

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

OPR/DEER/ERC II	)	
MILLENIUM PIPELINE COMPANY, L.P.	)	Docket No. CP98-150-000 and
	)	Docket No. CP98-150-002
COLUMBIA GAS TRANSMISSION CORP.	)	Docket No. CP98-151-000

Comments of the Public Service Commission  
of the State of New York on the Supplemental Draft Environmental Impact  
Statement

The Public Service Commission of the State of New York ("PSCNY") hereby submits its comments on the Supplemental Draft Environmental Impact Statement ("SDEIS") of the natural gas pipeline proposed by Millennium Pipeline Company, L.P. ("Millennium") in the above referenced dockets.

Copies of all correspondences should be sent to:

Lawrence G. Malone  
General Counsel  
Public Service Commission  
of the State of New York  
3 Empire State Plaza  
Albany, New York 12223

John P. Zekoll  
Deputy Director, Office of Gas and Water  
Public Service Commission  
of the State of New York  
3 Empire State Plaza  
Albany, New York 12223

**INTRODUCTION AND SUMMARY**

The Millennium pipeline project extends 424 miles from Lake Erie at the Canadian border to Mount Vernon, New York. The Federal Energy Regulatory Commission's ("FERC") SDEIS addresses the 9/9A Proposal, which requires roadside construction along U.S. Route 9, State Route 9A, and State Routes 9A/100. The SDEIS also recommends an alternate route, the Con Ed Offset/State Route 100 alternative. This route would move the pipeline away from the 9A route to parallel the Con Ed right-of-

way (“ROW”) and State Route 100 between mile posts 391.2 to 401.4. This alternative would follow the Con Ed ROW, the Taconic Parkway, Route 100 and the North Country Trail. In the SDEIS, the FERC concludes that approval of either the 9/9A Route or the Route 100 alternative, with appropriate mitigation measures, is acceptable.<sup>1</sup> The SDEIS also concludes that the PSCNY’s concerns about operating this system in close proximity to Con Ed’s electric corridor after the pipeline has been laid in the ground are “unfounded”.

The PSCNY supports the construction of natural gas pipelines that will serve New York State, and, in particular the metropolitan New York City area. The Con Ed electric corridor carries approximately 40% of New York City’s peak day electric requirements and presents unique reliability concerns. Our primary concern in all natural gas pipeline projects is safety and uninterrupted service to the public. The PSCNY is confident that except for the use of the Con Ed corridor, as originally contemplated, the pipeline can be constructed and operated safely. However, because of the unique circumstances associated with the Con Ed electric corridor, as originally proposed by Millennium, the pipeline would be exposed to increased risks not prevalent in other sectors of the project. Our major objective here, is to ensure that any pipeline construction and operation on this electric corridor is done in a manner that protects the safe and reliable operation of the

---

<sup>1</sup> Case 99-T-1814, Order Granting Certificate of Environmental Compatibility and Public Need (rel. March 29, 2001); the PSCNY approved Hudson Valley Corporation’s application for a Certificate of Environmental Compatibility and Public Need for the construction of 4.2 miles of 24 inch natural gas pipeline on March 28, 2001. This line will be constructed from the Buena Vista metering station in Clarkstown, to the proposed Millennium pipeline between MP 382.5 and MP 387.4. This line will supply gas to the Mirant-Bowline Generating Station. The order granting the certificate notes that “if Millennium does receive FERC approval, to avoid duplication of facilities, Hudson Valley [Gas Corporation] is negotiating with Millennium to transfer ownership and operation of its pipeline to Millennium.” In part II of the SDEIS section 2.0 addresses minor routing changes and mitigation measures in areas other than 9/9A or the Con Ed offset. This section should be revised to reflect the approval of this order.

Con Ed's electric ROW through Westchester County. Towards that end, the PSCNY and Millennium have entered into a Supplemental Memorandum of Understanding ("SMOU") that modifies the 9/9A Alternative by locating the pipeline on the western side of the southbound lane of the Taconic Parkway instead of locating the pipeline adjacent to Route 100, as proposed in the SDEIS ("Taconic Variation").

In addition, Millennium and the PSCNY have taken further steps to ensure the safe and reliable construction and operation of the pipeline within and adjacent to the Con Ed electric corridor. The SMOU provides that the pipeline be constructed no closer than 100 feet from the nearest conductor on the Buchanan-Millwood circuits (rather than the centerline of the southern towers as proposed by FERC) to the pipeline, along with other construction/operation mitigation measures. We fully expect that Millennium's engineers will conduct the appropriate analysis regarding fault currents and operating faults to validate that this 100' offset alleviates the safety concerns associated with placing the pipeline in proximity to this electric corridor.<sup>2</sup>

The PSCNY's staff has worked extensively with Millennium and community advocates to identify an acceptable alternative route through Westchester County that minimizes the impact on the Con Ed ROW. We urge the FERC to adopt the Taconic Variation and incorporate the terms and conditions of the SMOU into its Final Environmental Impact Statement. The PSCNY believes that with the adoption of the Taconic Variation and appropriate electrical mitigation measures, the pipeline can be

---

<sup>2</sup> The Canadian Standards Association C22.3 "Principles of Electric Coordination Between Pipelines and Electric Supply Lines," states "where pipeline and power line rights-of-way are shared or adjacent, the separation distance shall be as large as practicable." The key issue, is, the greater distance will provide a greater degree of assurance that transient currents during operating fault situations or from lightning strikes will not find the pipe to be the path of least resistance to ground.

installed and operated safely through Westchester County and within this critical Con Ed electric corridor.

Moreover, we urge the FERC to reevaluate its conclusions regarding the PSCNY's concerns about the impacts of blasting and lightning and fault currents within the electric corridor.

**A. FERC Should Incorporate The Taconic Variation And The Placement Of The Pipeline No Less Than 100 Feet Measured Horizontally From The Nearest Conductor Of The Southwestern Most Transmission Line**

The PSCNY concluded that the 9/9A Alternative was minimally acceptable because it presented the least risk to the electric and gas facilities along the Con Ed ROW.<sup>3</sup> However, Millennium, the community and the PSCNY continued to look for a way to further address community opposition to the route, while protecting the safe and reliable operation of the proposed pipeline and the Con Ed electric system. Subsequently, the SDEIS recommended the Route 100 alternative. However, the Route 100 alternative adds risks to the gas and electric facilities by placing the pipeline 100' from the center of the electric transmission towers between Buchanan and Millwood. Subsequently, the PSCNY and Millennium agreed in their SMOU that the pipeline could be constructed on the shoulder of the southbound lanes of the Taconic Parkway. By doing this, it would reduce in half the 2.7 miles of pipeline that falls in the shadows of the transmission circuits. In addition, there would be less construction interference and traffic disruptions along Route 100.

---

<sup>3</sup> Letter to the FERC dated April 25, 2000 from the PSCNY updating the FERC regarding the status of discussions between the PSCNY and Millennium.

Millennium's agreement to move construction from the Route 100 alternative to the Taconic Variation addresses some of the PSCNY's reliability concerns in those areas where the pipeline is proposed to be placed on or immediately adjacent to the Con Ed ROW. In addition, in the SMOU, Millennium has also committed to a 100' offset from the closest circuit to the pipeline measured horizontally. This would add approximately 30' for construction and operation of the pipeline. Although FERC's staff believes that a 100' offset from the center of the power lines is sufficient, the approximate additional 30' separation between the pipeline and the transmission towers provides added protection in the event of an emergency in this vital corridor.

#### **1. The 100' Offset From The Closest Circuit To The Pipeline Is Required During Construction**

The SDEIS states that the Con Ed ROW is a sensitive electric corridor that needs to be protected. In recommending the Route 100 alternative, FERC suggests placing the pipeline adjacent to the Con Ed ROW and about 100' from the centerline of the electric towers. Placing the pipeline a greater distance from the power lines may help alleviate construction concerns near the Con Ed electric facilities according to the SDEIS. We believe however, that a 100' offset from the closest circuit to the pipeline, as agreed to in the SMOU with Millennium, will provide further needed safety during construction and operation.

Pipeline construction along the Con Ed ROW will present unique challenges, and significant blasting is required due to the terrain along the Con Ed ROW being very rugged with hard, crystalline bedrock at the surface. Field inspections of the project area reveal steep terrain and side-slope conditions. Accordingly, a two-tier system will likely

be utilized during construction.<sup>4</sup> Additionally, the presence of surface rock will necessitate rock removal operations on a large scale. This type of construction will require a wider ROW and therefore, the approximate 30' that is gained by moving the offset from the center of the transmission lines to the closest circuit measured horizontally will facilitate a safer construction period.<sup>5</sup>

Moreover, the approximate additional 30' will keep construction equipment, workers and vehicular traffic further from the wire security zone and existing counterpoise wiring. This will provide additional safeguards for equipment and workers. Finally, while not obviating the need for grounding, induced currents in standing pipe and machinery will be reduced in direct proportion to the distance from the transmission line.

## **2. The 100' Offset From The Closest Circuit To The Pipeline Is Required During Operation**

The FERC indicates that the PSCNY has “overstated the potential” danger to Con Ed’s transmission lines during operation of the pipeline. The PSCNY disagrees with FERC’s assessment that risk of lightning arcing to the pipeline will not occur if proper mitigation measures are employed.

This particular electric corridor presents especially unique concerns when the pipeline is in close proximity to the electric facilities, because the presence of the pipeline

---

<sup>4</sup> A two-tier system involves creating two plateaus out of the slope. The ROW would be on the Southern side of the electric corridor. The travel lane would be closest to the existing facilities. On the next tier would be the pipeline stringing /construction area and trench. On the opposite side of the trench would be the soil pile area.

<sup>5</sup> In most instances, the ROW can accommodate this offset. However, the PSCNY staff recognizes that there are isolated instances where this cannot be done without removal of existing structures. In those cases, Millennium and Con Ed should determine if other mitigation factors need to be considered.

in the ROW creates the possibility of damage to the pipeline from fault currents.<sup>6</sup> If lightning strikes a power line it may result in damage to the pipeline coating, insulating fittings or even the pipeline itself. The possibility of damage increases the closer the pipeline is to the electric facilities. The counterpoise system may not have the capacity to take the magnitude of the fault current or be the path of least resistance. Several papers have been published supporting the PSCNY's position on the dangers of lightning strikes and the consequential potential for damage to the pipeline.<sup>7</sup> In light of this concern, the

---

<sup>6</sup> Case 88-T-132, Opinion and Order Granting Certificate of Environmental Compatibility and Public Need, Opinion 91-3, (Rel. March 1, 1991), in this litigated proceeding the PSCNY certified construction of a 155 mile 24 inch pipeline, 115 miles of which was constructed on a NYPA 345 Kv transmission corridor. To alleviate the risk of pipeline damage, the pipeline was built a minimum of 65' from the closest leg of NYPA's transmission tower. The 100' offset from the centerline here approximates the 65' offset in Empire. However, additional distance is necessary to alleviate safety concerns due to the terrain involved in this project along the Con Ed ROW.

<sup>7</sup> FERC's conclusions that electric operating fault currents as well as currents due to lightning strikes does not jeopardize the integrity of the pipeline is not consistent with several published sources:

**National Association of Corrosion Engineers (NACE) Standard RP0177-2000** "Mitigation of Alternating Current and Lightning Effects on Metallic Structures and Corrosion Control Systems". The document notes at §2.6.1 Lightning strikes on the power system can initiate fault current conditions. Lightning strikes to a structure, or to earth in the vicinity of a structure, can produce electrical effects similar to those caused by AC fault currents. Lightning may also strike a metallic structure at some point remote from AC power systems, also with deleterious effects.

**Canadian Standards Association C22.3 No. 6-M19E7** "Principles and Practices of Electrical Coordination Between Pipeline and Electric Supply Lines" provides at "3.3 Methods of Reducing Adverse Effects During Power Line Fault Conditions," that except where there is mutual agreement between the pipeline and power line companies, it is recommended that pipeline be located not less than 10 m from power line footings and other below-ground fault current discharge facilities.

It goes on to note the 10 m separation distance has been established as a reasonable physical clearance during construction and maintenance activities. Research has demonstrated that line to ground faults can cause damage to pipeline coatings or pipelines even with clearances in excess of 10 m (see Clause D4(1)). The severity of damage is determined by a combination of factors including voltage and fault current magnitude, fault duration, soil resistivity, and pipeline coating properties. Some measures to avoid or reduce adverse effects are as follows:

- (a) increased separation distance between pipelines and fault current discharging facilities;
- (b) increased pipe wall thickness;
- (c) increased pipe-coating dielectric strength; and
- (d) application of special backfill materials.

PSCNY requests that the 100' offset from the closest circuit measured horizontally, be adopted in FERC's Final Environmental Impact Statement.

In addition, the SDEIS states that most ground-current resulting from a short circuit, travels on the ground wires (or sky wires), and only a small portion (depending on soil resistivity) travels underground. However, the SDEIS does not reflect the unique counterpoise system on this ROW.<sup>8</sup> In the rocky terrain encountered along this particular route, the ground wire network extends well beyond the structures, and in certain locations envelopes the entire ROW, thus, the Con Ed grounding wires will need to be relocated to avoid disruption of the ground fault protection system for continuing reliable operation of the transmission facilities as well as protecting the operation of the pipeline. The safest way to address this is to move the construction/operation an additional approximate 30', as agreed to by Millennium in the SMOU. However, additional electrical mitigation design studies need to be conducted prior to construction and operation to validate the assumption made in the SMOU that the pipeline can be operated safely 100' from the nearest conductor.

Finally, FERC suggests that in the case of lightning strikes and line to ground faults, the circuit breaker will protect the pipeline. However, the circuit breaker does not protect against current finding its way to the pipeline, rather it protects the electric system. In the case of a phase to ground fault, the fault current will flow to ground. This current will seek out, and may lead to the puncture of a buried pipeline. In the event of a

---

A key mitigation factor recommended above is distance. In many sections of the Con Edison ROW the counterpoise system fully envelopes the area. For both additional safety considerations during construction and protection from ground faults during operation, additional footage associated with measuring the 100 feet from the nearest circuit to the pipeline is critical.

<sup>8</sup> The Empire Pipeline referenced in the SDEIS is buried in loamy soils and not rock, which have a different dissipation of short circuit because they are low resistance.

lightning strike, whether it strikes the tower or the ground (static) wire, the current generated by the lightning strike will flow through the towers to the ground and can puncture or damage the pipeline. Here again, the circuit breakers, even when opened, cannot stop the current caused by lightning and the resulting current flow to the pipeline. Accordingly, an additional approximate 30' is crucial to ensuring further protection of the pipeline in the event of ground fault or lightning strike.

**B. Additional Safety And Environmental Measures Are Required**

We agree with the conclusion that blasting will be required for much of the Con Ed corridor and that “there may be places where the rocsaw trencher or other mechanical means of excavating the trench may be feasible to reduce the need for blasting.” Blasting on or within 150' of the Con Ed corridor should only be employed as a last resort. To ensure effective coordination between Millennium and Con Ed where Millennium intends to blast, the Millennium Environmental Construction Standards, Section 4 (trenching) and Section 2 (blasting), should be modified to provide that Millennium will contact Con Ed a least 2 days prior to blasting on or within 150 feet of its ROW.<sup>9</sup>

Finally, there are some additional concerns that need to be addressed in the Final Environmental Impact Statement. Appendix C, “Typical Right –Of-Way Cross Sections,” has not been updated to address conditions for the Con Ed offset alternative or the Taconic Variation. Appendix D, “Extra Work Areas”, does not address the work

---

<sup>9</sup> Also, these sections should be modified to encourage that rocsaw trenching or other mechanical means of excavation be employed whenever feasible because the rocsaw inflicts less damage to the surrounding area.

space needs for the Con ED offset or Taconic Variation. Millennium must provide this information prior to final approval of the Environmental Impact Statement.<sup>10</sup>

The PSCNY recommends that Appendix E, “Environmental Construction Standards”, be modified to conform to the various route alternatives as follows; clearing standards should specify that tree falling will be controlled to avoid encounters with roadways, electric conductors and other structures; brush standards should specify that slash will either be chipped or removed from the Con Ed ROW, public roads and parklands (this will reduce fire hazards and unsightly debris); tree stumps should not be buried in proximity to electric transmission grounding equipment (proposed stump removal areas should be identified on alignment drawings for review prior to construction); construction access by Millennium on the Con Ed ROW must not interfere with the need for emergency access to the Con Ed facilities (any permanent access roads should have provisions for maintaining natural drainage and any culverts left in place should be sized to handle stormflow and be periodically maintained), broad based dips should be used to avoid permanent culverts where practicable; and, temporary construction access by Millennium on the Con Ed ROW must not interfere with the need for emergency access by Con Ed.

### **Conclusion**

For the foregoing reasons, the PSCNY requests that the FERC adopt and incorporate the terms and conditions agreed to by Millennium and the PSCNY in its SMOU. Specifically, we urge the FERC to adopt the Taconic Variation together with the

---

<sup>10</sup> In addition, the PSCNY notes, that the reference at page 1-1 of the SDEIS that suggests that “about 6.3 miles of the proposed route from the east bank of the Hudson River to the start of the 9/9A proposal” should be revised to reflect the actual distance of approximately 1 mile.

100' offset from the nearest conductor measured horizontally. Moreover, additional safety and environmental measures must be enumerated for the various route alternatives, and in particular the Taconic Variation, prior to final approval of the Environmental Impact Statement.<sup>11</sup>

Respectfully submitted,

Lawrence G. Malone  
General Counsel  
Brian Ossias  
Assistant Counsel  
Public Service Commission  
Of the State of New York  
Three Empire State Plaza  
Albany, NY 12223-1350

---

<sup>11</sup> The PSCNY notes that the SDEIS is generally not complete in addressing specific impacts and environmental details for the Con Ed offset routing proposal or Taconic Variation. The DEIS for the original route looked at the impact of routing along the centerline of the Con Ed ROW, not the offset to the outside of the ROW. The revised route will entail more clearing of forest, potentially more grading and permanent grade changes and additional access road construction. These impacts need to be identified and summarized for the final DEIS. In addition, the route alternatives need to identify and summarize the location of facilities such as valve locations, rectifier beds and deep well beds and construction staging sites and off-site access road locations. Millennium is reportedly developing these details.

CERTIFICATE OF SERVICE

I, Lori Ann Baker, do hereby certify that I will serve on April 30, 2001, the foregoing Request for Rehearing of the Public Service Commission of the State of New York by depositing a copy thereof, first class postage prepaid, in the United States mail, properly addressed to each of the parties of record, indicated on the official service list compiled by the Secretary in this proceeding.

Date: April 30, 2001  
Albany, New York

Lori Ann Baker