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201 NORTH FIGUEROA STREET
LOS ANGELES, CA 90012

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OSAMA YOUNAN, P.E.
EXECUTIVE OFFICER

Erik Waite
Pacific Seismic Products, Inc.
233 East Ave. H-8
Lancaster, CA 93535

RESEARCH REPORT: RR 5738
EFFECTIVE DATE: 07/01/2019
EXPIRATION DATE: 07/01/2020
Telephone: 800-442-7633

GENERAL APPROVAL - Renewal - "California" Earthquake Activated Gas Shut-Off Valve Model EV400, manufactured by Pacific Seismic Products, Inc.

DETAILS

This product is an all mechanical, earthquake activated, 3 way- 2 position pneumatic valve. It is intended to be installed in natural-gas supply lines outside of buildings or other locations approved by the Department. This seismic gas shut-off valve (SGSOV), when used in conjunction with a spring fail pneumatic actuator and an additional valve on the supply line (not supplied by Pacific Seismic Products, Inc.), cuts off the supply to gas piping systems during a seismic event. Mounting is accomplished using the two ¼"-20 UNC mounting holes, and its attached leveling chain. The pneumatic valve is controlled by the use of either compressed nitrogen or clean and dry compressed air, regulated at 80 psi.

This SGSOV does not use any source of internal or external electrical power, and has an all-mechanical earthquake sensing mechanism. It is designed to remain closed until it is manually reset. The earthquake sensing mechanism consists of a steel ball resting on a tapered support. The horizontal motion of an earthquake causes the ball to move from the center support. This allows the ball's mass to act upon the triggering ring of the tripping mechanism, activating the valve and initiating closure. The earthquake sensing mechanism is factory set and sealed. A sight glass is provided so that the status of the valve can be easily determined. Manual resetting of the valve is done by using a ¼" open-end wrench to turn the reset shaft approximately 105° clockwise, or until green appears in the status window.

The approval is subject to the following conditions:

1. This seismic gas shutoff valve (SGSOV) may be used in low-, medium-, or high-pressure gas systems in all occupancies whose maximum operating pressure does not exceed the pressure

rating specified on the valve and may be installed to comply with Ordinance 171874 and Section 94.1217.0 of the Los Angeles Plumbing Code (LAPC), 2017 Edition.

2. This SGSOV is available in one size only. The only variation in size comes from the actuating valve, not provided by Pacific Seismic. The actuating valve shall be the same size or larger than the size of the pipe required by the LAPC for the total volume of gas flowing. The pipe size required shall be such that sufficient gas pressure is provided to all appliances when full demand is being supplied to all appliances and the following:
 - a. All building gas supply lines served by one main meter may be served by one or more SGSOV's, provided that the actuating valve is of the appropriate size. The installation of multiple SGSOV's in parallel that supply one downstream system are not allowed.
 - b. Where multiple buildings on a site are served by a one main meter, one or more SGSOV's shall be installed on each building's supply line, provided that the actuating valve is of the appropriate size.
3. These SGSOV's shall be installed in accordance with the most restrictive provisions of the manufacturer's instructions, LAPC, and this Research Report. Installation and maintenance shall be performed by qualified personnel only as defined in the LAPC and the following:
 - a. Unions may be installed downstream of the bypass "T" of the utility's meter set assembly, outside of the building, for the installation of these SGSOV's.
 - b. The SGSOV is not equivalent to, nor is it to be substituted for, any required manual shut-off valve for the building supply.
4. These SGSOV's shall be installed on gas service systems at an accessible location. They shall be rigidly attached to the building or other structure acceptable to the Department with 2 brackets, or by other approved means. The brackets shall be mounted within 6 inches of each end of the valve. SGSOV's installed with Mechanical Test Lab approved brackets shall utilize the mounting techniques specified under their approvals.
5. These SGSOV's shall use flexible lines to connect to the actuator that is mounted on the gas pipe.
6. SGSOV's may be installed on the gas line in one of the following locations:
 - a. Gas service lines downstream of the bypass "T" of the meter set assembly, by a licensed contractor or qualified installer or,
 - b. Upstream of the juncture of the building-line stub and the bypass "T" of the meter set assembly by the gas utility or a contractor, working under contract of the gas utility.
7. If the SGSOV is actuated by an earthquake, the gas system shall be tested for leaks and shall be reset by a person qualified to perform the reset and gas leak detection tests, and by a

qualified installer (a single family dwelling homeowner is recognized as a qualified installer by the LAPC).

NOTE: The gas cock to each gas appliance shall be turned off after actuation by an earthquake valve prior to resetting of the valve for the purpose of testing for leaks.

8. A plumbing permit shall be obtained each time an SGSOV is installed. SGSOV's installed by the gas utility or a contractor authorized and contracted by the gas utility upstream of the bypass "T" of the meter set, shall not require a permit.
9. Plan check on gas systems shall be required for:
 - a. Systems having more than ten (10) outlets.
 - b. Whose maximum demand or developed length exceed the limits of Table 1216.2(1) through 1216.2(36) of the LAPC, 2017 Edition.
 - c. Systems utilizing SGSOV's in medium- or high- pressure gas systems.
10. Installation in existing occupancies do not require plan check if the existing gas meters are Models MSA Size 1 or MSA Size 2 and, the SGSOV's are sized based on the methods of Condition 2(a) or 2(b) of this report.
11. The manufacturer shall provide a thirty-year warranty that the valve is free from defects and will continue to operate properly for thirty years from the date of its original installation in accordance with Section 94.1217.3.5 of the LAPC, 2017 Edition.
12. Each valve shall be permanently identified with the following information where it will be visible after installation for inspection purposes:
 - a. Name of the valve manufacturer.
 - b. Model number.
 - c. Division of State Architect's logo.
 - d. Listing mark of an approved listing agency.
 - e. Date code of the manufacture of the valve.

DISCUSSION

The Mechanical Testing Laboratory reviewed recent testing reports and current listing certificates. These valves have been tested in accordance with Standard ASCE 25, "*Earthquake-Actuated Automatic Gas Shutoff Devices*," and are listed by ICC Evaluation Service, LLC. The materials and construction appear to be equivalent to that prescribed by the Los Angeles Municipal Code in quality, strength, effectiveness, durability, and safety.

For this General Approval to be valid on any individual construction project in the City of Los Angeles, an engineer or inspector of the Department of Building and Safety must make a determination that all conditions of the General Approval required to provide equivalency have been met in the case of each construction project under consideration.

This approval is granted under Sections 94.301.0, 94.1204.0, 94.1205.0, 94.1209.0, 94.1210.0, 94.1213.0, 94.1214.0, 94.1216.0, and 94.1217.0 of the Los Angeles Plumbing Code, 2017 Edition.

Approved by:



Irene Pool
Mechanical Testing Laboratory
Permit and Engineering Bureau