

TECH SHEET

Fire Sprinkler Systems Control Valve Safeguarding

EMC Insurance Companies®

The National Fire Protection Association (NFPA 25®) says, “Each normally open valve shall be secured by means of a seal or a lock or shall be electrically supervised...”

Control Valves—What Are They?

Control valves control the flow of water in an automatic fire sprinkler system. Therefore, it is critical they remain open to allow water flow to the sprinklers. According to the NFPA, closed valves are the main cause of sprinkler system failure. There will likely be several control valves located throughout your system that separate the system into designated sections. These valves come in a variety of sizes and types. The most common types of control valves are described below.

Outside Stem & Yoke (OS&Y) valve (also called an indicating gate valve)—Indicating type means that one can visually determine if the valve is open or closed. An OS&Y valve is open when the threaded stem extends from the valve. The valve is closed when the stem is not visible above the control wheel.

Butterfly valve—Also an indicating type. There is an indicating vane that moves when the valve wheel is turned. The valve is open if the vane is parallel to the riser or direction of water flow. If the vane is perpendicular to the direction of water flow, the valve is closed.

Post Indicator Valve (PIV)—This valve may be mounted on the exterior of the building (horizontal type) or in the yard of the premises (vertical type). The valve indicates its status through a small window on the side, displaying either “OPEN” or “SHUT.”

Control Valve Safeguarding Techniques

NFPA® standards require that each control valve contained within an automatic fire sprinkler system be secured. Each of the following methods can effectively secure valves from accidental or intentional closure.

Chain & Lock—Secure a locked chain through the control wheel or handle to prevent physical movement of the valve. The valve should be chained and locked in the open position.

Locked & Limited Access Room—The control valve can be safeguarded by limiting access to the valve. This may consist of keeping the door(s) to riser rooms locked and limiting access to authorized personnel only.



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Tamper Switch—A tamper switch is an electromechanical device attached or integrated into the valve controls which sends an electrical signal if the valve is moved. The tamper switch alarms should be supervised by a 24-hour remote station or may be locally monitored if the building is continuously occupied. Most tamper switch devices have a reset key. This key should be safeguarded or kept with authorized personnel only.

Multiple types—This utilizes two or more of the above techniques and provides superior safeguarding.

Note: Each sprinkler system is different and may have specific valve types or safeguarding requirements that cannot be addressed in this document. If you are unfamiliar with your system or require specific procedures, contact a sprinkler system contractor.

For Additional Information

National Fire Protection Association:

www.nfpa.org

- NFPA 25® – Inspection, Testing & Maintenance of Water-Based Fire Protection Systems

American Fire Sprinkler Association:

www.sprinklernet.org

EMC Insurance Companies: www.emcins.com

- Tech Sheets – Fire Sprinkler System Shutdown