

Leaking or Frozen Plug Cock Shut-offs Increase Probability of an Explosion

Safety Note

Periodically, Honeywell Combustion Safety comes across little known safety items or procedures that can greatly enhance a plant's ability to safely maintain combustion equipment. One of the key findings in our safety inspections is that more than 60% of lubricated plug cocks leak potentially explosive levels of natural gas when in the closed position. In some cases, these plug cocks are in new or relatively new installations.

This is a serious problem when maintenance personnel are locking out, securing, and serving gas trains because they believe they are shutting off supply gas when in fact the gas is still leaking downstream through the valve.

Lubricated Plug Cock Valve Theory of Operation:

Lubricated plug cocks seal only by virtue of the lubricant that exists between the machined tapered plug the machined tapered socket that it fits into. If no lubricant or very little lubricant is present, the valves can seize over time or gas can leak.

A seized valve prevents personnel from closing the valve in the case of an emergency (certainly not without a breaker bar or handle extension). It is also possible to cause damage to the gas train including breaking piping. This could then allow uncontrolled gas to flow making for a severe explosion hazard (if excessive force is used trying to close the gas valve).

Repair Note: One should always know and have access to isolation valves that can be immediately closed in the case of a piping break where your testing is occurring. This may include contacting your local gas utility and ask them stand by at the site.

It's also important to know who owns what. In many cases, the gas utility will take responsibility only up to the discharge flange of the meter.

Check on local policy with your gas supplier and don't try to repair their piping.

Valve Testing:

Codes require annual valve maintenance and leak testing. A proper valve leak testing program requires the use of trained personnel and equipment. Many leak testing approaches exist and their interaction with numerous types of safety shut-off and blocking valves goes beyond the intent of this document. Testing and checking of gas plug cocks should always be planned carefully.

The theory behind leak testing procedures requires a means to safely relieve pressure downstream of the plug cock. One would then need to determine if the pressure again builds downstream of the valve with the valve in the closed position.

Valve Servicing:

Conducting a formal plug cock maintenance program requires properly installing sealant in a valve with a sealant gun. It is important to know what type of lubricant to use on your plug cock valves. Do not use just any type of "grease". The wrong lubricant will not seal and could make matters worse.

The guns should include a swivel hose and gauge to determine whether the valve is accepting sealant or not. Different gage indications can provide important information on pressures or problems with the valve.

ABOUT US

Honeywell Combustion Safety is a part of Honeywell Thermal Solutions, an industry leader in commercial and industrial combustion solutions. Honeywell Combustion Safety, formerly known as CEC Combustion Safety, has been in business since 1984. With engineers and staff members that sit on Code committees such as NFPA 56, NFPA 85, NFPA 86, and NFPA 87, our inside expertise is integrated within all of our practices, and our global reach ensures that customers around the world are kept safe. Honeywell offers testing and inspections, engineering & upgrades/retrofits, gas hazards management, training, and field services for all industrial facilities and different types of fuel fired equipment. By assisting organizations and their personnel with the safe maintenance and operation of their combustion equipment, Honeywell aims to save lives and prevent explosions while increasing efficiency and reliability of combustion equipment.

For more information

Learn more about Honeywell Combustion Safety, contact info@combustionsafety.com, visit www.combustionsafety.com or contact your Honeywell Sales Engineer.

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