

NATIONAL TRANSPORTATION SAFETY BOARD WASHINGTON, D.C.

ISSUED: November 20, 1978

Forwarded to:

Mr. Robert E. Thomas
Chairman and Chief Executive Officer
MidAmerica Pipeline System
1800 South Baltimore Avenue
Tulsa, Oklahoma 74119

SAFETY RECOMMENDATION(S)
P-78-66 and 67

At 12:02 a.m., c.d.t., on August 4, 1978, propane that had vaporized and spread widely from a ruptured 8-inch liquefied petroleum gas (LPG) pipeline owned by the MidAmerica Pipeline System (MAPCO) was ignited by an unknown source in a rural area near Donnellson, Iowa. The intense fire killed two persons and critically burned three others as they fled their homes; one of the critically burned persons later died. A farmhouse and six buildings were destroyed, and two adjacent homes were damaged.

MAPCO extends from west Texas to Conway, Kansas, where it forms two branches. One branch extends to Minneapolis, Minnesota; the other, to Janesville, Wisconsin -- more than 5,000 miles of multiple lines from 4 inches to 12 inches in diameter. The section of pipeline involved in this accident extended from Birmingham Junction, Iowa, to Farmington, Illinois -- 116 miles. Although the line was not operating when it failed, it was under a static pressure of over 1,200 psig at the rupture.

After the fire erupted, an area resident closed valves at mileposts 32 and 36.8, thus isolating the failed section at milepost 33. At 12:06 a.m., the dispatching center at Tulsa, Oklahoma, recorded indications of a pressure drop on this system. Since MAPCO's maintenance personnel are scattered over several States and cannot always respond within minutes to close valves near an accident, MAPCO incorporates in its emergency plans a list of individuals, usually residents along the right-of-way, to contact in case of an emergency. These individuals are given keys that allow them to close certain valves. The list available to the dispatcher at the time of the accident had not been updated for at least 5 years. The persons listed for the valve at milepost 32 had both died; one of them several years earlier. The other valve at milepost 36.8 was not included in this list; the reason for the omission is still undetermined.

Before the fire was extinguished at 3:30 a.m., 3,750 barrels of propane had burned and 75 acres of cornfields and woods were damaged. The volunteer fire departments that responded to the fire had not received instructions or educational material on the hazards of LPG from MAPCO, and they had not previously encountered an LPG fire of this magnitude.

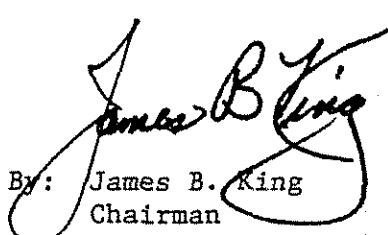
According to MAPCO's emergency plans, field locations were instructed to "...hold an annual fire school and safety session...", and local police and fire departments would be asked to participate in these schools. MAPCO held no training sessions for local firefighters and police in the area near accident site.

Therefore, the National Transportation Safety Board recommends that the MidAmerica Pipeline System:

Update the list of individuals who should be contacted to close specific valves in the event of an emergency and institute a procedure to assure that the list is updated at least annually. (Class I, Urgent Action)(P-78-66)

Conduct periodic training for public emergency response agencies along the route of its pipelines. As a minimum, this training should be conducted annually and be sufficient to inform emergency response agencies of the properties of the various products transported, the expected behavior of each product when released to the atmosphere, the locations of shutdown valves, the residents designated to operate each valve, and other information necessary for emergency response personnel to take effective actions and minimize losses. (Class I, Urgent Action)(P-78-67)

KING, Chairman, DRIVER, Vice Chairman, McADAMS and HOGUE, Members, concurred in the above recommendations.


By: James B. King
Chairman