

CHAPTER 36 - FIRE PROTECTION

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CHAPTER 36 - FIRE PROTECTION

A. INTRODUCTION

The purpose of this Chapter is to provide the fire protection criteria for all Smithsonian staff, visitors, collections, research projects, and buildings.

B. CHAPTER-SPECIFIC ROLES AND RESPONSIBILITIES

1. Safety Coordinator:
 - a. Implement the fire protection program in his/her facility.
 - b. Submit Form SI-2773, "OEDC Project Submittal Request," (See [SI Facilities Project Management Handbook](#), Figure C.6) to initiate the correction of fire protection deficiencies and installation of necessary fire suppression, protection, and detection systems. (Copies must be submitted to OSHEM).
 - c. Ensure that a fire investigation report, as required by this Chapter and [Chapter 7, "Injury/Incident Reporting and Investigation"](#), of this *Manual*, is completed and forwarded to OSHEM whenever a fire has occurred. See [Attachment 1, Fire Investigation and Reporting](#) of this Chapter, for specific fire incident details.
 - d. Ensure fire system impairment procedures are being followed, documented, and tracked.
 - e. Ensure fire regulations are followed.
 - f. Ensure SI staff is properly trained in how to report a fire and evacuate the premise.
2. Office of Protection Services (OPS)
 - a. Note and report fire and life safety hazards, including fire system impairments, identified during routine daily inspections to the facility Safety Coordinator/Building Manager.
 - b. Provide fire watch in areas where fire systems are out of service in accordance with Section 4 of this Chapter and [Attachment 2, "Fire Watch"](#), of this Chapter.
 - c. Maintain updated documents of the locations of fire detection and automatic suppression systems and their controls, utility services, such as water and gas cut-off valves, and electrical switch gear rooms.
 - d. Know the types and locations of fire hazards within the building.

- e. Assist the fire department by showing or directing them to the location of an emergency.
 - f. Ensure disaster management plans include fire drill and evacuation requirements, and are updated yearly.
 - g. Ensure OPS control room operators are properly trained on the fire evacuation procedures and protocol for the facility that they are working.
 - h. Ensure officers are properly trained in the various classes of fire extinguishers and their proper usage in fighting small fires.
3. Building Manager
- a. Expedite repairs of fire protection and life safety systems to minimize their time out of service – see Attachments 3 through 7 of this Chapter, which describe system impairment procedures.
 - b. Ensure Flammable/Combustible liquid storage rooms are appropriately labeled and identified.
 - c. Maintain updated documents of the locations of fire detection and automatic suppression systems and their controls, utility services, such as water and gas cut-off valves, and electrical switch gear rooms.
4. Supervisors
- a. Enforce housekeeping and storage requirements in their areas to ensure fire protection devices, fire extinguishers, emergency exit pathways and doors are visible and free from obstruction.
 - b. Ensure that metal containers with closed metal lids are provided for process related waste in the following locations:
 - (1) Conservation and registration areas;
 - (2) Packing and unpacking areas;
 - (3) Exhibit production shops
 - c. Submit impairment permit prior to conducting activities that may cause the activation of a fire detector (e.g. hot work, painting, sanding). See [Attachment 6](#) and [Attachment 7](#) of this Chapter, which describe fire alarm impairment details.
5. Employees
- a. Immediately report any fire.

- b. Immediately evacuate the building, via either the primary or secondary exit routes, upon activation of the building's fire alarm system and report to the designated assembly location.
 - c. Maintain clear access to fire equipment including: standpipe hose connections, fire sprinkler control valves, fire extinguishers, and fire alarm pull stations.
 - d. Keep fire doors closed at all times unless held open by a releasing device tied to the fire alarm system.
 - e. Isolate oily rags and similar materials from other wastes by placing them in approved metal containers with self-closing lids.
 - f. Only use portable fire extinguishers if trained.
6. Office of Engineering, Design and Construction

This office shall maintain, as a part of the "General Requirements" specification, a description of requirements for "Existing Fire Protection Systems." A part of this specification section shall include a description and requirements for a fire watch to be provided in the construction area when an existing fire protection or life safety system is impaired. The impairment fire watch may be provided by the contractor or by OPS with appropriate contract funding. Where required, fire watch must be provided in accordance with Section 4 of this Chapter and [Attachment 2, "Fire Watch"](#), of this Chapter.

C. PROGRAM COMPONENTS

1. **Design of new, and modifications to existing building, exhibits, and facilities** shall be in accordance with the requirements of Attachments 8 through 18 of this Chapter, which describe specific fire protection design criteria. Design is to incorporate redundant fire protection concepts, employing active fire protection through automatic sprinkler protection, passive fire barrier features, and limiting combustible fuel load within the SI buildings in order to control and minimize potential losses to SI staff, collections, mission, and infrastructure.
2. **Specialized Operations**
 - a. Flammable/combustible liquids storage, use, and handling and other hazardous and specialized operations: See [Chapter 19, "Chemical Handling and Storage"](#), and [Chapter 38, "Fire Prevention"](#), of this *Manual* for specific requirements for storage, dispensing, and safe handling practices.
 - b. Hot work operations involving open flames or smoke producing processes: See [Chapter 14, "Hot Work Management and Permit"](#)

[System](#)", of this *Manual* for specific requirements prior to performing hot work operations.

- c. Combustible materials (e.g., lumber, plastic, mounting boards, etc.) shall not be stockpiled in the shop areas, but stored in designated storage areas. These areas shall be separated from adjacent spaces by 1 hour fire-rated construction and protected with fire suppression systems designed specifically for the fuel load and storage configuration.
- d. Computer Rooms:
 - (1) Clean agent or approved water fire extinguishers are to be provided in computer rooms or research laboratories with highly sensitive/high value electronic equipment. A sign shall be located adjacent to each fire extinguisher to plainly indicate the type of fire for which it is intended. Dry chemical fire extinguishers shall not be permitted.
 - (2) Trash shall be kept in non-combustible containers.
 - (3) Combustible storage, such as paper stock, inks, unused recording media, within the computer room shall be restricted to the minimum necessary for efficient operation, and shall be stored in closed metal cabinets.
- e. Kitchens:
 - (1) Instructions for manually operating any automatic fire extinguishing system shall be posted conspicuously in the kitchen and shall be reviewed quarterly with employees by the supervisor. New employees shall receive instruction on or before their first day of kitchen work. Written records of such training shall be kept on site and a copy forwarded to the Safety Coordinator. See also [Attachment 18, "Kitchen Fire Suppression Systems"](#), of this Chapter.
 - (2) Commercial cooking equipment shall not be used when:
 - (a) A ventilation hood provided with a "water wash" system is not functioning, or
 - (b) The fire suppression system requires servicing, or
 - (c) The volume of air vented is less than that required by the cooking equipment manufacturer.
 - (3) All commercial grease hood and ducts shall meet the requirements of NFPA 96 – Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, and NFPA 17 – Standard for Dry

Chemical Extinguishing Systems or NFPA 17A – Standard for Wet Chemical Extinguishing Systems (as appropriate).

- (a) Commercial grease hoods and ducts shall be protected by a fire suppression system.
- (b) Grease ducts shall be protected by approved products, designed with clearance reduction methods and installed as fire rated enclosures.
- (c) Kitchens using deep fat fryers or other appliances utilizing combustible liquids shall have the appropriate size class K fire extinguishers located within 30 ft of such appliances.

f. Marine Operations:

- (1) Marine craft shall comply with United States Coast Guard regulations and NFPA 302 – Fire Protection Standard for Pleasure and Commercial Motor Craft.
- (2) Marine craft weighing 300 or more tons shall be inspected by the United States Coast Guard. Marine craft longer than 15 feet shall be inspected by a local marine authority.
- (3) All boats and docking areas shall be equipped with portable fire extinguishers. The number and type of extinguishers shall be as specified in NFPA 302.
- (4) Smoke detectors shall be provided on boats having sleeping quarters.
- (5) All inboard-powered boats with an enclosed engine compartment shall have a fire suppression system in the engine space.
- (6) Water supply for fire protection in marinas, piers, and boatyards shall be provided in accordance with the latest editions of NFPA 13 – Standard for the Installation of Sprinkler Systems, NFPA 14 – Standard for the Installation of Standpipes and Hose Systems, and NFPA 24 – Standard for the Installation of Private Fire Service Mains and Their Appurtenances.
- (7) Standpipes shall be provided for piers or marine docks where the hose lay from the responding fire apparatus is in excess of 150 feet long per NFPA 303 – Fire Protection Standard for Marinas and Boatyards, or where deemed necessary by OSHM.

g. Utility Rooms:

Doors to utility rooms containing mechanical or electrical equipment (e.g., transformer, switchgear, mechanical, and elevator machine rooms) shall remain closed and locked.

3. Storage Occupancies

a. Materials shall be handled and stored in accordance with [Chapter 13, "Materials Handling and Storage"](#), of this *Manual*. Additional fire protection storage considerations include:

- (1) Aisles between storage racks (excluding compact storage units and library stacks) shall be a minimum of 36 inches wide. Aisles shall be kept clear of debris and equipment at all times.
- (2) Storage shall be kept at least 18 inches below sprinkler head deflectors. (Storage may exceed this height where OSHEM determines that the sprinkler system coverage is not adversely affected.)
- (3) Material storage shall not exceed the capabilities of the fire sprinkler system available.
- (4) A minimum 4 inches clear and unobstructed space shall be maintained in transverse and longitudinal flue spaces in storage racks.

b. Collection Storage:

- (1) Within storage rooms, collections and high-value storage shall be kept in metal files or cabinets where possible. Items of extreme value shall be stored in fire-resistive vaults, containers, or safes.
- (2) Catalogs and other high priority archival material should be digitized, microfiche, or copied. Originals should be stored in metal cabinets in a separate room from the duplicates. Irreplaceable material should be stored in fire-resistive safes or filing cabinets.
- (3) In open storage areas, the most valuable collections should be stored near, but not on the floor, to minimize risk of fire and smoke damage.
- (4) Fluid-based, flammable liquid collections (i.e. "wet collections") shall be stored in areas approved by OSHEM and in accordance with [Chapter 38, "Fire Prevention"](#) (Storage of Hazardous Materials section), of this *Manual*. These may include, but are not limited to, warehouse areas such as flammable liquid warehouse areas, flammable liquid cut-off

rooms, flammable liquid storage lockers, and approved flammable liquid cabinets.

- (5) Weapons and munitions collections must be inspected by qualified explosives ordnance experts to insure the munitions have been declared inert (free of explosive material).
- (6) Collection/Artifacts that may present an explosion or self-ignition hazard (e.g., munitions, cellulose nitrate film) shall be stored in locations approved by OSHEM. Every attempt should be made to “safe” the collection or artifact prior to storage, in order to mitigate the potential hazard. The collection or artifact must be evaluated by OSHEM and the owner on a case-by-case basis, via risk-assessment, to determine the stability, general condition, and any adverse ramifications if the collection/artifact is exposed to fire or other unfavorable conditions. Storage areas for the collections may include, but are not limited to:
 - (a) Magazines (permanent, portable, and/or fire resistant);
 - (b) Fire-rated rooms;
 - (c) Areas with special provisions, such as explosion venting; or
 - (d) Remote buildings/facilities/areas that will not expose major facilities or other collections if the artifact/collection become unstable.
- (7) Collections/Artifacts that may contain fuel (e.g., match and lighter collection, vehicles that contain fuel) shall be stored in locations approved by OSHEM. Every attempt shall be made to eliminate the fuel(s) from the collection prior to storage, in order to mitigate the potential hazard.

4. Fire Protection Equipment and Systems (Operation and Reliability)

- a. Water Based Fire System, Fire Alarm, and Special Hazard Fire Suppression Impairments. See Attachments 3 through 7 of this Chapter, which establish a means to control fire protection system impairments, whether scheduled or as a result of an unforeseen emergency. Fire protection systems include any systems that detects, extinguishes, and limits the extent of fire damage or enhances life safety. A fire watch as defined in [Attachment 2, “Fire Watch”](#), of this Chapter shall be required when systems are out of service. A fire watch is required when:
 - (1) the impairment results in a complete loss of detection or suppression in the impairment area; **and**

- (2) the area out of service includes a complete zone, entire floor, or the entire building.

OSHEM shall be contacted for guidance when the requirement for a fire watch is not clear.

- b. Utility Impairments Affecting Fire Protection Aspects. See Attachments 3 through 7 of this Chapter, which establish the requirements for planned and emergency utility outages that affect fire protection.
- c. SI owned and leased facilities that have impaired fire protection systems covering areas larger than or equal to an entire floor (or equivalent for vertically zoned buildings) shall not continue to be used or occupied by the general public or staff, unless interim measures such as a fire watch have been approved by OSHEM and measures instituted by the Building Manager.
- d. Gaseous or Kitchen Chemical Fire Suppression Systems. SI staff members that occupy a space or work with kitchen cooking equipment protected by a gaseous or other chemical fire suppression system shall be aware of and follow the posted instructions pertaining to the system (See [Attachment 18, "Kitchen Fire Suppression Systems"](#), or [Attachment 19, "Gaseous Fire Suppression Systems"](#), of this Chapter).
- e. Water Distribution Systems for Fire Protection
 - (1) Exterior fire department connections to the building sprinkler and standpipe systems shall be labeled and have a minimum 6 feet clearance provided around them. Connections shall be covered with a cap secured with a chain.
 - (2) Using fire hose and other contents located in a fire hose cabinet for other than fire-related purposes is prohibited.
 - (3) A defensible space of 30 feet (minimum) shall be provided around water distribution tanks in accordance with NFPA 1144 and the International Wildland Urban Interface Code. Greater distances for space may be required where hazardous conditions might exist, such as in dry forested areas, or on greater than 30 percent slopes.
 - (4) The Office of Horticulture in the Washington, D.C. area, and facility building management outside the Washington, D.C area is responsible for clearing sidewalks and grounds of snow. Snow removal staff shall provide a 3 foot clearance around fire hydrants, fire department connections, post indicator valves (PIV), exterior fire hose cabinets, emergency exits doors and exit routes to the public way. Snow shall be cleared away from designated fire lanes to ensure the lanes are available at all times.

- (5) Building Manager and OPS shall review with their respective staff the fire protection (i.e. sprinkler zone valve locations) and alarm system locations and operations at least once a year and whenever new staff begin working in the building. This training program shall be documented as required in Part D of this Chapter.
- f. Fire suppression and fire alarm equipment shall not be painted. Painted equipment shall be replaced at the expense of the SI unit, facility, or contractor responsible for painting the equipment.
- g. Fire Detection and Alarm Systems
 - (1) Objects such as plants, partitions, exhibits, signs, and storage shall not inhibit access to or block the sight of *Manual* pull stations, horns, strobes, speakers, and other fire alarm devices.
 - (2) Staff, special events coordinators, and contractors must provide notice to the Facility Manager and Office of Protection Services (OPS) prior to activities that may cause a nuisance alarm (e.g., painting, cooking, cutting, sanding, etc).
 - (3) Fire alarm devices shall not be silenced, muffled, or otherwise impaired.
- 5. **Fire Investigation and Reporting.** Every fire, no matter how minor, shall be reported immediately to OSHEM. Fire investigations shall be conducted according to the guidance provided in [Chapter 7, "Injury/Incident Reporting and Investigations"](#), of this *Manual* and the instructions provided in [Attachment 1](#) of this Chapter.

D. TRAINING

- 1. Supervisors shall provide fire protection training to all new employees within their first week of employment and annually thereafter. Initial fire protection training shall include:
 - a. Fire reporting procedures.
 - b. Knowledge of special work area or unique fire suppression system operational requirements.
 - c. Specific duties such as fire safety inspections required to perform the job.
 - d. OFMR & OPS training on Fire sprinkler valve locations and utility shut off valves and switches.

2. Safety Coordinators shall provide training to supervisors to include:
 - a. Use of portable fire extinguishers
 - b. Fire reporting procedures
 - c. Fire Watch
3. OSHEM shall provide training to SI staff to include:
 - a. Fire protection systems and operations
 - b. OPS Control room operator fire signal response and procedures

E. RECORDS AND REPORTS

Program Documentation. The following fire protection program documentation and training records shall be kept on site with the following staff for a period of five years:

- a. Safety Coordinator
 - (1) Fire protection system training
 - (2) Fire investigations, reports, and follow-up
 - (3) Fire Watch training
- b. Building Manager
 - (1) Fire protection systems location and training
 - (2) Fire system impairment documentation
- c. OPS Security Manager
 - (1) Fire protection systems location and training
 - (2) Control room operator procedures and training
 - (3) Fire extinguisher monthly inspections (See [Chapter 35, Fire Safety ITM](#))
 - (4) Fire extinguisher use training
 - (5) Self-inspection reports and follow-up
 - (6) Fire Watch log or documentation as described in [Attachment 2, "Fire Watch"](#), of this Chapter.

F. REFERENCES

1. Code of Federal Regulations (CFR) 29, Part 1910, Occupational Safety and Health Standards for General Industry.
 - a. Subpart E - Means of Egress:
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10113
 - b. Subpart H - Hazardous Materials:
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10117
 - c. Subpart L - Fire Protection:
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10123
 - d. Subpart S – Electrical:
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10135
2. Code of Federal Regulations (CFR) 29, Part 1926, Occupational Safety and Health Standards, "Safety and Health Regulations for Construction, "Subpart F - Fire Protection and Prevention:
http://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1926
3. National Fire Protection Association (NFPA) fire codes: <http://www.nfpa.org>
 - a. NFPA 1 – Uniform Fire Code
 - b. NFPA 10 – Standard for Portable Fire Extinguishers
 - c. NFPA 13 – Standard for the Installation of Sprinkler Systems
 - d. NFPA 14 – Standard for the Installation of Standpipes and Hose Systems
 - e. NFPA 17 – Standard for Dry Chemical Extinguishing Systems
 - f. NFPA 17A – Standard for Wet Chemical Extinguishing Systems
 - g. NFPA 24 – Standard for the Installation of Private Fire Service Mains and Their Appurtenances
 - h. NFPA 25 – Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems
 - i. NFPA 30 – Flammable and Combustible Liquids Code

- j. NFPA 51B – Standard for Fire Prevention During Welding, Cutting, and Other Hot Work
 - k. NFPA 70 – National Electrical Code
 - l. NFPA 96 – Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
 - m. NFPA 101 – Life Safety Code
 - n. NFPA 302 – Fire Protection Standard for Pleasure and Commercial Motor Craft
 - o. NFPA 303 – Fire Protection Standard for Marinas and Boatyards
 - p. NFPA 306 – Standard for the Control of Gas Hazards on Vessels
 - q. NFPA 664 – Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities
 - r. NFPA 701 – Standard Methods of Fire Tests for Flame Propagation of Textiles and Films
- 4. International Code Council (ICC)
 - a. International Building Code (IBC)
 - b. International Fire Code (IFC)
 - c. International Mechanical Code (IMC)
 - 5. ASME/A17.1
 - 6. Factory Mutual Global Loss Prevention Data Sheet

Fire Investigation and Reporting

A. Fire Investigation Severity Levels:

(1) **Catastrophic Level.** A fire resulting in Smithsonian Management requesting a Board of Inquiry be formed to investigate the incident. The decision to form a Board of Inquiry will be based on whether or not the nature of the fire investigation extends beyond the capabilities or political interests of the Smithsonian Institution. OSHEM staff in conjunction with the Board shall investigate the fire and provide recommendations to best serve the Smithsonian Institution. Fire and explosion investigation guidelines and practices in NFPA 921 shall be followed. A Catastrophic level fire may involve one or more of the following:

- i. Loss of life.
- ii. Financial loss exceeding \$100,000.
- iii. Suspected arson.
- iv. Objects of cultural, artistic, or scientific value destroyed or damaged.
- v. Building or environmental damage that interferes with an office's mission.
- vi. Fire caused or made worse due to noncompliance with Smithsonian fire protection policies.
- vii. Requests for further investigation of a fire as a result of private, congressional, or public interest.
- viii. Technologically interesting (such as fire wall failure or failure of a sprinkler system to control a fire).
- ix. Widespread media attention.

(2) **Serious Level.** Fire investigations in the Washington, D.C. area will be conducted by OSHEM in coordination with OFMR, OPS, and any other Smithsonian office having an interest in the fire incident. Investigations outside of the Washington, D.C. area will be the responsibility of the facility director. These offices must assess their capabilities and resources and request additional resources if necessary. The investigation report shall be completed within 15 days after the fire. Fire and explosion investigation guidelines and practices in NFPA 921 shall be followed. A Serious Level fire may involve one or more of the following:

- i. Personal injury.
- ii. A fire resulting in major damage (greater than \$25,000) to property.
- iii. Interfering with the functions of an office for more than 24 hours.
- iv. Should the fire department respond to the incident, OSHEM is to be notified immediately.

- (3) **Recordable but not meeting the Serious or Catastrophic criteria.** Fires that result in minor personal injury (return to work within 2 days of the incident), and/or cause greater than \$1000 in property damage. OSHEM must be notified within 6 days of the incident, including a copy of SI Form 2120.
- (4) **Reportable but not Recordable Level.** Fires that cause minor property damage that amount to less than \$1000. A fire investigation report is unnecessary; however, OSHEM must be notified as soon as possible.

B Fire Investigation Report:

- (1) In the Washington, D.C. area OSHEM shall prepare a fire investigation report for Catastrophic and Serious Level fires within 15 days. See Preliminary Incident Report guidelines in [Chapter 7, "Injury/Incident Reporting and Investigation"](#), of this *Manual*, where final report requires more than 15 days to complete and publish.
- (2) Outside of the Washington D.C. area, the facility director is responsible for completing a fire investigation report within 15 days of a fire. See Preliminary Incident Report guidelines in [Chapter 7, "Injury/Incident Reporting and Investigation"](#), of this *Manual*, where final report requires more than 15 days to complete and publish.
- (3) Fire investigation reports shall contain the following information:
 - i. Date and time of fire.
 - ii. Fire location, origin, and cause.
 - iii. Injuries and other possible health effects.
 - iv. Fire department/staff and security personnel actions.
 - v. All pertinent details involved in the events leading up to the fire.
 - vi. Circumstances leading to injuries.
 - vii. Nature of destruction or damage to property (including cost estimates).
 - viii. Inventory or at least general description of any collections, records, or operating equipment that was lost or damaged.
 - ix. List of personnel at the scene of the fire.
 - x. Performance of the fire suppression and detection/alarm systems during the fire.
 - xi. Description of the efforts necessary for recovery operations, including: restoring operations to normal, salvaging damaged materials, obtaining replacement equipment, recovering lost information, etc.
 - xii. Recommendations to avoid a similar incident.

Fire Watch (as defined for fire protection system impairments)

A fire watch is a person(s) tasked with patrolling an area for signs of fire when a fire protection system (i.e. automatic sprinkler, fire alarm system, etc.) is out of service. Facility fire watch personnel understand the specific nature of the fire system impairment and the specific area(s) affected. This definition of a fire watch pertains to fire system impairment compensatory measures, not synonymous to the fire watch defined in [Chapter 14, "Hot Work Management and Permit System"](#), of this *Manual*.

- a. Facility fire watch personnel patrol all areas affected by a fire system impairment.
- b. Facility fire watch personnel are instructed in the frequency of the facility fire watch tours by the OFMR Facility Manager or Safety Coordinator. The frequency of tours typically is as follows:
 - Continuous, when required by facility process standards or process controls.
 - Hourly, when automatic suppression systems are out of service.
 - Once every 2 hours if only automatic alarm capability is out of service.
- c. Facility fire watch personnel are given instruction before standing facility fire watch. Each facility fire watch personnel is instructed on the following:
 - Areas to be watched.
 - Frequency of tours required.
 - Specifics of the fire protection impairment.
 - Appropriate emergency procedures and actions.
 - Methods for sounding the alarms.
 - Procedure for manually activating fire suppression systems.
 - Use of fire extinguishers (hands-on training required).
 - Methods for recording conduct of tours.
 - Other pertinent information in the log.
- d. Facility Fire Watch Log or Equivalent Documentation. A log or other documentation system shall be established and used to provide an auditable record of compliance with the requirements of this standard. The log or other documentation shall include (but is not limited to) the following:
 - Facility, building, and area under facility fire watch.
 - Nature of fire protection impairment.
 - Date of first fire protection impairment.
 - Dates and times of facility fire watch tours.
 - Printed name and signatures of personnel serving as facility fire watch.
 - Date of fire protection restoration.

Water Based Fire System Impairment Procedures

In some instances a fire system control valve must be shut. These include fire protection system extensions or changes, pipe breakage caused by accident, and replacement of fused sprinklers after a fire. Whenever fire protection water supplies, sprinklers, fire pumps, fire hydrants, standpipes, storage tanks, or other water based fire protection systems are out of service for any reason, a fire protection emergency exists, and specific fire safety procedures are to be followed. **Only SI staff may be authorized to close a fire system valve or otherwise impair any part of a water based fire protection system.** To ensure that complete precautionary measures are taken the following procedures are to be followed:

1. Fill out the SI [Water Based Fire System Impairment Permit \(Attachment 4\)](#), and present it to the **Building Manager**. Indicate which valve(s) will be shut, and when, why and for how long fire protection will be out of service, and what portion(s) of the building will be without service. Also state what precautions are being taken. This information will enable the building manager to advise on the best measures to minimize the hazard, and isolate the smallest area for the shortest time. ***[The Building Manager will immediately call the building security office, and transmit an Outlook e-mail to the "Fire Valve Closure" list and the FM Zone Manager, providing them with the information outlined above. The security office is to immediately notify the building control room operator. In addition, should a fire system impairment directly impact the ability of the local fire department to perform tactical fire fighting operations on SI property or within SI buildings, the Building Manager shall notify the local fire department of the fire protection system impairment (i.e. water storage tank serving hydrants, fire pumps serving fire hose valves in high rise buildings, main sprinkler control valve shut off, etc.)]***
2. After receiving a go-ahead from the Building Manager, fasten a ["Fire Protection Out of Service" Red Tag \(Attachment 5\)](#) to each shut valve. This serves as a reminder that the valve is shut. Do not lock shut valves. **Both the Building Manager and the OPS Control Room are to keep a written record of the shut valve, its exact location, the date and time it was closed, the time it is expected to be reopened, and the time it was reopened.**
3. Have everything ready before shutting any valves. Workers, materials and tools should all be at hand and all excavation completed. Plan the work. Familiarity with the location of water supplies, underground piping, control valves and sectional valves is a necessity. Keep as much of the fire protection system in service as possible by isolating the impaired area using system divisional valves. Provide plugs or caps to enable open pipe ends to be closed quickly in case of fire. Avoid using flange blanks as much as possible. If used, establish a follow-up system to ensure removal.
4. Work without interruption until completion. In no case may a valve remain closed

overnight without special permission from the Building Manager.

5. If possible, schedule work during idle periods when fewer ignition hazards are present.
6. The Building Manager is to ensure all hazardous processes in the effected area(s) are shut down while fire protection is out of service. All ignition sources, such as cutting and welding, should be stopped.
7. OPS is to assign security officers to perform fire watch duties (see part C.4 of [Chapter 36, "Fire Protection"](#), of this *Manual*) where protection is out of service when the area is not normally occupied.
8. When work is completed:
 - a) Make certain all valves are left fully open.
 - b) Make a full-flow drain test on the downstream side of each valve that was closed. This test is very important as the final check to ensure that all control valves have been left in the wide open position and that the water flow alarm is functioning properly. Fully open the drain valve and observe the pressure gauge. A quick return of pressure after the drain valve is closed indicates the valve is open to allow good flow. A slow return means there is partial obstruction. No return means the valve is totally shut or completely obstructed. Sometimes a valve disk becomes detached and slips into the closed position, yet the valve appears to be open. Other mechanical troubles or obstructed pipes similarly may give poor drain test results. Investigate immediately if drain tests are unsatisfactory.
 - c) Ensure the water flow alarm and valve tamper switch are reset, or lock the valve(s) after ensuring they are in the open position.
9. Telephone the Building Manager when the valve(s) have been reopened and the red tag(s) removed. [**The Building Manager will immediately call the building security office (who will in turn alert the control room operator), and transmit an Outlook e-e-mail "Fire Protection Restored" e-mail to the "Fire Valve Closure" list and the FM Zone Manager,** confirming that a full-flow drain test has been conducted and that the valve(s) have been left in the fully open position.

Water Based Fire System Impairment Permit

Smithsonian Institution		Rev 11-24-2008 Page 1 of 2	
FIRE SYSTEM IMPAIRMENT PERMIT			
SI Tracking # <input style="width: 150px;" type="text"/>			
NAME OF BUILDING AND CONTACT NUMBER		EMERGENCY PHONE # <input style="width: 100px;" type="text"/>	
Parent Building	<input style="width: 250px;" type="text"/>		
Permit Issued To	<input style="width: 100px;" type="text"/>	Phone	<input style="width: 100px;" type="text"/>
Requested by	<input style="width: 100px;" type="text"/>	Phone	<input style="width: 100px;" type="text"/>
Exact Location of valve, special hazard suppression system, zone, or fire alarm device: <input style="width: 100%; height: 20px;" type="text"/>			
Area Protected by valve, special hazard suppression system, zone, or fire alarm device: <input style="width: 100%; height: 20px;" type="text"/>			
SYSTEM TYPE		PERMIT REQUESTOR	
<input style="width: 100%; height: 20px;" type="text"/>		<input style="width: 100%; height: 20px;" type="text"/>	
REASON FOR IMPAIRMENT			
<input style="width: 100%; height: 20px;" type="text"/>			
CONTRACTOR AND/OR SI WORK GROUP & TYPE OF GENERAL WORK			
<input style="width: 100%; height: 20px;" type="text"/>			
Select "blank" to write additional comments.			
Impairment Restored	Initials <input style="width: 50px;" type="text"/>	PERMIT START DATE	<input style="width: 50px;" type="text"/>
		PERMIT EXPIRE DATE	<input style="width: 50px;" type="text"/>
MECHANIC PERFORMING WORK (SI Employee Name/Phone and/or Contracting Company Name, Employee's Names and Emergency Phone Number)			
<input style="width: 100%; height: 20px;" type="text"/>			
Additional Comments			
<input style="width: 100%; height: 50px;" type="text"/>			
<input type="checkbox"/> HOT WORK ALLOWED <input type="checkbox"/> HOT WORK PROHIBITED <input type="checkbox"/> LOCKOUT TAGOUT REQUIRED <input type="checkbox"/> CONFINE SPACE PERMIT REQUIRED <input type="checkbox"/> HAZARDOUS OPERATIONS STOPPED <input type="checkbox"/> IMPAIRMENT FORM ATTACHED TO SYSTEM <input type="checkbox"/> FIRE WATCH OF AFFECTED AREAS ESTABLISHED <input type="checkbox"/> FIRE PROT SYSTEM OUT OF SERVICE RED TAG <input type="checkbox"/> FULLY OPERATIONAL SPRINKLER SYSTEM <input type="checkbox"/> OTHER <input style="width: 100px;" type="text"/>		<input type="checkbox"/> BUILDING SECURITY CONTROL OPER NOTIFIED * <input type="checkbox"/> BUILDING MANAGER NOTIFIED * <input type="checkbox"/> WMC (1560) NOTIFIED ** <input type="checkbox"/> MUSEUM DIRECTOR NOTIFIED <input type="checkbox"/> BUILDING SAFETY COORDINATOR NOTIFIED * <input type="checkbox"/> SI OFMR SAFETY NOTIFIED <input type="checkbox"/> OEDC PROJECT MANAGER / COTR NOTIFIED <input type="checkbox"/> OTHER <input style="width: 100px;" type="text"/>	
		<input type="checkbox"/> ZONE PROJECT LIAISON NOTIFIED <input type="checkbox"/> CRAFT SHOP NOTIFIED <input type="checkbox"/> USRO / HVAC SHOP NOTIFIED <input type="checkbox"/> SED BLDG SYS ENG (BAS) NOTIFIED <input type="checkbox"/> SED SAFETY/FIRE SHOP NOTIFIED <input type="checkbox"/> NMZ CTRL SHOPS NOTIFIED <input type="checkbox"/> LOCAL FIRE DEPT NOTIFIED	
		**REQUIRED COPY FOR OFMR WORK *REQUIRED COPIES	
* I verify the above location has been examined, the precautions checked on the required precautions checklist have been taken to prevent fire and permit the impairment of the above equipment/system.			
PRINT NAME (Work Coordinator)		PRINT NAME (Permit Authorizing Individual, PAI)	
<input style="width: 100%; height: 20px;" type="text"/>		<input style="width: 100%; height: 20px;" type="text"/>	
SIGNATURE		SIGNATURE	
<input style="width: 100%; height: 20px;" type="text"/>		<input style="width: 100%; height: 20px;" type="text"/>	
Inspection Date / Time		Inspection Date / Time	
<input style="width: 100%; height: 20px;" type="text"/>		<input style="width: 100%; height: 20px;" type="text"/>	
SYSTEM IMPAIRMENT WORK MAY BEGIN AFTER IT HAS BEEN VERIFIED THAT ABOVE CONDITIONS HAVE BEEN MET, PERMIT SIGNED FOR APPROVAL AND POSTED. COPIES OF THIS PERMIT HAVE BEEN DISTRIBUTED TO OFFICE OF PROTECTION SERVICES (SECURITY MANAGER AND SECURITY CONTROL ROOM OPERATOR), BUILDING MANAGER, AND SAFETY COORDINATOR.			

Water Based Fire System Impairment Permit

Rev 4-8-2008 Page 2 of 2

FIRE SYSTEM IMPAIRMENT PERMIT

GENERAL INSTRUCTION

Summary:

The Fire System Impairment Permit Form is to be used whenever maintenance, repairs, modifications or upgrades cause fire detection / alarm systems, life safety systems, or fire suppression systems within the SI Facilities to be out of service. All work must be authorized and approved through the Building Manager. Using this form should help prevent miss communication and assure continuity of work among various shops and departments within the Office of Facility Engineering and Operation (OFEO). The Work Supervisor / Leader are responsible for ensuring all codes and regulations are followed during fire/life safety system repairs.

The Building Manager shall inspect the work area prior to granting a permit. The Building Manager will verify and sign off on the permit. The permit is void unless copies of the fire system impairment permit have been posted and properly distributed to the "Fire System Impairment" Outlook user group (including Building Management, and Work Management Center (WMC)) by the Building Manager. Upon notification, the security office is to immediately notify the building control room operator. The Work Supervisor will return the original copy of the permit back to the Building Manager. The Building Management Office shall retain the original permit for official record.

Should fire system impairment directly impact the ability of the local fire department to perform tactical fire fighting operations, the Building Manager shall notify the fire department of the impairment. Incidents requiring fire department notification may include impairment of water storage tanks serving hydrants, closure of main sprinkler control valves, shut down of mains feeding yard hydrants or entire buildings.

Instructions:

- 1) SI Tracking # – Select the appropriate control number and enter the tracking number. The Office of Facility Maintenance & Reliability (OFMR) group will use an SWO for the tracking number. The tracking number will be used for to record labor and material cost where applicable. All individuals in OFMR working on this permit should use the same number.
- 2) Name of Building – select from the drop down list the location of work or type in the building name.
 - Permit Issued to & Phone # – specify the individual who will be responsible for coordinating work. Provide a phone number xxx xxx-xxxx. The Work Coordinator will ensure that this permit is posted and copies are sent to appropriate shops and/or departments.
 - Requester & Phone # – use this block for the requester's name. Example: Work request may come from Building Management, Safety Office and / or the Office of Engineering, Design and Construction.
- 3) Exact Location of the Valve/Zone – enter the valve location and identification number. Copy of this permit will be posted at the valve location at a visible site.
Area Protected by Valve - provide some detail of the zones and/or areas affected by this work.
- 4) Specify Type of System – select from the drop down list the proper System type.
Reason for Impairment – select from the drop down list the proper reason for impairment and requesting agency.
Contractor and/or SI work group- select from the drop down list the proper agency performing the work and the type of work being done.
Planned Dates and Time (Impaired & Restored) – use the drop downs to select the dates and times.
- 5) Mechanic Performing Work (SI Employee Name/Phone and/or Contract Company Name, Employee's Names and Emergency Phone #)
- 6) Additional Comments – use this block to provide more specific information.
- 7) Notification - Precautions Taken (check as appropriate) – use the list and check those that are appropriate. Hot Work must be prohibited while any sprinkler systems or any component thereof is impaired. The Work Supervisor / Leader will provide notification to the Building Security Control Operator, Building Management, and Work Management Center (WMC) by providing a copy of the permit prior to any work other than extreme emergencies. After receiving a go-ahead from the Building Manager, fasten a "Fire Protection Out of Service" Red Tag to each shut valve. This serves as a reminder that the valve is shut. Do not lock shut valves.
- 8) Authorized By – The Permit Authorized Individual (PAI) and Work Coordinator shall provide last, first name (print), sign and date.

Reference Attachments B-2 and B-5 to Ch. 36 (Fire Protection) of the OSHEM Safety Manual, which provide specific procedures to be followed when impairing water based and fire alarm/special hazard systems.

Fire Protection Out of Service !

Contact the
Building Manager
for Details of this
Impairment

Fire Alarm and Special Hazard Fire Suppression System Impairment Procedures

In some instances, zones of a fire alarm system, specific fire alarm devices, special hazard systems (i.e. FM-200, Inergen, Halon, Wet Chemical, Dry Chemical, water based fire suppression system requiring a local panel to discharge, etc.) must be impaired or taken out of service. These include fire alarm and special hazard system extensions or changes, inadvertent disconnection caused by demolition processes or accidents, and replacement of fire alarm devices and system components either scheduled or unscheduled. Whenever fire alarm or special hazard systems are out of service for any reason, a fire protection emergency exists, and specific impairment procedures are to be followed. **Only SI staff may be authorized to disable any portions of a fire alarm or special hazard fire suppression system.** To ensure that complete precautionary measures are taken the following procedures are to be followed:

1. Fill out the SI [*Fire Alarm and Special Hazard Fire Suppression System Impairment Permit \(Attachment 7\)*](#), and present it to the **Building Manager**. Note that for pre-Action and deluge systems, the water based fire system impairment procedures are also to be followed. Indicate which fire alarm device(s) or zone(s) will be impaired, and when, why and for how long the fire protection system will be out of service, and what portion(s) of the building will be without service. Also state what precautions are being taken. This information will enable the building manager to advise on the best measures to minimize the hazard, and isolate the smallest area for the shortest time. *[The Building Manager will immediately call the building security office, pertinent SI curatorial staff, and transmit an Outlook e-mail to the “Fire Alarm and Special Hazard Fire Suppression System Impairment” list and the FM Zone Manager, providing them with the information outlined above. The security office is to immediately notify the building control room operator.]*
2. After receiving a go-ahead from the Building Manager, fasten a copy of the impairment form to each affected fire alarm panel(s) and special hazard fire suppression cylinder(s). This serves as a reminder that there are impaired fire alarm and suppression system components and should clearly indicated the zone or device impaired. **Both the Building Manager and the OPS Control Room are to keep a written record of the impaired fire alarm and/or special hazard fire suppression devices or zones, its exact location, the date and time it was impaired, the time it is expected to be placed back in service, and the time it was returned to service.**
3. Have everything ready before impairing the fire alarm and/or special hazard system. Workers, materials and tools should all be at hand. Plan the work.
 - a.) For special hazard fire suppression system impairments, disconnect the trigger solenoid or other trigger mechanism to avoid an inadvertent system discharge.

- b.) For fire alarm impairments, keep as much of the fire alarm system in service by isolating the impairment to a fire alarm device or a single zone, where possible. Ensure an alternate evacuation means is in place should fire alarm notification devices for certain areas of the building is affected by the impairment.
4. Work without interruption until completion. In no case may an entire fire alarm zone, devices, or special hazard fire suppression system remain impaired overnight without special permission from the Building Manager.
5. If possible, schedule work during idle periods when fewer ignition hazards are present.
6. The Building Manager is to ensure all hazardous processes in the effected area(s) are shut down unless sprinklers are fully functional in the area(s) affected by the system impairment. Otherwise, all ignition sources, such as cutting and welding, should be stopped.
7. OPS is to assign security officers to perform fire watch duties (see part C.4 of [Chapter 36, "Fire Protection"](#), of this *Manual*) where protection is out of service when the area is not normally occupied.
8. When work is completed:
 - a) Contact the OFMR Life Safety Systems Branch to witness in-service testing.
 - b) Perform functional alarm and trouble tests on the newly installed devices. Ensure fire alarm signals are received at the main fire alarm control panel (Security Control Room and Fire Command Center). Ensure all trouble conditions are properly corrected and addressable system programming returned to normal state prior to the impairment.
 - c) For special hazard systems, verify that the approved sequence of operation is in effect and the system is properly functioning.
9. Telephone the Building Manager when the fire alarm device(s), zone(s), and/or special hazard fire suppression systems have been returned to service and the impairment tag(s) on the fire alarm panel(s) and/or agent cylinders removed. **[The Building Manager will immediately call the building security office (who will in turn alert the control room operator), and transmit an Outlook e-mail "Fire Alarm and/or Special Hazard Fire Suppression System Restored" e-mail to the "Fire Alarm and Special Hazard Fire Suppression System Impairment" list, SI curator, and the FM Zone Manager,** confirming that the in-service testing has been conducted in the presence of the OFMR Life Safety Systems Branch staff and that all previously impaired fire alarm devices, zones, and/or special hazard fire suppression system have been returned to a fully functional state.

Fire Alarm and Special Hazard Fire Suppression System Impairment Permit

Smithsonian Institution	Rev 11-24-2008 Page 1 of 2	
FIRE SYSTEM IMPAIRMENT PERMIT		
1 SI Tracking # <input style="width: 150px;" type="text"/>		
2 NAME OF BUILDING AND CONTACT NUMBER <input style="width: 400px;" type="text"/> EMERGENCY PHONE # <input style="width: 100px;" type="text"/>		
Parent Building <input style="width: 450px;" type="text"/>		
Permit Issued To <input style="width: 150px;" type="text"/>	Phone <input style="width: 100px;" type="text"/>	
Requested by <input style="width: 150px;" type="text"/>	Phone <input style="width: 100px;" type="text"/>	
3 Exact Location of valve, special hazard suppression system, zone, or fire alarm device: <input style="width: 600px; height: 20px;" type="text"/>		
Area Protected by valve, special hazard suppression system, zone, or fire alarm device: <input style="width: 600px; height: 20px;" type="text"/>		
4		
SYSTEM TYPE	PERMIT REQUESTOR	REASON FOR IMPAIRMENT
<input style="width: 90%; height: 20px;" type="text"/>	<input style="width: 90%; height: 20px;" type="text"/>	<input style="width: 90%; height: 20px;" type="text"/>
CONTRACTOR AND/OR SI WORK GROUP & TYPE OF GENERAL WORK		
<input style="width: 90%; height: 20px;" type="text"/>		
Select "blank" to write additional comments.		
Impairment Restored <input style="width: 50px;" type="text"/>	Initials <input style="width: 50px;" type="text"/>	PERMIT START DATE <input style="width: 50px;" type="text"/>
		PERMIT EXPIRE DATE <input style="width: 50px;" type="text"/>
5 MECHANIC PERFORMING WORK (SI Employee Name/Phone and/or Contracting Company Name, Employee's Names and Emergency Phone Number) <input style="width: 600px; height: 20px;" type="text"/>		
6 Additional Comments <input style="width: 600px; height: 50px;" type="text"/>		
7		
<input type="checkbox"/> HOT WORK ALLOWED <input type="checkbox"/> HOT WORK PROHIBITED <input type="checkbox"/> LOCKOUT TAGOUT REQUIRED <input type="checkbox"/> CONFINE SPACE PERMIT REQUIRED <input type="checkbox"/> HAZARDOUS OPERATIONS STOPPED <input type="checkbox"/> IMPAIRMENT FORM ATTACHED TO SYSTEM <input type="checkbox"/> FIRE WATCH OF AFFECTED AREAS ESTABLISHED <input type="checkbox"/> FIRE PROT SYSTEM OUT OF SERVICE RED TAG <input type="checkbox"/> FULLY OPERATIONAL SPRINKLER SYSTEM <input type="checkbox"/> OTHER <input style="width: 100%; height: 20px;" type="text"/>	<input type="checkbox"/> BUILDING SECURITY CONTROL OPER NOTIFIED * <input type="checkbox"/> BUILDING MANAGER NOTIFIED * <input type="checkbox"/> WMC (1560) NOTIFIED ** <input type="checkbox"/> MUSEUM DIRECTOR NOTIFIED <input type="checkbox"/> BUILDING SAFETY COORDINATOR NOTIFIED * <input type="checkbox"/> SI OFMR SAFETY NOTIFIED <input type="checkbox"/> OEDC PROJECT MANAGER / COTR NOTIFIED <input type="checkbox"/> OTHER <input style="width: 100%; height: 20px;" type="text"/>	<input type="checkbox"/> ZONE PROJECT LIAISON NOTIFIED <input type="checkbox"/> CRAFT SHOP NOTIFIED <input type="checkbox"/> USRO / HVAC SHOP NOTIFIED <input type="checkbox"/> SED BLDG SYS ENG (BAS) NOTIFIED <input type="checkbox"/> SED SAFETY/FIRE SHOP NOTIFIED <input type="checkbox"/> NMZ CTRL SHOPS NOTIFIED <input type="checkbox"/> LOCAL FIRE DEPT NOTIFIED
	**REQUIRED COPY FOR OFMR WORK	*REQUIRED COPIES
8 * I verify the above location has been examined, the precautions checked on the required precautions checklist have been taken to prevent fire and permit the impairment of the above equipment/system.		
PRINT NAME (Work Coordinator) <input style="width: 250px;" type="text"/>		PRINT NAME (Permit Authorizing Individual, PAI) <input style="width: 250px;" type="text"/>
SIGNATURE <input style="width: 150px;" type="text"/>	Inspection Date / Time <input style="width: 100px;" type="text"/>	SIGNATURE <input style="width: 150px;" type="text"/>
		Inspection Date / Time <input style="width: 100px;" type="text"/>
SYSTEM IMPAIRMENT WORK MAY BEGIN AFTER IT HAS BEEN VERIFIED THAT ABOVE CONDITIONS HAVE BEEN MET, PERMIT SIGNED FOR APPROVAL AND POSTED. COPIES OF THIS PERMIT HAVE BEEN DISTRIBUTED TO OFFICE OF PROTECTION SERVICES (SECURITY MANAGER AND SECURITY CONTROL ROOM OPERATOR), BUILDING MANAGER, AND SAFETY COORDINATOR.		

Fire Alarm and Special Hazard Fire Suppression System Impairment Permit

Rev 4-8-2008 Page 2 of 2

FIRE SYSTEM IMPAIRMENT PERMIT

GENERAL INSTRUCTION

Summary:

The Fire System Impairment Permit Form is to be used whenever maintenance, repairs, modifications or upgrades cause fire detection / alarm systems, life safety systems, or fire suppression systems within the SI Facilities to be out of service. All work must be authorized and approved through the Building Manager. Using this form should help prevent miss communication and assure continuity of work among various shops and departments within the Office of Facility Engineering and Operation (OFEO). The Work Supervisor / Leader are responsible for ensuring all codes and regulations are followed during fire/life safety system repairs.

The Building Manager shall inspect the work area prior to granting a permit. The Building Manager will verify and sign off on the permit. The permit is void unless copies of the fire system impairment permit have been posted and properly distributed to the "Fire System Impairment" Outlook user group (including Building Management, and Work Management Center (WMC)) by the Building Manager. Upon notification, the security office is to immediately notify the building control room operator. The Work Supervisor will return the original copy of the permit back to the Building Manager. The Building Management Office shall retain the original permit for official record.

Should fire system impairment directly impact the ability of the local fire department to perform tactical fire fighting operations, the Building Manager shall notify the fire department of the impairment. Incidents requiring fire department notification may include impairment of water storage tanks serving hydrants, closure of main sprinkler control valves, shut down of mains feeding yard hydrants or entire buildings.

Instructions:

- 1) SI Tracking # – Select the appropriate control number and enter the tracking number. The Office of Facility Maintenance & Reliability (OFMR) group will use an SWO for the tracking number. The tracking number will be used for to record labor and material cost where applicable. All individuals in OFMR working on this permit should use the same number.
- 2) Name of Building – select from the drop down list the location of work or type in the building name.
 - Permit Issued to & Phone # – specify the individual who will be responsible for coordinating work. Provide a phone number xxx xxx-xxxx. The Work Coordinator will ensure that this permit is posted and copies are sent to appropriate shops and/or departments.
 - Requester & Phone # – use this block for the requester's name. Example: Work request may come from Building Management, Safety Office and / or the Office of Engineering, Design and Construction.
- 3) Exact Location of the Valve/Zone – enter the valve location and identification number. Copy of this permit will be posted at the valve location at a visible site.
Area Protected by Valve - provide some detail of the zones and/or areas affected by this work.
- 4) Specify Type of System – select from the drop down list the proper System type.
Reason for Impairment – select from the drop down list the proper reason for impairment and requesting agency.
Contractor and/or SI work group- select from the drop down list the proper agency performing the work and the type of work being done.
Planned Dates and Time (Impaired & Restored) – use the drop downs to select the dates and times.
- 5) Mechanic Performing Work (SI Employee Name/Phone and/or Contract Company Name, Employee's Names and Emergency Phone #)
- 6) Additional Comments – use this block to provide more specific information.
- 7) Notification - Precautions Taken (check as appropriate) – use the list and check those that are appropriate. Hot Work must be prohibited while any sprinkler systems or any component thereof is impaired. The Work Supervisor / Leader will provide notification to the Building Security Control Operator, Building Management, and Work Management Center (WMC) by providing a copy of the permit prior to any work other than extreme emergencies. After receiving a go-ahead from the Building Manager, fasten a "Fire Protection Out of Service" Red Tag to each shut valve. This serves as a reminder that the valve is shut. Do not lock shut valves.
- 8) Authorized By – The Permit Authorized Individual (PAI) and Work Coordinator shall provide last, first name (print), sign and date.

Reference Attachments B-2 and B-5 to Ch. 36 (Fire Protection) of the OSHM Safety Manual, which provide specific procedures to be followed when impairing water based and fire alarm/special hazard systems.

Fire Protection & Life Safety Design Manual

Fire Protection & Life Safety Design Manual can be found on the Office of Safety, Health and Environmental Management (OSHEM) website.

http://www.ofeo.si.edu/ae_center/safety_health/docs/fpls_design_manual_2014.pdf

Contact OSHEM for further instructions (202-633-2530)

Specification 078100 for Sprayed Fire-Resistive Materials

Specification 078100 for Sprayed Fire-Resistive Materials can be found on the Office of Engineering Design and Construction (OEDC) website.

http://www.ofeo.si.edu/safety_health/docs/fireprot_and_lifesafety_design_guide_and_specs/078100-sprayed_fire_resistant_materials.doc

Contact OSHEM for further instructions (202-633-2530)

Specification 078413 for Penetration Firestopping

Specification 078413 for Penetration Firestopping can be found on the Office of Engineering Design and Construction (OEDC) website.

http://www.ofeo.si.edu/safety_health/docs/fireprot_and_lifesafety_design_guide_and_specs/078413-penetration_firestopping.doc

Contact OSHEM for further instructions (202-633-2530)

Specification 081173 for Rolling Fire Doors

Specification 081173 for Rolling Fire Doors can be found on the Office of Engineering Design and Construction (OEDC) website.

http://www.ofeo.si.edu/safety_health/docs/fireprot_and_lifesafety_design_guide_and_specs/081173-rolling-fire_doors.doc

Contact OSHEM for further instructions (202-633-2530)

Specification 104400 for Fire Extinguisher Cabinets

Specification 104400 for Fire Extinguisher Cabinets can be found on the Office of Engineering Design and Construction (OEDC) website.

http://www.ofeo.si.edu/safety_health/docs/fireprot_and_lifesafety_design_guide_and_specs/104400-fire_extinguishers_cabinets.doc

Contact OSHEM for further instructions (202-633-2530)

Specification 211313 for Wet Pipe Sprinkler Systems

Specification 211313 for Wet Pipe Sprinkler Systems can be found on the Office of Engineering Design and Construction (OEDC) website.

http://www.ofeo.si.edu/safety_health/docs/fireprot_and_lifesafety_design_guide_and_specs/211313-wet_pipe_sprinkler_systems.doc

Contact OSHEM for further instructions (202-633-2530)

Specification 211316 for Dry Pipe and Pre-Action Sprinkler Systems

Specification 211316 for Dry Pipe and Pre-Action Sprinkler Systems can be found on the Office of Engineering Design and Construction (OEDC) website.

http://www.ofeo.si.edu/safety_health/docs/fireprot_and_lifesafety_design_guide_and_specs/211316-dry_pipe_and_preaction_sprinkler_systems.doc

Contact OSHEM for further instructions (202-633-2530)

Specification 213110 for Fire Pump Systems

Specification 213110 for Fire Pump Systems can be found on the Office of Engineering Design and Construction (OEDC) website.

http://www.ofeo.si.edu/safety_health/docs/fireprot_and_lifesafety_design_guide_and_specs/213110-fire_pump_system.doc

Contact OSHEM for further instructions (202-633-2530)

Specification 273111 for Addressable Fire Alarm Systems

Specification 273111 for Addressable Fire Alarm Systems can be found on the Office of Engineering Design and Construction (OEDC) website.

http://www.ofeo.si.edu/safety_health/docs/fireprot_and_lifesafety_design_guide_and_specs/283111-addressable_fire_alarm_system.doc

Contact OSHEM for further instructions (202-633-2530)

Specification 331615 for Water Storage Steel Tanks

Specification 331615 for Water Storage Steel Tanks can be found on the Office of Engineering Design and Construction (OEDC) website.

http://www.ofeo.si.edu/safety_health/docs/fireprot_and_lifesafety_design_guide_and_specs/331615-water_storage_steel_tanks.doc

Contact OSHEM for further instructions (202-633-2530)

Kitchen Fire Suppression Systems

Post the following requirements where kitchen cooking equipment is protected by a fire suppression system. Employees are to adhere to the following requirements, as well as specific manufacturer's instructions on the operation of the suppression system:

- (1) Know the extinguishing system sequence of operation.
 - (2) Maintain clear exit paths.
- (3) Keep the area around agent cylinders and controls secure, and clear of trash and debris.
- (4) Alert OFMR when the system has been damaged or a problem is suspected. Suspend cooking operations whenever suppression systems are disabled.
- (9) Employees shall:
 - (a) Know the procedures for reporting a fire.
 - (b) Ensure protected equipment is not moved from under the protection of the fire suppression system.
 - (c) Ensure nozzles are kept covered by foil or blow-off caps, if required by manufacturer.
 - (d) Know the location and method for operating the manual release station.
 - (e) Evacuate the area immediately upon system discharge.
 - (f) When a system has discharged, clean-up shall begin immediately after returning to the area because the dry or wet chemical may corrode electrical components and cooking equipment.

Gaseous Fire Suppression System

Post the following requirements in rooms or areas protected by a Gaseous Fire Suppression System (Halon, Inergen, FM-200, etc). Employees are to adhere to the following requirements, as well as specific manufacturer's instructions on the operation of the suppression system:

- (1) Know the extinguishing system sequence of operation.
 - (2) Maintain clear exit paths.
- (3) Keep the area around agent cylinders and controls secure, and clear of trash and debris.
- (4) Maintain the integrity of the enclosure by keeping doors closed, ceiling tiles in place, and ensure all penetrations remain properly sealed.
- (5) Evacuate on the first alarm.
- (6) Do Not enter the room after second alarm.
- (7) Use the abort switch (when provided) only if training has been provided on its use.
- (8) Alert OFMR when the system has been damaged or a problem is suspected.
- (9) OFMR is responsible for the ITM of the room enclosure integrity; see [Chapter 35 Fire Safety ITM](#).
- (10) Employees shall:
 - (a) Know the procedures for reporting a fire.
 - (b) Know the location and method for operating the manual release station.
 - (c) Evacuate the area immediately upon system discharge.