

## **Accufacts Inc.**

“Clear Knowledge in the Over Information Age”

8040 161<sup>st</sup> Ave NE, #435  
Redmond, WA 98052  
Ph (425) 802-1200  
Fax (805) 980-4204  
kuprewicz@comcast.net

**March 26, 2017**

**To: Maya van Rossum  
Aaron Stemplewicz  
Delaware Riverkeeper Network  
925 Canal St., Suite 3701  
Bristol, PA 19007**

**Re: Observations Concerning the Millennium Pipeline Eastern System Upgrade Project Proposal, FERC Docket No. CP-16-486**

Accufacts Inc. (“Accufacts”) was asked to review the above Millennium Pipeline filing and proposal to FERC identified as the Eastern System Upgrade Project Proposal (“Project”). The Project description indicates the proposal will:

1. loop the existing 24-inch Neversink 920 psig Maximum Allowable Operating Pressure, or MAOP, pipeline with approximately 7.8 miles of pipeline (approximately 0.1 miles of 30-inch and approximately 7.7 miles of 36-inch pipeline identified as the “Huguenot Loop,” which will be designed for an MAOP of 1,350 psig,<sup>1</sup>
2. provide 38,300 additional horsepower at the existing 15,900 horsepower Hancock compressor station,
3. construct and operate a new 22,400 horsepower compressor station (Highland) installed between the Hancock and Minisink compressor stations,
4. modify the existing Wagoner Interconnect,
5. supply additional pipeline facilities at the Huguenot Meter and Westtown Metering stations including installation of various pig launchers and receivers, and
6. make modifications at the existing Ramapo Metering and Regulator Station.<sup>2</sup>

The stated purpose of the Project “is to permit Millennium to transport an incremental volume of 223,000 dekatherms per day of natural gas from Millennium’s Corning Compressor Station to an existing interconnect with Algonquin Gas Transmission, L.L.C (Algonquin) located in Ramapo, New York.”<sup>3</sup> The application further states that “The Project facilities have been specifically designed to provide for an additional 223,000

---

<sup>1</sup> MAOP is a term defined in federal pipeline safety regulations for gas transmission pipelines that has a specific meaning and obligation to FERC. The Millennium application/filing references the term maximum operating pressure, but this term is not defined in federal pipeline safety regulations. The bulk of the Millennium gas transmission system is designed for an MAOP of 1200 psig.

<sup>2</sup> Millennium Pipeline Company L.L.C application to FERC, “Eastern System Upgrade Resource Report 1 General Project Description,” July 2016, pp. 1-1 & 1-10.

<sup>3</sup> *Ibid.*, p. 1-2.

dekatherms per day of firm transportation, as well as to maintain adequate operating pressures at intermediate delivery points following the construction of the Project, to continue to meet customer demand on Millennium's system during the summer months, and to ensure continued deliveries to interconnecting pipelines.”<sup>4</sup>

In order to obtain Project pipeline/flow/pressure data Accufacts was required to sign a Protective Agreement with Millennium, and a CEII nondisclosure agreement with FERC that prohibits public disclosure of certain information concerning this proposal. Based on a review of the CEII protected Exhibit G submissions for this project, Accufacts cannot justify the pipeline Project, especially the 1,350 psig MAOP design nor the 36-inch diameter for the new Huguenot Loop. In Accufacts' opinion this unusual proposal suggests further expansions are in Millennium's plans and such “segmented” expansion(s) should be included with this Project's proposal.

**Confidential Attachments (CEII protected) Exhibits No. 1, 2, 3, and 4 developed by Accufacts.**

The attached four Exhibits plot pressure and flow versus milepost between Corning compressor station, or “CS,” (set as milepost zero) and the Ramapo Metering station connection to Algonquin (milepost ~ 189) for the existing and the proposed peak day expansion cases submitted to FERC for summer and winter, respectively.

The mainline pipeline length downstream of Minisink to Ramapo provided by Millennium as Exhibit Gs for the mainline transmission pipe are not modified by the proposed Project but vary by over 5 miles in length (or over 16% of the segment). Millennium needs to reconcile this error in updated filings to FERC given the importance of the Minisink CS to Ramapo mainline segment length to the validity of the Project's application. Suspecting a typographical error in the Exhibit G submissions, for purposes of the attached Confidential CEII Exhibits, I have normalized this length to the same value across all four Exhibits using the shortest mainline length given in the Exhibit Gs for the Minisink to Ramapo pipeline segment. There is another apparent error in the existing winter case pressures for the segment between the Minisink CS and the Ramapo M&E delivery point (see Exhibit 3 pressure line). The pressure slopes appear inconsistent for the flows, and pressure downstream along a pipeline does not increase with flow unless compression is added.

Based on the provided CEII information, Accufacts has the following additional detailed comments supplemented from a review of attached Exhibits:

**1) The proposed MAOP of 1,350 psig for the new pipe looping (i.e., Huguenot Loop) cannot be supported nor justified by this Project.**

With the exception of the existing Neversink 24-inch segment restricted to an MAOP of 920 psig, the Millennium Pipeline gas transmission mainline was installed and designed to operate as a 30-inch pipeline with a MAOP of 1,200 psig (see purple dashed MAOP

---

<sup>4</sup> *Ibid.*

lines on all Exhibits).<sup>5</sup> Installing the 36-inch segment at an MAOP of 1,350 overbuilds the Project for its stated purpose. Millennium has not adequately explained nor justified their request to install additional large diameter 36-inch pipeline at the MAOP of 1,350 psig. Installing much larger diameter pipe rated for much higher MAOP than the current major system's design signals further expansions are being anticipated or planned as a result of this Project. Both the large diameter 36-inch pipeline and the higher pressure 1,350 psig MAOP for the looped pipe proposal are inconsistent with the remainder of Millennium's main gas transmission system of 30-inch pipe and 1,200 psig MAOP upstream and downstream of the proposed loop. There is no way, for example, that the 1,350 psig of the proposed loop can be utilized without incorporating additional compressor stations and/or mainline pipeline changes beyond the cases filed for this Project's proposal.

**2) The 36-inch diameter pipe is larger than that needed for the Project.**

A close review of the Exhibits, especially Exhibit No. 4, will demonstrate that the 36-inch diameter pipeline is larger than needed, even if it were to be installed at a MAOP of 1,200 psig. For example, on Exhibit 4 for the same flow rate, the approximate pressure line between the Hancock CS and Highland CS is less vertical than the pressure line between Highland CS and Huguenot Regulator. The pressure line slope between Highland CS and Huguenot Regulator should be the same or even less vertical because gas flow rate in that segment is the same or less than that for the Hancock CS to Highland CS segment, while the pressures are similar. This deviation in pressure slope or verticalness, because it can significantly affect the analysis, needs to be properly investigated and reconciled. A simple comparison analysis of the Exhibits will further demonstrate that a 30-inch pipeline for the Huguenot Loop would be suitable. Millennium has not adequately justified their proposing a 36-inch diameter pipeline for the Huguenot Loop. Installing a 36-inch pipe segment that is larger than is needed on this primarily 30-inch Millennium Pipeline system, given the current and proposed MAOPs, signals further expansions are anticipated for this Project.

**3) Delivery pressures to the Algonquin Pipeline are not justified.**

Based on the information provided, the delivery pressure to the Algonquin system at Ramapo can vary considerably. The delivery pressure assumption to Algonquin significantly influences the Millennium Pipeline design and operation. The delivery pressure of 750 psig to Algonquin for the additional gas claimed by the Project needs to be independently justified. Without appropriate justification, it appears as though the current proposal is anticipating additional upgrades.

**4) The Neversink 24-inch pipeline segment appears destined for a different service.**

It should come as no surprise that the older 24-inch, lower 920 psig MAOP, approximately 7.5 mile long segment of the Neversink portion of the Millennium

---

<sup>5</sup> PHMSA CAO

Pipeline is out of character with the design of the rest of the newer Millennium transmission pipeline that is 30-inch, 1,200 psig MAOP. The 24-inch Neversink segment has become an increasing bottleneck as gas rates have increased in recent years on the Millennium system. The serious impact of much higher gas rates and actual gas velocities, can be easily demonstrated by reviewing the steep slope (more vertical nature) of the pressure plots on Exhibit 1 and 3 for the existing Neversink segment. These steep slopes, higher pressure loss per mile, suggest that the Neversink 24-inch pipeline is destined for a different service, such as to serve as a much lower gas flow delivery supply gas line to the proposed CPV power plant. Once the Neversink is looped with a 30-inch 1,200 psig MAOP pipeline, the smaller diameter weaker MAOP Neversink pipeline segment is of little value to the mainline Millennium Pipeline system except to serve as a delivery supply line to customers on that segment, essentially the proposed CPV power plant.

**5) The Project proposal signals that Millennium Pipeline is anticipating further pipeline expansions.**

The gas rates required on the pipeline segment discharging from the Hancock compressor station (well over 1,200 Dth/d on the 30-inch 1,200 psig MAOP pipeline), results in an increase of almost 30% more gas through the Minisink Compressor station for the Peak Day Winter Expansion Case. As a result, the Project requests major horsepower addition at Hancock CS and a new compressor station addition at Highland (see Exhibit 4) to meet these higher flow rates. This additional compressor horsepower, needs further supporting analysis with appropriate flow/pressure data, given the discrepancies identified in the provided exhibit Gs, and demonstrated in the attached Exhibits. The combination of requested horsepower addition along with the much larger diameter 36-inch higher 1,350 psig MAOP needs additional supporting analysis as these changes suggest additional project expansions are expected well beyond the needs stated in the Project application.

**Conclusion**

Millennium's request for a larger diameter 36-inch, 1,350 psig MAOP for the Project's new pipeline segment (Huguenot Loop) is inconsistent and unwarranted. Such an unusual MAOP increase proposal over the Millennium Pipeline system's design in combination with the Project's 36-inch diameter pipe proposal, signals to me that further expansion projects are likely or already planned in the future operation of Millennium Pipeline. Such future projects, I believe, are reasonably foreseeable based on basic engineering principles and must be included in the Project's FERC application and Exhibit Gs.

*s/ Richard Kuprewicz*

Richard B. Kuprewicz,  
President,  
Accufacts Inc.