

MC-90813

MAR 17 1999 Not 6984

The Honorable Jim Hall
Chairman
National Transportation Safety Board
490 L'Enfant Plaza East, SW
Washington, DC 20594

Dear Chairman Hall:

This is in response to National Transportation Safety Board (NTSB) pipeline Safety Recommendations P-98-1, P-98-2, P-98-3, P-98-4, and P-98-5. These recommendations address brittle-like cracking of plastic piping.

P-98-1 **(n)otify pipeline system operators who have installed polyethylene gas piping extruded by Century Utility Products, Inc., from Union Carbide Corporation DHDA 2077 Tan resin of the piping's poor brittle-crack resistance. Require these operators to develop a plan to closely monitor the performance of this piping and to identify and replace, in a timely manner, any of the piping that indicates poor performance based on such evaluation factors as installation, operating, and environmental conditions; piping failure characteristics; and leak history.**

Since the beginning of 1997, RSPA has been actively seeking information on gas distribution systems using polyethylene pipe manufactured by Century Utility Products. Last year, RSPA's Office of Pipeline Safety (OPS) regional offices informed the state pipeline safety program offices of the Century Pipe issue. Operators who may have used Century Pipe were identified only in the Central Region, where the affected gas operators have plans to remove all suspect polyethylene pipe.

In response to this recommendation, RSPA issued an advisory bulletin (Enclosure 1) in March 1999 to remind gas distribution pipeline operators and the state pipeline safety program offices of the safety issues posed by Century Pipe installations.

RSPA requests that Safety Recommendation P-98-1 be classified as "CLOSED - Acceptable Action."

P-98-2

(d)etermine the extent of the susceptibility to premature brittle-like cracking of older plastic piping (beyond that piping marketed by Century Utility Products, Inc.) that remains in use for gas service nationwide. Inform gas system operators of the findings and require them to closely monitor the performance of the older plastic piping and to identify and replace, in a timely manner, any of the piping that indicates poor performance based on such evaluation factors as installation, operating, and environmental conditions; piping failure characteristics; and leak history.

RSPA recognizes NTSB's concern regarding the susceptibility to brittle-like cracking failures of the plastic pipe systems installed prior to 1980. Technical Committee F17 of the American Society for Testing and Materials (ASTM) is currently establishing new acceptance standards in standards ASTM D2513 and D2837 to ensure that plastic pipe used in gas service has superior long-term serviceability. The membership of this committee is drawn from a variety of plastic pipe interests, including gas transmission and distribution pipeline operators, state and federal regulatory personnel, plastic pipe manufacturers and vendors, and engineering consultants. Based on research sponsored by the Gas Research Institute at the University of Pennsylvania, the consensus of the ASTM F17 committee members is that the current acceptance criteria in ASTM D2513 will provide a life expectancy of at least 50 years, unless the plastic pipe is subjected to excessive loading that causes stress intensification.

Although strength loss due to aging alone has not been widely reported, RSPA technical staff is actively participating in the ASTM technical committee to develop methods to determine the susceptibility to brittle-like failures in the plastic pipe manufactured and installed prior to 1980. RSPA will evaluate the need for regulations addressing older plastic piping systems after a review of the committee's findings.

RSPA is evaluating various approaches to develop an understanding of the brittle-like cracking phenomenon and the susceptibility of older plastic pipe to brittle-like cracking failures, including random testing of field sample pipe. In addition, RSPA has published an advisory bulletin (Enclosure 2) addressing the potential for premature brittle-like failures of older plastic pipe.

RSPA believes the advisory bulletin, coupled with the efforts of the ASTM technical committees, will fully address this recommendation. RSPA requests that Safety Recommendation P-98-2 be classified as "OPEN - Acceptable Action."

P-98-3

(i)mmediately notify those States and territories with gas pipeline safety programs of the susceptibility to premature brittle-like cracking of much of the plastic piping manufactured from the 1960s through the early 1980s and of the actions that the Research and Special Programs Administration will require of gas system operators to monitor and replace piping that indicates unacceptable performance.

We agree with the findings of NTSB Special Investigation Report (NTSB/SIR-98/01) that certain plastic pipe used in natural gas distribution service may be susceptible to brittle-like cracking. The standards used to rate the long-term strength of plastic pipe may have overrated the strength and resistance to brittle-like cracking of much of the plastic pipe manufactured and used for gas service from the 1960s through the early 1980s.

RSPA addressed this recommendation by issuing an advisory bulletin in March 1999 on the potential for brittle-like cracking of older plastic piping to the gas distribution pipeline industry and the state pipeline safety program offices (Enclosure 2). The advisory bulletin recommended that all owners and operators of natural gas distribution systems identify all pre-1982 plastic pipe installations, analyze leak histories, and evaluate any conditions that may impose high stresses on the pipe. The operators should take appropriate remedial action, including replacement, to mitigate any risks to public safety.

RSPA requests that Safety Recommendation P-98-3 be classified as "CLOSED - Acceptable Action."

P-98-4 **[i]n cooperation with the manufacturers of products used in the transportation of gases or liquids regulated by the Office of Pipeline Safety, develop a mechanism by which the Office of Pipeline Safety will receive copies of all safety-related notices, bulletins, and other communications regarding any defect, unintended deviation from design specification, or failure to meet expected performance of any piping or piping product that is now in use or that may be expected to be in use for the transport of hazardous materials.**

In response to this recommendation, RSPA has arranged for the Plastics Pipe Institute (PPI) to collect safety-related information from its member manufacturers and importers and to provide RSPA with information on any materials, design, or performance issues. In addition, RSPA consults with numerous pipeline industry trade associations and national consensus standards committees to obtain useful information relevant to pipe design, installation, and defects that impact pipeline system safety. These include the American Gas Association's Plastic Materials Committee (PMC), the Gas Piping Technology Committee (GPTC), the American Society for Testing and Materials' ASTM F.17 plastic pipe standards committee, the American Petroleum Institute's API 5L steel line pipe committee, and others. The members of these committees include both pipeline operators and manufacturers of gas and hazardous liquid pipe and pipe fittings.

RSPA believes this issue has been fully addressed. RSPA requests that Safety Recommendation P-98-4 be classified as "CLOSED - Acceptable Action."

P-98-5 [r]evise the *Guidance Manual for Operators of Small Natural Gas Systems* to include more complete guidance for the proper installation of plastic service pipe connections to steel mains. The guidance should address pipe bending limits and should emphasize that a protective sleeve, in order to be effective, must be of the proper length and inner diameter for the particular connection and must be positioned properly.

The *Guidance Manual for Operators of Small Gas Systems (Manual)* was last revised in August 1997. RSPA will update the Manual to include additional guidance on plastic pipe installation as recommended by NTSB. This revision will be available on OPS' Internet page by the first quarter of 1999. The guidance will be included in the next printing of the Manual in 1999.

RSPA requests that Safety Recommendation P-98-5 be classified as "OPEN - Acceptable Action" until the revision of the Manual is completed, at which time we request that it be reclassified as "CLOSED - Acceptable Action."

If we can be of further assistance, please contact me or Ms. Patricia Klinger, Acting Director, Office of Policy and Program Support at (202) 366-4831.

Sincerely,



Kelley S. Coyner

Enclosures (2)

cc: Robert Chipkevich, NTSB