



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: June 8, 2006

In reply refer to: P-06-4

Mr. Frank Bailor
President
USPoly Company
7901 N. Kickapoo Avenue
Shawnee, Oklahoma 74804

The National Transportation Safety Board is an independent Federal agency charged by Congress with investigating transportation accidents, determining their probable cause, and making recommendations to prevent similar accidents from occurring. We are providing the following information to urge your organization to take action on the safety recommendation in this letter. The Safety Board is vitally interested in this recommendation because it is designed to prevent accidents and save lives.

This recommendation addresses USPoly Company's (USPoly's) butt-fusion procedure. This recommendation is derived from the Safety Board's investigation of the August 21, 2004, leak, explosion, and fire in DuBois, Pennsylvania, and is consistent with the evidence we found and the analysis we performed.¹ As a result of this investigation, the Safety Board has issued five safety recommendations, one of which is addressed to USPoly. Information supporting this recommendation is discussed below. The Safety Board would appreciate a response from you within 90 days addressing the actions you have taken or intend to take to implement our recommendation.

On August 21, 2004, about 8:54 a.m., a natural gas explosion destroyed a residence located at 48 Woodland Lane in DuBois, Pennsylvania. Two residents were killed in this accident. The Safety Board determined that the probable cause of the leak, explosion, and fire in DuBois, Pennsylvania, on August 21, 2004, was the fracture of a defective butt-fusion joint and the failure of the National Fuel Gas Distribution Corporation to have an adequate program to inspect butt-fusion joints and replace those joints not meeting its inspection criteria.

USPoly's March 5, 2000, pipe joining procedure addresses the methods for joining coiled pipe using butt fusion and recommends that drag force² be determined on a case-by-case basis. The procedure requires that the completed joint be inspected and prescribes that any joint not

¹ For additional information, see National Transportation Safety Board, *Natural Gas Pipeline Leak, Explosion, and Fire, DuBois, Pennsylvania, August 21, 2004*, Pipeline Accident Brief NTSB/PAB-06/01 (Washington, DC: NTSB, 2006).

² The fusion of a long or heavy segment of pipe is different from the fusion of two small segments of plastic pipe. *Drag force* is the force required to move the pipe to be joined. If this drag force is not added before applying the joining force, the proper joining force may not be applied.

meeting visual inspection criteria be remade. USPoly's key visual inspection criteria for its medium-density³ pipe product are listed below:

- Complete and uniform beads
- Bead rolled back to pipe
- Alignment

This USPoly procedure has one significant omission in that the importance of avoiding mitering is not addressed. As you know, mitering can concentrate stresses. Installers of plastic piping depend on manufacturers for technical guidance for the use of their products. Therefore, it is essential that USPoly's procedure be as complete as possible.

The National Transportation Safety Board therefore makes the following safety recommendation to USPoly Company:

Revise your butt-fusion procedures to include a requirement for the avoidance of mitering in plastic gas pipe joints. (P-06-4)

The Safety Board also issued safety recommendations to the Pennsylvania Public Utility Commission, National Fuel Gas Distribution Corporation, and the Plastics Pipe Institute. In your response to the recommendation in this letter, please refer to Safety Recommendation P-06-4. If you need additional information, you may call (202) 314-6177.

Acting Chairman ROSENKER and Members ENGLEMAN CONNERS, HERSMAN, and HIGGINS concurred in this recommendation.

[Original Signed]

By: Mark V. Rosenker
Acting Chairman

³ *Medium density* is characterized in ASTM D-2513. ASTM is now known as ASTM International, one of the largest voluntary standards development organizations in the world. ASTM was originally an abbreviation for American Society for Testing and Materials.