

FIRE PROTECTION SYSTEM, INSPECTION, TESTING, MAINTENANCE, AND DISCREPANCIES MANAGEMENT	Manual Document Page Issue Date	ESHQ TFC-ESHQ-FP-STD-04, REV C 1 of 23 July 22, 2015
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**FIRE PROTECTION SYSTEM
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1.0 PURPOSE AND SCOPE

(5.1.1, 5.1.2, 5.1.3)

This standard provides the minimum requirements for fire protection system inspection, testing, and maintenance in government-owned facilities under the Washington River Protection Solutions, LLC (WRPS) contract. This document also defines facility management responsibilities regarding fire protection system reporting, tracking and compensatory measures to address system deficiencies. The requirements are from the National Fire Protection Association (NFPA) Codes and Standards, which are mandatory under the Tank Operations Contract (TOC) as amended by Department of Energy (DOE) approved exemptions and equivalencies.

Although support in achieving the requirements of this section is provided by the Hanford Fire Department (HFD), the final responsibility for ensuring full compliance with this section shall belong to the facility management.

Facility Management is responsible for ensuring that all inspection/testing/maintenance (ITM) activities identified in this requirements document are completed within the specified frequencies. The Building Manager is specifically responsible for completing the inspection/testing activities identified with an asterisk found in this standard. All other activities are performed by the HFD and scheduled in concert with facility management. All inspection, testing, and maintenance activities are performed by HFD as required by MSC-RD-7899, "Fire Protection System Testing/Inspection/Maintenance/Discrepancies."

This standard establishes the minimum operability specifications for fire protection features in TOC facilities. Compliance with the inspection and testing requirements will provide the required assurance that the systems are available and reliable.

2.0 IMPLEMENTATION

This standard is effective on the date shown in the header.

3.0 STANDARD

All fire protection systems shall be inspected, tested, and maintained in accordance with the requirements described in the tables in this standard. Management shall provide all necessary support for the inspection, testing, and maintenance of fire protection systems.

NOTE: The building manager is responsible for completing the inspection/testing activities identified in the following tables with an asterisk (*) in the device column. All other activities are scheduled and performed by the Hanford Fire Department.

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3.1 Facility Management Support Requirements

3.1	REQUIREMENT	SOURCE
1.	Management shall provide all necessary support for the inspection, testing, and maintenance of all in-service fire protection systems under their responsibility as provided in this document.	DOE O 420.1B, ENS-ENG-IP-05 R0 MSC-RD-7899
2.	<p>a. Scheduling of inspections, testing, and maintenance activities specified in this document shall comply with the following and the criteria defined in Attachment A.</p> <p>NOTE: Facility Management is ultimately responsible for assuring that all inspection, testing, and maintenance (ITM) activities, including those scheduled by the HFD, are completed as required.</p> <p>b. If a fire system or system component is overdue for its test as required by this document, the building manager shall implement appropriate compensatory measures after consultation with the TOC Fire Protection Engineer (FPE).</p> <p>c. No grace period to complete fire system testing is recognized by the TOC.</p>	DOE O 420.1B, ENS-ENG-IP-05 R0 MSC-RD-7899
3.	All ITM activities conducted on fire protection systems shall be performed by trained personnel in accordance with NFPA 25 and NFPA 72.	DOE O 420.1B, ENS-ENG-IP-05 R0 MSC-RD-7899
4.	<p>Any fire protection system discrepancies identified shall require the following:</p> <p>a. Immediately notify the Fire Department.</p> <p>b. Inform the TOC FPE.</p> <p>c. As necessary, brief the building occupants affected by the discrepancy.</p> <p>d. Ensure the discrepancies are tracked and proper corrective actions and compensatory measures are implemented.</p>	DOE O 420.1B, ENS-ENG-IP-05 R0 MSC-RD-7899

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3.1	REQUIREMENT	SOURCE
	<p>5. When fire surveillance is required as determined by facility management and the TOC FPE, the facility manager shall ensure the following surveillance requirements are implemented.</p> <p>a. Notify occupants of the building when a fire protection system is out of service and the proper actions to take in an emergency.</p> <p>b. Instruct each fire surveillance person on the following:</p> <ol style="list-style-type: none"> (1) The areas to be surveyed (2) Frequency of tours required (3) The specifics of the fire protection impairment (4) Appropriate emergency procedures and actions (5) Methods for sounding the alarm(s) (6) Procedure for manually activating fire suppression systems (if applicable) (7) Methods for recording tours <p>c. Implement the surveillance as follows:</p> <ol style="list-style-type: none"> (1) Continuously, if required by facility process standards/controls. (2) Hourly, when fire protection systems are out of service. <p>NOTE: Occupied areas do not require fire surveillance, and Criteria c.(1) & c.(2), above, may be modified by the TOC FPE using a graded approach.</p> <p>d. Document the surveillance on Hanford Site Fire Surveillance Log form (A-6001-431 or equivalent).</p>	<p>DOE O 420.1B, ENS-ENG-IP-05 R0 MSC-RD-7899</p>

3.2 Fire System Discrepancy Requirements

3.2	REQUIREMENT	SOURCE
1.	Any employee identifying a fire protection system discrepancy must notify the facility management immediately.	DOE O 420.1B, ENS-ENG-IP-05 R0
2.	Fire protection system discrepancies shall be prioritized in by the Hanford Fire Department as directed by MSC-RD-7899. All discrepancies (Emergency Impairments, System Restrictions, Deficiencies and Maintenance Items) will be formally tracked by Fire Protection Systems Inspection, Testing and Maintenance.	DOE O 420.1B, ENS-ENG-IP-05 R0 MSC-RD-7899

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3.2	REQUIREMENT	SOURCE
	The facility FPE will assist the HFD with the priority designation and closeout of each item and shall approve corrective action plans generated by the facility.	
3.	<p>Priority 1 Discrepancies</p> <p>a. Priority 1 discrepancies should be repaired in 24 hours or less, and the duration of the impairments minimized.</p> <p>b. If the system cannot be restored within 5 days, facility management must submit a status report plan to the HFD and the facility FPE for concurrence on a weekly basis.</p> <p>c. As soon as an emergency impairment is recognized, facility management must implement the applicable compensatory measures noted below (items e - i) and obtain concurrence from the facility FPE.</p> <p>d. Establish a fire surveillance throughout areas affected by emergency impairments in accordance with this document.</p> <p>NOTE: A fire surveillance does not provide protection equivalent to a fire protection system. Fire surveillance durations must be minimized.</p> <p>e. Establish a fire surveillance throughout areas affected by emergency impairments in accordance with this document.</p> <p>NOTE: A fire surveillance does not provide protection equivalent to a fire protection system. Fire surveillance durations must be minimized.</p> <p>f. Evaluate the need to terminate hazardous production or maintenance operations protected by the fire system.</p> <p>g. Arrange for HFD standby or alternate water supplies.</p> <p>h. Maintain as much of the fire protection system in service as possible.</p> <p>NOTE: Often sprinkler systems can be kept in service using temporary hose connections to hydrants or nearby sprinkler systems. Verify emergency vehicle access to the facility is not obstructed.</p>	<p>DOE O 420.1B, ENS-ENG-IP-05 R0 MSC-RD-7899</p>

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3.2	REQUIREMENT	SOURCE
4.	<p>Priority 2 Discrepancies</p> <ol style="list-style-type: none"> a. Priority 2 discrepancies shall be repaired within 21 calendar days. b. Fire alarm panels locked in TROUBLE due to a malfunctioning supervisory/trouble condition shall be subject to a subsequent trouble surveillance. Surveillance frequency shall be determined by the facility FPE using a graded approach, normally at least once per shift. New trouble conditions shall be reported to facility management, the facility FPE and the Fire Department. 	<p>DOE O 420.1B, ENS-ENG-IP-05 R0 MSC-RD-7899</p>
5.	<p>Planned Impairments</p> <ol style="list-style-type: none"> a. Notify the Hanford Fire Systems Maintenance at least 24 hours in advance of planned impairments. b. Only one planned impairment should be scheduled at a time in a given facility. It is understood that at times conditions may not support this, and it may be necessary to have more than one impairment at a time. c. Planned impairments require a work package approved by the facility fire protection engineer. The work package shall: <ul style="list-style-type: none"> ● Define the scope of the planned fire protection impairment. ● Define the steps for temporary deactivation, disabling or bypassing of the specific fire protection systems. ● Define any compensatory measures that shall be in place to mitigate the potential consequences of a fire and to minimize the length of the impairment. 	<p>DOE O 420.1B, ENS-ENG-IP-05 R0 MSC-RD-7899</p>
6.	<p>Special Conditions</p> <p>Freeze Protection Discrepancies:</p> <ol style="list-style-type: none"> a. Categorize, track, and repair systems impaired due to unexpected freeze conditions as either system restrictions or emergency impairments, as appropriate. b. Track systems removed from service on a preplanned basis to prevent freeze damage as deactivations. 	<p>DOE O 420.1B, ENS-ENG-IP-05 R0</p>

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3.2	REQUIREMENT	SOURCE
7	<p>Utility Outages</p> <p>a. Treat fire protection systems impaired as a result of either an unexpected or planned outage of a utility system as either a system restriction or emergency impairment, as appropriate.</p> <p>b. If more than one structure is affected by the outage, implement compensatory measures for each affected structure. Write the impairment against the most significant of the affected facilities, and list all affected facilities on the impairment report.</p>	<p>DOE O 420.1B, ENS-ENG-IP-05 R0</p>
8.	<p>Nonfunctioning fire protection components that provide an interface with facility occupants (e.g., manual pull stations, bells, strobes) shall be affixed with a HFD "Out of Service" tag.</p>	<p>NFPA 1 13.3.4.3 MSC-RD-7899</p>

3.3 Fire Protection System Winterization Requirements

3.3	REQUIREMENT	SOURCE
1.	<p>The facility management responsible for the maintenance of each facility provided with fire protection systems/components shall ensure a documented winterization program is in place for their facilities.</p>	<p>DOE O 420.1B, ENS-ENG-IP-05 R0</p>
2.	<p>Document any deficiencies identified and initiate corrective action to repair or resolve the condition.</p>	<p>DOE O 420.1B, ENS-ENG-IP-05 R0</p>
3.	<p>Maintain winterization inspection records.</p>	<p>DOE O 420.1B, ENS-ENG-IP-05 R0</p>
4.	<p>Provide all areas where fire systems are installed with sufficient heat and/or noncombustible insulation to prevent freezing and/or equipment damage.</p>	<p>DOE O 420.1B, ENS-ENG-IP-05 R0</p>
5.	<p>Use permanent freeze protection such as forced hot air, fixed radiant heaters, insulation. Do not use temporary measures such as portable heaters for freeze protection of fire systems</p>	<p>DOE O 420.1B, ENS-ENG-IP-05 R0</p>

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3.3	REQUIREMENT	SOURCE
6.	<p>Use heat tape and portable heaters to winterize existing fire protection systems only if engineered protection measures are not readily available or feasible. If such measures must be used, the following restrictions apply:</p> <ol style="list-style-type: none"> 1. The portable heaters must comply with TFC-ESHQ-FP-STD-09. 2. Heat Tape installation must comply with the following: <ol style="list-style-type: none"> a. All new and/or replacement heat tape installed must be Underwriter's Laboratory (UL) listed for its intended use (that is, specifically tested for use on fire protection systems as well as the piping material being protected). b. The heat tape must be self-regulating. c. Noncombustible insulation shall be used over the pipe and heat tape. d. The fire system pipe temperature shall be monitored by a system including a mechanism to transmit a trouble alarm to the HFD if the pipe temperature drops below 40° F. e. Heat tape may not be used to prevent freezing of sprinkler system branch lines. f. Heat tape shall not be used for new system designs. <p>NOTE: An exception to rule 2.f is heat tape that is in compliance with the other requirements of this standard may be used to protect fire system risers in unheated trailer crawl spaces from freezing.</p> <ol style="list-style-type: none"> g. All heat tape installations shall be approved by the TOC FPE. 	DOE O 420.1B, ENS-ENG-IP-05 R0

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3.4 Suppression System Testing/Inspection and Maintenance

NOTE: Frequencies specified in the table below are minimum frequencies. More frequent ITM may be performed as needed.

3.5	Device	Frequency/Test	Source
1.	Gauges	*Monthly: Check gauges to verify indicated pressure is in the normal range.	NFPA 25; 5.2.4 MSC-RD-7899
2.	Deluge and Preaction Systems	*Daily: During cold weather, if not provided with low temperature alarm, inspect valve enclosure heating equipment to ensure at least 40°F can be maintained. *Monthly: During cold weather if provided with low temperature alarm, inspect valve enclosure heating equipment to ensure at least 40°F can be maintained.	NFPA 25; 13.4.3 and Equivalency 96-QSH-068 MSC-RD-7899
3.	Dry Systems (Dry Valves, Accelerators, Exhausters)	*Daily: (during cold weather if not provided w/low temperature alarm) *Monthly: (during cold weather if provided w/low temperature alarm) Inspect valve enclosure heating equipment to ensure at least 5°C (40°F) can be maintained.	NFPA 25; 13.4.4 and Equivalency 96-QSH-068 MSC-RD-7899
4.	Dry Chemical Systems (Fixed)	*Monthly: Inspect system and components in accordance with manufacturer's instructions. *6 Years: Inspect dry chemical in pressurized containers, or replace containers with new. *12 Years: Hydrostatically test the chemical container and hose assembly, or replace with new.	NFPA 17; 11-2; 11-3; 11-5 MSC-RD-7899
5.	Control Valves	*Weekly: (valves without locks or tamper switches) Inspect the installation and verify control valves are in the open position. *Monthly: (valves with locks or tamper switches) Inspect the installation and verify control valves are in the open position.	NFPA 25; 13.3 MSC-RD-7899

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3.5	Device	Frequency/Test	Source
		<p>Annually: Perform the following on each primary, sectional, and control valve:</p> <ul style="list-style-type: none"> • Oil or grease sprinkler system OS&Y valve stems. • Operate all valves the full travel of their mechanism to ensure they operate easily. Maintain a record of the number of turns required to operate each valve from the fully open to the fully shut position. Reopen the valve and check to see if the number of turns to close equals the number to open. • Open each PIV until spring or torsion is felt in the rod, indicating the rod <u>has not</u> become detached from the valve. Valves should be backed off one-quarter turn from wide open to prevent jamming. 	
6.	Water Tanks	<p>*Daily during cold weather: Inspect the heating system on tanks without low temperature alarms. Inspect automatic tank fill valve enclosure heating system.</p> <p>*Weekly during code weather: Inspect the heating system on tanks with low temperature alarms. Inspect automatic tank fill valve enclosure heating system. Inspect automatic tank fill isolation valves. Check and record water temperature on tanks without low temperature alarms.</p> <p>*Monthly: Inspect water level on tanks without low level alarms.</p> <p>*Monthly during cold weather: Check and record water temperature alarms and test low water temperature alarms and high water temperature limit switches. Inspection exterior of automatic fill valves. Inspect supervised automatic tank fill isolation valves.</p> <p>*3 Months: Inspect water level on tanks with low level alarms. Inspect tank exterior, support structure, ladders, and general surroundings. Inspect and clean tank fill valve strainers, filters, and orifices.</p>	<p>NFPA 25; 9.2; 9.3, 9.5 and Equivalency MSC-RD-7899</p>

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3.5	Device	Frequency/Test	Source
		<p>*Semi-Annually: Test each relief valve on pressure tanks.</p> <p>*Annually: Inspect exterior conditions and expansion joints. Test heating systems and high water temperature limit switches. Maintain cathodic protection, cycle drain valves, and clean vents. Test and inspect interior of automatic fill valves. Test low water level alarm.</p> <p>*3 Years: Inspect interior of steel tanks without cathodic protection.</p> <p>*5 Years: Inspect interior of tanks with cathodic protection. Test level gauges and pressure gauges Per manufacturer's instructions: Maintain and replace soft parts in automatic tank fill valves.</p>	
7.	Fire Pumps	<p>*Weekly: Perform inspections specified in Paragraph 8.2.2 of the reference.</p> <p>*Annually: Conduct performance test of pump in accordance with 8.3.3 of the reference.</p> <ul style="list-style-type: none"> • Check controller timer. • Check for proper indication of controller lights. • Check all valves to make sure they are in the correct position (open or closed). • Verify proper operation of circulation relief valves and pressure relief valves. <p>Pump performance test:</p> <ul style="list-style-type: none"> • Verify pump speed at each flow. • Record suction and discharge pressure at each flow. • Check water-flow and alarm switches. • Record relief valve setting. 	NFPA 25 8.2; 8.3; 8.5

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3.5	Device	Frequency/Test	Source
	Fire Pumps (Continued)	<ul style="list-style-type: none"> • Calibrate gauges. • Operate speed trip (internal combustion) • Document an evaluation of the pump performance. <p>*As Required: A preventive maintenance program shall be established in accordance with the driver and pump manufacturer's recommendations. In the absence of specific manufacturer's recommendations, the following applicable maintenance activities and frequencies shall be used.</p> <p>After each pump run:</p> <ul style="list-style-type: none"> • Check wet pit suction screen <p>Weekly:</p> <ul style="list-style-type: none"> • Check for water in fuel system • Inspect flexible fuel hoses and connectors • Inspect lube oil heater • Check for adequate cooling water to heat exchanger • Check engine water pumps for leaks • Check cooling hoses and connections • Inspect exhaust system • Drain exhaust condensate trap • General electrical system inspection • Check cranking circuit voltage (9 volts for 12 volt system, or 18 volts for 24 volt system) <p>Monthly:</p> <ul style="list-style-type: none"> • Exercise isolating switch and circuit breaker • Clean battery case 	<p>NFPA 25; 8.5.1 and Equivalency MSC-RD-7899</p>

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3.5	Device	Frequency/Test	Source
		<ul style="list-style-type: none"> • Exercise isolating switch and circuit breaker • Trip circuit breaker (if mechanism provided) • Inspect and operate emergency manual starting means (without power) • Check and tighten electrical connections • Lubricate mechanical moving parts in the electrical system, excluding starters and relays • Check for water and foreign material in fuel tank • Fuel tank vents and overflow piping are unobstructed • Inspect fuel piping • Change oil and filters (50 hours, or annual) • Rod out heat exchanger • Inspect combustion air duct work and louvers • Test for excessive exhaust back pressure • Inspect exhaust system hangers and supports • Tighten control and power wiring connections • Check voltmeter and ammeter for accuracy • Check for corrosion on printed circuit boards • Check for leaks in plumbing parts • Check for signs of water on electrical parts <p>2 Years:</p> <ul style="list-style-type: none"> • Replace circuit breakers or fuses 	

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3.5	Device	Frequency/Test	Source
8.	Winterization	<p>*Annually</p> <p>Inspect each facility by the end of October to ensure all areas are winterized to protect the installed fire protection systems. Ensure the following (as a minimum):</p> <ol style="list-style-type: none"> Condition/operation and adequacy of heating systems (e.g., forced air, radiant heaters, portable heaters, etc.) Clean duct heating coils to help preclude smoke detector alarm upon initial coil energization. Condition/operation of thermostats and filters. Condition/operation/installation of heat tape systems. Drain auxiliary drains on dry pipe, pre-action, and deluge sprinkler systems. 	<p>NFPA 25; 4.1.1.1, 13.4.3, 13.4.4</p> <p>MSC-RD-7899</p>
9.	Backflow Preventers	<p>*Weekly: Inspect double check assemblies, double check detector assemblies, reduced pressure assemblies and reduced pressure detector assemblies to ensure that the OS&Y isolation valves are in the normal open position.</p> <p>*Monthly: If OS&Y valves are secured with locks or electronically supervised, the inspections to verify OS&Y position may be monthly.</p>	<p>NFPA 25; 13.6</p> <p>MSC-RD-7899</p>

3.5 Miscellaneous System Testing/Inspection and Maintenance

NOTE: Frequencies specified in the table below are minimum frequencies. More frequent ITM may be performed as needed.

3.6	Device	Frequency/Test	Source
1.	Fire/Smoke Dampers	<p>*4 Years: Carefully disconnect the actuating device, and verify the damper closes without any additional force being required. Inspect the damper, giving attention to hinges and other moving parts, to see the</p>	<p>NFPA 90A 5.4.7</p>

3.6	Device	Frequency/Test	Source
		<p>damper is in good operable condition. Check the latch, if provided, and lubricate moving parts, if necessary. Dampers listed for "dynamic air flow" shall be tested under airflow conditions only if the system is designed for dynamic flow operation of the damper.</p> <p>Verify the damper force will totally close and latch the damper under normal operating conditions.</p>	
2.	Fire and Smoke Barriers	<p>*2 Years: Inspect all fire and smoke barriers within the building or facility to ensure they are capable of providing the necessary control of smoke or fire (i.e., have not been penetrated, seals in acceptable condition). Any questionable findings shall be resolved with approval of the area FPE.</p>	NFPA 101 4.6.12.4
3.	Fire Doors	<p>*Annually: Examine hardware and replace any parts found to be inoperative. Inspect Tinclad and Kalamein doors for dry rot. Inspect chains or cables used on suspended doors for excessive wear and stretching.</p> <p>Check chains or cables on counter-balanced doors, and make adjustments to ensure proper latching and to keep the doors in proper relation to the opening. Keep guides and bearings well lubricated to facilitate operation. Keep self-closing devices in proper working condition at all times. Test doors normally held in the open position and equipped with automatic closing devices to ensure proper operation. Test all doors for proper operation and full closure.</p>	NFPA 80; 15.2.1
4.	Ventilation	<p>*Annually: (Increase frequency if necessary. Does not apply to radiological contaminated ducts.)</p> <p>For building ventilation, exhaust, blower and duct systems where flammable/combustible vapors, residues, lint, and/or fibers may accumulate, perform, as a minimum, a documented inspection with cleaning, calibration, and replacement of components as required. Ensure the following:</p> <ul style="list-style-type: none"> • Grill plates are clean • Replace filter media (if design permits) 	NFPA 90A; App. B

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3.6	Device	Frequency/Test	Source
		<ul style="list-style-type: none"> • Remove any buildup of foreign material from the duct interior, if conditions warrant. <p>NOTE: The extent of inspection and maintenance necessary depends on many factors, including the environment being ventilated, material exhausted, equipment type, and operating pattern. All components exposed to the airflow should be included in the inspections. Combustible dust buildup (thick enough to obscure the surface of the duct) is a hazard. Similarly, exhaust systems for areas where combustible liquids are used (such as lubricants and solvents) can be coated with a highly combustible finish and be a hazard.</p>	
5.	Portable Fire Extinguishers (All)	<p>*Monthly: Inspect each extinguisher for:</p> <ul style="list-style-type: none"> • Proper location • Accessibility • Seals not broken • Pressure gage in operable range (if provided) • Physical condition <p>NOTE 1: Form A-6001-525 may be used to document the inspection.</p> <p>NOTE 2: Facility personnel are responsible for initialing the inspection tag during the monthly inspection. If facility personnel install new tags on the extinguishers, they must transfer the extinguisher data from the top of the old tag to the new tag.</p> <p>NOTE 3: An electronic bar-coding system may be used for recording the monthly inspection in lieu of the inspection tag.</p> <p>NOTE 4: The HFD annual inspection does not replace the facility monthly inspection.</p>	<p>NFPA 10; 7.2.2</p> <p>MSC-RD-7899</p>
6.	Carbon Dioxide & Pressurized Water	<p>*5 Years: Hydrostatically test and perform maintenance or replace</p>	<p>NFPA 10; 7.3.1.1</p> <p>MSC-RD-7899</p>

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3.6	Device	Frequency/Test	Source
7.	Stored Pressure (having a 12 yr. hydrostatic test)	*6 Years: Disassemble and perform maintenance on units or replace.	NFPA 10; 7.3.1.2 MSC-RD-7899
8.	Non-rechargeable Extinguishers	*12 Years: Remove from service.	NFPA 10; 7.3.1.2 MSC-RD-7899
9.	Portable Fire Extinguishers (continued) Halon, dry chemical, and stored pressure extinguishers (not including pressurized water and CO ₂ .)	*12 Years: Hydrostatically Test or replace	NFPA 10; 7.3.1.2 MSC-RD-7899
10.	Exit Signs	<p>*Monthly: Inspect exit signs with internal electrical lighting source to ensure all lamps are functional.</p> <p>*Annually: Inspect tritium gas-powered exit signs.</p> <ul style="list-style-type: none"> • Ensure the tritium gas tubes are not damaged, and the signs are in place and are not obstructed. • Turn off lights. Ensure the sign produces enough light to be visible for egress purposes. Lighting shall be tested for a period of 1 ½ hours. • Replace the signs before their expiration date as noted on the individual signs. <p>*Annually: Exit signs equipped with standby batteries shall be tested for a minimum of 1-1/2 hours.</p>	NFPA 101; 7.10.9.1 MSC-RD-7899

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3.6	Device	Frequency/Test	Source
		<p>* Monthly: Inspect Photo Luminescent exit sign to ensure:</p> <ul style="list-style-type: none"> • The photo luminescent exit sign is UL listed. • The sign is in its required location and free of damage, wear, or obstructions. • The face of a photo luminescent exit sign is continually illuminated while the building is occupied. 	
11.	Building Emergency Lights	<p>*Monthly: Operationally test lights for a minimum of 30 seconds. During this test, it is suggested the following items be verified also:</p> <ul style="list-style-type: none"> • Lamps are not cracked or damaged • Units are securely mounted • Lamps are properly positioned to provide illumination for the required areas • Lamps illuminate within 10 seconds of switching to the backup power supply. <p>*Annually: Operationally test lights for a minimum of 1-1/2 hours.</p> <p>NOTE: When Emergency Generators are used to satisfy the emergency light requirements, the generators/ systems shall be tested per NFPA 110, "Standard for Emergency and Standby Power Systems." The items above do not apply.</p>	NFPA 101; 7.9.3 MSC-RD-7899

3.6 RECORDS

Any of the following records may be generated during the performance of this standard:

- Fire Surveillance Log – Hanford Site (A-6001-431)
- Inspection – Fire Extinguishers (A-6004-299)
- Emergency Impairment Status Report
- System Restriction, Emergency Impairment Tracking.

The record custodian identified in the Company Level Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.

4.0 DEFINITIONS

Compensatory Measures. Actions taken to mitigate the potential consequences of a fire protection system discrepancy until the fire system is restored to service.

Continuous Fire Surveillance. Surveillance established in an area where the individual continuously occupies the affected area, and there are no physical barriers (i.e., walls) between the individual and the area with the impairment.

Corrective Action Plan. A written communication (such as an electronic mail message, internal memo, letter, or work package reference) that, at a minimum, includes an estimated completion date.

Corrective Actions. Actions taken to repair/restore a fire system or to correct a design/installation deficiency. Repairs and restoration are typically done using work packages. Design/installation deficiencies frequently require design changes and/or project attention.

Discrepancy Types. Regularly scheduled fire protection system testing/preventive maintenance activities do not constitute a discrepancy if the activity is conducted using approved procedures.

- Deficiency. A system design condition that does not prevent a fire protection system from operating as designed (not an impairment) but is characterized by a problem such as a code noncompliance, potential for failure, misapplication, inadequate coverage, or similar condition.

An identified noncompliance/nonconformance with, or unapproved deviation from, an established requirement, as stated in the contract, and can potentially hinder a Project/Functional/Facility (P/F/F) from achieving its quality objectives. Examples include, but are not limited to, conditions adverse to quality, safety, health, operability, or the environment, deviations, failures, malfunctions, or defective items.

System restriction (SR). A condition that has the potential to have an effect on system performance or reliability, but doesn't prevent it from performing its primary function of transmitting a fire alarm, activating building notification appliances (bells/chimes) or suppressing a fire. Examples include an impaired supervisory device or, in some cases, a single detector or sprinkler head that's impaired where other detectors or sprinklers are co-located in the same room or enclosure.

- Planned impairment. A planned outage that causes all or part of a fire protection system to become inoperable, normally for modification, utility outages, construction/modifications, and/or correction of deficiencies.
- Emergency impairment (EI). Any unplanned condition that causes all or part of a fire protection system to be inoperable (i.e., transmission of a fire alarm, activation of building notification appliances (bells/chimes) or suppression of a fire).

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- Maintenance Item (MI). A non-critical condition requiring maintenance, but one that has little potential to affect system performance or reliability (i.e., a broken valve handle on a main drain or a missing cap on a fire department connection).

NOTE: A single device out of service in an area having many devices of the same kind would not necessarily constitute an emergency impairment. For example, a single smoke detector out of service in an open bay area covered by other functional smoke detectors may not be an emergency impairment. This decision is by agreement of the facility FPE and the HFD.

Fire Protection System. A fire suppression system, fire alarm system, or fire barrier installed to prevent or mitigate fire damage or threat to life.

Fire Surveillance. In the context of this document, a fire surveillance is performed by a person assigned to survey the area(s) affected by an impairment, for the purpose of identifying fires and initiating emergency action (i.e., notify fire department, sound building alarm/notify building occupants to evacuate).

Fire surveillance is an interim compensatory measure to be used only when fire protection systems are inoperable (impaired), as provided in this document. Compensatory measures are intended to reduce fire risk during the short period of time the fire protection systems are impaired. Compensatory measures are not equivalent to operable fire protection systems.

Hourly Fire Surveillance. A roving surveillance that will inspect each portion of an affected area at least once per hour.

Occupied Area. An area where personnel normally report and remain during a designated work shift, and the area is not normally left unoccupied during the shift for longer than one hour. In addition, there are no physical barriers (i.e., walls) between the individual and the area with the impairment.

5.0 SOURCES

5.1 Requirements

1. DOE O 420.1B, "Facility Safety."
2. ENS-ENG-IP-05 R0, "ORP Fire Protection Program."
3. 29 CFR 1910, "General Industry," Subsection L, "Fire Protection."

5.2 References

1. MSC-RD-7899, "Fire Protection System Testing/Inspection/Maintenance/Discrepancies."
2. NFPA® 1, "Fire Code."
3. NFPA 10, "Standard for Portable Fire Extinguishers."

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4. NFPA 12A, "Standard on Halon 1301 Fire Extinguishing Systems."
5. NFPA 17, "Standard for Dry Chemical Extinguishing Systems."
6. NFPA 25, "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems."
7. NFPA 72®, "National Fire Alarm Code."®
8. NFPA 80, "Standard for Fire Doors and Other Opening Protectives."
9. NFPA 90A, "Standard for the Installation of Air-Conditioning and Ventilating Systems."
10. NFPA 101®, "Life Safety Code."®
11. NFPA 110, "Emergency and Standby Power Systems."
12. NFPA 1962, "Standard for the Inspection, Care, and Use of Fire Hose, Couplings, and Nozzles and the Service Testing of Fire Hose."
13. TFC-BSM-FPM_PR-C-13, "Winterization and Snow Removal Procedure for Tank Operations Contractor Facilities."
14. TFC-ESHQ-FP-STD-09, "Fire Protection System Winterization and Portable Heater Use."
15. Equivalency 96-QSH-068, "Hanford Site Implementation of National Fire Protection Association (NFPA) 25," Sept. 25, 1996.
16. Equivalency 01-ESD-014, Approval of Hanford Fire Protection Forum (HFPP) Equivalency Request for National Fire Protection Association (NFPA) 72, "National Fire Alarm Code Inspection and Testing Requirements".
17. Equivalency 12-SED-0055, Equivalency Request for Implementation of National Fire Protection Association (NFPA) 25-2011, "Standard for the Inspection, Testing and Maintenance of Water Based Fire Protection Systems"

ATTACHMENT A – RECALL FREQUENCY PROTOCOL

Recurring frequencies expressed in this standard are to be applied using the following criteria.

- a. Test frequencies may not be extended for operational/scheduling conflicts. Compensatory measures will be put into place as agreed to by the TOC Fire Protection Engineer.
- b. Specific calendar dates are not to be used for determining the next scheduled due date nor late date. Any activity performed within the specified frequency (e.g., monthly, annually, semiannually) complies with the requirements established by this standard.
- c. Inspection, test, and maintenance activities with frequencies longer than a month shall be scheduled to occur during the last month of the frequency specified for the given activity within this standard. The activity shall not be considered delinquent until the first day of the month following the scheduled month. For example, if an annual activity is originally to be performed in January, it shall next be scheduled for performance during January of the following year and shall comply with these criteria if performed on or before January 31.
- d. Scheduling of these activities that are performed in the delinquent period, shall continue to be scheduled using the original by-month sequence. For example, an annual activity scheduled for March but actually performed in June shall next be scheduled for performance the following March. Likewise, an annual activity scheduled for performance in August but performed in July would continue to be scheduled for performance during August of subsequent years.