

**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-2022-0084
Requested By: Columbia Gulf Transmission, LLC
Operator ID#: 2620
Original Date Requested: June 22, 2022
Original Issuance 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),¹ provides this information to describe the facts of the subject special permit application submitted by Columbia Gulf Transmission, LLC (CGT),² 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. CGT requested that PHMSA waive 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.

¹ 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.

² CGT is a wholly owned, subsidiary of TC Energy.

Pipeline System Affected:

This special permit applies to the CGT request for a waiver from the class location change requirements in 49 CFR 192.611 for approximately 5.066 miles of 30-inch diameter gas transmission pipelines and 2.749 miles of 36-inch diameter gas transmission pipelines located in Madison County, Kentucky. Without this special permit, 49 CFR 192.611(a) would require CGT to replace the seven (7) *special permit segments* with stronger pipe or reduce the pipeline maximum allowable operating pressure (MAOP) for a Class 1 to Class 3 location change.

Table 1 – Pipe Specifications by Line Name

Special Permit Segment	Line Name	Outside Diameter (inches)	Year Installed	Seam Type	Coating Type	Grade	Wall Thickness (inches)	MAOP (psig)	Min. Test Pressure (psig)	Pressure Test Factor
1	ML 100	30	1954	DSAW	Coal Tar Enamel	X52	0.375	935	1,220	1.305
2	ML 200	30	1963/1964	DSAW	Coal Tar Enamel	X60	0.360	1,007	1,323	1.314
3	ML 300	36	1970	DSAW	Coal Tar Enamel	X65	0.388	1,007	1,338	1.329
4	ML 300	36	1970	DSAW	Coal Tar Enamel	X65 X60	0.388 0.625	1,007	1,338	1.329
5	ML 100	30	1954	DSAW	Coal Tar Enamel	X52	0.375	935	1,241	1.327
6	ML 200	30	1963/1964	DSAW	Coal Tar Enamel	X60	0.375	1,007	1,355	1.346
7	ML 300	36	1970	DSAW	Coal Tar Enamel	X60	0.504 0.605	1,007	1,369	1.359

Note: DSAW is double submerged arc welded pipe weld seam type.
Psig means pounds per square inch gauge.

Special Permit Request:

On June 22, 2022, CGT applied to PHMSA for a 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 ML 100 and ML 200 and 36-inch diameter ML 300 Pipelines located in Madison County, Kentucky.

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, State	No. Dwellings	Year Installed	Seam Type	MAOP (psig)	Pressure Test Records Condition 1(b) required ³	Material Records – Condition 13(d) required ⁴
1	30	ML 100	6,600	2618+00	2684+00	Madison, KY	47	1954	DSAW	935	No	Yes
2	30	ML 200	6,500	2620+00	2685+00	Madison, KY	44	1963/1964	DSAW	1,007	No	Yes
3	36	ML 300	7,450	2608+50	2683+00	Madison, KY	47	1970	DSAW	1,007	No	Yes
4	36	ML 300	165	2853+40	2855+05	Madison, KY	1	1970	DSAW	1,007	No	Yes
5	30	ML 100	6,800	3219+00	3287+00	Madison, KY	50	1954	DSAW	935	No	Yes
6	30	ML 200	6,850	3221+50	3290+00	Madison, KY	48	1963/1964	DSAW	1,007	Yes	Yes
7	36	ML 300	6,900	3218+00	3287+00	Madison, KY	47	1970	DSAW	1,007	No	Yes

Notes: DSAW is a double submerged arc welded pipe longitudinal seam.

The pipe external coating is coal tar enamel for each *special permit segment*.

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 Areas

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, 5	30	ML 100	10+58	3374+89	63.72
2	2, 6	30	ML 200	12+23	4232+00	79.92
3	3, 4, 7	36	ML 300	0+58	4226+74	80.04

The *special permit inspection areas* are in Madison, Casey, Estill, Lincoln, Powell, and Garrard Counties, Kentucky.

³ *Special permit segment 6* does not meet **Condition 1(b)**, it has no identified test person or pressure test elevations and was tested in 1964.

⁴ CGT has not furnished chemical and mechanical properties for the pipe in *special permit segments 1 through 7*.

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

Public Notice:

On August 17, 2022, PHMSA posted a notice of this special permit request in the Federal Register (87 FR 50693) with a closing date of September 16, 2022. PHMSA received one public comment concerning this special permit. This public comment is reviewed in the Final Environmental Assessment (FEA) and Finding of No Significant Impact (FONSI).

The CGT special permit application letter, Federal Register notice, Special Permit, FEA and FONSI, and all other pertinent documents are available for review in Docket No. PHMSA-2022-0084 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 CGT 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 CGT 30-inch diameter ML 100 and ML 200 pipelines and the 36-inch ML 300 pipeline, where a change has occurred from a Class 1 location to a Class 3 location.
 - CGT meets this requirement.

- 2) No bare pipe will be considered.
 - The CGT *special permit segments* are externally coated with coal tar enamel.
 - CGT has not reported any coating issues such as disbonded coating.
 - CGT meets this requirement.
- 3) No pipe containing wrinkle bends will be considered.
 - There are no wrinkle bends in the *special permit segments*.
 - CGT 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.
 - CGT 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 CGT 30-inch diameter ML 100 and ML 200 pipelines and the 36-inch ML 300 pipeline were tested to at least 1.25 times the MAOP or **Table 1** and **Condition 1(b)** will require a pressure test to 1.39 times MAOP.
 - CGT meets or will meet 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).
 - CGT has run ILI tools on the CGT 30-inch diameter ML 100 and ML 200 pipelines and the 36-inch ML 300 pipeline in 2015, 2016, 2019, and 2020 in the *special permit inspection area*. **Attachment A - Listing of Columbia Gulf Transmission (CGT) Special Permit Segments** details all ILI assessments and date of the assessment.
 - CGT has found two (2) crack features at Survey Station 2346+82 on *special permit segments 3, 4, and 7*. The cracks were minor surface cracks and have been remediated.
 - CGT 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 CGT’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*.
- CGT’s defined *special permit inspection areas 1, 2 and 3* are 63.72, 79.92, and 80.04 miles in length as detailed in **Table 3 – Special Permit Inspection Areas**.

Criteria Matrix: The data submitted by CGT 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:
 - CGT has identified issues in girth welds within the *special permit segments* and pipe girth weld records are not available. CGT will complete **Special Permit Condition 6 – Girth Welds**;
 - The coating type may shield CP when disbonded, causing SCC.⁶ CGT will complete **Special Permit Condition 7 – Stress Corrosion Cracking Threat**; and

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.

- 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 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 CGT must implement to comply with this special permit.

Past Enforcement History – January 1, 2011 through September 30, 2022:

From January 1, 2011, through September 30, 2022, CGT was cited in five (5) enforcement actions with a total of \$33,100 in assessed civil penalties. PHMSA initiated one (1) Corrective Action Order, one (1) Notice of Amendment, two (2) Notices of Probable Violation, no Safety Orders, and one (1) Warning Letter against CGT. TC Energy acquired CGT in 2016. Since TC Energy became owner of CGT, PHMSA has issued no enforcement cases.

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

Table 4: CGT Enforcement Matters from January 1, 2011, through September 30, 2022						
Status	Corrective Action Order	Notice of Amendment	Notice of Probable Violation	Safety Order	Warning Letter	Total
CLOSED	1	1	2	0	1	5
OPEN	0	0	0	0	0	0
Total	1	1	2	0	1	5

Table 5: CGT Enforcement Civil Penalty Status January 1, 2011 through September 30, 2022				
Proposed	Awaiting Order	Assessed	Withdrawn/Reduced	Collected
\$33,100	\$0	\$33,100	\$0	\$33,100

Summary of Enforcement Findings for CGT includes:

- **Construction: Atmospheric Corrosion Control:** Monitoring; **External Corrosion Control:** Cathodic Protection and Electrical Isolation; **Internal Corrosion Control:** Inspection Internal Surface; **Design:** Yield Strength for Steel Pipe; **Maintenance:** Abandonment or Deactivation of Facilities, Pressure Limiting and Regulating Station-Relief Devices, Repair Procedures; **Operations:** Emergency Plans, Underwater Inspection to Identify Gulf of Mexico Pipeline Hazards; **Operator Qualification:** Qualification Program; **Reporting:** System Incident Reports, National Registry of Pipeline and LNG Operators; **Welding:** Qualification of Welders.
- 49 CFR 191.22, 191.5, 192.107, 192.227, 192.463, 192.467, 192.475, 192.481, 192.612, 192.615, 192.711, 192.727, 192.743, and 192.805.

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

Table 6: Summary of Enforcement Findings from CGT January 1, 2011 to September 30, 2022				
Notice of Amendment				
Corrosion Control	5	Design	1	Operation and/or Maintenance 5
Operator Qualification	3	Welding of Steel in Pipelines	1	
Notice of Amendment Total:				15
Notice of Probable Violation				
Operation and/or Maintenance	1	Reporting	1	
Notice of Probable Violation Total:				2
Warning Letter				
Reporting	2			
Warning Letter Total:				2
Grand Total:				19

From January 1, 2011, through September 30, 2022, PHMSA initiated the enforcement cases outlined in **Tables 7 and 8** against the four (4) pipeline companies owned by TC Energy, the operator of CGT. TC Energy owns and operates the ANR Pipeline Company (ANR), Columbia Gas Transmission, LLC (TCO), Columbia Gulf Transmission, LLC (CGT), and Great Lakes Gas Transmission Company (GLGT) pipeline systems (Operator identification #s 405, 2616, 2620, and 6660). TC Energy acquired the TCO and CGT pipeline systems in 2016.

Table 7: Enforcement Matters from January 1, 2011 through September 30, 2022 ANR, TCO, CGT, and GLGT						
Status	Corrective Action Order	Notice of Amendment	Notice of Probable Violation	Safety Order	Warning Letter	Total
CLOSED	3	19	27	3	27	79
OPEN	0	0	2	0	0	2
Total	3	19	29	3	27	81

Table 8: Enforcement Civil Penalty Status for ANR, TCO, CGT, and GLGT January 1, 2011 through September 30, 2022				
Proposed	Awaiting Order	Assessed	Withdrawn/Reduced	Collected
\$3,364,004	\$0	\$3,160,404	\$177,200	\$3,160,404

The type of 49 CFR Part 192 enforcement violations against TC Energy on these four (4) pipeline systems from January 1, 2011 through September 30, 2022 includes: **Construction:** Compliance with specifications or standards and General Inspection; **Control Room Management:** Alarm Management, Fatigue Mitigation, Roles & Responsibilities, SCADA System Limitations, and Training; **Atmospheric Corrosion Control:** General and Monitoring; **Corrosion Control:** Corrosion Control Records and CP after installation within one year; **External Corrosion Control:** Buried Pipe Post 1971, CP, Electrical Isolation, Interference Currents, Monitoring, and Test Leads; **Internal Corrosion Control:** Inspection internal surface and Monitoring; **Design:** Compressor Station Design & Construction, Compressor Stations Additional Safety Equipment, Compressor Stations Emergency Shutdown, Supports and Anchors, Yield Strength for Steel Pipe; **Drug and Alcohol:** Alcohol Tests Required and Drug Testing Required; **Enforcement Procedures:** Inspections and Investigations, **Integrity Management (IM):** Addressing Integrity Issues, Change to IM Plan, Elements and Implementation, HCA Identification, Preventative and

Mitigative Measures, Program Elements, and Requirements for SCC Direct Assessment (SCCDA); **OME Procedural Manual:** General, Maintenance and normal operations, and Safety Related Condition Report (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, Systems Incident Reports, Immediate Reporting Incident, National Registry of Pipeline and LNG Operators, and SRCR; **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 191.15, 191.17, 191.22, 191.23, 191.25, 191.5, 192.107, 192.12, 192.161, 192.163, 192.167, 192.171, 192.201, 192.225, 192.227, 192.241, 192.303, 192.305, 192.309, 192.319, 192.455, 192.463, 192.465, 192.467, 192.471, 192.473, 192.475, 192.477, 192.479, 192.481, 192.491, 192.503, 192.505, 192.603, 192.605, 192.609, 192.612, 192.615, 192.616, 192.619, 192.620, 192.625, 192.631, 192.703, 192.705, 192.707, 192.709, 192.711, 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, 192.929, 192.933, 192.935, and 192.949.

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

Table 9: Summary of Enforcement Findings for ANR, TCO, CGT, and GLGT January 1, 2011 through September 30, 2022					
Notice of Amendment					
Construction	1	Control Room Management	14	Corrosion Control	5
Design	1	Integrity Management	5	OME Procedural Manual	10
Operation and/or Maintenance	13	Operator Qualification	5	Public Awareness	6
Transportation of Gas	10	Welding of Steel in Pipelines	2		
Notice of Amendment Total:					72
Notice of Probable Violation					
Construction	2	Corrosion Control	12	Design	3
Drug and Alcohol	2	Integrity Management	6	OME Procedural Manual	6
Operation and/or Maintenance	18	Public Awareness	1	OME Procedural Manual	10
Operation and/or Maintenance	26	Reporting	11	Test Requirements	1
Transportation of Gas	1	Welding of Steel in Pipelines	1		
Notice of Probable Violation Total:					100
Warning Letter					
Control Room Management	5	Corrosion Control	5	Design	2
Enforcement and Regulatory Procedures	1	Integrity Management	2	OME Procedural Manual	10
Operation and/or Maintenance	23	Operator Qualification	1	Reporting	9
Transportation of Gas	5	Welding of Steel in Pipelines	1		
Warning Letter Total:					64
Grand Total:					236

Findings:

Based on the information submitted by CGT and PHMSA’s analysis of the technical, operational, and safety issues, PHMSA finds that granting this special permit to CGT to operate *special permit segments* on the 30-inch diameter ML 100 and ML 200 and 36-inch diameter ML 300 Pipelines located in Madison County, Kentucky 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 the cracking threat. To ensure

CGT properly implements the special permit conditions, CGT 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 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 requires CGT 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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