Chapter 17
Documentation and Record of Completion

လိုအပ်သည့်မှတ်တမ်း(documentation)များ

(၁) အောင်မြင်စွာ တပ်ဆင်ပြီးကြောင်းမှတ်တမ်း (fire alarm system record of completion)

(၂) Point တစ်ခုချင်းစီကိုဖော်ပြသည့်ပုံများ(Point-to-Point wiring diagrams)

(၃) ကိရိယာတစ်ခုချင်းစီကို ချိတ်ဆက်ထားသည့် ဝါယာကြိုးများကို ဖော်ပြထားပုံ(individual device inter-connection drawings)

(၄) အားလုံးတပ်ဆင်ပြီးနောက် နောက်ဆုံး တပ်ဆင်ထားသည့်အတိုင်း ရေးဆွဲထားသည့်ပုံများ(As-Built drawings)

(၅) အသုံးပြုထားသည့် equipment များ၏ နည်းပညာအချက်အလက်များ ပါဝင်သည့် စာရွက် စာတမ်းများ (copy of original equipment submittals)

(၆) မည်ကဲ့သို့ အလုပ်လုပ်သည်။ Operate ရမည်၊ မည်ကဲ့သို့ ပြုပြင်ထိန်းသိမ်းမှုများ ပြုလုပ်သင့်သည်ကို ဖော်ပြ ထားသည့် လမ်းညွှန်ချက်များ(Operational and Maintenance Manuals)

(၇) ထုတ်လုပ်သူများမှ စမ်းသပ်(test လုပ်) ထားသည့် အချက်အလက်များ၊ ပြုပြင်ထိန်းသိမ်းရန် အတွက် လိုအပ်ချက်များ၊ device တိုင်းတွင် ပေးထားသည့် သို့မဟုတ် ထည့်သွင်းထားသည့် address စာရင်း (addressable system အတွက်သာ) သို့မဟုတ် device များတပ်ဆင်ထားသည့်နေရာကို ဖော်ပြထားသည့် စာရင်း(manufacturer's proper testing and maintenance requirements)

(၈) Device Address List/Conventional Device Location List

၁၇.၁ Shop Drawings

Shop drawing များတွင် fire alarm system အတွက် အခြေခံ အချက်အလက်များ(basic information) ပါဝင်ရမည့် ကိရိယာများ၊ နေရာများ၊ ဝါယာကြိုး ချိတ်ဆက်ရမည့်နည်းများ၊ ဆောင်ရွက်ပြီးခဲ့သည့် အဓိကအလုပ်ကိစ္စများ(work being performed)၊ ပုံများ(floor plan drawings)၊ ဒိုင်ယာဂရမ်များ(riser diagrams)၊ ဝါယာရင်း(control panel wiring diagrams)၊ point များ၏ ဝါယာရင်းပုံများ(point-to-point wiring diagrams)၊

conduit သွယ်တန်းထားသည့် နေရာများ(conduit routing)၊ ဝါယာရင်းပုံများ(typical wiring diagrams) နှင့် အခြားသော သက်ဆိုင်သည့် အချက်အလက်များ(information) ပါဝင်ရမည်။

Shop drawing များအားလုံးကို ရေးဆွဲမည့် စက္ကူသည် စာရွက်အရွယ်အစား တူညီ(uniform) ရမည်။ အောက်တွင် ဖော်ပြ ထားသည့် အချက်အလက်များ ပါဝင်ရမည်။

(၁) Name of protected premises, owner, and occupant (where applicable)
(၂) Name of installer or contractor
(၃) Location of protected premises
(၄) Device legend in accordance with NFPA 170, Standard for Fire Safety and Emergency Symbols
(၅) Date of issue and any revisions

Floor plan drawing များကို ရေးဆွဲရာတွင် အောက်တွင် ဖော်ပြထားသည့် အချက်အလက်များ ပါဝင်ရမည်။

(၁) Floor identification
(၂) Point of compass (indication of north)
(၃) Graphic scale
(၄) All walls and doors
(၅) All partitions extending to within 10 percent of the ceiling height (where applicable)
(၆) Room descriptions
(၇) Fire alarm device/component locations
(၈) Locations of fire alarm primary power connection(s)
(၉) Locations of monitor/control interfaces to other systems
(၁၀) Riser locations
(၁၁) Type and number of fire alarm system components/devices on each circuit, on each floor or level
(၁၂) Type and quantity of conductors and conduit (if used) used for each circuit
(၁၃) Location of all supply and return air diffusers (where automatic detection is used)

Fire alarm system riser diagram များ ရေးဆွဲရာတွင် အောက်တွင် ဖော်ပြထားသည့် အချက်အလက်များ (information) ပါဝင်ရမည်။

(၁) General arrangement of the system in building cross-section
(၂) Number of risers
(၃) Type and number of circuits in each riser
(၄) Type and number of fire alarm system components/devices on each circuit, on each floor or level
(၅) Type and quantity of conductors and conduit (if used) for each circuit

Control unit wiring diagram များတွင် control equipment (i.e., equipment listed as either a control unit or control unit accessory)၊ လျှပ်စစ်ဓာတ်အားပေးမှုများ(power supplies)၊

ဘက်ထရီဓာတ်အားသွင်းစက်(battery chargers) နှင့် annunciator များ ပါဝင်ရမည်။ Control wring diagram ရေးဆွဲရာတွင် ပါဝင်ရမည့် အချက်လက်များကို အောက်တွင် ဖော်ပြထားသည်။

(၁) Identification of the control equipment depicted
(၂) Location(s)
(၃) All field wiring terminals and terminal identifications
(၄) All circuits connected to field wiring terminals and circuit identifications

(၅) All indicators and manual controls, including the full text of all labels
(၆) All field connections to supervising station signaling equipment, releasing equipment, and fire safety control interfaces

Initiating device များ အားလုံး၊ notification appliance များအားလုံး၊ remote indicator များအားလုံး၊ annunciator များ အားလုံး၊ remote test station များ အားလုံးနှင့် end-of-line and power supervisory devices များ အားလုံးအတွက် typical wiring diagram များကို ဖော်ပြရမည်။ ရေးဆွဲထားရမည်။

Documentation checklist:

- ❑ Fire Alarm System Record of Completion
- ❑ Point-to-Point Wiring Diagrams
- ❑ Individual Device Interconnection Drawings
- ❑ As-Built (Record) Drawings
- ❑ Copy of Original Equipment Submittals
- ❑ Operational Manuals
- ❑ Manufacturer's Proper Testing and Maintenance Requirements
- ❑ Device Address List/Conventional Device Location List

စမ်းသပ်စစ်ဆေး၍ ရရှိသည့်ရလဒ်များ(test results)များကို အပြည့်အစုံမှတ်တမ်းတင်(fully documented) သိမ်းဆည်းထားပြီး ပိုင်ရှင်(building owner)ထံသို့ လွှဲပြောင်းအပ်နှံထားရမည်။ Emergency communications system contractor ၊ system designer ၊ authority having jurisdiction နှင့်တခြားသော အဖွဲ့အစည်းများ(other individual or organization)ဆီသို့ ပေးပို့ထားရမည်။

NFPA 72 Chapter 10 တွင် ပါရှိသည့် test documentation များ သာမက အောက်တွင် ဖော်ပြထားသည့် test result များကို ပြုစုထားရန် လိုအပ်သည်။

(၁) Building location and related descriptive facility information
(၂) Names, titles, and contact information for individuals involved in test
(၃) Dates and times of tests
(၄) A list of testing instruments, including manufacturer’s name, model, serial number, and date of most recent calibration
(၅) Technical description of emergency communications system
(၆) Identification of ADSs
(၇) Locations of specific measurement points (in a list or on a set of drawings)
(၈) Site definition of ambient sound pressure levels
(၉) STI/STIPA measurements at each measurement point
(၁၀) Final corrected STI/STIPA values where the post-processing procedure is used
(၁၁) Indication of whether or not the test met the pass/fail criteria
(၁၂) Record of system restoration
(၁၃) Any additional information to assist with future evaluation of system performance

၁၇.၂ Record of Completion

FIRE ALARM AND EMERGENCY COMMUNICATION SYSTEM RECORD OF COMPLETION

To be completed by the system installation contractor at the time of system acceptance and approval.
It shall be permitted to modify this form as needed to provide a more complete and/or clear record.
Insert N/A in all unused lines.
Attach additional sheets, data, or calculations as necessary to provide a complete record.

1. PROPERTY INFORMATION

Name of property: Main Street Towers

Address: 12345 Main Street, Pleasantville, NY 01111

Description of property: 40-story high-rise building with an adjacent 1-story parking structure

Occupancy type: B

Name of property representative: Mary Morris, Property Manager, Mary's Management Company

Address: 12345 Main Street, Pleasantville, NY 01111

Phone: 222/222-2222 Fax: 333/333-3333 E-mail: mm@mmc.com

Authority having jurisdiction over this property: Inspector Jack Jones, Pleasantville Fire Department

Phone: 444/444-4444 Fax: 555/555-5555 E-mail: jackjones@pfd.org

2. INSTALLATION, SERVICE, AND TESTING CONTRACTOR INFORMATION

Installation contractor for this equipment: Fred's Fine Fire Alarm Systems

Address: 789 Broad Street, Pleasantville, NY 01113

License or certification number: NY–1634

Phone: 888/888-8888 Fax: 999/999-9999 E-mail: fredfriendly@fffas.com

Service organization for this equipment: Fred's Fine Fire Alarm Systems

Address: Same

License or certification number:

Phone: Fax: E-mail:

A contract for test and inspection in accordance with NFPA standards is in effect as of: June 11, 2010

Contracted testing company: Fred's Fine Fire Alarm Systems

Address: Same

Phone: Fax: E-mail:

Contract expires: June 11, 2011 Contract number: 45678 Frequency of routine inspections: Quarterly

3. DESCRIPTION OF SYSTEM OR SERVICE

❑ Fire alarm system (nonvoice)

❑ Fire alarm with in-building fire emergency voice alarm communication system (EVACS)

❑ Mass notification system (MNS)

☑ Combination system, with the following components:

☑ Fire alarm ☑ EVACS ☑ MNS ☑ Two-way, in-building, emergency communication system

❑ Other (specify): N/A

3. DESCRIPTION OF SYSTEM OR SERVICE *(continued)*

NFPA 72 edition: 2010 Additional description of system(s): N/A

3.1 Control Unit

Manufacturer: Megasystems Model number: AZ–1230

3.2 Mass Notification System ❑ This system does not incorporate an MNS.

3.2.1 System Type:

☑ In-building MNS — combination

❑ In-building MNS — stand-alone ❑ Wide-area MNS ❑ Distributed recipient MNS

❑ Other (specify): N/A

3.2.2 System Features:

☑ Combination fire alarm/MNS ❑ MNS autonomous control unit ❑ Wide-area MNS to regional national alerting interface

❑ Local operating console (LOC) ❑ Distributed recipient MNS (DRMNS) ❑ Wide-area MNS to DRMNS interface

❑ Wide-area MNS to high-power speaker array (HPSA) interface ❑ In-building MNS to wide-area MNS interface

❑ Other (specify): N/A

3.3 System Documentation

☑ An owner's manual, a copy of the manufacturer's instructions, a written sequence of operation, and a copy of the numbered record drawings are stored on site. Location: Building management office, Suite 2222

3.4 System Software ❑ This system does not have alterable site-specific software.

Operating system (executive) software revision level: 4.567

Site-specific software revision date: June 26, 2010 Revision completed by: Fred Friendly

☑ A copy of the site-specific software is stored on site. Location: Building management office, Suite 2222

3.5 Off-Premises Signal Transmission ❑ This system does not have off-premises transmission.

Name of organization receiving alarm signals with phone numbers:

Alarm: Manny's Monitoring Phone: 777/777-7777

Supervisory: Manny's Monitoring Phone: 777/777-7777

Trouble: Manny's Monitoring Phone: 777/777-7777

Entity to which alarms are retransmitted: Pleasantville Fire Department Phone: 444/444-4444

Method of retransmission: Central station operator calls 444/444-4444 after receiving a signal

If Chapter 26, specify the means of transmission from the protected premises to the supervising station:

DACT

If Chapter 27, specify the type of auxiliary alarm system: ❑ Local energy ❑ Shunt ❑ Wired ❑ Wireless

4. CIRCUITS AND PATHWAYS

4.1 Signaling Line Pathways

4.1.1 Pathways Class Designations and Survivability

Pathways class: A Survivability level: 2 Quantity: 12

(See NFPA 72, Sections 12.3 and 12.4)

4.1.2 Pathways Utilizing Two or More Media

Quantity: 0 Description: N/A

4.1.3 Device Power Pathways

☑ No separate power pathways from the signaling line pathway

❑ Power pathways are separate but of the same pathway classification as the signaling line pathway

❑ Power pathways are separate and different classification from the signaling line pathway

4.1.4 Isolation Modules

Quantity: 4

4.2 Alarm Initiating Device Pathways

4.2.1 Pathways Class Designations and Survivability

Pathways class: N/A Survivability level: N/A Quantity: 0

(See NFPA 72, Sections 12.3 and 12.4)

4.2.2 Pathways Utilizing Two or More Media

Quantity: 0 Description: N/A

4.2.3 Device Power Pathways

❑ No separate power pathways from the initiating device pathway

❑ Power pathways are separate but of the same pathway classification as the initiating device pathway

❑ Power pathways are separate and different classification from the initiating device pathway

4.3 Non-Voice Audible System Pathways

4.3.1 Pathways Class Designations and Survivability

Pathways class: B Survivability level: N/A Quantity: 24

(See NFPA 72, Sections 12.3 and 12.4)

4.3.2 Pathways Utilizing Two or More Media

Quantity: 0 Description: N/A

4.3.3 Appliance Power Pathways

☑ No separate power pathways from the notification appliance pathway

❑ Power pathways are separate but of the same pathway classification as the notification appliance pathway

❑ Power pathways are separate and different classification from the notification appliance pathway

5. ALARM INITIATING DEVICES

5.1 Manual Initiating Devices

5.1.1 Manual Fire Alarm Boxes ❑ This system does not have manual fire alarm boxes.

Type and number of devices: Addressable: 74 Conventional: 0 Coded: 0 Transmitter: 0

Other (specify): N/A

5.1.2 Other Alarm Boxes ❑ This system does not have other alarm boxes.

Description:

Type and number of devices: Addressable: 10 Conventional: 0 Coded: 0 Transmitter: 0

Other (specify): N/A

5.2 Automatic Initiating Devices

5.2.1 Smoke Detectors ❑ This system does not have smoke detectors.

Type and number of devices: Addressable: 96 Conventional: 0

Other (specify): N/A

Type of coverage: ❑ Complete area ☑ Partial area ❑ Nonrequired partial area

Other (specify): Located in all electrical and equipment rooms, in elevator lobbies, and at fire doors

Type of smoke detector sensing technology: ❑ Ionization ☑ Photoelectric ❑ Multicriteria ❑ Aspirating ❑ Beam

Other (specify): N/A

5.2.2 Duct Smoke Detectors ❑ This system does not have alarm-causing duct smoke detectors.

Type and number of devices: Addressable: 33 Conventional: 0

Other (specify): N/A

Type of coverage: Located at the supply and return of all air handling units

Type of smoke detector sensing technology: ❑ Ionization ☑ Photoelectric ❑ Aspirating ❑ Beam

5.2.3 Radiant Energy (Flame) Detectors ☑ This system does not have radiant energy detectors.

Type and number of devices: Addressable: _____ Conventional: _____

Other (specify): N/A

Type of coverage: N/A

5.2.4 Gas Detectors ☑ This system does not have gas detectors.

Type of detector(s): N/A

Number of devices: Addressable: _____ Conventional: _____

Type of coverage: N/A

5.2.5 Heat Detectors ❑ This system does not have heat detectors.

Type and number of devices: Addressable: 12 Conventional: 0

Type of coverage: ❑ Complete area ☑ Partial area ❑ Nonrequired partial area ❑ Linear ☑ Spot

Type of heat detector sensing technology: ☑ Fixed temperature ☑ Rate-of-rise ❑ Rate compensated

5. ALARM INITIATING DEVICES *(continued)*

5.2.6 Addressable Monitoring Modules ❑ This system does not have monitoring modules.

Number of devices: 67

5.2.7 Waterflow Alarm Devices ☑ This system does not have waterflow alarm devices.

Type and number of devices: Addressable: 42 Conventional: 0 Coded: 0 Transmitter: 0

5.2.8 Alarm Verification ☑ This system does not incorporate alarm verification.

Number of devices subject to alarm verification: _____ Alarm verification set for _____ seconds

5.2.9 Presignal ❑ This system does not incorporate pre-signal.

Number of devices subject to presignal: N/A

Describe presignal functions: N/A

5.2.10 Positive Alarm Sequence (PAS) ☑ This system does not incorporate PAS.

Describe PAS: N/A

5.2.11 Other Initiating Devices ☑ This system does have other initiating devices.

Describe: N/A

6. SUPERVISORY SIGNAL–INITIATING DEVICES

6.1 Sprinkler System Supervisory Devices ❑ This system does not have sprinkler supervisory devices.

Type and number of devices: Addressable: 49 Conventional: 0 Coded: 0 Transmitter: 0

Other (specify): N/A

6.2 Fire Pump Description and Supervisory Devices ❑ This system does not have a fire pump.

Type fire pump: ☑ Electric ❑ Engine

Type and number of devices: Addressable: 3 Conventional: 0 Coded: 0 Transmitter: 0

Other (specify): N/A

6.2.1 Fire Pump Functions Supervised

☑ Power ☑ Running ☑ Phase reversal ❑ Selector switch not in auto ❑ Engine or control panel trouble ❑ Low fuel

Other (specify): N/A

6.3 Duct Smoke Detectors (DSDs) ☑ This system does not have DSDs causing supervisory signals.

Type and number of devices: Addressable: _____ Conventional: _____

Other (specify): N/A

Type of coverage: N/A

Type of smoke detector sensing technology: ❑ Ionization ❑ Photoelectric ❑ Aspirating ❑ Beam

6.4 Other Supervisory Devices ☑ This system does not have other supervisory devices.

Describe: _____

7. MONITORED SYSTEMS

7.1 Engine-Driven Generator

❑ This system does not have a generator.

7.1.1 Generator Functions Supervised

☑ Engine or control panel trouble ☑ Generator running ☑ Selector switch not in auto ☑ Low fuel

❑ Other (specify): N/A

7.2 Special Hazard Suppression Systems

❑ This system does not monitor special hazard systems.

Description of special hazard system(s): Sprinkler preaction system in 24th floor computer room

7.3 Other Monitoring Systems

☑ This system does not monitor other systems.

Description of other system(s):

8. ANNUNCIATORS

❑ This system does not have annunciators.

8.1 Location and Description of Annunciators

Location 1: Fire command center

Location 2: Front lobby at east entrance doors

Location 3: Engineering office on P1 level

9. ALARM NOTIFICATION APPLIANCES

9.1 In-Building Fire Emergency Voice Alarm Communication System

❑ This system does not have an EVACS.

Number of single voice alarm channels: 58 Number of multiple voice alarm channels: 0

Number of speakers: 490 Number of speaker circuits: 58

Location of amplification and sound-processing equipment: Fire command center

Location of paging microphone stations:

Location 1: Fire command center

Location 2: N/A

Location 3: N/A

9.2 Nonvoice Notification Appliances

❑ This system does not have nonvoice notification appliances.

Horns: 0 With visible: 0 Bells: 0 With visible: 0

Chimes: 0 With visible: 0

Visible only: 566 Other (describe): 0

9.3 Notification Appliance Power Extender Panels

❑ This system does not have power extender panels.

Quantity: 42

Locations: 2 in the fire command center and 1 in the electrical equipment room on each floor

10. MASS NOTIFICATION CONTROLS, APPLIANCES, AND CIRCUITS

❑ This system does not have an MNS.

10.1 MNS Local Operating Consoles

Location 1: Fire command center

Location 2: N/A

Location 3: N/A

10.2 High-Power Speaker Arrays

Number of HPSA speaker initiation zones: None

Location 1:

Location 2:

Location 3:

10.3 Mass Notification Devices

Combination fire alarm/MNS visible appliances: 0 MNS-only visible appliances: 216

Textual signs: 0 Other (describe): N/A

Supervision class: B

10.3.1 Special Hazard Notification

☑ This system does not have special suppression predischarge notification.

❑ MNS systems DO NOT override notification appliances required to provide special suppression predischarge notification.

11. TWO-WAY EMERGENCY COMMUNICATION SYSTEMS

11.1 Telephone System

❑ This system does not have a two-way telephone system.

Number of telephone jacks installed: 138 Number of warden stations installed: 0

Number of telephone handsets stored on site: 8

Type of telephone system installed: ☑ Electrically powered ❑ Sound powered

11.2 Two-Way Radio Communications Enhancement System

☑ This system does not have a two-way radio communications enhancement system.

Percentage of area covered by two-way radio service: Critical areas: _____ % General building areas: _____ %

Amplification component locations: N/A

Inbound signal strength: _____ dBm Outbound signal strength: _____ dBm

Donor antenna isolation is _____ dB above the signal booster gain

Radio frequencies covered:

Radio system monitor panel location:

11. TWO-WAY EMERGENCY COMMUNICATION SYSTEMS *(continued)*

11.3 Area of Refuge (Area of Rescue Assistance) Emergency Communications Systems

❑ This system does not have an area of refuge (area of rescue assistance) emergency communications system.

Number of stations: 43 Location of central control point: Fire command center

Days and hours when central control point is attended: During incident

Location of alternate control point: Building management office

Days and hours when alternate control point is attended: 8 to 5 on weekdays

11.4 Elevator Emergency Communications Systems

❑ This system does not have an elevator emergency communications system.

Number of elevators with stations: 12 Location of central control point: Fire command center

Days and hours when central control point is attended: During incident

Location of alternate control point: Building management office

Days and hours when alternate control point is attended: 8 to 5 on weekdays

11.5 Other Two-Way Communication Systems

Describe: N/A

12. CONTROL FUNCTIONS

This system activates the following control functions:

☑ Hold-open door releasing devices ☑ Smoke management ❑ HVAC shutdown ☑ F/S dampers

☑ Door unlocking ☑ Elevator recall ☑ Fuel source shutdown ❑ Extinguishing agent release

☑ Elevator shunt trip ☑ Mass notification system override of fire alarm notification appliances

Other (specify): N/A

12.1 Addressable Control Modules

❑ This system does not have control modules.

Number of devices: 122

Other (specify): N/A

13. SYSTEM POWER

13.1 Control Unit

13.1.1 Primary Power

Input voltage of control panel: 120 VAC Control panel amps: 6.2

Overcurrent protection: Type: Circuit breaker Amps: 15

Location (of primary supply panel board): First floor electrical room

Disconnecting means location: First floor electrical room

13.1.2 Engine-Driven Generator

❑ This system does not have a generator.

Location of generator: Lower level generator room

Location of fuel storage: Sub basement fuel storage room Type of fuel: Diesel

13. SYSTEM POWER *(continued)*

13.1.3 Uninterruptible Power System ☑ This system does not have a UPS.

Equipment powered by a UPS system: _____

Location of UPS system: _____

Calculated capacity of UPS batteries to drive the system components connected to it:

In standby mode (hours): _____ In alarm mode (minutes): _____

13.1.4 Batteries

Location: Fire command center Type: Gel cell Nominal voltage: 24 VDC Amp/hour rating: 30

Calculated capacity of batteries to drive the system:

In standby mode (hours): 38 In alarm mode (minutes): 11

☑ Batteries are marked with date of manufacture ☑ Battery calculations are attached

13.2 In-Building Fire Emergency Voice Alarm Communication System or Mass Notification System

❑ This system does not have an EVACS or MNS system.

13.2.1 Primary Power

Input voltage of EVACS or MNS panel: 120 VAC EVACS or MNS panel amps: 11.9

Overcurrent protection: Type: Circuit breaker Amps: 15

Location (of primary supply panel board): First floor electrical room

Disconnecting means location: First floor electrical room

13.2.2 Engine-Driven Generator ❑ This system does not have a generator.

Location of generator: Lower level generator room

Location of fuel storage: Sub basement fuel storage room Type of fuel: Diesel

13.2.3 Uninterruptible Power System ☑ This system does not have a UPS.

Equipment powered by a UPS system: _____

Location of UPS system: _____

Calculated capacity of UPS batteries to drive the system components connected to it:

In standby mode (hours): _____ In alarm mode (minutes): _____

13.2.4 Batteries

Location: Fire command center Type: Gel cell Nominal voltage: 24 VDC Amp/hour rating: 120

Calculated capacity of batteries to drive the system:

In standby mode (hours): 30 In alarm mode (minutes): 8

☑ Batteries are marked with date of manufacture ☑ Battery calculations are attached

13. SYSTEM POWER *(continued)*

13.3 Notification Appliance Power Extender Panels

❑ This system does not have power extender panels.

13.3.1 Primary Power

Input voltage of power extender panel(s): 120 VAC Power extender panel amps: 2

Overcurrent protection: Type: Circuit breaker Amps: 15

Location (of primary supply panel board): E Power panels located every three floors in the electrical rooms

Disconnecting means location: E Power panels

13.3.2 Engine-Driven Generator

❑ This system does not have a generator.

Location of generator: Lower level generator room

Location of fuel storage: Sub basement fuel storage room Type of fuel: Diesel

13.3.3 Uninterruptible Power System

☑ This system does not have a UPS.

Equipment powered by a UPS system: _____

Location of UPS system: _____

Calculated capacity of UPS batteries to drive the system components connected to it:

In standby mode (hours): _____ In alarm mode (minutes): _____

13.3.4 Batteries

Location: Inside each panel Type: Gel cell Nominal voltage: 24 VDC Amp/hour rating: 14

Calculated capacity of batteries to drive the system:

In standby mode (hours): _____ In alarm mode (minutes): See attached calculations

☑ Batteries are marked with date of manufacture ☑ Battery calculations are attached

14. RECORD OF SYSTEM INSTALLATION

Fill out after all installation is complete and wiring has been checked for opens, shorts, ground faults, and improper branching, but before conducting operational acceptance tests.

This is a: ☑ New system ❑ Modification to an existing system Permit number: 4567

The system has been installed in accordance with the following requirements: (Note any or all that apply.)

☑ *NFPA 72,* Edition: 2010

☑ *NFPA 70, National Electrical Code,* Article 760, Edition: 2008

☑ Manufacturer's published instructions

Other (specify): Pleasantville local codes, revised 2008

System deviations from referenced NFPA standards: None known

Signed: Fred Friendly Printed name: Fred Friendly Date: 8/21/2010

Organization: Fred's Fine Fire Alarm Syst. Title: President Phone: 444/444-4444

15. RECORD OF SYSTEM OPERATONAL ACCEPTANCE TEST

☑ New system

All operational features and functions of this system were tested by, or in the presence of, the signer shown below, on the date shown below, and were found to be operating properly in accordance with the requirements for the following:

❑ Modifications to an existing system

All newly modified operational features and functions of the system were tested by, or in the presence of, the signer shown below, on the date shown below, and were found to be operating properly in accordance with the requirements of the following:

☑ *NFPA 72,* Edition: 2010

☑ *NFPA 70, National Electrical Code,* Article 760, Edition: 2008

☑ Manufacturer's published instructions

Other (specify): Pleasantville local codes, revised 2008

☑ Individual device testing documentation [Inspection and Testing Form (Figure 14.6.2.4) is attached]

Signed: Fred Friendly Printed name: Fred Friendly Date: 8/21/2010

Organization: Fred's Fine Fire Alarm Syst. Title: President Phone: 444/444-4444

16. CERTIFICATIONS AND APPROVALS

16.1 System Installation Contractor:

This system, as specified herein, has been installed and tested according to all NFPA standards cited herein.

Signed: Fred Friendly Printed name: Fred Friendly Date: 8/21/2010

Organization: Fred's Fine Fire Alarm Syst. Title: President Phone: 888/888-8888

16.2 System Service Contractor:

The undersigned has a service contract for this system in effect as of the date shown below.

Signed: Fred Friendly Printed name: Fred Friendly Date: 8/21/2010

Organization: Fred's Fine Fire Alarm Syst. Title: President Phone: 888/888-8888

16.3 Supervising Station:

This system, as specified herein, will be monitored according to all NFPA standards cited herein.

Signed: Manny Monitor Printed name: Manny Monitor Date: 8/30/2010

Organization: Manny's Monitoring Title: President Phone: 777/777-7777

16. CERTIFICATIONS AND APPROVALS *(continued)*

16.4 Property or Owner Representative:

I accept this system as having been installed and tested to its specifications and all NFPA standards cited herein.

Signed: Mary Morris Printed name: Mary Morris Date: 8/30/2010

Organization: Mary's Management Title: Property Manager Phone: 222/222-2222

16.5 Authority Having Jurisdiction:

I have witnessed a satisfactory acceptance test of this system and find it to be installed and operating properly in accordance with its approved plans and specifications, with its approved sequence of operations, and with all NFPA standards cited herein.

Signed: Jack Jones Printed name: Jack Jones Date: 9/10/2010

Organization: Pleasantville Fire Dept. Title: Inspector Phone: 444/444-4444

၁၇.၃ NFPA Plan Review

Reference numbers following checklist statements represent an NFPA code section unless otherwise specified.

Checklist Legend: OK = acceptable; N = need to provide; NA = not applicable

(၁) Three sets of drawings are provided.

(၂) Equipment is listed for intended use and compatible with the system, specification data sheets are required, 4.3.1, 4.4.2. Drawings shall detail the following items, OFC 907.1.2 and NFPA 72 4.5.1.1

(၃) Scale: a common scale is used and plan information is legible.

(၄) Rooms are labeled and room dimensions are provided.

(၅) Equipment symbol legend is provided.

(၆) Class A or B system is declared, alarms zones do not exceed 22,500 sq. ft. (unless sprinklered then limit is set by NFPA 13, and each floor is a separate zone, OFC 907.7.3.

(၇) When detectors are used, device locations, mounting heights, and building cross sectional details are shown on the plans.

(၈) The type of devices used.

(၉) Wiring for alarm initiating and alarm signaling indicating devices are detailed.

(၁၀) The location of the Fire Alarm Control Unit (FACU) and when required, the Remote Annunciator panel are located near the main entrance or as approved by the AHJ, 4.4.6.3.

(၁၁) If more than one building is served by a system, each building is indicated separately on the FACU or annunciator and it is noted as such on the plans, 4.4.6.6.2.

(၁၂) Type and gauge(s) of conductors.

(၁၃) Sectional views of structure, roof, and ceiling, and rooms with beam or solid joists and drop ceilings, etc unless plans declare them smooth ceiling.

(၁၄) Riser diagram with shows quantity and type of devices per circuit, zone ID, 120 AC dedicated circuit, batteries, panel, generator, etc. It shall be noted on the plans that the 120 AC dedicated circuit is labeled Fire Alarm Circuit and accessible to only to authorized personnel, 4.4.1.4, 4.4.1.4.2.

Fire alarm system နှင့်သက်ဆိုင်သည့် အောက်ပါ စာရွက်စာတန်းများ(documentation)များ လိုအပ်သည်။

(၁) System description.

(၂) Checklist of equipment and components.

(၃) Installation instructions.

(၄) Equipment connection diagrams showing wiring detail of Addressable Device positions with adresses.

(၅) Standby battery calculations showing system power requirements and formu las used to calculate specified power.

(၆) Final testing instructions.

(၇) Commissioning instructions.

(၈) BAFE certification documents.

(၉) Log book.

(၁၀) System operating instructions.

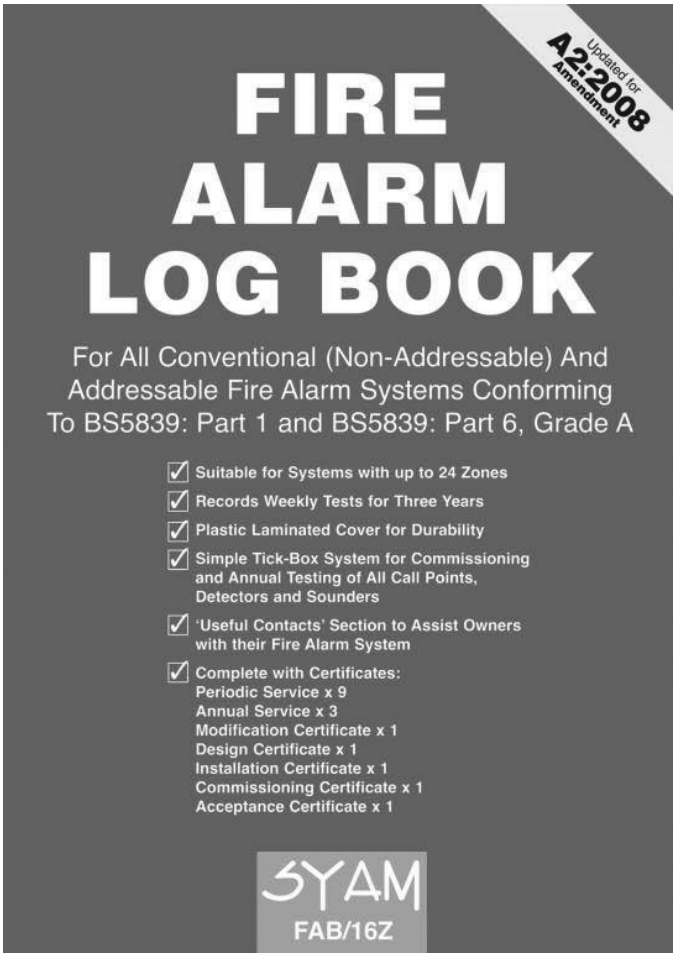
(၁၁) Routine maintenance instructions and schedules.

(၁၂) Remote monitoring link description and operating instructions (if this option is being provided).

ပုံ ၁၇-၁ Technician testing fire alarm system

ပုံ ၁၇-၂ Fire alarm document cabinet

ပုံ ၁၇-၃ Fire alarm system log book



ပုံ ၁၇-၄ Fire alarm system log book

- End –