Appendix A: Reference Material

<u>These Reference Guide will be given to you by the FDNY examiners when taking the FLS Director Computer Test at the Fire Department.</u>

Certificate of Fitness/Certificate of Qualification List

Type	Description	Personal/General	Premises Related or Citywide
B-29	Supervision of Battery Systems	General	Premises related
F-01	Citywide Fire Guard for Impairment	Personal	Citywide
F-07/W-07	Fire and Non-Fire Emergency Drill Conductor	Personal	F-07: Premises related W-07: Citywide
F-60	Fire guard for torch operation and fire guard for construction site.	Personal	Citywide
F-89	Fire and Life Safety Director	Personal	Premises related
G-60	Torch operation	Personal	Citywide
P-64/F-64 /W-64	Commercial Kitchen Exhaust System Cleaning Technician	Personal	P-64/W-64: Citywide F-64: Premises related
Q-01/Q-99	Refrigeration system operating engineers	Personal	Premises related
S-12	Citywide Sprinkler System	Personal	Citywide
S-13	Standpipe System (except multi-zone system)	Personal	Citywide
S-14	Standpipe System, multi-zone	Personal	Premises related
S-78/F-78	Inspection, Cleaning & Testing Of Smoke Detectors	Personal	S-78: Citywide F-78: Premises related
S-95	Supervision Of Fire Alarm Systems	Personal	Premises related
S-97/S-98	Inspection, Testing and Servicing of Fire Alarm Systems	Personal	Citywide
T-89	Temporary Fire and Life Safety Director	Personal	Premises related
W-97	Fumigation and insecticidal fogging operation	Personal	Citywide
W-96	Portable Fire Extinguisher Servicing	Personal	Citywide

Duration and Frequency of FLS Staff Training

The Fire Department recommends that the FLS staff participate in the training designed to familiarize them with their duties pursuant to the plan in accordance with the frequency set below:

FLS staff member	Initial training duration		Refresher training duration and frequency	
	Fire safety	Non-fire emergency	Fire safety	Non-fire emergency
Deputy FLS Directors	Require FLS Director C of F	Require FLS Director C of F	• 1 hour quarterly for Group A; • 1 hour quarterly for Group R-1 (per shift); • 1 hour annually for all other occupancies	1 hour semiannually
FLS building evacuation supervisor	2 hours	3 hours		1 hour semiannually
FLS wardens and deputy wardens	1 hour	2 hours		1 hour annually
FLS brigade members	1 hour	2 hours		1 hour annually
All other FLS staff	1 hour	2 hours		1 hour annually

Fire alarm system

Certificate of Fitness for fire alarm system

	Duties can be performed by C of F Holders	May be performed by	
		S-95/F-89/T-89	S-97/S-98
1.	Daily visual inspections of fire alarm system	**Yes**	**Yes**
2.	Maintain the fire alarm log book	**Yes**	**Yes**
3.	Program, service, clean, test, repair and/or replace any fire alarm system components	**No**	**Yes**

Certificate of Fitness for smoke detector cleaning and testing

	Duties can be performed by C of F Holders	May be performed by		
		S-95/F-89/T-89	S-78/ F-78	S-97/S-98
1.	Smoke detector visual inspection	**Yes**	**Yes**	**Yes**
2.	Smoke detector inspection, testing and cleaning	**No**	**Yes**	**Yes**
3.	Smoke detector maintenance	**No**	**Yes**	**Yes**
3.	Program, service, clean, test, repair and/or replace fire alarm components	**No**	**No**	**Yes**

Visual Inspection and Testing Frequencies of Fire Alarm Systems

1. Visual inspection frequencies of each fire alarm component
Components
Weekly
Control equipment: fire alarm systems UNMONITORED for alarm, supervisory and trouble signals (including fuses, interfaced equipment, lamps and LEDs, primary (main) power supply)
Monthly
Batteries: Lead-acid
Batteries: Primary (dry cell)
Quarterly
Initiating devices: Radiant energy fire detectors
Initiating devices: Supervisory signal devices
Initiating devices: Waterflow devices
Semiannually
Batteries: Nickel-cadmium
Batteries: Sealed lead-acid
Fire alarm control unit trouble signals
In-building fire emergency voice/alarm communications equipment
Remote annunciators
Initiating devices:
- Air sampling
- Duct detectors
- Electromechanical releasing
- Fire extinguishing system(s) or suppression system(s) switches

1. Visual inspection frequencies of each fire alarm component
Components
- Manual fire alarm boxes
- Heat detectors
- Smoke detectors (excluding one- and two-family dwellings)
Supervising Station Fire Alarm Systems
- Transmitters: DACT
- Transmitters: DART
- Transmitters: McCulloh
- Transmitters: RAT
Special procedures
Public emergency alarm reporting system transmission equipment
-Publicly accessible alarm box
-Master box- manual operation
Mass notification system, NON-SUPERVISED systems installed prior to adoption of the NFPA 72, 2010 edition
-Control equipment: Fuses
-Control equipment: Interfaces
-Control equipment: Lamp/LED
-Control equipment: Primary (main) power supply
-Secondary power batteries: Lead-acid
-Secondary power batteries: Nickel-cadmium
-Secondary power batteries: Primary (dry-cell)
-Secondary power batteries: Sealed lead-acid
-Initiating devices
-Notification appliances
Guard's tour equipment
Semiannually
Combination systems : Fire extinguisher electronic monitoring device/systems
Combination systems: Carbon monoxide detectors/systems
Interface equipment
Alarm notification appliances-supervised
Exit marking audible notification appliances
Annually
Control equipment: fire alarm systems MONITORED for alarm, supervisory, and trouble signals (including fuses, interfaced equipment, lamps and LEDs, primary (main) power supply)
Fiber-optic cable connections
Public emergency alarm reporting system transmission equipment
-Auxiliary box
-Master box- auxiliary operation
Mass notification system, SUPERVISED
-Control equipment: Fuses
-Control equipment: Interfaces
-Control equipment: Lamp/LED
-Control equipment: Primary (main) power supply
-Secondary power batteries: Lead-acid
-Secondary power batteries: Nickel-cadmium
-Secondary power batteries: Primary (dry-cell)

1. Visual inspection frequencies of each fire alarm component
Components
-Secondary power batteries: Sealed lead-acid
-Initiating devices
-Notification appliances
Mass notification system: Antenna
Mass notification system: Transceivers

2. Test frequencies of each fire alarm components
Components
Daily
Public emergency alarm reporting systems: Power supply: Wired system-voltage tests
Weekly
Public emergency alarm reporting systems: Engine-driven generator
Monthly
Batteries-fire alarm systems: Primary type (dry cell)-Age test
Quarterly
Control equipment: building systems NOT connected to a supervising station (including Functions, fuses, interfaced equipment, lamps and LEDs, primary (main) power supply, and transponders)
Public emergency alarm reporting systems: Power supply
-Lead-acid type batteries- Discharge test(2 hours)
-Lead-acid type batteries- Load voltage test
-Nickel-cadmium type batteries- Load voltage test
-Sealed lead-acid type batteries- Load voltage test
Initiating devices: Supervisory signal devices
Pressure supervisory indicating devices
-Water level supervisory indicating devices
-Water temperature supervisory indicating devices
-Room temperature supervisory indicating devices
-Other suppression system supervisory indicating devices
Semiannually
Batteries-fire alarm systems:
- Lead-acid type- Discharge test (30 minutes)
- Lead-acid type- Load voltage test
- Lead-acid type- Specific gravity
- Nickel-cadmium type- Load voltage test
- Sealed lead-acid type- Load voltage test
Public emergency alarm reporting systems: Power supply: Lead-acid type batteries- Specific gravity
Initiating devices:
- Radiant energy fire detectors
- Supervisory signal devices: Valve supervisory switches
- Waterflow devices
Public emergency alarm reporting system transmission equipment:
- Public accessible alarm box
- Master box-manual operation

2. Test frequencies of each fire alarm components
Components
Mass notification system, NON-SUPERVISED systems installed prior to adoption of the NFPA 72, 2010 edition
-Control unit functions and no diagnostic failures are indicated
-Audible/visible functional test
-Secondary power
-Verify content of prerecorded messages
-Verify activation of correct prerecorded message based on a selected event
-Verify activation of correct prerecorded message based on a targeted event
-Verify control unit security mechanism is functional
Annually
Control equipment: building systems connected to a supervising station (including Functions, fuses, interfaced equipment, lamps and LEDs, primary (main) power supply, and transponders)
Batteries- Fire alarm systems:
- Lead-acid type- Charger test (replace battery as needed)
- Nickel-cadmium type- Charger test (replace battery as needed)
- Nickel-cadmium type- Discharge test (30 minutes)
- Sealed lead-acid type- Charger test (replace battery within 5 years after manufacture or more frequently as needed)
- Sealed lead-acid type- Discharge test (30 minutes)
Public emergency alarm reporting systems: Power supply
-Lead-acid type batteries-Charger test (replace battery as needed)
-Nickel-cadmium type batteries-Charger test (replace battery as needed)
-Nickel-cadmium type batteries-Discharge test (2 hours)
-Sealed lead-acid type batteries-Charger test (replace battery within 5 years after manufacture or more frequently if needed)
-Sealed lead-acid type batteries-Discharge test (2 hours)
Fiber-optic cable power
Control unit trouble signals
In-building fire emergency voice/alarm communications equipment
Remote annunciators
Initiating devices:
- Duct detectors
- Electromechanical releasing
- Fire extinguishing system(s) or suppression system(s) switches
- Fire-gas and other detectors
- Manual fire alarm boxes
- Heat detectors
- System smoke detectors- functional test
- Single- and multiple- station heat alarms
- Single- and multiple- station smoke alarms (in other than one- and two-family dwellings)
- Other supervisory initiating devices
Guard's tour equipment

2. Test frequencies of each fire alarm components
Components
Combination systems: Fire extinguisher electronic monitoring device/ systems
Combination systems: Carbon monoxide detectors/systems
Interface equipment and emergency control functions (i.e., fan control, smoke damper operation, elevator recall, elevator power shutdown, door holder release, shutter release, fail-safe system, etc.)
Special hazard equipment
Alarm notification appliances:
- Audible devices
- Audible textual notification appliances
- Visible devices
Exit marking notification appliances
Public emergency alarm reporting system transmission equipment:
- Auxiliary box
- Master box-Auxiliary operation
Supervising station alarm systems-transmitters
Annually
Special procedures
Mass notification system- protected premises, SUPERVISED
Control unit functions and no diagnostic failures are indicated
Audible/visible functional test
Secondary power
Verify content of prerecorded messages
Verify activation of correct prerecorded message based on a selected event
Verify activation of correct prerecorded message based on a targeted event
Verify control unit security mechanism is functional
Mass notification system- wide-area
Control unit functions and no diagnostic failures are indicated
Control unit reset
Control unit security
Audible/visible functional test
Software backup
Secondary power
Antenna
Transceivers
Verify content of prerecorded messages
Verify activation of correct prerecorded message based on a selected event
Verify activation of correct prerecorded message based on a targeted event
Verify control unit security mechanism is functional

Smoke detectors

All smoke detectors connected to a defined fire alarm system must be

a. **cleaned** at least once every 6 months, except for analog (intelligent) smoke detectors, which must be cleaned no later than one week from receipt of an indication of the need for cleaning.
b. tested for smoke entry at least once a year.
c. tested for sensitivity at least once a year, except for analog (intelligent) smoke detectors, which must be tested for sensitivity no later than one week from receipt of an indication of the need for such testing.

Sprinkler systems

Spare sprinkler heads

A stock of spare sprinklers (not less than 6) must be kept on the premise where the temperature does not exceed 100 Degrees F and must include all types and ratings installed in the protected facility and provided as follows:

1-**300** sprinklers **six**.

301 - **1000** sprinklers **twelve**.

Over **1000** sprinklers **twenty-four**.

Individuals authorized to perform tasks

There are certain periodic visual inspections, maintenance, and tests required by the Fire Code that the S-12/S-15 Certificate of Fitness holder may perform, and some that they cannot without additional qualifications (refer to S-12/S-15 FDNY Certificate of Fitness booklet). The table below provides details of the qualifications required for individuals perform various tasks:

	Holding S-12/S-15 only	Q-01 holding S-12/S-15	Master Plumber holding S-12/S-15	Master Fire Suppression Piping Contractor holding S-12/S-15
Visual inspections	Yes	Yes	Yes	Yes
Perform limited maintenance and test of sprinkler system components (refer to the S-12/S-15 booklet for the detail)	No	Yes	Yes	Yes
Test, maintain and repair/replace all sprinkler systems components, but limited to residential occupancies 30 sprinkler heads or less without a booster pump.	No	No	Yes	Yes
Test, maintain and repair/replace all sprinkler systems components	No	No	No	Yes

The FLS Directors with S-12/S-15 C of F are only authorized to conduct visual inspections of a standpipe system.

Test Frequency of Sprinkler Systems

C of F	**Certificate of Fitness for (S-12) or (S-15).**
Engineer	**Refrigeration Operating Engineer (Q-01 or Q-99), NYC High Pressure Operating Engineer, NYS High Pressure Operating Engineer with S-12 C of F (For employees of a single or multiple properties under common ownership employed by the same building owner/management company)**
MFSPC	**Master Fire Suppression Piping Contractor License (A or B) with S-12 or S-15 C of F.**
MP	**Master Plumber License (MP) with S-12 or S-15 C of F.**

[1] Limited to residential occupancies 30 sprinkler heads or less without booster pump.

[2] S-95 Supervision for Fire alarm Systems & other related systems.

[3] Record must be maintained to be checked annually.

[4] Must be performed once annually by licensed contractor.

*** Foam-Water Sprinkler Systems ONLY.**

**** Water Spray Fixed Systems ONLY.**

Test frequency requirements for sprinkler system components

Components		May be performed by			
		C of F	Engineer	MFSPC	MP[1]
A. Sprinkler Systems					
QUARTERLY (4)					
Alarm Devices	water motor gong	No	Yes	Yes	Yes[1]
Water Spray system test**		No	No	Yes	Yes
SEMIANNUALLY (2)					
Alarm Devices (Vane type water flow devices)		No	Yes	Yes	Yes[1]
Pressure Switch Type		No	Yes	Yes	Yes[1]
ANNUALLY (1)					
Antifreeze solution		No	No	Yes	Yes[1]
Flushing**		No	No	Yes	Yes
Complete foam-water system(s)*		No	No	Yes	Yes
Foam-water solution*		No	No	Yes	Yes
5 YEARS					
Gauges - Remove & send for calibration test or replace asrequired		No	Yes[3]	Yes	Yes[1]
Sprinklers - Remove send for extra high temperature test andreplace as required		No	No	Yes	Yes[1]
10 years & every 10 yrs. thereafter					
Sprinklers - Dry type		No	No	Yes	Yes[1]
20 years & every 10 yrs. thereafter					
Sprinklers – fast response and residential		No	No	Yes	Yes[1]
50 years & every 10 years after					
Sprinklers (Standard Response)		No	No	Yes	Yes[1]
B. Fire, Booster and Special Service Pumps					
WEEKLY (52)					
Pump operation - No-flow condition		No	Yes	Yes	Yes[1]
Diesel Engine system	tank float switch	No	Yes	Yes	Yes[1]
	Solenoids valve operation				

MONTHLY (1)						
Fire pump – Electric pump (minimum of 10 minutes)			**No**	**Yes**	**Yes**	**Yes[1]**
Electrical system[2]	Isolating switch & circuit breaker		**No**	**Yes[3]**	**Yes**	**Yes[1]**
Battery system	Specific gravity or state of charge					
SEMIANNUALLY (2)						
Electrical system[2]	Operating manual starting means (electrical)		**No**	**Yes[3]**	**Yes**	**Yes[1]**
Diesel Engine System	Cooling system	Antifreeze protection level	**No**	**Yes[3]**	**Yes**	**Yes[1]**
	Fuel	Tank float switch				
		Solenoids valve operation				
	Electrical system	Operation of safeties and alarms				
ANNUALLY (1)						
Pump operation - Flow condition			**No**	**No**	**Yes**	**No**
Electrical system[2]	Trip circuit breaker (if mechanism provided)		**No**	**No**	**Yes**	**No**
	Operate emergency manual starting means (without power)					
Exhaust system	Excessive back pressure		**No**	**No**	**Yes**	**No**
Diesel Engine System	Tank vents and overflow piping unobstructed		**No**	**No**	**Yes**	**No**
C. Water Storage Tank						
MONTHLY (12)						
Temperature alarms (cold weather)			**No**	**Yes[4]**	**Yes**	**Yes[1]**
High temperature limit switches (cold weather)			**No**	**Yes[4]**	**Yes**	**Yes[1]**
SEMIANNUALLY (2)						
Water level alarms			**No**	**Yes[4]**	**Yes**	**Yes[1]**
5 YEARS						
Level indicators			**No**	**No**	**Yes**	**Yes[1]**
Pressure gauges			**No**	**No**	**Yes**	**Yes[1]**
D. Valve and Valve Component						
QUARTERLY (4)						
Main drain (sole water supply is through a backflow preventer and/or pressure reducing valves)			**No**	**Yes[4]**	**Yes**	**Yes[1]**
Water-Flow Alarms (pertaining to dry valves, pre-action, and deluge valves)			**No**	**Yes[4]**	**Yes**	**Yes[1]**
Foam concentrate strainer(s)*			**No**	**No**	**Yes**	**Yes**
Pre-action and deluge valves	Priming water		**No**	**Yes[4]**	**Yes**	**Yes[1]**
	Low/high air pressure alarm					
Dry pipe valves and Quick Opening devices	Priming water		**No**	**Yes[4]**	**Yes**	**Yes[1]**
	Low/high air pressure alarm					
	Quick-opening devices					
SEMIANNUALLY (2)						
Control Valves Tamper Switch	Supervisory Alarm		**No**	**Yes[4]**	**Yes**	**Yes[1]**
Water flow alarms	Vane-type and pressure Switch-type water-flow devices		**No**	**Yes[4]**	**Yes**	**Yes[1]**
ANNUALLY (1)						
Main drain			**No**	**No**	**Yes**	**Yes[1]**
Preaction and deluge valves	Full flow		**No**	**No**	**Yes**	**Yes[1]**
Dry pipe valves and Quick Opening devices	Trip test		**No**	**No**	**Yes**	**Yes[1]**
Control Valves	Position		**No**	**No**	**Yes**	**Yes[1]**
	Operation					
Pressure reducing and Relief valves	Circulation relief		**No**	**No**	**Yes**	**Yes[1]**
	Pressure relief valves					
Backflow prevention Assemblies/Forward flow test			**No**	**No**	**Yes**	**Yes[1]**
Proportioning system(s)-all*			**No**	**No**	**Yes**	**Yes**

Manual actuation device(s)*		**No**	**No**	**Yes**	**Yes**
Backflow preventer(s)*		**No**	**No**	**Yes**	**Yes**
3 YEARS					
Dry pipe valves and quick opening devices	Full flow trip test	**No**	**No**	**Yes**	**Yes[1]**
Pre-action systems	For air leakage	**No**	**No**	**Yes**	**Yes**
5 YEARS					
Hydrostatic Test		**No**	**No**	**Yes**	**Yes**
Pressure reducing & Relief valves	Sprinkler systems Hose connections Hose racks	**No**	**No**	**Yes**	**Yes[1]**

Standpipe systems

Individuals authorized to perform tasks

A multi-zone standpipe system must be continuously under the supervision of an S-14 Certificate of Fitness holder. In other words, if your building has multi-zone standpipe system, there must be at least one S-14 C of F holder that could be continuously supervising this system.

The FLS Directors with S-13/S-14 C of F are only authorized to conduct visual inspections of a standpipe system.

The sole FLS Director (without holding an S-13/S-14 C of F) C of F is not authorized to conduct required inspections of a standpipe system; however, the FLS Director must ensure that the standpipe systems are inspected, test and maintained as required frequency by the proper C of F or license holder.

The S-13/S-14 C of F holders with different qualifications are permitted to carry different level of responsibilities in inspecting, testing and maintaining the standpipe systems:

Standpipe system (without multi-zone)	**Holding S-13 only**	**Q-01 holding S-13**	**Master Plumber holding S-13**	**Master Fire Suppression Piping Contractor holding S-13**
Visual inspections	Yes	Yes	Yes	Yes
Perform limited maintenance and test of standpipe system components (refer to the S-13/S-14 booklet for detail)	No	Yes	Yes	Yes
Test, maintain and repair/replace all standpipe systems that are NOT combined with sprinkler systems	No	No	Yes	Yes
Test, maintain and repair/replace all standpipe systems components that are combined with sprinkler systems	No	No	No	Yes

Multi-zone standpipe system	**Holding S-14 only**	**Q-01 holding S-14**
Visual inspections	Yes	Yes
Perform limited maintenance and test of standpipe system components (refer to the S-13/S-14 booklet for detail)	No	Yes
Test, maintain and repair/replace all standpipe systems that are NOT combined with sprinkler systems	No	No
Test, maintain and repair/replace all standpipe systems components that are combined with sprinkler systems	No	No

Test Frequency of Standpipe Systems

C of F	**Certificate of Fitness S-13 City Wide Standpipe System.**
Engineer	**Refrigeration Operating Engineer (Q-01 & Q-99), NYC High Pressure Operating Engineer, NYS High Pressure Operating Engineer with S-13 C of F (For employees of a single or multiple properties under common ownership employed by the same building owner/management company)**
MFSPC	**Master Fire Suppression Piping Contractor License (A or B) with S-13 C of F.**
MP	**Master Plumber License (MP) with S-13 C of F.**

[1] Must have an S-12 or S-15 Certificate.
[2] S-95 Supervision for Fire Alarm Systems & other related systems.
[3] Follow testing requirement.
[4] Record must be maintained to be checked annually.
[5] Must be performed once annually by licensed contractor.

Test frequency requirements for standpipe system components

Components			May be performed by			
			C of F	Engineer	MFSPC	MP
Frequency						
A. Standpipe Systems						
QUARTERLY (4)						
Alarm Devices	Water flow alarms		**Yes**	**Yes**	**Yes**	**Yes**
	Supervisory devices		**Yes**	**Yes**	**Yes**	**Yes**
SEMIANNUALLY (2)						
Alarm Devices (Vane Type and Pressure Type water flow devices)			**Yes**	**Yes**	**Yes**	**Yes**
5 YEARS						
Gauges - Remove and send for calibration test or replace as required			**No**	**Yes[4]**	**Yes**	**Yes**
B. Fire, Booster and Special Service Pumps						
WEEKLY (52)						
Diesel Pump operation - No-flow condition			**No**	**Yes**	**Yes**	**Yes**
Diesel Engine system	Solenoids valve operation		**No**	**Yes**	**Yes**	**Yes**
	Fuel	Tank float switch				
		Solenoids valve operation				
MONTHLY (1)						
Electric Fire pump - (minimum of 10 minutes)			**No**	**Yes**	**Yes**	**Yes**
Electrical system [2]	Isolating switch & circuit breaker		**No**	**Yes**	**Yes**	**Yes**
Battery system	Specific gravity or state of charge					
B. Fire, Booster and Special Service Pumps						
SEMIANNUALLY (2)						
Electrical system [2]	Operate manual starting means (electrical)		**No**	**Yes[4]**	**Yes**	**Yes**
Diesel Engine System	Cooling system	Antifreeze protection level	**No**	**Yes**	**Yes**	**Yes**
	Electrical system	Operation of safeties and alarms				
ANNUALLY (1)						
Pump operation - Flow condition			**No**	**No**	**Yes**	**Yes**
Electrical system [2]	Trip circuit breaker (if mechanism provided)		**No**	**No**	**Yes**	**Yes**
	Operate emergency manual starting means (without power)					

Exhaust system	Excessive back pressure	**No**	**No**	**Yes**	**Yes**
Diesel Engine System	Tank vents and overflow piping unobstructed	**No**	**No**	**Yes**	**Yes**
C. Water Storage Tank					
MONTHLY (12)					
Temperature alarms (cold weather)		**No**	**Yes[5]**	**Yes**	**Yes**
High temperature limit switches (whenever the heating system is in service)		**No**	**Yes[5]**	**Yes**	**Yes**
SEMIANNUALLY (2)					
Water level alarms		**No**	**Yes[5]**	**Yes**	**Yes**
5 YEARS					
Level indicators		**No**	**Yes[5]**	**Yes**	**Yes**
Pressure gauges		**No**	**Yes[5]**	**Yes**	**Yes**
D. Valve and Valve Component					
QUARTERLY (4)					
Main drain (where the sole water supply is through a backflow preventer and/or pressure reducing valves)		**No**	**Yes**	**Yes**	**Yes[1]**
Dry pipe valves and quick opening devices	Priming water Low air pressure alarm Quick-opening devices	**No**	**Yes[5]**	**Yes**	**Yes**
SEMIANNUALLY (2)					
Control Valves Tamper Switch	Supervisory Alarm	**No**	**Yes[5]**	**Yes**	**Yes**
ANNUALLY (1)					
Hose Nozzle (NFPA 1962)		**No**	**No**	**Yes**	**Yes**
Hose Storage device, racks (NFPA 1962)		**No**	**No**	**Yes**	**Yes**
Standpipe – hose valve (Class I and Class III)		**No**	**Yes**	**Yes**	**Yes**
Main drain		**No**	**No**	**Yes**	**Yes[1]**
D. Valve and Valve Component					
ANNUALLY (1)					
Dry pipe valves and Quick opening devices	Trip test	**No**	**No**	**Yes**	**Yes**
Control Valves	Position Operation	**No**	**No**	**Yes**	**Yes**
Pressure reducing and Relief valves	Circulation relief Pressure relief valves	**No**	**No**	**Yes**	**Yes**
Backflow prevention Assemblies		**No**	**No**	**Yes**	**Yes**
3 YEARS					
Hose 1962		**No**	**Yes**	**Yes**	**Yes**
Dry pipe valves and quick opening devices	Full flow trip test	**No**	**No**	**Yes**	**Yes**
Pressure reducing valve flow test		**No**	**No**	**Yes**	**Yes**
5 YEARS					
Hose		**No**	**Yes**	**Yes**	**Yes**
Hydrostatic Test		**No**	**No**	**Yes**	**Yes**
Standpipe system full flow test		**No**	**No**	**Yes**	**Yes**
Gauges - Remove and send for calibration test or replace as required		**No**	**Yes[4]**	**Yes**	**Yes**

Non-water fire extinguishing systems summary table

Systems	Commonly found in/with	Monthly visual inspection	Test, service and maintenance	
			Qualified personnel	Minimum frequency requirement
Dry chemical fire extinguishing systems	flammable liquid storage rooms and at motor fuel dispensing areas.	required	A licensed master fire suppression piping contractor properly trained and having knowledge of the installation, operation and maintenance of the specific system.	semiannual
Wet chemical fire extinguishing systems	commercial cooking system	required		semiannual
Foam systems	commercial cooking system	required to be conducted by a S-15 COF holder		annual
Carbon dioxide fire extinguishing system	flammable liquid storage rooms and at motor fuel dispensing areas.	required		semiannual
Clean agent fire extinguishing systems	IT systems, data storage rooms and manufacturing equipment, or irreplaceable items	required		semiannual
Halon fire extinguishing systems		required		semiannual
Water mist fire extinguishing systems	computer rooms or other energized electrical equipment areas	required		annual

Smoke control system

Inspection, Maintenance and Testing

Fire Code requires that smoke control systems be maintained in good working order. It requires a written maintenance program, including periodic inspection and testing, to be established and implemented immediately upon installation of the smoke control system. Operational testing of the smoke control system must include all of the system's components including initiating devices, fans, dampers, controls, doors and windows.

Frequency

- Dedicated smoke control systems:
  - must be tested semiannually
- Non-dedicated smoke control systems:
  - must be tested annually.
- Post –fire smoke purge systems:
  - must be tested periodically
  - periodic inspection
  - maintained according to manufacturers' recommendations.

Emergency power System

Individuals authorized to perform tasks

Fire Code requires that the inspection, testing and other maintenance of emergency power systems be conducted under the supervision of a person having one of the following qualifications:

- A person holding a Certificate of Fitness as a Fire and Life Safety Director.
- A person holding a Q-01 Certificate of Qualification.
- An electrician licensed by the Department of Buildings.
- An electrician holding a special license issued by the Department of Buildings.
- A person holding a stationary engineer license, or high-pressure boiler operating engineer's license, issued by the Department of Buildings.
- A registered design professional.

Periodic inspection and testing requirements

NFPA Standard 110

Chapter 8 of NFPA Standard 110 includes requirements for the periodic inspection, testing and other maintenance of emergency power systems supplied by emergency generators. Emergency power systems subject to compliance with the requirements of NFPA Standard 110, as modified by FC Appendix B must be maintained as follows:

- Storage batteries, including electrolyte levels or battery voltage, must be inspected weekly and maintained in full compliance with the manufacturer's specifications. Lead- acid batteries must include the monthly testing and recording of electrolyte specific gravity.
- Emergency power systems, including all related components, must be inspected weekly and exercised under load monthly.
- Emergency generator sets must be tested monthly for a minimum of 30 minutes under operating temperature conditions and at not less than 30 percent of the emergency power system nameplate kilowatt rating, or under loading that maintains the minimum exhaust gas temperatures as recommended by the manufacturer. Instructions must be provided for safe manual transfer in the event automatic transfer switches malfunction.
- Diesel-powered emergency power system installations that do not meet the requirements of generator set monthly exercise as noted above must be tested monthly with the available emergency power system load and exercised annually with supplemental loads at 25 percent of nameplate rating for 30 minutes, followed by 50 percent of nameplate rating for 30 minutes, followed by 75 percent of nameplate rating for 60 minutes, for a total of 2 continuous hours.
- Transfer switches must be tested semiannually. The semiannually test of a transfer switch must consist of electrically operating the transfer switch from the standard position to the alternate position and then returning back to the standard position.
- Level 1 emergency power systems must be tested every 3 years for at least 4 hours under its running load. A full facility power outage is not intended for this test, but is recommended where a facility power outage has not occurred within the last 36 months.
- Emergency power systems must be maintained to ensure to a reasonable degree that the system is capable of supplying service within the time specified for both the type and the class. The

maintenance procedure and frequency should conform to the manufacturer's recommendations. In the absence of such recommendations, Figure A.8.3.1(a) of NFPA Standard 110 suggests periodic (weekly, monthly, quarterly, semiannually and annually) visual inspection, checking, changing components, cleaning and testing of the following:

- Fuel.
- Lubrication system.
- Cooling system.
- Exhaust system.
- Battery system.
- Electrical system.
- Prime mover.
- Generator.
- General conditions of emergency power systems (any unusual condition of vibration, leakage, noise, temperature or deterioration), and service room or housing housekeeping.
- Restore systems to automatic operation condition.

NFPA Standard 111

Stored electrical energy emergency power systems subject to compliance with the requirements of NFPA Standard 111 must be maintained as follows:

- Equipment must be inspected monthly and tested quarterly under connected load for a minimum of 5 minutes. The monthly inspection must include the following:
  - Battery and associated charger/control equipment must be checked to verify that they are in a clean and satisfactory condition.
  - Battery electrolyte levels, individual cell voltages and specific gravity must be checked.
  - Conditions of the plates and sediment of free-electrolyte, lead-acid batteries in transparent containers must be checked.
  - A load test must be performed and the output voltage, the battery voltage, and the duration of the test must be recorded at the beginning and end of the test for each battery set.
  - All indicator lamps, meters, and controls must be checked to verify that they are operating correctly.
- Stored emergency power systems must be checked annually at full load for time duration as specified in NFPA Standard 111.
- Transfer switches must be tested semiannually.
- A regular maintenance and testing program must be established. The maintenance procedure and frequency should conform to the manufacturer's recommendations. In the absence of such recommendations, Table A.8.3.2 of NFPA Standard 111 suggests periodic (weekly, monthly, quarterly, semiannually and annually) visual inspection, checking, changing components, cleaning and testing of the following:
  - Battery.
  - Energy conversion equipment.
  - Battery charger.
  - Load current (check quarterly).
  - Transfer switch (tested semiannually).

Certificate of Fitness, Certificate of Qualification, Company Certification and FDNY Permit requirements

Topics	Required C of F or C of Q	Required Company Certification	FDNY Permit Required
Module 1: Primary Fire Protection Systems			
Sprinkler system	S-12/S-15	No	No
Standpipe system	S-13/S-14	No	No
Fire Alarm system	S-95/FLSD: Visual inspection	No	No
	S-78/F-78: inspection & cleaning of smoke detectors	Smoke detector company	
	S-97/S-98: install, repair, servicing fire alarm system	Smoke detector company or Central station company	
Fire guard for out-of-service fire protection system	F-01	No	No
Module 2: Other Fire Safety-Related Building Systems			
Refrigerating system	Q-01	No	Yes
Emergency power system	Q-01or FLSD or other licensed professionals listed in the emergency power system section of this material.	No	Yes[a]
Battery system	B-29	No	No
Elevators-in-readiness	No	No	No
Non-water fire extinguishing systems	No[b]	No	No
Means of egress	No	No	No
Commercial cooking system	P-64/F-64/W-64	Commercial Cooking Exhaust System	Yes
Module 3: Other Fire Safety Operational and Maintenance Requirements			
Hot work operations	G-60: Torch operation F-60: Fire guard for torch operation	No	Yes
Fumigation and insecticidal fogging operation	W-97	Fumigation and Thermal Insecticidal Fogging Operation	No
Storage, use & display of decorations	No	No	No
Emergency planning & preparedness	FLSD (F-89/T-89)	No	No
Portable fire extinguishers	W-96	Portable Fire Extinguisher Servicing	No

i. Emergency power system operating on fuel oil requires an FDNY permit for oil storage.

ii. Foam fire extinguishing system must be supervised by an S-15 C of F holder

Logbook entry requirements

- FLS staffing

Identification of the FLS Director and deputy FLS director(s) (name and C of F number), availability of FLS staff members on duty each day or shift during regular business hours.

Any FLS staff changes, FLS on-site examinations, amendments, and date of the plan acceptance by the FDNY.

- Daily entries

The name of the person who made the entry, the Certificate of Fitness number of the FLS director on duty, and the time each tour of duty began and ended, must be entered in the FLS log book on a daily basis.

- Fire incidents and any implementation of FDNY plan

(1) Date and time of the occurrence of any activation of the fire alarm system or any fire-related incident.

(2) Location of the alarm activation and activated detector type

(3) Any implementation of the fire safety and evacuation plan.

Entries must be made of any evacuation, partial evacuation or other implementation of the fire safety and evacuation plan, including the affected floors, in-building relocation areas to which they were directed or other directions given.

(4) Any notifications to the FDNY or other agencies

(5) Responding department unit and officer

- Fire alarm system off-line entries

If the fire alarm is taken off-line, the following entries should be made:

(1) Date and time off-line

(2) Name and C of F number of the person who took off-line

(3) Reason off-line

(4) Central station name, phone number of the central station, name and the C of F number (or ID number) of the operator

(5) Date and time restored

- Non-fire emergency incidents and any implementation of FDNY plan

(1) Date and time of the occurrence of any non-fire emergency incident.

(2) Any implementation of the non-fire emergency action plan.

Entries must be made of any evacuation, partial evacuation, in-building relocation, shelter-in-place, or other implementation of the emergency action plan, including the affected floors, in-building relocation areas to which they were directed or other directions given.

(3) Any notifications to the FDNY or other agencies

(4) Responding department unit and officer

- Drills

The record of each drill that is conducted must be included in the FLS logbook. It is recommended to include the following information:

(1) the date and time of the drill;

(2) the person(s) conducting the drill, including the Certificate of Fitness number of any drill conductor;

(3) the FLS staff members participating in the drill;

(4) date and time that required notifications (to Department and other agencies) were made, and persons receiving such notifications

(5) identification of the floors or other areas of the building or occupancy, and the number of building occupants participating in the drill;

(6) the type of drill conducted (fire or non-fire emergency, and indicate type of scenario, if applicable, and/or stairway familiarization)

(7) the special needs addressed;

(8) the problems encountered;

(9) if an evacuation drill was conducted, the weather conditions and time required to accomplish the evacuation; and

(10) an outline of the drill content.

The drill conductor, if not a member of the emergency preparedness staff of the building or occupancy, must maintain a record of each drill, the location of each presentation, the problems encountered, and an outline of the drill content.

- <u>FLS staff training</u>

(1) the date of training session;

(2) the person(s) conducting the training session, the person's Certificate of Fitness number;

(3) the persons attending the training session; and

(4) the type of training session conducted (live or computerized instruction).

- <u>Fire alarm, sprinkler, standpipe and emergency power systems</u>

The FLS logbook should include the record of any inspection, test, and maintenance of fire alarm, sprinkler, standpipe, emergency power systems. The entries should include

(1) The date, the name, Certificate of Fitness or other license number of any contractor responsible for inspecting, testing and/or otherwise maintaining the building's sprinkler and standpipe systems.

(2) The job type (inspection, maintenance or test)

(3) The frequency requirement (daily, weekly, monthly, etc.)

(4) Condition found and any action taken regarding to the condition

(5) Out-of-service record:

- Date and time
- Description of condition, affected areas
- Notification for out of service and the person receiving the notification
- Action taken
- Date and time restored
- Notification for restoring
- Responsible impairment coordinator

- Phase I and Phase II elevator operations

The FLS logbook should include the record of any test of phase I and phase II elevator operations. The entries should include

(1) The date of testing,

(2) person who performed the test: Indicate the name and number of the Certificate of Fitness holder (if applicable) or other building personnel (by job title) or a contractor (title and company name).

(3) condition found and any action taken regarding to the condition.

(4) The elevator keys have been verified to be located in approved location.

- Smoke control systems

The FLS logbook should include the record of any inspection and test of dedicated and/or non-dedicated smoke control systems. The entries should include:

(1) The Date of the inspection/test

(2) Name of the person who performs the inspection/test

(3) Job type (inspection/test)

(4) Normal power/ emergency power

(5) Condition found and any action taken regarding to the condition

- Commercial cooking equipment systems

Indicate the name and number of the Certificate of Fitness holder (if applicable) or other building personnel (by job title). If inspection, testing or other maintenance is to be performed by a contractor, indicate as much in the plan, and identify the contractor in the FSP logbook.

- FLS staff on-site examinations

The FLS logbook should include the record of any on-site exam taken place in the premises. The entries should include:

(1) The on-site exam type

(2) Date and time of the on-site exam

(3) Name of the candidate who took the exam

(4) Name of the FDNY inspector who administered the exam