U.S. DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
OFFICE OF PIPELINE SAFETY
WASHINGTON, DC 20590

SPECIAL PERMIT MODIFICATION AGREEMENT

This Agreement modifies the special permits the Pipeline and Hazardous Materials Safety Administration (PHMSA) granted to Boardwalk Pipeline Partners, LP and its subsidiaries Gulf Crossing Pipeline Company LLC, Gulf South Pipeline Company, LP, and Texas Gas Transmission, LLC (collectively hereinafter, "Boardwalk") to operate certain pipelines located in Louisiana, Texas, Mississippi, Arkansas, Oklahoma and Alabama at up to 80 percent SMYS in Class 1 locations provided that numerous conditions and safety requirements were met. These pipelines are defined as: 42-inch East Texas to Mississippi Pipeline, 42-inch Mississippi Loop Pipeline, 42-inch South East Pipeline, 42-inch Gulf Crossing Pipeline, 36-inch Fayetteville Lateral and 36-inch Greeneville Lateral (collectively referred to as "Pipelines").

Subsequent to the issuance of these special permits, the X70 grade steel pipe used in constructing these pipelines appears to have exhibited low yield strength in field conditions and may be below the minimum level allowed by American Petroleum Institute Specification 5L, Specification for Line Pipe (API 5L). During the process of complying with the special permit for the Mississippi Loop project, a hydrostatic test failure occurred in which the root cause was determined to be a switched plate inadvertently inserted into the plate rolling in the plate mill. As a result of the hydrostatic test failure, Boardwalk, in cooperation with PHMSA, ran deformation tools in all of the subject pipelines and discovered additional potentially low yield strength anomalies in the Pipelines. While not all of these additional anomalies may be directly related to the initial root cause findings for the Mississippi Loop failure, Boardwalk is continuing its investigation, is formulating a remediation and fitness for purpose plan including the potential excavation and removal of certain of the anomalous pipe joints.

Based on the new information and changed circumstances surrounding the construction and operation of the Pipelines that PHMSA became aware of after the special permits were initially granted, PHMSA has determined that interim pressure limits and other remedial actions to address the potential low yield strength issues are necessary as part of the implementation of the special permit conditions to ensure the purpose of the conditions is met prior to implementing the alternative MAOP and to ensure the pipelines can be safely operated.

Having agreed that modification of the special permits to include additional conditions is necessary to address the potential low yield strength issue described above, Boardwalk agrees as follows:

I. General Provisions

1. Boardwalk acknowledges that, as operator of the specified pipelines, Boardwalk and its pipeline systems are subject to the jurisdiction of the pipeline safety laws, 49 U.S.C. 60101 *et*

seq., and regulations and administrative orders issued thereunder. Boardwalk and PHMSA hereby agree to the additional conditions set forth in this Agreement modifying the special permits and each party waives its rights to contest the validity of this Agreement. Boardwalk further waives any further procedural requirements it would otherwise have the opportunity to avail itself of under 49 C.F.R. § 190.341(h) in connection with the special permit modifications set forth in this Agreement, including any rights to administrative or judicial hearings or appeals.

2. Boardwalk agrees that the potential low yield strength issues described above exist and agrees to address them by completing the actions specified in Section II of this Agreement (Additional Special Permit Conditions) including any work plans and schedules which shall automatically be incorporated into this Agreement, certain aspects of which are subject to further discussion and mutual agreement of PHMSA and Boardwalk. This Agreement shall apply to and be binding upon Boardwalk, its officers, directors, and employees, and its successors, assigns, or other entities or persons otherwise bound by law. Boardwalk agrees to provide a copy of this Agreement and any incorporated work plans and schedules to all of its officers, employees, and agents whose duties might reasonably include compliance with this agreement.

3. For all transfers of ownership or operating responsibility of the specified pipelines, Boardwalk shall provide a copy of this Agreement to the prospective transferee at least 30 days prior to such transfer and simultaneously provide written notice of the prospective transfer to PHMSA.

4. Nothing in this Agreement affects or relieves Boardwalk of its responsibility to comply with all applicable requirements of the pipeline safety laws, 49 U.S.C. § 60101 *et seq.*, and regulations and orders issued thereunder. Nothing in this Agreement alters PHMSA's right of access, entry, inspection, and information gathering or PHMSA's authority to bring enforcement actions against Boardwalk pursuant to the pipeline safety laws, 49 U.S.C. § 60101 *et seq.*, regulations or orders issued thereunder, or any other provision of Federal or State law.

5. This Agreement does not waive or modify any other Federal, State, or local laws or regulations applicable to Boardwalk's pipeline systems. Boardwalk is responsible for achieving and maintaining compliance with all applicable Federal, State, and local laws, regulations and permits.

6. This Agreement does not create rights in, or grant any cause of action to, any third party not party to this Agreement. The U.S. Department of Transportation is not liable for any injuries or damages to persons or property arising from acts or omissions of Boardwalk or its officers, employees, or agents carrying out the work required by this Agreement. The U.S. Department of Transportation, its officers, employees, agents, and representatives are not liable for any cause of action arising from any acts or omissions of Boardwalk or its contractors in carrying out the work required by this Agreement.

II. Additional Special Permit Conditions

East Texas to Mississippi, Southeast Expansion, Mississippi Loop, Gulf Crossing, Fayetteville and Greenville Lateral Projects (Project(s))

1. Boardwalk is approved to operate its pipeline systems or *segment(s)* per the "Interim Operating Pressure" as defined in Table 1. Boardwalk must limit the operation of each pipeline project *segment* at or below the "Interim Operating Pressure" until each such pipeline *segment* has met the conditions contained within this Agreement. This pressure restriction will remain in effect until written approval to increase the pressure is obtained from the Director, Engineering and Emergency Support as set forth in Item 16.

Table 1 - Listing of Segments and Pressure Limitations

"Project[1]"	*"Segment[2]"*	**PHMSA Region**	**Interim Operating Pressure (psig)**	**Interim Percent of % SMYS**	**72[3]% SMYS (psig)**
East Texas to MS (PHMSA- 2006-26533)	Carthage Junction CS to Hall Summit	Southwest	1,066	64%	1,200
East Texas to MS (PHMSA- 2006-26533)	Hall Summit to Vixen CS	Southwest	964	58%	1,200
East Texas to MS (PHMSA- 2006-26533)	Vixen CS to Tallulah CS	Southwest	1,058	63%	1,200
East Texas to MS (PHMSA- 2006-26533)	Tallulah CS to Harrisville CS	Southwest/Southern	1,072	57%	1,340
Southeast Expansion (PHMSA- 2007-28994)	Entire line (Harrisville CS to Transco 85)	Southern	1065	57%	1340
Mississippi Loop (PHMSA- 2008-0068)	Entire line	Southwest/Southern	1340	72%	1340
Gulf Crossing (PHMSA- 2008-0068)	Sherman to Bennington[4]	Southwest	1340	72%	1340
Gulf Crossing (PHMSA- 2008-0068)	Bennington to Paris	Southwest	1340	72%	1340
Gulf Crossing (PHMSA- 2008-0068)	Paris to Mira	Southwest	1032	55%	1340
Gulf Crossing (PHMSA- 2008-0068)	Mira to Sterlington	Southwest	1032	55%	1340
Gulf Crossing (PHMSA- 2008-0068)	Sterlington to Tallulah	Southwest	902	48%	1340
Fayetteville (PHMSA- 2008-0067)	Grand View to Bald Knob	Southwest	1050	72%	1050
Fayetteville (PHMSA- 2008-0067)	Bald Knob to Lula	Southwest/Southern	810	52%	1125
Greenville (PHMSA-2008-0067)	Greenville to Kosciusko	Southern	1050	72%	1050
East Texas to MS (PHMSA- 2006-26533)	36" Carthage Header	Southwest	1204	72%	1204

[1] A "*Project*" is defined as a complete pipeline project and all of its segments.

[2] A "*Segment*" is defined as a section of pipe between defined points, compressor stations or the entire pipeline.

[3] The 72% SMYS used in the pressure calculations in Table 1are based upon X70 (70,000 psi yield strength) pipe. If through testing under this agreement it is determined that X70 is not the appropriate strength value to use the table will be amended accordingly.

[4] The Mississippi Loop Pipeline and Gulf Crossing Pipeline *segments* – Sherman to Bennington and Bennington to Paris - do not have any expanded pipe in them based upon either removal of pipe or Deformation tool results.

Actions that must be taken prior to increasing the pressure above the "Interim Operating Pressure" up to 72% SMYS

2. Prior to being allowed to operate any pipeline segment up to 72% specified minimum yield strength (SMYS) (as defined in Table 1) Boardwalk must evaluate that pipeline segment with a high resolution deformation tool specifically for identifying potentially expanded pipe. Once the pipeline deformation tool results from the Fayetteville and Greenville Lateral Pipelines[5] become available and are evaluated which is anticipated to occur during the summer of 2009, Boardwalk may elect to submit an alternative plan for remediating the Fayetteville and Greenville Lateral Pipelines. In such event, PHMSA will review and assess such plan, including reviewing the "Proposed Interim Operating Pressures" identified above.

3. Unless otherwise agreed to in writing by PHMSA or as set forth herein, Boardwalk must cut out all expanded pipe over API 5L tolerances on expansion, 0.25" or 0.60% of diameter for 42-inch pipe and 0.27-inch or 0.75% of diameter for 36-inch pipe. After cutting out the expanded pipe in any given *segment*, Boardwalk may request to operate that *segment* up to 72 percent SMYS. Boardwalk must submit requests to modify this agreement or to increase operating pressures in accordance with Item 16 below.

4. Boardwalk must submit a "Construction Plan" to the Director, Engineering and Emergency Support with copies to the Directors, PHMSA Southern and Southwestern Regions. The plan should contain any planned deformation tool runs and updated with the schedules for removal of any identified expanded pipe. For purposes of this Agreement, a Construction Plan shall mean the weekly reports that Boardwalk currently submits that outlines the work anticipated to occur during the following week. Boardwalk is to submit these Construction Plans each week.

5. The Construction Plan referenced in Item 4 must address the removal of the pipe joints containing the three horizontal directional drill anomalies identified on the 42-inch East Texas to Mississippi Pipeline[6] that appear to have expansion of approximately 1.0% to 2.25 %, five horizontal directional drill (HDD) anomalies on the 42-inch Southeast Expansion Pipeline[7] that appear to have an expansion of approximately 1.0%, and one horizontal directional drill anomaly on the Gulf Crossing Pipeline[8] that may have an expansion of approximately 1.0%.

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[5] The 36" Fayetteville Lateral deformation tool run is scheduled for May 28 on the 66 mile section from Grandview to Bald Knob, AR. The 36" Greenville Lateral deformation tool run is scheduled for June 2 on the 97 mile section from Greenville to Kosciusko, MS. The 36" Carthage Header (part of the East Texas to Mississippi Pipeline Project) deformation tool run is scheduled for the week of May 4 for the entire 3 mile segment.

[6] The 42-inch East Texas to Mississippi Pipeline, Hall Summit to Vixen segment, has the following anomalies in HDDs: a) Saline Bayou West - 2 anomalies, b) Saline Bayou East - 1 anomaly, c) Dugdemona Creek – 1 anomaly.

[7] The 42-inch Southeast Expansion Pipeline has the following anomalies in HDDs: a) Campbell Creek – 1 anomaly, b) Leaf River – 1 anomaly, c) West Tallahalla Creek – 1 anomaly, d) Tallahalla Creek – 1 anomaly, and e) County Road 613 – 1 anomaly.

[8] The 42-inch Gulf Crossing Pipeline, Mira to Sterlington segment, has the following anomaly in a HDD: a) Dorcheat Bayou – 1 anomaly.

6. If any pipe that has been identified as "Expanded" (as defined in Item 3) is not removed, including any of the joints identified in Item 5, Boardwalk must submit to the Director, Engineering and Emergency Support with copies to the Directors, PHMSA Southern and Southwestern Regions, a technical justification why the expanded pipe can be operated safely at the higher operating pressures.

Actions that must be taken prior to increasing the pressure above the 72% SMYS up to MAOP Special Permit Conditions.

7. Boardwalk must continue with testing of pipe removed from the subject *segments* in order to establish the serviceability up to 80% SMYS operating parameters. For each 42-inch and 36-inch pipe steel supplier, rolling campaign, and slab source with an identified pipe expansion:
   a) A minimum of 4 pipe joints must be tested showing no expansion after hydrotest[9];
   b) A minimum of 4 pipe joints must be tested showing expansion between 0.6% of diameter[10] (0.75% of diameter for the 36" pipe) to 1.0% expansion after hydrotest;
   c) A minimum of 4 pipe joints must be tested showing expansion between >1.0 % to 2.0% expansion hydrotest;
   d) All pipe joints must be tested showing expansion greater than 2.0 % expansion after hydrotest;
   e) A minimum of 4 pipe joints must be tested that have not previously been hydrotested;
   f) If less than 4 pipe joints exists for a category listed above, only those meeting criteria that are removed will be tested.
   g) The total test pipe joints for non-expanded pipe in Items 7 (a) and (e), must total at least 10% of the removed expanded pipe joints for each such category, i.e. pipe supplier, rolling campaign and slab source.

   A metallurgical examination must be conducted including mechanical (yield, tensile, hardness, elongation, charpy impact and if necessary, drop weight tear test- DWTT), chemical composition, and cross-sectional and grain size. Test coupons (transverse) must be taken from 2 distant locations down the pipe joint for each metallurgical test item listed above and opposite the pipe seam. This testing must include full destructive testing as set forth in API 5L.

8. Boardwalk must continue to test pipe cut out from the pipeline *segments* as set forth above, to determine a "Technical Fitness for Purpose Repair and Operating Plan". This "Technical Fitness for Purpose Repair and Operating Plan" must be submitted to PHMSA within 180 days of operating each pipeline up to 72% SMYS. Until this plan is accepted, Boardwalk must limit operation of each pipeline *segment* at a pressure of at or below 72% SMYS. Boardwalk must submit requests to modify this Agreement or to increase operating pressures in accordance with Item 16 below.

9. Boardwalk must incorporate Items 10, 11 and 12 below into their O & M Plan or Construction Plan, as applicable, for each such *segment*.

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[9] The hydrotest parameters are specified in the Special Permit.
[10] 0.6% equals 0.25" for 42" pipe.

10. Boardwalk must run close interval surveys (CIS) and remediate the pipe in each *segment* in accordance with 49 CFR Part 192 on a periodic basis not to exceed 45 months.

11. Boardwalk must run ILI Tools to evaluate for metal loss anomalies within 18 months of removing expanded pipe from each pipeline *Project or segment.*

12. Boardwalk must evaluate[11] all metal loss anomalies found on these pipeline *segments* in accordance with the following criteria until the Technical Fitness for Purpose Repair and Operating Plan is implemented. All anomaly evaluations and repairs for the 72% SMYS operations in the special permit *segment*, regardless of HCA status, must be performed, based upon the following:

    a) Anomaly Response Time: Immediately
        - Any anomaly within a *segment* operating up to 72% SMYS with either: (1) a failure pressure ratio (FPR) equal to or less than 1.25; (2) an anomaly depth equal to or greater than 50% wall thickness loss.
        - Any anomaly within a *segment* operating up to 60% SMYS with either: (1) an FPR equal to or less than 1.40; (2) an anomaly depth equal to or greater than 50% wall thickness loss.
        - Any anomaly within a *segment* operating up to 50% SMYS with either: (1) an FPR equal to or less than 1.5; (2) an anomaly depth equal to or greater than 50% wall thickness loss.

    b) Anomaly Response Time: Repair Within One Year
        - Any anomaly within a *segment* operating at up to 72% SMYS with either: (1) an FPR equal to or less than 1.39; (2) an anomaly depth equal to or greater than 40% wall thickness loss.
        - Any anomaly within a *segment* operating at up to 60% SMYS with either: (1) an FPR equal to or less than 1.67; (2) an anomaly depth equal to or greater than 40% wall thickness loss.
        - Any anomaly within a *segment* operating at up 50% SMYS with either: (1) an FPR equal to or less than 2.0; (2) an anomaly depth equal to or greater than 40% wall thickness loss.

    c) Anomaly Response Time: Monitored Conditions
        - Anomalies not requiring immediate or one year repairs above must be reassessed according to 49 CFR Part 192, Subpart O reassessment intervals.
        - Each anomaly not repaired under the immediate repair requirements must have a corrosion growth rate and ILI tool tolerance assigned per Boardwalk's Gas Integrity Management Program (IMP) to determine the maximum re-inspection interval.

    d) Anomaly Assessment Methods
        - Boardwalk must confirm the remaining strength (R-STRENG) effective area method, R-STRENG - 0.85dL, and ASME B31G assessment methods are valid for the pipe diameter, wall, thickness, grade, operating pressure, operating stress level, and operating temperature. Boardwalk must use the most conservative method until

[11] Evaluate means to review ILI data, excavate indication, evaluate (measure) actual anomaly and take appropriate repair actions.

confirmation of the proper method is made to the Director, Engineering and Emergency Support with copies to the Directors, PHMSA Southern and Southwestern Regions.

13. Boardwalk must complete the 36-inch Fayetteville Lateral Pipeline Project girth weld inspection and remediation plan as outlined below prior to operating the applicable segments above 72% SMYS as documented in Table 1.

Fayetteville Lateral Project Girth Weld Inspection and Remediation Protocol

Phase I – Program Development

1. Boardwalk must review the welding, weld repair and nondestructive testing (NDT) procedures that were used for the repair of the girth weld that failed during hydrostatic testing to ensure there are no technical problems with the procedures.

2. Boardwalk must review the Fayetteville Lateral Project construction records to identify, locate and catalog all girth weld repairs completed with the same procedures used on the failed girth weld.

3. Boardwalk must review the Fayetteville Lateral Project specifications and construction records regarding the actual placement of supports underneath the pipe at tie-ins, over-bends, sag-bends, and other areas of high stress to ensure that high stresses are not occurring on the Fayetteville Lateral Project as a result of inadequate pipe support.

4. The girth weld inspection and remediation program must include the nondestructive testing (NDT) and repair (if necessary) of girth welds along the Fayetteville Lateral Project with special emphasis on those areas of the pipeline subjected to the highest external loading. Boardwalk must identify, investigate and where necessary remediate previously repaired girth welds that meet the following criteria:

   a) On any previously repaired girth weld where welding and/or NDT procedures may not have been properly followed;
   b) On any repaired girth welds in the vicinity of the failed girth weld with a minimum re-inspection of three repaired girth welds upstream and three downstream of the failed girth weld;
   c) On any repaired girth welds in agricultural areas where heavy farm equipment may add to overburden stresses;
   d) On any repaired girth welds on the top and bottom of the pipe; and
   e) On any repaired girth welds near over-bends or sag-bends.

5. Boardwalk must submit the findings of the "Fayetteville Lateral Project Girth Weld Inspection and Remediation Protocol" Items 1, 2 and 3 above and the

framework of the girth weld inspection and remediation program (Item 4) to the Director, Engineering and Emergency Support with copies to the Directors, PHMSA Southern and Southwestern Regions for review prior to beginning any excavations.

Phase II – Program Implementation

1. Boardwalk must implement the program as described above.
2. If problems are discovered after the girth weld inspection and remediation program is implemented, Boardwalk must also address each of the following, as required:

   (a) Repair girth welds on hilltops;

   (b) Repair girth welds where hi-lo pipe alignment issues were not resolved by shims;
   (c) Repair girth welds at excessive depth locations;
   (d) Repair girth welds in the downstream section of compressor stations; and
   (e) Repair girth welds in other areas determined to be of high risk from excessive external forces such as bored crossings of highways/railroads and at valve settings.

3. Boardwalk must submit all the findings and results of the girth weld inspection and remediation program to the Director, Engineering and Emergency Support with copies to the Directors, PHMSA Southern and Southwestern Regions for review.

14. Should Boardwalk find, through the deformation tool evaluations and excavations of the identified anomalies, or develop any additional information, whether through the investigation or testing described otherwise herein, that may technically warrant a modification of any of the provisions of this agreement, Boardwalk may notify the Director, Engineering and Emergency Support with copies to the Directors, Southern and Southwestern Regions of these findings and request approval of the proposed modifications.

15. Boardwalk is to submit quarterly reports to the Director, Engineering and Emergency Support with copies to the Directors, Southern and Southwestern Regions that: (1) include available data and results of the testing and evaluations required by this Agreement; and (2) describe the progress of the repairs and other remedial actions being undertaken. The first quarterly report shall be due June 1, 2009.

16. The Director may allow the removal or modification of the pressure restriction set forth in the Agreement upon a written request from Boardwalk demonstrating that the potentially low yield strength risk has been abated and that restoring the affected pipeline, or portion thereof, to its otherwise applicable MAOP is justified based on a reliable engineering analysis or other mutually agreeable data, including industry publications or studies showing that the pressure increase is safe considering all known physical properties, and operating parameters of the pipeline.

III. Relationship to Original MAOP Special Permits

The additional conditions set forth in this Agreement are in addition to the conditions in the original special permits and Boardwalk must comply with both the original special permit terms and this Agreement. To the extent a term or condition in the original special permit and this Agreement are in conflict, the condition in this Agreement is controlling.

IV. Review and Approval Process

All submissions required or allowed under this Agreement should be submitted electronically in the absence of good cause to do otherwise. With respect to each submission that under this Agreement requires the approval of the Director, Engineering and Emergency Support, the Director may: (a) approve, in whole or in part, the submission, (b) approve the submission on specified conditions, (c) disapprove, in whole or in part, the submission, or (d) any combination of the foregoing. In the event of approval, approval in part, or approval with conditions, Boardwalk will proceed to take all action required by the submission as approved by the Director. In the event that the Director disapproves all or any portion of the submission, the Director will provide Boardwalk with prompt written notice of the deficiencies and the specific additional action needed to obtain approval. Boardwalk will correct all deficiencies within the reasonable time specified by the Director and resubmit it for approval.

V. Enforcement

This Agreement is incorporated into the special permits issued by PHMSA for the specified pipelines and is subject to all enforcement authorities available to PHMSA under 49 U.S.C. § 60101 *et seq.* and 49 C.F.R. Part 190, including administrative civil penalties under § 60122 of up to $100,000 per violation for each day the violation continues, if PHMSA determines that Boardwalk is not proceeding in accordance with terms of the agreement, determinations made by the Regional Director, or if appealed, decisions of the Associate Administrator. Any work plans and associated schedules shall be automatically incorporated into this Agreement and are enforceable in the same manner. Notwithstanding anything herein, Boardwalk shall have all of its legal rights to challenge, appeal or otherwise contest any proposed enforcement authority asserted for alleged non-compliance with this Agreement.

VI. Modification

The terms of this Agreement may be modified by mutual agreement of the parties. Such modifications shall be in writing and shall be signed by both parties.

VII. Termination

This Agreement shall terminate upon the completion of all terms set forth in Section II (Additional Special Permit Conditions). Boardwalk may request written confirmation from PHMSA when this Agreement is terminated. To the extent ongoing monitoring is required,

PHMSA may terminate this Agreement with respect to all other requirements with the exception of such monitoring. Nothing in this Agreement prevents Boardwalk from completing any of the obligations earlier than the deadlines provided for herein.

VIII. Ratification

The parties undersigned representatives certify that they are fully authorized to enter into the terms and conditions of this Agreement and to execute and legally bind such party to this document.

On behalf of Boardwalk, I hereby agree to all conditions and terms of this Agreement and agree to implement this Agreement on the referenced pipeline *projects* and *segments*.

Walter Bennett
Senior Vice President of Operations
Boardwalk Pipeline Partners, LP

Date 5/5/09

Jeffrey D. Wiese
Associate Administrator for Pipeline Safety

Date 4/30/09