

Rrg P-94

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: February 8, 1978

Forwarded to:

Mr. L. D. Santman  
Director  
Materials Transportation Bureau  
Department of Transportation  
Washington, D.C. 20590

SAFETY RECOMMENDATION(S)  
P-78-9 through P-78-11

At 4:30 a.m., e.d.t., on July 20, 1977, a 12-inch propane pipeline, owned by the Consolidated Gas Supply Corporation, ruptured near the town of Ruff Creek, Pennsylvania. The liquid, under 450-psig pressure, escaped from the pipeline, vaporized, and propane vapors settled like a fog over the bottom of a valley. 1/

About 6 a.m., two men in a pickup truck entered the propane cloud; the truck stalled and the propane gas ignited when an attempt was made to restart the truck. A flash fire, approximately 100 yards wide, followed a streambed located along the bottom of the valley and burned everything in its path for a distance of 1 mile. The flames were over 100 feet high at the point of the rupture and burned for 14 hours until the remaining propane liquid in the pipeline could be isolated in the pipeline by the use of valves and stopples.

As a result of this accident, the 2 persons in the truck were killed, the truck was destroyed, 57 head of cattle were killed, overhead power and telephone lines were destroyed, a hay storage shed containing 450 bales of hay was burned, 1,800 barrels of propane burned, and a meadow and wooded area 1 mile long by 100 yards wide was burned.

1/ For more detailed information about this accident, read "Pipeline Accident Report -- Consolidated Gas Supply Corporation, Propane Pipeline Rupture and Fire, Ruff Creek, Pennsylvania, July 20, 1977" (NTSB-PAR-78-1).

In the past 9 years liquefied petroleum gas (LPG) was reported to your Office of Pipeline Safety Operations (OPSO) as being involved in less than 10 percent of the reported liquid petroleum pipeline accidents. The alarming statistics are that these LPG accidents caused 66 percent of all of the fatalities, 48 percent of all of the injuries, and 31 percent of all of the property damage.

The Safety Board has often commented on the inadequacies of 49 CFR 195 and has called for many amendments. More stringent regulations are needed to assure the safe transportation of LPG. From meetings with OPSO on its progress in implementing our many recommendations on LPG, we understand the publishing of the Notice of Proposed Rulemaking is imminent.

In addition to expediting the LPG rulemaking, there is need for operators to conduct public education on the particular hazards of LPG and how to report an emergency. In this accident, although signs identifying the pipeline as a propane carrier were placed at a road crossing within 100 feet of the rupture, the public and emergency response personnel did not know what to do and how to notify the pipeline company even though its telephone number was clearly noted on the signs.

With the shortage of natural gas, some companies may wish to convert their gas pipelines into liquefied petroleum gas pipelines. The stress-corrosion cracking of this pipeline was not discovered by extensive testing, including hydrostatic testing at high pressure, when the pipeline was converted to propane service. However, 7 years later the pipeline failed at an operating pressure that was less than one-third of the hydrostatic test pressure.

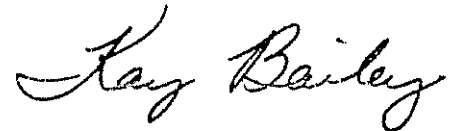
Therefore, the National Transportation Safety Board recommends that the Materials Transportation Bureau of the U. S. Department of Transportation:

Expedite the publishing of the Notice of Proposed Rulemaking on regulations for the safe transportation by pipelines of liquefied petroleum gases (LPG). Include a comprehensive section on the communications required for the safe operation of LPG pipelines. (Class II, Priority Action) (P-78-9)

Include in proposed regulations a section similar to the emergency plan section of the natural gas code (49 CFR 192.615) that will require operators to provide information to persons who live or work within 220 yards of a propane pipeline, and up to 1 mile if located downhill of a LPG pipeline, about the particular hazards of LPG and how to contact emergency response personnel. (Class III, Longer Term Action) (P-78-10)

Include in proposed 49 CFR 195 regulations, provisions for checking natural gas pipelines that are being converted to liquefied petroleum gas (LPG) service for stress-corrosion cracking. (Class III, Longer Term Action)(P-78-11)

McADAMS, HOGUE and KING, Members, concurred in the above recommendations.  
BAILEY, Acting Chairman, did not participate.

A handwritten signature in cursive script that reads "Kay Bailey".

By: Kay Bailey  
Acting Chairman