



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

MAR 3 2010

1200 New Jersey Avenue, SE
Washington, D.C. 20590

Mr. Christopher A. Helms
Executive Vice President and Group CEO
NiSource Gas Transmission & Storage
5151 San Felipe, Suite 2500
Houston, Texas 77056

Docket No. PHMSA-2008-0332

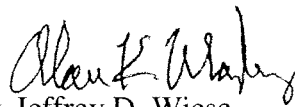
Dear Mr. Helms:

On November 21, 2008, Columbia Gas Transmission Company (CGTC) wrote to the Pipeline and Hazardous Materials Safety Administration (PHMSA) requesting a special permit to waive compliance from PHMSA's pipeline safety regulation in 49 CFR § 192.611, for five segments of the CGTC natural gas transmission pipeline system located in Adams and York Counties, Pennsylvania. Section 192.611 requires confirmation or revision of the maximum allowable operating pressure (MAOP) of a pipeline segment where the class location has changed.

PHMSA is denying this special permit request, which would have allowed CGTC to operate the 20-inch Mainline 1804 pipeline in Adams and York Counties, PA, at the current MAOP of 936 pounds per square inch gauge (psig). The reason for this denial can be found in the special permit analysis and findings document enclosed with this letter. This document and all other pertinent documents are available for review in Docket No. PHMSA-2008-0332 in the Federal Docket Management System (FDMS) located on the internet at www.Regulations.gov. PHMSA will grant CGTC twelve (12) months from the date of this letter to comply with the requirements of 49 CFR § 192.611.

My staff would be pleased to discuss this denial or any other regulatory matter with you. John Gale, Director of Regulations (202-366-0434), may be contacted on regulatory matters and Alan Mayberry, Director of Engineering and Emergency Support (202-366-5124), may be contacted on technical matters.

Sincerely,


for = Jeffrey D. Wiese

Associate Administrator for Pipeline Safety

Enclosure (Special Permit Analysis and Findings)

U.S. DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION (PHMSA)
Special Permit Analysis and Findings

Special Permit Information:

Docket Number: PHMSA-2008-0332

Requested By: Columbia Gas Transmission Company¹

Date Requested: November 21, 2008

Code Sections: 49 CFR § 192.611

Purpose:

The Pipeline and Hazardous Materials Safety Administration (PHMSA) provides this information to describe the facts of the subject special permit application submitted by Columbia Gas Transmission Company (CGTC), to discuss any relevant public comments received with respect to the application, to present the engineering and safety analysis of the special permit application, and to make findings regarding whether the requested special permit should be granted and if so under what conditions.

Pipeline System Affected:

This special permit application applies to five natural gas transmission pipeline segments of 20-inch Mainline 1804 pipeline operated by CGTC in Adams and York Counties, PA, where changes have occurred from an original Class 1 location to a Class 3 location or a Class 2² location to Class 3 location. If granted, a special permit would allow CGTC to continue to operate the five pipeline segments at their current maximum allowable operating pressure (MAOP) of 936 pounds per square inch gauge (psig) for 20-inch Mainline 1804 pipeline.

This special permit application applies to the *special permit segments* defined as follows using the CGTC pipeline survey stationing (Sta.):

¹ Columbia Gas Transmission Company (CGTC) is owned and operated by NiSource Gas Transmission and Storage (NGT&S).

² The Class 3 location *special permit segments* were originally a Class 1 location that were upgraded to a Class 2 location in accordance with a § 192.611(a) hydrostatic test.

- *Special Permit Segment 1:* 20-inch Mainline 1804 - 949 feet, Sta. 9302+31 to Sta. 9311+80
- *Special Permit Segment 2:* 20-inch Mainline 1804 - 466 feet, Sta. 9376+91 to Sta. 9381+57
- *Special Permit Segment 3:* 20-inch Mainline 1804 - 1,203 feet, Sta. 9390+67 to Sta. 9402+70
- *Special Permit Segment 4:* 20-inch Mainline 1804 - 182 feet, Sta. 10081+34 to Sta. 10083+16
- *Special Permit Segment 5:* 20-inch Mainline 1804 - 3,437 feet, Sta. 10231+40 to Sta. 10265+77

This special permit application applies to the *special permit inspection area* defined using the CGTC pipeline stationing (Sta.) references as follows:

Special permit inspection area - means the area that extends 220 yards on each side of the centerline of the pipeline along the entire length of the CGTC 20-inch Mainline 1804 pipeline from the following stations:

- *Special Permit Inspection Area:* 20-inch Mainline 1804 - 25.8 miles, Sta. 9059+72 to Sta. 10422+74

Note: The *special permit inspection area* includes the *special permit segments*.

The *special permit inspection area* extends from the CGTC Gettysburg Compressor Station, Sta. 9059+72, to North York Receiver, Sta. 10422+74, approximately 4.6 miles upstream of the *special permit segments* to approximately 3.0 miles downstream of the *special permit segments*, a total of approximately 25.8 miles of *special permit inspection area*. The *special permit inspection area* is located in Adams and York Counties, PA.

Special Permit Request:

CGTC submitted an application to PHMSA on November 21, 2008, for a special permit seeking relief from the Federal pipeline safety regulations in 49 CFR § 192.611(a) for five segments on the 20-inch Mainline 1804 pipeline along CGTC's natural gas transmission pipeline system where a change has occurred from a original Class 1 location per 192.611 to a Class 3 location in Adams and York Counties, PA. CGTC's special permit application requests approval to continue to operate the five pipeline segments at their current maximum allowable operating pressure (MAOP); i.e. 936 pounds per square inch gauge (psig) for 20-inch Mainline 1804 pipeline. The Federal pipeline safety regulations in 49 CFR § 192.611 require natural gas pipeline operators to confirm or revise the MAOP of a pipeline segment after a change in class location. If granted, a special permit would allow CGTC to continue to operate each of the five

special permit segments on 20-inch Mainline 1804 pipeline at its existing MAOP despite a change in class location. If the special permit application is denied, CGTC would have to comply with 49 C.F.R. § 192.611 by reducing pipeline pressure or replacing the subject pipe. The pipeline system is composed of two parallel pipelines in a common right-of-way; Mainline 1804 and 10240. CGTC did not include Mainline 10240 pipeline in the special permit request.

In its application, CGTC suggested that the five special permit segments be included in the *special permit inspection area* (see CGTC's application for the specific details). This *special permit inspection area* extends from the CGTC Gettysburg Compressor Station, Sta.9059+72, to North York Receiver, Sta. 10422+74, approximately 4.6 miles upstream of the special permit segments to approximately 3.0 miles downstream of the special permit segments, a total of approximately 25.8 miles of *special permit inspection areas*.

Public Notice:

On January 23, 2009, PHMSA posted a notice of this special permit request in the Federal Register (74 FR 4298). PHMSA did not receive any comments for or against this special permit request as a result of this notice. CGTC's special permit request, the Federal Register notice and all other pertinent documents are available for review in Docket No. PHMSA-2008-0332 in the Federal Docket Management System (FDMS) located on the internet at www.Regulations.gov.

Analysis:

Background: On June 29, 2004, PHMSA published in the Federal Register (69 FR 38948) the criteria it uses for the consideration of class location change waivers, now being granted through special permits. First, certain threshold requirements must be met for a pipeline section to be further evaluated for a class location change special permit. Second, the age and manufacturing process of the pipe; system design and construction; environmental, operating and maintenance histories; and integrity management program (IMP) elements are evaluated as significant criteria. These significant criteria are presented in matrix form and can be reviewed in the FDMS, Docket Number PHMSA-RSPA-2004-17401. Third, such special permits may only then be granted when pipe conditions and active integrity management provides a level of safety greater than or equal to a pipe replacement or pressure reduction.

Threshold Requirements: Each of the threshold requirements published by PHMSA in the June 29, 2004, FR notice is discussed below in regards to the CGTC special permit petition.

- 1) No pipeline segments in a class location changing to Class 4 location will be considered. This special permit request is for five segments of the CGTC pipeline system where a class location change has occurred from Class 1 to Class 3. CGTC has met this requirement.
- 2) No bare pipe will be considered. The CGTC *special permit segments* are coated with coal tar. CGTC has met this requirement.
- 3) No pipe containing wrinkle bends will be considered. There are no wrinkle bends in the *special permit segments*. CGTC has met this requirement.
- 4) No pipe segments operating above 72% of the specified minimum yield strength (SMYS) will be considered for a Class 3 special permit. This *special permit segments* operate at or below 72% SMYS. CGTC has met this requirement.
- 5) Records must be produced that show a hydrostatic test to at least 1.25 x MAOP and 90% of SMYS. CGTC has met this requirement.
- 6) In-line inspection (ILI) must have been performed with no significant anomalies identified that indicate systemic problems. CGTC has met this requirement.
- 7) Criteria for consideration of class location change waiver, now being granted through special permit, published by PHMSA in the Federal Register (69 FR 38948), define a *waiver inspection area (now a special permit inspection area)* as up to 25 miles of pipe either side of the *waiver segment (special permit segment)*. The *special permit inspection area* must be inspected according to CGTC's integrity management program and periodically inspected with an in-line inspection technique. The portion of the *special permit inspection area* both upstream and downstream of the *special permit segments* is approximately 25.8 miles long. Any special permit would be contingent upon CGTC's incorporation of all five *special permit segments* in its written integrity management program as "*covered segments*" in a "*high consequence area*" (HCA) per 49 CFR § 192.903.

Criteria Matrix: The original and supplemental data submitted by CGTC for the five *special permit segments* have been compared to the class location change special permit criteria matrix. The five *special permit segments* fall in the probable acceptance column of the criteria matrix for all criteria except for:

- a. Possible acceptance – pipe coating and cathodic protection.

- b. Requires substantial justification – CGTC has not performed External Corrosion Direct Assessment (ECDA) or Stress Corrosion Cracking Direct Assessment (SCCDA) on its pipelines and there are some outstanding PHMSA inspection findings that are being remediated on CGTC pipelines. The CGTC 20-inch pipe material has a LF-ERW weld seam manufactured by Youngstown Steel which requires substantial justification.

The data falls within the “probable acceptance” column of the criteria matrix for all criteria except for the following:

- 1) Pipe design and construction, including pipe manufacture, material and pipe coating: 20-inch Mainline 1804 pipeline was installed in 1960 and consists of American Petroleum Institute Specification 5L, *Specification for Line Pipe* (API 5L), low frequency electric resistance welded (LF-ERW), X-52 steel pipe manufactured by Youngstown Steel. This pipe is of unknown toughness but CGTC has addressed this risk in their integrity management plan. CGTC documents indicate that the 20-inch LF-ERW pipe in this *special permit inspection area* was hydrostatically tested in 1972 for 24 hours at minimum pressures over 95% SMYS at the high elevation points, with much of the 20-inch pipe being tested to over 100% SMYS – 1300 psig. CGTC also reports that the 20-inch pipe in the *special permit inspection area* has never experienced a field hydrostatic test failure or operating failure in the 20-inch LF-ERW weld seam. However, this type of weld seam pipe has been known for systemic manufacturing issues resulting in weld seam failure. This places the *special permit segments* in the “requires substantial justification” column of the criteria matrix. PHMSA has seen systemic weld seam issues on many pipelines with LF-ERW pipe seams manufactured by Youngstown Steel and other LF-ERW seam manufacturers, including several failures linked to LF-ERW seams. The proposed *special permit segments* on 20-inch Mainline 1804 pipeline have LF-ERW pipe seams and are located in densely populated area, which is a new Class 3 location population area defined by § 192.5(a)(1), (a)(2) and (b)(3) – Class Locations as follows;

(a) This section classifies pipeline locations for purposes of this part. The following criteria apply to classifications under this section.

(1) A "class location unit" is an onshore area that extends 220 yards (200 meters) on either side of the centerline of any continuous 1-mile (1.6 kilometers) length of pipeline.

(2) Each separate dwelling unit in a multiple dwelling unit building is counted as a separate building intended for human occupancy.

(b) (3) A Class 3 location is:

(i) Any class location unit that has 46 or more buildings intended for human occupancy; or

(ii) An area where the pipeline lies within 100 yards (91 meters) of either a building or a small, 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. (The days and weeks need not be consecutive.)

2) Cathodic Protection: 20-inch Mainline 1804 pipeline has cathodic protection installed on the system in 1961. The cathodic protection system meets requirements of § 192, Subpart I and there is no evidence of external corrosion or only isolated corrosion damage that has been appropriately mitigated. Any special permit would require CGTC to run coating surveys such as close interval surveys (CIS) and direct current voltage gradient (DCVG) surveys to identify areas along the pipeline with poor cathodic protection current and coatings so that remediation measures can be conducted.

3) Direct Assessment (ECDA & SCCDA): CGTC has not completed an external direct assessment (ECDA) or a stress corrosion cracking assessment (SCCDA) of the special permit segments. This places both special permit segments in the "requires substantial justification" column of the criteria matrix. To address these issues, any special permit would require CGTC to complete a Direct Current Voltage Gradient (DCVG) survey or an Alternating Current Voltage Gradient (ACVG) survey; a close interval survey (CIS); and an SCCDA along 20-inch Mainline 1804 pipeline not later than one year after the grant of this special permit.

PHMSA has determined that a special permit, even with conditions, that would allow CGTC to leave the existing 20-inch pipeline in service will not ensure equivalent safety based upon the 49 CFR § 192.611 regulations for Class 3 location areas due to the 20-inch pipeline containing LF-ERW seam pipe in the Class 3 location special permit segments. The location of the 20-inch

pipe produced from a manufacturing process with known weld seam failure risks in a populated Class 3 location does not warrant a special permit.

Findings:

Based on the information submitted by CGTC and PHMSA's analysis of technical, operational and safety issues, PHMSA finds that granting this special permit to CGTC to operate *special permit segments* of the 20-inch Mainline 1804 natural gas transmission pipeline at the current MAOP of 936 psig where a change in class location has occurred from an original Class 1 location to a Class 3 location would be inconsistent with pipeline safety.

MAR 3 2010

Completed in Washington DC on: _____

Prepared by: PHMSA – Engineering and Emergency Support