



# AMERICAN PUBLIC GAS ASSOCIATION

April 11, 2011

Ms. Cynthia Quarterman  
Administrator  
U.S. Department of Transportation  
Pipeline and Hazardous Materials Safety Administration  
1200 New Jersey Ave., SE  
Washington, DC 20590

Dear Ms. Quarterman:

Re: APGA response to the PHMSA Request for Information Letter from Quarterman, March 18, 2011

In your March 18, 2011 letter you asked APGA to “identify and share with PHMSA on the integrity of APGA’s members’ infrastructure based on any comprehensive review or data analysis as well as possible solutions to the challenges facing the rehabilitation, repair and replacement of the following: (1) pipelines made of bare steel, cast iron pipe, copper pipe, and polyethylene or plastic pipe; (2) pipelines with unknown or uncertain material specifications or longitudinal weld seams; and (3) pipelines with questionable or unconfirmed integrity.”

APGA is the national, non-profit association of publicly-owned natural gas distribution systems. APGA was formed in 1961 as a non-profit, non-partisan organization, and currently has approximately 700 members in 36 states. Overall, there are nearly 1,000 municipally-owned systems in the U.S. serving more than five million customers. Publicly-owned gas systems are not-for-profit retail distribution entities that are owned by, and accountable to, the citizens they serve. They include municipal gas distribution systems, public utility districts, county districts, and other public agencies that have natural gas distribution facilities.

APGA does not have a comprehensive review of pipelines operated by our members. We do have data analysis of the distribution piping owned by our members and the replacement rate from 2000 to 2010. Data is available for 522 APGA members representing over 4 million services, or about 80% of public gas customers. The following table shows the miles of gas mains and # of service lines on January 1, 2000 and January 1, 2010 by material of construction:

Material of Construction	Miles of Main 1/1/2000 <sup>1</sup>	Miles of Main 1/1/2010 <sup>2</sup>	Change	# of Services 1/1/2000 <sup>1</sup>	# of Services 1/1/2010 <sup>2</sup>	Change
Bare steel	1,530	1,018	-33%	366,567	212,669	-42%
Coated steel	39,800	41,219	+4%	1,186,877	1,070,915	-10%
Plastic	35,178	51,778	+48%	1,993,564	2,753,159	+38%
Cast/Wrought Iron	4,786	3,415	-29%	922 <sup>3</sup>	1,788 <sup>3</sup>	Unknown
Ductile Iron	355	302	-15%	17	12	-29%
Copper	0	0.2 <sup>4</sup>	Unknown	27,760	22,590	-19%
Other	132	183	+28%	48,302	49,521	+3%
<b>Total</b>	<b>81,781</b>	<b>96,654</b>	<b>+18%</b>	<b>3,624,009</b>	<b>4,110,663</b>	<b>+13%</b>

Some of the significant findings are:

- Bare steel accounts for approximately 1 % and cast and wrought iron accounts for approximately 3.5% of mains,
- Over the past 10 years, APGA members have removed 33% of bare steel and 29% of cast iron from service.

Polyethylene pipe mileage has increased by 48%. Polyethylene (PE) should not have been listed as a material requiring repair, replacement or rehabilitation – PE pipe is the material of choice for most distribution installations because it does not corrode. When operators replace cast iron and bare steel, it is usually replaced with PE plastic pipe. APGA is aware that plastic pipe extruded by Century Utility Products Inc. between 1970 and 1973 (Century pipe) may fail in service due to its poor resistance to brittle-like cracking. In addition certain low-ductile inner wall "Aldyl A" piping manufactured by DuPont Company before 1973 and Polyethylene gas pipe designated PE 3306 have also been found to be susceptible to cracking. APGA has worked with PHMSA to alert our members about potential problems with these materials, but PHMSA should not suggest that ALL PE pipe needs replacement. APGA does not have information how much PE pipe falls into these categories but believe it is a small fraction of all PE pipe.

<sup>1</sup> Source: PHMSA Distribution Annual Reports (Form 7100.1-1) for 12/31/1999

<sup>2</sup> Source: PHMSA Distribution Annual Reports (Form 7100.1-1) for 12/31/2009

<sup>3</sup> Four systems reported an increase in cast iron services from 1999 to 2009. APGA contacted each utility and learned that none had installed cast iron and all had removed cast iron services between 1999 and 2009.

- One system reported 245 cast iron services in 1999 and 624 in 2009. This was a result of a review of records during conversion to a GIS system. They stated that they are removing 10-12 cast iron service per year.
- Another system reported 0 cast iron services in 1999 and 12 in 2009. This was also the result of a record review during conversion to a computerized system. They currently have 2 cast iron services remaining.
- A third system reported 0 in 1999 and 539 in 2009. The 2009 number was a result of a clerical error in completing the annual report form – they have no cast iron services.
- The fourth system reported 0 cast iron services in 1999 and 600 in 2009. APGA was unable to contact this system.

<sup>4</sup> One system reported 0 miles of copper mains in 1999 and 0.2 miles in 2009 as a result of records review during conversion to GIS. They have not added any copper mains.

In addition, 52 APGA members also operate 2,230 miles of pipeline classified as transmission under PHMSA's definition. 100% of these transmission pipelines are coated steel or plastic and half of the mileage is pipe 10 inches or less in diameter; 10% is 4 inches or smaller. These "transmission lines" operated by APGA members are more like distribution lines than what are typically thought of as transmission lines.

APGA members that have cast iron piping have had programs in place since at least the early 1990's to replace cast iron pipe. Many began much earlier. The priority for these replacements takes into account factors such as age, pipe diameter, maintenance history, construction activity that could have a detrimental effect due to vibration, soil settlement or added surface loading, depth of cover, traffic loading, freeze-thaw cycles, paving conditions and other environmental factors that may be harmful. Age alone is not a significant factor affecting the fitness for service of cast iron because cast iron is very corrosion resistant – much more corrosion resistant than steel. The major concern with cast iron, particularly smaller diameter cast iron pipe, is that it is prone to cracking when a bending force is placed on it due to soil movement or nearby excavation. Operators have programs in place to identify and replace "at-risk" cast iron pipe.

Similarly, the fact that steel pipe is uncoated, e.g. "bare," does not automatically mean it poses an unreasonable risk to the public. The concern about uncoated pipeline is that under certain soil conditions it may corrode, but not all bare steel is corroding. Operators perform regular inspections to identify and repair or replace pipe that is corroding. Again, age is just one of many factors that affect the fitness for service of bare steel pipe. Corrosion inspection and leak surveys as well as physical inspection of pipeline condition whenever the pipeline is exposed are better indicators of fitness for service of bare steel piping than age. And, as shown in the table above, APGA members have relatively little bare steel pipe and have eliminated about one-third of bare steel pipe since January 1, 2000.

All APGA members, as well as all other distribution system operators, are currently developing written integrity management plans that will formalize existing programs to identify threats to pipeline safety and specify additional and accelerated actions on pipe segments with the highest relative risk. PHMSA and APGA's Security and Integrity Foundation (SIF) worked together to develop a program called SHRIMP (Simple, Handy Risk-based Integrity Management Plan) to assist utilities to assess threats, rank risks and implement additional and accelerated action to reduce risks. To date, over 1,000 systems have registered to use SHRIMP, representing approximately 20 million services, or about one third of the distribution industry. The SHRIMP risk ranking model uses all an operator's inspection records, repair records and other factors in a sophisticated risk ranking model to help users prioritize accelerated actions. It offers suggestions for additional actions based on the unique circumstances of the utility.

APGA does not have information on members' pipelines with unknown or uncertain material specifications or longitudinal weld seams, however seam weld type and material specifications are not as critical on distribution lines as transmission lines because it operates at much lower pressures. In fact, PHMSA regulations do not require strength tests to establish the maximum allowable operating pressure of distribution lines operating under 100 pounds pressure. Plastic pipe is tested to over 1,000 pounds pressure by the manufacturer yet is limited to less than 100 pounds pressure in most distribution systems. Similarly, a 2 inch diameter, schedule 40 steel pipe, such could be bought off the shelf at a local hardware store, 100 pounds pressure is about 2% of the pressure this pipe could actually withstand. Therefore the material specification and weld type are not critical factors in determining the safe maximum pressure of distribution pipelines. Extraordinary measures to verify the specification of distribution pipe would provide very little benefit.

APGA supports efforts to improve pipeline safety, but feel that any program that presumes that an operator's cast iron, bare steel or any other type of pipe is no longer fit for service or that requires removal of pipe of certain age and/or material may divert resources away from the highest relative risks as identified in the operator's Distribution Integrity Management Program. PHMSA's distribution incident data shows that excavation damage is the number one cause of distribution incidents and any program to improve distribution safety must include actions to address excavation damage. APGA is pleased that DOT has included in these discussions actions to encourage states to adopt and enforce effective underground damage prevention programs.

APGA appreciates the opportunity to work with DOT to ensure the safety of natural gas pipelines.

Sincerely,



Bert Kalisch  
President and CEO