



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: November 18, 1998

In reply refer to: P-98-40

Mr. Gerald Shankel
Executive Director
NACE International
1440 South Creek Drive
Houston, Texas 77084-4906

On Saturday, August 24, 1996, about 3:26 p.m., an 8-inch-diameter steel LPG (liquefied petroleum gas) pipeline transporting liquid butane, operated by Koch Pipeline Company, LP (Koch), ruptured near Lively, Texas, sending a butane vapor cloud into a surrounding residential area.¹ The butane vapor ignited as two area residents in a pickup truck drove into the vapor cloud. The two people died at the accident site from thermal injuries. About 25 families were evacuated from the affected area. Koch estimated its direct pipeline losses, including the loss of product from the line, to be about \$217,000. Other property losses included damage to the roadway under which the rupture occurred and damage to a pickup truck, a mobile home, several outbuildings, and adjacent woodlands.

The National Transportation Safety Board determined that the probable cause of this accident was the failure of Koch to adequately protect its pipeline from corrosion.

Following the accident, Koch contracted with a consultant to perform testing and analysis for bacteria on the pipe's surface. Koch's consultant used a procedure similar to NACE International Standard TM 0194-94, *Field monitoring of bacterial growth in oil field systems*, which describes field testing methods for estimating bacteria populations commonly found in oil field systems. This standard, however, is not directly applicable to sampling and testing for microbes on a pipeline's external surface. The consultant's analysis may have been inaccurate for several reasons, namely the pipe was cleaned before samples were collected, laboratory tests were performed about 2 days after the pipe was removed from the ground, and tap water was used in the tests. The Safety Board determined that the contribution of microbes to the corrosion damage could not be accurately determined because of inadequate sampling and testing techniques.

¹ For additional information, read Pipeline Accident Summary Report—*Pipeline Rupture, Liquid Butane Release, and Fire, Lively, Texas, August 24, 1996* (NTSB/PAR-98/02/SUM).

The National Transportation Safety Board therefore recommends that NACE International:

Develop a standard for microbial sampling and testing of external surfaces on an underground pipeline. (P-98-40)

Also, the Safety Board issued Safety Recommendations P-98-34 through -38 to the Research and Special Programs Administration and P-98-39 to Koch Pipeline Company, LP.

The National Transportation Safety Board is an independent Federal agency with the statutory responsibility “to promote transportation safety by conducting independent accident investigations and by formulating safety improvement recommendations” (Public Law 93-633). The Safety Board is vitally interested in any action taken as a result of its safety recommendations. Therefore, it would appreciate a response from you regarding action taken or contemplated with respect to the recommendation in this letter. Please refer to Safety Recommendation P-98-40 in your reply.

Chairman HALL, Vice Chairman FRANCIS, and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in this recommendation.

By: Jim Hall
Chairman