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National Park Service
U.S. Department of the Interior

Structural Fire Management Plan

Redwood National Park

Pacific West Region

3/23/2015

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Introduction

Historically, structural fires have caused significant damage to National Park Service (NPS) resources. These fires have also resulted in death and numerous injuries. Effective structural fire management is essential to the protection of human life, property, and irreplaceable cultural resources.

Life safety is paramount in all NPS structural fire management activities. Furthermore, the National Park Service is committed to protecting all resources entrusted to its care and will focus on preventing fires and minimizing the damage resulting from structural fires in accordance with Director's Order and Reference Manual #58 (DO-58/RM-58), Directors Order and Reference Manual #50B (DO/RM-50B) Occupational Health and Safety Program, NPS Management Policies, Occupational Health and Safety Administration (OHSA) regulations, and National Fire Protection Association (NFPA) standards,[1] where required. It applies to all NPS and commercial service personnel assigned or attached to units in the National Park Service, including all contractors.

Purpose

This Structural Fire Management Plan (SFMP) sets forth the operational policies and procedures necessary to establish and implement a structural fire prevention and protection program at Redwood National Park (RNP). The purpose of the SFMP is to prevent and reduce losses from fires. It provides guidance to assist the Superintendent and park staff with protecting people, property, and the resources under their control.

Structural fire management is defined as the protection of people, content, structures, marine vessels, resources, and the landscape surrounding these structures from the effects of fire. At the park level, a fully implemented SFMP is the most effective way to achieve structural fire management goals. This SFMP shall establish written fire prevention and protection requirements that:

- Meet the needs of the RNP Superintendent.
- Minimize accidental fires and related fire losses.
- Provide for prompt detection, reporting, control, extinguishing, and investigation of fires.
- Establish abatement procedures.
- Provide for the safe evacuation of building occupants.
- Reduce injury and loss of life and property.

Park Facilities Covered

The requirements and action items of this SFMP applies to all Redwood National Park facilities, divisions, and personnel within park boundaries, where the National Park Service is the owner of the building, or where the building owner has allowed the National Park Service to institute its policies or procedures. Otherwise, the National Park Service shall only go so far as to ensure, in conjunction with the building owner, a safe environment in accordance with the owners' organizational policies, and the code requirements of the local jurisdiction.

[1] Directors Order #58, IV Operational Policies and Procedures, H.: "The NPS will adopt National Fire Protection Association (NFPA) codes and standards and recommended practices for fire prevention, protection and life safety, with exceptions and modifications as specified in RM-58".

Description
RNSP receives approximately 397,859 visitors each year. Most visitors are interested in outdoor activities, education, interpretive programs, and cultural activities.

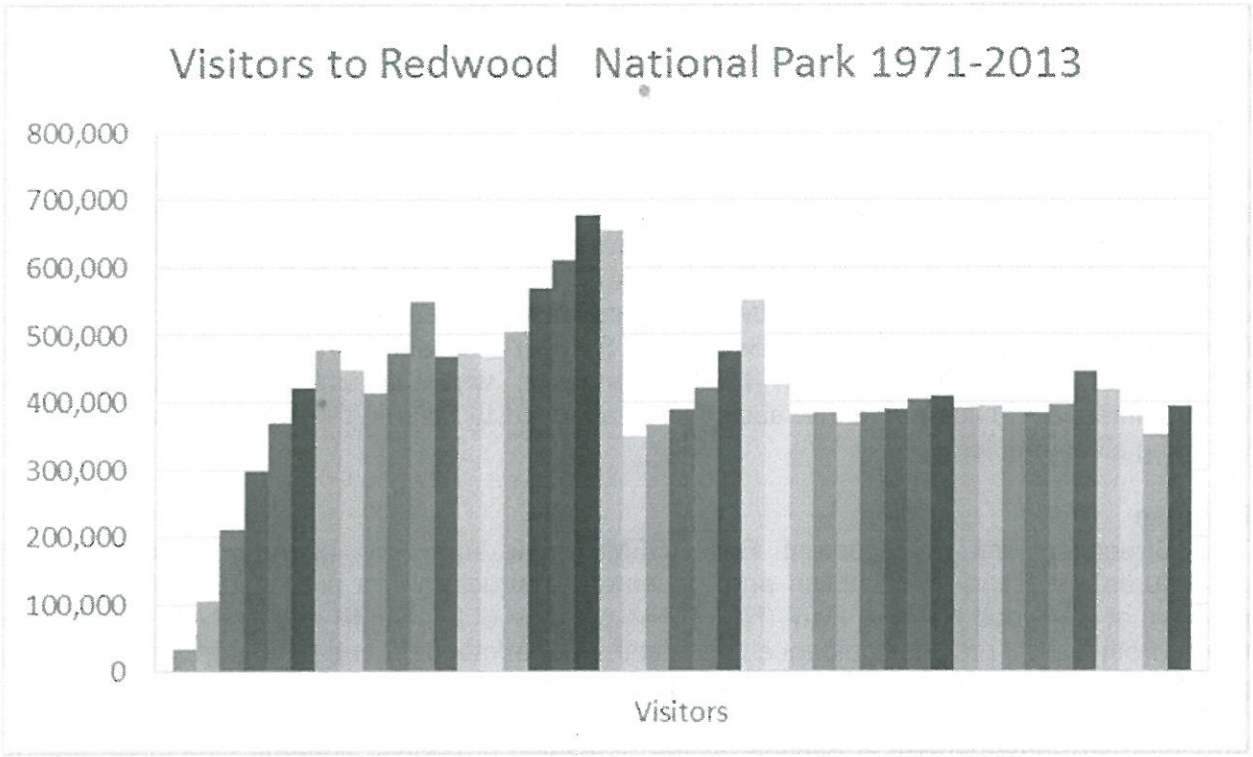


Figure 1: Visitors to Redwoods National Park per year from 1971 to 2013

The developed areas of the Redwood National and State parks are located throughout the park (see Figure 2 and Figure 3). The developed areas of the park are a mix of both federally and state owned structures and land. In the northern portion of RNSP, above the Klamath River the state parks are the Jedediah Smith Redwoods State Park and Del Norte Coast Redwoods State park. Figure 2 shows that the main developed areas in the north are Hiouchi (State), North Operations Center (State), Howland Hill (NPS), Crescent Beach (NPS), and headquarters (NPS). In the southern region of RNSP the developed areas consist of Prairie Creek (state), Wolf Creek (NPS), South Operations Center (GSA), and Kuchel.

The park has no concession, or transient lodging facilities. The Park is home to a historic World War II radar station.

Redwood National and State Parks (RNSP) does not have a structural fire brigade. RSNP depends on CAL Fire, Crescent City Fire and Smith River/Hiouchi Volunteer Departments that meet NFPA Standards in the north. The southern portion of the park depends on California Emergency Management Agency Mutual Aid Plan. Local Volunteer Fire Departments have been resistant to enter into a mutual aid agreements with the park.

RNSP's wildland fire potential is considered moderate and is managed per a wildland fire management plan. The wildland fire plan does not require inspections of structures.

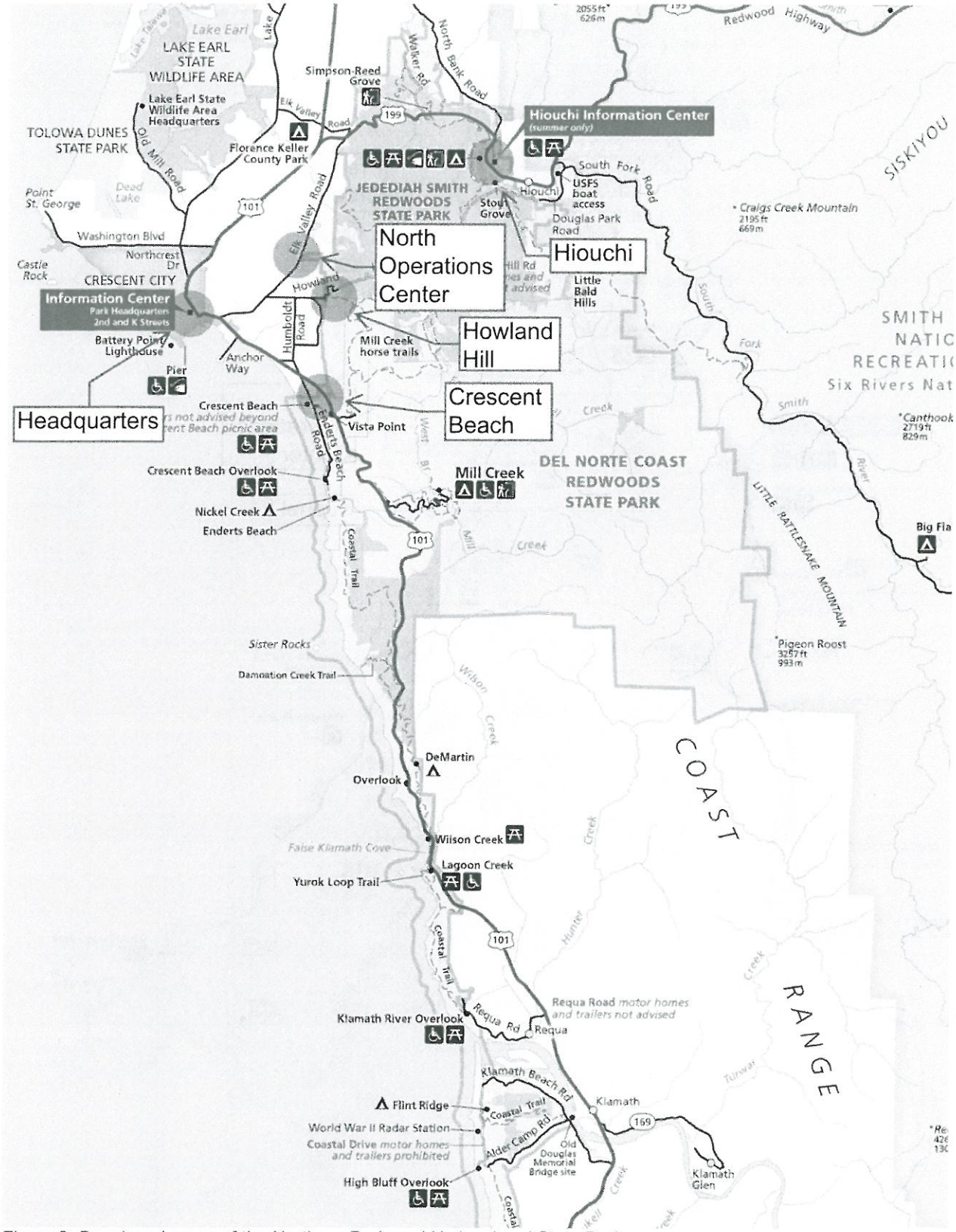


Figure 2: Developed areas of the Northern Redwood National and State Parks

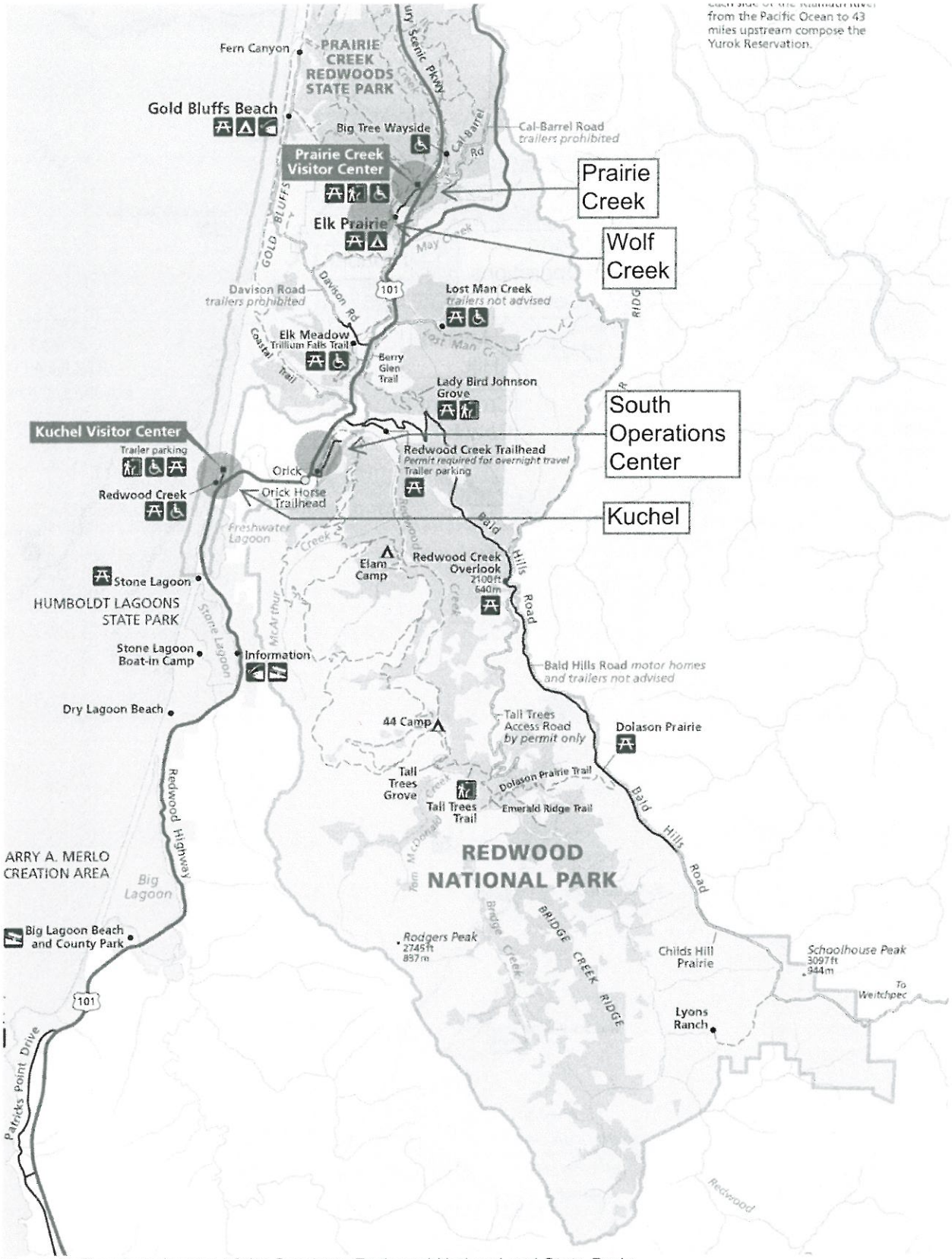


Figure 3: Developed areas of the Southern Redwood National and State Parks

Table 1: Fire Departments in the Vicinity of Redwoods National and State Parks

Fire Department	Phone	Website
Eureka Fire Department	Phone: (707) 441-4000	http://www.hbfire.org/ http://www.ci.eureka.ca.gov/depts/fire/
Arcata Fire Department	Phone: (707) 825-2000	http://www.arcatafire.org/
CAL Fire-Crescent City	Phone: (707) 464-5526	http://calfire.ca.gov/contacts/index.php
CAL Fire-Orick	Phone: (707) 499-2240	http://calfire.ca.gov/contacts/index.php
CAL Fire-Trinidad	Phone: (707) 677-3638	http://calfire.ca.gov/contacts/index.php
Crescent City Volunteer Fire Department	Phone: (707)-464-9113	http://www.crescentcity.org/fire.html
Orick Volunteer Fire Department	Phone: (707) 488-3093	http://firedepartment.net/directory/california/humboldt-county/orick/orick-volunteer-fire-department

Implementation

When signed by the RNP Superintendent, this Structural Fire Management Plan becomes the RNP Policy and Procedure for the prevention, mitigation, and suppression of structural fire.

Upon SFMP implementation, all Division Chiefs and other appropriate personnel will be briefed on its contents and copies will be made available to all RNSP personnel. It is the responsibility of the Park Structural Fire Coordinator (PSFC) to review the SFMP annually. The SFMP will also be reviewed after significant changes to Park infrastructure including pipelines and utilities, after the Park has acquired new structures or has released structures to another agency or organization, and after a major fire incident.

With implementation, the Park will engage in the execution of the SFMP to the fullest extent possible to include fire prevention activities, inspections, and training as outlined in the plan and in any subsidiary standard operating procedures or guidelines. The PSFC will secure the services of the Regional Structural Fire Manager (RSFM), as needed, to evaluate the Park's fire prevention and protection program.

Responsibilities

Structural fire management responsibilities are assigned to the following Park personnel and divisions:

- **Superintendent**
  - The development, maintenance, and adoption of Park-wide structural fire protection policies and procedures
  - Directs and delegates implementation of the Park's structural fire protection policies through the Chief Ranger and other Park division chiefs
  - Develops and maintains the Park Compendium, outlining transportation access, road closures, and fire apparatus access and restrictions
  - Appoints the PSFC, in writing, after consulting with the Chief Ranger
- **Park Structural Fire Coordinator**
  - Directs the implementation of the structural fire management program
  - Provides or coordinates employee fire prevention and fire extinguisher training

  - Ensures that facility emergency plans, exit requirements, and fire event procedures are properly prepared and fire drills are conducted in commercial structures
  - Recommends revisions to the structural fire protection policies, procedures, and guidelines
  - Assists with housing fire safety to include annual fire safety inspections
  - Facilitates the completion of annual fire prevention inspections on NPS structures
  - Ensures that plans for building construction or changes in new and existing structures and fire protection systems are reviewed by the RSFM
  - Coordinates requests for assistance from the RSFM
  - Manages and maintains portable fire extinguisher ITM program
  - Coordinates fire hydrant flow tests
- **Facility Management**
  - Manages inspection, testing, and maintenance (ITM) of all fire sprinkler systems
  - Manages hot work policy and permits
  - Manages housing fire safety to include annual fire safety inspections
  - Conducts fire hydrant and water supply ITM
  - Manages and maintains bulk fuel storage, fueling stations, and compressed gas fire safety programs and systems
  - Oversees hazardous materials clean-up and disposal
  - Oversees project development (contracting documents), for all fire protection systems, renovations, rehabilitation, new construction projects, and ensures proper review by the AHJ
- **Wildland Fire Management Officer**
  - Responsible for management of the wildland fire and aviation programs
  - Coordinates wildland urban interface risk reduction (vegetation) program
  - Coordinates with CAL Fire and Park Law Enforcement to manage fire cause determination and investigation
- **Other Division Chiefs**
  - Implement Park policies regarding facility safety, smoking, housekeeping, cooking, open flame use, public assemblies, facility egress, and concessions and contracting

Structural Fire Protection Planning and Compliance

Life safety is, and will at all times be, the first priority in all NPS structural fire management activities. Furthermore, the NPS and the RNP Superintendent are committed to protecting all resources entrusted to their care and will focus on preventing fires and minimizing the damage resulting from structural fires in accordance with Director's Order and Reference Manual #58 (DO/RM-58).

This SFMP was written with the intentions, recommendations, and requirements of DO/RM-58, codes and standards developed by the NFPA, OSHA codes and regulations, and Park-level administrative procedures and policies.

Authorities

Authority has been granted to the Park Superintendent to appoint a Park Structural Fire Coordinator and establish a structural fire management plan.[2] Said plan shall be reviewed by the Pacific West Region authority having jurisdiction (AHJ)[3] prior to implementation and approval by the Park Superintendent. The Park Superintendent has the full authority to manage and implement plan components.

Per Director's Order 58 (DO-58), Reference Manual 58 (RM-58) and the Pacific West Region Director, the RSFM is the Authority Having Jurisdiction (AHJ) for structural fire and life safety matters in the Pacific West Region.

All matters of policy, as they pertain to structural fire prevention, protection, education, and life safety should be reviewed and approved by the RSFM prior to implementation.

[2] National Park Service Organic Act (16 U.S.C. §1 through 4); Department of the Interior Manual (Part 245); NPS Director's Order #58 (2010) (III. Management Policies, 9.1.8 Structural Fire Protection and Suppression) and (IV. Operational Policies and Procedures, F).
[3] Previously known as the Regional Structural Fire Management Officer (RSFMO).

1 Fire Safety Objectives

1.1 General

Fire safety objectives provide targets as a means to measure success. The fire safety objectives should address the broad issues of life safety, the preservation of site mission, collections, and structures.

It is essential that fires be prevented in order to protect life and property as well as the irreplaceable cultural resources within the Park.

The following goals have been established for the Park:

- Life safety
- Preservation of site mission
- Preservation and protection of collections

The Park's fire protection and prevention objectives shall be met through the implementation of the following activities:

- Building design
- Building construction
- Installation and maintenance of fire detection, notification, and suppression systems where appropriate, as identified by the Regional Structural Fire Manager
- Regular fire and life safety inspections of buildings and fire protection systems
- Developing collections management and protection plans
- Fire safety training and education
- Establishing and maintaining structural fire response agreements

1.2 Life Safety

Life safety shall always be the first priority and goal. The following objectives deal with limiting the probability of death or injury to visitors, staff, and firefighters. To this end, the Park's life safety objectives are to:

- Ensure outstanding life safety deficiencies have been mitigated, corrected, or addressed. Part of this process is to generate, complete and close Facility Management Software System (FMSS) work orders specific to facility fire and life safety deficiencies. The PSFC, or designee, is responsible for working with division heads and Facility Management to ensure work orders are addressed and corrective actions are implemented.
- Ensure outstanding fire code deficiencies have been mitigated, corrected, or addressed. The PSFC, or designee, shall ensure division heads are generating Project Management Information System (PMIS) requests for outstanding fire and life safety capital improvements and the installation of fire protection systems as identified.
- Ensure existing fire suppression and detection and notification systems are active and code-compliant, and that they are being inspected, tested, and maintained according to applicable NFPA and NPS standards. The PSFC, or designee, shall ensure that Park-wide fire protection system (sprinkler and fire alarm) inspection, testing, and maintenance contracts are in place by qualified contractors.
- Implement an active fire safety awareness program to educate Park employees, their families, and the public.

- Inspect all NPS target hazards,[4] in accordance with RM-58, for fire and life safety deficiencies at least annually. The PSFC shall ensure that annual fire and life safety inspections are being performed and documented, and that deficiencies are reported to Facility Management for corrective action.

1.3 Preservation of Site Mission

The following objectives focus on limiting the probability and extent of damage to assets which are critical to the Park's mission. Such assets include equipment, functions, documents, resources, and structures.

The ability to preserve and protect structures is critical to the implementation of an effective structural fire management program. To this end, the following objectives support the Park's site mission:

- All construction plans require review and approval by the Regional Structural Fire Manager.
- New construction will be in accordance with the most current edition of NFPA codes and standards and NPS policy. Should the codes change during the construction planning process those codes originally accepted remain in effect.
- All new buildings, buildings undergoing alteration as defined below, and buildings where there is a change in occupancy will have automatic fire sprinklers and automatic fire detection systems installed.
- All new construction that meets the following criteria will have NFPA supervised automatic sprinkler systems and complete fire alarm systems installed (if the occupancy is not listed, contact the RSFM for direction):
    - Any business occupancy building greater than 5,000 square feet.
    - Any lodging, apartment or dwelling occupancy building
    - Any storage occupancy building greater than 5,000 square feet.
    - Any collection or archival storage building.
    - Any industrial occupancy greater than 5,000 square feet.
    - As determined by the Park Superintendent.
- Final construction documents must be submitted to the RSFM for review. Certification must be indicated on the drawings provided by the contractor's Fire Protection Engineer or other persons approved by the RSFM, and the drawings and specifications must be in compliance with NPS structural fire requirements.
- New and existing fire detection and suppression systems shall be monitored as required by the RSFM.
- Fire and life safety inspections shall be conducted annually (at a minimum, and more frequently in structures identified by the RSFM) to identify real and potential risks to structures (e.g.: inadequate inspection, testing, and maintenance of fire detection, notification, and suppression systems, and/or activities or operations inappropriate for a given facility).
- Pre-incident plans shall be developed for all target hazard structures (high value, historic, buildings with collections, all overnight accommodations, etc.) as identified by the park, and are to be shared with automatic aid departments or resources.

[4] Target Hazard: A structure whose building materials and/or contents are combustible, whereby if a fire were to start, a significant loss or damage to the structure or its contents or loss of life could occur. Examples may be: 1) Any structure that is actively used for any purpose, including seasonally used structures and structures used solely for storage. 2) Any structure that has significance to the park history and or mission. 3) Any structure that if lost or damaged would represent a significant cultural or historic loss or have a negative impact to the parks continuity of operations.

Walkthroughs of these target hazards should be conducted with automatic aid forces where practical.
    - Each pre-incident plan shall identify at a minimum: potential threats, alarm panels, sprinkler risers and valves, utility access and shut offs, fire department connections, water supplies, roof access, apparatus access, and predetermined strategies and tactics where applicable.
    - The book of pre-incident plans shall be shared with appropriate local Fire Departments.
- Post-fire incident facility stabilization procedures shall be developed that will validate facility soundness and mitigate further damage from wind, rain, extreme temperatures, smoke, heat, flame, fire crew salvage, and overhaul operations.

1.4 Preservation and Protection of Collections

Fire protection objectives will focus on limiting the probability of destruction or damage to collections and records by flame, heat, smoke and corrosive byproducts and suppression water during a fire. Collections include historic artifacts, archival materials, photographs, natural history specimens, and archeological collections displayed or stored on site.

NPS Management Policies 2006, 5.3.1.2 (second paragraph) state:

> *In the preservation of historic structures and museum and library collections, every attempt will be made to comply with national building and fire codes. When these cannot be met without significantly impairing a structure's integrity and character, management and use of the structure will be modified to minimize potential hazards rather than modifying the structure itself.*
>
> *Subject to the previous paragraph, when warranted by the significance of a historic structure or a museum or library collection, adequate and appropriate fire detection, warning, and suppression systems will be installed.*

Structural fire management programs involving cultural resources will comply with appropriate NFPA codes and standards.[5]

The Park's Cultural Resources Program Manager will develop a preservation and protection plan that address the probability of post-fire damage during salvage and overhaul, and from mold, mildew, moisture, exposure, and temperature changes. The plan shall address the potential for protection in place, as well as removal and relocation pre-fire, during a fire, and post fire. The plan shall support the collections' management policies and includes:

- Selecting systems appropriate to the nature of museum property in the space, and to the structure in which it is housed.
- Making spaces housing museum property fire-resistant to the extent possible given the nature of the structure.
- Storing museum property records in an appropriate fire and burglary-resistant container or vault, and ensure the enclosure is locked when not in use.
- Addressing museum property needs in preventing, detecting, and suppressing fire.
- Avoiding storing flammable liquids in the museum property storage area.

[5] Directors Order #58: Structural Fire Management, V. Program Requirements, D. Cultural Resources

Curatorial and preservation personnel are responsible for salvaging and restoring damaged and undamaged collections in accordance with DO/RM 28[6] and NFPA 909.[7] Curatorial recovery planning includes the development of action plans that:

- Set priorities for salvage of collections.
- Coordinates salvage procedures with facility management staff for critical collections.
- Utilizes tarpaulins and other protective devices.
- Prepares for the removal of collections from fire areas and an inventory of moved materials.
- Identifies the location of refrigerated vans and warehousing facilities to transport or store fire or water damaged items.
- Identifies responsible organizations with the capacity and ability to restore collections. Capacity should be based on the largest anticipated fire area.
- Lists other curatorial facilities and professionals with the capacity to assist.

The PSFC should be involved in the planning process.

[6] Cultural Resource Management Guideline.
[7] National Fire Protection Association, NFPA 909 – Code for the Protection of Cultural Resource Properties – Museums, Libraries, and Places of Worship, 2010.

2 Work Requiring Authority Having Jurisdiction (AHJ) Approval

See RM-#58 Chapter 6 for additional information[8]

Buildings are altered in many ways and defined by many different codes and references. It is not the intent of this document to require complete compliance with fire codes every time routine maintenance takes place in a building. To provide clarity, altered buildings requiring compliance with NFPA 101, new occupancy chapter requirements, and this RM requirement for fire protection systems are defined as:

- **Rehabilitation**, as defined in RM 36 (Note this pertains to housing only as it is not an NFPA definition. All other definitions below pertain to all NPS buildings including housing):

  A one-time rehabilitation of the entire housing unit that includes any of the following elements:
  a. Major improvements to the electrical system
  b. Major improvements to the plumbing system
  c. Reroofing - In this instance, the term reroofing should be interpreted to mean the replacement of structural members of the roof system. The replacement of shingles is not considered a major rehabilitation project and does not trigger compliance with new fire codes.

- **Renovation**, as defined in NFPA 101, Chapter 43, and as revised here, is the replacement in kind or strengthening of load-bearing elements.

- **Modification**, as defined in NFPA 101, Chapter 43, and as revised here, is:
  a. The reconfiguration of any space.
  b. The addition or elimination of load-bearing elements. NOTE: The reconfiguration or extension of any system, or the installation of any additional equipment, while part of the definition, will not always warrant compliance with new fire codes. In these instances, the Regional Structural Fire Manager (RSFM) must be consulted.

- **Reconstruction**, as defined in NFPA 101, Chapter 43, is:
  a. The reconfiguration of a space that affects an exit or a corridor shared by more than one occupant space.
  b. The reconfiguration of a space such that the rehabilitation work area is not permitted to be occupied because existing means of egress and fire protection systems, or their equivalent, are not in place or continuously maintained.

- **Change of Occupancy/Use**, as defined in NFPA 101, Chapter 43, is a change in the occupancy classification of a structure or portion of a structure. NOTE: This is an NFPA definition of a building's intended change of use in accordance with code

8 http://classicinside.nps.gov/documents/Chapter%206%20Structure%20Fire%20Prevention%20and%20Fire%20Code%20Compliance%20(Final%202014).pdf

3 Fire Prevention Inspection Procedures

See RM-58 Section 4 for additional Structural Fire Prevention Requirements

3.1 Inspection Authorization

Facility Management, or authorized inspector[9], will perform scheduled and unscheduled inspections of all NPS owned target hazards (see Chapter 3.5 and 3.6 for inspection frequency). Fire hazards and/or deficiencies identified during an inspection are recorded on the NPS Annual Fire and Life Safety building Inspection Form (see Appendix 33.4).

3.2 Report Distribution – Abatement Tracking

A copy of the annual fire and life safety building inspection form is retained by Facility Management for mitigation of any deficiencies. The PSFC is required to review and sign the form, and monitor and document that corrective actions have been taken. Failure to take action to eliminate hazardous conditions results in the report being forwarded to the Superintendent or the Regional Structural Fire Manager for action.

3.3 Identification of Hazards / Deficiencies Process

If hazards/deficiencies are identified in a facility, the following process will be followed to correct or abate said hazard:

- The hazard is identified by Park personnel or during an annual inspection.
- The hazard is documented on the NPS Report of Hazard Form (RH-1) (Appendix 33.5).
- If the hazard is:
    - Not an immediate life safety issue, ten working days (two weeks) will be allowed for correction of the hazard.
    - An immediate life safety issue, the hazard will be corrected immediately. If the hazard/deficiency cannot be corrected immediately, the PSFC and RSFM may place interim control measures to reduce the risk to an acceptable level.
- An FMSS work order is to be submitted for correction of the hazard/deficiency.
- The hazard/deficiency is corrected and logged in FMSS, the correction is noted on the inspection report, and the inspection report is signed and returned to the PSFC.
- If the hazard is not corrected, a report is forwarded to the Superintendent or the RSFM for action.
- All deficiencies shall be tracked within the Park and reports kept in the building file folder.

3.4 Hazards Identified

When no hazard/deficiencies are found, or are corrected on the spot, the NPS Report of Hazard Form (RH-1) (Appendix 33.5) is used to document the inspection. This form is maintained by the PSFC and no other actions are required.

3.5 Housing Fire Inspections

Per the NPS Housing Management Plan, Chapter 5; Part 1, NPS family housing (to include dormitories) are to be inspected prior to initial occupancy and annually thereafter. The PSFC, along with the Housing Officer, shall ensure that a structural fire and life safety component of the annual inspection exists. This will allow for the evaluation of the existence, condition, and

[9] As identified in RM-58, Chapter 6, 3.2.1. Annual Fire and Life Safety Building Inspections of Target Hazards.

proper placement of fire extinguishers and smoke detectors and for the identification of existing fire and life safety deficiencies.

The inspection will be documented on the RH-1 Report of Hazard Form. Deficiencies must be reported to the resident of record, and a copy of form RH-1 shall be sent to Facility Management for correction of deficiencies. The inspection results shall be maintained by the Housing Officer/ Facility Manager or the PSFC.

3.6 Inspection Frequency

All target hazards shall receive an annual fire and life safety inspection by a qualified person[10]. More frequent inspections may be conducted if the RSFM or PSFC determines there is an increased level of risk or hazard.

3.7 Inspection Reporting

Inspections may be reported in SFMDS located at:
http://inside.nps.gov/waso/custompages.cfm?prg=358&id=9415&lv=3&pgid=3813

[10] Qualified person: A person that has attended the NPS Park Structural Fire Coordinator class or has completed fire inspection training through organizations such as NFPA and community college programs.

4 Fire Event Procedures

See RM-58 Chapter 6 Structural Fire Prevention Requirements for additional information.

4.1 Responsible Personnel

Building specific emergency plans should be developed for each facility housing more than ten (10) personnel. Emergency plans must be in compliance with 29 CFR 1910.38, 1910.39, and NFPA 101. In the event of a fire or any indication of fire, such as smoke, odor, or unusual heat conditions, it is the duty of any individual who discovers a fire (or potential fire) to initiate a facility general alarm.

The Structural Fire Coordinator will work with the most senior supervisor within a facility to identify one or more employees that will be responsible for maintaining the facility's fire event procedure.

4.2 Notification of Engine Company

The Park's structural fire response is activated by calling 911. Each employee's telephone shall have a fire reporting number decal affixed to it. The individual(s) or supervisor(s) responsible for a specific facility is responsible for ensuring compliance with this requirement. When reporting a fire, one or more personnel should be instructed to wait outside to direct the responding firefighting personnel to the location of the fire. Personnel need to respond in the following manner when calling 911:

- Keep calm, speak clearly, and answer all questions asked by the dispatcher. Do not hang up until told to do so, unless conditions require you to leave
- Give your name, location, and location of fire
- Give building address or landmarks for location
- Provide any information on individuals that may be trapped in the building
- Tell where the fire is located within the structure (e.g.: kitchen, basement, etc.)
- Tell the nature of the fire if known (i.e., flammable liquids, trash, etc.)
- Tell how much of the structure is involved in fire (e.g.: 100%, 50%, room involved, or small fire)

4.3 Alarm Response

In the event of an alarm from the fire protection system, the alarm will call out to different monitoring services depending on the building. The headquarters building and the North Operations Center alarm systems will contact Security Lock & Alarm, who will then notify Crescent City Fire Department. All other buildings in the park equipped with a fire alarm system will call out to California Department of Parks and Recreation, Northern Communications (NORCOM) dispatch center with a pre-recorded message. NORCOM will notify the appropriate agency for response.

4.4 Evacuation Signal

Upon notification of a fire, either by word of mouth or fire evacuation horn / bells, all personnel must evacuate the facility by the most direct route. If time allows, close all doors and windows, secure safes, and shut off unnecessary equipment to deter the spread of fire.

4.5 Meeting Designation

Evacuees will meet at a pre-designated assembly area outside the facility as developed in the facility fire prevention and building evacuation plan. Supervisors will account for each of their employees that are on duty, or to the extent it is possible to do so, and ensure the safe

evacuation of all visitors from the building. Evacuated personnel will remain together and available to responding personnel until released by the incident commander.

4.6 Handicap Requirements

The supervisor shall establish procedures to assist handicapped and special needs personnel during building evacuation. Egress for disabled persons may not be readily accessible in an emergency. Special attention shall be paid to rendering assistance to persons with disabilities in facilities that are not ADA[11] compliant.

4.7 Extinguisher Use

Activation of or sounding of an alarm should occur prior to using a fire extinguisher. Early stage (incipient) fires should be attacked with a portable fire extinguisher. If the extinguisher does not extinguish the fire, all personnel must withdraw and evacuate the building.

4.8 Standpipe Fire Hose Stations (Interior Hose Cabinets)

Interior standpipe fire hose stations with rack mounted fire hose should not be used for interior structural firefighting. Rack mounted fire hoses have been removed from all hose cabinets. Interior standpipes shall remain available for firefighting purposes and can only be used by properly equipped and trained members of a responding fire agency.

4.9 Utilization of Hose House Equipment

Hose and firefighting equipment located in hose houses that are typically located near a fire hydrant, may only be used when properly tested and by properly equipped and trained personnel. Hose houses and firefighting equipment shall be removed unless an exemption is granted by the RSFM. The Park does not currently maintain any hose houses.

4.10 Procedures

Post-fire procedures should have a list of contacts that includes, but is not limited to:

- Superintendent
- Structural Fire Coordinator
- Law Enforcement Chief
- Facility Management Chief
- Other affected divisions

All structure fires, regardless of size or nature, are to be reported in accordance with park reporting requirements and to the Regional Chief Ranger and Regional Structural Fire Manager. All structure fires shall be reported within three days of the fire being declared out or the responding units being released, whichever is later. Reporting is accomplished by completing the web-based structural fire report through the NPS structural fire reporting website.[12]

[11] Americans with Disabilities Act.
[12] NPS Structural Fire Reporting Website:
http://inside.nps.gov/waso/custompages.cfm?prg=358&id=372&lv=3&pgid=3653

5 Fire Prevention Training Requirements

See RM-58 Chapter 13: Training for additional information.

5.1 Fire Prevention Training Requirements

The PSFC is responsible for the coordination and delivery of fire prevention training. General fire prevention training is required for all newly assigned permanent, temporary, and seasonal NPS personnel as part of new employment orientation. This training should include locations of fire alarm pull boxes, location and use of portable fire extinguishers, emergency evacuation plans, and fire prevention plans. All training should be documented and maintained on file.

Fire extinguisher training is provided by facility maintenance staff.

5.2 Special Training

Specific fire prevention training is required for personnel who work in areas where special fire safety instructions and precautions are required. Examples include public assemblies, cultural resource facilities, fuel storage and handling, and marinas. Training will include visitor evacuation, protection of resources, and use of portable fire extinguishers.

5.3 Training Contents

It is the responsibility of the PSFC to ensure that all personnel are properly trained. Training sessions should be scheduled to acquire the largest possible audience.

General fire safety training is a requirement of all employees. At a minimum, training should include:

- Evacuation and accountability procedures
- Means of reporting fires and other emergencies
- Fire prevention in the workplace
- Fire drills
- Fire extinguisher training (hands-on, video, or DOI Learn NPS S/F PFE[13] training course)
- Fire prevention procedures and responsibilities for public assembly employees
- Hot Work Permits - welding, cutting, and brazing certification training for Facility Management personnel and contractors
- Fire safety in the marine environment

[13] Portable fire extinguisher.

6 Fire Drills

See RM-58 Section 13: Training and NFPA 10 for additional information.

6.1 Fire Drill Frequency

Fire drills are conducted periodically to ensure that all personnel with specific fire protection duties and responsibilities during emergency situations can perform these duties. Fire drills also reduce the possibility of panic in a real situation. Speed in building evacuation, although important, is not the primary objective and should be secondary to an orderly and efficient evacuation.

Drills should be held at unexpected times and under varying conditions to simulate unusual fire situations.

The PSFC will work with the most senior supervisor within a facility to identify one or more employees that will be responsible for organizing and conducting the facility's fire drills.

Managers of facilities with fire alarm systems should request assistance from the PSFC before any system is activated. The central alarm monitoring station and PSFC shall be notified before any fire drill.

Annual fire drills are required in all structures that are occupied by ten (10) or more employees. Drills shall be held at expected and unexpected times and under varying conditions to simulate the unusual conditions that can occur in an actual emergency.

6.2 Documentation

Fire drills should be documented and this documentation should be maintained by the PSFC.

7 Exit Requirements

See NFPA 101 Chapter 7 for additional information.

7.1 Responsibility

The PSFC will work with the most senior supervisor within a facility to identify one or more employees that will be responsible for monitoring the facility's exit requirements.

Exits obstructed due to a doorway equipment malfunction or damage will be reported to Facility Management through the work order system.

7.2 Exit Obstruction

Building exits must be unobstructed. Desks, tables, chairs, stored material, etc., shall be arranged to permit a clear path to exits. Corridor widths and avenues of exit shall not be constricted due to obstruction.

7.3 Unlock Exit Requirement

Exit doors shall remain unlocked at all times when the facility is occupied.

7.4 Exit Illumination

Illuminated exit signs shall remain powered at all times when the facility is occupied.

7.5 Exterior Exit Locations

Exterior exits shall be kept unobstructed for the full width of the exit doors. Exits shall not be obstructed by trash, vehicles, equipment, dumpsters, or snow and ice.

7.6 Storage under Exits

Combustible storage in stairwells or under stairs is prohibited except where the space is protected by fire sprinklers. Fire sprinklers shall not be blocked and stored items shall be kept a minimum of eighteen (18) inches from all sprinkler heads.

7.7 Blockage of Doors

Doors shall not be blocked without approval of the PSFC. Blocked doors will have a "Not An Exit" sign on them with letters at least four inches high.

7.8 Smoke Barrier Doors

Smoke barrier doors shall remain closed at all times and will swing freely without restriction. **Exception:** Doors equipped with the automatic magnetic, self-closing devices and are controlled by the integrated building fire alarm system may remain open when controlled by the fire alarm system. Automatic and non-automatic smoke barrier doors shall **not** be wedged or blocked open at any time.

7.9 Exit Door Maintenance

Exit doors shall be kept in good operating condition; door hardware operates freely and door swings freely without restriction.

7.10 Evacuation Plan

Where required, evacuation plans are to be posted conspicuously in facilities where personnel must travel a considerable distance through interior enclosures and/or over obscured lanes of egress to exit the facility.

8 Housekeeping

8.1 Housekeeping Practices

The PSFC will work with the most senior supervisor within a facility to identify one or more employees that will be responsible for monitoring the facility's housekeeping practices.

Good housekeeping practices are vital in eliminating potential fire hazards within buildings and on the surrounding premises. Practices may include, but not be limited to, the following.

- Trash is not allowed to accumulate in any structure.
- Oily rags, grease, and paints shall not be placed in containers with other combustibles.
- Oily rags or wiping cloths shall be kept in approved metal waste containers with self-closing lids.
- All flammable liquid shall be properly stored in approved containers or cabinets.
- Storage areas shall be kept neat. Storage in boiler rooms, furnace rooms, electrical equipment rooms, and air conditioning and mechanical equipment rooms is strictly prohibited.
- Storage within three feet of sprinkler valves and risers is strictly prohibited. Sprinkler valves and risers shall be kept readily accessible.
- Stored materials in any building will be stacked no closer than 18 inches from the ceiling.
- A minimum of 18 inches shall be maintained above stored materials and fire sprinkler heads. Stored materials shall not be stacked above or between sprinkler heads.
- Nothing shall be hung from fire sprinkler heads, pipe, or other fire protection equipment.
- Trash shall not be accumulated or stored in janitor's closets. Janitorial supplies and equipment are the only items that can be stored in a janitor closet. Each closet shall be neat, clean, and free of accumulated trash or an abundance of supplies.
- Lint bags and filters on clothes dryers shall kept free of lint and emptied after each use or at the end of a shift.

9 Electrical Installation and Equipment

See RM-58 Chapter 6 Structural Fire Prevention Requirements and NFPA 70 for additional information.

9.1 Equipment Operation

Electrical equipment shall be utilized in a safe manner and for its intended purpose within structures and in the surrounding premises. Operation of all electrical equipment, appliances, and machines shall be stopped immediately when an unsafe or hazardous condition exists.

The following guidelines provide an overview for safe use of electrical equipment. Questions regarding the proper use of extension cords and electrical equipment should be referred to the PSFC or Facility Management.

9.2 Extension Cord Use

Extension cords are used temporarily only when a flexible cord is necessary and shall not be a substitute for permanent fixed wiring. All cords shall be used only in continuous lengths without tapped or spliced sections. Such cords shall not be tacked, stapled, or fastened to woodwork or walls, nor will they be draped over pipes or other supports. All cords shall be approved by a recognized testing laboratory such as Underwriters Laboratories (U.L.), shall be constructed of #16 gauge or larger wire, and be grounded. Extension cords shall, at a minimum, be rated to carry 13 amperes (up to 1560 watts).

9.3 Appliance Usage

High wattage, portable electrical appliances (coffee pots, coffee makers, electric heaters, etc.) shall not be used with extension cords of any size. Surge protected strip cords may be used for office equipment, desk lamps, or other low wattage electrical appliances as required, provided the strip cord or circuit from the strip cord is not overloaded by the use of multiplier plugs.

9.4 Electrical Cord Protection

All electrical cords will be protected against mechanical damage and shall not be placed under rugs or carpets.

9.5 Overloading

Overloading and overusing electrical circuits and appliances is prohibited. Fuses shall not be bridged. Ground fault circuit interrupters (GFI or GFCI) receptacles and circuit breakers shall not be taped or wired into the open position.

9.6 Flammable Liquid, Clearance of Light Fixtures

Electrical equipment used near flammable liquids or gases shall be explosion proof. Clearance of 18 inches shall be maintained around light fixtures.

9.7 Coffee Makers

Electric coffee makers may be used if they are thermostatically controlled, approved by a recognized testing laboratory (Underwriters Laboratories - U.L. or other), properly maintained, and set on a noncombustible surface (ceramic tile). They shall be disconnected when not in use and cords removed from the floor. Timers may not be used.

9.8 Fuses, Switches, other Electrical Components

All fuses, switches, receptacles, and junction boxes shall be properly equipped with approved protective covers. Junction boxes and circuit breaker panels must not be blocked or obstructed (clearance minimum 36") and doors are kept in the closed position. Electric timers may not be used on appliances such as heaters or any other electrical equipment unless they are used in direct support of a specific research and development project. Timers will be of a commercial heavy duty type, 30 amps or more.

9.9 Portable Space Heaters

Portable space heaters must:

- Be placed so that their chance of being overturned is lessened
- Not be left on unattended
- Not be within contact with combustible materials
- Be plugged into an appropriate receptacles or adequate extension cord
- Be prohibited where the AHJ or PSFC declares

The AHJ shall be permitted to prohibit use of portable electric heaters in occupancies or situations where such use or operation would present an undue danger to life or property (NFPA 1 Section 11.5.3.1). Portable electric heaters shall be designed and located so that they cannot be easily overturned (NFPA 1 Section 11.5.3.2). All portable electric heaters shall be listed (NFPA 1 Section 11.5.3.3).

9.10 Compliance with National Electric Code (NEC)

Electrical installations, modifications, and safety must comply with OSHA regulations and the National Electric Code (NEC).

10 Smoking Control

10.1 Smoking Policy

Department of Interior (DOI) policy[14] prohibits smoking in government buildings, with exceptions for residential occupancies.

Safe smoking practices must meet http://www.nps.gov/policy/DOrders/DOrder50D.html and proper disposal of smoking materials are enforced as follows:

- Smoking is prohibited in all government buildings and government owned or leased vehicles. Smoking is also prohibited where posted.[15]
- Smoking materials must be extinguished before discarding.
- Smoking or striking matches or lighters will not be permitted in any building, structure, or room (including miscellaneous supply rooms, and machine shops) used for storage, repair, processing, testing, paint, evidence storage, fabrication, gasoline dispensing areas, or similar areas. Suitable metal receptacles and "NO SMOKING" signs will be posted at each entrance to a hazardous building or area.
- Ashtrays shall not be emptied into trash cans and smoking material shall not be discarded on floors. Ashtrays must be emptied into metal containers used for that purpose only.[16]
- Smoking is prohibited within 25 feet of the entrance to a public building.
- Smoking is prohibited within 50 feet of gasoline pumps and flammable material storage areas.
- Smoking is prohibited in all structures and ruins found in non-developed areas.

[14] Department of the Interior, Departmental Manual, Administrative Services, Part 310: General, Chapter 11: Smoking in Public Buildings
[15] 36 CFR 2.21
[16] 36 CFR 2.13(a)(5)

11 Wild Land Urban Interface (WUI)

See RM-18 Chapter 6 Wildland Fire Management for additional information.

11.1 Inspection Requirements

Where applicable, the Park will ensure wildland urban interface fire safety inspections are conducted and that an appropriate defensible space is provided around all structures. Historical structures are exempt from the defensible space requirement when the structure's cultural or esthetic value is threatened by removal of vegetation.[17]

11.2 Facility Gutters

Reserved

11.3 Vegetation Clearance

Facility Management shall ensure that vegetation is kept short around buildings, fuel tanks, gas pipes, control valves, parking areas, fences, and similar areas.

The NPS has adopted the ICC (International Code Council) 2006 International Urban- Wildland Interface Code (NPS 2006b, Chapter 10, Section H, p. 18). Contained in the ICC's code (Sections 603 and 604) are descriptions of urban-wildland interface area defensible space requirements and maintenance. Maintenance of the defensible space includes modifying or removing non-fire resistant vegetation and keeping needles, leaves, and other dead vegetative material regularly removed from around structures and roofs. The Code stipulates that the minimum requirement for defensible space around structures is 30 feet. Tree crowns should be pruned and maintained to a minimum of 10 feet horizontal clearance from structures and overhead electrical facilities. Tree limbs should be pruned to maintain a six foot clearance above the ground. High fire-hazard areas, flammable construction materials, topography, and fuels may require up to and possibly exceeding 100 feet of additional clearance space.

[17] See Appendix 35.9 –
NFPA 1: National Fire Code; 10.14 Combustible Vegetation.

12 Portable Fire Extinguishers

See RM-58 Section 5 Fire Extinguishing Systems and NFPA 10: Standard for Portable Fire Extinguishers for additional information.

12.1 Inspection Cycle

All portable fire extinguishers should be checked (inspected) on a monthly basis. Occupants of Park facilities, including Park housing, are responsible for monthly fire extinguisher checks.[18] The monthly check will include the following items:

1. The extinguisher is located in its designated place
2. There are no obstructions
3. The pressure gauge or indicator is in the operable range or position
4. The extinguisher feels full when hefted
5. The hose, nozzle and other parts are not damaged
6. The security pin and seal are in place

The PSFC will work with the most senior supervisor within a facility to identify one or more employees that will be responsible for conducting monthly fire extinguisher inspections.

Portable extinguisher inspections should be included in each facility's fire event plan. Supervisors shall make certain that fire extinguishers are inspected in their work area and each fire extinguisher's tag is marked with the date (month/year) and initials of the person conducting the inspection. Fire extinguishers that are unserviceable or defective shall be taken out of service and replaced immediately.

The PSFC will be responsible for fire extinguisher maintenance and replacement.

Annual Portable Fire Extinguisher Inspection/Maintenance

Per NFPA 10[19] and CFR 29 Part 1910.157[20] an annual inspection is required for all portable fire extinguishers. The PSFC is responsible for annual inspection and maintenance of fire extinguishers. A file shall be maintained that specifies fire extinguisher locations and maintenance intervals.

Annual inspections shall consist of a thorough examination of the fire extinguisher that is intended to ensure that a fire extinguisher will operate effectively and safely and to determine if physical damage or condition will prevent its operation. The inspections should determine if repair or replacement is necessary and if hydrostatic testing or internal maintenance is required. *Stored pressure extinguishers do not require an annual internal examination.*

Maintenance may be performed by a contractor or Park employee who is qualified, certified, and meets NFPA standards. A record of the annual inspection shall be kept that consists of the date, type of maintenance performed, and name of person or contractor performing the inspection.

12.2 Installation Requirements

[18] NFPA 10; Chapter 7 Inspection, Maintenance, and Recharging of Portable Fire Extinguishers; 7.1.1 Responsibility: "The owner or designated agent or occupant of a property in which fire extinguishers are located shall be responsible for inspection maintenance, and recharging."
[19] NFPA 10: Chapter 7, 7.3.1.1.1
[20] Code of Federal Regulations (CFR) 29 Part 1910.157(e) (3) (Fire Protection/Fire Extinguishers).

PFE installation is the responsibility of Facility Management and should be installed according to NFPA 10. Types, sizes, and locations are determined by occupancy and hazard. Portable fire extinguishers should be mounted according the manufactures recommendation or NFPA 10. Extinguishers cannot be placed on the floor or ground except when in use or removed for servicing.

12.3 Location Requirements

PFE should not be moved or relocated from their installed positions except for use in suppression of an incipient (early stage) fire, inspection, or servicing. PFE should not be used as door stops, clothes racks, or blocked by supplies or other material.

12.4 Usage Requirements

PFE should not be used for anything other than fire suppression.

12.5 Vehicle Requirements

Personnel that routinely operate the same vehicle should inspect the PFE in that vehicle as part of the monthly vehicle inspection. Vehicles that are part of a motor pool will be the responsibility of the person responsible for the motor pool. The same requirement applies to support equipment that has a PFE.

12.6 Obsolete types of portable fire extinguishers

The following types of PFE are considered obsolete and shall be removed from service:

- Soda acid
- Chemical foam (excluding film-forming agents)
- Vaporizing liquid (carbon tetrachloride)
- Cartridge-operated water
- Cartridge-operated loaded stream
- Copper or brass shell tanks (excluding pump tanks) that are joined by soft solder or rivets
- Carbon dioxide extinguishers with metal horns
- Solid charge–type AFFF extinguishers (paper cartridge)
- Pressurized water fire extinguishers manufactured prior to 1971
- Any extinguisher that needs to be inverted to operate
- Any stored pressure extinguisher manufactured prior to 1955
- Any extinguishers with 4B, 6B, 8B, 12B, and 16B fire ratings
- Stored-pressure water extinguishers with fiberglass shells (pre-1976)
- Dry chemical stored pressure extinguishers manufactured prior to October 1984 shall be removed from service at the next six-year maintenance interval or the next hydrostatic test interval, whichever comes first
- Any fire extinguisher that can no longer be serviced in accordance with the manufacturer's maintenance manual is considered obsolete and shall be removed from service
- The installation of new Halon® fire extinguishers or extinguishing systems is illegal. Existing Halon® systems and extinguishers can continue to be used as long as they are properly inspected, tested, and maintained.

12.7 Procurement and Replacement

Park personnel shall not purchase, install, or relocate portable fire extinguishers without the prior approval of the PSFC. The type and classification of PFE to be used in the Park shall be approved by the PSFC before being purchased.

The procurement, replacement, inspection and maintenance of portable extinguishers is the responsibility of the PSFC.

12.8 Personnel Training

The PSFC is responsible for coordinating portable fire extinguisher training. Fire extinguisher training will be made available on an annual basis.

All Park personnel capable[21] of utilizing PFE's are required to receive fire extinguisher training in accordance with 29 CFR 1910.157[22]. This includes NPS and tenant organizations. Training will familiarize employees with the general principles of fire extinguisher use, appropriate fire extinguisher selection, and the hazards involved with incipient/early stage firefighting.

Employees expected to use PFE will be provided initial training within 30 days of employment and at least annually thereafter. Training may be provided in a variety of ways and is not limited to classroom, demonstration, and printed or electronic media as long as OSHA requirements are fulfilled. Annual fire extinguisher training may be obtained through the DOI Learn on-line training portal.

Portable fire extinguisher training should periodically combine education with hands-on practice. Hands-on practice should include the actual discharging of fire extinguishers appropriate for the type of fires expected. Hands-on practice does not necessarily mean live fire training. However, when conducted, live-fire training must be conducted under qualified supervision in compliance with RM-58 requirements. Extinguisher training must be documented and maintained by the supervisor, Safety Manager, and/or PSFC.

[21] Personnel unable to utilize portable fire extinguishers due to physical, special needs or other limitations are excused from fire extinguisher training.

[22] http://www.ecfr.gov/cgi-bin/text-idx?SID=cc6076479957f168ae14681f53103765&node=29:5.1.1.1.8&rgn=div5#29:5.1.1.1.8.12.34.3

13 Fire Protection Systems

See NPS Management Policies Section 9.1.8, and RM-58 Section 4 & 5 for additional information.

13.1 Blockage of System Equipment

Fire alarm manual pull stations, fire extinguishers, sprinkler system risers, and alarm control panels or enunciators shall not be blocked. A three foot clear space shall be maintained around all fire protection system equipment.

13.2 Stored Material

Stored materials are kept a minimum of 18 inches from heat, flame, or smoke detection devices, and sprinkler heads. Clearance of 36 inches is provided when stack heights exceed 15 feet.

13.3 Tampering with Equipment

Tampering with installed fire suppression/detection systems is strictly prohibited.

13.4 Alterations

Any alternations or additions to a building which could affect the operation of any fire suppression/detection system must be approved by the Regional AHJ before work begins. All alterations or additions shall be completed by qualified personnel.

13.5 Exit Illumination

All exit illumination shall be tested and inspected visually on a monthly basis to ensure proper function. The exit signs shall not be painted, used to support decorations, or any function other than their intended use.

The PSFC will work with the most senior supervisor within a facility to identify one or more employees that will be responsible for checking exit illumination function.

13.6 Fixed Fire Protection System Maintenance

All fire protection systems shall be inspected annually or more frequently as required. All fire protection equipment must be maintained by qualified personnel per industry code compliant standards and proper recordkeeping should be kept on file with Facility Management.

System maintenance should be performed in accordance with NFPA 25 and 72 and RM 58. Documentation for system maintenance is found at: LINK (Job Plans and Forms) Fixed fire protection system inspection shall be the responsibility of Facility Management.

Facilities with fixed fire protection systems that are subject to seasonal closures and government shutdown must be prepared for continued systems maintenance during the closure period. Refer to Appendix 35.11 for additional information.

Parks with the following structural fire system assets must inventory those assets and enter specific system attributes[23] in FMSS. System attributes are captured as asset records of a structure's location record. Systems that are required to be inventoried are:

- Generator (supporting fire systems)
- Emergency Lighting

[23] As specified in the WASO Structural Fire Inventory Guidance (2013) document, available through the RSFM

- Fire Pump System
- Standpipe
- Smoke Alarm System
- Fire Sprinkler System
- Portable Fire Extinguishers
- Interior Door
- Smoke Management and Control System
- Fire Alarm Signaling System
- Fire Hydrant
- Fixed Fire Suppression System
- Exterior Door

13.7 New Installation(s)

New installation(s) of fixed fire protection systems must be approved by the AHJ and are subject to acceptance, testing and commissioning by qualified personnel. All plans and drawings shall be maintained in archival storage. Phone numbers and contact information for system monitoring stations shall be maintained and updated on an annual basis, or as change dictates.

14 Public Assembly Facility Requirements

14.1 Special Consideration

The potential for life and high property loss in public assembly facilities requires special actions to prevent fires.

14.2 Occupancy Load

The number of persons permitted in restaurants, conference rooms, meeting rooms, bars, and other public assembly facilities is only that number which can be safely evacuated in the event of a fire. The occupant load classification is determined by the Regional Structural Fire Manager per Chapter 7 of NFPA 101 (Life Safety Code).

The maximum number of occupants shall be posted above the doorway of the main entry that is used by the public. The maximum occupancy sign shall be of a design approved by the Regional Structural Fire Manager.

14.3 Established Procedures

Managers of public assembly facilities of greater than 50 people should establish and maintain procedures to ensure their employees have been trained and understand their fire prevention and protection responsibilities within the work environment.

Public assembly procedures should include quarterly drills of employees (building evacuation is not required) and the immediate training of newly-hired employees. All training should be documented and made available to the PSFC for review by the Regional Structural Fire Manager or other authorized personnel.

14.4 Written Designation

Managers of public assembly facilities, or assistants designated in writing, are responsible to make sure these facilities remain in a fire-safe condition at close of business. Designated personnel should conduct daily closing inspections and this requirement may not be delegated to janitorial personnel.

NOTE: The PSFC should maintain a list of names of all individuals that are authorized to make closing inspections in public assembly facilities. The list shall be kept up-to-date.

14.5 Decoration Requirements

Temporary decorations, the use of temporary lighting or special effects, or unusual arrangements in public assembly facilities require an inspection by the PSFC, or designee, prior to the event. Fire retardant decorations are permitted as long as the original packaging is marked as fire retardant and is available for inspection by the PSFC or designee. This inspection does not relieve the manager of his or her closing inspection responsibilities.

Live holiday decorations and other combustible vegetation (i.e.: Christmas trees, wreaths, and swag) shall be compliant with NFPA 1 (Uniform Fire Code): Chapter 10.14 (see Appendix 35.9). Live Christmas trees are not allowed in assembly, education, dormitory, and hotel occupancies. Electrical or other attached illumination systems shall not be allowed without the approval of the PSFC. Open flame is prohibited on all live vegetation within a structure.

14.6 Restaurant Requirements
Reserved

14.7 Kitchen Hood System Requirements

Managers of facilities where commercial or restaurant-type cooking is performed shall ensure all kitchen hood suppression systems are U.L. listed, installed, and maintained per NFPA 96 & 30 requirements by NFPA qualified personnel.

14.8 Requirements for Concessionaires
Reserved

15 Heating and Cooking Appliances

15.1 Attendance Requirements

The PSFC will work with the most senior supervisor within a facility to identify one or more employees that will be responsible for assuring that kitchen ranges, stoves, and manually operated heaters are not be left operating unattended.

15.2 Open Flame Restrictions

Electric, oil fired, or any other type of open flame heaters are not permitted or to be operated in areas where concentrations of fumes from flammable liquids or gases are present. All installations, changes, and repairs of heaters and ranges shall only be made by qualified personnel.

15.3 Cleaning

All cooking ranges, grills, etc., will be kept free of excessive grease. Each unit shall be thoroughly cleaned before the kitchen is closed daily.

15.4 Obstruction to Egress

Heating, cooking, or other service equipment will not be installed or operated so as to obstruct any means of egress, facilitate spread of fire or smoke through buildings, or otherwise create a hazard to occupants.

15.5 Hot Plate Requirements

Hot plates are discouraged. Open coil-type hot plates are prohibited.

15.6 Listing Requirements

Only approved, U.L. listed electrical space heaters are authorized for use in NPS facilities.

16 Open Flame Use and Fireplace

See NFPA 211 and RM-58 Section 16 for additional information.

16.1 Open Flame Policy

Use of open flame devices in assembly occupancies requires a permit and inspection by the PSFC or designee. All permit required open flame use will be conducted according to the procedures contained herein. Contracting officers shall become familiar with the requirements of this chapter and shall ensure that all permit required open flame use within their control meets these requirements.

Open flame devices will be permitted in the following situations, provided that precautions satisfactory to the PSFC are taken to prevent ignition of any combustible material or injury to occupants:

- For ceremonial or religious purposes.
- On stages and platforms where they are part of a performance.
- During conferences or temporary markets situated in assembly occupancies.

Examples of open flame devices include but are not limited to:

- Candles
- Oil lamps
- Forges
- Kilns
- Glassblowers
- Pyrotechnical devices
- Propane gas fired devices

Open flame devices do not include fireplaces or woodstoves that are used on a routine basis, are annually inspected by the PSFC, and maintained by Facilities Maintenance.

The person responsible for installation of open flame devices shall request a written permit from the PSFC, or designee, a minimum of 24 hours prior to installation and activation of open flame devices. The requestor shall provide the PSFC with the following information prior to issuance of a permit:

1. Type(s) of open flame devices to be utilized.
2. The date(s), time(s), and duration of the of open flame devices.
3. A diagram of the room in which the open flame devices will be used. The diagram shall include placement of booths, seating, tables, isles, fire extinguishers, and open flame equipment.
4. Training of personnel utilizing open flame devices.
5. Emergency response procedures and building evacuation.

A written letter (permit) from the PSFC or designee is required before installing or activating open flame devices. To avoid a delay in obtaining the permit, 24 hours advanced notice is required.

16.2 Restaurants

Reserved

16.3 Additional Precautions

The following precautions should be observed when using open flame devices:

- A written standard operating procedure should be in place for assuring open flame use is conducted safely and that facilities are left in safe condition prior to leaving areas used for open flame unattended.
- Installed fire suppression and detection systems are operational and properly maintained.
- All employees working around open flames or flame producing devices shall be trained in the proper use and operation of the device, emergency response procedures, and building evacuation.
- Open flames and flame-producing devices will be monitored constantly by a trained person.
- Fire extinguishers that are listed for the appropriate purpose shall be located within 30 feet of the area where open flames or flame-producing devices are in use.
- Candles shall be kept a minimum of four feet from combustible window treatments and wall or ceiling hangings.
- Fireplace openings will be covered with a fire screen when not used for cooking or similar demonstrations.
- Chimneys that serve active fireplaces or solid fuel burning stoves will be lined, provided with spark arrester, and maintained in good working order.
- Chimneys that serve active fireplaces or stoves will be inspected and cleaned annually by a competent person.
- The use of open flames either inside or outside assembly occupancies shall be extinguished prior to shutdown of the facility to ensure that the flame is completely extinguished.

16.4 Open Flames on Premises

Open flame fires, such as warming, camp, or bonfires that are outside of designated fire rings are prohibited except pursuant to the terms and conditions of a permit or in designated areas under such conditions as the superintendent may establish, in accordance with 36 CFR Sec 2.13.

17 Welding, Cutting, Brazing, and Related Permits

17.1 RM-58 Requirements[24]

All hot work operations should be conducted according to the procedures contained in RM 58 and 29 CFR 1910.252(a). Facility Management staff and Contracting officers shall become familiar with the requirements of this chapter and shall ensure that all hot work operations (i.e.; welding, cutting, brazing) within their control meet those requirements.

A written permit (See Appendix 33.7) from the PSFC, or designee, is required before starting welding, cutting, brazing, or soldering operations outside of shops or areas constructed and approved for that purpose. The hot work project supervisor shall obtain a written permit from the PSFC or designee. To avoid a delay in obtaining the required permit, 24 hours advanced notice is required.

17.2 Location of Work to be Performed

When possible, welding, cutting, and work with flame or spark producing equipment should be performed in welding shops or specially constructed rooms offering proper ventilation and fire protection.

17.3 Requirements of the Hot Work at Location

When welding operations must be performed in places other than welding shops, sheet metal guards, fire retardant blankets, or similar protection shall be used to prevent hot metal and sparks from falling on wooden floors, partitions, or combustible materials which cannot be removed.

17.4 Restrictions

The welding/cutting operations environment shall be free of flammable liquids and vapors. Flammable materials within a radius of 35 feet will be protected or removed.

17.5 Fire Watch Requirements

Fire watch procedures are implemented when welding activities are conducted within 35 feet of combustible materials or as directed by the responsible party, regardless of the protection provided. Fire watch is to be provided during and for 60 minutes (at 20 minute intervals) following the completion of any hot work activity. Where applicable, fire watch personnel shall sign the welding permit upon completion of duties. When the work continues for more than one day, the permit shall be signed daily.

17.6 Fire Extinguisher Requirements

Fire extinguishers with a minimum rating of 10:A – 60:B:C shall be provided by the personnel performing the work. The extinguishers shall be approved by the PSFC or designee.

17.7 Weld Gases and Requirements

Oxygen and acetylene cylinders must be equipped with flash back arrestors and be turned off when not in use. Acetylene cylinders must always be stored in the upright position and properly secured.

17.8 Requirement Application

[24] RM-58 Fire Code Compliance Section 4; Permits and Fire Safety During Construction

The requirements for welding, cutting, and brazing operations apply to all new construction and remodeling projects, but do not apply to fixed or permanent welding facilities (such as maintenance facilities) that are inspected on an annual basis.

17.9 Permits and Systems Requirement

Permits shall not be issued in structures where sprinkler systems and/or fire alarms systems are not in service. During construction and renovation projects, a building's automatic fire detection and suppression systems shall only be removed from service to the extent required to accomplish the work. Once the work requiring the systems to be removed from service is completed, the systems shall be returned to service immediately, even when the facility is unoccupied. If this is not possible, a 24-hour fireguard is required after welding, cutting, and open flame operations in facilities, or a written certification is required to be submitted to the PSFC that the facility is fire safe. The PSFC must be notified any time a system is removed from service and again when it is returned to service.

17.10 Permit Procedures

The procedure for obtaining a permit shall be:

- Facility Management staff or designee is authorized to issue the permit and conduct a worksite and equipment inspection prior to issuance of the permit.
- A worksite inspection shall be conducted prior to commencement of work. The inspection shall be conducted in accordance with RM-58 and OSHA 1910.252 to ensure the specified area is fire-safe.
- Failure of contractors to meet the required procedures shall result in revocation or denial of a permit. Contractors performing work without a permit shall be reported to the PSFC, Contracting Officer, and the Regional Structural Fire Management Officer.

17.11 Tar Kettles

When tar kettles are used, contractors shall follow these rules:

- Tar kettles shall not be operated on the roofs of buildings. Instead, the material must be pumped to the roof from ground level.
- Tar kettles shall not be transported with open flames.
- The use of any solid fuel or flammable liquid with a flashpoint under 100 degrees Fahrenheit is prohibited.
- At least one 20-pound dry chemical fire extinguisher with a rating of 20:A – 120:B:C shall be located within 30 feet of the tar kettle.
- Mops and other tools used for application of roofing materials must be stored away from buildings and combustibles.

18 Flammable/Combustible Liquids

18.1 Storage Requirements

Facility Management shall be responsible for maintaining flammable liquid storage and dispensing facilities. Petroleum, oil, and lubricant facilities include any area or building used for storing, dispensing, or handling any type of flammable or combustible liquid. Rules to observe in these areas or buildings include, but are not limited to, the following:

- All drums or tanks used for dispensing flammable liquids are properly bonded and grounded according to NFPA 30 (Flammable & Combustible Liquids Code).
- Storage of flammable liquids is according to NFPA 30. Only listed/approved areas, cabinets, and containers are permitted within NPS and contractor facilities.
- All dip tanks or cleaning vats which use combustible liquids are equipped with fusible links in such a manner that in case of fire, the cover closes automatically. When tanks are not in use, lids are kept closed.
- Spray painting is done only when there is adequate ventilation and in approved paint spray booths. Spray painting operations are performed according to OSHA and NFPA standards. Touch-up painting is performed carefully. The ESM, or designee, designates touch-up painting areas.
- Liquid fuels (e.g.: gasoline) shall never be used as cleaning solvents.
- Hoses for dispensing flammable liquids will be in good repair. Worn or damaged hoses and/or associated equipment are repaired or replaced.

18.2 Office and Residential Areas

- Store flammable and combustible liquids in accordance with NPFA 30
- Storage of Class I and II liquids inside office occupancies shall not exceed 25 gallons
- Storage of Class I and II liquids inside residential occupancies shall not exceed 1 gallon
- Keep Storage areas free of weeds, debris, and combustible materials not needed for storage
- Do not permit open flames and smoking in the storage area
- Plainly mark the contents on tanks and containers storing flammable and combustible liquids above ground and note: "Flammable-Keep Fire and Flame Away"
- Locate at least one portable fire extinguisher with at least 20-B rating 5-10 feet from any class I or II Storage
- Store class I and II liquids in approved safety cans
- Keep materials on hand to clean up spills and leakage quickly and safely
- Pour Class I liquids only in areas with adequate ventilation and no ignition sources

19 Fire Hydrants and Water Supply

See NFPA 14 & 25, NPS Management Policies 9.1.5.1, and RM-58 Section 4 for additional information.

19.1 Requirements for Shutting off Water Supply

Water mains and fire hydrants will not be shut off, nor will any maintenance be performed which interferes with the fire suppression water supply without first notifying the appropriate Fire Department and Facility Management representative.

19.2 Connections to Fire Hydrants

Non-emergency connection to fire hydrants is prohibited without prior approval from the U.S Navy or Guam Fire Departments. Only properly designed hydrant wrenches will be used.

19.3 Parking near Fire Hydrants

Parking within 15 feet of fire hydrants is prohibited.

19.4 Damage Reporting

Damage to fire hydrants must be reported immediately to the water purveyor.

19.5 Snow Removal Requirements

Not applicable

19.6 Hydrant Inspection, Testing, and Maintenance

Facility Management is responsible for fire hydrant inspection, testing, and maintenance.

All fire hydrants should be visually inspected and flushed annually. Each hydrant shall be opened fully and water flowed for not less than one minute and until all foreign material has cleared (NFPA 25: 7.3 Testing). A visual inspection should be made to determine the physical state of the hydrant, assure that the hydrant has not been damaged or is leaking, and assess the need for repainting.

The paint on all fire hydrants should be maintained free of cracks, chips, and fading. Fire hydrants shall be painted and color-coded in accordance with NFPA 291 (Recommended Practice for Fire Flow Testing and Marking of Hydrants) standards.

Hydrants shall be lubricated annually to ensure that all stems, caps, plugs, and threads are in proper operating condition (NFPA 25: 7.4 Maintenance).

All hydrant inspection, testing, and maintenance shall be conducted in accordance with the latest edition of NFPA 25: Inspection, Testing, and Maintenance of Water-based Fire Protection Systems.

19.7 Hydrant Fire Flow Testing

Facility Management shall be responsible for flow testing of hydrants. Competent and qualified personnel or contractors shall conduct all hydrant flow testing. Fire hydrants shall be flow tested to determine the internal condition of the piping at minimum 5-year intervals. All hydrant fire flow testing should be conducted in accordance with the latest edition of NFPA 291.

20 Fireworks

20.1 Park Policy

Using or possessing fireworks and firecrackers is prohibited, except pursuant to the terms and conditions of a permit or in designated areas under such conditions as the Superintendent may establish, in accordance with 36 CFR Sec. 2.38.

Freshwater Spit on July 4th. Only California approved fireworks may be used. All fireworks-related trash and debris must be properly disposed of.[25]

20.2 State Law Application[26][27]

Specifically Permitted

Per APA Std. 87-1, the following items are permitted: ground & hand-held sparkling devices, cylindrical & cone fountains, wheel & ground spinners, illuminating torch, flitter sparklers (morning glory) not exceeding 10" in length or ¼" in diameter, toy smoke device, party poppers and snappers. Fireworks for sale must appear on the approved list issued annually by the SFM office

Specifically Prohibited

Firecrackers, skyrockets, rockets, roman candles, chasers, all wire & wooden stick sparklers, surprise items, friction items, torpedoes, items resembling food, fireworks containing arsenic, phosphorus, thiocyanates magnesium (magnesium alloys permitted), mercury salts, picrates or picric acid, gallates or gallic acid, chlorates, (except those of alkali or earth metals), boron, titanium (except larger than 100 mesh), zirconium, gunpowder, and fireworks kits.

[25] Superintendent's Compendium Signed March 26, 2014
[26] http://www.americanpyro.com/assets/docs/State_Laws/ca13.pdf
[27] http://osfm.fire.ca.gov/strucfireengineer/strucfireengineer_fireworks.php

21 Explosives

Reserved.

21.1 Storage of Powders and Other Explosives

Using, possessing, storing, or transporting explosives, blasting agents, or explosive materials is prohibited, except pursuant to the terms and conditions of a permit. When permitted, the use, possession, storage, and transportation shall be in accordance with, applicable federal and state laws, and NFPA codes and standards.

A letter permitting the storage, transportation, and utilization of blasting agents and explosives shall be obtained from the PSFC or his/her designee.

The Visitor and Resource Protection Division should establish a standard operating procedure that specifies the amount and method for storing and securing ammunition.

21.2 Signage

Containers, structures, and vehicles storing powders and other explosives shall be properly labeled in a manner that provides a visual indication of where and whether or not explosives are actually being stored.

22 Compressed Gases

See NFPA 52 & 55 for additional information.

This chapter concerns compressed gases that are stored in cylinders and utilized by Facility Management, Science, Visitor & Resource Protection, contractors, and Commercial Services' maintenance personnel.

The following guidelines provide an overview for safe use of compressed gases. Questions regarding the compressed gas safety should be referred to the Safety Officer or PSFC.

22.1 Separation of Stored Cylinders

Oxygen cylinders, in storage, will be separated from fuel gas cylinders or combustible materials, including oil or grease, by a minimum distance of 20 feet or by a non-combustible barrier at least five feet high with a fire rating of one-half hour.

22.2 Securing Requirements

All compressed gas cylinders must be secured in place by a chain or strap of noncombustible material.

22.3 Valve Protection

Cylinders, when not in use, must have the protective cover installed.

22.4 Cylinders and Arrestors

Oxygen and acetylene cylinders must be equipped with flashback arrestors and the equipment must be turned off when not in use. Acetylene cylinders must always be stored in the upright position and properly secured.

22.5 Signage

All cylinders shall be labeled with proper "Empty", "In Use", and "Full" signs.

23
24 Vehicle Parking and Storage

24.1 Parking Restrictions at Hydrants

Vehicles and/or trailers may not be parked in any manner that would preclude access by fire vehicles to all sides of buildings, in fire lanes, or within 15 feet of fire hydrants and sprinkler/standpipe connections. Improperly parked vehicles are subject to removal and impoundment by law enforcement personnel.

24.2 Parking Restrictions to Fuel Storage

Vehicles may not be parked within 50 feet of any fuel storage area, except in designated parking spaces or for the purpose of loading and unloading.

24.3 Designated Building

Motor vehicles shall not be parked or stored inside any building unless the building is designed for that purpose. Persons requesting designated areas must submit a request to the PSFC, or designee, with a drawing of the proposed parking area. All requests must specifically identify the reason, location, number of vehicles, and type of vehicle. Commercial vehicle storage is noted on pre-fire plans.

24.4 Storage of Fuel Powered Equipment

Fuel powered equipment such as lawn mowers and other equipment should not be stored in any occupied commercial building, other than interior vehicle parking areas, without notifying the PSFC or designee.

24.5 Enforcement

Improperly parked vehicles may be subject to removal and impoundment by law enforcement personnel.

25 Hazardous Materials Incident

See NPS Management Policies Section 8.2.5.2 & 9.1.6.2 and RM-58 Section 10 for additional information.

25.1 Method of Containment

Methods, procedures, and equipment used to contain, dike, store, transport, divert, dissipate, or monitor hazardous material (HAZMAT) spills, whether liquid, powered, granulated, or solid; or hazardous material releases must be in strict accordance with:

- CFR 1910.120
- NFPA Standard 472
- International Fire Service Training Association (IFSTA) manuals
- Park standard operating procedures
- Any other codes, manuals, and/or standards deemed appropriate by the park Safety or hazardous materials officer

The Park Division, contractor, or transporter responsible for the release shall immediately contact Facility Management and shall be responsible for mitigation and cleanup.

A HAZMAT spill that is imminently or immediately dangerous to the environment, life, or health shall be considered an emergency and shall receive a response from a fire department trained to respond to these types of incidents. Park staff shall isolate the spill area and deny entry to the area until the appropriately trained personnel are on scene. The area to be isolated shall be determined by referring to the current edition of the U.S. Department of Transportation Emergency Response Guidebook.

25.2 Employee Solicitation

Under no circumstances shall Park staff solicit on-scene assistance from any other Park employee or Park partner for spills and releases unless that individual has been:

- Trained to the requirements listed in 29 CFR 1910.120 and NFPA 472,
- Certified in the specific operation to be performed, and
- Issued the appropriate safety gear for the specific operation.

25.3 Use of Protective Gear

Under no circumstance are a firefighter's personal protective equipment (turnout gear and/or self-contained breathing apparatus) to be used in lieu of approved Level I, Level II, or Level III entry suits and associated equipment.

25.4 Visitor Solicitation

Under no circumstances shall an NPS employee solicit assistance from a visitor.

25.5 Initial Training Requirements

All initial and recurring hazardous materials response training shall conform to the requirements of Director's Order #30B: Hazardous Spill Response Training, 29 CFR 1910.120, and NFPA 472.

25.6 Certification Requirements

Reserved

25.7 HAZMAT Clean-up Disposal

Facility Management shall develop a list of licensed hazardous materials clean up and disposal companies that are under contract with the Park, other NPS unit, or governmental agency.

26 Fire Apparatus Right of Way

26.1 Obstruction of Fire Lanes
Obstructions which delay fire vehicles are prohibited. Fire station exits are fire lanes and are not to be used for parking.

26.2 Passing Requirements
Vehicles shall not pass or attempt to pass any structure fire apparatus responding to an alarm, nor follow closer than 500 feet from such apparatus.

26.3 Yield to Emergency Vehicles
Fire vehicles responding to emergencies will always use visual and audible warning devices. Upon seeing or hearing these devices, vehicle drivers yield the right of way by safely steering to the right side of the road as far as possible and bringing the vehicle to a full stop.

26.4 Emergency Vehicle Driver Compliance
Reserved

26.5 Fire Hose
Personnel will not drive vehicles over fire hoses unless hose ramps are deployed, or authorized to do so by the senior fire officer or incident commander.

26.6 Alternate Routes
If primary or secondary routes are closed due to construction, weather, natural disaster, etc., alternate routes shall be established, and Engine Company personnel, fire department(s), and other emergency services shall be informed of the alternate route.

27 Contract Management

27.1 Pre-construction Meetings

The Park Structure Fire Coordinator (PSFC), a Facility Management Division representative, and/or a Contract Specialist shall attend all preconstruction or pre-performance meetings with the project/contract manager to coordinate fire prevention requirements with contractors.

27.2 Construction Safety Policies

All construction projects, new construction, or maintenance and repair activities are monitored to ensure compliance with NPS fire prevention policies. When fire hazards, unsafe practices, or conditions are found, the PSFC, Project Manager, or Contracting Officer advises the responsible Contractor to take corrective action.

27.3 New Construction Policy

New construction requires review and approval by the Regional Structural Fire Program Manager. All new construction will be in accordance with the most current version of NFPA codes and standards and NPS policy. New buildings, where required by NFPA 101, are required to have automatic sprinkler system protection and automatic fire detection that meets the requirements of the NFPA standards and codes and RM-58. An exemption procedure for this requirement is explained in RM-58.

27.4 System Requirements per RM-58

Any type of alteration (renovation, modification, reconstruction, or addition) requires the review and approval by the AHJ to ensure that it meets NPS requirements. Alterations may provide opportunities to correct fire safety deficiencies, especially in older buildings. Any building undergoing alteration should be considered for automatic sprinkler system protection and automatic fire detection installed, if they are not already in place and in good working condition. An exemption procedure for this requirement is explained in RM-58. Any construction to modernize or renovate a structure shall not diminish the fire safety features of the facility below the level(s) required for new construction.

27.5 Change of Occupancy

Buildings changing from one occupancy classification to another require a Fire and Life Safety Plan Review and approval by the AHJ. Buildings undergoing a change in occupancy must have both automatic sprinkler system protection and automatic fire detection.

27.6 Demolition Work

Proposed demolition work shall require review by the RSFM. The following items related to demolition require review by the PSFC or designee:

- Hot work
- Temporary wiring
- Utility hazards
- Maintaining functional fire protection systems
- Fire extinguisher placement and use
- Storage of flammable and combustible liquids
- Storage of flammable gases
- Other precautions as required

27.7 Final Construction Documents

The typical design process has three phases: design, construction documents, and as-builts. Plans and specifications for each of the three phases shall be submitted to the RSFM for review. Certification must be indicated on the drawings provided by the contractor's fire protection engineer that the drawings and specifications are in compliance with NPS structural fire requirements.

28 Partners, Contractors, and Concessionaires

28.1 Procedures

All Contracting Officer/Manager/Specialist(s) are responsible for enforcing procedures set forth in this instruction and the following:

- Ensure all employees (including subcontractors) receive an initial contractor's fire prevention briefing prior to commencing work.
- Comply with procedures set forth in the Contractors Fire Prevention Guide, contact specifications, and this instruction to include inspecting all work areas to ensure that they are left in a clean and fire-safe condition.
- Keep the PSFC, or designee, informed of project status and any fire protection issues.

28.2 Concessions Contracts

Reserved

28.3 Partners

Redwood National Park has partnerships with California State Parks {Jedediah Smith Redwoods State Park, Del Norte Coast Redwoods State Park, and Prairie Creek Redwoods State Park}, the Redwood Parks Association (RPA), and the Government Services Administration (GSA).

The nature of these partnerships insists that, for the purpose of structural fire protection, the owner of each building must be responsible. It is recommended that any changes to this arrangement be a written contract between the parties involved.

29 Employee Housing

See RM-58 Section 16 and NPS Management Plan Section 9.4.3 for additional information.

29.1 Occupant Responsibilities

Occupants are responsible for fire prevention in their quarters. Occupants should ensure that dependents are familiar with fire prevention instructions, know how to report fires, and know how to evacuate their quarters. The Housing Manager will ensure that occupants receive a fire prevention orientation within 30 days of occupancy of the residence.

29.2 Inspection Requirements for Smoke Detectors

The occupant of each NPS or commercial services' employee-housing unit is additionally responsible for testing and inspecting all battery powered and hard-wired smoke detectors. Testing and inspection shall be conducted according to the manufacturer's published instructions. Testing and inspection includes inspecting the physical appearance of the detector(s) for evidence of damage, abuse, tampering, or other indications which may render the device(s) inoperative. All problems concerning smoke detectors are reported to the Housing Manager and Facility Management, or the Commercial Services' safety office.

29.3 Inspection Requirements for Fire Extinguishers

The occupant of each NPS or commercial services' employee-housing unit is additionally responsible for conducting a monthly inspection (check) of all fire extinguishers in the residence.[28] Inspections shall comply with RM-58, Chapter 6, Structural Fire Prevention Requirements. All problems with fire extinguishers shall be reported to the Housing Manager and Facility Management, or the Commercial Services' safety office.

Commercial rechargeable dry chemical fire extinguishers are not required in private residences. Single-use (non-rechargeable) residential fire extinguishers are available and authorized. Single-use (non-rechargeable) residential fire extinguishers do not require annual inspection and maintenance by employees or contractors, but only the monthly inspection referenced in 30.3, above.

29.4 Carbon Monoxide Detectors

Carbon monoxide (CO) detectors or alarms shall be provided in all permanent and transient residential facilities that contain fuel-burning appliances and in units that have a closed attached garage that is not mechanically ventilated. Carbon monoxide alarms or detectors shall be installed outside of each separate dwelling unit sleeping area in the immediate vicinity of the sleeping rooms and on every occupancy level of a dwelling unit, including basements. CO detectors or alarms are not required in attics or crawl spaces.

The occupant of each NPS or commercial services' employee-housing unit is additionally responsible for testing and inspecting all battery powered and hard-wired CO detectors or alarms. Testing and inspection shall be conducted according to the manufacturer's published instructions. Testing and inspection includes inspecting the physical appearance of the detector(s) for evidence of damage, abuse, tampering, or other indications which may render the device(s) inoperative. All problems concerning CO detectors are reported to the Housing Manager and Facility Management, or the Commercial Services' safety office.

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[28] NFPA 10; Chapter 7 Inspection, Maintenance, and Recharging of Portable Fire Extinguishers; 7.1.1 Responsibility: "The owner or designated agent or occupant of a property in which fire extinguishers are located shall be responsible for inspection, maintenance, and recharging."

29.5 Inspection Requirements for Residential Fire Sprinkler Systems

The occupant of each NPS employee-housing unit that is equipped with a residential fire sprinkler system is additionally responsible for the following monthly inspections. All problems with the sprinkler system are to be reported to the Housing Manager and Facility Management.

- Visual inspection of all sprinkler heads to ensure that they are not blocked
- Check to ensure that control valves are in the open position
- Check and record water pressure (if equipped with gauges)
- Check for visible damage to system and leaks
- Sprinkler heads shall not be painted and shall be protected (bagged) when painting.

30 Vacant Buildings

30.1 Seasonal and vacant Buildings and Premises

Reducing the fuel load in a vacant building is critical because, in the event of a fire, little or no combustible contents should contribute to the spread of the fire. Vacant buildings are subject to vandalism and arson and must be kept secure by placing barricades on all doors, windows, and other openings. Any vacant building, premises, or portion thereof must have all combustible storage, waste, refuse and vegetation removed (NFPA 1 Section 10.13.1). All fire protection systems must be maintained in service (NFPA 1 Section 10.13.1.1).

31 Self-Help Construction Projects

Self-help construction projects are do-it-yourself projects conducted by any park personnel without the assistance of facilities management personnel or a contractor. The Park does not allow Park personnel to conduct self-help construction projects.

31.1 Coordination Requirements
Reserved

31.2 Electrical Work Requirements
Reserved

31.3 Prevention Criteria
Reserved

31.4 New and Existing Fire Protection Systems
Reserved

31.5 Violations
Reserved

32 Post Fire Incident Reviews

32.1 Post Fire Incident Review Members

In general, all fire responses should receive an after action review (AAR) and critique by the Park and responding agencies. Responses that resulted in the loss of life, injury to a firefighter, or the utilization of fire suppression tactics shall be reviewed. A serious accident investigation team (SAIT) response will be initiated for any event that results in a work related injury or fatality of an NPS or other agency employee or volunteer. See 30.4 (below) for additional information.

At a minimum, the review shall consist of representatives of the responding agency, PSFC, and Safety Coordinator. The procedures in 30.2 (below) are to be followed when initiating a cause and origin (fire) investigation. Additional information can be found in RM-58, Chapter 16, Structural Fire Investigations.

32.2 Fire Investigation Requirements

All structural fires or explosions that occur on Park property must be investigated. Proper determination of their cause is an essential part of preventing future incidents, as well as compiling meaningful fire-related statistics. All structure fire incidents are to be investigated in accordance with RM 50B.

Procedures for launching a Serious Accident Investigation Team (SAIT) investigation:

- The law enforcement or NPS staff will notify the Superintendent of all fires or explosions involving structures and contents.
- The Superintendent will contact the Deputy Regional Director and Regional Structural Fire Manager.
- Working with the Park, the RSFM will make a determination as to which assisting agencies will be contacted and how extensive the investigation should be.
- A structural fire review team will be mobilized for any incident that results in a fatality or a significant dollar loss, that is considered controversial or unusual, or at the request of the Park Superintendent.
- Law enforcement personnel or their designees must maintain the chain of evidence by securing the scene of any fire or explosion until fire investigator(s) arrive. All structural fires and explosions must be treated as potential crime scenes and handled accordingly.

32.3 Fire Investigation Resources

The Park may conduct its own in-house investigation if it has qualified investigative personnel, but must receive prior approval from the RSFM. The resources below are listed in order of their overall priority as contacts and may be available for investigative assistance.

- Local fire investigators
    - A local fire investigator may assist if the local investigator is a full-time investigator and has testified in court as an expert witness.
- U.S. Department of Treasury, Alcohol Tobacco, Firearms, and Explosives (ATF)
    - Requests made to the ATF for assistance in investigating significant structural fire incidents must be coordinated with the Regional Structural Fire Manager.

32.4 Serious Accident Investigation

A serious accident is defined as an event that results in a work related injury or fatality of an employee (NPS, other agency under NPS jurisdiction, or contractors and volunteers directly supervised by NPS), and/or incidental damage to NPS property of $250,000 or more. All serious

accidents shall be investigated as per RM-50B Section 1. Section 1 of RM-50B (Occupational Safety & Health) identifies the requirements for incident reporting and criteria for launching a serious accident investigation.

33 Bulk Fuel Storage and Fueling Stations

33.1 Inspection, Testing, and Maintenance

All bulk fuel storage and vehicle fueling stations that dispense gasoline, diesel, propane, and compressed natural gas shall be inspected, tested, and maintained in compliance with the current edition of:

- NFPA 30: Flammable and Combustible Liquids Code
- NFPA 30A: Code for Motor Fuel Dispensing Facilities and Repair Garages
- NFPA 54: National Fuel Gas Code
- NFPA 58: Liquefied Petroleum Gas Code

Facility Management (commercial services' contractor or operator) shall be responsible for bulk fuel storage and fueling station maintenance.

Annual inspections shall be conducted by the PSFC, or designee, and must be documented on the NPS Annual Fire and Life Safety Building Inspection Form or other approved form. Deficiencies must be reported to the manager of record who is responsible for correcting any identified deficiencies that pose a fire hazard.

33.2 Smoking

Smoking and open flame shall be prohibited within 50 feet of any bulk fuel storage or fueling facility.

33.3 Fire Protection

All bulk fuel storage facilities and vehicle fueling stations shall have, at a minimum, one (1) – 20 pound, 20:A-120:B:C rated fire extinguisher mounted in a conspicuous location not more than 15 feet from bulk storage fill valves or lids or vehicle fueling pumps. The portable fire extinguisher shall be inspected on a monthly basis in accordance with NFPA 10.

33.4 Housekeeping

Bulk fuel storage facilities and vehicle fueling stations shall be kept clear of all trash, debris, and storage, and shall be used only for the intended purpose.

34 Fire Engine Company Operations

34.1 Park Fire Engine Company Organizational Requirements
Reserved

34.2 Engine Company Training
Reserved

34.3 Staffing Plan
Reserved

34.4 Pre-incident Plans
Reserved

34.5 Personal Protective Equipment
Reserved

34.6 Emergency Operations
Reserved

34.7 Incident Management
Reserved

34.8 Outside Agency Response

Redwood National and State Parks (RNSP) does not have a structural fire brigade. RSNP depends on CAL Fire, Crescent City Fire and Smith River/Hiouchi Volunteer Departments that meet NFPA Standards in the north.

The southern portion of the park depends on California Emergency Management Agency Mutual Aid Plan. Local Volunteer Fire Departments have been resistant to enter into a mutual aid agreements with the park.

Any agreement must be accordance with: RM-58, Chapter 18, Agreements and Contracts, and shall contain detailed written documentation that specifies responsibilities regarding pre-incident planning, operational procedures, command and control, and clear authorities and communications. The fire agency shall be made aware of any special needs and concerns that the Park may have. These needs and concerns shall be communicated before an emergency situation arises and must be kept current.

35 Appendices

35.1 Common NPS Structural Fire Management Plan Terms

Authority Having Jurisdiction (AHJ): The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure relative to fire protection.

Emergency Action Plan: Designated actions that employers and employees must take to ensure safety from fire and other emergencies within a facility. Regulations for emergency action plans are covered in OSHA Standard 29 CFR 1910.38.

Engine Company: A group of people organized to engage in rescue, fire suppression, and related activities.

Facility Manager: Responsible for managing fire-safe facilities and equipment under their jurisdiction.

Fire Brigade: An industrial unit trained to respond to and mitigate fires and emergencies in the industrial setting.

Fire Hazard: A fire hazard is any situation, process, material, or condition that, on the basis of applicable data, can 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.

Fire Deficiency: A fire deficiency requires a subjective analysis to determine the priority required for the corrective action. They are prioritized according to their seriousness and assigned a code. These codes are used to input the most serious deficiencies into the park's Facilities Management Software System (FMSS) for identification and correction.

Fire Prevention: Measures directed at reducing the likelihood of fire and/or avoiding the inception of fire.

Fire Prevention Plan: This plan describes how to prevent fires in a facility. Included are employer and employee responsibilities in preventing fires, descriptions of the major worksite fire hazards, requirements for maintaining equipment to prevent or control fire, steps in controlling fuel source hazards, housekeeping controls to prevent hazardous accumulations of combustible and flammable materials, waste and residues, employee training on hazards of materials and processes, and practices for maintenance of heat producing equipment and systems. Regulations for fire prevention plans are covered in OSHA Standard 29 CFR 1910.38.

Fire Protection: All measures taken to reduce the burden of fire on quality of life. Fire protection includes all aspects of fire protection engineering, fire prevention, fire suppression, hazardous materials response, and related rescue operations.

Fire Protection Condition Assessment (FPCA): A comprehensive survey of park buildings, conducted by a fire protection engineer or other approved person. The FPCA process identifies fire life safety deficiencies related to the structures.

Fire Suppression: All measures involved in controlling and extinguishing fires. Fire suppression shall include all activities performed at the scene of a fire incident and/or training

exercise(s) that expose fire department members to the dangers of heat, flame, smoke, or other products of combustion, explosion, or structural collapse.

Hazard Mitigation: Activities taken to isolate eliminate, or reduce the degree of risk to life and property from hazards, either before, during, or after incident.

Interim Controls: Temporary measures pending permanent corrective action.

Memorandum of Agreement / Automatic aid Agreement / Memorandum of Understanding: A pre-arranged agreement developed between two or more entities to render assistance to the parties of the agreement. Consult Director's Orders #20 for further explanation of the terms and conditions of each.

National Fire Protection Association (NFPA): Publishes the National Fire Codes that serve as the standard for NPS fire protection and prevention programs.

Occupancy: Establishes purpose of the structure. NFPA 101[29] provides guidance for defining the various usages. The established occupancy directs required fire protection for the specified usage.

Park Fire Inspector: Found in parks with significant structural fire risk. This position is responsible for structural fire inspections and code enforcement.

Park Structural Fire Coordinator: Provides direct operational management and supervision of the park's structural fire management program. The PSFC is responsible for drafting and updating the Structure Fire Management Plan as needed.

Plan Review: Review of proposed plan(s) of a building, or portion of a building, for fire protection system, fire assembly, or equipment. The plan can include specifications, cut sheets, and other engineering data. The term includes sketches, site plans, floor plans, shop drawings, and blueprints. Reviews are done by fire protection engineers, fire protection specialists, or state or local fire marshal's office; however, this must be coordinated with the Regional Structural Fire Management Officer.

Pre-fire Plan: Advance planning of firefighting operations at a particular location, taking into account all factors that will influence firefighting tactics. A standard form used to outline fire protection features and emergency response goals at a given facility and carried aboard responding apparatus.

Program Review: A process conducted by the Superintendent with guidance from the Regional Structural Fire Management Officer and other subject matter experts. It is generally a precursor to writing a structural fire management plan.

Standard Operating Procedures / Guidelines (SOPs or SOGs): These written organizational directives establish or prescribe specific operational or administrative methods to be followed routinely, or provide guidance for the performance of designated operations or actions; in some jurisdictions also known as standard operating guidelines.

[29] NFPA 101: Life Safety Code, 2009, National Fire Protection Association, Quincy, MA.

Structural Fire Management Plan (SFMP): This plan describes the measures taken for fire prevention, preparedness, and response and recovery actions pertaining to a park service unit. Superintendents are required to develop a SFMP and submit a copy to the Regional Structural Fire Management Officer for review.

Target Hazard: A structure whose building materials and/or contents are combustible, whereby if a fire were to start, a significant loss or damage to the structure or its contents or loss of life could occur. Examples may be: 1) Any structure that is actively used for any purpose, including seasonally used structures and structures used solely for storage. 2) Any structure that has significance to the park history and or mission. 3) Any structure that if lost or damaged would represent a significant cultural or historic loss or have a negative impact to the parks continuity of operations.

35.2 Functional Requirements by Position

The following positions have responsibility for implementation of the Structural Fire Management Plan at Redwood National Park.

Regional Structural Fire Manager
The Regional Structural Fire Manager (RSFM) is assigned to carry out the day-to-day duties of overseeing the structural fire protection programs at each park. The Regional Director typically delegates Authority Having Jurisdiction (AHJ) duties to this person. As the delegated AHJ they have direct oversight and responsibility for all structural fire matters within the region.

Park Superintendent
The Superintendent shall have overall responsibility for the implementation and management of the Park's Structural Fire Management Program and approval of the Park SFMP. The Superintendent will appoint in writing a Park Structural Fire Coordinator (PSFC).

Park Chief Ranger
Reserved

Park Structural Fire Coordinator
The Superintendent delegates the responsibilities of the PSFC in writing. The PSFC is responsible for ensuring the Park's structural fire program complies with RM-58 and with the Park's structural fire management policies and procedures. Assistance is available to the PSFC from the Regional Structural Fire Manager.

The PSFC will administer the Park's fire prevention and response program to ensure:

- Annual fire and life safety building inspections are conducted in all target hazards.
- Inspection, testing, and maintenance of fire protection systems and equipment are conducted.
- Emergency evacuation plans and procedures are implemented.
- Emergency response plan is implemented.
- Required fire drills are conducted.
- Fire prevention education and training is conducted.
- Plans for building construction and alterations to existing buildings are reviewed by the Regional Authority Having Jurisdiction (AHJ).
- Plans for installation and modification of fire protection systems are reviewed by the Regional AHJ.
- Fire safety is provided during building construction, alterations, and demolition.
- Fire cause and origin investigations are conducted.
- Engine Company vehicular access is provided.

Park Chief Officer (Battalion Chief)
Reserved

Park Fire Prevention Officer
Reserved

Park Fire Inspector
Reserved

Engine Company Officer (Captain)
Reserved

Driver/Operator
Reserved

Structural Firefighter
Reserved

Support Firefighter
Reserved

Law Enforcement Ranger Activities
Reserved

Park Safety Officer
Reserved

Park Facility Management Division
The Facility Management Division must assure that the Park's facilities personnel follow the requirements of RM-58 as it refers to fire suppression systems, extinguishers, construction, and occupancy change. The assigned Facility Management manager will oversee the establishment of contracts for the inspection, maintenance, and testing of all fire suppression, detection systems, and fire extinguishers.

Park Management, through Facility Management staff is responsible for the mitigation of identified fire and life safety deficiencies and to ensure compliance with NPS adopted codes and standards during facility design and construction, alteration, rehabilitation, and renovation. The Facility Management Division, in conjunction with the Contracting Office, ensures all proposed construction and remodel projects are designed by qualified fire protection specialists and/or engineers and are submitted to the Regional Structure Fire Manager (AHJ) for review and approval.

Park Housing Officer
Reserved

Other Park Positions
Refer to RM-58 for definitions of other Park positions.

35.3 Structural Fire Management Plan Responsibilities

Structural fire management responsibilities are assigned to the following Park personnel and divisions:

- **Superintendent**
  - The development, maintenance, and adoption of Park-wide structural fire protection policies and procedures
  - Directs and delegates implementation of the Park's structural fire protection policies through the Park's Division Chiefs
- **Park Structural Fire Coordinator (PSFC)**
  - Recommends revisions to the Park's structural fire protection policies, procedures, and guidelines
  - Facilitates the completion of annual fire prevention inspections on NPS structures
  - Ensures that plans for building construction or changes in new and existing structures and fire protection systems are reviewed by the RSFM
  - Provides or coordinates employee fire prevention and fire extinguisher training
  - Ensures that facility emergency plans, exit requirements, and fire event procedures are properly prepared and fire drills are conducted in commercial structures
  - Manages fire cause determination and investigation
  - Coordinates requests for assistance from the RSFM
- **Facility Management**
  - Manages inspection, testing, and maintenance (ITM) of all built in and fixed fire protection systems
  - Manages and maintains portable fire extinguisher ITM program
  - Manages hot work policy and permits
  - Oversees self-help construction projects
  - Manages and maintains bulk fuel storage, fueling stations, and compressed gas fire safety programs and systems
  - Oversees hazardous materials clean-up and disposal
- **Other Division Chiefs**
  - Implement Park policies regarding facility safety, smoking, housekeeping, cooking, open flame use, public assemblies, facility egress, and contract management as identified.

35.4 NPS Annual Fire Prevention Inspection Form

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NPS ANNUAL FIRE AND LIFE SAFETY BUILDING INSPECTION

This inspection must be completed and retained by the PSFC and the Facility Management Division.

Inspector(s) Name:_____Date: _____

Park: _____Building: _____

FMSS asset ID number: _____

Instructions: place an "X" in the appropriate box and where a violation is identified (box N) and write in the comment section location of violation with comments on corrective action.

Life Safety

Y	N	NA	
☐	☐	☐	Ability to exit door is not hampered by locking devices (padlocks, chains, etc.).
☐	☐	☐	Stairwell and hallway fire doors are kept in the closed position and operate properly.
☐	☐	☐	Stairwells and evacuation routes are free and clear of obstructions.
☐	☐	☐	Fire escapes and stair(s) appear to be in good condition.
☐	☐	☐	Emergency lighting units operate when tested.
☐	☐	☐	Exterior emergency exit routes are clear, free from snow and ice or other obstructions, or trip and fall hazards.
☐	☐	☐	Illuminated exit signs are all lit, not blocked, and can be easily seen.
☐	☐	☐	Smoking regulation is enforced and "No Smoking" signs are posted.
☐	☐	☐	Emergency evacuation drills are conducted at least twice per year, documented, and on file.
☐	☐	☐	All exterior exits, emergency exits, and fire escapes afford unobstructed passage to a safe area.

Fire Protection Equipment

Y	N	NA	
☐	☐	☐	Portable fire extinguishers are mounted properly, accessible, fully charged, and sealed with current inspection tag
☐	☐	☐	A space of at least 18 in. is kept between sprinkler heads and material
☐	☐	☐	If fire hose cabinets exist, hose has been removed and replaced with an appropriately sized fire extinguisher.
☐	☐	☐	If fire detection and notification alarm system exist, the system is tested annually by a licensed person(s), and Park maintains required forms and records.
☐	☐	☐	Fire alarm notification system can be heard and seen in all parts of the

building.

☐ ☐ ☐ Sprinkler control valves are open and locked or remotely supervised.

☐ ☐ ☐ If a sprinkler system exists, system is tested annually by a licensed person(s) and Park maintains all required forms and records.

☐ ☐ ☐ If a booster fire pump and/or backflow preventer exist, they are tested annually by a licensed person(s) and Park maintains all required forms and records

☐ ☐ ☐ Kitchen hood fire suppression systems are inspected and tested twice annually by a licensed person(s) and Park maintains all required forms and records.

☐ ☐ ☐ Sprinkler tanks, piping, and supports appear in good condition.

☐ ☐ ☐ Fire hydrants and fire department connections (FDC) are visible, accessible, and operable.

☐ ☐ ☐ Personnel receive annual training on proper use of portable fire extinguisher and attendance records are maintained.

Housekeeping and Storage

Y N NA

☐ ☐ ☐ Rubbish is not left to accumulate in excessive quantities; trash receptacles are emptied regularly.

☐ ☐ ☐ Storage areas are kept clean and orderly; cleaning materials are safely stored.

☐ ☐ ☐ Combustible materials are not stored in attics and crawl spaces.

☐ ☐ ☐ Aisles are unobstructed.

☐ ☐ ☐ Electrical, utility closets, boiler rooms, and sprinkler riser/fire pump rooms are free and clear of any storage.

☐ ☐ ☐ Grounds surrounding the buildings are clear of accumulation of combustible materials and brush.

☐ ☐ ☐ Fire service access is maintained clear.

☐ ☐ ☐ Woodworking equipment dust collectors are functioning adequately and collector bins are emptied regularly.

☐ ☐ ☐ Grounds surrounding the facility are clear of accumulations of combustible material and brush.

☐ ☐ ☐ Fire service access roads are clear and accessible.

Hazardous Material

Y N NA

☐ ☐ ☐ Emergency procedures are posted in case of accidental spill.

☐ ☐ ☐ Flammable/combustible liquids are kept in approved safety containers.

☐ ☐ ☐ Soiled rags are kept in an approved self-closing waste container.

☐ ☐ ☐ Material Safety Data Sheets (MSDS) are available.

Electrical Hazards

Y N NA

☐ ☐ ☐ Building lighting arrestors are in good condition.
☐ ☐ ☐ Extension cords are not being use as permanent wiring.
☐ ☐ ☐ Electrical cords are not damaged or show signs of being repaired.
☐ ☐ ☐ Electrical panels do not show signs of overheating.
☐ ☐ ☐ Electrical circuits in panels are labeled.
☐ ☐ ☐ Junction boxes have cover plates installed.
☐ ☐ ☐ Light fixtures do not flicker or show signs of overheating.
☐ ☐ ☐ Electrical appliances have warning lights and are unplugged when not in use.
☐ ☐ ☐ Power tools are unplugged when not in use.

Assembly Areas

Y N NA

☐ ☐ ☐ Occupant load is posted and enforced
☐ ☐ ☐ Standing and sitting in aisles is prohibited.

Comment Section:

Enter the deficiency in the space provided, also indicate if the deficiency was corrected, or what steps are being taken to correct deficiencies.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

35.5 Report of Hazard Form (Form RH-1)

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Report of Hazard Form
(Form RH-1)

Date Observed: _____

Hazard Observed/Reported by: _____
(Print Name)

Telephone No.: _____ Email Address: _____

Reported to Supervisor: Yes ☐ No ☐ _____
(Print Name)

Building Tenant: _____

Received by Fire Prevention
Date: _____
By: _____
Hazard Tracking Number: _____
Received by Safety Office
Date: _____
By: _____

REPORTING EMPLOYEE AND SUPERVISOR SIGNATURES BELOW. Reporting employee is urged to report hazards to their building's safety coordinator and supervisor. Should reporting employee wish not to divulge their name to their supervisor the reporting employee may send this report directly to or call the Park Structural Fire Coordinator.

Area where hazard was noticed:

_____

_____

The Following Hazard Was Noticed:

_____

_____

_____

The Potential Risk Is As Follows:

_____

_____

_____

The Following Action Is Recommended:

_____

_____

_____

Hazard Corrected: Yes ☐ No ☐

Corrected by: _____
(Print Name)

Supervisor Reported To: _____
(Print) (Signature)

Reported By: _____
(Print) (Signature)

35.6 Facility Fire Prevention Checklist

Facility Fire Prevention Checklist

Daily

- **Exits**
  - ❑ Unlocked
  - ❑ Clear of obstructions
  - ❑ Stairwells kept clear of combustibles – no storage under stairwell
- **Housekeeping**
  - ❑ Trash removed
  - ❑ Oily rags properly stored
  - ❑ Flammable liquids properly stored
  - ❑ Fire sprinkler heads kept clear of stacked or stored materials (3 feet in all directions)
- **Electrical Equipment**
  - ❑ Equipment used only for its intended use
  - ❑ Extension cords are proper size
- **Heating and Cooking Appliances**
  - ❑ Kept clean
  - ❑ Attended when in use
  - ❑ Turned off after use/hours

Monthly

- **Fire Extinguishers**
  - ❑ Visually inspected – tag marked with date and initials
- **Exit Signs**
  - ❑ Illuminated exit signs checked monthly to ensure proper function
  - ❑ Inspection recorded with date and initials

Semi-annually

- **Fire Drill**
  - ❑ Facility fire/evacuation drill conducted twice per year
  - ❑ Drills are recorded with date and list of participants

Annually

- **Fire Event Procedure**
  - ❑ Fire event procedure reviewed with all staff members
  - ❑ Review recorded with date and list of participants

35.7 Hot Work Permit (Form HW-1)

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Hot Work Permit
(Form HW-1)

Hot Work Permitting
Hot work shall only be performed in ***designated*** or ***permit-required*** areas. Before hot work operations begin in a non-designated location, a signed Hot Work Permit, issued by the Park Structural Fire Coordinator or his/her designee, shall be issued.

Designated Area
A designated area shall be a specific area designed for, or approved by the Park Structural Fire Coordinator or his/her designee for, such work. A designated area can be a maintenance shop or a detached outside location that is of noncombustible or fire-resistive construction, essentially free of combustible and flammable contents, and suitably segregated from adjacent areas. All designated areas shall have been inspected and approved by the Park Structural Fire Coordinator or his/her designee.

Permit-Required Area
A permit-required area shall be an area that is made fire safe and authorized by the issuance of a signed NPS Hot Work Permit. The Hot Work Permit shall be signed by Park Structural Fire Coordinator or his/her designee.

Non-permissible Areas
Hot work **shall not be allowed** in the following areas:

(a) In areas not authorized by the Park Structural Fire Coordinator or his/her designee
(b) In sprinklered buildings while such protection is impaired
(c) In the presence of explosive atmospheres (that is, where mixtures of flammable gases, vapors, liquids, or dusts with air exist)
(d) In explosive atmospheres that can develop inside unclean or improperly prepared drums, tanks, or other containers and equipment that have previously contained such materials
(e) In explosive atmospheres that can develop in areas with an accumulation of combustible dusts

GENERAL

Park:_____ District: _____ Building: _____ Floor:_____

Work to be done: _____

_____

Special precautions: _____

_____

PERSON PERFORMING WORK

Contractor Business Name: _____

Contractor Representative: _____

Contractor Contact Number: _____

NPS Employee's Name: _____

NPS Office: _____

NPS Employee's Contact Number: _____

CHECK

Work area and all adjacent areas to which sparks and heat might have spread (including floors above and below and on opposite side of wall(s) were inspected every 20 minutes for 1 hour after the work was completed and were found fire safe.

ATTENTION

Before approving any hot work permit, the Park Structure Fire Coordinator or his/her designee shall inspect the work area and confirm that the proper precautions have been taken to prevent fire, in accordance with the NPS Hot Work Permit Form (Form HW) and the NPS Hot Work Policy.

PRECAUTIONS

- ❑ Sprinklers in service
- ❑ Hot work equipment in good repair

WITHIN 35 FEET OF HOT WORK AREA

- ❑ Floors swept, clean of combustibles
- ❑ Combustible floors wetted down, covered w/ damp sand or other shields in place
- ❑ All wall and floor openings covered

WORK ON WALLS OR CEILINGS

- ❑ Combustibles moved away from opposite side of wall

WORK ON ENCLOSED EQUIPMENT (tanks, containers, ducts, dust collectors etc.)

- ❑ Equipment cleaned of all combustibles
- ❑ Containers purged of all flammable vapors

FIRE WATCH

- ❑ To be provided during and 60 minutes after operation
- ❑ Supplied with a fully charged and operable fire extinguisher
- ❑ Trained in use of equipment and activating fire alarm system

FINAL CHECK

- ❑ To be made every 20 minutes for 60 minutes after completion of any operation unless fire watch is provided

Is a fire watch required? Yes ☐ No ☐

The location where the work is to be done has been examined, necessary precautions taken, and permission is granted for this work.

Permit Issue Date: _____ Permit Expires: _____

Park Structure Fire Coordinator or Designee: _____

Signature: _____ Date: _____

35.8 National Park Service – Policy on Hot Work Permits

This standard shall provide guidance for persons, including outside contractors and property managers, who manage, supervise, and perform hot work.

This standard shall cover provisions to prevent loss of life and property from fire or explosion as a result of hot work in institutional, commercial, and industrial operations.

This standard shall cover the following hot work processes:
(a) Welding and allied processes
(b) Heat treating
(c) Grinding
(d) Thawing pipe
(e) Powder-driven fasteners
(f) Hot riveting
(g) Similar applications producing a spark, flame, or heat

This standard shall **not** cover the following:
(a) Candles
(b) Pyrotechnics or special effects
(c) Cooking operations
(d) Electric soldering irons
(e) Design and installation of gas cutting and welding equipment covered in NFPA 51, Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes
(f) Additional requirements for hot work operations in confined spaces
(g) Lockout/Tag out procedures during hot work
(h) Torch-applied roofing covered in NFPA 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations

The provisions of this document shall be considered necessary to provide a reasonable level of protection from loss of life and property from fire and explosion. They shall reflect situations and the state-of-the-art prevalent at the time the standard was issued.

Unless otherwise noted, it shall not be intended that the provisions of this document be applied to facilities, equipment, structures, or installations that were existing or approved for construction or installation prior to the effective date of the document, except in those cases where it is determined by the authority having jurisdiction that the existing situation involves a distinct hazard to life or adjacent property.

Definitions
(a) Authority Having Jurisdiction: The organization, office, or individual responsible for approving equipment, an installation, or a procedure.
(b) Hot Work: Any work involving burning, welding, or similar operations that is capable of initiating fires or explosions.
(c) Management: All persons, including owners, contractors, and so on, who are responsible for hot work operations.
(d) Permit: A document issued by the authority having jurisdiction for the purpose of authorizing performance of a specified activity.
(e) Park Structure Fire Coordinator (PSFC): The individual with the proper training and designated by management to authorize hot work. The PSFC cannot be the hot work operator.
(f) Shall: Indicates a mandatory requirement.
(g) Welding and Allied Processes: Those processes such as arc welding, oxy-fuel gas welding, open-flame soldering, brazing, thermal spraying, oxygen cutting, and arc cutting.

Responsibility for Hot Work
Park Management shall be responsible for the safe operations of hot work activity.

Park Management shall ensure that all individuals involved in the hot work operations, including contractors, are familiar with the provisions of this policy. These individuals shall be trained in the safe operation of their equipment and the safe use of the process. These individuals shall have an awareness of the inherent risks involved and understand the emergency procedures in the event of a fire.

The PSFC shall advise all contractors about site-specific flammable materials, hazardous processes, or other potential fire hazards.
The PSFC shall advise all contractors with regard to flammable materials or hazardous conditions.
The PSFC in conjunction with park management shall be responsible for the safe operation of hot work activities.

The PSFC shall determine site-specific flammable materials, hazardous processes, or other potential fire hazards present or likely to be present in the work location.

The PSFC shall ensure the protection of combustibles from ignition by the following means:
(a) Ensure the work is moved to a location free from combustibles.
(b) If the work cannot be moved, ensure the combustibles are moved to a safe distance or have the combustibles properly shielded against ignition.
(c) Ensure hot work is scheduled such that operations that could expose combustibles to ignition are not started during hot work operations.

If (a), (b), or (c) cannot be met, then hot work shall not be performed. The PSFC shall determine that fire protection and extinguishing equipment are properly located at the site.

Where a fire watch is required, the PSFC shall see that the fire watch is available at the site.

Where a fire watch is not required, the PSFC shall make a final checkup every twenty minutes for one hour after the completion of hot work operations to detect and extinguish possible smoldering fires.

Hot Work Operator
The hot work operator shall handle the equipment safely and use it as follows so as not to endanger lives and property.
(a) The operator shall have the PSFC approval before starting hot work operations.
(b) The operator shall cease hot work operations if unsafe conditions develop and shall notify management, the area supervisor, or the PSFC for reassessment of the situation.

Fire Watch
(a) The fire watch shall be aware of the inherent hazards of the work site and of the hot work.
(b) The fire watch shall ensure that safe conditions are maintained during hot work operations.
(c) The fire watch shall have the authority to stop the hot work operations if unsafe conditions develop.
(d) The fire watch shall have fire-extinguishing equipment readily available and shall be trained in its use.
(e) The fire watch shall be familiar with the facilities and procedures for sounding an alarm in the event of a fire.

Fire Prevention Precautions
Permissible Areas
Hot work shall be allowed only in areas that are or have been made fire safe. Hot work shall be performed in either designated areas or permit-required areas.

Designated Area
A designated area shall be a specific area designed or approved for such work, such as a maintenance shop or a detached outside location that is of noncombustible or fire-resistive construction, essentially free of combustible and flammable contents, and suitably segregated from adjacent areas.

Permit-Required Area
A permit-required area shall be an area that is made fire safe by removing or protecting combustibles from ignition sources.

Non-permissible Areas.
Hot work shall not be allowed in the following areas:
(a) In areas not authorized by management
(b) In sprinklered buildings while such protection is impaired
(c) In the presence of explosive atmospheres (that is, where mixtures of flammable gases, vapors, liquids, or dusts with air exist)
(d) In explosive atmospheres that can develop inside unclean or improperly prepared drums, tanks, or other containers and equipment that have previously contained such materials
(e) In explosive atmospheres that can develop in areas with an accumulation of combustible dusts

Hot Work Permit
Before hot work operations begin in a non-designated location, a written hot work permit by the permit a PSFC shall be required.

Before a hot work permit is issued, the following conditions shall be verified by the PSFC
(a) Hot work equipment to be used shall be in satisfactory operating condition and in good repair.
(b) Where combustible materials, such as paper clippings, wood shavings, or textile fibers, are on the floor, the floor shall be swept clean for a radius of 35 ft. Combustible floors (except wood on concrete) shall be kept wet, be covered with damp sand, or be protected by noncombustible or fire-retardant shields. Where floors have been wet down, personnel operating arc welding or cutting equipment shall be protected from possible shock.
(c) All combustibles shall be relocated at least 35 ft. (11 m) horizontally from the work site. If relocation is impractical, combustibles shall be protected with fire-retardant covers or otherwise shielded with metal or fire-retardant guards or curtains. Edges of covers at the floor shall be tight to prevent sparks from going under them, including where several covers overlap when protecting a large pile.
(d) Openings or cracks in walls, floors, or ducts within 35 ft. (11 m) of the site shall be tightly covered with fire-retardant or noncombustible material to prevent the passage of sparks to adjacent areas.
(e) Conveyor systems that might carry sparks to distant combustibles shall be shielded.
(f) If hot work is done near walls, partitions, ceilings, or roofs of combustible construction, fire-retardant shields or guards shall be provided to prevent ignition.
(g) If hot work is to be done on a wall, partition, ceiling, or roof, precautions shall be taken to prevent ignition of combustibles on the other side by relocating combustibles. If it is impractical to relocate combustibles, a fire watch on the opposite side from the work shall be provided.
(h) Hot work shall not be attempted on a partition, wall, ceiling, or roof that has a combustible covering or insulation, or on walls or partitions of combustible sandwich-type panel construction.
(i) Hot work that is performed on pipes or other metal that is in contact with combustible walls, partitions, ceilings, roofs, or other combustibles shall not be undertaken if the work is close enough to cause ignition by conduction.
(j) Fully charged and operable fire extinguishers that are appropriate for the type of possible fire shall be available immediately at the work area. If existing hose lines are located within the hot work area defined by the permit, they shall be connected and ready for service, but shall not be required to be unrolled or charged.
(k) If hot work is done in close proximity to a sprinkler head, a wet rag shall be laid over the head and then removed at the conclusion of the welding or cutting operation. During hot work, special precautions shall be taken to avoid accidental operation of automatic fire detection or suppression systems (for example, special extinguishing systems or sprinklers).

Based on local conditions, the PSFC shall determine the length of the period for which the hot work permit is valid.

The area shall be inspected by the PSFC at least once per day while the hot work permit is in effect to ensure that it is a fire-safe area.

Fire Watch
A fire watch shall be required by the PSFC when hot work is performed in a location where other than a minor fire might develop, or where the following conditions exist.
(a) Combustible materials in building construction or contents are closer than 35 ft. (11 m) to the point of operation.
(b) Combustible materials are more than 35 ft. (11 m) away but are easily ignited by sparks.
(c) Wall or floor openings within a 35-ft (11-m) radius expose combustible materials in adjacent areas, including concealed spaces in walls or floors.
(d) Combustible materials are adjacent to the opposite side of partitions, walls, ceilings, or roofs and are likely to be ignited.

A fire watch shall be maintained for at least one hour after completion of hot work operations in order to detect and extinguish smoldering fires.

Authority Having Jurisdiction
The phrase authority having jurisdiction is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the commanding officer or departmental official may be the authority having jurisdiction.

Park Structure Fire Coordinator (PSFC)
This individual is permitted to be, among others, the supervisor, foreperson, property owner or representative, or health and safety administrator. The PSFC is aware of the fire hazards involved and is familiar with the provisions of this standard.

Management should ensure that the contractor has evidence of financial responsibility, which can take the form of an insurance certificate or other document attesting to coverage or responsibility.
Alternate methods to hot work should be considered where practical.

An inspection shall be made once every twenty minutes for one hour after the completion of hot work to detect and extinguish possible smoldering fires. The PSFC should be alert for circumstances that can require an extension of the final inspection interval.

For additional information on cutting and welding of containers that have held flammable materials, see NFPA 327, Standard Procedures for Cleaning or Safeguarding Small Tanks and Containers Without Entry, and ANSI/AWS F-4.1, Recommended Safe Practices for the Preparation for Welding and Cutting Containers and Piping.

Additional consideration should be given when performing hot work in areas near the storage of large quantities of exposed, readily ignitable materials such as bulk sulfur, baled paper, or cotton. For additional information on welding and cutting in storage areas, refer to NFPA 231, Standard for General Storage; NFPA 231C, Standard for Rack Storage of Materials; NFPA 231D, Standard for Storage of Rubber Tires; NFPA 231E, Recommended Practice for the Storage of Baled Cotton; and NFPA 655, Standard for Prevention of Sulfur Fires and Explosions.

When hot work is performed at an elevated level, it should be noted that the sparks or slag can fall at a trajectory and land further than 35 ft. (11 m) horizontally from a point directly under the hot work operator.

It is advisable that the permit should be issued for a maximum period of 24 hours.

35.9 NFPA 1 – National Fire Code; 10.14 Combustible Vegetation

10.14 Combustible Vegetation.

10.14.1 Combustible vegetation, including natural cut Christmas trees, shall be in accordance with Section 10.14.
10.14.1.1 Christmas tree placement within buildings shall comply with Table 10.14.1.1.

10.14.2 In any occupancy, limited quantities of combustible vegetation shall be permitted where the AHJ determines that adequate safeguards are provided based on the quantity and nature of the combustible vegetation.

10.14.3* Provisions for Fire Retardance for Artificial Vegetation.
10.14.3.1 Artificial vegetation and artificial Christmas trees shall be labeled or otherwise identified or certified by the manufacturer as being fire retardant.
10.14.3.2 Such fire retardance shall be demonstrated by each individual decorative vegetation item, including any decorative lighting, in an approved manner.

10.14.4 Vegetation and Christmas trees shall not obstruct corridors, exit ways, or other means of egress.

10.14.5 Only listed electrical lights and wiring shall be used on natural or artificial combustible vegetation, natural or artificial Christmas trees, and other similar decorations.

10.14.6 Electrical lights shall be prohibited on metal artificial trees.

10.14.7 Open flames such as from candles, lanterns, kerosene heaters, and gas-fired heaters shall not be located on or near combustible vegetation, Christmas trees, or other similar combustible materials.

35.10 Cooperative Agreements

(Insert copy of structural fire response agreement(s) here)