FIRE PROTECTION EQUIPMENT INSPECTION

INTRODUCTION

Emergencies seldom give warning before they strike. Thus, it is essential that fire protection equipment be inspected, tested, and maintained to be certain it is operable at all times. To accomplish this, management must establish an effective fire protection equipment inspection program.

POSITION

- Perform fire protection equipment inspections at least weekly.
- Appoint a qualified individual as the Fire Brigade Chief or Emergency Response Coordinator to monitor the program and report to management. The qualifications for the Brigade Chief or Emergency Response Coordinator are included in PRC.1.7.0.
- Select and train individuals with appropriate mechanical aptitude to conduct the inspections and tests of fire protection equipment.
- Initiate a complete survey of the fire protection equipment at the facility to determine the scope of the inspection program.
- Make an initial tour with the inspector to identify any problems with procedures and verify the practicability of the reporting system.
- Establish effective procedures for reviewing the inspection results.
- Initiate prompt action to correct any noted deficiencies.
- File the results for subsequent AXA XL Risk Consulting review.
- Sign contracts for periodic testing and emergency maintenance of specialized fire and explosion protective systems.

DISCUSSION

Fire protection equipment, like all other equipment, deteriorates with time. It is also vulnerable to external influences such as corrosive environments, tampering, accidental damages, and careless use. Further, since fire protection equipment is used infrequently, it must be inspected and tested regularly to determine its condition, its operability, and its need for routine maintenance. Detecting an unsatisfactory condition prior to an emergency is far better than discovering it during the emergency.

Once the inspectors are selected, they must be properly trained. Several features this training should include:

- Reviewing of existing protection equipment and its maintenance, operation and testing techniques and familiarization with newly installed fire protection equipment.
- Attending appropriate schools and seminars. AXA XL Risk Consulting offers a one-week course covering the fundamentals of industrial fire protection equipment.
- Making copies of manufacturers' instruction manuals and other data available in a centralized training file.
- Accompanying AXA XL Risk Consulting's representatives during their loss prevention surveys, asking them questions and learning from their experience.

Base the inspection schedule on the requirements in the various NFPA Codes. Consult NFPA 25 and PRC.12.0.2 as a basis for testing water based systems and NFPA 72 and PRC.11.1.1.0 for protective signaling systems.

The inspection recording system must include a variety of data to guide inspectors and enable them to adequately record their results. A computerized inspection procedure should be developed to help track problems with equipment and to minimize overlooking equipment. AXA XL Risk Consulting recommends that each location have a custom-designed inspection recording system for the inspections. Although AXA XL Risk Consulting has available a sample fire protection equipment inspection form (see PRC.1.12.0.A) to use to develop a custom-tailored report form, there are many other sources that could be used. In the appendix of NFPA 25, there are two sample forms for water-based extinguishing systems.

When custom-designing a form or computerized program, include the appropriate sections. For example, PRC.1.12.0.B contains a suggested fire door checklist showing items that should be inspected for all types of fire doors. Forms should be printed with facility identification numbers such as building and valve numbers and may be limited by design to include only the equipment encountered at the facility.

Inspect all fire protection equipment. As a minimum, AXA XL Risk Consulting recommends the inspection frequencies that follow, although under certain circumstances the management of some facilities may feel that more frequent inspections are desirable. An example of a condition requiring more frequent inspection would be a strike by facility employees.

In the course of making the inspection, any unsatisfactory condition relating to fire protection should be reported. Such deficiencies might include stock piled too near the sprinkler heads; bent sprinkler piping; sprinkler heads that are painted, corroded or otherwise obstructed; and blocked fire doors. Any deficiencies should be noted for correction or repair.

The weekly inspection should include, but not necessarily be limited to, verification that:

- All fire protection control valves are open and sealed.
- System air pressure and priming water levels in dry pipe systems are proper and adequate room heat is provided.
- Visually inspect all fire doors and shutters. Look for stock blocking the door, bent rails or shroud, missing fusible links and missing rollers.
- Public and private water supplies are in service.
- Critical components of automotive fire apparatus are checked in accordance with PRC.1.12.0.C. The manufacturer's recommendations should be followed.
- Special extinguishing systems, including carbon dioxide, dry chemical, foam, foam-water, explosion suppression and spark extinguishing systems are in service. Critical components should be examined in accordance with the manufacturer's recommendations.
- Water supply tanks are full, heaters operational and exterior in good condition.

- Fire pumps are operated; checklist completed and pumps controller left in automatic operation. The checklist should be based on the requirements of NFPA 25. The controllers should be tested in accordance with PRC.14.2.1.3.

At least once a month, the following should be inspected:

- Drain dry pipe system low points. Inspect the weights, where provided, of deluge and pre-action valves to be certain there is no corrosion or obstruction that would prevent it from falling freely. Various types of sprinkler systems may require additional inspection of special design features. Certain items such as sprinkler system water supply pressure and dry pipe valve air pressure may require more frequent checking.
- Fire pump checklists completed and pump controllers left in automatic operation. Base the checklist on the requirements of NFPA 25.
- Hand-portable and wheeled fire extinguishers and inside hose connections to be certain they are accessible, properly placed and maintained. Each extinguisher should be properly charged and a tag should be attached indicating that it has been serviced within the last year and hydrostatically tested as required. At each inside hose connection, the nozzle should be properly attached and in the shut position, and the hose should be correctly racked and connected to the supply piping. A checklist or plan showing the location and type of units should be available to aid the inspector in making certain each unit is inspected (see PRC.1.12.0.D).
- Hose houses, hydrants and monitor nozzles to be certain they are well-arranged, properly equipped and maintained and accessible at all times. A list of required equipment should be posted in each hose house. Equipment in the hose houses should be inventoried against this list.
- Fire doors and shutters manually closed to check for proper operation.
- Explosion-relief vents to be certain that nothing will hinder their proper operation.

At least once a quarter, the following should be inspected:

- Sprinkler system static and flowing water pressures to be sure that they are at acceptable levels, that alarm control valves are open and sealed, and that alarms are operating properly. System air pressure and priming water levels in dry pipe systems should be checked and low points should be drained. Supervisory air pressure in deluge and preaction systems should be checked. The weight in some types of deluge and pre-action valves should be inspected to be certain there is no corrosion or obstruction that would prevent it from falling freely. Various types of sprinkler systems may require additional inspection of special design features. Certain items such as sprinkler system water supply pressure and dry pipe valve air pressure may require more frequent checking.
- Protective signaling system components such as waterflow and gate valve supervision have been tested.

Once the entire facility has been inspected and the report form filled out, the inspector should forward the report for appropriate management review. Deficiencies should be promptly corrected. A copy of the report should be filed for review by the AXA XL Risk Consulting representative.

Where more detailed maintenance is required on fire or explosion protection systems, such operations should be included in the maintenance information system (see PRC.1.3.0).

Additional inspections and tests should be conducted at various times during the year. A special inspection of the facility should be made prior to the onset of cold weather (see PRC.1.12.0.E). More complete performance tests of various fire protection equipment may also be necessary (see PRC.1.12.0.F).