airport ground traffic surveillance radar equipment or 300 feet from the beam of such equipment

16. Storage of Gasoline Powered Equipment. Gasoline-powered equipment shall only be stored in approved storage locations and in such a way as not to pose a hazard to life or property. In no case shall such equipment be stored within occupied areas of buildings.

**Note:** Emergency equipment located on fire apparatus in a fire station bay is considered to be stored in an approved location.

17. Labeling and Placarding of Flammable and Combustible Liquid Storage Tanks.

a. Storage tanks shall be properly placarded as specified in reference (f) and the NFPA Standard 704.

(1) Tanks shall be marked for the protection of first responders and marking shall be located where it can be seen, such as the side of the tank, shoulder of an access way or walkway to the tank or tanks, on the piping outside of the diked area.

(2) If more than one tank is involved, the markings shall be so located that each tank can be identified.

(3) For more information on NFPA Standard 704 placards, see Appendix F.

b. Storage tanks shall be properly labeled as to identify contents.

18. Installation, Storage, Repair, and Removal of Flammable and Combustible Storage Tanks.

The installation, storage, repair, and removal of fixed aboveground and underground flammable and combustible liquid storage tanks shall follow guidance in reference (f) and the NFPA Standard 20, Code 30, Code 30A, and Standard 326.

19. Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair. The safeguarding of tanks and containers for entry, cleaning, or repair shall follow the guidance in reference (f) and the NFPA Standard 326.

20. Handling Releases of Flammable and Combustible Liquids and Gases. The handling of releases of flammable and combustible liquids and gases shall follow guidance in reference (f) and the NFPA Guide 329.

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**CHAPTER 9**  
**HEATING APPLIANCES**

1. General.

- a. All heat producing appliances used or installed shall be labeled/marked and/or listed/approved by a nationally recognized testing laboratory.
- b. Heat producing appliances shall be used and installed according to the manufacturer's instructions.
- c. Coffee makers, toaster ovens, and similar appliances shall be located so as to provide a minimum clearance of 6 inches from combustibles and shall not be operated in storage rooms or closets. Noncombustible spaces shall be provided to operate these appliances if not placed into a designed kitchen area. Permitting will be as required by the fire prevention office.
- d. Toaster ovens, soldering irons, and similar heat producing appliances shall be turned off or disconnected prior to close of business each day.

2. Portable Space Heaters.

- a. Portable electric space heaters shall be listed/approved and equipped with a thermostat and tip-over safety shut-off switch.
- b. Portable heaters shall be designed and located so that they cannot be easily overturned.
- c. The use of open flame type or direct-fired portable heaters is prohibited.

**Note:** In extreme emergency situations, fuel fired heaters may be used as approved by the fire department. The use of such heating equipment at construction sites shall follow chapter 4 of this instruction.

3. Heaters and Heating Systems.

- a. Heating, ventilation, and air conditioning areas shall be kept free of flammable and combustible liquids. Storage within these areas is not allowed and good housekeeping practices shall be observed.

- b. Oil Fired Heaters.

- (1) All oil-burning equipment shall be of the approved type and display appropriate labeling and listing. Oil burning equipment shall be used and installed according to the manufacturer's instructions as discussed in reference (f), and NFPA Standard 31.

- (2) Operational switches, shut-off switches, and valves shall be provided and will be accessible.

- (3) Storage of any kind within boiler rooms is prohibited.
- (4) Oil burning equipment shall be inspected frequently and periodically maintained by qualified maintenance personnel. Heating units, vent stacks, and flues shall be thoroughly cleaned at least once a year.
- (5) Safety devices, thermostats, and similar control equipment shall be frequently inspected and maintained to ensure proper operation.
- (6) Heating oil storage tanks shall be listed and installed following guidance in reference (f), and NFPA Code 30 and Standard 31.
- (7) Storage tanks shall be properly labeled following the guidance listed in reference (f) and NFPA Standard 704.

(8) Storage tanks shall be properly labeled as to identify tank content.

c. Liquid Petroleum Gas and Natural Gas Heaters.

- (1) The installation, maintenance, and storage of appliances burning natural or manufactured gas shall follow the guidance in reference (f) and NFPA Code 54.
- (2) LPG or natural gas-fired heaters and stoves shall be secured in a fixed position to prevent movement and subsequent development of leaks at connections. Flexible connections shall not be used.
- (3) All gas-fired heating devices shall be equipped with automatic safety pilots (complete shut-off type), approved by the American Gas Association, and shall be labeled/marked and/or listed/approved by a nationally recognized testing laboratory.
- (4) Gas-fired heating devices shall be frequently inspected and periodically maintained by qualified maintenance personnel.
- (5) Under no circumstances shall matches or open flames be used for leak testing LPG or natural gas lines.
- (6) In the event of a gas leak, the gas supply shall be secured, piping inspected, and repaired by qualified maintenance personnel. The fire department shall be notified.
- (7) LPG shall not be used on ordnance piers.
- (8) Installation, storage, and maintenance of appliances burning natural or manufactured gas in aircraft hangars shall follow the guidance discussed in reference (f) and NFPA Standard 409.



**CHAPTER 10**  
**SPECIAL OPERATIONS**

1. General. This chapter provides general guidelines for those operations that are unique or that may create a specific hazard, which requires special precautions.

2. Battery Rooms.

a. Only authorized personnel qualified in the precautions connected with the hazards of battery maintenance, handling acids, and charging batteries shall perform these tasks, and have access to battery rooms.

b. Ventilation systems, forced or natural, in battery rooms shall be maintained to prevent a build-up of explosive mixtures. This maintenance shall include a functional test of any associated detection and alarms systems.

c. Eye and body wash apparatus shall be maintained in operable condition.

d. Workers shall not enter battery rooms unless proper illumination is provided.

e. Smoking, spark producing lights and/or switches, flames and flame producing devices shall not be allowed in battery rooms and appropriate warning signs will be posted.

f. Workers shall follow required procedures in reference (f).

3. Dust Explosion Prevention.

a. All dust-producing equipment, processes, and operations shall be performed, installed, and maintained following reference (f).

b. Surfaces shall be cleaned in a manner that minimizes the risk of generating a fire or explosion hazard. Suitable dust-collecting equipment shall be installed and accumulation of dust shall be kept at a minimum in the interior of buildings. All components of the dust collection systems shall follow NFPA Code 70. Means shall be provided to minimize the hazard.

c. Smoking, the carrying of matches, the use of heat, spark producing devices, or any open flame is prohibited in areas containing dust producing or dust agitating operations.

4. Industrial Ovens and Furnaces. Industrial ovens and furnaces shall be constructed, installed, and protected following reference (f) and NFPA Standard 86.

5. Mechanical Refrigeration.

a. Mechanical refrigeration unit and system installations having a refrigerant circuit containing more than 220 pounds of Group A1 or 3 pounds of any other group refrigerant shall be classified following reference (f) and the NFPA Code 1, Chapter 53.

b. All refrigeration systems shall be maintained free from accumulations of oil, dirt, waste, and other debris. They shall be maintained accessible at all times.

c. All mechanical refrigeration systems shall be installed and maintained in a safe manner that will minimize life, health, and fire hazards of the activity.

d. A toxic, flammable, or refrigerant ammonia refrigeration system shall be provided with an approved treatment system for safely discharging refrigerant to the atmosphere in the event of an emergency. NFPA Standard 704 placards shall be used in such spaces. See Appendix F for a NFPA Standard 704 placard example.

6. Combustible Fibers. All facilities handling or storing combustible fibers shall comply with the provisions of this instruction and reference (f).

a. No smoking or open flame shall be permitted in any area where combustible fibers are handled or stored, nor within 50 feet of any uncovered pile of such fibers.

b. No smoking signs shall be posted in these areas.

7. Fireworks.

a. Except for activity-sponsored displays, the possession of fireworks for use, sale, or storage is prohibited on Navy-owned or controlled property. Fireworks do not include paper caps or highway flares.

b. Approved handling and storage of fireworks shall follow the guidance in reference (f) and NFPA Code 1123.

c. Fireworks displays shall be coordinated with the Fire Department and require a permit to ensure maximum fire safety is observed and to provide for emergency response planning.

8. Explosives. Handling, transportation, and storage of explosive materials shall follow the guidance in references (q) and (s).

9. Cylinder Storage, Compressed Gas, and Oxygen.

a. Storage of compressed gas cylinders shall follow guidance discussed in references (f) and (t).

b. Individual compressed gas containers, cylinders, and tanks that are stored or used in the same area as the containers shall be marked or labeled according to Department of Transportation (DOT) requirements and reference (f), and shall be marked or labeled per DOT requirements.

c. Compressed gas cylinders, containers, and tanks shall require a minimum separation of 20 feet from unstable/reactive Class 2, 3, 4 materials (corrosive, oxidizing, flammable, pyrophoric, toxic or highly toxic materials). The 20 feet distance can be reduced to 5 feet where one of the gases is enclosed in a gas cabinet or without limit if both are enclosed in gas cabinets.

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Further, separation distances shall be permitted to be reduced without limit where compressed gas cylinders, tanks, and containers, are separated by a barrier of non-combustible construction that has a fire resistive rating of at least a half hour and interrupts the line of sight between the containers.

d. Indoor storage, use areas and storage buildings for compressed gas and cryogenic fluids shall be provided with mechanical exhaust ventilation or fixed natural ventilation, where natural ventilation is shown to be acceptable for the material as stored.

e. Compressed gas cylinders, containers, and tanks, whether full or partially empty shall not be exposed to temperatures exceeding 125 degrees Fahrenheit (52 degrees Celsius) or sub-ambient (low) temperatures unless designed for use under such exposure.

f. Compressed gas cylinders, containers, and tanks that have not been designed for use under elevated temperature conditions shall not be exposed to direct sunlight outdoors, where ambient temperatures exceed 125 degrees Fahrenheit (52 degrees Celsius). The use of a weather protected structure or shaded environment for storage or use shall be permitted as a means to protect against direct exposure to sunlight.

g. Compressed gas cylinders shall be stored "valve end up" and shall be properly secured in place.

h. Compressed gas cylinders, containers, tanks, and systems shall be secured against accidental dislodgement and against access by unauthorized personnel. Compressed gas cylinders, containers, tanks, and systems that could be exposed to physical damage shall be protected.

i. Where compressed gas containers, cylinders, and tanks are designed to accept valve-protective caps, the user shall keep such caps on compressed gas containers, cylinders, and tanks at all times, except when empty, being processed, or connected for use.

j. Oxygen cylinders shall not be stored in generator or mechanical rooms.

k. Oxygen cylinders shall not be stored within 20 feet of fuel gas cylinders or combustible materials except when a noncombustible barrier is provided, at least five feet high having a fire-resistant rating of at least a half hour as discussed in references (f) and (o).

l. Signs prohibiting smoking or open flames within 25 feet of area perimeters shall be provided where toxic, highly toxic, corrosive, unstable reactive, flammable, oxidizing, or pyrophoric gases are produce, stored, or used.

m. Compressed gas cylinders, containers, and tanks showing evidence of corroded or abraded areas, dents, cuts, gouges, or any other conditions that might make it unsafe for hazardous materials service shall be repaired and retested or removed from service.

n. DOT regulated compressed gas cylinders, containers, and tanks that have not had the required hydrostatic test (every five years), or which have markings or labels obscured, shall be returned for testing before recharging.

**Note:** American Society of Mechanical Engineers (ASME) regulated cylinders do not require periodic hydrostatic testing.

10. Shipping and Transferring Gas Cylinders.

a. Cylinders and discharge valves shall be handled with care so that they are not dropped or allowed to strike forcefully against each other or any object. Outlet and protecting caps shall be in place prior to the moving of cylinders.

b. When loading or transferring cylinders, they shall be secured in a cradle or suitable platform or rack.

c. When moving cylinders with a hand truck, the cylinders shall be securely fastened to the truck to prevent slippage.

11. Hazardous Materials and Hazardous Waste Handling Use. The handling and use of hazardous materials and hazardous waste shall follow the guidance of local regulations and reference (f).

12. Labeling of Hazardous Materials.

a. Activities shall be required to label any HAZMAT not already labeled when received. The NFPA Standard 704 label (see Appendix F) shall be used as the hazard warning to meet this requirement. Existing manufacturers labels shall not be removed, defaced, or covered when affixing the NFPA Standard 704 label. Information needed for completing NFPA labels can be obtained from safety data sheets.

b. The NFPA Standard 704 Hazard Identification System provides a system of easily recognizable and easily understandable markings. This system identifies the hazards of a material in terms of three principle categories: "health," "flammability," and "instability." The label indicates the order of severity numerically by five divisions ranging from 4 (severe hazard) to 0 (no hazard). The top space is always red in color and indicates the fire hazard. The right-hand space is yellow and gives instability hazard. The left-hand space is blue and specifies the health hazard. The fourth space, at the bottom of the diagram, is white in color and specifies special hazards.

(BLUE)

Health Rating

4 Can Be Lethal

3 Serious Injury

2 Temporary Incapacitation or  
Residual Injury

1 Significant Irritation

0 No Hazard Beyond Ordinary Combustibles

(RED)

Flammability Rating

4 Rapidly or Completely Vaporize and  
Readily Burn

3 Ignite Readily in Ambient Conditions

2 Ignite When Moderately Heated

1 Will Not Burn under Normal Fire  
Conditions

(WHITE)

Special Hazards

OX Oxidizer

~~W~~ Water Reactive

SA Simple Asphyxiates

(YELLOW)

Instability Rating

4 May Detonate or Have Explosive  
Reaction

3 Shock & Heat May Detonate or Cause  
Explosive

2 Violent Chemical Change at Elevated  
Temperatures

1 Unstable if Heated

0 Normally Stable

c. Degrees of Hazard.

(1) Flammability Hazards. The degrees of hazard are ranked according to the susceptibility of materials to burning.

(a) A “4” is assigned to materials that rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and burn readily.

(b) A “3” is assigned to liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions.

(c) A “2” is assigned to materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.

(d) A “1” is assigned to materials that must be pre-heated before ignition can occur.

(e) A “0” is assigned to materials that will not burn under typical fire conditions.

(2) Health Hazards. Health hazards deal with the capacity of material to cause personal injury from contact with or absorption into the body. There are two sources of health hazards – one arises out of the inherent properties of the material, and the other arises out of the toxic products of combustion or decomposition of the material. The hazard degree should be assigned on the basis of the greatest hazard that can exist under fire or other emergency conditions. The degree of hazards is ranked according to the probable severity of hazard to personnel.

(a) A “4” is assigned to materials that under emergency conditions can be lethal.

(b) A “3” is assigned to materials that under emergency conditions can cause serious or permanent injury.

(c) A “2” is assigned to materials that under emergency conditions can cause temporary incapacitation or residual injury.

(d) A “1” is assigned to materials that under emergency conditions can cause significant irritation.

(e) A “0” is assigned to materials that under emergency conditions would offer no hazard beyond that of ordinary combustible materials.

(3) Instability Hazards. The degrees of hazard are ranked according to ease, rate, and quantity of energy released.

(a) A “4” is assigned to materials that in themselves are explosive, capable of detonation, explosive decomposition, or reaction at normal temperatures and pressures.

(b) A “3” is assigned to materials that in themselves are capable of detonation, explosive decomposition, or explosive reaction, but that requires a strong initiating source or must be heated under confinement before initiation.

(c) A “2” is assigned to materials that readily undergo violent chemical change at elevated temperatures and pressures.

(d) A “1” is assigned to materials that in themselves are normally stable but that can become unstable at elevated temperatures and pressures.

(e) A “0” is assigned to materials that in themselves are normally stable, even under fire conditions.

(4) The NFPA Standard 704 labels are available through the supply system.

### 13. Chemicals Reacting with Water.

a. Some chemicals must be stored in fire resistive structures without automatic sprinkler protection. These include calcium carbide, un-slaked lime, sodium and potassium peroxide, chlorine dioxide, metallic calcium, and other chemicals that react violently with water. They shall not be stored in a building containing combustibles or valuable materials. If the quantities are minimal, they may be stored in small, detached noncombustible warehouses. Such storage, wherever located, shall be specifically designated by signs to advise the FD of the nature of the materials contained.

(1) Calcium carbide shall be stored in metal containers conspicuously marked “CALCIUM CARBIDE - DANGEROUS IF NOT KEPT DRY.”

(2) Each area of the building where calcium carbide is handled, stored, or used shall have signs easily seen reading “CALCIUM CARBIDE - DANGEROUS IF NOT KEPT DRY - KEEP WATER AND FLAMES AWAY.”

b. Water-resistive chemicals shall be stored on a platform, shelf, pallet, or skid not less than 6 inches above the floor. These liquids shall not be stored below the adjoining ground or grade level (unless in a waterproof cabinet). Exposed water, steam, or condensation lines shall not be permitted in water-resistive flammable/combustible chemical storage areas.

c. Storage of water-reactive flammable/combustible chemicals shall be in a dry, waterproof, well-ventilated location.

14. Organic Oils. Substances such as linseed oil, cottonseed oil, fish oil, and castor oil are susceptible to spontaneous heating when in contact with combustible fiber, cloth, or mattresses. Generally speaking, these materials do not present serious problems of ignition if kept segregated from combustibles and porous or fibrous materials. They shall, however, be stored in separate fire-resistive buildings having automatic sprinklers.

15. Storage of HAZMAT.

- a. The storage of HAZMAT shall follow local regulations and reference (f).
- b. HAZMAT storage facilities shall be designed and constructed to offer protection against the physical, health, or environmental hazards presented by the material.
- c. Storage areas shall be designed to prevent surface or groundwater contamination in the event of a spill or leak, and to capture completely each class of material individually.
- d. Mixed occupancy buildings shall not house HAZMAT storage and handling operations. Under no circumstances shall office buildings contain HAZMAT storage and handling operations.

16. Storage of Hazardous Waste (HW).

- a. The storage of HW shall follow local regulations as well as references (l) and (u).
- b. HW storage facilities shall be designed to store non-leaking containers labeled according to DOT/Environmental Protection Agency criteria.
- c. HW container storage areas shall have provisions for containing leaks, spills, and accumulated precipitation.

**CHAPTER 11**  
**WATERFRONT FIRE REGULATIONS**

1. General.

a. Operations conducted at piers and waterfront shall follow the guidance in references (f), (o), (q), and (v).

b. Ships berthed at piers shall be responsible for fire prevention, storage, handling of materials and proper cleanliness alongside their berths. Open fires or incinerators on the piers are prohibited.

c. Both ship officers and shore-side supervisors shall ensure that effective fire prevention measures are observed during any dockside operations.

2. Actions in Case of Fire.

a. Fires on any ship at any of the piers shall be reported to the Emergency Communication Center/Fire Dispatcher via fire alarm boxes and telephone. Under no circumstances shall notification be delayed from the belief that the fire is trivial or already extinguished.

b. In the event of a fire on one of the piers or aboard a ship at one of the piers, any ships affected by the fire or berthed near the fire shall be prepared to move from the pier under their own power or by use of tugs, if required.

c. For a commissioned ship, the ship's CO or designated representative (i.e., ship's duty officer) is in charge of actions inside the ship at all times and therefore is the Incident Commander (IC). The ship's CO is responsible for setting the goals and objectives of the in-hull casualty actions to control and extinguish the fire.

(1) When the responding SFO arrives at the scene, he/she will assist the CO by establishing an incident command post and integrate with Ship's Forces (SF) to fight the fire. The In-Hull Incident Commander (IHIC), with the support of the SFO is responsible for the safety, accountability, and well-being of the integrated Fire and Emergency Services (F&ES), SF, and mutual aid firefighting resources.

(2) When representatives of additional organizations arrive (i.e., Senior Ship Repair and/or Construction Activity representative, Security, etc.) the CO or designated representative, with the support of the SFO, will direct all on and off-hull actions until establishment of an on-scene IC, who will assume responsibility for off-hull actions.

(3) Under the command of the CO and as part of the IC staff, the SFO is expected to provide expertise and guidance for the overall response effort; along with the CO, the SFO has responsibility and authority for accountability and safety of all personnel entering the Immediately Dangerous to Life or Health atmosphere.



d. Upon arrival on the scene of any ship involved in the fire, the SFO or fire department representative shall report to the ship's quarterdeck and determine if assistance is required.

(1) If assistance is requested, the first arriving SFO reports to the IHIC and will integrate as part of the IHIC staff.

(2) If the ship accepts assistance from F&ES for combating the casualty, the next senior fire officer will serve as the In-Hull Operations Section Chief (IHOSC) or assist the IHOSC as a tactical advisor. Based on the priority dictated by the casualty situation, additional roles for senior fire officers, such as on-scene fire and rescue officer and elevation of the in-hull safety officer to a senior fire officer, need to be filled as additional senior F&ES officers arrive.

(3) Fire response plans and standard operating procedures should include a means to assemble the necessary number of senior fire officers to staff the above roles. The IHOSC position shall be filled by an experienced/damage control trained member of the SF (e.g., the Damage Control Assistant, Command Master Chief) or a Senior Fire Officer at the discretion of the IHIC.

(4) If the fire department is requested to stand by, the SFO or fire department representative shall determine the equipment necessary to remain on the scene, based on the circumstances. Naval vessels moored at piers shall obtain fire department resources from on-scene stand-by equipment by contacting and requesting through the SFO.

(5) If no assistance is required or standby desired by the ship, the fire department shall secure from the scene, provided no hazard exists to the pier or base property.

e. In the event of a fire at the piers or onboard ships at the piers or deperming station, the fire dispatcher will immediately notify the service craft dispatcher and port services department. The dispatcher shall promptly send tugs to report to the SFO or fire department representative at the scene of the fire for the purpose of assisting ships from piers or assisting in fighting the fire, as may be directed. In the event the CO of a ship is in doubt as to the necessity for his ship being moved from the vicinity of the fire, the decision shall be made by the installation commander or the installation Command Duty Officer (CDO).

f. The port services department shall select and designate anchorage areas for the disposition of vessels on fire and shall instruct the proper tug master/boat captains accordingly. The areas selected for this purpose shall be such that the depth is suitable for scuttling the ship to extinguish the fire if required.

g. All fires shall be investigated by the fire department following the guidance in references (f), (j) and NFPA Guide 921 to determine probable origin, cause, and to reveal lessons learned to support fire protection improvements and education programs.

3. Fire Lanes on Piers. Fire lanes shall be designated and identified adjacent to ships pier side, dock side while in dry dock, or on building ways to provide access for emergency apparatus.

a. Fire lanes shall be maintained following the guidance in references (d) and (v). Fire lanes shall be marked with painted yellow lines to retain a 15-foot-wide unobstructed emergency access.

b. An additional marked (with dashed painted yellow lines) 2.5-foot-wide “dual use” buffer shall be identified on both sides of the 15-foot unobstructed fire lane.

c. For wharves, provide 20-foot-wide unobstructed fire lane immediately adjacent to the operating area.

Please Note: Small craft and yard piers are exempt from this requirement.

d. The angle of approach and the angle of departure shall not exceed 8 degrees at any point on the fire lane or its intersection with other roads or fire lanes. Minimum inside turning radius shall be 25 feet and minimum outside turning radius shall be 50 feet. It is recommended that the head and foot of the pier be designated a fire lane to accommodate turnaround space and provide a designated location to obtain overboard drafting for water supply for fire apparatus.

e. At least 13 feet and 6 inches of vertical clearance shall be provided and maintained over the width of a fire lane.

f. When facility work projects or other situations require a fire lane to be temporarily blocked, the District Fire Chief and Fire Safety Council (FSC) shall approve the project in advance.

#### 4. Fueling of Equipment on Piers.

a. The fueling or defueling of any type of mobile equipment on wooden piers or wharves is prohibited.

b. Gasoline trucks are prohibited on wooden piers or wharves and gasoline for refueling equipment on barges shall be transported in approved safety cans.

#### 5. Dockside Fueling Operations.

##### a. Fire Protection.

(1) Fueling operations shall not be conducted at any pier by a vessel without prior inspection and approval from the fire department. This approval shall be as required by the fire prevention office.

(2) The ship's fire hoses and other firefighting equipment shall be connected and ready for immediate use during fuel transfer operations.

(3) A competent hose watch shall be provided from the ship's company for all fuel transfer operations. The hose watch shall stand by at all times to raise or lower the hose, to

watch for strains or chafing of the hose, to close the ship's valves or to signal to the pump man in the event of emergency, or upon receipt of signal from the wharf man.

(4) The BRAVO Flag shall fly during all fueling and defueling operations.

b. Duties.

(1) An experienced supervisor shall be in charge of dockside operations when any fuel transfers are started or stopped. The location of the supervisor shall be known by shipboard personnel at all times during the fueling/defueling operations, and be readily available in the event of an emergency. Ships and submarines being fueled/defueled by pipeline or fuel tanker truck shall provide one person on the ship with headphones and one person on the pier (hose watch) with headphones for communications from ship to pier.

(2) The principal assistants (wharf man and hose watch) shall have a thorough understanding of established rules and regulations governing fuel transfer operations. Upon notice of violations, or rules and regulations omissions that endanger the operation, the fuel transfer operations shall be halted until the unsafe condition has been corrected.

(3) At least one experienced and responsible wharf man, in addition to the hose watch, shall remain on duty at dockside during the entire period of bulk fuel transfer. The hose watch shall stand by at all times to close the wharf valve and order pumping or gravity transfer stopped on signal from the ship or in event that a spill or leak is observed. Spills or leaks shall be cleaned up before fuel operations are resumed.

(4) Personnel engaged in fuel transfer operations shall not leave their assigned duty post until properly relieved.

(5) Personnel shall wrap hose couplings and buckets shall be placed under each coupling. The fueling area shall be boomed and any storm drain in the vicinity shall be covered in case of leaks.

c. Source of Ignition.

(1) The smoking lamp shall be out aboard a ship involved in gasoline handling operations, as well as aboard any other vessel within 200 feet of such ships. The smoking lamp shall be put out prior to the start of operations and remain out until the CO of the ship concerned deems it safe to remove the restriction. However, in no case shall smoking be permitted until 15 minutes after completion of the operations. Similarly, smoking shall not be permitted in any area within 200 feet of a ship engaged in gasoline transfer operations.

(2) All sources capable of igniting gasoline vapors shall be prohibited within an area of at least 200 feet of a ship engaged in gasoline transfer operations, including those sources aboard other vessels, and such obvious sources of ignition as smoking, open flame and fires, other hazards including motor vehicles, power boats, locomotives, light, friction sparks, cranes, and

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mechanical devices. Under some conditions, the foregoing minimum conditions may be increased.

(3) Prior approval from a fire department representative will be obtained before transferring gasoline from barge to ship outboard.

(4) Streets or roadways leading to piers and wharves where gasoline transfers are being made shall be effectively barricaded at a minimum of 200 feet from the transfer area.

(5) Personnel engaged in loading or unloading gasoline or flammable liquids with flash points below 100 degrees Fahrenheit shall not wear boots with exposed metal objects in soles or heels.

(6) Only non-sparking tools shall be permitted for use within the restricted area surrounding gasoline transfer operations.

(7) Only those electrical devices listed by Underwriters Laboratories for use in hazardous locations shall be permitted in gasoline handling areas. Installation of temporary electrical devices shall not be permitted in such areas.

(8) Transfer of any fuel is prohibited during electrical storms, except under extreme emergency circumstances, as approved by the CO or designee.

(9) The loading or discharging of gasoline, JP-5, kerosene, or other highly flammable liquids during the hours of darkness is prohibited. When operational necessity precludes compliance, permission for waiver shall be requested during normal working hours via the installation Commanding Officer or the installation CDO.

(10) Energized radar shall not be aimed in the direction of operations involving fuels or fuel handling, explosives, or transfers of ammunitions.

d. Bonding.

(1) Static bonding devices shall be in place and secured between ship and pipeline before the fueling hose is connected and left in place until after such hose is disconnected.

(2) Before permitting a gasoline-powered boat to fuel from shore, a proper bonding connection shall be made. These connections shall be made of wire or solid metal to ensure positive contacts are made.

(3) Bonding is required where the use of metallic hose is not practical, and a separate container is used to power gasoline into the boat tanks. Such containers shall first be bonded with the boat tanks by a flexible conducting cable or wire.

e. Ships shall not take on discharged bulk gasoline or aircraft fuels beyond 80% capacity in any one tank (except JP-5 where 95% is permissible) while berthed at the piers, except in an

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emergency, and then only with the approval of the installation Commanding Officer. When transferring bulk gasoline from ship to barge, or from barge to ship while at the piers, the barge shall be on the outboard side of the ship. Gasoline spill (overflow) upon the surface of the water within 1,000 feet of any pier will be reported, immediately, to the emergency activities.

- f. Fueling of ships' boats at wooden piers is prohibited.
- g. No fueling is permitted at the same pier simultaneously with ammunition handling.
- h. When any ship is loading or unloading aircraft in service condition containing fuel, it is prohibited for any ship at the pier to load or discharge ammunition or LOX.
- i. The transfer of sludge, etc., to a donut or tank truck on the pier is classified as a fueling operation. Where the availability of the pier connections permits the discharge of such residues directly into a pier or shore collection system, no restrictions on simultaneous discharge or ammunitions handling are required, unless a specific hazard is identified.

#### 6. LOX.

a. Only qualified operating personnel with full cognizance and understanding of operating procedures shall be permitted to handle charging and/or off-loading of LOX.

b. Keep the work area and equipment free of oil, grease, or any readily combustible material. Keep tools and clothing free of oil and grease. Additionally, extreme care shall be taken to prevent liquid oxygen from spilling or dripping upon asphalt, wood, oil-covered concrete, or any other combustible material. If spillage or dripping on the ground cannot be prevented by the charging unit or truck design, the equipment shall be positioned over an unpainted metal tray. This tray shall be large enough to catch any liquid that may spill.

(1) The length and width of the tray shall exceed the charging unit's comparable dimensions by 3 feet and have a depth of at least 10 inches. A ramp shall be provided to catch any liquid that may spill.

(2) Charging units or trucks that contain provisions for preventing such conditions may be used with no special guidelines.

c. Ensure that the aircraft or the LOX converter when removed from the aircraft and the LOX servicing trailer are grounded and bonded. The grounding conductor must be connected to the frame of the trailer and all metal parts must be bonded together.

d. Ensure a safe separation distance for LOX tanks and carts as follows, as specified in reference (c):

(1) A minimum of 100 feet from any flammable or combustible liquids handling, servicing, processing, or storage areas.

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(3) OXYGEN - NO SMOKING - NO OPEN FLAMES - DO NOT BLOCK LOX JETTISON RAMPS,” or equivalent signs shall be located prominently around the protected area, generation, and storage spaces.

e. Prohibit smoking, open flames, sparks, charging batteries, painting, fueling, and loading or off-loading of ammunition within 50 feet of LOX servicing trailers that are transferring or storing LOX.

f. Ensure a suitable fire extinguisher is immediately available in the LOX handling space and ensure that only approved non-sparking tools are used when working on LOX equipment.

7. Welding and Burning Operations. Prohibited as follows:

a. Within 200 feet of any ship loading or discharging bulk gasoline, LOX, JP-5, kerosene, grade heavy boiler fuel oil, or other flammable liquids.

b. Within 200 feet of the transfer of drummed gasoline, alcohol, JP-5, kerosene, grade heavy boiler fuel, or other flammable liquids.

c. Within 100 feet of any ship loading or unloading aircraft in service condition containing fuel.

d. Welding and burning near ammunition (see paragraph 10).

e. A hot work permit shall be obtained prior to beginning welding and burning operations.

8. Fire Protection Responsibilities for Decommissioning Ships.

a. During ship decommissioning, the ship's CO retains sole responsibility for fire protection aboard the ship.

b. Assistance from the fire department during periods of ship decommissioning, can, and shall be provided to supplement fire protection requirements. However, the ship, throughout its stay at pier side shall provide the following minimum fire protection:

(1) Maintain sufficient damage control equipment to support the ship and tow ship requirements.

(2) Maintain quarterdeck, sounding, and security watches.

(3) Maintain sufficient duty section fire party response teams to provide initial firefighting capabilities.

(4) Fire hoses shall be rigged throughout the ship to provide primary fire attack.

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(5) All ships without installed pumping and dewatering capabilities shall maintain portable saltwater pumping capability to support ship functions.

(6) Provide sufficient portable fire extinguishers, including CO2 and PKP extinguishers for Class Bravo and Charlie fires.

(7) Provide ship familiarization tour for firefighters.

9. Aircraft Operations.

a. No flight operations shall be conducted at any pier without specific authorization from the installation Commanding Officer via the Port Operations Officer.

b. The fire department shall be notified, and a fire department representative, will inspect the pier area prior to the start of any flight operation. The representative for this operation will issue an authorization permit.

c. The ship involved in the flight operation shall have firefighting equipment laid out and fire party personnel standing by. Hoses will be equipped to produce foam. The fire party shall be equipped with all necessary forcible entry tools required for immediate rescue.

d. All petroleum-product handling at the berth involved, and adjacent berths (across pier), shall cease for the duration of flight operations. Fuel hoses need not be disconnected.

e. Ordnance handling evolutions and flight operations shall not be scheduled simultaneously.

f. In no case shall shipboard flight operations at piers be authorized if the aircraft is carrying live ordnance.

g. On and Off Loading Aircraft.

(1) The fire department shall be notified, and a fire department representative shall inspect the pier area prior to the start of any aircraft on/off-loading operation. The representative for this operation will issue an authorization permit.

(2) If the aircraft to be on/off-loaded contains fuel, the ship's fire parties shall be stationed on the flight deck and on the pier. Hose lines are not required to be charged but should be equipped to flow foam, if firefighting operations are required.

10. Handling of Ammunition.

a. The handling of ammunition at piers and the waterfront shall follow local regulations, instructions, and references (q) and (s).

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b. Activities shall ensure that all ships berthed at the pier are capable of fighting shipboard fires. Pier and ship hose layouts, and required inspections and notifications shall be made following reference (q).

c. Ammunition Terminals. Hot work shall not be undertaken on merchant ships or naval vessels located at an ammunition terminal or in an approved explosive anchorage if ammunition handling is being conducted at the pier or anchorage, or if ammunition is staged at the same pier.

d. General Ship Berthing Facilities.

(1) No hot work shall be performed at or alongside an authorized ammunition handling location during any logistics or maintenance movement of ammunition, unless such hot work is in a confined tender shop.

(2) Exposed hot work (outside the skin of a ship) may be performed at other berths of the same pier or slip, provided there is 500 feet separation between the hot work and any external ammunition movement, and a minimum of 500 feet from any exposed ammunition.

(3) Hot work inside the skin of a ship (not exposed) may be performed at any berth other than the berth at which ammunition is being handled.

e. Additional Ship Berthing Requirements.

(1) No hot work shall be undertaken that is potentially hazardous to the ammunition cargo or when ammunition handling is underway at the same pier or wharf.

(a) When the ship's damage control capabilities are fully functional, welding, burning or other hot work can be conducted only within the welding shop, ship fitter's shop, and engineering spaces, provided at least one intervening compartment not containing ammunition separates such shops or spaces from spaces containing ammunition.

(b) A ship's directive signed by the CO will specify those engineering spaces that meet the one-intervening compartment criterion.

(2) Hot work may be performed on topside spaces and areas as long as the one-intervening compartment rule is not violated and the area under consideration for hot work is above the main deck.

(3) No hot work shall be performed externally within 100 feet of the skin of the cold iron, loaded ammunition ship.

f. Fueling operations shall be prohibited at the same pier simultaneously with ammunition handling. The transfer of sludge, to a tank truck on the pier or a donut alongside shall be considered in the same category as a fueling operation.



g. Gasoline or JP-5 (either in bulk or drums), oxygen, compressed flammable gases, or any other highly hazardous material shall not be handled at the same pier or in the same ship, with ammunition handling.

h. Smoking shall be prohibited in magazines, buildings on piers or wharves, and on any other potential explosion site on any conveyance where ammunition, explosives, and related hazards are present, or areas restricted by the CO.

(1) Exceptions may be authorized by the CO for designated locations, at specified times under specified conditions as noted in reference (n).

(2) Smoking shall not be permitted on ships berthed at piers or anchorages during ammunition and explosives loading, offloading operations, or when ammunitions or explosives are exposed on deck.

i. No lighters, matches, or flame producing devices shall be carried on any person either engaged in, or in the vicinity of, ammunition handling operations.

j. Ammunition handling operations shall be secured during severe weather that may create or increase a hazard.

k. Ammunition handling operations shall not commence until the pier is cleared of any obstacle that could impede access of firefighting or other emergency vehicles.

l. Pier vehicular traffic shall be limited to fire, ambulance, and that equipment required to support the ammunition handling operations.

m. All ships and vessels shall be inspected prior to loading and off-loading operations. Emergency information shall be provided to the quarterdeck at the time of the inspection.

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**CHAPTER 12**  
**AIRCRAFT FIRE REGULATIONS**

1. Aircraft Hangars. General guidance for aircraft hangars are:

- a. Privately-owned vehicles shall not enter aircraft hangars.
- b. Aircraft-servicing vehicles or any other internal combustion engine powered equipment should not enter aircraft hangars unless necessary for aircraft maintenance and servicing. These vehicles should not be stored in a hangar unless absolutely necessary, and then only in a segregated area at least 25 feet away from any aircraft. Maintenance on such vehicles shall not be conducted in hangars.
- c. The arrangement of aircrafts in hangars shall be carefully planned to permit rapid removal in case of emergency. Tow bars should be installed on nose gear ready for immediate use, brakes released, and if practicable, a tow tractor hooked-up and ready for start-up and use. An unobstructed area in front of an aircraft hangar door shall be maintained at one and one half times the width of the largest aircraft allowed parked inside the hangar to permit rapid removal of the aircraft in case of emergency.
- d. Metal pans should be placed under aircraft wherever needed to collect oil or hydraulic leakage. Fuel from venting or leaks shall be contained and disposed of according to fire, safety, and environmental regulations.
- e. Welding operations inside hangars on aircraft is prohibited, except in extreme cases. In such cases, a special welding permit shall be obtained from the fire department, which may issue such permit upon a thorough investigation of circumstances and compliance with provisions set forth in chapter eight and reference (f).

2. Specific Applicability. General fire prevention measures outlined in chapters three and four apply to aircraft hangars as in other occupancies. However, the following items are specifically applicable to aircraft hangars:

a. Fuels.

(1) Fueling or de-fueling of an aircraft within any hangar is prohibited in any form or way. Aircraft fueling shall not be conducted within 50 feet of any structure.

(2) Aircraft fuel trucks shall neither enter nor be stored in aircraft hangars.

(3) Aircraft fuel tank maintenance shall be conducted in strict compliance with references (f), (w), (x), and NFPA Standard 410. Under no circumstances shall aircraft fuel cells be purged inside hangars unless it is being performed following checklists provided by NAVAIR 01-1A-35.

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(4) Automotive equipment and internal combustion engine driven ramp equipment shall be fueled from standard fueling facilities at least 25 feet from any hangar.

(5) Accidental discharge of aircraft fuels or any other combustible liquids on hangar decks shall be cleaned up and disposed of outside the hangar immediately.

(6) Aircraft fuel tanks should not be loaded prior to entering hangars to the extent that thermal expansion would result in overflow from tank vents.

(7) Fuel dripping or leaks from aircraft inside hangars shall be repaired as soon as possible.

b. Housekeeping.

(1) Good housekeeping in hangars, shops, work docks, and other aircraft maintenance areas is essential to fire and personnel safety, efficient aircraft maintenance, and flight safety. The highest standard of cleanliness and order shall be observed in all aircraft maintenance areas.

(2) An ample number of waste receptacles shall be provided in hangar decks and shop areas. Receptacles shall be of non-combustible material and have a tightly fitted lid.

(3) Spills of fuel, oil, fluids, etc., shall immediately be cleaned and disposed of properly.

(4) Covered metal containers shall be provided and used for storing supplies of clean rags and other combustible materials.

(5) Solvents with a flash point of 100° Fahrenheit or less shall not be used for cleaning aircraft, parts, or anything else.

(6) Paint, thinners, and other flammable solvents shall be stored according to reference (f).

(7) Spray painting of aircraft inside hangars is prohibited except for minor touch-up operations. During such operations, ample ventilation shall be provided and no other maintenance work shall be performed on or around the aircraft.

(8) An ample number of drip pans shall be provided under aircraft to collect any dripping of hydraulic fluid or oils while aircraft are in the hangar.

(9) An ample number of fuel containers shall be provided under aircraft to collect any dripping of aircraft fuel while aircraft are in the hangar.

c. Electricity.

(1) Electrical equipment used on hangar decks (i.e., portable equipment and lamps, cutouts, switches, receptacles, charging panels, generators, motors, etc.) shall be of the totally

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enclosed type or suitable for Class I Division 2 hazardous locations or up to a level 18 inches above the floor.

(2) Pendants and flexible extension cords used on hangar deck areas shall be approved for extra hard usage and they shall be maintained in good condition at all times, otherwise, they will not be used. Each such cord shall include a separate grounding conductor.

(3) Aircraft batteries shall not be charged when installed in aircraft located inside a hangar. Charging nickel-cadmium batteries shall be segregated from lead-acid battery charging operations.

(4) Electric converters or rectifier units used to energize aircraft power systems shall be suitable for the hazard location when used in hangars. These units shall not be positioned under aircraft wings or engines.

(5) Engine driven generators are not recommended to be used to energize aircraft power systems inside hangars. If used, they shall be located close to exterior doors where ample ventilation is provided and positioned at least 20 feet from the aircraft fuel system vent openings.

(6) Mobile servicing equipment such as air compressors, air movers, portable heater units, and vacuum cleaners shall not be in the vicinity of the aircraft. Vicinity of aircraft is the area within 5 feet horizontally from aircraft power plants or aircraft fuel tanks and shall be classified as a Class I Division 2 hazardous locations that shall extend upward from the floor to a level 5 feet above the upper surface of wings and of engine enclosures.

(7) All aircrafts shall be grounded while inside any hangar.

(8) Vending machines, cooled drinking fountains, etc., shall not be installed in hangar decks unless suitable for Class I Division 2 hazardous locations.

d. Life Safety.

(1) All doors designated as exits shall swing in the direction of exit travel, except sliding doors, and shall be kept unlocked and unrestricted in the direction of exit travel while the area is occupied.

(2) Exit signs shall be provided over doors and exit ways with letters at least 6 inches high on conspicuous backgrounds.

(3) Fire drills in aircraft hangars shall be conducted according to reference (f).

3. Hangar Fire Lanes

a. Hangar fire lanes will be 10 feet wide. This clearance is the egress lane adjacent to walls to allow for adequate egress from the hangar bay, shops, and offices.

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b. Clearly-marked hangar center aisles in drive-through hangars (older hangars with aircraft entry from opposite ends) bays shall be maintained at all times to allow for egress of aircraft and fire fighting vehicles during emergencies.

4. Ordnance.

- a. Use, handling, and storage of ordnance shall follow guidance in reference (q).
- b. Transportation of ordnance shall follow guidance in reference (q).
- c. Any operation that involves the use, handling, transportation, or storage of ordnance will be under the strict control of the weapons and/or ordnance departments.

5. Aircraft Fueling Operations-General.

a. Aircraft fueling operations shall follow the requirements in references (f), (w), (x) and NFPA Standard 407.

b. Only authorized personnel trained in the safe operation of fueling equipment, operation of emergency controls, and in emergency procedures to be followed, will fuel or de-fuel aircraft. All aviation fuels personnel shall be completely familiar with the information contained in MIL-HDBK-844B (AS).

6. Aircraft Fueling-Reducing Electrostatic Charges. One of the primary sources of ignition is static electricity. To ensure the safe relaxation of static charges relevant to fuel operations, all activities shall follow the guidance in reference (x):

- a. Prohibit the top loading or splash filling of any fuel vessel (e.g., trucks or tanks).
- b. Refill filter/separator vessels slowly, whenever they have been drained.
- c. Keep tanks free of foreign objects (i.e., small conductive objects that can be floated by foaming fuel, thereby becoming an un-bonded charge collector).
- d. Always electrically bond the refueling equipment to the aircraft or truck into which the fuel is being loaded.
- e. Grounding is required for all hot refueling operations.
- f. Check the electrical resistance of single point nozzle monthly (see the nozzle manufacturer's technical manual for instructions).
- g. Bond over wing (gravity) refueling nozzles to the aircraft using a separate bonding pigtail before tanks caps are removed.

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**Note:** Only connect grounding connectors/cables to approved grounding receptacle locations. Do not secure/attach to external doors, latches or hinges.

- h. Inspect bonding and grounding cables, clamps, and plugs on a daily basis, and the electrical resistance of grounding cables monthly.
- i. Cease all fueling activities when lightning is observed within 5 miles of the facility.
- j. Remove refuelers from aircraft parking areas during electrical storms.

7. Aircraft Fueling-Eliminating Other Sources of Ignition. To prevent or eliminate sources of ignition, activities shall follow guidance under reference (x):

- a. Prohibit fuel personnel from wearing shoes with nails or other metal devices on the soles.
- b. Prohibit smoking, spark or flame producing items, open flames, or hot work within 50 feet of any refueling operation.
- c. Entrances to fueling areas shall be posted with "NO SMOKING" signs.
- d. Prohibit all repair work on fueling equipment during fuel handling operations.
- e. Prohibit fuel personnel to carry matches or cigarette lighters.
- f. Prohibit repair or maintenance work on aircraft during refueling or defueling operations.
- g. Open flames and lit open flame devices will be prohibited on aircraft servicing ramps, aprons and in other locations within 50 feet of any aircraft fuel servicing operation or fueling equipment.
- h. Ensure that liquid oxygen operations are not being performed and their handling equipment is not located within 50 feet of fuel operation.
- i. Ensure that aircraft radar and all unnecessary radio equipment are switched off before refueling or defueling commences. If it is necessary that equipment be warmed up prior to an immediate launch, be sure that it is not transmitting. The only exception to this rule occurs during hot refueling. Hot refueling operations require the pilot to keep in radio contact with the tower at all times.
- j. Prohibit conducting aircraft fuel handling operations within 300 feet of ground radar equipment.
- k. Ensure all internal combustion engines operated within 50 feet of fuel handling operations with spark-arresting type mufflers.

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l. Avoid starting or stopping any engine, regardless of its configuration, within 50 feet of fueling or defueling operations. This prohibition includes aircraft being serviced and adjacent aircraft, as well as ground support equipment. The starting or stopping of an engine within 50 feet of a fueling or defueling operation is sufficient cause for the operator to immediately shut down the fuel pump.

m. Conduct overwing refueling only as a last resort and then only if operational necessity or aircraft design dictates.

n. Conduct hot refueling operations to the absolute minimum possible.

8. Aircraft Fueling-Reducing/Controlling Vapor Generation. To help prevent fires by reducing or controlling vapor generation, activities shall follow the guidance in reference (x):

a. Prohibit handling aviation fuel in open containers.

b. Prohibit refueling, defueling, draining aircraft, or conducting fuel handling operations in hangars or confined areas, except for the removal of water and the extraction of samples from aircraft low point drains. This restriction does not apply to structures specifically designed for these operations.

c. Keep all fuel containers, such as aircraft fuel tanks or vessels, closed except when necessary to open for actual operation.

d. Prohibit driving or moving a refueler or defueler with a leak in the tank, piping, or other equipment.

e. Prohibit disposing of waste fuel in storm water or sanitary sewage systems.

f. Prohibit top load or splash fill tanks (this prohibition does not prohibit overwing refueling of aircraft that are solely configured for this operation).

g. Prohibit using gasoline or jet engine fuel as a cleaning agent.

h. Maintain a spill kit on the site of fueling areas during all fueling operations.

9. Aircraft Fueling-Fire Protection.

a. Fire extinguisher requirements for aircraft fueling operations shall be used following references (f) and (w).

**Note:** Use all fire extinguishers only for their intended purpose, (i.e., to extinguish a fire), they shall never be used to inert a fuel tank since this can actually ignite a fire or explosion.

b. Aircraft firefighting vehicles shall be on standby during hot refueling and concurrent refueling operations.

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**CHAPTER 13**  
**FIRE PROTECTION AND PREVENTION FOR SHIPS UNDERGOING**  
**AVAILABILITIES IN SHIPYARDS**

1. General. This chapter is established to prevent fires aboard ships, or, if they occur, to minimize loss of life and injury to personnel; damage to material and equipment; and interruption to the industrial and ships' work schedules. This chapter is site-specific to Norfolk Naval Shipyard located in Portsmouth, VA and Portsmouth Naval Shipyard located in Kittery, ME. Fire protection and prevention standards for this site-specific chapter shall use shipyard instructions and reference (v).

2. Fire Lanes on Piers.

a. Fire lanes shall be designated and identified adjacent to ships pier side, dock side while in dry-dock, or on building ways to provide access for emergency apparatus. Fire lanes shall be maintained following the guidance in references (d) and (v).

(1) Fire lanes shall be marked with painted yellow lines to retain a 15-foot-wide unobstructed emergency access.

(2) An additional marked (with dashed painted yellow lines) 2.5-foot-wide "dual use" buffer shall be identified on both sides of the 15-foot-wide unobstructed fire lane.

(3) For wharves, provide a 20-foot-wide unobstructed fire lane immediately adjacent to the operating area.

Note: Small craft and yard piers are exempt from this requirement.

b. The angle of approach and angle of departure shall not exceed 8 degrees at any point on the fire lane, its intersection with other roads, or fire lanes. Minimum inside turning radius shall be 25 feet and minimum outside turning radius shall be 50 feet. It is recommended that the head and foot of the pier be designated a fire lane to accommodate turnaround space and provide a designated location to obtain overboard drafting for water supply for fire apparatus.

c. At least 13 feet and 6 inches of vertical clearance shall be provided and maintained over the width of a fire lane.

d. When facility work projects or other situations require a fire lane to be temporarily blocked, the District Fire Chief and FSC shall approve the project in advance.

3. Temporary Structures and Laydown Areas. To minimize combustible materials, temporary structures erected aboard ship should be avoided. Where such structures are used such as on large deck ships, construction staging supports and bracing shall be made of metal. The use of wood shall be minimized to reduce the fire hazard. Additional requirements involving temporary structures and laydown areas shall be regulated following reference (v).



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#### 4. Ship Repair and/or Construction Activity (SRCA) Fire Safety Inspections.

a. Each SRCA shall conduct fire prevention and safety inspections on each project for each manned shift where industrial work is being performed to note and initiate actions to eliminate fire hazards or to implement work procedures to keep these hazards to a minimum.

b. An initial inspection shall be made by the SRCA to evaluate potential fire hazards as soon as practicable after the availability is started and before any industrial work commences. The inspection shall be conducted jointly by SRCA and SF representatives.

c. Once on each manned/regular workday, follow on inspections (which should rotate through different areas on large deck ships) shall include a Senior (zone manager equivalent or higher) Project Management Representative, ship's Representative, and ship's Safety Officer, or equivalent.

d. When the availability is performed on a Navy installation, Fire and Emergency Services representatives shall be invited to attend and may be counted as shipboard familiarity training.

e. Deficiencies noted shall be corrected immediately, and forwarded to the Project Superintendent, ship's Commanding Officer, FSC or equivalent, and SRCA Safety Organization. The SRCA shall compile project provided data to determine where additional focus is required to improve project safety and fire prevention performance.

#### 5. SRCA Fire Safety Inspection Minimum Requirements.

a. Minimum requirements for inspection shall identify the following:

(1) Housekeeping conditions, including location of trash.

(2) Type and amount of cargo aboard.

(3) Type, amount, and condition of fire protection equipment.

(4) Type and approximate amounts of fuel or other flammable liquids, and to include all associated piping systems.

(5) The visible requirements of this manual, such as cleanliness, access and egress routes, temporary systems, fire extinguishers, condition of combination smoke and heat detectors, fire reporting and communication systems, and observation of fire watch and hot work authorizations for hot work in progress.

#### 6. Fire Safety Inspection Documentation.

a. Inspections performed jointly by SRCA inspectors and Fire Department personnel shall be documented with copies maintained by SRCA and the Fire Prevention Office.

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b. The Chief Fire Inspector and or District Fire Chief shall provide guidance to applicable SRCA personnel on documentation and maintenance of fire safety inspection discrepancies as well as corrections for review by Fire and Emergency Services personnel or audit teams.

c. The Chief Fire Inspector and or District Fire Chief shall periodically request to examine the fire safety inspection reports to ensure proper fire safety inspections and follow-up are being conducted.

**APPENDIX A**  
**RISK ASSESSMENT CODE (RAC) MATRIX**

Hazard Severity		Mishap Probability			
Description	Code	A Likely to occur immediately	B Probably will occur in time	C Possible to occur in time	D Unlikely to occur
Death, permanent total disability, or loss of facility or asset	I	1 Critical	1 Critical	2 Serious	4 Minor
Permanent partial disability or major property damage	II	1 Critical	2 Serious	3 Moderate	4 Minor
Lost workday injury or compensable injury, or minor property damage	III	2 Serious	3 Moderate	4 Minor	5 Negligible
Injury involving first aid or minor supportive medical treatment, a minimal threat to personnel or property, or a violation of a standard	IV	4 Minor	4 Minor	5 Negligible	5 Negligible

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**APPENDIX B**  
**FIRE BILL SIGN (FORMAT)**

# **FIRE BILL**

**BUILDING NO. \_\_\_\_\_**

## **IN CASE OF FIRE**

- 1. USE NEAREST FIRE ALARM BOX, DIAL 911 or THE APPROPRIATE EMERGENCY NUMBER \_\_\_\_\_.**

**Know the location of the nearest fire alarm box and nearest telephone in your work area. When using a telephone, report the building number and the specific location in the building. Upon their arrival direct fire department personnel to the scene of the fire.**

- 2. SPREAD THE ALARM – PASS THE WORD.**

**All personnel, with the exception of fire department personnel need to evacuate the area.**

- 3. IF TIME PERMITS, CLOSE DOORS AND WINDOWS TO CONFINE THE FIRE AND PREVENT DRAFTS. DO NOT ENDANGER YOURSELF OR OTHERS IN THIS EFFORT.**

- 4. KNOW THE LOCATION OF FIRE EXTINGUISHING EQUIPMENT.**

**If attempting to extinguish a small fire with an extinguisher do not risk injury to yourself or others in this effort.**

APPENDIX C  
STAIRWAY MARKING SIGN (FORMAT)

NORTH STAIR

FLOOR

5

SUB-BASEMENT TO 24TH FLOOR  
↓ NO FLOOR ACCESS  
DOWN TO FIRST FLOOR  
FOR EXIT DISCHARGE

**APPENDIX D**  
**TRUSS BUILDING IDENTIFYING EMBLEMS (FORMAT)**

**TRUSS BUILDING  
IDENTIFYING EMBLEMS**

"The emblem shall be of a bright and reflective color, or made of reflective material. The shape of the emblem shall be an isosceles triangle and the size shall be 12 inches horizontally by 6 inches vertically. The following letters, of a size and color to make them conspicuous, shall be printed on the emblem, as shown in diagram below."



TRUSS FLOOR



TRUSS ROOF

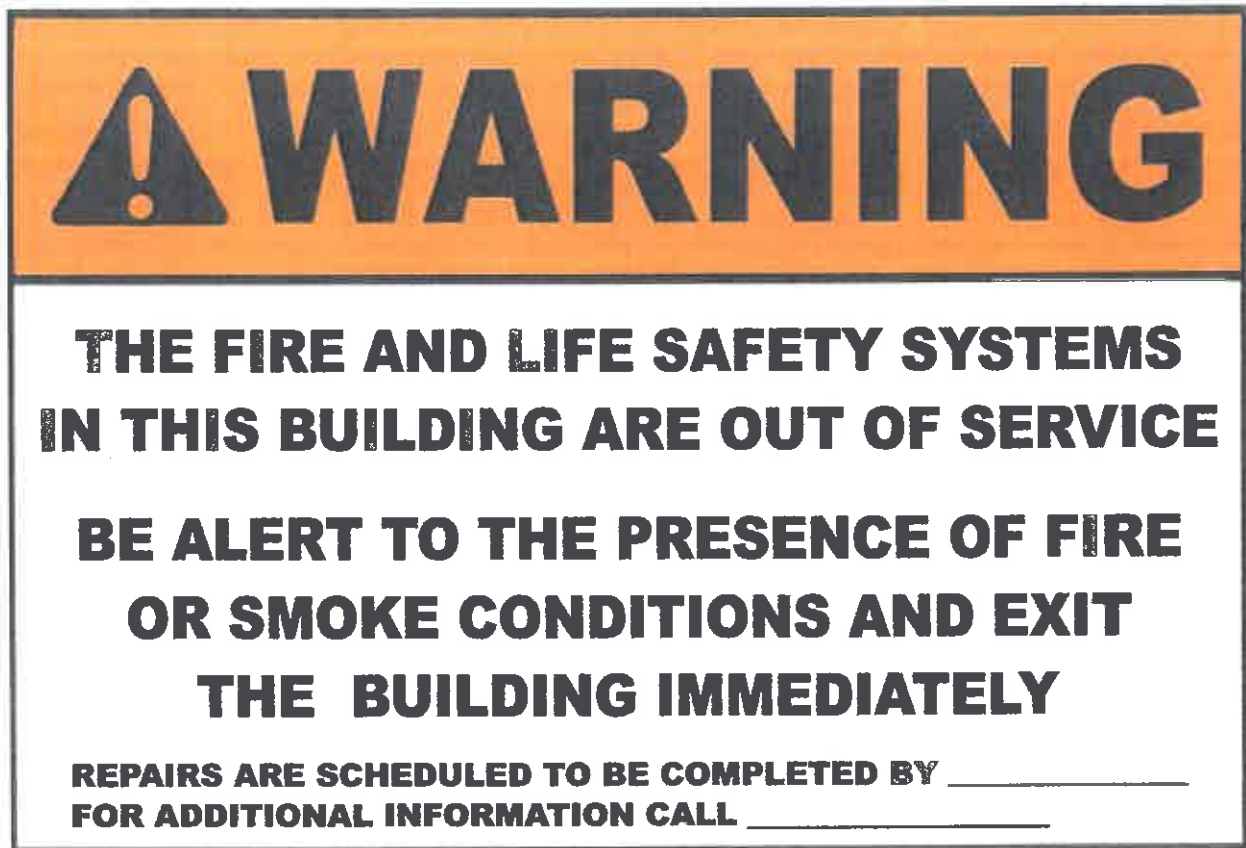


TRUSS FLOORS & ROOF

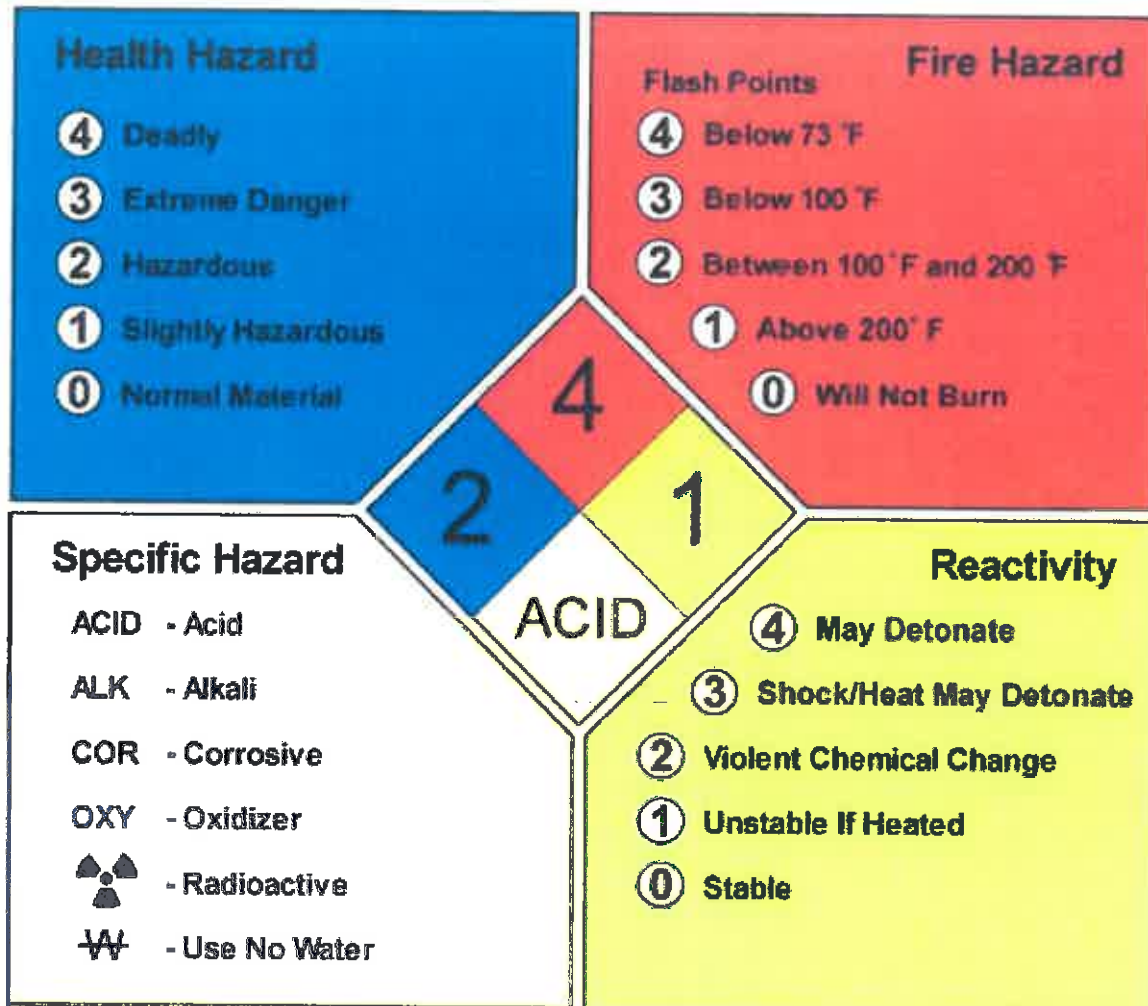
"The emblem shall be permanently affixed to the left of the main entrance door at a height between 4 and 6 feet above the ground and shall be installed and maintained by the owner of the building."

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APPENDIX E  
SYSTEM OUT OF SERVICE OR IMPAIRED SIGN (FORMAT)



**APPENDIX F**  
**NFPA 704 LABEL (SIMILAR EXAMPLE)**





SEP 05 2018

**APPENDIX G**  
**DISTRICT FIRE CHIEF/CHIEF FIRE INSPECTOR OFFICE TELEPHONE**  
**DIRECTORY**

District 1

NAVSTA Norfolk-COMM: (757) 444-7757/DSN: 322-2416

NSA Hampton Roads-COMM: (757) 444-7757/DSN: 322-2416

Northwest Annex-COMM: (757) 444-7757/DSN: 322-2416

NMC Portsmouth-COMM: (757) 444-7757/DSN: 322-2416

District 2

NNSY-COMM: (757) 396-3557/DSN: 967-2941

NWS Yorktown-COMM: (757) 396-3557/DSN: 967-2941

Cheatham Annex-COMM: (757) 396-3557/DSN: 967-2941

Craney Island-COMM: (757) 396-3557/DSN: 967-2941

Scott Center Annex-COMM: (757) 396-3557/DSN: 967-2941

St. Helena Annex-COMM: (757) 396-3557/DSN: 967-2941

St. Juliens Creek Annex-COMM: (757) 396-3557/DSN: 967-2941

NEX Suffolk Complex-COMM: (757) 396-3557/DSN: 967-2941

District 3

JEBLCFS-COMM: (757) 433-3258/DSN: 433-2407

NAS Oceana-COMM: (757) 433-3258/DSN: 433-2407

Dam Neck Annex-COMM: (757) 433-3258/DSN: 433-2407

NALF Fentress-COMM: (757) 433-3258/DSN: 433-2407

Dare County Bombing Range-COMM: (757) 433-3258/DSN: 433-2407

**SEP 05 2018**District 5

NWS Earle-COMM: (732) 866-2118/DSN: 866-2870

NSA Mechanicsburg-COMM: (732) 866-2118/DSN: 866-2870

NSA Philadelphia-COMM: (732) 866-2118/DSN: 866-2870

Philadelphia Navy Yard Annex-COMM: (732) 866-2118/DSN: 866-2870

District 6

NSB New London-COMM: (860) 694-5080/DSN: 694-5079

NAVSTA Newport-COMM: (860) 694-5080/DSN: 694-5079

NSA Saratoga Springs-COMM: (860) 694-5080/DSN: 694-5079

Mitchell Field Annex-COMM: (860) 694-5080/DSN: 694-5079

District 8

PNSY-COMM: (207) 438-4381 (District Fire Chief only)

NCTAMS LANT DET Cutler-COMM: (207) 438-4381 (District Fire Chief only)

District 9

NSA Crane-COMM: (812) 854-4637/DSN: 854-5607

District 10

NAVSTA Great Lakes-COMM: (847) 688-2135/DSN: 688-2135