

11.8.2.2 Test records shall be maintained on the premises and must indicate the date of such testing, the qualified service personnel, and any corrective measures needed or taken.

11.8.3 All smoke-control systems and devices shall be maintained in a reliable operating condition and shall be replaced or repaired where defective.

11.8.4 The AHJ shall be notified when any smoke-control system is out of service for more than 4 hours in a 24-hour period and again upon restoration of service of such systems.

11.8.5 The AHJ shall be permitted to require the building to be evacuated or an approved fire watch to be provided for all portions left unprotected by the fire protection system shutdown until the fire protection system has been returned to service.

11.9 Emergency Command Center. Where required, emergency command centers shall comply with Section 11.9.

11.9.1 The location, design, content, and fire department access of the emergency command center shall be approved by the fire department.

11.9.2 The emergency command center shall be separated from the remainder of the building by a fire barrier having a fire resistance rating of not less than 1 hour.

11.9.3 New emergency command center rooms shall be a minimum of 200 ft² (19 m²) with a minimum dimension of 10 ft (3050 mm).

11.9.3.1 Existing emergency command center rooms shall be maintained with the minimum square footage and dimensions previously approved by the AHJ.

11.9.4 The following shall be provided in the emergency command center:

- (1) The fire department communication unit
- (2) A telephone for fire department use with controlled access to the public telephone system
- (3) Schematic building plans indicating the typical floor plan and detailing the building core means of egress, fire protection systems, fire-fighting equipment, and fire department access
- (4) Work table
- (5) If applicable, hazardous material management plans for the building

11.9.5 Where otherwise required, the following devices or functions shall be provided within the emergency command center:

- (1) The emergency voice/alarm communication system unit
- (2) Fire detection and alarm system annunciator unit
- (3) Annunciator visually indicating the location of the elevators and whether they are operational
- (4) Status indicators and controls for air-handling systems
- (5) Controls for unlocking stairway doors simultaneously
- (6) Sprinkler valve and waterflow detector display panels
- (7) Emergency and standby power status indicators
- (8) Fire pump status indicators
- (9) Generator supervision devices and manual start and transfer features
- (10) Public address system, where specifically required by other sections of this *Code*
- (11) Controls required for smoke control

11.9.6 Emergency Command Center Acceptance Testing. Devices, equipment, components, and sequences shall be individually tested in accordance with appropriate standards and manufacturers' documented instructions.

11.10* In-Building Emergency Responder Communication Enhancement Systems.

11.10.1 Permits.

11.10.1.1 Where required by the AHJ, an installation permit shall comply with Section 1.12.

11.10.1.2 Where required by the AHJ, a renewable permit in accordance with 9.6.6.2 of NFPA 1221 shall be issued at the conclusion of successful acceptance testing.

11.10.2 General. In all new and existing buildings, minimum radio signal strength for emergency services department communications shall be maintained at a level determined by the AHJ, and based on the existing coverage levels of the public safety communication systems utilized by the jurisdiction, measured at the exterior of the building.

11.10.2.1 Where existing coverage at the exterior of the building does not meet or exceed delivered audio quality of 3.4 or greater for analog or digital systems, two-way radio communication enhancement systems shall not be required.

11.10.3 In-building emergency responder communication enhancement systems shall comply with the design, installation, testing, inspection, and maintenance requirements in Section 9.6 of NFPA 1221 and 11.10.3.1 through 11.10.11 of this *Code*.

11.10.3.1 Listed and Labeled. In-building emergency responder communication enhancement systems installed within buildings shall be listed and labeled in accordance with UL 2524, *In-building 2-Way Emergency Radio Communication Enhancement Systems*.

11.10.3.2* In-building emergency responder communication enhancement systems capable of operating on frequencies licensed to any public safety agency by the Federal Communications Commission (FCC) or other radio licensing authority shall not be installed without prior coordination and approval of the AHJ.

11.10.4* Lightning Protection. Systems shall have lightning protection that complies with NFPA 780. [1221:9.6.3]

11.10.5 Enclosures. All repeater, transmitter, receiver, signal booster components, optical-to-RF and RF-to-optical converters, external filters, batteries, and battery system components shall be contained in a NEMA4- or NEMA4X-type enclosure(s). [1221:9.6.11.2]

11.10.5.1 Batteries that require venting shall be stored in NEMA3R-type enclosures.

11.10.6 Oscillation Detection and Control. Bi-directional amplifiers (BDAs) used in in-building emergency responder communication enhancement systems shall have oscillation detection and control circuitry.

11.10.7* Minimum Signal Strength into the Building. In addition to the requirements in 9.6.8.1 of NFPA 1221, the inbound signal strength shall be a minimum of -95 dBm throughout