Meeting with Evonik and UBE to discuss Petition OPS-09-03

Date of Meeting: Friday September 14, 2012
Time of Meeting: 11:30 am – 12:30 pm
Location: USDOT HQ Building (1200 New Jersey Avenue, SE Washington, DC)
Background: On April 27, 2007, Evonik Degussa Corp (Evonik) and UBE America (UBE) submitted a joint petition to increase the design factor for calculating the maximum design pressure for Polyamide 12 (PA12) piping systems and incorporated by reference ASTM International Standards pertaining to PA12 pipe and components. PHMSA established a docket for the petition at www.regulations.gov under Docket # PHMSA-2010-0009. On February 12, 2012, Evonik and UBE submitted a petition for PHMSA to reconsider their request. This letter was followed a by subsequent request on July 25, 2012 to meet with PHMSA and discuss the petition in person. The meeting took place on Friday, September 14, 2012.

Meeting Participants:

Name	Affiliation
Jon Decker	McDermott Will & Emery (representing Evonik)
Jennifer Trock	Pillsbury Winthrop (representing UBE)
Peter Rieck	Evonik
Max Kieba	USDOT/PHMSA
Richard Wolf	UBE
Cameron Satterthwaite	USDOT/PHMSA
Kay McIver	USDOT/PHMSA
Takumi Wakamoto	UBE
Brian Lemanski	UBE
Hitesh Patadia	Evonik

Attachments /Appendices

Appendix A –July 25, 2012 letter from Evonik and UBE requesting a meeting

Notes from Meeting

- Introduction on Purpose of Meeting – To discuss status of Petition
- Meeting Participants Introduce Themselves
  - PHMSA expresses that the petition request is still active and that a potential rule has been established that should address the petition. PHMSA further noted that the rulemaking process can be a lengthy process.
  - PHMSA details that a letter will be sent to them in response to the February 14, 2012 letter. This letter will identify the Regulatory Identification Number for the rulemaking that will be able to be tracked at www.reginfo.gov.
  - Petitioners ask if the petition needs further technical support and documentation. They also note that PA12 has been used successfully under special permits.
  - PHMSA noted that operators can still submit special permit requests to use PA12 on a case by case basis. PHMSA further noted that there have not been that many special permit requests for PA 12.
  - PHMSA expresses that the delay is not based on the technical merits of the petition but due to other activities in the office. One significant activity is the handling of Section 24 of the recent pipeline legislation that was signed on January 3, 2012. Section 24 requires that all materials incorporated by reference must be made available to the public for free on internet. This would not allow PHMSA to incorporate the necessary ASTM standards for PA12 until ASTM makes it available for free on the web. PHMSA is currently working to address this situation.
  - Petitioners ask if they should gather letters of support for broader incorporation of PA12.
  - PHMSA suggests that letter from operators (as the users of the pipe) would be beneficial to show a demand for the product in expanded use.
  - Petitioners ask if the docket is still active. PHMSA affirms that the docket is still active.
  - Petitioners also note that the product has even been subjected to earthquake testing.

Appendix A
-July 25, 2012 letter from Evonik and UBE requesting a meeting

July 25, 2012

Mr. John Gale, Director of Standards and Rulemaking
Office of Pipeline Safety
Pipeline and Hazardous Material Safety Administration
U.S. Department of Transportation
1200 New Jersey Avenue, SE
East Building, 2nd Floor
Washington, DC 20590

Dear Mr. Gale,

Evonik Degussa Corp ("Evonik") and UBE Industries, Ltd. ("UBE") are jointly writing to you to request a meeting regarding our effort to speed up the rulemaking changes to 49 C.F.R. Part 192 to permit the use of Polyamide 12 ("PA12" or "Nylon 12") for high pressure natural gas distribution systems. We have attached a White Paper which summarizes our petition.

PHMSA's approval of PA12 will ensure that the gas transportation industry utilizes specially designed engineered plastics meeting PHMSA's performance based standards, and will facilitate the use of next-generation materials in the nation's pipeline system. The use of PA12 piping systems has wide industry support, and is supported by empirical and technical scientific data and analysis demonstrating its safety and reliability.

If granted, the proposed changes would ensure that PHMSA's regulations are kept current with continuing advancements in technology and will promote the overall safety and integrity of the US natural gas infrastructure.

Evonik and UBE have already submitted to PHMSA all information necessary to evaluate our request and would like to schedule a joint meeting with you at your office by August 15, 2012 to discuss what next steps our companies should take to move the approval process along.

Please contact me as soon as possible to let me know what day and time work best for you. Thank you in advance for your cooperation.

Sincerely,

Shin Kawasuso
President and CEO
UBE America Inc.

Peter E. Rieck
Market Development Manager
Evonik Degussa Corp.

USE OF POLYAMIDE 12 IN NATURAL GAS APPLICATIONS

Executive Summary:

Evonik Degussa Corp ("Evonik") and UBE Industries, Ltd. ("UBE") (collectively the "Petitioners") urge PHSMA to grant its petition for rulemaking, first submitted a petition for rulemaking 2007[1] to amend 49 CFR Part 192 ("Part 192") to permit the use of Polyamide 12 ("PA12" or "Nylon 12") for high pressure natural gas distribution systems. In the nearly five years since the initial petition, the Petitioners have met with PHSMA, provided information in response to PHSMA's requests, and have submitted amended petitions containing additional supporting material. The petition is ripe for action by PHSMA, and should be granted expeditiously.

Not only does PA12 have demonstrable safe operating experience up to 250 psig in actual distribution systems, but it offers (i) significant cost savings over traditional steel pipe currently permitted under Part 192; (ii) environmental benefits; and (iii) job creation at gas and pipe manufacturing facilities and public utilities in the United States. PHMSA's approval of PA12 will ensure that the gas transportation industry utilizes specially designed engineered plastics meeting PHSMA's performance based standards, and will facilitate use of next-generation materials in the nation's pipeline system. The use of PA12 piping systems has wide industry support, and is supported by empirical and technical scientific data and analysis demonstrating its safety and reliability.

I. Background

Over the past five years, the Petitioners have been seeking authorization to incorporate PA12 pipe for high pressure natural gas distributions systems. Well before the initial petition was submitted in April 2007, trial installations were performed under special permit granted by various state regulatory bodies and PHMSA to utilize PA12 in a number of different natural gas projects around the country. These projects have been successfully completed in Montana and Mississippi and operating without incident for over three years. These respective installations provide additional support and validation of the performance of PA12 piping systems.

II. The Benefits Of Using PA12 Pipe For Natural Gas Distribution

A. PA12 Meets Applicable Safety Requirements:

PA12 has been used without incident in lower pressure applications such as fuel lines in cars, for air brake tubing in trucks, and in oil exploration for over many years. PA12 has an approved long term hydrostatic strength rating of 3150 psi[2] and can be designed to operate at 250 psig for gas distribution lines in accordance to current PHSMA regulations. The safety of PA12 for high pressure natural gas distribution systems is further demonstrated by the following:

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[1] Docket No. PHMSA-2007-29042

[2] The VESTAMID LX9030 and UBESTA 3035 have an establish hydrostatic design basis (HDB) rating listed in the Plastics Pipe Institute (PPI) TR-4 listing as per Federal Code requirements

- Extensive testing and feasibility study of PA12 by Gas Technology Institute (GTI) and sponsored by the 15 gas companies[3] through the Operations Technology Development (OTD) concluded that "PA12 is a suitable material for high pressure gas distribution piping applications."[4]

- Two successful installations of PA12 piping systems at Energy West (Great Falls, Montana) and ATMOS Energy (Greenville, Mississippi), the 6th largest gas company in the U.S. These two public right-of-way installations have continued to perform safely for almost two years, with no issues reported at the higher operating pressures. Further, to verify the overall physical and mechanical properties of PA12 at these two installation sites, sections of pipe were removed and subjected to independent testing by the Gas Technology Institute (GTI). The results of these tests confirm that PA12 retained its original properties. In all of the test sections, the PA12 pipes did not experience any expansion at the higher operating stresses or pressures.[5]

- PA12 has demonstrated high resistance to stress cracking – a threat equally applicable to PA12 or traditional steel pipes – and testing of PA12 has yielded no corrosion failures. The long-term performance and retention of its mechanical and physical properties makes PA12 an ideal choice for gas utility companies.

B. PA12 Life-Cycle Cost Savings Provide An Important Manufacturer and Consumer Benefit:

As illustrated on the attached chart, PA12 offers significant savings over traditional steel pipe used in high pressure natural gas delivery systems. These savings are attributed to a range of factors, including lower maintenance costs associated with PA12 versus steel over a 50-year period. In addition, PA12 offers savings in a variety of other ways, including the following:

- PA12 offers significant labor and installation savings over steel, since PA12 is lightweight and allows for faster construction than steel, which requires welding, which, if done improperly, creates safety issues. Installation of PA12 can be accomplished using a smaller construction crew, saving time and money. In fact, a reduced initial investment is required for construction teams because the same equipment and processes are used when installing PA12 pipe as PE pipe.

- PA12 pipes can be manufactured in lengths of 50 feet as straight pipe to more than 250 feet in coils, depending on the diameter and wall thickness. This flexibility in length – particularly for long stretches of installation – saves money by reducing time spent fusing pipe ends together.

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[3] Alabama Gas Company (Alagasco), American Public Gas Association (APGA), ATMOS Energy, Consolidated Edison N.Y. (ConEd), National Fuel, National Grid, NiSource, Northwest Natural, New York State Electric and Gas (NYSEG), Public Service Electric and Gas (PSEG), Questar, Rochester Gas, Southern California Gas Company (SoCal), South West Gas Company (SW Gas), TECO Peoples

[4] Patadia, H., " Evaluation of Polyamide 12 (PA12) for High Pressure Gas Distribution Application, OTD 20042, December 2006

[5] Gas Technology Institute, "Testing of One-Year PA12 Pipe," October 20, 2010

- Compliance with pipeline integrity regulations is also more cost-effective. Whereas traditional steel pipe must adhere to corrosion control requirements which add to the company's expense, PA12 is corrosion-resistant.

- PA12 pipe is easier to maintain than steel pipe. Equipment used in the installation of both straight and coil pipe does not require any modification. The heat fusion process for joining two ends of PA12 is easier and faster than connecting steel pipes benefitting the bottom line.

- The ability to use PA12 to replace some portion of the U.S.'s aging steel infrastructure will yield long-term benefits to taxpayers by way of low maintenance and the long service life of PA12 pipe. Participating companies whose installations use PA12 will be able to pass along some portion of life-cycle cost savings to consumers and businesses they serve.

C. Environmental

PA12 provides demonstrable environmental benefits when compared to steel, including the following:

- Because PA12 is suitable for sand bed free installations, the installation of PA12 pipe has a correspondingly lower carbon footprint than steel since sand does not need to be transported there.

- PA12 is lightweight and easy to transport.

- PA12 is highly resistant to chemical attack.

D. Additional Employment Potential

PHMSA's approval of PA12 would likely translate into job growth at a number of large pipe manufacturing facilities nationwide. In addition, semi-skilled installation positions at utility companies will open up to a wider range of candidates as steel welding credentials will not be required.

III. Legal Status of Rulemaking

The submissions necessary to grant the rulemaking, including robust technical studies and support, are complete and awaiting government action. PA12 has been subject to extensive safety testing and conforms to Part 192 performance requirements. Importantly, the safety of PA12 has been previously evaluated by PHSMA for use as gas distribution piping in North America under special permits approved by the State of Mississippi and State of Montana. All of these installations are currently operating without incident.

PA12 either meets or exceeds the minimum standards for gas distribution plastic pipeline systems in accordance with Part 192. The amendments being requested as part of the petition are consistent with PHMSA's efforts to promote the overall safety of the natural gas pipelines.

The evidence includes:

- The proposed design factor of 0.40 is consistent with other approved engineered plastic piping materials operating at higher pressures (49 CFR §192.121)

- The proposed limit in the allowable maximum operating pressure of 250 psig is consistent with actual safe in-service operating experience for various field installations. Moreover, the petition stipulates that the minimum wall thickness shall not be less than 0.090 in. which is greater than the current 0.063 in. limitation (49 CFR §192.123).

- The petition seeks to incorporate by reference ANSI certified specifications, ASTM F2785, which prescribe stringent performance based requirements governing the chemical, mechanical, and physical properties of PA12 piping materials and systems (49 CFR §192.121). These requirements are more stringent than current requirements and ensure safe performance under various types of known threats and failure mechanisms. They also include stringent traceability requirements to enable gas utility companies to capture forward and backward traceability information.

- The PA12 piping systems conform to all other Part 192 requirements related to joining, pressure testing, appurtenances, etc. (49 CFR §§ 192.281, 192.283, 192.285, 192.513)

The PA12 piping system has been extensively studied and actual field experience has validated its performance to operate at the proposed design pressures being requested. If granted, the proposed changes would ensure the regulations are kept current with continuing advancements in technology and will promote the overall safety and integrity of the US natural gas infrastructure.

IV. Conclusion

PA12 has a track record of safety, and provides significant life-cycle cost advantages, and therefore, PHMSA should promptly move ahead with regulatory approval of PA12. The Petitioners have submitted all information necessary to evaluate their request, and PHSMA should grant the petition for rulemaking to amend Part 192 to include the use of PA12.