

# **Fire Protection Program Requirements**

**MSC-RD-10606**

**Revision 2**

**Effective Date: April 21, 2011**

**Topic: Fire Protection**

# Fire Protection Program Requirements

## 1.0 PURPOSE AND SCOPE

This document provides an overview of the Mission Support Contract (MSC) Fire Protection Program requirements and responsibilities while performing MSC scope of work. The document implements requirements from CRD O 420.1B, *Facility Safety*, SCRDO 420.1B, Rev. 4, *Facility Safety*, the *Fire Marshal's Charter*, which is approved by the U.S. Department of Energy (DOE) – Richland Operations Office (RL) and MSC-MP-32219, *10 CFR 851 MSC Worker Safety and Health Program Description*.

This Level 1 Requirements Document is applicable to MSC Team employees involved in MSC scope of work.

This document partially implements ISMS Core Function #2 Identify & Analyze Hazards, as well as ISMS Guiding Principles #1 Line Management Responsibility for Safety and Environmental Requirements, and #2 Clear Roles and Responsibilities.

## 2.0 REQUIREMENTS

### 2.1 MSC Fire Protection Objective Requirements

**NOTE:** For the tables in this section under the requirement "type" column, "V" means verbatim and "I" means interpreted.

#	REQUIREMENT	TYPE V or I	SOURCE
1.	Minimize the potential for the occurrence of a fire or related event.	I	CRD O 420.1B, Chapter II, 1.a.
2.	Minimize the potential for a fire to cause an unacceptable onsite or offsite release of hazardous or radioactive material that could impact the health and safety of employees, the public or the environment.	I	CRD O 420.1B, Chapter II, 1.b
3.	Implement a Fire Prevention Program that meets or exceeds the requirements of nationally recognized codes and standards such as National Fire Protection Association (NFPA) 1, <i>Fire Code</i> , in order to provide an acceptable degree of life safety to DOE and contractor personnel, and to ensure there are no undue hazards to the public from fire and its effects in DOE facilities.	I	SCRDO 420.1B, Rev. 4, Section E 1) d. and Fire Marshal's Charter
4.	Minimize the potential for vital DOE programs suffering unacceptable delays (defined by the program senior official) as a result of fire and related perils.	I	CRD O 420.1B, Chapter II, 1.c.
5.	Minimize the potential for property damage from fire and related perils from exceeding DOE established levels.	I	CRD O 420.1B, Chapter II, 1.d.
6.	Minimize the potential for damage to process control and safety systems as a result of fire or related perils.	I	CRD O 420.1B, Chapter II, 1.e.

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7.	Fulfill the requirements for the best-protected class of industrial risks.	I	CRD O 420.1B, Chapter II, 3.a.(1)
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### 2.2 MSC Fire Protection Programmatic Requirements

1.	Maintenance of a qualified fire protection engineering organization.	I	CRD O 420.1B, Chapter II, 3.b.(7)
2.	Maintenance of a trained and equipped fire department.	I	CRD O 420.1B, Chapter II, 3.b.(7)
3.	Maintenance of a trained fire protection system testing and maintenance staff.	I	CRD O 420.1B, Chapter II, 3.b.(7)
4.	A system to ensure that the requirements of the DOE fire protection program are documented and incorporated in the plans and specifications for all new facilities and for significant modifications of existing facilities.	I	CRD O 420.1B, Chapter II, 3.b.(3)
5.	Provide a documented review by a qualified Fire Protection Engineer (FPE) of plans, specifications, procedures and acceptance tests consistent with <a href="#">MSC-PRO-8635</a> , <i>Review and Approval of Technical Documents</i> .		CRD O 420.1B, Chapter II, 3.b.(4)
6.	Perform a review of the Baseline Needs Assessment (BNA), if determined necessary, for the incorporation of applicable BNA information into site emergency plans, Fire Hazards Analyses and Documented Safety Analyses as appropriate for those facilities on site that take credit through an FHA, or DSA, an emergency response by the fire department to mitigate any event at their facilities.	I	CRD O 420.1B, Chapter II, 3.b. (9)
7.	Comprehensive, written fire protection criteria or procedures that include: <ul style="list-style-type: none"> <li>a. site-specific requirements;</li> <li>b. staff organization, training and responsibilities;</li> <li>c. administrative responsibilities;</li> <li>d. design, installation, operability, inspection, maintenance and testing requirements;</li> <li>e. use and storage of combustible, flammable, radioactive, and hazardous materials to minimize the risk of fire;</li> <li>f. fire protection impairments;</li> <li>g. smoking and hotwork;</li> <li>h. safe operation of process equipment;</li> <li>i. prevention measures that decrease the risk of fire.</li> </ul>	I	CRD O 420.1B, Chapter II, 3.b.(2)

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### 2.3 MSC General Fire Protection Design Requirements

1.	A reliable water supply of adequate capacity for automatic and manual fire suppression.	I	CRD O 420.1B, Chapter II, 3.c.(1)
2.	Noncombustible construction materials for facilities exceeding the size limitations established by DOE (See DOE-STD-1066, <i>Fire Protection Design</i> , for information on size limitations).	V	CRD O 420.1B, Chapter II, 3.c.(2)
3.	Complete fire-rated construction and barriers, commensurate with the applicable codes and fire hazards, to isolate hazardous areas and minimize fire spread and loss potential consistent with limits as defined by DOE (See DOE-STD-1066-99).	I	CRD O 420.1B, Chapter II, 3.c.(3)
4.	Automatic fire extinguishing systems throughout all significant facilities and in all facilities and areas with potential for loss of safety class systems (other than fire protection systems), significant life safety hazards, unacceptable program interruption, or fire loss potential in excess of limits defined by DOE (See DOE-STD-1066-99).	V	CRD O 420.1B, Chapter II, 3.c.(4)
5.	A means to summon the fire department in the event of a fire and to ensure immediate physical access capability for effective fire department intervention.	I	CRD O 420.1B, Chapter II, 3.c.(7) and (9)
6.	A means to notify and evacuate building occupants in the event of a fire.	I	CRD O 420.1B, Chapter II, 3.c.(7)
7.	Emergency egress and illumination for safe facility evacuation in the event of fire as required by applicable codes or FHA's.	I	CRD O 420.1B, Chapter II, 3.c.(8)
8.	Redundant fire protection systems in areas where safety class systems are vulnerable to fire damage.	I	CRD O 420.1B, Chapter II, 3.c.(5)
9.	In new facilities, redundant safety class systems (other than fire protection systems) must be located in separate fire areas).	V	CRD O 420.1B, Chapter II, 3.c.(6)
10.	A means to prevent the accidental release of significant quantities of contaminated product of combustion and fire fighting water to the environment, such as ventilation control and filter systems, and curbs and dikes. Such features would only be necessary if required by the FHA or DSA in conjunction with other facility or site environmental protection measures.	V	CRD O 420.1B, Chapter II, 3.c.(10)

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11.	Fire protection systems designed such that their inadvertent operation, inactivation, or failure of structural stability will not result in the loss of vital safety functions or inoperability of safety class systems as determined in the Documented Safety Analysis.	I	CRD O 420.1B, Chapter II, 3.c.(12)
12.	A means to address fire related hazards that are unique to DOE and not addressed in industry codes and standards.	I	CRD O 420.1B, Chapter II, 3.c.(11)

### 2.4 MSC Fire Protection Program Responsibility Requirements

1.	<p>Hanford Fire Department (HFD) – The HFD has the overall responsibility for developing, administering and enforcing the fire and life safety program for the Hanford site. Duties and responsibilities of the HFD shall include but not be limited to:</p> <ul style="list-style-type: none"> <li>a. Compliance with the applicable fire department provisions of NFPA Codes and Standards and this CRD and Section 4.0 of DOE G 420.1-35 (latest edition), <i>Implementation Guide for DOE Fire Protection and Emergency Services Program</i>.</li> <li>b. Maintaining mutual aid agreements with surrounding area fire districts.</li> <li>c. Maintaining a qualified Industrial Hygienist on staff to serve as a technical advisor for emergency response, safety requirements and personal protective equipment purposes.</li> <li>d. Performance of self-contained breathing apparatus maintenance.</li> <li>e. Providing appropriate sitewide fire protection system inspection, testing and maintenance of fire alarm and suppression systems and maintaining all records of such including system deactivation/reactivations per <a href="#">MSC-RD-210</a>, <i>Records Management Program</i>.</li> <li>f. Complying with the Hanford site lock and tag program.</li> <li>g. Maintaining confined space entry and other emergency rescue readiness as required by 29 CFR 1910.</li> <li>h. Developing and maintaining pre-incident plans.</li> <li>i. Be the designated incident command agency for the Hanford site except during declared security events.</li> <li>j. Act as the lead emergency response organization and provide incident command as required by 29 CFR 1910 and NFPA Codes and Standards for fire suppression, emergency medical and ambulance service, special emergency rescue including confined space, high angle, and low angle technical rescue and hazardous material events for Hanford site operations.</li> </ul>	I	<p>SCRD O 420.1B, Rev. 4, Section E – Specific Supplemental Requirements: 1) Hanford Fire Department – Fire Protection</p>
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	<p>k. Act as the lead emergency medical service provider and communicate with the Occupational Medical contractor as required by emergency response plans. Operate emergency medical services in accordance with the Mid-Columbia Emergency Medical Services and Trauma Council and their medical program director.</p> <p>l. Collecting and tracking performance indicator data and coordinating the data and corrective actions with other Hanford contractors</p>		
	<p>m. Maintenance of the Fire Department and Fire Protection Forum Internet Homepage.</p> <p>n. Preparation and maintenance of an operational baseline needs assessment consistent with the site mission, hazards and requirements as described in DOE G 420.1-3, Section 4.9 and that complies with the requirements of SCRD O 420.1B, Rev. 4.</p>	I	Fire Marshal's Charter
2.	<p>Hanford Fire Marshal (HFM) – The HFM, who shall be a member of the HFD, shall have the authority to develop, administer and enforce the Fire Prevention Program for the MSC as directed by SCRD O 420.1B, Rev. 4, <i>Facility Safety</i>, and by RL approval of the HFM's Charter, which establishes the authority, responsibilities and duties of the HFM. The HFM's authority shall extend to all work performed under or on behalf of MSC. RL will support the HFM in enforcement of the codes and standards and execution of the HFM's duties as described below.</p> <p><b>NOTE:</b> <i>Whenever the title Fire Marshal is used, it is also intended to mean the Fire Chief or a representative designated as a Deputy Fire Marshal.</i></p>		
3.	<p>To support the development, administration and enforcement of the Fire Prevention Program the duties of the HFM shall include but not be limited to:</p> <p>a. Implementing a process for developing fire safety equivalencies, exemptions and deviations to any fire protection code or standard.</p> <p>b. Assist the RL FPE by making routine code interpretations and performing initial reviews of fire safety exemptions, equivalencies and deviations</p> <p><b>NOTE:</b> <i>DOE will be the Authority Having Jurisdiction (AHJ) in review and final approval of exemptions, equivalencies and deviations.</i></p> <p>c. Developing fire prevention programs including but not limited to programs for fire protection water supply and construction/demolition projects.</p>	I	SCRD O 420.1B, Rev. 4, Section B, 4)

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	<ul style="list-style-type: none"> <li>d. Review and approval of Acceptance Test Procedures (ATPs) for fire alarm and suppression systems and equipment including new or modified installations.</li> <li>e. Conducting maintenance, testing and inspection record audits on an unspecified number of facilities annually in a random selection process to ensure the testing and inspection programs meet minimum established requirements.</li> </ul>		
	<ul style="list-style-type: none"> <li>f. Authorization to establish and issue permits, certificates, approvals or orders pertaining to fire control and fire hazards. The HFM shall also have the authority to revoke a permit if any violation of fire codes or standards is found upon inspection or if it is determined that false statements of misrepresentations have been made upon which the permit or approval was based.</li> <li>g. Issuing advisory bulletins and providing assistance in resolving fire protection/prevention concerns.</li> <li>h. Review and approval of new fire protection system designs and modifications/upgrades to existing fire protection systems per <a href="#">MSC-PRO-8635</a>, <i>Review and Approval of Technical Documents</i>.</li> <li>i. Authority to require that fire watches be conducted when conditions warrant.</li> <li>j. Authority to investigate the cause, origin or circumstance of any fire, explosion, accident, incident or other hazardous condition or any occurrence involving installed fire protection systems and take custody of all physical evidence relating to the cause of the fire, explosion or other hazardous condition.</li> <li>k. Authority to issue “Findings” for noncompliance with applicable fire protection requirements including but not limited to DOE and NFPA.</li> <li>l. Be the final approval authority on pre-incident plans.</li> <li>m. Performance of ignitable and reactive waste site inspections as required by WAC 173-303-395 and control and maintenance of the documentation per <a href="#">MSC-RD-210</a>, <i>Records Management Program</i>. Document the inspection on Site Form A-6005-334, Hanford Fire Department Ignitable/Reactive Waste Fire Inspection form.</li> </ul>	I	Fire Marshal’s Charter
4.	<p>All MSC personnel are responsible for:</p> <ul style="list-style-type: none"> <li>a. Notifying the HFD of smoke smells, or fires whether they are extinguished or not.</li> <li>b. Unexpected and unidentified odors may be investigated by project safety and health personnel. If the odor can be traced to an identifiable source and controlled safely with</li> </ul>		

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	<p>local resources, it can be resolved at the facility level. If project safety and health personnel determine that the odor may be a health threat and cannot be safely controlled with local resources or an odor is found to be the result of an action that requires emergency response, the Hanford Fire Department shall be notified.</p> <ul style="list-style-type: none"> <li>c. Performing activities safely to prevent the occurrence of a fire.</li> <li>d. Notifying the HFD and immediate manager or supervisor of hazardous conditions that could result in a hazardous material spill, emergency rescue, or medical need.</li> <li>e. Notifying the HFD of any hazardous material spill, or any other incident or emergency requiring response by the HFD.</li> <li>f. Directing, if possible, the HFD to the scene of the emergency.</li> <li>g. Reporting to the HFM Office any life safety concerns such as locked exit doors and blocked or partially blocked aisles.</li> <li>h. Parking and driving all vehicles (private and government) so they do not block fire department equipment access or delay emergency response vehicles.</li> </ul>		
<p>5.</p>	<p>MSC Project Management shall:</p> <ul style="list-style-type: none"> <li>a. Provide and maintain the necessary fire protection staff and resources to develop, implement, and maintain the MSC Fire Protection program, and provide technical expertise when necessary to achieve DOE fire protection goals and requirements.</li> <li>b. Implement and adhere to the requirements of the fire protection program for the facilities, programs, and/or operations under their jurisdiction and provide funding for support to achieve and maintain compliance when necessary.</li> <li>c. Assist fire protection personnel with fire protection facility assessments, appraisals, investigations, and analyses and with functional testing and preventive and corrective maintenance including administration of the lock and tag program for fire system work.</li> </ul>	<p>I</p>	<p>CRD O 420.1B, Chapter II, 3.b.2</p>

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	<p>d. Provide notification to the HFD at least 2 working days in advance of the following planned or anticipated conditions or events: (except for emergency drills as noted below)</p> <ul style="list-style-type: none"> <li>• Fire System Impairments.</li> <li>• Water Outages.</li> <li>• Power Outages.</li> <li>• Road Closures.</li> <li>• Any condition that prevents fire suppression, detection and alarm systems from activating.</li> <li>• Any planned condition that could delay or obstruct emergency vehicle access.</li> <li>• Emergency drills, exercises, etc., in which HFD participation is anticipated (two weeks prior notification required).</li> </ul>	I	CRD O 420.1B, Chapter II, 3.b.(2)
	<p>e. Ensure designs, specifications, modifications, fire system acceptance test procedures and fire equipment procurements are submitted to the HFM's Office or the Projects' HFM deputized FPEs for review and approval per <a href="#">MSC-RD-9118</a>, <i>Fire Protection Design/Operations Criteria</i>, and <a href="#">MSC-PRO-8635</a>, <i>Review and Approval of Technical Documents</i>.</p> <p><b>NOTE:</b> <i>For HFD fire system testing/inspection and maintenance procedures and work documents, the HFM Office will provide review and input through the HFD protocol for procedure review as described in HFD Policy 4.6, Rev. 0.</i></p> <p>f. Develop corrective action plans, provide timely resolution, and provide the necessary support for resolving fire protection deficiencies identified during appraisals, audits, and assessments, and fire protection system emergency impairments and system restrictions.</p> <p>g. Ensure correction activities for fire protection deficiencies are funded and completed with minimum delays.</p>	I	
	<p>h. Report fire and property losses in accordance with CRD M 231.1-1A, <i>Environment, Safety, and Health Reporting Manual</i>.</p>	I	Fire Marshal's Charter
	<p>i. Ensure a Fire Hazards Analysis is prepared as required by <a href="#">MSC-PRO-38421</a>, <i>Fire Hazard Analysis Development and Implementation Process</i>.</p>	I	CRD O 420.1B, Chapter II, 3.b.(15)
	<p>j. Ensure that facility fire protection assessments and fire protection program assessments are performed in accordance with the requirements of <a href="#">MSC- PRO-34037</a>, <i>Performance of Fire Protection Assessments</i>, and maintenance of the documentation per <a href="#">MSC-RD-210</a>,</p>	I	CRD M 231.1- 1A, Chg2, (Supp. Rev. 1)

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<i>Records Management Program.</i>			
k. Ensure that all MSC employees receive basic fire prevention training including the following items (as a minimum) upon initial employment and annually thereafter: <ul style="list-style-type: none"> <li>• Instruction on the use of portable fire extinguishers.</li> <li>• Good housekeeping practices.</li> <li>• Proper response/notification in the event of a fire, medical emergency and/or hazardous materials spill or release.</li> <li>• Recognition of potential fire hazards.</li> </ul> <p><b>NOTE:</b> <i>Successful completion of the Hanford General Employee Training (HGET) fire protection lessons satisfies the above requirements.</i></p>	I		CRD O 420.1B, Chapter II, 3.b.(5)
l. Ensure that employees designated for assignment as a fire-watch (such as for a welding and cutting operation) receive training once every 3 years. <p><b>NOTE:</b> <i>Training Activity Course #044400 (includes hands-on portable fire extinguisher training).</i></p>	I		CRD O 420.1B, Chapter II, 3.b.(14)
m. Ensure all fire protection training is documented according to training administration procedures. (Refer to <a href="#">MSC-PRO-249</a> , <i>Training Records Administration</i> )	I		29 CFR 1910.157
n. New and existing buildings shall have approved identification numbers or address numbers as appropriate placed in a position to be plainly legible and visible from the street or road fronting the property. <p><b>NOTE:</b> <i>Contact the responsible FPE or the HFM's office for building identification sign specifications.</i></p>	I		MSC-MP-32219, Appendix B, 851.22(a)
o. Ensure that all modifications/additions to site water distribution systems are approved by the HFM's Office.	I		CRD O 420.1B, Chapter II, 3.b.(2); NFPA 1, 10.12.1.1; CRD O 420.1B, Chapter II, 3.b.(4)

### 3.0 FORMS

*Hanford Fire Department Ignitable/Reactive Waste Fire Inspection Form (A-6005-334)*

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### 4.0 RECORD IDENTIFICATION

All records are generated, received, processed, and maintained by MSC in accordance with [MSC-PRO-10588](#), *Records Management Processes*.

**Records Capture Table**

Name of Document	Submittal Responsibility	Retention Responsibility
Various including ATP's	Submittal: Contractor or project with Fire Marshal's Office Marshal's Office approval.	<i>Retained in IDMS</i>
Hanford Fire Department Ignitable/Reactive Waste Fire Inspection Form	Submittal: Contractor or project with Fire Marshal's Office Marshal's Office approval.	<i>Fire Protection Engineers</i>

### 5.0 REFERENCES

#### 5.1 Source References

29 CFR 1910, *Occupational Safety and Health Administration, Department of Labor*

CRD M 231.1-1A, Chg. 2 (Supplemented Rev. 1) *Environment, Safety and Health Reporting Manual*

CRD O 420.1B, *Facility Safety*

MSC-MP-32219, *10 CFR 851 MSC Worker Safety and Health Program Description*

Authority, Responsibilities, and Duties of the Hanford Fire Marshal (Fire Marshal's Charter), DOE Approval Letter 08-SED-0108, dated March 14, 2008.

SCRD O 420.1B, Rev.4, *Facility Safety*

#### 5.2 Working References

CRD M 231.1-1A, *Environment, Safety, and Health Reporting Manual*.

DOE G 420.1-3, *Implementation Guide for DOE Fire Protection and Emergency Services Programs for use with DOE O 420.1B*

DOE-STD-1066-99, *Fire Protection Design Criteria*

*HFD Policy 4.6, Rev. 0, Hanford Fire Department Internal Policy*

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[MSC-PRO-249](#), *Training Records Administration*

[MSC-PRO-8635](#), *Review and Approval of Technical Documents*

[MSC-PRO-34037](#), *Performance of Fire Protection Assessments*

[MSC-PRO-38421](#), *Fire Hazard Analysis Development and Implementation Process*

[MSC-RD-210](#), *Records Management Program*

[MSC-RD-9118](#), *Fire Protection Design/Operations Criteria*

NFPA 1, *Fire Code, 2009 Edition*

WAC 173-303-395, *Other General Requirements*