

Fire and Life Safety Compliance Protects Students

by Matthew S. Munter, P.E. and J. Michael Thompson, P.E.

Fire and life safety is always a “hot” issue on college campuses. The National Fire Protection Association’s (NFPA) Fire Analysis and Research Division reported an average of 1,425 fires per year in college and university dorms between 1994 and 1998, plus an annual average of 141 fires in fraternity and sorority houses during the same period. In aggregate, campus housing fires injure approximately 75 civilians each year, and cost nearly \$10 million annually in property damage. But even when no one is critically injured, and property damage is minimal, a fire can damage an institution’s reputation and have a residual impact on parent and student confidence. The best defense is a strong offense: a sound, compliant program for routine inspection and maintenance of fire and life safety systems.

Institutions that implement routine inspection of critical operating systems, have routine maintenance programs for each building maintenance division, and also require strict compliance with building standards and codes for new construction projects may still fall short in fire and life safety if they are not meeting the NFPA’s Standards for installation, testing, and maintenance of life safety systems.

Chief among the NFPA’s Standards that apply to fire and life safety are



NFPA 25 and NFPA 72. Familiarity with these Standards is the first step in developing an institutional safety system plan.

NFPA 25, the Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, establishes the minimum requirements for the periodic inspection, testing, and maintenance of water-based fire protection systems, including land-based and marine applications. The Standard, last revised in 2002 and slated for updating this year, applies to fire sprinkler systems, standpipe and hose systems, fire service piping and appurtenances, fire pumps, water storage tanks, fixed water spray, foam-water, and valves.

To be compliant with NFPA 25, a facility must have qualified in-house or contracted personnel routinely: (1) inspect the fire and life safety and components, (2) test and maintain the system at prescribed intervals, and (3) keep records. According to NFPA 25, Section 4.1.2.3, “These tasks shall be performed by personnel who have developed competence through training and experience.” In some states,

detailed training and certification requirements are indicated for these tasks. Visual inspections are typically performed by in-house staff, while testing and maintenance are contracted out to service or consulting companies. Facility managers should confirm that any personnel involved in the compliance process for fire and life safety are trained and certified sufficient to federal, state, and local government requirements, as well as industry standards.

NFPA 72, the National Fire Alarm Code, covers the application, installation, location, performance, inspection, testing, and maintenance of fire alarm systems, fire and emergency warning equipment, and their components. In the past decade, new research and developments in technology have advanced the role of alarm and signaling systems, improved egress times, and enhanced system reliability. But even the most technically advanced alarm systems can fail when inspection and maintenance routines break down. Facility compliance with NFPA 72 requires:

- monthly system and component inspection,
- annual testing and maintenance, record keeping, and
- personnel training and education.

Key to maintaining compliance and ensuring that life safety systems will perform on demand is the development of an institutional facility plan for maintenance and inspection of fire protection systems. This plan should establish a calendar of weekly, monthly, quarterly, and annual inspections; identify those inspections that will be performed by in-house personnel and those that will be performed by contractors; and document any rationale for non-compliance with

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consensus standards such as NFPA 25 and NFPA 72.

The NFPA's Standard handbooks or qualified contractors can help facilities managers develop and implement a life safety systems inspection and maintenance plan, which will include a combination of visual inspections, testing, and specified maintenance. For example, routine visual inspections of fire suppression systems range from weekly verification that sprinkler valves are open, to annual assurance that sprinkler heads are unobstructed and that building alterations have not resulted in uncovered areas. Testing of sprinkler components, such as alarm devices and main drains, is required on a quarterly or annual basis. Maintenance is required annually for all valves, or seasonally (before freezing) for low point drains in a dry pipe system. Standpipes should also be checked for proper operation. Facility managers should consult NFPA 25 for specific, detailed frequencies of all types of inspection, testing, and maintenance.

Portable fire extinguishers require monthly inspections to verify that the extinguisher is still present in its proper location and that it has not been discharged. A related Standard, NFPA 10, stipulates that portable fire extinguishers must be serviced annually by qualified personnel, which typically means hiring an outside service company to ensure that extinguishers are properly sized, clearly marked, and routinely inspected properly. Records of the monthly inspections and annual service should be clearly indicated on the service tag attached to each extinguisher.

NFPA 72 requires annual visual inspections of monitored fire alarm control equipment and semi-annual inspections for most other fire alarm components. Supervised control equipment; initiating devices like smoke detectors and pull stations; and notification appliances such as

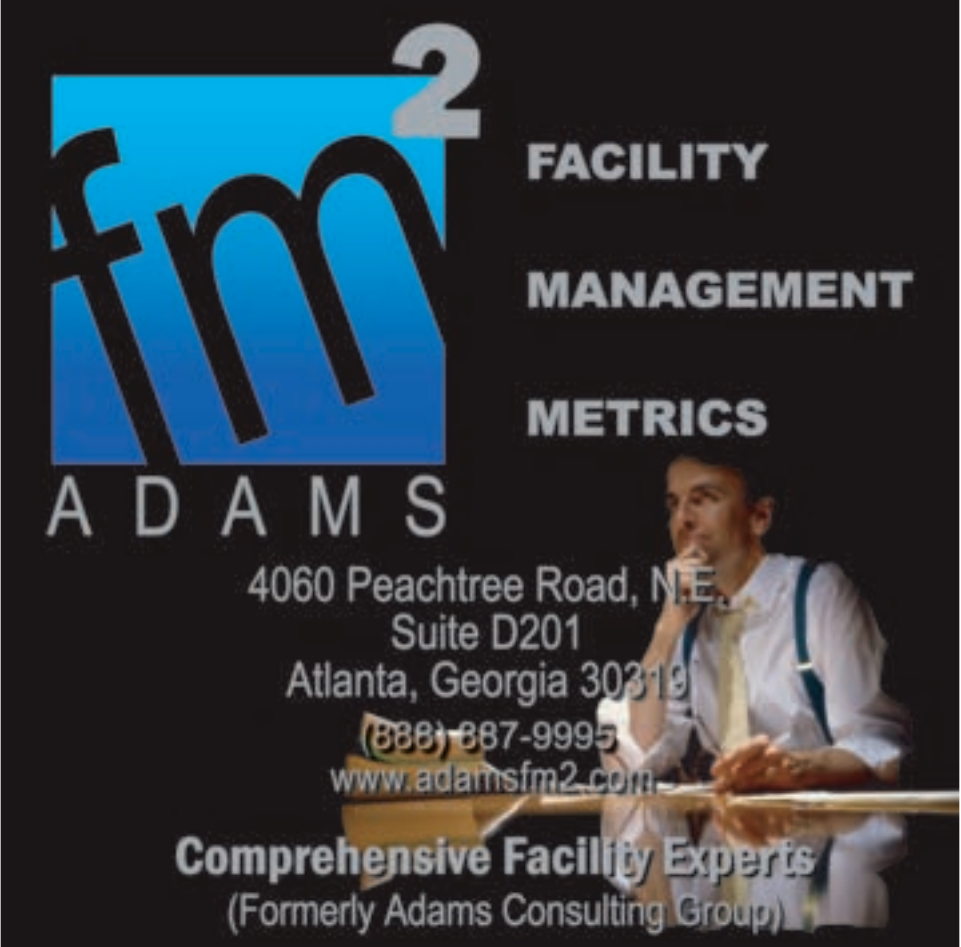
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horns, speakers, and strobes all require annual testing. For larger systems, the testing may be split: half of the system is tested in the first six months, and the balance tested in the second six months. The type and frequency of maintenance required for fire alarm systems depends on specific manufacturer's instructions and the ambient conditions where the systems

are located. NFPA 72 also defines the requirements that personnel must meet to be qualified or certified for testing and maintenance procedures.

Facility managers must remember that according to both NFPA 25 and 72, the requirements for inspection, testing, and maintenance of fire and life safety systems are not satisfied without complete, accurate records. In both Standards, record keeping is a mandatory condition of compliance.

To ensure the safety of a campus population and facilities, it is always a good idea to go back to school and revisit the Standards and their cyclical revisions, to keep your institution at the forefront of fire and life safety. Copies of the Standards are available at www.nfpa.org. ▲



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