

**Position Paper  
Corrosion Prevention  
November 2016**

**Position**

As corrosion remains a leading cause of gas pipeline failures as well as the cause for the overall declining state of our country's pipeline infrastructure, pipeline operators are increasingly using superior piping made of polyethylene (PE), polyamide (PA), and spoolable thermoplastic (TP) composite piping in the gas distribution, transmission, and oil and gas gathering sectors. Corrosion-related monitoring, replacement, and maintenance activities cost billions of dollars annually, therefore, many operators are utilizing these materials due to their benefits related to public safety, environmental protection, resource conservation and overall cost effectiveness. As Congress, regulatory agencies, and public advocacy organizations continue to scrutinize pipeline infrastructure and related impacts stemming from corrosion, policy should not interfere with selection of PE, PA and spoolable composites in all sectors of pipeline transportation. In fact, public policy should encourage it.

**Background**

Corrosion has been defined as the breaking down or destruction of a material, especially a metal, through chemical reactions. Due to the large amounts of metallic piping in gas and oil pipeline systems, Federal regulation requires extensive protection from corrosion to pipeline systems. Protective coatings, cathodic protection, and other measures are used in concert with regular inspection and testing; however, as piping materials and technologies advance, operators are finding that plastic piping systems do not corrode. In fact, PE, PA and spoolable TP composite pipes are widely known as the most leak-free, corrosion-free piping available.

Gas utilities continue to implement aggressive distribution pipeline replacement and upgrade programs, and PE continues to be the material of choice, representing more than 95 percent of new gas distribution infrastructure used across the country. Pipeline operators are beginning to take a closer look at PE and PA piping in transmission applications because of the proven durability and corrosion-free characteristics of these pipe materials.

The hydraulic properties of smooth, thermoplastic pipe are better than that of steel pipe, therefore, PE and PA lining systems can be used to protect metallic pipelines from internal corrosion, abrasion and erosion. Lining systems provide excellent corrosion resistance for numerous gas and oil pipeline applications while eliminating the need for chemical injection of corrosion inhibitors.

Operators of oil and gas gathering systems at the wellhead should be afforded the opportunity for full use of TP composite piping, which consists of layers of PE and metallic and non-metallic (glass and carbon fiber) reinforcements which can operate at higher pressures and offer the same corrosion-free benefits. However, because TP composites are not fully recognized in the pipeline safety regulations, operators of gathering systems may not be able to take advantage of the benefits afforded to those in the distribution sector.

Pipeline safety and related climate change issues remain a priority of many in Congress, regulatory agencies and the general public. Corrosion control is a part of that, but pipeline operators should be allowed to take full advantage of pipelines that don't corrode in the first place. PE, PA and spoolable TP composite pipes provide a proven, corrosion-free solution, and policymakers at all government levels should do whatever possible to allow pipeline operators to build, replace and improve their systems with these superior materials. This can be accomplished by allowing their use through Special Permit, and by incorporating consensus standards for these products and developing appropriate design and use practices in the Federal Code.