
**DEPARTMENT OF
TRANSPORTATION**
Pipeline Safety Advisory Bulletin ADB-94-02 Valve Location and Spacing
AGENCY: Research and Special Programs Administration (RSPA), DOT.
ACTION: Advisory to owners and operators of gas distribution facilities

SUMMARY: The purpose of this advisory bulletin is to provide guidance to operators regarding the valve location and spacing requirements of 49 CFR 192.181(a).

Advisory

In the event of an incident or other emergency, the number and location of gas distribution system valves are critical in achieving the effective shut down and isolation of any section of main in a gas distribution system. The RSPA is providing guidance in this Advisory Bulletin to owners and operators to assure that valving on high pressure distribution systems complies with the requirements of §192.181(a).

The "Guide for Gas Transmission and Distribution Piping Systems" (Guide) can be referred to for help in establishing locations for emergency valves. Developed by the Gas Piping Technology Committee, it is now referenced as American National Standards Institute ANSI/GPTC Z 380. Copies are available through the American Gas Association; 1515 Wilson Blvd.; Arlington, VA 22209.

The guide lists the following as criteria to be considered when establishing valve locations in high pressure distribution systems:

- Physical Characteristics:
 - Size of area to be isolated.
 - Topographic features (such as rivers, major highways and railroads).
 - Number of valves necessary to isolate the area.
- Operating Characteristics:
 - Number of customers and type of customers such as hospitals, schools and commercial and industrial users that would be affected.
 - Time required for available personnel to carry out isolation procedures.
 - Time required for controlling the pressure in the isolated area by means of

venting, transferring gas to adjacent systems, etc.

—Time required for available personnel to restore service to customers.

Background

A high pressure gas main in Atlanta, Georgia was ruptured by a construction contractor on December 1, 1977. The National Transportation Safety Board (NTSB) investigated the incident and found the probable cause was the failure of the contractor to use information available to him on his blueprint which resulted in the rupture of the gas main. The incident occurred at 1:00 p.m. and, because of a poor selection of the location and the number of emergency valves, it took until 2:45 p.m. to shut off the flow of gas to the ruptured main.

In its accident report on the rupture, NTSB recommended (Safety Recommendation P-78-24) that RSPA amend 192.181(a) to specifically define the requirement for location and number of emergency valves. This is not feasible because the location and number of emergency valves is dependent on local conditions, and because local conditions vary greatly from operator to operator and city to city. Therefore, by means of this Advisory Bulletin, the attention of operators is being redirected to the requirements of §192.181(a), and to the Guide for any help it can be toward meeting the requirements of §192.181(a). Although §192.181 is a design regulation on gas distribution systems readied for service after March 1971, on systems installed before (as well as after) that date the Guide material can be used, as noted previously, as a help in determining emergency valve locations.

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