http://ops.dot.gov/regs/interp/192-7/747/79-09-20.pdf

Interpretation of §192.747

Associate Director for Pipeline Safety Regulation, DMT-30

Chief, Southern Region, DMT-16

In your memorandum of December 19, 1978, you point out problems you find in trying to enforce §192.747 "Valve maintenance; distribution systems" concerning the number of valves that must be maintained as required in a given piping system having a well defined business district and class 1, 2, and 3 areas. You asked if one key valve will suffice as the emergency valve, assuming that the valve controls the system supply and that multiple main valves do exist within the system. If one valve will not suffice, what minimum number of key valves should suffice, and what systems areas should they control?

After a thorough review, we have concluded that:

(a) Section 192.747 does not specify how many valves are necessary for the safe operation of a distribution system. The regulation requires that any valves necessary for the safe operation of a distribution system (key valves) "...be checked and serviced at intervals not exceeding 1 year." Section 192.181 which prescribed design standards for installation of key valves in pipeline systems can be used as a guideline for identifying key valves in existing systems installed prior to 1971. On such existing systems, new valve installations can be required only if the existing system is hazardous to life or property or as necessary to meet the requirements of the operators' Inspection and Maintenance or Emergency Plans. In addition, the manual used by the Transportation Safety Institute (TSI) in conducting the course on "Safety Regulation for Gas Pipeline Systems" includes additional guidance in determining if one key valve will suffice as the emergency valve on such a distribution system. The TSI manual states that key valves be considered at each pressure regulating station, principal lines to business districts, and class 4 locations, as well as other criteria. Since the system to which you refer has a well defined business district, class 1, 2, and 3 areas, as well as multiple main line valves. it appears that more than one key valve may be required for the safe operation of that distribution system.

(b) We cannot establish the minimum number of key valves that would suffice"...for a typical distribution system having a well defined business district, and class 1, 2, and 3 areas" because the number would depend on the specific system design. Because if the various dwelling densities of the system, it appears that several key valves can be identified using criteria set forth in §192.181, such as the operating pressure, the size of the mains, and the local physical conditions. Some additional criteria to ne considered in determining the location of key valves are

the size of the system, accessibility of each valve, and the capability of the operator to handle an emergency. The TSI manual states that the key valves should be considered at the following locations:

1. Control valve(s) at each pressure regulator station.
2. Principal feed(s) to business districts and class 4 locations.
3. All single valves on mains within (2) above.
4. Valves that meet the following criteria.

   (a) Reasonable for sectionalizing plan.
   Consider - Number of customers
   - Volume of gas
   - Environment
   - Response time/valve accessibility

   (b) Necessary because of unsatisfactory maintenance History of pipeline section
   Consider - Leak history
   - Types of failures

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