

# Life Safety and Security Inspection, Testing, and Maintenance

**NYAPPA Winter  
Conference 2026**  
Saratoga Springs

# C&S/BIOGRAPHIES



**Robert Gleason, III, PE, PMP**  
*Department Manager*  
13 Years of Experience



**Matthew Ostroff, PE, CFPS**  
*Project Engineer*  
12 Years of Experience



**Victoria Morningstar, PE**  
*Project Engineer*  
6 Years of Experience



**Stephen Zaferakis, PSP**  
*Senior Project Designer*  
25 Years of Experience

**600+** employees providing full-service architecture, interior design, engineering, and in-house construction services

**70+** professionals licensed in New York State

&

**19** offices nationwide

Nearly **50** professionals certified in green building and sustainability



# Learning Outcomes



- ◆ Outline Code Requirements for Inspection and Maintenance
- ◆ Visual Inspection Basics
- ◆ Reporting Impairments
- ◆ Compensatory Measures
- ◆ Preventative and Remedial Security System Maintenance
- ◆ Security Vulnerability Assessment

# Applicable Codes

- ◆ 2025 Fire Code of New York State

- ◆ NFPA 4 Standard for Integrated Fire Protection and Life Safety System Testing, 2024 Edition

- ◆ Water-Based Systems

- ◆ NFPA 25 Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems, 2023 Edition

- ◆ Fire Alarm

- ◆ NFPA 72 National Fire Alarm and Signaling Code, 2022 Edition
  - ◆ Chapter 14

- ◆ Security

- ◆ NFPA 731 Standard for Installation of Premises Security Systems, 2023 Edition

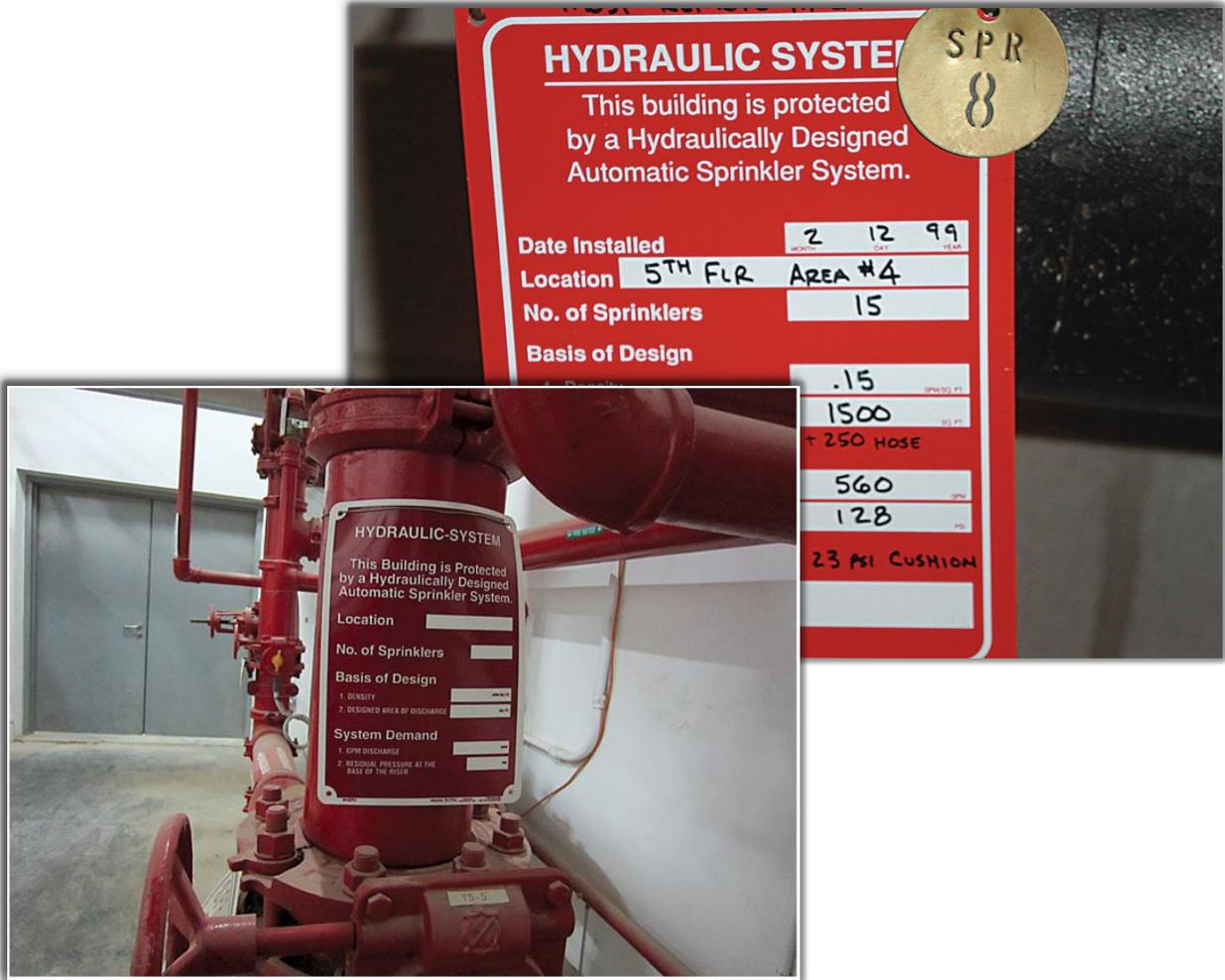
# Water-Based Systems: Inspection

- ◆ Purpose of Inspection
- ◆ Visual Only
  - ◆ Missing Escutcheons
  - ◆ Dirty/Corroded Sprinklers
  - ◆ Corroded Pipe
  - ◆ Closed Valves
  - ◆ Missing Ceiling Tiles
  - ◆ Changes in Occupancy, Use, Process, or Materials
  - ◆ Changes in Hazard



# Water-Based Systems: Inspection – Deficiencies Found

- ◆ Impairment vs Deficiency
- ◆ Critical vs Noncritical Deficiency
- ◆ Steps to take
- ◆ Common Compensatory Measures



# System Out of Service

## ◆ FCNYS §901.7

- ◆ ...the fire department and the fire code official shall be notified immediately...
- ◆ where required...the building shall be either *evacuated* or an approved *fire watch* shall be provided
  - ◆ Exception: Facilities with an approved notification and impairment management program.

## ◆ NFPA 25 §15.5.2(4)

- ◆ Where...*out of service for more than 10 hours in a 24-hour period*, the impairment coordinator shall arrange for one of the following:
  - a) *Evacuation* of the building or portion of the building affected by the system out of service
  - b) An approved *fire watch*
  - c) Establishment of a temporary water supply
  - d) Establishment and implementation of an approved program to eliminate potential ignition sources and limit the amount of fuel available to the fire

## ◆ NFPA 72 §10.21.4/5

- ◆ The service provider shall report to the authority having jurisdiction any system that is *out of service for more than 8 hours*.
- ◆ Where required by the authority having jurisdiction, *mitigating measures shall be implemented* for the period that the system is impaired.

# Impairments

- ◆ FC §901.7.1 Impairment Coordinator: Owner or owners' designee
- ◆ FC §901.7.2 Tag Required: A tag shall be used to indicate portion removed from service. Tags located at:
  - ◆ each fire department connection
  - ◆ system control valve
  - ◆ fire alarm control unit
  - ◆ fire alarm annunciator
  - ◆ fire command center
- ◆ NFPA 25 §15.3 Tag Impairment System
- ◆ NFPA 72 Annex I — Color-Coded Tagging Program (*not mandatory*)

<b>DO NOT REMOVE BY ORDER OF THE AUTHORITY HAVING JURISDICTION</b> (until all conditions are corrected) <b>SYSTEM DEFICIENCY(IES) REQUIRES CORRECTIVE ACTION</b>		
<i>Registered Firm's Name</i> <i>Street Address</i> <i>City, State, Zip</i> <i>Phone Number - License Number</i>		
Date	Technician Signature	Cert. #
List Conditions: _____		
_____		
<b>REPORT STATUS TO OWNER AND AHJ</b> (in writing within five business days)		

Color: Black text on yellow background.

<b>DO NOT REMOVE BY ORDER OF THE AUTHORITY HAVING JURISDICTION</b> (until all conditions are corrected) <b>System</b> <input type="checkbox"/> <b>INOPERABLE</b> <input type="checkbox"/> <b>IMPAIRED</b> <input type="checkbox"/> <b>FAULT</b>		
<i>Registered Firm's Name</i> <i>Street Address</i> <i>City, State, Zip</i> <i>Phone Number - License Number</i>		
Date	Technician Signature	Cert. #
List Conditions: _____		
_____		
<b>REPORT INOPERABLE TO OWNER AND AHJ</b> (orally immediately and in writing within next business day) <b>REPORT ALL OTHER TO OWNER AND AHJ</b> (in writing within three business days)		

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# Preplanned and Emergency Impairments

- ◆ **FC 901.7.4** Preplanned impairments shall be authorized by the impairment coordinator. Before authorization is given, a designated individual shall be responsible for verifying that all of the following procedures have been implemented:
  1. The **extent and expected duration** of the impairment have been determined.
  2. The areas or buildings involved have been **inspected** and the increased risks determined.
  3. **Recommendations** have been submitted to management or the building owner/manager.
  4. The fire department has been **notified**.
  5. The insurance carrier, the alarm company, the building owner/manager and other authorities having jurisdiction have been **notified**.
  6. The supervisors in the areas to be affected have been **notified**.
  7. A **tag impairment** system has been implemented.
  8. Necessary tools and materials have been assembled on the impairment site.

# Restoring Systems to Service

- ◆ FC 901.7.6 Where impaired equipment is restored to normal working order, the **impairment coordinator shall verify** that all of the following procedures have been implemented:
  1. Necessary **inspections and tests** have been conducted to verify that affected systems are operational.
  2. Supervisors have been **advised** that protection is restored.
  3. The fire department has been **advised** that protection is restored.
  4. The building owner/manager, insurance carrier, alarm company and other involved parties have been **advised** that protection is restored.
  5. The impairment **tag** has been removed.

# Water Based Systems: Testing

- ◆ FC 901.6.2 Integrated Testing

- ◆ For high-rise buildings, integrated testing shall comply with NFPA 4...at intervals not exceeding 10 years

- ◆ NFPA 25 4.6.1

- ◆ All components and systems shall be tested to verify that they function as intended.



# Water-Based Systems: Testing

## ◆ Send for testing or replace

Sprinklers (all)	At 50 years and every 10 years thereafter	5.3.1
Sprinklers (all)	At 75 years and every 5 years thereafter	5.3.1
Sprinklers (dry)	At 20 years and every 10 years thereafter	5.3.1
Sprinklers (extra-high or greater temperature solder type)	Every 5 years	5.3.1
Sprinklers (fast-response, except ESFR and CMSA)	At 25 years and every 10 years thereafter	5.3.1
Sprinklers (ESFR and CMSA with fast-response elements)	At 20 years and every 10 years thereafter	5.3.1
Sprinklers (harsh environments)	Every 5 years	5.3.1



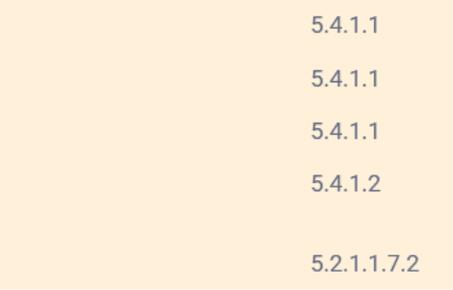
# Water Based Systems: Maintenance

◆ Per NFPA 25 and Manufacturers' Recommendations

**Maintenance**

Low-point drains (dry pipe and preaction systems)	—	Chapter 13
Sprinklers and automatic spray nozzles protecting commercial cooking equipment and ventilation systems	Annually	5.4.1.8
Replacement of sprinklers manufactured prior to 1920	—	5.4.1.1
Replacement of sprinklers showing signs in 5.2.1.1.1	—	5.4.1.1

Table 8.6.1 Summary of Component Action Requirements					
Component	Adjust	Repair	Rebuild	Replace	Test Criteria
<b>Fire Pump System</b>					
Entire pump assembly				X	Perform acceptance test in accordance with NFPA 20
Impeller/rotating assembly		X		X	Perform acceptance test in accordance with NFPA 20
Casing		X		X	Perform acceptance test in accordance with NFPA 20 with alignment inspection
Bearings				X	Perform annual test in accordance with 8.3.3
Sleeves				X	Perform annual test in accordance with 8.3.3
Wear rings				X	Perform annual test in accordance with 8.3.3
Main shaft		X		X	Perform annual test in accordance with 8.3.3
Packing	X			X	Perform test in accordance with 8.3.2
<b>Mechanical Transmission</b>					
Gear right-angle drives		X	X	X	Perform acceptance test in accordance with NFPA 20
Drive coupling	X	X	X	X	Perform test in accordance with 8.3.3 with alignment inspection
<b>Electrical System/Controller</b>					
Entire controller				X	Perform acceptance test in accordance with NFPA 20



Chapter 13

# Fire Alarm: Inspection

## ◆ NFPA 72, Section 14.3

▲ Table 14.3.1 Visual Inspection

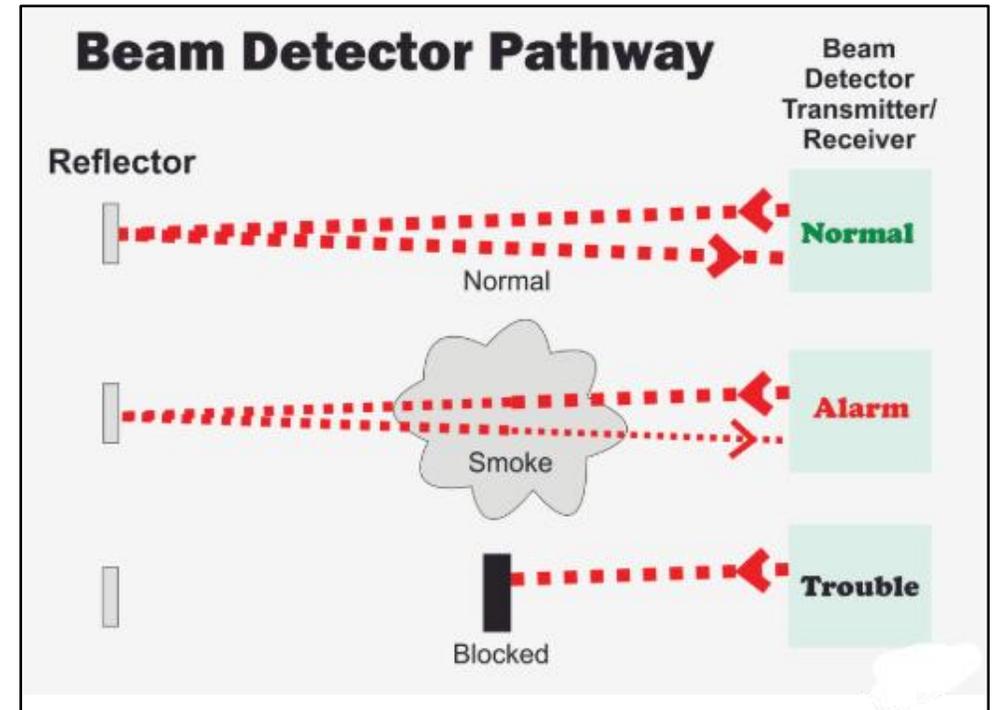
	Component	Initial Acceptance	Periodic Frequency	Method	Reference
1.	All equipment	X	Annual	Ensure there are no changes that affect equipment performance. Inspect for building modifications, occupancy changes, changes in environmental conditions, device location, physical obstructions, device orientation, physical damage, and degree of cleanliness.	14.3.4
2.	Control equipment:				
	(1) Fire alarm systems monitored for alarm, supervisory, and trouble signals			Verify a system normal condition.	
	(a) Fuses	X	Annual		
	(b) Interfaced equipment	X	Annual		
	(c) Lamps and LEDs	X	Annual		
	(d) Primary (main) power supply	X	Annual		
	(e) Trouble signals	X	Semiannual		
	(2) Fire alarm systems unmonitored for alarm, supervisory, and trouble signals			Verify a system normal condition.	
	(a) Fuses	X	Weekly		
	(b) Interfaced equipment	X	Weekly		
	(c) Lamps and LEDs	X	Weekly		
	(d) Primary (main) power supply	X	Weekly		
	(e) Trouble signals	X	Weekly		
3.	Reserved				
4.	Supervising station alarm systems — transmitters			Verify location, physical condition, and a system normal condition.	
	(1) Digital alarm communicator transmitter (DACT)	X	Annual		
	(2) Digital alarm radio transmitter (DART)	X	Annual		
	(3) McCulloh	X	Annual		
	(4) Radio alarm transmitter (RAT)	X	Annual		
	(5) All other types of communicators	X	Annual		
5.	In-building fire emergency voice/alarm communications equipment	X	Semiannual	Verify location and condition.	

# Fire Alarm: Inspection



## ◆ Visual Only

- ◆ Damaged/non-operable devices
- ◆ Occupancy Changes
- ◆ Environmental Conditions
- ◆ Physical Obstructions



# Fire Alarm: Inspection – Deficiencies Found

- ◆ Impairment (3.3.145) vs deficiency (3.3.74)
- ◆ NFPA 72, Section 10.21 Impairments
  - ◆ Inform system owner or their designated representative in writing within 24 hours
  - ◆ Let the owner or owner rep know when it is closed
  - ◆ Need to keep an impairment record
- ◆ Common Compensatory/Mitigating Measures



# Fire Alarm: Testing

## ◆ NFPA 72, Section 14.4

▲ Table 14.4.3.2 Testing

Component	Initial Acceptance	Periodic Frequency	Method
1. All equipment	X		See Table 14.3.1.
2. Control equipment and transponder			
(1) Functions	X	Annually	Verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
(2) Fuses	X	Annually	Verify rating and supervision.
(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. Test redundant power supplies separately.
3. Alarm control unit trouble signals			
(1) Audible and visual	X	Annually	Verify operation of control unit trouble signals. Verify ring-back feature for systems using a trouble-silencing switch that requires resetting.
(2) Disconnect switches	X	Annually	If control unit has disconnect or isolating switches, verify performance of intended function of each switch. Verify receipt of trouble signal when a supervised function is disconnected.
(3) Ground-fault monitoring circuit	X	Annually	If the system has a ground detection feature, verify the occurrence of ground-fault indication whenever any installation conductor is grounded.
(4) Transmission of signals to off-premises location	X	Annually	Actuate an initiating device and verify receipt of alarm signal at the off-premises location. Create a trouble condition and verify receipt of a trouble signal at the off-premises location. Actuate a supervisory device and verify receipt of a supervisory signal at the off-premises location. If a transmission carrier is capable of operation under a single- or multiple-fault condition, actuate an initiating device during such fault condition and verify receipt of an alarm signal and a trouble signal at the off-premises location.

- ◆ Acceptance and Reacceptance testing
- ◆ Manufacturer's Instructions



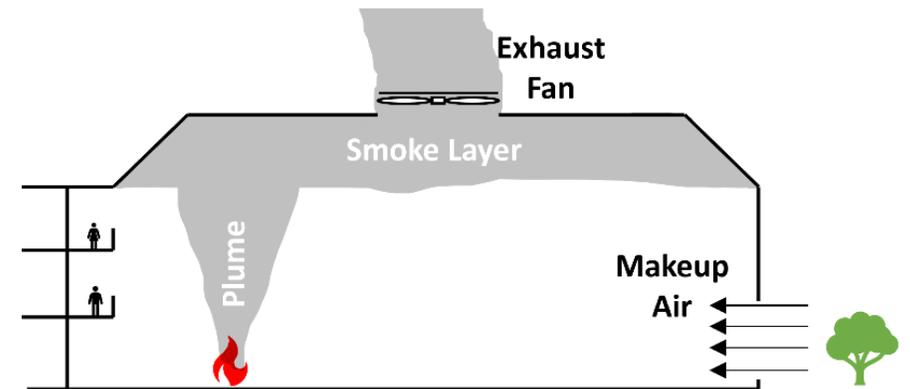
# Fire Alarm: Testing

## ◆ FC 901.6.2.1 High-Rise Buildings

- ◆ For high-rise buildings, integrated testing shall comply with NFPA 4, with an integrated test performed prior to issuance of the certificate of occupancy and **at intervals not exceeding 10 years**

## ◆ FC 901.6.2.2 Smoke Control Systems

- ◆ Where a fire alarm system is integrated with a smoke control system as outlined in Section 909, integrated testing shall comply with NFPA 4, with an integrated test performed prior to issuance of the certificate of occupancy and **at intervals not exceeding 10 years**



# Fire Alarm: Testing

## NOTICE ON FIRE ALARM TESTING

Dear Members and Guests

Please be informed that we will conduct  
a Fire Cert Application Test on

**Wednesday, 9 April 2025  
between 10:00 AM - 12:00 PM.**

Fire alarm will be alerted multiple times during the test.  
Public announcements will be made to inform everyone in  
the building that it is a false alarm.

All lifts will not be in operation during this time.

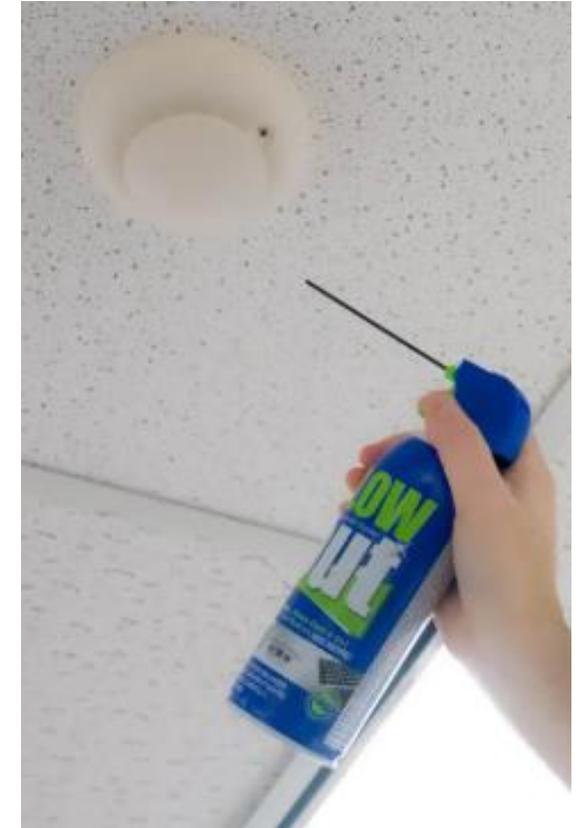
Thank you for your kind understanding and we apologise  
for any inconvenience caused.

- ◆ NFPA 72, 14.2.4 – Notify all persons and facilities receiving signals
- ◆ Coordinate with end users
- ◆ Done by qualified and experienced personnel



# Fire Alarm: Maintenance

- ◆ NFPA 72, Section 14.5
- ◆ Manufacturer's instructions
- ◆ Environmental Conditions
- ◆ Document Everything Inspection, Testing, and Maintenance
  - ◆ NFPA 72, Section 14.6.2



# Security: Inspection

## Standard (Referenced Standard – 2025 NYS Fire Code)

NFPA 731 – Standard for the Installation of Premise Security Systems  
Chapter 10 – Testing and Inspections

- ◆ The system user, the premises security system provider for the protected premises, or the owner's designated representative shall be responsible for the inspection, testing, and maintenance of the systems and alterations of the systems
- ◆ Inspection can be performed by a qualified third-party under a contract
- ◆ The inspection frequency shall be performed in accordance with the **security vulnerability assessment** for the protected premises. (NFPA 730)

# Security: Testing

- ◆ System user, parties responsible for the protected premises, and facilities receiving alarm signals shall be notified of the testing.
- ◆ Testing frequency shall be in accordance with the manufacturer's instructions and the security vulnerability assessment.
- ◆ Re-acceptance Testing shall be performed for:
  1. Added or deleted system components
  2. Any modification, repair or adjustment to hardware or wiring
  3. Any modifications to the structure being protected.

# Security: Impairments

- ◆ System defects and malfunctions shall be corrected.
- ◆ Repairs *shall* begin within 24 hours of indication, unless a delay is approved.
- ◆ If no risk to the property or occupant, repair can be beyond required time.
- ◆ If defect/malfunction is not corrected, written notice required within 24 hours.
- ◆ Records maintained for 1 year.



# Security: Maintenance

- ◆ Permanent Records: Maintained for the life of the system and available to the AHJ.
- ◆ Maintenance retained until the next test and for the next 12 months.
- ◆ For monitoring station premises security systems, records pertaining to signals received at the monitoring station shall be maintained for not less than 12 consecutive months.

# Security Vulnerability Assessment

## NFPA 730

An SVA should assess the current vulnerabilities, threat exposures, security features, and preparedness.

Should use a recognized, analytical methodology.

Classify critically assets, identify potential targets, analyze consequence.

- ◆ Qualified Person(s).
- ◆ Qualitative and Quantitative
- ◆ Crucial for planning
- ◆ Identify and prioritize assets
- ◆ Helps determine Inspection and Testing frequency

# Security Vulnerability Assessment

Recommendations	Section
Electronic access control at all entry/egress doors, all sides of the building.	Access Control
Electronic access control at assembly space entrances.	Access Control
Combination card reader / keypad at entry/egress points.	Access Control
Policy to track and maintain access cards with emergency responders.	Access Control
Initiate lockdown quickly from interior and exterior of each school.	Communications
Additional means to initiate a lockdown and reduce false alarms.	Communications
Automatically call the 911 Center during a lockdown activation.	Communications
Direct parents to a predetermined off-site location.	Communications
Audible gunshot detection and integrate with the lockdown system.	Communications
Electronic access control on all assembly space doors.	Doors/Locks
Lock assembly space doors from the interior using a thumb-turn.	Doors/Locks
Integrate fire doors and assembly space doors to the lockdown system.	Doors/Locks
Remove the pull handle on the inactive leaf of double doors.	Doors/Locks
Temporary concealment blinds for interior spaces.	Doors/Locks
Master keys	Doors/Locks
Local door ajar alarm for exterior doors not normally used	Doors/Locks

# Security Vulnerability Assessment

Recommendations	Section
Ensure there are means for students, staff, and visitors to egress from the outside fenced areas.	Fencing/Gates/Env.
Keep all fence lines clear from vegetation to reduce the potential for concealment and staging.	Fencing/Gates/Env.
Remove evergreens along the front of the school.	Fencing/Gates/Env.
Upgrade the site lighting.	Fencing/Gates/Env.
Intrusion detection at each school for after-hours, third-party monitoring.	Intrusion Detection
Security film/glass that meets the ASTM F3561 standard.	Security Film/Glass
UL 752 bullet resistant glass for future transaction windows at secure vestibules.	Security Film/Glass
Reconfigure main entrances to create 2-3 layers of security.	Secure Vestibules
Electronic access control on the interior vestibule doors.	Secure Vestibules
Video surveillance within vestibules.	Secure Vestibules
Bullet Resistant transaction windows	Secure Vestibules
Automatic metal/weapons detection system	Secure Vestibules
Visitor management system for all guests and visitors.	Secure Vestibules

## References

- ◆ NFPA 731 - Standard for Installation of Premises Security Systems.
- ◆ NFPA 730 – Guide for Premises Security
- ◆ NFPA 72 - National Fire Alarm and Signaling Code
- ◆ UL 681 - Standard for Installation and Classification of Burglar and Holdup Alarm Systems
- ◆ UL 2050 - Standard for National Industrial Security Systems
- ◆ ASIS International (2023) - "Building and Defending a Plan for Preventative Maintenance." Strategies for security asset lifecycle improvement.

# Conclusion



- ◆ Inspection, Testing, and Maintenance are critical to ensure life safety and security systems operate as intended in the event of a real emergency.
- ◆ System outages are inevitable. Be prepared with a preplanned impairment program.
- ◆ Please remember to fill out the session review.



Questions?