EASTERN SYSTEM UPGRADE

RESOURCE REPORT 11

Reliability and Safety

FERC Docket No. CP16-__-000

July 2016

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Filing Requirement	**Location in Environmental Report**
• Describe measures proposed to protect the public from failure of the proposed facilities (including coordination with local agencies). (§ 380.12 (*m*)(1))	Sections 11.1 and 11.3
• Discuss hazards, the environmental impact, and service interruptions which could reasonably ensue from failure of the proposed facilities. (§ 380.12 (*m*)(2))	Section 11.1
• Discuss design and operational measures to avoid or reduce risk. (§ 380.12 (*m*)(3))	Sections 11.1 and 11.3
• Discuss contingency plans for maintaining service or reducing downtime. (§ 380.12 (*m*)(4))	Sections 11.3
• Describe measures used to exclude the public from hazardous areas. Discuss measures used to minimize problems arising from malfunctions and accidents (with estimates of probability of occurrence) and identify standard procedures for protecting services and public safety during maintenance and breakdowns. (§ 380.12 (*m*)(5))	Section 11.3

FERC COMMENTS ON DRAFT RESOURCE REPORT 11	LOCATION OR RESPONSE TO COMMENT
JULY 1, 2016 COMMENTS	
Resource Report 11 – Reliability and Safety	
1. In Table 11A-1, verify that the mileposts match class locations shown in the alignment sheets, such as the class location at milepost 1.7, which is identified as Class 1 in the alignment sheets and as Class 2 in Table 11A-1.	Table 11A-1
2. Identify the potential impact radius for the Project facilities.	Table 11A-3

LIST OF ACRONYMS AND ABBREVIATIONS

CFR	Code of Federal Regulations
Columbia	Columbia Gas Transmission, LLC
FERC or Commission	Federal Energy Regulatory Commission
Hancock CS	Hancock Compressor Station
HCA	high consequence area
Highland CS	Highland Compressor Station
hp	horsepower
Huguenot M&R	Huguenot Meter Station
Millennium	Millennium Pipeline Company, L.L.C.
MP	milepost
O&M	Operation and Maintenance
Part 192	Title 49 CFR Part 192
Project	Eastern System Upgrade
Ramapo M&R	Ramapo Meter Station
USDOT	U.S. Department of Transportation
Westtown M&R	Westtown Meter Station

11.0 RELIABILITY AND SAFETY

Millennium Pipeline Company, L.L.C. (Millennium) is seeking authorization from the Federal Energy Regulatory Commission (FERC or Commission) pursuant to Section 7(c) of the Natural Gas Act to construct, install, operate, and maintain the Eastern System Upgrade (Project). The Project includes construction of approximately 7.8 miles of 30- and 36-inch pipeline loop in Orange County, New York (Huguenot Loop). Millennium proposes to locate a majority of the pipeline loop overlapping with and adjacent to the permanent easement associated with its existing mainline (Millennium Pipeline). Additionally, as part of the Project, Millennium proposes to construct and operate (1) a new compressor station (Highland CS) in Sullivan County, New York, (2) additional horsepower (hp) at the existing Hancock Compressor Station (Hancock CS) in Delaware County, New York, (3) modifications to the existing Ramapo Meter and Regulator Station (Ramapo M&R) in Rockland County, New York, (4) modifications to the existing Wagoner Interconnect in Orange County, New York and (5) additional pipeline appurtenant facilities at the existing Huguenot Meter Station (Huguenot M&R) and Westtown Meter Station (Westtown M&R) in Orange County, New York. Dependent upon receipt of necessary approvals, construction of the Project would be anticipated to commence in the fall of 2017 to meet a target in-service date in September 2018.

The Project consists of the following components and facilities:

- approximately 7.8 miles of new 30- and 36-inch diameter pipeline looping generally overlapping with and adjacent to Millennium's existing pipeline right-of-way in Orange County, New York ;
- construction and operation of a new 22,400 hp compressor station, Highland CS in Sullivan County, New York;
- construction and operation of an additional 22,400 hp at the existing Hancock CS in Delaware County, New York;
- modifications to the Ramapo M&R in Rockland County, New York;
- modifications to the Wagoner Interconnect in Orange County, New York;
- addition of pipeline appurtenant facilities, which includes pigging facilities, at the Huguenot M&R and the Westtown M&R in Orange County, New York; and
- addition of an alternate interconnect to the 16-inch Valley Lateral at milepost (MP) 7.6.

Resource Report 11 addresses the potential hazard to the public from failure of Project components resulting from accidents, incidents, natural catastrophes, or acts of third parties. In addition, this Resource Report addresses the procedures that would be used and design features that would be incorporated to avoid undue hazards or effects, and what measures, including equipment, training, emergency response, and emergency notification procedures, would be implemented to protect the public from failure of the Project due to accidents, incidents, or natural catastrophes. More details concerning the design, construction, and operation of the Project can be found in Resource Report 1.

11.1 NATURAL GAS INDUSTRY STANDARDS

The proposed Huguenot Loop and aboveground facilities will be designed, constructed, operated, and maintained in accordance with the United States Department of Transportation (USDOT) Minimum Federal Safety Standards stated in Title 49 of Code of Federal Regulations (CFR) Part 192 (Part 192). The regulations are intended to ensure adequate protection for the public from natural gas pipeline failures. Part 192 specifies material selection and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion.

11.1.1 Class Locations

Part 192 defines four area classifications based on population density in the vicinity of the pipeline. The classification area extends for 220 yards (660 feet) on either side of the centerline of any continuous one-mile length of pipeline. The four area classes as defined by federal law are as follows:

- Class 1: Class location unit with 10 or fewer buildings intended for human occupancy.
- Class 2: Class location unit with more than 10 but fewer than 46 buildings intended for human occupancy.
- Class 3: Location with 46 or more buildings intended for human occupancy and/or a location where the pipeline lies within 100 yards of either a building or a well-defined outside area such as a playground, recreation area, outdoor theater, or other place of public assembly that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period.
- Class 4: Class location unit where buildings with four or more stories aboveground are prevalent.

Pipeline design, installation, operations and maintenance, which includes wall thickness and specified minimum yield strength, hydrostatic pressures, maximum allowable operating pressure, inspection and testing of welds and frequency of pipeline patrols and leak surveys must also conform to higher standards in more populated areas.

Millennium has completed classification studies of the Project areas. Millennium will design and construct the entire pipeline to meet or exceed the minimum standards required by class location. Class locations and design factors are included on the alignment sheets provided in Appendix 1C of Resource Report 1. Class locations by milepost are included in Table 11.1-1. In regard to changes in class location, the pipeline will be operated in accordance with CFR 49, title 192 subpart L, including specifically, Section 192.609 (Change in Class Location: Required Study) and Section 192.611 (Change in Class Location: Confirmation or revision of maximum allowable operating pressure) and the timeframes required therein.

Millennium has committed to comply with the minimum depth requirements for Class 2, 3, and 4 in those areas that are identified as Class 1. In addition, Millennium has committed to providing a minimum of 4 feet of cover in active agricultural lands that will be crossed by the Project. These commitments meet or exceed the USDOT's Minimum Federal Safety Standards stated in Part 192. Millennium's proposal to meet or exceed class location requirements takes into consideration future planning and population growth.

While Millennium will comply with the Change in Class Location requirements noted above, Millennium anticipates the current design will adequately meet federal safety standards as the population increases in the area for the foreseeable future, particularly given that there was a 0.9 percent change in population for Orange County from 2010 to 2014 (U.S. Census Data).

Part 192 also prescribes the minimum standards for operating and maintaining pipeline facilities, including the requirement to establish a written plan governing these activities. Under 49 CFR § 192.615, each pipeline operator must also establish an emergency plan that provides written procedures to minimize the hazards from a gas pipeline emergency. Key elements of the plan include procedures for:

- Receiving, identifying, and classifying emergency events (gas leakage, fires, explosions, and natural disasters);
- Establishing and maintaining means of communication with local fire, police, and public officials, and coordinating emergency response;
- Making personnel, equipment, tools, and materials available at the scene of an emergency;
- Protecting people first and then property, and making them safe from actual or potential hazards; and
- Emergency shutdown and pressure reduction of any section of system and safely restoring service.

Each operator must establish and maintain liaison with appropriate fire, police, and public officials to learn the resources and responsibilities of each organization that may respond to a gas pipeline emergency, and coordinate mutual assistance in responding to emergencies. The operator must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency. Millennium currently uses Columbia Gas Transmission, LLC (Columbia) as the operator of its pipeline system and intends to use Columbia as the operator of the Project once it is constructed. As Millennium's operator, Columbia conducts annual emergency training for their operations personnel. Local fire departments are invited to attend and participate in a mock emergency drill that is included as part of this training program.

11.1.2 Pipeline Integrity Management

Millennium and Columbia will comply with the USDOT rule on Gas Transmission Pipeline Integrity Management (49 CFR 192 – Subpart O). This rule requires an operator of a covered pipeline segment to develop and follow a written integrity management program that identifies the procedures for monitoring and maintaining pipeline integrity throughout its system, most specifically for sections of pipe within High Consequence Areas (HCAs). The required elements of the integrity management program are described in 49 CFR § 192.911. The primary components of the integrity management program are:

- An identification of all HCAs and covered pipeline segments;
- An identification of threats to each covered pipeline segment;
- A direct assessment plan, if applicable;

- Provisions for remediating conditions found during an integrity assessment; and
- A process for continual evaluation and assessment.

11.1.3 High Consequence Areas

HCAs are established by one of the methods described below:

- All Class 3 and 4 Locations;
- Class 1 or 2 Locations where the potential impact radius is greater than 660 feet and the area within a potential impact circle contains 20 or more buildings intended for human occupancy; or
- Areas within a potential impact circle containing 20 or more buildings intended for human occupancy, or an identified site such as: (1) an outside area or open structure that is occupied by 20 or more persons for at least 50 days in any 12- month period; (2) a building that is occupied by 20 or more persons for at least 5 days a week for 10 weeks in a 12-month period; or (3) a facility occupied by persons who are confined, are of impaired mobility, or would be difficult to evacuate.

The potential impact radius is defined as the radius of a circle within which the hypothetical failure of a pipeline could have significant impact on people or property. The potential impact radius is determined by the formula r = 0.69 x (square root of ($p \times d^2$)), where 'r' is the radius of a circular area surrounding the point of hypothetical failure, 'p' is the maximum allowable operating pressure in the pipeline segment in pounds per square inch, and 'd' is the nominal diameter of the pipeline in inches. The calculation of potential impact radius is based on USDOT Title 49, Part 192.903 and Section A.02, Potential Impact Radius, of the USDOT Gas Integrity Management Protocols with Guidance, Revision 5 (January 2008).

One HCA will be crossed by the Project for a total of 0.31 mile, as identified in Table 11A-2. The potential impact radius from each of the Project facilities are included in Table 11A-3.

11.1.4 Compressor Station Specifications

The proposed new Highland CS and modifications at the Hancock CS will be designed and constructed to meet or exceed the safety standards for compressor stations established by the USDOT in Part 192. The piping system at the stations will utilize high strength steel meeting modern standards. The existing Millennium pipeline system is already designed to safely handle the additional gas volumes that would be transported through the system by the new Highland CS and the modified Hancock CS.

The compressor units will be centrifugal compressors driven by a natural gas-fueled turbine. Centrifugal compressors have lower pulsation and vibration levels than typical natural gas reciprocating compression. The proposed compressors will be equipped with a full range of automatic emergency detection and shut down systems. Station and unit control computers will monitor the essential functions of the compressors and associated facilities, and will trigger an appropriate sequence of remedial actions if an upset condition is detected. If the compressor station computers detect an upset condition, appropriate action within the station controls will be automatically initiated. The stations will have a hazardous gas and fire detection/alarm system and an emergency shut-down system. These safety and emergency systems will be

monitored 24 hours a day by on-site control systems. Columbia's gas control center will also remotely monitor the facility on a continuous basis (i.e., 24 hours per day, 365 days a year) and will immediately dispatch local personnel to the site should any safety related alarm be triggered. Standard fire protection, first aid, and safety equipment will be maintained at the compressor stations, and station maintenance personnel responsible for the station will be trained in proper equipment use and in first aid. The fire-fighting equipment that will be maintained on-site includes dry chemical fire extinguishers. Columbia will also coordinate with the local emergency response services concerning the equipment at the stations.

11.2 HISTORICAL OPERATING RECORD

The federal standards and company practices described above for the Project are the same as those that currently apply to the remainder of Millennium's system. Adherence to these standards and practices has enabled both Millennium and Columbia to maintain excellent safety records; the construction and operation of the proposed facilities for the Project will not increase the existing low risk of accidents or other public hazards at the site.

11.3 MEASURES TO PROTECT THE PUBLIC

Columbia maintains operating plans and procedures that are periodically reviewed by USDOT's Pipeline and Hazardous Materials Safety Administration. All operating personnel are trained to perform their activities in accordance with these plans and procedures. These standards provide specific directions in preventive maintenance and patrols of facilities, as well as procedures to be followed in the event of accident, incident, or natural catastrophe. Periodic training sessions and review of operating and emergency procedures are conducted for affected operations employees. This training includes safe operation of pipeline valves and equipment; facilities, including meter stations and compressor stations; hazardous material handling procedures; fire-fighting school; public liaison programs, and general operating procedures. The proposed Project facilities will be operated and maintained in accordance with these standards.

Millennium will design, and install the Huguenot Loop in a manner that will not damage the existing parallel pipeline. The Project will fully adhere to USDOT regulatory requirements pertaining to safety, including damage protection. These safety regulations will be reinforced by both Millennium's and Columbia's comprehensive and strictly enforced corporate practices.

11.3.1 Restricted Access at Aboveground Facility Locations

The Project involves the construction of a new Highland CS, modifications to three existing M&R stations, modifications to the existing Hancock CS, and construction of pig launcher and receiver facilities. With the exception of the 12-inch side tap for the Valley Lateral pipeline, these aboveground facilities will be securely fenced to prevent unauthorized access. The compressor station facilities will also include intrusion detection alarm systems.

11.3.2 Odorant

A portion of the natural gas transported by Millennium's mainline is odorized, in accordance with the requirements of Part 192. Currently, odorant is added to the natural gas in that portion of the existing mainline between the Wagoner Interconnect and the pipeline's terminus at Buena Vista. Odorant levels are monitored downstream of the injection point to ensure compliance with Part 192. Odorant will not be added at the aboveground facilities proposed as part of the Project, but it may be present in the gas flowing through the facilities depending on the source.

11.3.3 Corrosion Protection

Part 192, Subpart I, Requirements for Corrosion Control, prescribes minimum requirements for the protection of metallic pipelines from external, internal and atmospheric corrosion. These requirements will be met by externally coating the buried pipeline with a fusion bonded epoxy coating system, which has an outstanding record for preventing external corrosion. The effectiveness of this coating will be augmented by an existing cathodic protection system on the Millennium Pipeline, which will be expanded to protect the additional facilities (see Resource Report 1, Section 1.3.2.4). Aboveground piping at aboveground facilities will be coated with a paint system that protects against atmospheric corrosion. Internal corrosion is not a concern based on the fact that tariff quality natural gas is being transported. The quality of the gas entering the pipeline is continuously monitored to assure conformance. Coating and cathodic protection are an integral part of ensuring the structural integrity of Millennium's existing transmission system in New York. Cathodic protection prevents corrosion of the pipeline facilities by providing direct voltage electrical current flow to the pipeline. This offsets the natural soil or groundwater corrosion potential that can degrade the integrity of the pipe. The cathodic protection system is inspected at regular intervals to ensure proper operating conditions consistent with USDOT requirements for corrosion control and mitigation.

11.3.4 System Monitoring Equipment

The Columbia gas control center monitors Millennium's system pressures, flows, and deliveries 24 hours a day, 365 days a year. Columbia also maintains area offices along Millennium's pipeline route where personnel can provide quick response to emergency situations and direct safety operations as necessary. The closest area offices to the proposed Project are in Binghamton, New York (approximately 41 miles northwest of the Hancock CS) and in Port Jervis, New York (approximately 5 miles west of the Huguenot M&R and proposed Huguenot Loop). Additionally, Columbia maintains a backup location for gas control operations in the event the primary location is placed out of service.

If operating conditions fall outside predetermined ranges, alarms are activated at the gas control center enabling a timely diagnosis and mitigation of the alarm condition.

The proposed compressor stations will be designed for unattended operation and self-monitoring, and will include a communications and monitoring system designed to ensure a response in the event that a mechanical problem or a potentially unsafe condition is detected. Like Millennium's existing Hancock CS, the Highland CS will have two modes of communication for remote operation and monitoring by the gas

control center. The compressor station's primary communications system will be via wide area network. Should a wide area network communication outage occur, the communications system will revert to the very small aperture terminal satellite secondary backup system. In the event of a loss of utility electric at the station, a natural gas fueled back-up generator will come online automatically, and provide station power until utility power service is restored. A battery system will provide direct current power for essential equipment during the interim switchover.

11.3.5 Procedures for Operations, Maintenance and Emergency Response

Columbia's operating policies and procedures are defined in its Operation and Maintenance (O&M) manual, Incident Management Plan, and site-specific Emergency Plans, which are all readily available to all operations employees. The manual and plans provide directions in the day to day operation and preventive maintenance of the transmission system, as well as procedures to be followed in the event of an incident or natural catastrophe. The existing O&M and Emergency Plans will be adopted and amended as appropriate for the proposed facilities.

Columbia's O&M manual, Incident Management Plan, and site-specific Emergency Plans are implemented according to a defined schedule, revised as necessary and reviewed regularly by operations employees. These include the safe operation and maintenance of mainline block valves, meter stations and compressor stations, and presentation of public awareness programs and operating procedures. Periodic reviews of these procedures provide for the latest pipeline technology, industry experience, Federal regulations, and risk management practices to be incorporated into Columbia's procedures.

Millennium designs, installs and operates its facilities to meet or exceed applicable regulations (e.g., PHSMA, state, etc.). PHMSA documents compliance with federal regulations under 49 CFR Part 192. Millennium designs its emergency blowdown system at the compressor stations to discharge through a silencer to provide a minimum amount of noise. Additionally, Millennium is designing the emergency blowdown system station at the Highland CS and Hancock CS such that during scheduled (planned) testing of the station blowdown system a majority of the gas will be contained (not vented). Local authorities are not notified of scheduled or unscheduled blowdowns.

11.3.6 Field Patrols/Leak Detection Surveys

11.3.6.1 Pipeline Facilities

The following discussion details the surveys and frequencies at which they will be completed along Millennium's facilities. These inspections include aerial patrols, leakage surveys, and cathodic protection. Weather permitting, the aerial and foot patrols of all pipelines and facilities will be performed along with scheduled preventive maintenance. Any unusual situation or condition will be reported and investigated immediately. The Project facilities constructed by Millennium will have inspection surveys consistent with these standards:

- Leakage Survey:
    - Annually
- Cathodic Protection:
    - Rectifier readings six times per year.
- Inspections:
    - Test station readings annually; and
    - Critical Bond readings six times per year.

Leakage surveys are instrumental in early detection of leaks and can reduce the likelihood of pipeline failure. Leakage surveys are conducted in accordance with Millennium's standards, using advanced technology.

Columbia, as Millennium's operator, is also a member of New York's Dig Safely System. Through One Call and similar organizations, contractors provide notification to a central agency of proposed excavation, which in turn notifies Columbia of the excavation locations. If Millennium facilities are located in the area of proposed contractor activity, they will be marked in the field and Millennium's standards will be followed to ensure that the facility is not compromised.

11.3.6.2 Aboveground Facilities

In addition to periodic instrumented leak surveys, Columbia's gas control center will remotely monitor Millennium's compressor station facilities on a continuous basis (i.e., 24 hours per day, 365 days a year), including leak detection, and will immediately dispatch local personnel to the site should any safety related alarm be triggered. The site-specific Emergency Plan will discuss how leaks will be identified and addressed.

11.3.7 Liaison Procedures with Local Authorities

Liaison with public authorities and local utilities is maintained along the pipeline system. The site-specific Emergency Plans contain a list of contacts to be notified in case of emergency. Key components of the liaison program consist of:

- Periodic visits with emergency agencies to inform them of the location and nature of the Millennium facilities and to coordinate emergency response in the event of an incident.
- Special information meetings and training at the invitation of Columbia or Millennium.
- Circulation of literature listing emergency telephone numbers and other pertinent data.

Yearly training updates for emergency responders have been conducted in the municipalities crossed by the existing pipeline facilities since the system became operational in 2008. Columbia will continue to coordinate with the local responders before and after the proposed facilities are operational.

11.3.8 Emergency Plan

Under 49 CFR § 192.615, each pipeline operator must also establish an emergency plan that provides written procedures to minimize the hazards from a gas pipeline emergency. As discussed above, Columbia will update its site-specific Emergency Plan to include the new pipeline loop and aboveground facilities prior to Millennium them into operation. Key elements of this plan includes procedures for:

- receiving, identifying and classifying emergency events (i.e., gas leakage, fires, explosions, natural disasters);
- establishing and maintaining communications with local fire, police and public officials, and coordinating emergency response;
- maintaining access to the facilities and making personnel, equipment, tools and materials available at the scene of an emergency;
- protecting people first and then property, and making both safe from actual or potential hazards; and
- emergency shutdown of system and the safe restoration of service.

Columbia, on behalf of Millennium as operator of the Millennium system, maintains a liaison with appropriate fire, police and public officials to learn the resources and responsibilities of each organization that may respond to a gas pipeline emergency, and coordinate mutual assistance in responding to emergencies. Police and fire departments in the vicinity of the Project site are discussed in Resource Report 5. Columbia has also established a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency and report it to appropriate public officials.

Columbia will provide the appropriate training to local emergency service personnel before the facilities are placed in service. In addition, yearly training updates for emergency responders have been conducted in the municipalities crossed by the existing pipeline facilities since the system became operational in 2008. Columbia will continue to coordinate with the local responders before and after the proposed facilities are operational. After the new Highland CS and modified Hancock CS are operational, Millennium and Columbia plan to have an emergency responder open house at each station.

11.3.9 Emergency Shut-Down System

Part 192 specifies that each compressor station must have an emergency shut-down system that can be manually operated from at least two points. In addition to having more than the two required manual shutdown points, Millennium's compressor stations will have a number of compressor and building monitoring systems that will initiate a shut-down automatically. The compressor unit building will also be equipped with fire, heat and gas detection systems which would, based upon certain conditions, initiate a shut-down.

APPENDIX 11A

Supplemental Tables

TABLE 11A-1
Class Locations for the Eastern System Upgrade Facilities

Facility	Town(s)/County	Begin MP	End MP	Class Location [a, b]
Pipeline/Launcher	Deerpark / Orange County	0.00	0.03	3
Pipeline	Deerpark / Orange County	0.03	0.72	2
Pipeline	Deerpark / Orange County	0.72	1.33	1
Pipeline	Deerpark / Orange County	1.33	1.79	2
Pipeline	Deerpark & Greenville / Orange County	1.79	2.81	1
Pipeline	Greenville / Orange County	2.81	3.88	2
Pipeline	Greenville / Orange County	3.88	3.95	1
Pipeline	Greenville / Orange County	3.95	4.44	2
Pipeline	Greenville / Orange County	4.44	4.76	1
Pipeline	Greenville / Orange County	4.76	5.82	2
Pipeline	Greenville / Orange County	5.82	6.79	1
Pipeline	Greenville / Orange County	6.79	7.27	2
Pipeline	Greenville & Minisink / Orange County	7.27	7.57	1
Pipeline	Greenville & Minisink / Orange County	7.57	7.76	2
Pipeline/Receiver	Minisink / Orange County	7.76	7.77	3

Notes:

a: Class Definitions:

Class 1: Location with 10 or fewer buildings intended for human occupancy.

Class 2: Location with more than 10 but fewer than 46 buildings intended for human occupancy.

Class 3: Location with 46 or more buildings intended for human occupancy and/or a location where the pipeline lies within 100 yards of either a building or a well-defined outside area such as a playground, recreation area, outdoor theater, or other place of public assembly that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period.

Class Location Unit: Onshore area that extends 220 yards on either side of the centerline of any continuous one-mile length of pipeline.

b: Pipeline shall incorporate a design factor to meet or exceed DOT minimum requirements, 49 CFR 192, for class location and crossings with consideration for potential future upgrades to class.

TABLE 11A-2
Location of High Consequence Area for the Eastern System Upgrade

Facility	Town/County	Begin MP	End MP	Approximate Length (feet)
Pipeline/Launcher	Deerpark/Orange County	0.00	0.31	1,654

As set forth under Part 192, Subpart O integrity management regulations, High Consequence Areas ("HCAs") are designated locations along the pipeline that are near either densely populated areas, facilities that would be difficult to evacuate (such as hospitals or schools), or locations where people congregate (such as churches, offices or parks).

TABLE 11A-3
Potential Impact Radius for the Eastern System Upgrade Facilities

Project Facility	Largest Pipeline Diameter (inches)	Maximum Allowable Operating Pressure (pounds per square inch gauge)	Potential Impact Radius (feet)
Pipeline Facilities			
Huguenot Loop	30	1,200	717
Compressor Stations			
Highland CS (New)	36	1,200	861
Hancock CS	30	1,200	718
Meter Stations			
Huguenot M&R	30	1,200	717
Westtown M&R	42	1,200	1,004
Ramapo M&R	42	1,200	1,004
Additional Aboveground Facilities			
Pig Launcher / Receiver (MP 0.1)	42	1,200	1,004
Alternate Interconnect (MP 7.6)	16	920	335