RISK MANAGEMENT

PREVENTING LOW POINT DRAIN FREEZE-UP LOSS MITIGATION

June 15, 2022

Dry sprinkler systems are often installed in areas of piping that run through unheated spaces. These systems typically use low point drains also known as auxiliary drains. If the low point drains are not labeled, there's a risk that during testing or an unintended system activation, these areas will not be properly drained when the system is restored to service. The water remaining in the system is subject to freezing and this often results in pipes bursting and significant water damage losses. To avoid freeze-ups in low point drains of dry sprinkler systems, it's imperative that low point drains be properly marked.

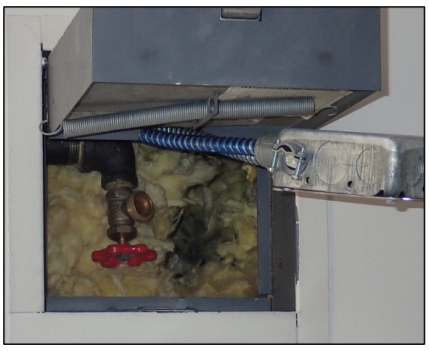
1. Applicable Code

The Building Code incorporates NFPA 13, which provides standards for the installation of water-based fire protection systems, and NFPA 25, which provides the baseline for inspection, testing, and maintenance of such systems. Under NFPA 13 (2013) § 6.7.4.1, “all control, drain, and test connection valves shall be provided with permanently marked weatherproof metal or rigid plastic identification signs.” Where such a drain is needed, there is often an access hatch located nearby (see photo below). Notably, this standard regarding identification signs may not have been in effect at the time a building was constructed or retrofitted with a sprinkler system, and therefore signage may not be installed. NFPA 25 § 4.1 requires a permanent marked metal or rigid plastic sign be placed “at the system control riser supplying an antifreeze loop, dry system, preaction system, or auxiliary system control valve.” Each sign shall indicate at least the following information: (1) location of the area served by the system; (2) location of auxiliary drains and low point drains for dry pipe and preaction systems; (3) the presence and location of antifreeze or other auxiliary systems; (4) the presence and location(s) of heat trace.

2. Locating Low Point Drains

The photograph to the left shows a low point auxiliary drain access hatch (in the open position) adjacent to a low point in a dry sprinkler system. This area of piping was located in an unheated section of the attic of a building above the ceiling of an unheated vestibule. The hatch was not marked and as a result, this auxiliary drain was not drained after the system was trip tested and left filled with water by the service provider.

These photographs below show a sprinkler head with an auxiliary drain hatch (in the closed position) adjacent to it. It has been marked with appropriate signage. When opening the hatch, it's apparent that it requires draining to prevent it from freezing.



3. Marked Low Point Drains Prevent Freeze Ups

We recommend that all MIIA members retain a qualified sprinkler installation, service and/or maintenance company and request that they inspect all buildings that use a dry sprinkler system, locate all low point/auxiliary drains, and properly label them. Any access hatches, whether the hatch is located next to a sprinkler head or not, should be opened and examined. If blueprints or diagrams from the initial installation of the system are available, these should be reviewed as well. All drains must be labeled, and the number and location of low point/auxiliary drains should also be noted on a sign in the riser room.

Too often, unlabeled low point drains result in pipe freeze-ups and significant water damage losses. Help prevent freeze-ups in low point drains by having all access drain hatches marked and labeled. Following any inspection or intentional or unintended sprinkler activation, it's critical that every low point/auxiliary drain be drained to ensure that no water remains in the system.

MIIA Risk Management
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