

U.S. DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
Special Permit Analysis and Findings - Non-odorization of Gas

Special Permit Information:

Docket Number: PHMSA-2019-0174
Requested By: Gulf South Pipeline Company, LP
Operator ID#: 31728
Original Date Requested: September 4, 2019
Effective Dates: April 22, 2020 to April 22, 2030
Code Section(s): 49 CFR 192.625

Purpose:

The Pipeline and Hazardous Materials Safety Administration (PHMSA)¹ provides this information to describe the facts of the subject special permit application submitted by Gulf South Pipeline Company, LP (GSPC)² to discuss any relevant public comments received with respect to the application, to present the engineering/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. GSPC requested that PHMSA waive compliance from 49 Code of Federal Regulations (CFR) 192.625 for one (1) segment and 1.31 miles of natural gas transmission pipeline.

Pipeline System Affected:

The special permit applies to the GSPC request for a waiver of the odorant requirements in 49 CFR 192.625 for 1.31 miles (6,929 feet) of 30-inch diameter Index 129-72 Pipeline located in Fort Bend County, Texas. The special permit allows GSPC to continue to operate the pipeline at

¹ Throughout this special permit analysis and findings document 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 GSPC is a wholly-owned, operating subsidiary of Boardwalk Pipeline Partners, LP.

its maximum allowable operating pressure (MAOP) of 1,100 pound per square inch gauge (psig) without odorized natural gas in the *special permit segment* with implementation of the conditions of the special permit.

Special Permit Request:

GSPC applied to PHMSA on September 4, 2019, for a special permit seeking relief from the Federal pipeline safety regulations in 49 CFR 192.625 for 1.31 miles of the *special permit segment* as described below and in Appendix A - GSPC Pipeline – Overview Map. The *special permit segment* is defined below.

- *Special permit segment* – Index 129-72 Pipeline — 1.31 miles of the GSPC Index 129-72 Pipeline which connects GSPC’s Index 129 Pipeline to Katy Storage in Fort Bend County, Texas. The Index 129-72 Pipeline total length is 1.31 miles (6,929 feet).

The special permit allows GSPC to operate the *special permit segment* without odorization. GSPC must operate the *special permit segment* in accordance with the additional safety requirements required in the special permit conditions.

Public Notice:

On December 13, 2019, PHMSA published the special permit request in the Federal Register (84 FR 68297) and the public comment period ended on January 13, 2020, with all comments received through February 29, 2020, being reviewed and considered. The special permit application from GSPC, pipeline route maps, public comments, environmental assessment, and special permit conditions are available in Docket No. PHMSA-2019-0174 at: www.regulations.gov.

PHMSA received one (1) stakeholder comment on the proposed GSPC Index 129-72 Pipeline special permit. The comment sought the denial of the special permit request based on environmental and public health concerns.

PHMSA Overall Response and Considerations of Public Safety Concerns:

PHMSA has reviewed the public stakeholder comment on the docket, e-mails sent to PHMSA, and any phone calls received through February 29, 2020 concerning the GSPC Index 129-72 Pipeline. For the *special permit segment*, the offset of the pipeline from any dwellings or

homes, usage of the higher safety design factor pipe, enhanced material, construction, hydrostatic pressure testing, and operations and maintenance procedures, as outlined in the special permit conditions, will maintain equivalent safety as compared to odorization of this segment. The special permit conditions require additional aerial, ground patrol and instrumented leak detection on a periodic basis. For detection and shutdown of the pipeline in emergency situations, the pipeline gas flow and pressure will be monitored by GSPC personnel 24-hours, 7- days a week, and all pipeline mainline valves will be remote-controlled for isolation and with pressure monitoring.

The public comments are summarized as noted below and the referenced Findings of No Significant Impact can be reviewed on the docket (PHMSA-2019-0174) at www.regulations.gov.

PHMSA's summarization of the public stakeholder comments and how the concerns are being handled within the special permit are below:

- 1) **Stakeholder Comment:** I recommend we don't issue a permit to Gulf South to better protect the environment and public health. I further recommend we nationalize the oil and gas industry that operates on Americans Public Lands;
 - **PHMSA Response:** PHMSA has structured the special permit conditions to exceed PHMSA pipeline safety code requirements in 49 CFR Part 192 for the GSPC Index 129-72 Pipeline life-cycle that included design, construction, operations, maintenance and emergency response. The special permit conditions will protect the environment and public health to a greater extent than odorizing the gas. Denial of the special permit would result in additional construction and environmental impacts.

While nationalization of the oil and gas industry is outside of the scope of the special permit request, PHMSA notes that it has no authority to nationalize the oil and gas industries.

Analysis:

PHMSA developed the special conditions to achieve an equivalent or higher level of safety by significantly decreasing the likelihood of a release of natural gas in the *special permit segment*.

The special permit conditions include: additional inspection, use of coatings on the pipe and girth

welds that do not shield against cathodic protection (CP), inline inspection (smart pigging), cathodic protection inspections and defined repair criteria (reducing the risk of failure due to mechanical damage and corrosion); and increased patrolling and line of sight markers (reducing the risk of in-service mechanical damage). The special permit conditions require the entire GSPC Index 129-72 Pipeline to be controlled and monitored by a supervisory control and data acquisition (SCADA) system and to be equipped with equipment and valves for remote monitoring and control to detect and shut-off gas flow when a large volume leak or rupture is detected.

Natural gas is typically odorless, and thus gas without odorant could build-up within a closed structure without being detected. For ignition of leaking gas to occur, a sufficient concentration is required. Because natural gas dissipates in air, typically enclosed spaces are at much greater risk for ignition than open air. The GSPC Index 129-72 Pipeline does not have a direct connection to any structures within the *special permit segment*, so migration of gas released from a leak would not have a direct path to any structure, which minimizes the risk of natural gas build up in an enclosed structure. Furthermore, PHMSA believes that undertaking additional measures designed to prevent pipeline leaks will provide an equivalent or higher level of public safety in the *special permit segment* than would be achieved by introducing odorant in the pipeline, and that this will offset any potential increased risk of an unidentified leak or build-up of natural gas in an enclosed area.

GSPC requested that odorization requirements be waived for the following reasons:

- 1) Index 129-72 Pipeline begins at an interconnect with GSPC's existing Index 129 Pipeline main transmission line. The Index 129-72 Pipeline terminates at Katy Storage, which provides interstate underground natural gas storage services. The Index 129-72 Pipeline is designed to operate bi-directionally, and GSPC currently operates this pipeline to transport gas away from storage and into GSPC's existing Index 129 Pipeline (which does not require odorization). GSPC is requesting a special permit for the 1.31-mile Index 129-72 Pipeline (i.e., *special permit segment*) that connects Katy Storage and GSPC's existing Index 129 Pipeline. The special permit will waive the requirement to odorize the gas in the Index 129-72 Pipeline when gas flows from the unodorized Index 129 Pipeline towards Katy Storage.

- 2) The Index 129-72 Pipeline connects two (2) facilities that do not carry odorized natural gas. Katy Storage, which is owned and operated by Enstor Inc., cannot accept odorized natural gas for operational and commercial reasons. Odorants, like mercaptan, contain sulphur. When mixed with water, (commonly found in underground natural gas storage facilities) sulphur becomes hydrogen sulfide (H₂S), a highly toxic and corrosive compound that is harmful to underground storage and pipeline facilities. In addition, Katy Storage is connected to 14 different pipelines, including GSPC, and serves as a natural gas storage hub. Customers at Katy Storage have the flexibility to transport gas into and out of Katy Storage on different pipelines so that they can access markets across the interstate and intrastate pipeline grid. The gas that Katy Storage receives from the pipelines and stores for its customers is commingled in the storage cavern and is re-delivered into several take-away pipelines that also do not transport odorized natural gas. Because Katy Storage must provide a product that can be accepted by all of its interconnecting pipelines, Katy Storage cannot accept odorized gas.

Operational Integrity Compliance:

PHMSA has reviewed this special permit request to ensure that integrity threats to the pipeline in the *special permit segment* are addressed in the operator's design, material, construction, operations and management plan (O&M Procedures and specifications). PHMSA carefully designed a comprehensive set of conditions that GSPC is required to meet for the special permit to be granted for non-odorization of the 1.31 miles of 30-inch diameter Index 129-72 Pipeline. Among other things, the conditions include:

- 1) The *special permit segment* must be capable of internal inspection in accordance with 49 CFR 192.150 and must include permanently or temporally installed launchers and receivers.
- 2) All mainline valves on the GSPC pipeline within the *special permit segment* must be equipped for remote operation, monitoring and control, or remote monitoring and automatic control in accordance 49 CFR 192.620(d)(3)(iii).

- 3) The 30-inch mainline pipe within the *special permit segment* must be manufactured using American Petroleum Institute Standard 5L “*Specification for Line Pipe*” (API 5L)³ product specification Level 2.
- 4) The ratio of the specified outside pipe diameter of the pipe to the specified wall thickness (d/t) must be less than 100 for the pipeline within the *special permit segment*.
- 5) The toughness properties for pipe must ensure at least ninety-nine percent (99%) probability of fracture arrest within eight pipe lengths with a probability of not less than ninety percent (90%) within five pipe lengths as defined in 49 CFR 192.112(b) for the pipeline within the *special permit segment*.
- 6) The special permit segment must be hydrostatically tested to 1,650 psig (which is a minimum of 1.50 times the MAOP of 1100 psig) for eight (8) continuous hours in accordance with 49 CFR Part 192, Subpart J.
- 7) Coatings that can shield CP, such as polyethylene coatings (shrink sleeves and tape coatings), must not be used within the *special permit segment*.
- 8) GSPC must incorporate the requirements of this special permit into its written integrity management program and standard operating procedures (SOPs).⁴ GSPC must treat the *special permit segment* as “*covered segment*” in a “*high consequence area (HCA)*” in accordance with 49 CFR Part 192, Subpart O.
- 9) Anomaly response and repair for the GSPC pipeline within the *special permit segment* must be conducted as required by 49 CFR 192, Subpart O, and the additional evaluation and remediation criteria in the special permit conditions regardless of HCA⁵ status. The required timing for excavation, investigation, and remediation of anomalies based on ILI data or excavation results must be in accordance with 49 CFR 192.933 and must

³ API 5L editions and other industry standards “incorporated by reference” are listed in 49 CFR 192.7. If PHMSA adopts a revised edition of a referenced standard such as API, NACE International or ASME standards into 49 CFR Part 192, the referenced requirements of those revised standards are automatically incorporated into these special permit conditions unless noted otherwise.

⁴ Pipeline operating procedures such as GSPC SOPs are required by 49 CFR 192.603(b) and 192.605.

⁵ HCAs in the *special permit inspection area* and *special permit segments 1 and 2* must have anomalies evaluated and repaired based upon the most stringent requirements of: this special permit; 49 CFR Part 192, Subpart O, or GSPC’s Integrity Management Plan.

incorporate the appropriate class location design factors and wall loss criteria in the anomaly repair criteria

- 10) A close-interval survey (CIS)⁶ must be conducted and areas of inadequate cathodic protection in *special permit segment* must be remediated⁷ within one (1) year of the issuance of this special permit or after pipeline construction in 2017.
- 11) CIS reassessments must be conducted on the *special permit segment* at a frequency consistent with the reassessment intervals specified in 49 CFR 192, Subpart O for HCAs and the CP levels required in 49 CFR 192, Subpart I.
- 12) Spacing between CP pipe-to-soil test stations within the *special permit segment* cannot exceed 3200 feet.
- 13) Any areas of low CP potential within the *special permit segment* must be remediated within one (1) year of the finding unless it is impracticable to meet this schedule due to a permitting interval.
- 14) In addition to the requirements of 49 CFR 192.705 and 192.706, GSPC must perform right-of-way patrols as follows:
 - a. Ground patrols using instrumented leakage detection equipment that can detect gas leaks along the *special permit segment* at intervals between every five (5) months to seven and one-half (7-½) months, not to exceed seven and one-half (7-½) months, but at least two (2) times per calendar year.
 - b. Aerial flyover patrols or ground patrols by walking or driving of the *special permit segment* right-of-way once a week, not to exceed 10-days, contingent on weather conditions. Should mechanical availability of the patrol aircraft or weather conditions become an extended issue, the *special permit segment* pipeline aerial flyover patrol must be completed within 21-days of the past patrol by other methods such as walking or driving the pipeline route, as feasible.

⁶ CIS must be conducted at a maximum 5-foot spacing and with interrupted on/off current.

⁷ The terms “remediate” or “remediation” of pipe coating must include repair of damaged external pipe coating, where required to maintain cathodic protection of the pipeline in accordance with 49 CFR 192.463.

- c. If either the ground patrols or aerial flyover patrols schedule cannot be met due to circumstances beyond GSPC's control, GSPC must notify the PHMSA Central Region Director in writing of the reasons the schedule cannot be met and obtain a letter of "no objection" within three (3) business days of the exceedance.
- 15) Line-of-sight markers must be installed and maintained within the *special permit segment* in accordance with 49 CFR 192.620(d)(4)(iv) to the extent practical.
- 16) All mainline valves for the GSPC pipeline within the *special permit segment* must be controlled by a SCADA system and must be equipped for remote monitoring and control, or remote monitoring and automatic control in accordance 49 CFR 192.620(d)(3)(iii) and the special permit conditions.
- 17) Within one (1) year of issuance of the permit, GSPC must perform surveys and remediation, with corrosion control implemented, for induced currents from electric transmission lines and other known sources of potential interference within the *special permit segment*.
- 18) GSPC must provide pipeline safety awareness material to residents within the potential impact radius (PIR) of the *special permit segment* each calendar year.
- 19) Annually, after issuance of this special permit, GSPC must submit an annual pipeline integrity report to PHMSA.
- 20) GSPC must maintain data integration of special permit condition findings and remediation in the *special permit segment*.
- 21) GSPC must evaluate the potential environmental consequences and affected resources of any land disturbances and water body crossings needed to implement the special permit conditions for *special permit segment* prior to the disturbance. GSPC must obtain all applicable (Federal, state, and local) environmental permits and adhere to all applicable (Federal, state, and local) environmental permit requirements when conducting the special permit conditions activity.
- 22) If a leak or rupture (incident as defined by 49 CFR 191.3) occurs in the *special permit inspection segment*, a "root cause analysis" must be performed to determine the cause of the failure.

23) GSPC must maintain all records required by 49 CFR Part 192, as well as records required in the special permit conditions for the *special permit segment*.

24) A GSPC senior executive officer, vice president or higher must certify in writing the following:

- a. GSPC pipeline *special permit segment* meets the conditions described in this special permit;
- b. The written manual of O&M procedures required by 49 CFR 192.605 for the GSPC pipeline has been updated to include all requirements of this special permit; and
- c. GSPC has implemented all Conditions as required by this special permit.

The special permit contains conditions to ensure GSPC meets or exceeds the threshold requirements with equivalent safety and to ensure that granting the special permit will not be inconsistent with safety.

Past Enforcement History – January 1, 2010 through February 29, 2020

Since January 1, 2010 through February 29, 2020, Boardwalk and GSPC were cited in 29 enforcement cases with a total of \$706,700 in assessed civil penalties. PHMSA initiated three Notices of Amendments, ten Notices of Probable Violations, fourteen Warning Letters, one Safety Order and one Corrective Action Orders against Boardwalk Pipeline Partners and GSPC.

Below is a table of PHMSA enforcement matters of all types in all PHMSA Regions for Boardwalk/GSPC (OPID #19270, 31554, 31728, 32299) from January 1, 2010, through February 29, 2020:

- Texas Gas Transmission, LLC (19270)
- Boardwalk Petrochemical Pipeline, LLC (31554)
- Gulf South Pipeline Company, L.P. (31728)
- Gulf Crossing Pipeline Company, LLC (32299)

Status	Corrective Action Order	Notice of Amendment	Notice of Probable Violation	Safety Order	Warning Letter	Total
CLOSED	1	3	10	0	14	28
OPEN	0	0	0	1	0	1
Total	1	3	10	1	14	29

The limitations section of the special permit requires a reapplication and review of the GSPC special permit on a periodic basis. PHMSA may revoke, suspend or modify the GSPC special permit based on any finding listed in 49 CFR 190.341(h)(1) and require GSPC to comply with the regulatory requirements in 49 CFR 192.625. As provided in 49 U.S.C. Chapter 601 and 49 CFR Part 190, PHMSA may also issue an enforcement action for failure to comply with the special permit. Any work plans and associated schedules must be automatically incorporated into the GSPC special permit and are enforceable in the same manner.

PHMSA has determined that imposing the conditions and limitations summarized in this document will ensure that granting the special permit for non-odorization for the *special permit segment* will be consistent with safety.

Findings:

Based on the information submitted by GSPC and PHMSA's analysis of technical, operational and safety issues, and given the conditions that will be imposed in the special permit, PHMSA finds that granting this special permit to GSPC to operate the 30-inch Index 129-72 Pipeline *special permit segment* located in Fort Bend County, Texas, without odorization of the natural gas would not be inconsistent with pipeline safety.

Completed in Washington DC on: April 22, 2020

Prepared By: PHMSA – Engineering and Research Division