

U.S. DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
Special Permit Analysis and Findings
Class 1 to 3 Location

Special Permit Information:

Docket Number:	PHMSA-2019-0202 ^{1,2}
Requested By:	Columbia Gas Transmission, LLC
Operator ID#:	2616
Original Date Requested:	October 15, 2019
Original Issuance Date:	March 31, 2022
Amended Date:	June 30, 2023
Code Section(s):	49 CFR 192.611(a) and (d) and 192.619(a)

Purpose:

The Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety (OPS),³ provides this information to describe the facts of the subject special permit amendment application submitted by Columbia Gas Transmission, LLC (TCO),⁴ 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. TCO requested that PHMSA waive

¹ On June 22, 2022, TCO requested the addition of two (2) *special permit segments 5 and 6* to its existing special permit. On November 30, 2022, TCO requested the addition of one (1) *special permit segment 7*. These segments are shown in **Table 1 – Special Permit Segments**

² PHMSA published the special permit request in the Federal Register (87 FR 50691) for a 30-day public comment period from August 17, 2022, through September 16, 2022, for *special permit segments 5 and 6*. On January 5, 2023, PHMSA posted a notice of this special permit request for *special permit segment 7*, in the Federal Register (88 FR 908) to Docket No. PHMSA-2022-0166 with a closing date of February 6, 2023. *Special permit segments 5, 6, and 7* have been included into special permit docket 2019-0202.

³ Throughout this special permit the usage of “PHMSA” or “PHMSA OPS” means the U.S. Department of Transportation’s Pipeline and Hazardous Materials Safety Administration Office of Pipeline Safety.

⁴ TCO is a wholly owned, subsidiary of TC Energy.

compliance from the 49 Code of Federal Regulations (CFR) 192.611(a) and (d) and 192.619(a) for natural gas transmission pipeline segments, where the class location has changed from a Class 1 to a Class 3 location.

Pipeline System Affected:

This amendment of the special permit applies to the TCO request for a waiver from the class location change requirements in 49 CFR 192.611(a) and (d) and 192.619(a) for 3,101 feet (approximately 0.587 miles) of the 30-inch diameter gas transmission Line MC - Line VC Pipeline located in Montgomery County, Maryland; and Loudoun County, Virginia. Without this special permit, 49 CFR 192.611(a) would require TCO to replace the three (3) *special permit segments* with stronger pipe or reduce the pipeline maximum allowable operating pressure (MAOP) for a Class 1 to Class 3 location change.

Pipe specifications including outside diameter, year installed, seam type, coating type, pipe grade, wall thickness, MAOP, minimum pressure test pressure, and pressure test factor based on the minimum test pressure are detailed in **Table 1 – Pipe Specifications by Line Name**.

Table 1 – Pipe Specifications by Line Name									
Line Name	Outside Diameter (inches)	Year Installed	Seam Type	Coating Type	Grade	Wall Thickness (inches)	MAOP (psig)	Min. Test Pressure (psig)	Pressure Test Factor
MC/VC	30	1962	DSAW	Asphalt	X60	0.312	898	1,146	1.28

Note: DSAW is double submerged arc welded seam pipe.

Special Permit Request:

On June 22, 2022, and November 30, 2022, TCO applied to PHMSA for an amendment to its special permit seeking relief from 49 CFR 192.611(a) and (d) and 192.619(a) for the below listed *special permit segments*, where a class location change occurred from the original Class 1 to a Class 3 on the 30-inch diameter Line MC - Line VC Pipeline located in Montgomery County, Maryland; and Loudoun County, Virginia.

Special Permit Segments:

This special permit applies to the *special permit segments* in **Table 2 – Special Permit Segments**.

Table 2 – Special Permit Segments										
Special Permit Segment Number	Outside Diameter (inches)	Line Name	Length (feet)	Start Survey Station (SS)	End Survey Station (SS)	County or Parish, State	No. Dwellings	Year Installed	Seam Type	MAOP (psig)
5	30	Line VC	481	361+50	366+31	Loudoun, VA	3	1962	DSAW	898
6	30	Line MC	1,169	858+09	869+78	Montgomery, MD	2	1962	DSAW	898
7	30	Line MC	1,450	244+00	258+50	Montgomery, MD	3	1962	DSAW	898

Note: DSAW is double submerged arc welded seam pipe.

Special Permit Inspection Area:

The *special permit inspection area* is defined as the area that extends 220 yards on each side of the centerline as listed in **Table 3 – Special Permit Inspection Area**.

Table 3 – Special Permit Inspection Area						
Special Permit Inspection Area Number	Special Permit Segment(s) Included	Outside Diameter (inches)	Line Name	Start Survey Station (SS)	End Survey Station (SS)	Length ⁵ (miles)
1	1, 2, 3, 4, 5, 6, and 7	30	Line VC - Line MC	0+00 (Line VC)	1603+78 (Line MC)	40.5

Public Notice:

On August 17, 2022, PHMSA posted a notice of this special permit request in the Federal Register (87 FR 50691) for *special permit segments 5 and 6*, with a closing date of September 16, 2022.

PHMSA received no public comments concerning this special permit amendment. On January 5, 2023, PHMSA posted a notice of this special permit request for *special permit segment 7*, in the Federal Register (88 FR 908) to Docket No. PHMSA-2022-0166 with a closing date of February 6, 2023. PHMSA received public comment on the November 30, 2022, request and is addressing the comment received concerning this special permit amendment in the Final Environmental Assessment (FEA) and Finding of No Significant Impact (FONSI).

The TCO special permit amendment application letter, Federal Register notice, Special Permit, FEA and FONSI, and all other pertinent documents are available for review in Docket No.

⁵ If the *special permit inspection area* footage does not extent from launcher to receiver then the *special permit inspection area* would need to be extended.

PHMSA-2019-0202 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 applications for class location change waivers, now being granted or denied through a special permit. First, certain threshold requirements should be met on a pipeline *special permit segment* for a class location change special permit to be granted. Second, the age and manufacturing process of the pipe; system design, and construction; environmental, operating, and maintenance histories; and integrity management program elements are evaluated as significant criteria. These significant criteria are presented in matrix form and can be reviewed in the FDMS, Docket No. PHMSA–RSPA-2004-17401. Third, special permits will only 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. The operator’s federal pipeline safety regulation compliance history is also evaluated as part of the criteria matrix for acceptability prior to issuance of a special permit.

Threshold Requirements: Each of the threshold requirements published by PHMSA in the June 29, 2004, Federal Register notice is discussed below for the TCO special permit request.

- 1) No pipeline segments in a class location changing to Class 4 location will be considered.
 - This special permit request is for *special permit segments* on the TCO 30-inch diameter Line MC – Line VC Pipeline, where a change has occurred from a Class 1 location to a Class 3 location.
 - TCO meets this requirement.
- 2) No bare pipe will be considered.
 - The TCO *special permit segments* are externally coated with asphalt enamel.
 - TCO has not reported any coating issues such as disbonded coating.
 - TCO meets this requirement.
- 3) No pipe containing wrinkle bends will be considered.
 - There are no wrinkle bends in the *special permit segments*.
 - TCO meets 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.
 - The *special permit segments* operate at or below 72% SMYS.
 - TCO meets this requirement.
- 5) Records must be produced that show a hydrostatic test to at least 1.25 x MAOP and 90% of SMYS.
 - The *special permit segments* on the Line MC – Line VC Pipeline was tested to at least 1.28 times the MAOP.
 - TCO meets this requirement.
- 6) Inline inspection (ILI) must have been performed with no significant anomalies identified that indicate systemic problems such as stress corrosion cracking (SCC).
 - TCO ran ILI tools on the Line MC – Line VC Pipeline in 2019 in the *special permit inspection area*.
 - TCO has not found any SCC indications in or within 20 miles of the *special permit segment*.
 - TCO meets this requirement.
- 7) Criteria for consideration of a class location change waiver, being considered through the special permit, published by PHMSA in the Federal Register (69 FR 38948), define a *waiver inspection area (special permit inspection area)* as up to 25 miles of pipe on either side of the *waiver segment (special permit segment)*.
 - A special permit would be contingent upon TCO's incorporation of the *special permit segments* in its written integrity management program as covered segments in a high consequence area (HCA) in accordance with 49 CFR 192.903 and to assess and remediate threats to the *special permit inspection area*.
 - TCO's defined *special permit inspection area* is 40.5 miles in length.

Criteria Matrix: The data submitted by TCO for the *special permit segments* has been compared to the class location change special permit criteria matrix. The data fall within the *probable acceptance or the possible acceptance* column of the criteria matrix, except for PHMSA enforcement findings which fall under the *requires substantial justification*.

- The *special permit segments* fall in the *probable acceptance* column of the criteria matrix for:
 - Design stress, pipe material, depth of pipe cover, test pressure, test failures, type service, pressure fluctuations, safety related conditions, leaks and failures, direct assessment, ILI type, ILI program, and damage prevention program.
- The *special permit segments* fall in the *possible acceptance* column of the criteria matrix for:
 - Class 1 to 3 location, pipe manufacturer, pipe coating type (may shield cathodic protection (CP)), local geology, CP, and HCA program.
- The *special permit segments* fall in the *requires substantial justification* column of the criteria matrix for:
 - TCO has identified issues in girth welds within the *special permit segments* and pipe girth weld records are not available. TCO will complete **Special Permit Condition 6 – Girth Welds**;
 - The coating type may shield CP when disbonded, causing SCC.⁶ TCO will complete **Special Permit Condition 7 – Stress Corrosion Cracking Threat**; and
 - Inspection findings (Enforcement History) – PHMSA enforcements are in the “Past Enforcement History – January 1, 2011 through September 30, 2022” section below.

Operational Integrity Compliance:

To inform PHMSA’s decision about whether a special permit could provide a level of safety greater than or equal to a pipe replacement or pressure reduction and is consistent with pipeline safety, PHMSA reviewed this special permit request to understand the known type of integrity threats that are in the *special permit segments* and *special permit inspection area*. This integrity information was used to design special permit conditions to provide a systematic program to review and remediate the pipeline for safety concerns. Additional operational integrity review and remediation requirements are required by this special permit to ensure that the operator has an ongoing program to locate and remediate safety threats. These threats to integrity and safety

⁶ Two (2) types of SCC are found on pipelines: High pH (9 to 11) SCC and near-neutral pH (6 to 8) SCC. Coal tar and asphalt coatings that are disbonded are more prone to having SCC.

include any issues with the pipe coating quality, CP effectiveness, operations damage prevention program, pipe depth of soil cover, weld seam and girth weld integrity, anomalies in the pipe steel and welds, and material and structures either along or near the pipeline that could cause the CP system to be ineffective. PHMSA has carefully designed a comprehensive set of conditions that TCO must implement to comply with this special permit.

Past Enforcement History – January 1, 2012 through January 22, 2023:

From January 1, 2012, through January 22, 2023, TCO was cited in forty-four (44) enforcement actions with a total of \$2,167,004 in assessed civil penalties. PHMSA initiated one (1) Corrective Action Order, eleven (11) Notices of Amendment, fifteen (15) Notices of Probable Violation, two (2) Safety Orders, and fifteen (15) Warnings Letter against TCO. TC Energy acquired TCO in 2016. Since TC Energy became owner of TCO, PHMSA has issued five (5) Notice of Amendments, three (3) Notice of Probable Violations, one (1) Safety Order, and twelve (12) Warning Letters with a total of \$1,529,904 in collected penalties to TC Energy on the TCO pipeline system.

Tables 4 and 5 below show PHMSA enforcement actions and civil penalties for TCO:

Table 4: TCO Enforcement Matters from January 1, 2012 through January 22, 2023						
Status	Corrective Action Order	Notice of Amendment	Notice of Probable Violation	Safety Order	Warning Letter	Total
CLOSED	1	11	13	2	15	42
OPEN	0	0	2	0	0	2
Total	1	11	15	2	15	44

Table 5: TCO Enforcement Civil Penalty Status January 1, 2012 through January 22, 2023				
Proposed	Awaiting Order	Assessed	Withdrawn/Reduced	Collected
\$2,293,804	\$0	\$2,167,004	\$100,400	\$2,167,004

Summary of Enforcement Findings for TCO includes:

- **Construction:** Compliance with specifications or standards, Repair of Steel Pipe, General Inspection, and Installation of Pipe in a Ditch; **Control Room Management:** Alarm Management, Compliance and Deviations, Fatigue Mitigation, SCADA System Limitations,

Provide Adequate Information, and Training Procedures; **Atmospheric Corrosion Control:** General and Monitoring; **Corrosion Control:** Corrosion Control Records; **External Corrosion Control:** Buried Pipe Post 1971, Interference Currents, and Monitoring; **Design:** Compressor Stations Additional safety equipment and Supports and Anchors; **Enforcement Procedures:** Inspections and Investigations; **Integrity Management (IM):** Elements and Implementation, Preventative and Mitigative Measures, and HCA Identification; **OME Procedural Manual:** Abnormal Operations, General, and Maintenance and normal operations; **Maintenance:** General, Line Markers, Pressure Limiting and Regulating Stations, Prevention of Accidental Ignition, Patrolling, Record keeping, and Leak Surveys; **Operations:** Alternative MAOP, Emergency Plans, General, MAOP-Steel or Plastic, and Procedures; **Operator Qualification:** Qualification Program; **Reporting:** Filing Safety Related Condition Report (SRCR) and GTGG Annual Reports; **Test Requirements:** General and SMYS > 30% (at or above the test pressure for at least 8 hours); **Gas Transportation:** Class Locations, Gathering Line Requirements, and Underground natural gas storage facilities; **Welding:** Inspection and Test of Welds.

- 49 CFR 190.203, 191.17, 191.22, 191.25, 192.5, 192.9, 192.12, 192.161, 192.171, 192.241, 192.303, 192.305, 192.309, 192.319, 192.455, 192.465, 192.473, 192.479, 192.481, 192.491, 192.503, 192.505, 192.603, 192.605, 192.615, 192.619, 192.620, 192.631, 192.703, 192.705, 192.706, 192.707, 192.709, 192.743, 192.805, 192.905, 192.907, and 192.935.

Table 6 below shows PHMSA's enforcement actions and civil penalties for TCO and the specific 49 CFR Parts 191 and 192 violations:

Table 6: Summary of Enforcement Findings from TCO January 1, 2012 to January 22, 2023					
Notice of Amendment					
Construction	1	Control Room Management	13	Integrity Management	1
OME Procedural Manual	4	Operation and/or Maintenance	7	Operator Qualification	2
Transportation of Gas	10				
Notice of Amendment Total:					38
Notice of Probable Violation					
Construction	2	Corrosion Control	9	Design	1
Fire Protection	1	Integrity Management	1	OME Procedural Manual	4
Operation and/or Maintenance	5	Reporting	2	Test Requirements	1

Transportation of Gas	1	Welding of Steel in Pipelines	1		
Notice of Probable Violation Total:					28
Warning Letter					
Corrosion Control	2	Design	1	Enforcement and Regulatory Procedures	1
OME Procedural Manual	6	Operation and/or Maintenance	13	Reporting	3
Transportation of Gas	3				
Warning Letter Total:					27
Grand Total:					93

Summary of Enforcement Findings for TC Energy – ANR, CGT, GLGTC, PNGTS, and TCO:

From January 1, 2012 through January 22, 2023, TC Energy, the operator of PNGTS, was cited in 73 enforcement actions with a total of \$2,978,004 in assessed civil penalties on its ANR Pipeline Company (ANR) (OPID 405), Columbia Gulf Transmission (CGT) (OPID 2620), Columbia Gas Transmission (TCO) (OPID 2616), Great Lakes Gas Transmission Company (GLGTC) (OPID 6660), and Portland Natural Gas System (PNGTS) (OPID 31145) pipeline systems. PHMSA issued three (3) Corrective Action Orders, 18 Notices of Amendment, 24 Notices of Probable Violation, two (2) Safety Orders and 26 Warning Letters to TC Energy.

Tables 7 and 8 below show PHMSA's enforcement actions and civil penalties for TC Energy on these pipeline systems – ANR, CGT, TCO, GLGTC, and PNGTS pipeline systems.

Table 7: TC Energy Enforcement Matters from January 1, 2012 through January 22, 2023						
Status	Corrective Action Order	Notice of Amendment	Notice of Probable Violation	Safety Order	Warning Letter	Total
CLOSED	3	18	22	2	26	71
OPEN	-	-	2	-	-	2
Total	3	18	24	2	26	73

Table 8: TC Energy Enforcement Civil Penalty Status January 1, 2012 through January 22, 2023				
Proposed	Awaiting Order	Assessed	Withdrawn/Reduced	Collected
\$3,161,004	\$0	\$2,978,004	\$156,600	\$2,978,004

The type of 49 CFR Part 192 enforcement violations against TC Energy on these five (5) pipeline

systems from January 1, 2012 through January 22, 2023 were as follows:

Summary of Enforcement Endings for ANR, CGT, TCO, GLGTC, and PNGTS includes:

Construction: Compliance with specifications or standards, General Inspection, Installation of Pipe in a Ditch; **Control Room Management:** Alarm Management, Compliance and Deviations, Fatigue Mitigation, Provide Adequate Information (Point to Point Checks), Roles & Responsibilities, SCADA System Limitations, Training, and Training Procedures; **Atmospheric Corrosion Control:** General and Monitoring; **Corrosion Control:** Corrosion Control Records; **External Corrosion Control:** Buried Pipe Post 1971, Interference Currents, Monitoring, and Test Leads; **Design:** Compressor Station Design & Construction, Compressor Stations Additional Safety Equipment, Compressor Stations Emergency Shutdown, and Supports and Anchors; **Drug and Alcohol:** Alcohol Tests Required and Drug Testing Required; **Enforcement Procedures:** Inspections and Investigations, **IM:** Addressing Integrity Issues, Elements and Implementation, Change to IM Plan, HCA Identification, Preventative and Mitigative Measures, Program Elements, and Requirements for SCCDA; **OME Procedural Manual:** General, Maintenance and normal operations, Abnormal operations, Alternative MAOP, and SRCR; **Maintenance:** Abandonment or Deactivation of Facilities, Compressor Stations-Gas Detection, Compressor stations-inspection and testing of relief devices, Compressor stations-Storage of Combustible Materials, General, Line Markers, Pressure Limiting and Regulating Stations-Inspection and Testing, Pressure Limiting and Regulating Stations-Relief Devices, Prevention of Accidental Ignition, Procedures, Remedial Measures, Patrolling, Record keeping, Repair Procedures, and Valve Maintenance Transmission Lines; **Operations:** Change in Class Location (Required Study), Emergency Plans, General, MAOP-Steel or Plastic, Odorization of Gas, Procedures, Transfer Procedures, and Underwater Inspection to Identify Gulf of Mexico Pipeline Hazards; **Operator Qualification:** Qualification Program; **Public Awareness:** Activities for advising affected municipalities, Comprehensive Media, Develop and Implement Public Awareness, Justification for not following API RP 1162, Specifics addressing the Public; **Reporting:** Filing SRCR, Annual Reports, Immediate Reporting Incident, and National Registry of Pipeline and LNG Operators; **Test Requirements:** General; **Gas Transportation:** Class Locations, Gathering Line Requirements, Underground Natural Gas Storage Facilities; **Welding:** Inspection and Test of Welds, Procedures, and Qualification of Welders,

- 49 CFR 190.203, 191.3, 191.5, 191.15, 191.17, 191.22, 191.25, 192.5, 192.9, 192.12,

192.161, 192.163, 192.167, 192.171, 192.201, 192.225, 192.241, 192.303, 192.305, 192.309, 192.319, 192.455, 192.465, 192.471, 192.473, 192.479, 192.481, 192.491, 192.603, 192.605, 192.609, 192.612, 192.615, 192.616, 192.619, 192.625, 192.631, 192.703, 192.705, 192.707, 192.709, 192.727, 192.731, 192.735, 192.736, 192.739, 192.743, 192.745, 192.751, 192.805, 192.905, 192.907, 192.909, 192.911, 192.933, and 192.935.

Table 9 below gives a complete summary of the findings and the specific 49 CFR Part 191 and 192 violation:

Table 9: Summary of Enforcement Findings for ANR, TCO, CGT, GLGT, and PNGTS January 1, 2012 through January 22, 2023					
Notice of Amendment					
Construction	1	Control Room Management	16	Integrity Management	5
OME Procedural Manual	9	Operation and/or Maintenance	7	Operator Qualification	2
Public Awareness	6	Transportation of Gas	10	Welding of Steel in Pipelines	1
Notice of Amendment Total:					57
Notice of Probable Violation					
Construction	2	Corrosion Control	11	Design	3
Drug and Alcohol	2	Integrity Management	6	OME Procedural Manual	6
Operation and/or Maintenance	16	Public Awareness	1	Reporting	8
Test Requirements	1	Transportation of Gas	1	Welding of Steel in Pipelines	1
Notice of Probable Violation Total:					58
Warning Letter					
Control Room Management	5	Corrosion Control	4	Design	2
Enforcement and Regulatory Procedures	1	Integrity Management	2	OME Procedural Manual	11
Operation and/or Maintenance	19	Operator Qualification	1	Reporting	8
Transportation of Gas	5	Welding of Steel in Pipelines	1		
Warning Letter Total:					59
Grand Total:					174

Findings:

Based on the information submitted by TCO and PHMSA's analysis of the technical, operational, and safety issues, PHMSA finds that granting this special permit to TCO to operate *special permit segments* on the 30-inch diameter Line MC – Line VC Pipeline located in Montgomery County, Maryland, and Loudoun County, Virginia is consistent with pipeline safety.

PHMSA has designed special permit conditions to effectively assess and remediate threats to the *special permit segments* and *special permit inspection area*, including assessments to evaluate

pipe girth welds that have not been non-destructively tested and for SCC. To ensure TCO properly implements the special permit conditions, TCO will be required to give PHMSA an annual review of their compliance with the special permit.

PHMSA finds that no significant negative impact to human safety and the environment will result from the issuance and full implementation of this amendment of a special permit that waives the requirements of 49 CFR 192.611 for class location changes from Class 1 to a Class 3 location. This permit amendment requires TCO to implement the special permit conditions that include safety requirements on the operations, maintenance, and integrity management of the *special permit segments* and the *special permit inspection area*.

Completed in Washington DC on: June 30, 2023

Prepared by: PHMSA - Engineering and Research Division

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