

**BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Request of NGO :  
Transmission, Inc. for Waiver Pursuant to : Case No. 17-1751-GA-WVR  
49 C.F.R. 192 and O.A.C 4901:1-16-02(E) :  
for Installation of Reinforced thermoplastic :  
Pipe to Replace Approximately 28,500 feet :  
of Steel Transmission Pipeline. :  
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**STAFF REPORT SUBMITTED ON BEHALF OF THE STAFF OF THE PUBLIC  
UTILITIES COMMISSION OF OHIO**

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**I. Background**

On August 8, 2017, NGO Transmission, Inc. (“NGO”) proposed to replace approximately 28,500 feet of a six-inch steel transmission line installed in 1955 with reinforced thermoplastic piping (RTP). The RTP has an outside diameter of four inches and would be installed by a combination of the insertion of the pipe inside the existing six-inch steel pipe, boring, or plowing / trenching.

NGO is required to comply with the gas pipeline safety standards contained in Ohio Adm.Code 4901:1-16, *et. seq.*, which adopt the U.S. Department of Transportation’s Pipeline Safety Regulations, including those required by 49 C.F.R. 192. The Pipeline Safety Regulations do not address the use of RTP. In order for NGO to proceed with its planned replacement, NGO requested a waiver of the following requirements of the Pipeline Safety Regulations:

- 49 C.F.R. 192.53(c), which states: “Materials for pipe and components must be: ... (c) Qualified in accordance with the applicable requirements of this subpart.”<sup>1</sup>

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<sup>1</sup> The requirements for piping used in natural gas systems listed in 49 C.F.R. 192 Subpart B – Materials do not address the use of RTP.

- 49 C.F.R. 192.121, which provides two formulas by which the design pressure for plastic pipe can be determined.<sup>2</sup>
- 49 C.F.R. 192.123, which establishes design limitations for plastic piping, including limitations on the design pressure for plastic piping above and beyond the design formulas listed in 49 C.F.R. 192.121.
- 49 C.F.R. 192.283(b), which establishes requirements for qualifying joining procedures for plastic piping.<sup>3</sup>
- 49 C.F.R. 192.619(a), which establishes requirements for determining a maximum allowable operating pressure (MAOP) for steel or plastic pipelines. One of the limiting factors for determining MAOP is the pipe may not be operated at more than a certain percentage of the design pressure calculated in 49 C.F.R. 192.121 and 192.123.

## **II. Statutory Authority**

Following certification in accordance with 49 U.S.C. 60105, the Public Utilities Commission of Ohio (PUCO) acts as an interstate agent with regards to enforcement of the Pipeline Safety Regulations contained at 49 C.F.R. 192. In accordance with 49 U.S.C. 60118(d), the PUCO is permitted to waive certain safety regulations contained in 49 C.F.R. 192 to the same extent and in the same manner listed in 49 U.S.C. 60118(c).<sup>4</sup>

## **III. Staff Investigation**

The RTP NGO proposes to use is manufactured by Specialty RTP, LLC and is constructed by winding a high strength fiber mesh over a nylon core pipe, with an outer polypropylene jacket intended to resist abrasion and ultraviolet light exposure. Staff has reviewed the information on this piping provided by NGO and is satisfied that the piping is able to maintain structural integrity under temperature and other environmental

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<sup>2</sup> NGO states RTP is constructed differently from conventional plastic piping and these formulas are not applicable.

<sup>3</sup> NGO intends to join segments of RTP through the use of mechanical fittings, which is not a method used for conventional plastic piping.

<sup>4</sup> Specifically, the Secretary of the Department of Transportation may waive compliance following notice and an opportunity for hearing. Additionally, 49 U.S.C. §60118(d) requires the PUCO to provide the Secretary of the Department of Transportation with written notice of the waiver at least 60 days prior its effective date.

conditions that may be anticipated, and is chemically compatible with any gas and other material that may be transported in the pipeline with which is in contact.

The design pressure rating formula for this piping was developed using the recommended practices of the American Petroleum Institute contained in API RP 15S, "Qualification of Spoolable Reinforced Plastic Line Pipe." Staff believes API RP 15S is a credible industry standard and the design formula proposed for use by NGO in its request for a waiver is appropriate.

The pipeline would be constructed using union couplings to join 2,800 foot long individual sections of RTP pipe. End terminations would be double raised-face, ANSI 600 flanges when connected to flanges and weld-style termination couplings designed to connect to the existing 6" piping. NGO provided documentation that the flanges and couplings to be used meet the minimum specifications of 49 C.F.R. 192. NGO also provided a copy of the joining procedure from the pipe manufacturer that is intended to meet the general requirements of 49 C.F.R. 192, that each joint would sustain the longitudinal pullout or thrust forces caused by contraction or expansion of the piping or by anticipated external or internal loading.

#### **IV. Conclusions and Recommendations**

Staff recommends approval of the waiver as requested by NGO, with the following conditions:

- 1: NGO must provide certifications or other documentation that all construction personnel involved during all phases of installation and inspection of the Specialty RTP piping are trained on a qualified joining and installation procedure approved by the manufacturer. This documentation must be provided to Staff prior to pipeline installation.
- 2: NGO must provide documentation that when piping segments are installed by insertion of the RTP inside the existing six-inch steel line, a minimum of 50 feet of the Specialty RTP piping be pulled beyond its final destination for visual inspection. If any compromising damage occurred during the pulling process, the records must indicate the cause of damage and how it was addressed to the satisfaction of both NGO and the piping manufacturer to

ensure its future operation is not compromised. This documentation must be provided prior to placing the pipeline into operation.

- 3: NGO must follow the hydrostatic test plan provided with its waiver application with the exception that the test duration must be for a minimum of 24 hours, to allow for more time for the composite layers to settle.
- 4: Protection against corrosion must be provided for metallic couplings and flanges used in the joining of pipeline segments. Protection must include an external protective coating that meets the requirements of 49 C.F.R. 192.461, or meet the exemption for electrically isolated metal alloy fittings provided in 49 C.F.R. 192.455(f). Protection must also include a cathodic protection system that may consist of sacrificial anodes or any other system that complies with 49 C.F.R. 192, Subpart I.
- 5: NGO must follow its existing integrity management plans and procedures applicable to transmission lines, modifying as needed for the waiver, to detect and manage leaks. The plans and procedures must also include provisions that address the integrity reassessment and/or re-inspection of the pipe at appropriate intervals based on design life calculations, but not to exceed 15 years, to insure there have been no adverse effects to the pipe's integrity and its composite layers that may have occurred through operation of the pipe.
- 6: Any deviations from the submitted and approved installation plan, hydrostatic test plan, and joining procedures must be submitted to and approved by PUCO Staff prior to implementation.
- 7: This waiver is specifically for 49 C.F.R. 192.53(c), 49 C.F.R. 192.121, 49 C.F.R. 192.123, 49 C.F.R. 192.283(b), and 49 C.F.R. 192.619(a). All other applicable sections of the 49 C.F.R. 192 and 195 remain fully in effect.

## **PROOF OF SERVICE**

I hereby certify that a true copy of the foregoing **Staff Report** submitted on behalf of the Staff of the Public Utilities Commission of Ohio, was served via electronic mail upon the following Parties of Record, this 12<sup>th</sup> day of March, 2018.

/s/Thomas G. Lindgren

**Thomas G. Lindgren**

Assistant Attorney General

### **Parties of Record:**

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