Approval Standard
for
Central Station Service
for Fire Alarms and
Protective Equipment
Supervision

Class Number 3011

April 1999

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Foreword

The FM Approvals certification mark is intended to verify that the products and services described will meet FM Approvals’ stated conditions of performance, safety and quality useful to the ends of property conservation. The purpose of Approval Standards is to present the criteria for FM Approval of various types of products and services, as guidance for FM Approvals personnel, manufacturers, users and authorities having jurisdiction.

Products submitted for certification by FM Approvals shall demonstrate that they meet the intent of the Approval Standard, and that quality control in manufacturing shall ensure a consistently uniform and reliable product. Approval Standards strive to be performance-oriented. They are intended to facilitate technological development.

For examining equipment, materials and services, Approval Standards:

   a)   must be useful to the ends of property conservation by preventing, limiting or not causing damage under the conditions stated by the Approval listing; and

   b)   must be readily identifiable.

Continuance of Approval and listing depends on compliance with the Approval Agreement, satisfactory performance in the field, on successful re-examinations of equipment, materials, and services as appropriate, and on periodic follow-up audits of the manufacturing facility.

FM Approvals LLC reserves the right in its sole judgment to change or revise its standards, criteria, methods, or procedures.
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1.0 INTRODUCTION

1.1 Purpose

1.1.1 This standard states FM Approval requirements for Central Station Service for Fire Alarms and Protective Equipment Supervision.

1.1.2 FM Approval criteria may include, but are not limited to, examination of supervising stations, subsidiary stations, repeater stations, service facilities, protected premises, marking requirements, operating procedures and records, runners, maintenance, testing and service, and a follow-up examination program.

1.2 Scope

1.2.1 Central station service is the installation, operation, testing and maintenance of signaling systems wherein fire alarm and related supervisory, trouble and test signals and guard’s tour signals are initiated at a subscribing protected premises and monitored at a constantly attended central station. At the central station, properly trained personnel take prescribed action on the signals received, including retransmission to the designated agency and dispatch of runners (inspection personnel), where required, to the protected premises. Central station service includes provision for regularly scheduled testing and maintenance of systems, readily available repairs and appropriate record keeping.

1.2.2 FM Approval of central station service is limited to service provided in accordance with all requirements of this Standard. Such service is referred to as Standard Service. (See Section 9. MARKING)

1.3 Basis for Approval

1.3.1 This Standard reflects FM Approval practices in verifying compliance with the applicable requirements in ANSI/NFPA 72 National Fire Alarm Code of the National Fire Protection Association (NFPA). Requirements contained in ANSI/NFPA 72 are considered applicable except where altered or amended by this Standard. A service deviating from these requirements will be considered according to the intent of this Standard and, if equivalent, may be Approved. Meeting the requirements of this Standard does not assure Approval; other factors may dominate, such as compliance with the conditions listed on the Approval Agreement.

1.3.2 FM Approval is based on satisfactory results of an examination of the facilities, equipment, service procedures, including tests of equipment at protected premises.

1.4 Basis for Continued Approval

Continued FM Approval is based upon:

- availability of Standard Service to subscribers as currently Approved;
- the continued use of FM Approved equipment and facilities to provide Standard Service;
- satisfactory field performance;
- satisfactory results of periodic reexaminations;
- compliance with the terms stipulated in the Approval Agreement.

Also, as a condition of retaining Approval, a Central Station Company or a Fire Alarm Service – Local Company may not change facilities and locations used to support the provision of Standard Service without prior notification to, and authorization by FM Approvals.
1.5 Approval Application Requirements

1.5.1 To apply for an Approval examination the central station or local company, or its authorized representative, shall submit a request to:

   Electrical Group Manager  
   FM Approvals  
   1151 Boston-Providence Turnpike  
   Norwood, MA 02062  
   U. S. A.

1.5.2 The requestor shall provide the names and addresses of all locations to be included in the Approval examination. See paragraphs 1.7.2 and 1.7.3 below.

1.6 Contract(s) and Prime Contractor

   FM Approved Central Station Standard Service is required to be provided under contract as described in Sections 1.6.1 through 1.6.3. The company responsible for coordination of all requirements contained herein for Standard Service is referred to as the Prime Contractor. The Prime Contractor’s responsibilities include confirmation that all requirements are provided to the subscriber as listed under contract.

   1.6.1 Central Station Standard Service provided by an FM Approved Central Station Company – Complete Service (as Prime Contractor) whose supervising station, subsidiary and/or repeater station(s) (where used for signal transmission), and service facility(ies) are covered by FM Approval.

   1.6.2 Central Station Standard Service provided by an FM Approved Central Station Company (as Prime Contractor) in conjunction with an FM Approved Fire Alarm Service – Local Company. The supervising station and subsidiary and/or repeater station(s) (where used for signal transmission) are covered by FM Approval. All or part of the installation, testing, maintenance and runner service is subcontracted to the Fire Alarm Service – Local Company.

   1.6.3 Central Station Standard Service provided by an FM Approved Fire Alarm Service – Local Company (as Prime Contractor) in conjunction with an FM Approved Central Station Company. The signal monitoring, retransmission and associated record keeping are subcontracted to the Central Station Company whose supervising station and subsidiary and/or repeater station(s) (where used for signal transmission) are covered by FM Approval.

1.7 FM Approved Facilities Used for Central Station Standard Service

   1.7.1 FM Approved Central Station Standard Service shall be provided only by the use of FM Approved facilities and equipment as required by this Standard.

   1.7.2 FM Approvals examines and issues Approvals for central station service facilities in the categories identified below.
   a. Supervising Station;
   b. Subsidiary Station or Repeater Station;
   c. Fire Alarm Service – Local Company;
   d. Maintenance and Service Facility.
1.7.3 Where additional facilities and locations, such as dispatch facilities, communication facilities, etc., not listed in 1.7.2, are used to support the provision of Standard Service, these facilities and locations may also be required by FM Approvals to be examined and/or FM Approved.

1.8 Travel Time for Runners and Service Personnel

1.8.1 In order to assure prompt inspection, maintenance and equipment repair at protected properties, FM Approval is limited to the area within the land based travel times as listed in 1.8.1.1 to 1.8.1.3.

1.8.1.1 Four hours travel time [200 mi (320 km)] from the FM Approved Central Station Company maintenance and service facility or, in the case of jointly provided service, from the FM Approved Fire Alarm Service – Local Company, from which personnel are dispatched to initiate maintenance.

1.8.1.2 One hour travel time [50 mi (80 km)] from the FM Approved Central Station Company maintenance and service facility or, in the case of jointly provided service, from the FM Approved Fire Alarm Service – Local Company, from which personnel are dispatched to reset protected property equipment or to investigate supervisory signals.

1.8.1.3 Thirty minutes travel time [25 mi (40 km)] from the FM Approved Central Station Company maintenance and service facility or, in the case of jointly provided service, from the FM Approved Fire Alarm Service – Local Company, from which personnel are dispatched to investigate a delinquent guard’s signal.

1.8.2 Where supervisory signals must be investigated or protected premises equipment needs to be manually reset or rewound, the Standard Service contract shall include provision for runner response.

1.8.3 Dispatch of service personnel is permitted in lieu of runners where the required runner response time is maintained.

1.9 Equipment Not Covered by FM Approval

FM Approval does not cover equipment used to provide a communications channel, transmission channel, switched telephone network or public switched telephone network, unless such equipment is under the control of the Central Station Company.

1.10 Systems of Units

Units of measurement used in this Standard are United States (U.S.) Customary units. These are followed by their arithmetic equivalents in International System (SI) units, enclosed in parentheses. The first value stated shall be regarded as the requirement. The converted equivalent value may be approximate. Appendix A lists selected units and conversions to SI units for measures appearing in this Standard. Conversion of U.S. customary units is in accordance with the American National Standards Institute (ANSI)/Institute of Electrical and Electronics Engineers (IEEE)/American Society for Testing Materials (ASTM) SI 10-97, “Standard for Use of the International System of Units (SI): The Modern Metric System”.

1.11 Applicable Documents


ANSI/UL 827 – 1996 Central-Station for Watchman, Fire-Alarm and Supervisory Services

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1.12 Definitions

1.12.1 Unless otherwise indicated, the terms used herein are intended to conform with the definitions in ANSI/NFPA 72 National Fire Alarm Code.

1.12.2 Additional definitions are as follows:

**Alarm Verification**
Confirmation via voice contact or physical investigation of the validity of a signal received at the supervising station from a protected premises.

**Central Station Company**
A person, firm or corporation whose business is the furnishing of Approved central station service to protected premises. The Central Station Company may be either a Central Station Company – Complete Service or a Central Station Company – Monitoring Only.

**Central Station Company – Complete Service**
A Central Station Company that provides all elements of central station service with its own facilities and personnel.

**Central Station Company – Monitoring Only**
A Central Station Company that provides, as a minimum, the signal monitoring, retransmission, and associated record keeping and reporting with its own facilities and personnel and that subcontracts all or part of the installation, testing, maintenance and runner service.

**Fire Alarm Service – Local Company**
A company that provides the installation and testing and maintenance with its own facilities and personnel and that subcontracts the signal monitoring, retransmission, and associated record keeping and reporting to a Central Station Company. The required runner service is provided by the Fire Alarm Service – Local Company with its own personnel or by the Central Station Company with its own personnel.

**Maintenance and Service Facility**
A facility, operated by a Central Station Company or by a Fire Alarm Service – Local Company, from which repair service, including periodic maintenance and tests required to keep the fire alarm system and its component parts in an operative condition at all times, and the records thereof are based.

**Standard Service**
FM Approved central station service conforming to all requirements of this Standard, under contract, and identified by a Placard.

1.13 Effective Date

The effective date of an FM Approval Standard mandates that all products or services tested for Approval after the effective date shall satisfy the requirements of that Standard. Products or services Approved under a previous edition shall comply with the new version by the effective date or else forfeit Approval. The effective date shall apply to the entire Approval Standard or, where so indicated, only to specific paragraphs of the Standard. Where other referenced standards have requirement effective dates later than that for this Standard, the later dates for those requirements shall apply.

The effective date of this Standard is **January 1, 2001**.
2.0 FACILITIES

2.1 General

Supervising, subsidiary and repeater stations shall be firesafe and physically secure to the extent that central station functions are not likely to be interrupted. The supervising station and subsidiary station facilities shall conform to ANSI/NFPA 72-1996 National Fire Alarm Code requirements for “Building Construction”, “Physical Protection”, “Fire Protection”, “Standby Lighting”, “Power Supply”, “Subsidiary Stations”, “Cable System” and “Automation Systems” and as amended in this Standard.

2.2 Flooding

Where equipment required to provide Standard Service is in a location susceptible to water accumulation (such as a basement), the equipment and monitoring device(s) shall be installed to alert the supervising station in advance of water accumulation which will impair equipment operation.

2.3 Repeater Station

A repeater station shall meet the requirements for a subsidiary station, unless the repeater station is fully duplicated at another location and the alarm transmission equipment is configured to utilize the operational station in the event of a failure of one station. Where multiple repeater stations are required to meet the equipment requirements of ANSI/NFPA 72 National Fire Alarm Code, or of the FM Approval of the signaling equipment, transmission channel or communication channel, all required repeater stations shall meet the requirements for a subsidiary station. A repeater station need not be capable of operating as a supervising station where signals can be retransmitted manually to a supervising station for processing.

2.4 Secondary Power Supply

2.4.1 In the event of primary power failure, the secondary power supply (which may be from a combination of sources) shall be capable of providing the necessary energy for vital supervising station, subsidiary station, and repeater station operations. The secondary power supply shall be in accordance with ANSI/NFPA 72 National Fire Alarm Code and have adequate capacity for at least 60 hours of operation.

2.4.2 The 60-hour secondary power capability shall be supplied by one of the methods listed in ANSI/NFPA 72 as amended below.

2.4.2.1 Where storage batteries constitute the secondary supply they shall have a minimum capacity of 60 hours.

2.4.2.2 Where a single, automatic starting, engine driven generator is provided along with storage batteries, the batteries shall have a minimum capacity of 4 hours.

2.4.2.3 Where multiple engine driven generators (at least one of which is arranged for automatic starting) are provided along with batteries, the batteries shall have a minimum capacity of 15 minutes.

2.4.2.4 Alternatively, the secondary supply can be provided by automatically charged storage batteries capable of providing energy automatically and without interruption for at least 24 hours, supplemented by a readily available, portable, engine-driven generator, or a permanently connected, manually started, engine-driven generator. The generator capacity shall be at least 150% of the maximum normal load. Instructions for obtaining, connecting and operating the generator shall be posted at the location of use and personnel responding to emergency situations shall be familiar with the procedure. To qualify as readily available, the portable engine-driven generator must be owned, operated and maintained by the Central Station Company, or under contract from a service providing such equipment, with a maximum 16 hour delivery time. Instructions for use, contract(s)
2.4.3 Engine Driven Generators

2.4.3.1 Where permanently installed engine-driven generator fuel is stored on-site, sufficient fuel shall be available, in storage, for six months of testing plus the runtime specified above. Where multiple engine driven generators are provided, the runtime requirement shall apply for each unit arranged to operate simultaneously. A manual or automatic system shall be in effect to monitor and record fuel level, at least weekly, to confirm sufficient capacity. A refill level shall be established such that timely notification is made for refilling. The Central Station Company shall maintain documentation for FM Approvals review of fuel consumption versus runtime to assure compliance with the above.

2.4.3.2 Where the Central Station Company has a contract or written agreement with a fuel supplier, or suppliers, for automatic refill and guaranteed delivery of fuel upon emergency notification, the fuel level may be permitted to drop to a level sufficient for a minimum of 24 hours of runtime prior to refilling. Contract(s) or agreement(s) on-file shall be kept current. Such contract(s) or written agreement(s) shall be readily available to representatives of FM Approvals for review during examinations.

2.4.3.3 Where a readily available, portable engine-driven generator is utilized, written instructions as to where to obtain fuel for the portable unit shall be posted at the location of use, and personnel responding to emergency situations shall be familiar with the procedure. Instructions shall be reviewed at least annually, and updated if necessary. On-site fuel storage for portable units is permitted. Written instructions shall be readily available to representatives of FM Approvals for review during examinations.

2.4.4 Batteries and Battery Chargers

2.4.4.1 Information regarding the make, model, voltage, capacity and connected configuration of storage batteries shall be readily available to representatives of FM Approvals for review during examinations.

2.4.4.2 Means to determine the operational standby time of storage batteries, based on actual connected load, shall be maintained. Such means shall be readily available to representatives of FM Approvals for review and demonstration during examinations.

2.4.4.3 Adequate battery charging capability shall be provided to maintain batteries at full charge during normal operation and to recharge batteries within 48 hours following a single discharge for the duration required to comply with Section 2.4.2.

2.4.5 Components of combination uninterruptable power supply/uninterruptable battery systems (UPS/UBS) shall also be evaluated separately to meet both the requirements of the battery and that of the generator system.

2.4.6 All primary and secondary power supplies shall be supervised in accordance with ANSI/NFPA 72. Where existing battery charging equipment is not designed to supervise the connection of the battery, it is permitted to supervise only the primary power at the charger.

2.5 Fire Alarm Systems

Fire alarm systems installed in supervising, subsidiary and repeater stations shall be provided with smoke and/or heat detection as appropriate for the area in which the detection is installed. Where an automatic sprinkler system is provided in the supervising station it shall be monitored for workflow by the fire alarm system or arranged to transmit a fire alarm signal to the supervising station.
3.0 SUPERVISING STATION, SUBSIDIARY STATION AND REPEATER STATION FIRE ALARM SIGNALING EQUIPMENT

3.1 Supervising Station Fire Alarm System Equipment

Active multiplex, digital alarm communicator, digital alarm radio, two-way radio frequency multiplex, and one-way private radio alarm systems shall be arranged to conform to the applicable requirements of ANSI/NFPA 72 National Fire Alarm Code and shall be FM Approved.

3.2 Computerized Signal Processing Equipment and Software

3.2.1 Computerized signal processing equipment and software shall be verified by third party examination, listing, FM Approval or other means acceptable to FM Approvals. (See Section 2.1)

3.2.2 Where signals are assigned priority codes within automated signal processing systems, the priorities shall be selected such that the response times listed in Section 5 are maintained.

3.3 Signal Identification

Signals shall be clearly identified as to their initiating device(s) and separated by classification as alarm, trouble or supervisory.

3.4 Spare Equipment

The Central Station Company shall maintain adequate spare parts or duplicate units so that in the event of a failure, any critical component can be replaced and the supervising station restored to normal operation within 30 minutes. A critical component is one in which a malfunction will prevent the receipt and interpretation of signals by the supervising station operators. This provision does not supersede requirements for particular equipment or systems (such as digital alarm communication receivers [DACR]) for which more stringent time constraints for restoral to operation are specified by ANSI/NFPA 72 or by FM Approval requirements.

3.5 Communication Means

Where a communication means is under the control of the Central Station Company, such as a private branch exchange (PBX), or requires power to be supplied by the central station, the communication means shall be considered vital equipment and provided with a standby power supply described in Section 2.
4.0 MUNICIPAL CONNECTION FOR RETRANSMISSION

4.1 General

Two independent means of communication shall be provided to each public fire service communication center in compliance with ANSI/NFPA 72 National Fire Alarm Code. The means of communication must be acceptable to the authority having jurisdiction for the public fire service communication center to which contact is necessary.

4.2 Communication Means

4.2.1 Where either required retransmission communication means is under the control of the Central Station Company, such as a private branch exchange (PBX), or requires power to be supplied by the Central Station Company for proper operation, the communication means shall be considered vital equipment and provided with a power supply described in Section 2.

4.2.2 Where telephone service is used for both required means, at least one means shall be independent of all private branch exchange (PBX) equipment if such is used in the supervising station.

4.2.3 Where cellular telephone service is used as a required means, the cellular telephone equipment shall be dedicated to the supervising station and must remain there at all times.

5.0 CENTRAL STATION PERSONNEL AND PROCEDURES

5.1 General

Central station personnel and procedures shall conform to the requirements of ANSI/NFPA 72 National Fire Alarm Code and as amended in the following sections.

5.2 Alarm Signals

Alarm signals shall be immediately retransmitted to the public fire service communications center. Retransmission initiated within 90 seconds of receipt of the signal is considered as meeting this requirement.

5.3 Supervisory and Trouble Signals

Supervisory signals and trouble signals shall result in immediate prearranged notification to a responsible person of the protected premises involved. Notification initiated within four minutes of receipt of the signal is considered as meeting this requirement.

5.3.1 Provision shall be made to notify the subscriber as to the nature of the signal, time of occurrence, and when equipment has been out of service for more than 8 hours, and upon restoration of service.
5.3.2 Provision shall be made to notify the authority having jurisdiction when sprinkler systems or other fire protection system(s) or equipment have been wholly or partially out of service for more than 8 hours, and upon restoration of service. This provision may be waived if the authority having jurisdiction declines notification.

6.0 EQUIPMENT AND TESTS AT PROTECTED PREMISES

6.1 Equipment

All fire protection signaling equipment installed at Standard Service customer premises shall be arranged to conform to the applicable requirements of ANSI/NFPA 72 *National Fire Alarm Code* and shall be FM Approved.

6.2 Testing

Periodic testing shall be by the FM Approved Central Station Company personnel or by the FM Approved Fire Alarm Service – Local Company personnel, and shall be in accordance with the applicable requirements of ANSI/NFPA 72 *National Fire Alarm Code* and 6.2.1 to 6.2.2.

6.2.1 Sprinkler waterflow alarm tests shall be by an actual waterflow of not more than 2 minutes duration. For a wet pipe system with alarm initiated by movement of a flexible vane or by an increase-of-pressure sensing device at the sprinkler riser, this test shall be conducted by opening a test orifice that is equal in size to the smallest sprinkler in the system, and usually located at or near the end of the system. For a wet pipe system with alarm produced by a decrease-of-pressure sensing device at the sprinkler riser, and for dry pipe systems, this test may be conducted by opening a bleed-off valve at the riser. Where actual waterflow tests are restricted or prohibited by the authority having jurisdiction, there shall be an alternative means developed to verify equipment operation. Such means shall be described on instructions to the inspection/test personnel.

6.2.2 Fire pumps shall not be shut off, or impaired, during sprinkler waterflow alarm tests by the Central Station Company or the Fire Alarm Service – Local Company. This requirement is not intended to prevent temporary shutoff for the purposes of testing fire pump supervisory equipment.

6.3 Records

Records shall comply with the requirements of Section 8.
7.0 MAINTENANCE AND REPAIRS AT PROTECTED PREMISES

7.1 Maintenance

Maintenance of equipment at protected properties shall be in compliance with ANSI/NFPA 72 National Fire Alarm Code requirements for maintenance and service, and as amended below.

7.2 Minimum Requirements

Where maintenance requirements by the authority having jurisdiction are less than those listed in ANSI/NFPA 72 National Fire Alarm Code, the latter shall define the minimum requirements.

7.3 Response Time

Response times for maintenance and repairs shall, at a maximum, be those listed in Section 1.7.

7.4 Instructions for Requesting Repairs

The Prime Contractor shall provide the Standard Service subscriber with written instructions for requesting repairs and reporting equipment trouble, which permit the subscriber to promptly report problems.

7.5 Records

Records shall comply with the requirements of Section 8.

8.0 RECORDS

8.1 General

8.1.1 The Prime Contractor shall maintain contracts and associated records that identify the types of service provided and the equipment installed at protected premises. The Prime Contractor shall make contracts for Standard Service readily available to representatives of FM Approvals for review during examinations. Contracts and records of installed equipment shall be kept current.

8.1.2 All records of signals received, required retransmission and notifications, required tests and maintenance and for repairs shall be readily available to representatives of FM Approvals for review during examinations.

8.1.3 The Central Station Company or Fire Alarm Service – Local Company shall provide, upon request by any jurisdictional authority, including the applicable Operations Center of FM Global, installation specifications plus records of all alarm, supervisory, trouble, and test signals received from subscribing customers.
8.2 Records of Signals Received

Records of all signals received at the supervising station shall be retained at the supervising station for at least one year in compliance with ANSI/NFPA 72 National Fire Alarm Code. Records shall contain, as a minimum, the information shown below for each type of signal and shall be made manually or automatically with time and date of entry.

<table>
<thead>
<tr>
<th>Required Record</th>
<th>Fire</th>
<th>Supervisory</th>
<th>Trouble</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal received at the supervising station including subscriber and system identification and type of signal</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Signal retransmitted to the public fire service communication center</td>
<td>X</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Dispatch of runner(s) and/or maintenance and service personnel and their identification</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Arrival of runner(s) and/or maintenance and service personnel and their identification</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Initiation of contact with premises, subscriber or person(s) designated by subscriber</td>
<td>X</td>
<td>X</td>
<td>Where Required¹</td>
</tr>
<tr>
<td>Contact with premises, subscriber or person(s) designated by subscriber and identification of same</td>
<td>X</td>
<td>X</td>
<td>Where Required¹</td>
</tr>
<tr>
<td>Identification of operator(s) processing the signal, retransmission and contact(s)</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Notification to the authority having jurisdiction</td>
<td>Where Required²</td>
<td>Where Required¹</td>
<td>Where Required¹</td>
</tr>
<tr>
<td>Notification to the fire department or law enforcement agency, or both</td>
<td>N/A</td>
<td>Where Required²</td>
<td>N/A</td>
</tr>
</tbody>
</table>

¹Where notification is required by the authority or the subscriber and the equipment has been out of service for 8 hours or more.
²Where notification is required by the authority or agency.

8.3 Records of Testing for Supervising Station Facilities

Records of testing for supervising station facilities shall be retained at the supervising station for at least one year. Test records shall clearly indicate the equipment tested, start and completion times with the date the test was performed, and the identification of the service/test personnel.

8.4 Records of Testing for Subsidiary and Repeater Station Facilities

Records of testing for subsidiary and repeater station facilities shall be retained at the supervising station, subsidiary station, repeater station or at a maintenance and service facility for at least one year. Test records shall clearly indicate the equipment tested, start and completion times with the date the testing was performed, and the identification of the service/test personnel.

8.5 Records of Equipment Tests at Protected Premises

Records of equipment tests at protected premises shall comply, as a minimum, with ANSI/NFPA 72 National Fire Alarm Code and shall clearly show the items listed in 8.5.1 to 8.5.6.

8.5.1 All equipment covered by the contract (i.e., each initiating device, notification appliance, control equipment, power supply, etc.).

8.5.2 The schedule of testing (i.e., monthly, bimonthly, quarterly, etc.) for each initiating device, notification appliance, control equipment, power supply, etc., including the test(s) and inspection(s) to be performed at each visit.
8.5.3 The test, inspection, service and/or repair form(s) provided to the service/test personnel identifying the equipment to be tested during each scheduled visit.

8.5.4 The signal(s) received report(s) from the supervising station for each test performed. A method of written verification or over check is required following any inspection or test at a protected property to confirm supervising station receipt of all signals.

8.5.5 Test records must clearly indicate resolution of failures and reasons for any lapses in scheduled testing.

8.5.6 Test records shall clearly indicate the start and completion times with the date the testing was performed, and the identification of the service/test personnel.

8.6 Records for Maintenance and Repairs at Protected Premises

Records for maintenance and repairs at a protected premises shall, as a minimum, clearly show the items listed in 8.6.1 to 8.6.5.

8.6.1 The time and date that the request for maintenance or repair was received.

8.6.2 The time and date that the maintenance or repair personnel arrived at the premises to begin work.

8.6.3 The time and date that the maintenance or repair was completed and the equipment was restored to proper operation.

8.6.4 Testing that was performed to comply with ANSI/NFPA 72 National Fire Alarm Code requirements for reacceptance testing.

8.6.5 The identification of the maintenance or repair personnel performing the work and the reacceptance testing.

9.0 MARKING

9.1 Placard

To serve as a Prime Contractor, a Central Station Company or Fire Alarm Service – Local Company shall have the means to mark protected premises installations where the equipment and service conform to the requirements of this Standard. This marking shall be referred to as a Placard and shall consist of a securely affixed metal sign, adhesive label, or equivalent durable means. The Placard shall be located on or near the fire alarm system control unit or, if no control unit exists, near a fire alarm system component at the protected premises, or at a location specified by the authority having jurisdiction.
9.1.1 Marking on the Placard shall include the name and telephone number of the Prime Contractor, the FM Approval mark (see Appendix A), a serialized identification number, plus the following statement:

“This fire protection signaling system installation, all equipment and wiring plus the maintenance, testing and supervision thereof, are in accordance with the central station Approval requirements of FM Approval Standard No. 3011.”

9.1.2 Where the Prime Contractor responsible for the Standard Service contract is not the same as the supervising station (central station), the name and telephone number of the supervising station shall also appear on the Placard.

9.1.3 Other information may also appear on the Placard. As an example:

---

**WARNING**

The Fire Department will respond to alarm signals unless telephone number _________ is called before tests of this system are made.”

---

9.1.4 The size of the placard shall not be less than 20 in.\(^2\) (0.013 m\(^2\)).

9.2 Placard Log

9.2.1 Each FM Approved Central Station Company or Fire Alarm Service – Local Company shall maintain a log, by serial number, of all Placards applied at Standard Service installations for which it is the Prime Contractor. The log shall clearly identify the system to which Standard Service applies by address, account number and other means necessary, and shall be kept current as to the status of the service provided to the placarded location (active/discontinued).

9.2.1.1 Multiple Placards may be installed at one protected premises. Each Placard shall have a different serialized identification number and shall be recorded in the log with the information listed in Section 9.2.

9.2.1.2 Where companies have more than one location which issues Placards, separate logs may be kept at each location. Placards issued from different locations shall be uniquely identified.

9.2.2 The Placard, Placard log(s) and the method of serialized identification shall be readily available for review by representatives of FM Approvals during examinations.

9.3 Non Compliant Installations

The FM Approval symbol and compliance statement (refer to 9.1.1) shall not be displayed on any installation where a contract is in effect that supersedes or abridges any aspect of the Approval requirements of this Standard.

9.4 Installations No Longer Receiving Standard Service

The Prime Contractor shall retain ownership of the Placards and shall retrieve Placard(s) from any installation which is no longer receiving Standard Service in compliance with this Standard and notify the appropriate authority having jurisdiction.
APPENDIX A:

APPROVAL MARKS

REPRODUCTION ART: FM Approval Marks

For use on nameplates, in literature, advertisements, packaging and other graphics.

1) The FM Approvals diamond mark is acceptable to FM Approvals as an Approval mark when used with the word “Approved.”

2) The FM Approval logomark has no minimum size requirement, but should always be large enough to be readily identifiable.

3) Color should be black on a light background or a reverse may be used on a dark background.

For Cast-On Marks

4) Where reproduction of the mark described above is impossible because of production restrictions, a modified version of the diamond is suggested. Minimum size specifications are the same as for printed marks. Use of the word “Approved” with this mark is optional.

NOTE: These Approval marks are to be used only in conjunction with products or services that have been FM Approved. The FM Approval marks should never be used in any manner (including advertising, sales or promotional purposes) that could suggest or imply FM Approval or endorsement of a specific manufacturer or distributor. Nor should it be implied that Approval extends to a product or service not covered by written agreement with FM Approvals. The Approval marks signify that products or services have met certain requirements as reported by FM Approvals.

Additional reproduction art is available through
FM Approvals
P.O. Box 9102,
Norwood, Massachusetts 02062
USA
APPENDIX B

UNITS OF MEASUREMENT

LENGTH: in. - “inches”; (mm - “millimeters”)
mm = in. × 25.4 ft - “feet” (m - “meters”)
m = ft × 0.3048

AREA: in² - “square inches” (mm² - “square millimeters”)
mm² = in² × 6.4516 × 10² ft² - “square feet”
(m² - “square meters”)
m² = ft² × 0.0929

TEMPERATURE: °F - “degrees Fahrenheit” (°C - “degrees Celsius”)
°C = (°F - 32) × ⁵⁄₉
APPENDIX C

SAMPLE PLACARD

This Appendix shows a representative sample Placard for Standard Service installations. The actual configuration of a Placard provided by a Central Station Company or a Fire Alarm Service - Local Company is not required to be in this form as long as it contains all information listed, and meets the minimum size requirements given in Section 9 of this Standard.

FIRE DEPARTMENT WILL RESPOND

TO ALARM SIGNALS UNLESS TELEPHONE NUMBER

IS CALLED BEFORE TESTS OF THIS SYSTEM ARE MADE

ALARM SERVICE BY: __________________________

TELEPHONE NUMBER: _________________________

SUPERVISING (CENTRAL) STATION: ______________

TELEPHONE NUMBER: _________________________

CENTRAL STATION SERVICE PLACARD

This fire protection signaling system installation, all equipment and wiring plus the maintenance, testing and supervision thereof are in accordance with the central station Approval requirements of FM Approval Standard No. 3011.

PLACARD IDENTIFICATION: _________________________

PRIME CONTRACTOR: ____________________________
APPENDIX D

CLASSIFICATION OF SIGNALING SYSTEMS

This APPENDIX is a reprint of a portion of FM Global Property Loss Prevention Data Sheet 5-40 (December 1986) PROTECTIVE SIGNALING SYSTEMS. The material reprinted here is provided for information only and is not to be considered as a part of this Standard. Where a Central Station Company or a Fire Alarm Service – Local Company is planning work at a subscriber who is an FM Global insured, the specific requirements for the extent of protection and equipment to be monitored should be verified with the FM Global Field Office or FM Global field representative familiar with the subscriber.
CLASSIFICATION OF SIGNALING SYSTEMS

Properties can be protected by various classes of signaling systems. The class needed for proper supervision usually depends upon the size and value of the property and the extent of watch service provided. The classes are described as follows:

No Waterflow Alarms

Locations having automatic sprinkler systems should be equipped with at least a local waterflow alarm. The operation of sprinklers cannot be detected unless someone in attendance actually notices that water is flowing. For this reason, former Class I alarm service, which actually meant no alarms, has been eliminated.

Class II: Local Waterflow Alarms, Unreliable Response

Class II alarm service can be provided by local sprinkler waterflow alarms at a plant location where response is uncertain, but where it can be expected to be noticed by someone if it activates for a long period of time. Response is uncertain when it depends on a chance passerby, a watchman on two or three hourly rounds, nearby residents, or personnel in other, often noisy plant areas. Dependence on prompt notification being given to the proper authorities by untrained persons is also uncertain.

Class III: Local Waterflow Alarms, Reliable Response

Class III alarm service can be provided by local sprinkler waterflow alarms at a plant location where reliable response is assured. Reliable response is obtained when the alarms are located where they can be heard by properly instructed personnel in constantly attended work areas, such as a boiler house, all-night switchboard, gate house, or guard’s headquarters.

Care should be taken to determine whether or not the waterflow alarms can actually be heard by the people who are expected to respond. Often, bells located on the outside walls can be heard inside the building only in their close proximity. Also, the person expected to respond should be a plant employee or some other person who has been instructed in the proper actions to be taken.

Class IV: Unsupervised Waterflow Alarms Signals to a Constantly Attended Remote Location or supervised signaling using unapproved signaling equipment or unapproved central station signaling.

Class IV alarm service can be provided where waterflow alarm signals are transmitted to a public fire station by means of electrically unsupervised circuits.

The sprinkler waterflow alarm arrangements may not provide dependable transmission and reception of the sprinkler waterflow alarm signals. A circuit fault, such as a break or ground, not only prevents the transmission of a waterflow alarm signal but the fault would be undetected. If reliable response to signals is not assured or if the receiving or sounding equipment is even occasionally unattended, reduction in the class of service is advised.

Alarms that cause a siren or other type of horn to sound at a fire station are also acceptable.

Class IV alarms also consist of service provided by an unapproved central station, an unapproved proprietary system, or nonstandard service provided by an approved central station.

Standard Service. Approved central stations often contract to provide a subscriber with less than what FM Approvals considers “standard service”. Examples of what may constitute a lesser grade service follow.

1. Use of unapproved equipment.
2. Testing equipment less frequently than required.
3. The installation work is subcontracted or equipment is maintained by an unapproved installer.

4. The fire department is not immediately notified upon receipt of alarm signals.

5. The alarm company will not provide maintenance service nights or weekends.

Unless the installation is marked with the FM Approvals Standard Service Placard, it should be considered Nonstandard. At installations not marked “Standard Service”, alarm classification V or VI is incorrect.

*FM Approvals does not approve equipment specifically for Class IV installations.*

**Class V: Supervised Waterflow Alarm Signals to a Constantly Attended Location.**

Class V alarm service can be provided by electrically supervised circuits for the transmission of sprinkler waterflow alarms to an FM Approved central station system, to an FM Approved proprietary system central supervisory station, or a constantly attended public fire department.

Class V service includes only waterflow alarm monitoring and does not include other system functions, such as sprinkler control valves, tank water levels, etc.

All of these Class V waterflow alarm systems offer the advantage of prompt notification of the fire department. These signaling system arrangements have personnel in attendance at all times. In addition, prompt detection of some circuit faults and dependable transmission of waterflow alarm signals are assured.

Descriptive details on central station and proprietary systems are given under Class VI alarm service.

Waterflow alarm signals can be transmitted to a constantly attended fire department by means of a remote station system or an auxiliary system. The *Approval Guide* lists the approved remote station systems. A remote station system essentially consists of a supervised local system connected by an electrically supervised leased telephone circuit to a constantly attended public fire station or equivalent. An auxiliary system utilizes the municipal fire alarm system facilities and circuits to transmit waterflow alarm signals from the protected property to a constantly attended public fire station, municipal fire alarm headquarters, or other locations having personnel on duty at all times who are trained and equipped to interpret the signals and summon public fire fighting forces. It is necessary for the protected plant to obtain advance acceptance from the public authorities for a remote station or auxiliary system.

**Class VI: Central Station Service or Proprietary System Class VIA alarm service can be provided by an FM Approved central station and by FM Approved proprietary systems that monitor sprinkler waterflow alarms, sprinkler control valves, and other system functions. Each signal is coded or uniquely identified so that it may be interpreted properly.**

Class VI service includes monitoring of the following:

1. Sprinkler waterflow alarms.

2. Sprinkler control valves larger than 1½ in. (38 mm) or controlling more than five sprinklers. Smaller valves should be monitored if loss expectancies justify.

3. Pressure for dry-pipe sprinkler systems and fire protection pressure tanks.

4. Fire pumps as called for in appropriate FM Approval standards.

5. Water level within allowable limits in fire protection water storage tanks, and water temperature in fire protection water storage tanks having heating systems.

6. Heat detectors and/or smoke detectors where applicable.
7. Burglar alarms where analysis of the occupancy justifies.

If monitoring of an applicable function is not provided, the service cannot be classified as Class VI.

The above systems have maximum reliability and will assure prompt action in case of fire, sprinkler leakage, or other trouble.

*Central station* service consists of electrically operated circuits, instruments, and devices, together with the necessary electrical energy supply, designed to transmit alarms, supervisory signals, and trouble signals to a constantly attended central station where signals are recorded and experienced operators will take proper action.

The *Approval Guide* lists approved central station services and distant monitoring services. FM Approval requirements assure that the necessary re-signal transmitting circuits exist between the central station and the public fire department headquarters, or police station if burglar alarm service is included.

A *proprietary system* is similar to a central station signaling system, but is owned or leased by the owner of the protected property and entirely under his/her control. The system normally consists of numerous signal actuating devices wired to a control console or panel at a constantly attended central supervising station (usually at the protected property) where the signals are received and recorded. A proprietary system may protect more than one plant if the plants are under single ownership or control. Many styles of proprietary systems are available (see NFPA 72D).

Certain proprietary systems and approved central station services provide emergency operation for fire alarm, waterflow alarm, and other emergency signals during a fault on the signaling line circuit between the protected property and the central (supervising) station. The emergency operation feature is a significant advantage which results in larger capacities (the number of initiating devices circuits, building, etc. that can be connected) being assigned

Proprietary systems that do not include this emergency operating feature however provide for monitoring of the signaling circuit and provide a distinctive trouble signal when a fault occurs. These systems have lower capacities.

The *Approval Guide* lists approved proprietary systems. Also, see Data Sheet 5-2N for further details on proprietary signaling systems.

*Class VIB Service.*

A level of supervisory performance higher than Class V, but not fully meeting Class VIA, can be accomplished by connecting waterflow alarms to a constantly attended public fire department and the remaining functions to some other constantly attended location having trained personnel who are interested in the proper action to be taken. This method may be termed Class VIB.
APPENDIX E

COMPLIANCE CERTIFICATE: SAMPLE—CENTRAL STATIONS

This is to certify that the central station service company indicated below is listed in the Approval Guide, as a publication
approved by the National Fire Protection Association and authorized to use the "FM Approvals" mark in accordance with the rules and
regulations promulgated by the Association. The Central Service Company has been found to meet all requirements set forth in FM
Approval Standard 3011, and that the central station service company conducting the service as described above does so in
conjunction with the principles set forth in this Approval Guide.

Central Station Service Company: ABC Company

Address: 123 Main Street
City: Cityville
State: State
ZIP Code: 12345

Date: April 1999

[Signature]
W. S. Elliott, Technical Service Manager