

Abington Township Fire Department
Guideline for Sprinkler System Training Prop



This guideline shall serve as an overview for utilizing the Automatic Sprinkler System Prop at the Abington Township Fire Training Facility.

Located within the “non burn room of the 2007 addition” is a complete sprinkler system training prop. This prop serves as a static display of all typical system components, but can also be arranged as a fully functioning sprinkler system.

Basic training curriculum objectives for a new firefighter will call for the identification of various components of a sprinkler system. This includes sprinkler heads, sprinkler piping, sprinkler risers and control valves. The sprinkler prop includes the following:

Upright Sprinkler Head	Pendent Sprinkler Head	Sidewall Sprinkler Head
Inspectors Test Valve	Sprinkler Branch Line	Sprinkler Riser
Water Motor Gong	Main Drain	Alarm Check Valve
Dry Pipe Valve	O S & Y Valve	Butterfly Valve
Post Indicator Valve	Wall Indicator Valve	Fire Department Connection

In addition to the static display of various system components, the prop can be arranged as a fully functioning system. When this is to be accomplished, stretch an 1½” hose from the fire hydrant to the system connection. This **replicates or simulates** the underground water main for the building sprinkler system. When the hydrant is turned on, the system pressure shown on the gauge simulates the water main pressure for the sprinkler system. If sprinkler heads on the branch lines are already fused, replace the fused head with a non-fused head prior to use. Spare sprinkler heads are within the Sprinkler Head Cabinets on the wall.

With the Main Drain valve closed and the Main Control valve open, water can be moved through the system by opening the Inspectors Test valve. This will replicate a single sprinkler head being fused, allowing water to flow through the system and sounding the Water Motor alarm. You can also now fuse a sprinkler head – thus demonstrating the water flow from a sprinkler head.

For a more **advanced training exercise or evolution**, set up the sprinkler system prop for use and fill the building with cold smoke. Fuse a sprinkler head allowing the Water Motor gong to sound. Have an engine crew respond to the building for an AFA response and report light smoke showing from the structure. Have the engine company crew go in service, simulating a fire in a sprinkler building. Some operating objectives with this exercise can be gained by reviewing the example operating guidelines below for use in response to *Sprinkler Systems* and *Fire Department Connections for Sprinkler Systems*.

L. Siefken
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Operating Guideline

Automatic Sprinkler Systems

Purpose:

Provide an overview of fire company activities with regards to automatic sprinkler systems.

Guideline:

Sprinkler systems are very effective with regards to fire protection, property conservation, and life safety.

Sprinkler systems are effective 96% of the time in controlling fires that occur within sprinklered buildings.

Examples of when sprinklers rarely fail to control a fire are as follows:

- Full or partially shut valves.
- A system impairment.
- Lack of maintenance.
- Changes in occupancy producing a heavier challenge to the system than what the system was originally designed for.

It is incumbent upon the fire company to know how to operate within those buildings protected by sprinkler systems.

The following guidelines should be utilized when responding to fire calls within sprinklered buildings:

- Be familiar with the layout of the sprinklered building, i.e., is the building fully sprinklered; what is the location of the main valve(s); what is the location of the Fire Department Connection(FDC); what concerns might the occupancy produce, etc.
- In addition to traditional size up strategies, make a mental note of whether or not a water flow alarm was received or a fire alarm(or both); is the alarm sounding upon your arrival; is there apparent active water flow at the main riser; is the alarm on the outside of the building a water motor gong or an electric bell; is water flowing from the exterior drain just below the water motor gong, etc.

Operating Guideline

Automatic Sprinkler Systems

- If a fire is discovered within a sprinklered building, crews should ascertain if the fire has been controlled by the sprinkler system. A crew should also be sent to the main valve, verifying that the main valve(s) is fully open and remain with the valve until told otherwise by the OIC. Crews should also check all areas of the building making sure there are not multiple fires and/or extension. The lead person of this crew should have a radio and will be referred to as the “Valve Operator.” Also, if you are part of the crew sent to secure the valve, bolt cutters should be in hand in the event the main valve is locked open with a chain/padlock.
- If at all possible, sprinkler systems should NOT be shut down by the fire company. Instead, efforts should be made to stop the flow of water from the fused sprinkler heads. This can be done by utilizing wooden wedges or with the “Sprinkler Stop Tool.” If a sprinkler system is needed to be shut down as a last resort, say for property conservation measures, it should be done only after all areas of the building have been checked, verifying that no other fires or extension exist.
- If a sprinkler system has activated due to a fire, an engine, backed up with a water supply, should connect to and supply the system via the sprinkler system fire department connection(FDC).
Refer to Operating Guideline 01-7-3(D) for further details.
- If a sprinkler system has activated and once the building is secure with regards to fire activity, NO efforts should be made by the fire company to restore the sprinkler system. The fire building should simply be turned over to the Authority Having Jurisdiction, Fire Marshal and/or building representative for restoration by an authorized sprinkler system contractor. If a sprinkler system has been turned off, it is essential that the building owner/representative be made fully aware that the fire protection systems in the building are out of service.

*Reference Essentials of Firefighting for additional details pertaining to sprinkler systems, types, features, etc.

Operating Guideline

Sprinkler System Fire Department Connections(FDC)

Purpose:

Provide an overview of fire company operations with respect to supporting Fire Department Connections(FDC) of sprinkler systems.

Guideline:

One of the first arriving engines will stage at the fire department connection.

The driver of the apparatus will be cognizant of the location of nearby fire hydrants in relation to the FDC.

If instructed to connect to the FDC by the OIC, the driver shall stretch 3" hose to such and make connection. Check for, and remove any debris or objects in the FDC. Use caution while doing this for any sharp objects, etc.

The driver shall be aware of the area hydrants to ascertain if this will be a stand alone operation or if an additional engine will be needed.

Prepare to back the engine up with a public water supply.

The OIC shall give the order to pressurize the FDC. If instructed to pressurize the FDC, the pump operator shall initially pressurize the FDC with tank water.

Once you have established that you are indeed flowing into the system, then back yourself up with public water.

The system should be pressurized to 125-150 psi.

Under no circumstances should the pressure being supplied to the FDC exceed 175 psi.

Sprinkler systems are designed for a maximum working pressure of 175 psi. A serious impairment could result to the sprinkler system in the building if pressures exceed 175 psi.

Under certain circumstances, of which judgment should be used, a second 3" hose will be connected to the FDC.