National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: June 8, 2006

In reply refer to: P-06-2 and -3

Mr. Philip C. Ackerman
Chairman of the Board, President, and Chief Executive Officer
National Fuel Gas Distribution Corporation
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Williamsville, New York 14221

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 two safety recommendations in this letter. The Safety Board is vitally interested in these recommendations because they are designed to prevent accidents and save lives.

These recommendations address National Fuel Gas Distribution Corporation's (National Fuel's) butt-fusion procedures, and initial qualification and requalification of fusion personnel. These recommendations are derived from the Safety Board's investigation of the August 21, 2004, leak, explosion, and fire in DuBois, Pennsylvania, and are 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, two of which are addressed to National Fuel. Information supporting these recommendations 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 recommendations.

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 National Fuel to have an adequate program to inspect butt-fusion joints and replace those joints not meeting its inspection criteria.

[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).

The May 2005 National Fuel fusion procedure addresses drag force.[2] However, instead of determining the drag force on a case-by-case basis in the field, the National Fuel procedure adds a predetermined fixed drag force for some fusion machines. Drag force is dependent on the friction forces of the ground over which the pipe has to be moved in order to join the sections. Therefore, it is a variable that should be determined on a case-by-case basis and accounted for before the joining force is applied.

National Fuel employees who produce plastic fusions and fitting installations are required to take an initial qualification course and are then requalified annually. This process requires the trainee to make test joints that may or may not be made from coiled pipe. However, butt fusion of coiled pipe is considered more difficult than fusion of straight pipe because the residual curvature makes it difficult to obtain an optimal alignment and reduce mitering. Proper procedures, equipment, and extra care are necessary if high-quality joints are to be consistently produced. It is important to conduct fusion qualification and requalification using coiled pipe if coiled pipe will be butt fused in the field.

The National Transportation Safety Board therefore makes the following safety recommendations to National Fuel Gas Distribution Corporation:

> Revise your butt-fusion procedures for plastic pipe to include a requirement for determining drag force in the field for each butt-fusion joint. (P-06-2)
>
> Revise your initial qualification and requalification procedures for plastic gas pipe to ensure fusers produce test joints made from coiled pipe with characteristics similar to those experienced in the field. (P-06-3)

The Safety Board also issued safety recommendations to the Pennsylvania Public Utility Commission, USPoly Company, and the Plastics Pipe Institute. In your response to the recommendations in this letter, please refer to Safety Recommendations P-06-2 and -3. If you need additional information, you may call (202) 314-6177.

Acting Chairman ROSENKER and Members ENGLEMAN CONNERS, HERSMAN, and HIGGINS concurred in these recommendations.

[Original Signed]

By: Mark V. Rosenker
Acting Chairman

[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.