



**BUREAU OF FIRE PREVENTION
FIRE ALARM INSPECTION UNIT
STANDARD OPERATING PROCEDURE**

SOP # 06-02-11

**ACCEPTANCE / REACCEPTANCE TESTING OF FIRE ALARM, EMERGENCY AND AUTOMATIC
EXTINGUISHING SYSTEMS**

A. PURPOSE

The purpose of this SOP is to establish the policy that will govern the on-site acceptance and reacceptance inspection/test of all new/modified fire alarm, detection and emergency systems, as well as fire pumps and all other fire protection systems in order to confirm that the installation accurately reflects the approved plans and meets the requirements of the applicable Codes and Standards.

This SOP supersedes the operational policies of December 19, 2008 and May 7, 2009.

B. AUTHORITY

Fire Code, 2008	Sections 901.5, 907.17, 913.5.1
Building Code, 2008	Section 907.16
NFPA 72, 2002	Section 10.4

C. SCOPE

This policy applies to the supervisory and inspectorial staff of the Fire Alarm Inspection Unit (FAIU).

D. POLICY STATEMENT

The FAIU will conduct the on-site acceptance and re-acceptance inspection/test of each new/modified installation as assigned by the scheduling supervisor to verify the compliance with all applicable laws, rules and regulations. The FAIU will issue enforcement documents for any code violations observed and will follow-up on such documents.

E. ACCEPTANCE TEST PROCEDURES

- 1. Qualified Personnel and Equipment.** The fire alarm contractor requesting the acceptance test is responsible for providing the equipment and materials necessary for testing and scheduling all other needed trades.
- 2. Construction Documentation.** A set of approved 24"x36" plans, the Department of Building Plan/Work Application (Form PW-1), Plan Examination (Form TM-1), Electrician's Sign-off (Form A-433), data sheets and other construction documentation shall be provided on the job site either from the office or by the installing contractor.
- 3. System Pretest.** The contractor is obligated to perform a 100% pretest and submit the written documentation, including the event history, that all devices were tested prior to the acceptance test. The Fire Code and NFPA 72 mandate testing of all devices and associated control equipment, but there is no requirement for a fire inspector to witness testing of all installed devices and functions. The FAIU Inspectors are obligated to witness the final acceptance tests as delineated in this protocol in order to assure that the pretests have been completed and the system initially operates properly.

4. **Inspector's Involvement.** The FAIU Inspectors witness the tests and do not perform the testing.
5. **Required Prerequisites.**
- a. Building-wide fire alarm systems in Occupancy Group B HI-RI buildings - new construction projects and existing buildings where a permission to split the installation is granted.
Prior to commencing the acceptance/test of the core building fire alarm system or the initial phase the installation must meet the minimum requirements as set forth in Attachment No. 1.
 - b. Tenant buildouts - new construction projects and existing buildings where a permission to split the installation is granted.
No acceptance inspection/test is permitted unless the core building fire alarm system was inspected. The installing contractor must furnish a copy of the Letter of Defect or Partial Letter of Approval on the job site. Prior to commencing the acceptance test the installation must meet the minimum requirements set forth in Attachment No. 1.
 - c. Building-wide fire alarm systems in buildings with Occupancy Group B (LO-RI) and any other Occupancy Groups – new construction projects and existing premises.
The installation of the fire alarm system and fire pump(s) shall be 100% completed.
Exception: On special occasions (large buildings, etc.) the installation of the fire alarm system is permitted to be split in the core building fire alarm system and tenant buildout or phases if a written permission has been granted by the Chief of Technology Management (Form TM-4). Prior to commencing the acceptance test installation must meet the minimum requirements as set forth in Attachment No. 1.
6. **Acceptance Test.** The inspector is to visually inspect and witness the following tests:
- a. Primary/Secondary Power Supply and Grounding: the primary and secondary power supply is to be visually inspected with emphasis on the equipment listing, sizing, fuse rating, application of circuit integrity, mechanical and thermal protection. The entire grounding system is to be visually inspected.
 - b. Wiring: 100% of the low voltage wiring shall be visually inspected with emphasis on the circuit integrity, applicability of conductors, mechanical and thermal protection, and support.
 - c. Detection devices: All devices shall be visually inspected and 25% of the detectors on each circuit (but not less than two devices), shall be tested.
 - d. Supervisory devices: Each supervisory device shall be tested in the manner of normal operation. Valve tamper switches shall be tested by closing the valve, waterflow switches by actually flowing water, etc.
 - e. Trouble conditions: each circuit shall be put into a trouble condition, power sources are to be disconnected, etc.
 - f. Notification appliances: The acceptance test of the audible and visible appliances shall be conducted as follows:
 - i. Common Locations – all appliances shall be visually inspected and tested to verify the location, adequacy of the candela rating, sound pressure and voice intelligibility (where applicable);
 - ii. Dwelling Units in Group R-1 and R-2 occupancies – 25% of the appliances shall be visually inspected and tested for adequacy of the candela rating, sound pressure and voice intelligibility (where applicable);
 - iii. Sleeping Units in Group I occupancies – 100% of the appliances shall be visually inspected and tested for adequacy of the candela rating, sound pressure and voice intelligibility (where applicable);
 - g. Fire fighter communication system: 50% of the phone stations on each circuit shall be tested.
 - h. Building Safety Functions: 100% of building safety functions (elevator recall, fan shutdown, door release, etc.) shall be tested.

- i. Digital Alarm Communicator Transmitter (DACT): DACT shall be tested for the line seizure capability, receipt of the correct zoned signal at the Central Station and proper timing. The primary/secondary means of transmission from the DACT shall be tested for supervision.
7. **Alterations to Fire Alarm System - Reacceptance Test Procedures.** The inspector is required to visually inspect and witness the following tests:
 - a. When an initiating device, notification appliance, or control relay is added, it shall be functionally tested.
 - b. When an initiating device, notification appliance, or control relay is deleted, another device, appliance, or control relay on the circuit shall be operated.
 - c. Replacement of fire command center (station), fire alarm control panel, DGP, TTB, or any other control units compromising the fire alarm system shall require a 10% functional test of the system, including a test of at least one device on each input and output circuit per floor to verify the critical functions such as alarm notification, building safety functions, and Central Office connection as follows:
 - (1) All functions known to be affected by the change, or identified by a means that indicates change, shall be 100% tested.
 - (2) In addition, 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, also shall be tested and the system operation shall be verified.
 - d. Replacement of fire alarm system shall require all inspection and testing procedures outlined in Section 6.
 8. **Test Methods.** The fire alarm, detection and emergency systems and other fire protection equipment that is associated with fire alarm systems shall be tested according to NFPA 72, Table 10.4.2.2. Prior to any testing, visual inspection should be conducted.

F. CANCELATION POLICY

1. If the preliminary evaluation of the fire alarm system reveals that the installation doesn't meet the required qualification minimum as set forth in Attachment No.1, Section 1.1 the acceptance inspection/test should be canceled.
2. If number of the deficiencies other than administrative issues (e.g. missing "as-built" riser, inaccurate A-433, lack of signage, etc.) exceeds the maximum of tolerable defects as set forth in Attachment No.1, Section 1.2 the acceptance inspection/test should be discontinued.
3. The acceptance inspection/test should be discontinued at any point of time if the inspector encounters a defect that may critically impact the system efficiency, reliability and survivability.
4. Prior to cancelation or termination of the acceptance inspection/test the inspector shall notify the office (The Director, the Deputy Chief Inspector or the Scheduling Supervisor).
5. Exceptions to this section may be authorized only by the Chief of Fire Prevention, the Assistant Chief of Fire Prevention, the director or the Deputy Chief Inspector of the FAIU.

G. INSPECTION REPORTS

1. A Violation Order with 30-day compliance shall be served upon the owner, owner's representative, agent, building manager, fire safety director, deputy fire safety director, engineer, superintendent, or any other authorized person in charge if the inspection is canceled or discontinued.
2. A Letter of Defect with 90-day compliance shall be issued if the number of deficiencies does not exceed the maximum of tolerable defects.
3. An extension to the 90-day compliance may be authorized only by the Chief of Fire Prevention, the Assistant Chief of Fire Prevention or the Director of the Fire Alarm Inspection Unit.

POLICY HISTORY

Policy Responsible Oversight Executive Approval to Proceed:

Richard S. Tobin,
Assistant Chief of Fire Prevention

Richard S. Tobin

7/5/2011

Oversight Executive

Signature

Date

Policy Reviewer Approval to Proceed:

Alex Spektor
Director, FAIU

Alex Spektor

06/20/11

Reviewer

Signature

Date

Next Scheduled Review Date:

June 20, 2012

**GUIDELINES FOR MINIMUM REQUIREMENTS AND ACCEPTABLE NUMBER OF
SYSTEM/ EQUIPMENT DEFECTS
IN NEW CONSTRUCTION PROJECTS AND EXISTING BUILDINGS**

1. NEW CONSTRUCTION PROJECTS AND EXISTING BUILDINGS WHERE A PERMISSION TO SPLIT THE INSTALLATION WAS GRANTED.

1.1. The following minimum requirements must be met prior to commencing acceptance inspection/test of the building-wide fire alarm systems at premises where the installation is permitted to be split:

- | | |
|--|--------------------|
| (1) The manual Standpipe Fire Pump must be online and inspected | (AS APPLICABLE). |
| (2) The automatic Standpipe Fire Pump must be online and inspected | (AS APPLICABLE). |
| (3) The automatic Sprinkler Booster Pump must be online and inspected | (AS APPLICABLE). |
| (4) The combination Fire Pump must be online and inspected | (AS APPLICABLE). |
| (5) The Special Service Fire Pump must be online and inspected | (AS APPLICABLE). |
| (6) The Fire Command Center (Fire Alarm Control Panel) - installation must be permanent, clear of alarms and troubles. | |
| (7) The primary/secondary power supply to the fire alarm system must be permanent. | |
| (8) Minimum of (3) elevators must be on firemen's service | (AFFECTED FLOORS). |
| (9) Minimum of (2) elevators must be on firemen's service | (OTHER FLOORS). |
| (10) Three or fewer elevators - every car must be on firemen's service | (AFFECTED FLOORS). |
| (11) Any other building safety functions must be operational | (AFFECTED FLOORS). |
| (12) Central Office Connection must be online. | |
| (13) All devices and equipment filed for, provided for and intended for the effected floors must be permanently installed and fully operational. | (AFFECTED FLOORS). |
| (14) Smoke Control System, Post-Fire Purge System or any other smoke management system must be permanently installed and fully operational | (AS APPLICABLE). |
| (15) Fire Fighter Communication System must be permanently installed and fully operational. | (AFFECTED FLOORS). |

1.2. Total number of deficiencies other than administrative issues (PW-1, "as-built" riser, plans, labeling, instructions) should not exceed:

- a) LO-RI buildings – 10 (ten) defects.
- b) HI-RI buildings – 20 (twenty) defects.

2. NEW CONSTRUCTION PROJECTS AND EXISTING BUILDINGS – ENTIRE INSTALLATION.

2.1. The following minimum requirements must be met prior to commencing acceptance inspection/test of the entire building-wide fire alarm system:

- (1) Fire Pump (s) must be online and inspected (AS APPLICABLE).
- (2) All automatic elevators must be on automatic recall and firemen service.
- (3) All building safety functions must be operational.
- (4) Central Office Connection must be online.
- (5) The primary/secondary power supply to the fire alarm system must be permanent.
- (6) The Fire Command Center (Fire Alarm Control Panel) - installation must be permanent, clear of alarms and troubles.
- (7) Smoke Control System, Post-Fire Purge System must be permanently installed and fully operational (AS APPLICABLE).
- (8) All equipment, devices and appliances filed for the entire system must be permanently installed in accordance with approved plans and fully operational.

2.2. Total number of deficiencies other than administrative issues (PW-1, "as-built" riser, plans, labeling, instructions) should not exceed:

- a) LO-RI buildings – 10 (ten) defects.
- b) HI-RI buildings – 20 (twenty) defects.

3. ALTERNATIVE AUTOMATIC FIRE-EXTINGUISHING SYSTEMS.

3.1. The following minimum requirements must be met prior to commencing acceptance inspection/test of the alternative fire-extinguishing system:

- (1) The primary/secondary power supply to the alternative fire-extinguishing system must be permanent. (AS APPLICABLE).
- (2) The Fire Alarm Control Panel - installation must be permanent, clear of alarms and troubles.
- (3) All required outputs and safety functions are operational.
- (4) All equipment, devices and appliances filed for the system must be permanently installed in accordance with approved plans and fully operational.

3.2. Total number of deficiencies other than administrative issues (PW-1, "as-built" riser, plans, labeling, instructions) should not exceed 5 (five) defects.

4. EMERGENCY ALARM SYSTEMS.

4.1. The following minimum requirements must be met prior to commencing acceptance inspection/test of the emergency alarm system:

- (1) The primary/secondary power supply to the emergency alarm system must be permanent.
- (2) All required outputs and safety functions are operational
- (3) The Emergency Alarm Control Panel - installation must be permanent, clear of alarms and troubles.
- (4) All equipment, devices and appliances filed for the system must be permanently installed in accordance with approved plans and fully operational

4.2. Total number of deficiencies other than administrative issues (PW-1, "as-built" riser, plans, labeling, instructions) should not exceed 5 (five) defects.

5. FIRE PUMPS.

5.1. The following minimum requirements must be met prior to commencing acceptance inspection/test of the fire pump:

- (1) The primary to the fire pump must be permanent.
- (2) The secondary power supply to the fire pump must be permanent, automatic transfer switching - operational
- (3) The controller must be programmed, clear of troubles and permanently installed.

5.2. Total number of deficiencies other than administrative issues should not exceed 3 (three) defects.

6. REACCEPTANCE TEST PROCEDURES.

6.1. The following minimum requirements must be met prior to commencing inspection of alteration to the core building-wide fire alarm system (tenant buildout) – reacceptance test:

- (1) The core building fire alarm system was inspected and the Partial Letter of Approval was issued or, at a minimum, the Letter of Defect was generated.
- (2) All effected safety functions must be operational.
- (3) All devices and equipment filed for, provided for and intended for the effected floors must be permanently installed and fully operational. (AFFECTED FLOORS).

6.2. The following minimum requirements must be met prior commencing inspection of alterations to the building-wide fire alarm systems – reacceptance test:

- (1) The building fire alarm system was inspected and the Letter of Approval was issued or, at a minimum, the Letter of Defect was generated.
- (2) All effected safety functions must be operational.
- (3) All devices and equipment filed for, provided for and intended for the effected floors must be permanently installed and fully operational. (AFFECTED FLOORS).

6.3. The following minimum requirements must be met prior to commencing inspection of alterations to the alternative automatic fire-extinguishing and emergency alarm systems – reacceptance test:

- (1) The system was inspected and approved.
- (2) All required outputs and safety functions are operational
- (3) All devices and equipment filed for, provided for and intended for the effected floors must be permanently installed and fully operational. (AFFECTED FLOORS).

6.4. Total number of deficiencies other than administrative issues should not exceed:

- a) Alterations to the building-wide fire alarm system (core or entire) – 2 (two) defects per floor with total number of defects not in excess of 15(fifteen).
- b) Alterations to the alternative automatic fire-extinguishing and emergency alarm systems – 5 (five) defects.



June 20, 2011
FIRE ALARM INSPECTION UNIT
INFORMATION BULLETIN
No. 06-01-11

To: Members of Fire Alarm Industry
From: Alex Spektor, Director, FAIU
Effective Date: June 20, 2011
Subject: **Fire Alarm Acceptance Test - Checklist**

PRIOR TO SCHEDULING AN ACCEPTANCE TEST, THE FOLLOWING ITEMS SHOULD BE REVIEWED TO ENSURE THAT THE SYSTEM IS OPERATIONAL AND READY FOR INSPECTION.

- 1. **Construction Documentation:** FD approved plans, Plan Examination (Form TM-1), Electrician's Sign-off (Form A-433), Manufacturer's cut sheets, MEA Listing or Certificate of Acceptance for all equipment used.
- 2. **Construction Site:** The construction site is substantially clean of debris and arrangements have been made to protect devices after the test is completed if necessary.
- 3. **System Readiness:** The installation of the various components is free of defective workmanship. The fire alarm system has been 100% checked and pre-tested, and functions are in complete compliance with the FD approved plans and sequence of operations, specifications and manufacturer's recommendations.
- 4. **Central Office Connection:** The fire alarm is permanently connected to a listed Central Station and the required zoned signals have been verified.
- 5. **Qualified Testing Personnel :** All appropriate installers must be present including electrical contractor, fire alarm technician(s), sprinkler (fire pump) installer if test involves sprinkler alarms or fire pump; HVAC contractor if test involves duct smoke detectors, fire or smoke dampers.
- 6. **Communication Means:** Two (2) portable radios are provided.
- 7. **Testing Equipment and Tools:** digital voltmeter; DBA meter; flashlight; voice intelligibility meter if intelligibility testing is required; detector testing equipment specified by manufacturer; equipment to provide access to all devices (stepladder, lift, extension rods, etc.).
- 8. **Contracts:** System Monitoring and Maintenance contracts are available on the job site.
- 9. **Special Arrangements.**
 - 9.1. All persons and facilities receiving alarm, supervisory, or trouble signals and all building occupants have been notified of the testing.
 - 9.2. The system test was coordinated to prevent interruption of the critical building systems or equipment.

Note: Upon inspector's request all testing might be done on battery power.

If you need further clarification, please contact Barry Brown, Deputy Chief Inspector at 718-999-2469 or the Scheduling Supervisor at 718-999-2467.

Alex Spektor
Director, FAIU