

U.S. DEPARTMENT OF TRANSPORTATION  
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION (PHMSA)

**Special Permit Analysis and Findings**

**Purpose:**

The Pipeline and Hazardous Materials Safety Administration (PHMSA) provides this information to describe the facts of the subject special permit application, 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 list the findings supporting the grant of a special permit to Texas Gas Transmission LLC.

**Special Permit Information:**

Docket Number: PHMSA-2006-26611  
Requested By: Texas Gas Transmission LLC  
Date Requested: June 1, 2006  
Code Sections: 49 CFR § 192.611

Pipeline System Affected: This special permit applies to five pipeline segments operated by Texas Gas Transmission LLC (TXGT) in Lafayette Parish, LA, and Oldham County, KY, where changes have occurred from original Class 1 locations to Class 3 locations. This special permit allows TXGT to continue to operate the five pipeline segments at their current maximum allowable operating pressure (MAOP) as follows: EUT Lines: EUT 20-1 TT – MAOP 1052 psig; EUT 26-1 TT – MAOP 1080 psig; EUT 30-1 TT – MAOP 1080 psig. MLS Lines: MLS 26-1 TT - MAOP 810 psig; MLS 26-2 TT – MAOP 810 psig.

This special permit applies to the *special permit segments* defined as follows using TXGT's stationing along the Main Lines 20" EUT 20-1 TT, 26" EUT 26-1 TT and 30" EUT 30-1 TT. The Main Lines are 20-inches, 26-inches and 30-inches in diameter. The "*special permit segments*" and "*special permit inspection area*" are defined as follows:

**Lafayette, Louisiana**

PHMSA waives compliance from 49 CFR §192.611(a) for three natural gas transmission pipeline segments on the 20" EUT 20-1 TT, 26" EUT 26-1 TT, & 30" EUT 30-1 TT pipelines

near the E'Lan Subdivision, Lafayette, Louisiana, where a change has occurred from a Class 1 location to a Class 3 location. This special permit allows TXGT to continue to operate each *special permit segment* at its current maximum allowable operating pressure (MAOP) of 1052 pounds per square inch gauge (psig) for the EUT 20-1 TT and MAOP of 1080 psig for the EUT 26-1 TT and the EUT 30-1 TT lines.

This special permit applies to the *special permit segments* defined using the TXGT mile post (MP) references as follows:

- *Special Permit Segment 1 - 20" EUT 20-1 TT - 817 feet, MP 36+2700 to MP 36+3517*
- *Special Permit Segment 2 - 26" EUT 26-1 TT - 817 feet, MP 36+2700 to MP 36+3517*
- *Special Permit Segment 3 - 30" EUT 30-1 TT - 817 feet, MP 36+2700 to MP 36+3517*

This special permit applies to the *MLS special permit inspection area* defined using the TXGT mile post (MP) references as follows:

*EUT special permit inspection area* - means the area that extends 220 yards on each side of the centerline of the outermost pipeline on each side of the right-of-way along the entire length of TXGT pipeline system (EUT 20-1 TT, EUT 26-1 TT, & EUT 30-1 TT) from the discharge of the Youngsville Compressor Station at MP 40+1600 to MP 11+2700.

The *special permit inspection area* is located in Acadia, Lafayette, Vermilion and Iberia Parishes, Louisiana. [Note: The *EUT special permit inspection area* extends from approximately four miles upstream of the special permit segments to approximately 25 miles downstream of the special permit segments; a total of approximately 29 miles.]

### **Louisville, Kentucky**

PHMSA waives compliance from 49 CFR §192.611(a) for two natural gas transmission pipeline segments on the MLS 26-1 TT & MLS 26-2 TT pipelines near the Heritage Hills Subdivision, Louisville, Kentucky, where a change has occurred from a Class 1 location to a Class 3 location. This special permit allows TXGT to continue to operate each *special permit segment* at its current MAOP of 810 psig for the MLS 26-1 TT and the MLS 26-2 TT lines.

This special permit applies to the *special permit segments* defined using the TXGT mile post (MP) references as follows:

- *Special Permit Segment 1 - 26" MLS 26-1 TT - 955 feet, MP 602+2438 to MP 602+3393*
- *Special Permit Segment 2 - 26" MLS 26-2 TT - 862 feet, MP 602+2438 to MP 602+3300*

This special permit applies to the *MLS special permit inspection area* defined using the TXGT mile post (MP) references as follows:

*MLS special permit inspection area* - means the area that extends 220 yards on each side of the centerline of the outermost pipeline on each side of the right-of-way along the entire length of TXGT pipeline system (MLS 26-1 TT & MLS 26-2 TT) from the pig traps at MP 594+4372 (English Station) to the Ohio River crossing at MP 631+4488, which is approximately 28 miles downstream of the special permit segments.

The *special permit inspection area* is located in Jefferson, Oldham, Trimble, and Carroll Counties, Kentucky. [Note: The *MLS special permit inspection area* extends approximately 37 miles.]

### **Special Permit Request:**

TXGT petitioned PHMSA on June 1, 2006, for a special permit seeking relief from the Federal pipeline safety regulations in 49 CFR § 192.611 for five segments in separate sections along TXGT's natural gas transmission pipeline system in Louisiana and Kentucky. The system is composed of parallel pipelines in a common right-of-way: Mainlines EUT 20-1 TT, 26-1 TT and 30-1 TT in Louisiana and MLS 26-1 TT & MLS 26-2 TT in Kentucky. The Federal pipeline safety regulations in 49 CFR § 192.611 require natural gas pipeline operators to confirm or revise the MAOP of a pipeline segment after a change in class location. A special permit would allow TXGT to continue to operate each of the four special permit segments at its existing MAOP despite a change in class location.

In its petition, TXGT suggested that the five special permit segments be included in five separate special permit inspection areas, i.e., a separate special permit inspection area for each of the five requested sections (see TXGT's petition dated June 1, 2006 for the specific details).

**Public Notice:**

On February 8, 2007, PHMSA posted a notice of this special permit request in the Federal Register (72 FR 6044). We did not receive any comments for or against this special permit request as a result of this notice. The request letter, Federal Register notice and all other pertinent documents are available for review in Docket No. PHMSA-2006-26611 in the Federal Docket Management System (FDMS) located on the internet at [www.Regulations.gov](http://www.Regulations.gov).

**Analysis:**

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

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

- 1) No pipeline segments in a class location changing to Class 4 location will be considered. This special permit request is for four segments of the TXGT pipeline system where a class location change has occurred from original Class 1 location to Class 3. TXGT has met this requirement.
- 2) No bare pipe will be considered. This TXGT *special permit segments* are coated with coal tar. TXGT has met this requirement.
- 3) No pipe containing wrinkle bends will be considered. There are no wrinkle bends in the *special permit segments*. TXGT has met this requirement.
- 4) No pipe segments operating above 72% of the specified minimum yield strength (SMYS) will be considered for a Class 3 special permit. This *special permit segments* operate at or below 72% SMYS. TXGT has met this requirement.

- 5) Records must be produced that show a hydrostatic test to at least 1.25 X maximum allowable operating pressure (MAOP) and 90% of SMYS. TXGT has met this requirement.
- 6) In-line inspection (ILI) must have been performed with no significant anomalies identified that indicate systemic problems. TXGT has met this requirement with the exception of mainline EUT 30-1 TT and MLS 26-2 which will be ILI inspected during April 2009.
- 7) Criteria for consideration of class location change waiver, now being granted through special permit, published by PHMSA in the Federal Register (69 FR 38948), define a *waiver inspection area (now a special permit inspection area)* as up to 25 miles of pipe either side of the *waiver segment (special permit segment)*. The *special permit inspection area* must be inspected according to TXGT's integrity management program and periodically inspected with an in-line inspection technique. The portion of the *special permit inspection area* both upstream and downstream of the *special permit segments* is approximately 25 miles long. This special permit will be issued contingent upon TXGT's incorporation of all five *special permit segments* in its written integrity management program as "*covered segments*" in a "*high consequence area*" (HCA) per 49 CFR § 192.903.

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

- 1) Pipe design and construction, including pipe manufacture, material and design stress:
  - EUT 20-1 TT, EUT 26-1 TT, & EUT 30-1 TT in Louisiana were installed in 1956, 1964 & 1971 and consists of American Petroleum Institute Specification 5L, "*Specification for Line Pipe*" (API 5L), electric fusion weld (EFW), X-52 steel pipe manufactured by AO Smith for lines EUT 20-1 TT, EUT 26-1 TT. Mainline Line EUT 30-1 TT was installed in 1971 and consists of API 5L, X-60, DSAW steel pipe manufactured by Bethlehem Steel. These pipes are of unknown toughness but TXGT has addressed this risk in their integrity management plan. Moreover, none of these pipes have any known systemic manufacturing issues. This places all four *special permit segments* in the "possible acceptance" column of the criteria matrix

- MLS 26-1 TT & MLS 26-2 TT in Kentucky were installed in 1951 & 1956 and consists of American Petroleum Institute Specification 5L, “*Specification for Line Pipe*” (API 5L), electric fusion weld (EFW), X-52 steel pipe manufactured by AO Smith and National Tube. These pipes are of unknown toughness but TXGT has addressed this risk in their integrity management plan. None of these pipes have any known systemic manufacturing issues. This places all four *special permit segments* in the “possible acceptance” column of the criteria matrix

To address these pipe design and construction issues, this special permit will include conditions requiring TXGT to treat all five *special permit segments* as “covered segments” in an HCA per 49 CFR § 192.903. TXGT will also be required to perform a stress corrosion cracking direct assessment (SCCDA) of Mainlines EUT 20-1 TT, EUT 26-1 TT, EUT 30-1 TT, MLS 26-1 TT & MLS 26-2 along the entire length of the *special permit inspection area* according to the requirements of 49 CFR § 192.929 within one year after the grant of this special permit. This special permit will include a condition that TXGT must continue to operate each *special permit segment* at or below its existing MAOP.

- 2) Girth welds: TXGT believes that no girth welds were x-rayed during initial construction of mainline EUT 20-1 TT, EUT 26-1 TT, MLS 26-1 TT & MLS 26-2. TXGT believes that all girth welds were x-rayed during initial construction of mainline EUT 30-1 TT. This places four of the five *special permit segments* in the “requires substantial justification” column of the criteria matrix. While there have been no reported problems with girth welds on these pipelines in the *special permit inspection area*, to address the girth weld issue this special permit will include a condition requiring TXGT to provide girth weld inspection records or to certify that there have been no in-service leaks or breaks in the girth welds in the *special permit inspection area* on mainlines EUT 20-1 TT, EUT 26-1 TT, MLS 26-1 TT & MLS 26-2. In the absence of records, TXGT must prepare and follow a girth weld remediation plan for all four *special permit segments*.
- 3) ILI Time Frame: EUT 20-1 TT, EUT 26-1 TT, EUT 30-1 TT, MLS 26-1 TT & MLS 26-2 mainlines were last inspected with a high-resolution magnetic flux leakage (MFL) and a geometry tool in ILI

- EUT 20-1 TT – 2007; EUT 26-1 TT – 2008; EUT 30-1 TT – April 2009.
- MLS 26-1 TT – 2008; MLS 26-2 – April 2009

This places all five *special permit segments* in the “possible acceptance” column of the criteria matrix. To address ILI issues, this special permit will be conditioned upon TXGT treating all five *special permit segments* as a “covered segment” in a “high consequence area” per 49 CFR § 192.903. These regulations specify the time intervals between ILI runs.

- 4) Direct Assessment (ECDA & SCCDA): TXGT has not completed an external direct assessment (ECDA) or a stress corrosion cracking assessment (SCCDA) of *the special permit segments*. This places all five *special permit segments* in the “requires substantial justification” column of the criteria matrix. To address these issues, this special permit will be conditioned upon TXGT completing a Direct Current Voltage Gradient (DCVG) survey or an Alternating Current Voltage Gradient (ACVG) survey; a close interval survey (CIS); and an SCCDA along all mainlines not later than one year after the grant of this special permit.
- 5) Pipe Manufacture: The pipe on Mainlines EUT 20-1 TT, EUT 26-1 TT, MLS 26-1 TT and MLS 26-2 “requires substantial justification” category due to seam type, EFW. These mainlines have not had any failures in the special permit area and have been hydrotested with no failures since 1965. The hydrostatic tests were above 1.25 X MAOP. MLS 26-2 did have a seam leak in 1979 and the pipe joint was replaced.

Operational Integrity Compliance: PHMSA has looked at this special permit request to ensure that integrity threats to the pipeline in the special permit segment and special permit area are in the operator’s operations and management plan (O &M Plan), to provide a systematic program to review and remediate the pipeline for safety concerns. Additional operational integrity review and remediation requirements have been required by this special permit for this special permit segment class location change. The pipeline operational integrity requirements are to ensure that the operator has an ongoing program to locate and remediate safety threats. Some of these threats to integrity and safety are the pipe coating quality, cathodic protection effectiveness, operations damage prevention program for third party damage, weld seam and girth weld integrity, anomalies in the pipe steel, and material and structures either along or near the pipeline that could cause the cathodic protection system to be ineffective. PHMSA carefully designed a

comprehensive set of conditions that TXGT would be required to meet in order for the special permit to be granted. Among other things, the conditions include:

- A close interval survey to determine the effectiveness of the cathodic protection system must be performed within the special permit inspection area, and all areas with inadequate cathodic protection must be remediated.
- A coating survey to determine the quality of the pipe coating must be conducted and ineffective coating areas must be required to be remediated.
- Stress corrosion cracking surveys on the pipeline will be required to ensure that the pipe steel is not cracking due to the effects of high and near neutral pH SCC.
- The latest methods of damage prevention must be incorporated by the operator, such as the best practices of the Common Ground Alliance (CGA) within the special permit inspection areas.
- Interference currents from electric transmission lines and other interfering structures in the special permit inspection areas must be identified, controlled and mitigated by conducting surveys and installing grounding systems where required.
- An analysis of pipeline field coated girth welds that could have shielding coatings that could cause corrosion of the pipe steel must be undertaken in the special permit segments and in-line inspection logs, that indicate 30% corrosion indications on shielding or unknown coatings must be exposed and evaluated.
- Anomalies and dents on the pipeline must be repaired based upon the special permit repair criteria.
- Girth welds in the special permit segments must have had a non destructive test plan during construction, or a quality review and remediation program must be implemented by the pipeline operator.
- All shorted casings at road crossings and railroad crossings in the special permit segments (either metallic or electrolytic) must be cleared to prevent corrosion.
- Pipeline longitudinal seams within the special permit inspection area must have an engineering analysis to determine if there are any threats and remediated if integrity threats are determined.

- Periodic close interval surveys and in-line inspection surveys (pipeline internal surveys to determine corrosion in the pipeline) must be performed on the *special permit segments* at the applicable reassessment intervals.

PHMSA has determined that imposing these conditions (along with the remainder of the conditions set forth in the special permit) will ensure that granting the special permit will not be inconsistent with safety.

### **Findings:**

Based on the information submitted by TXGT and PHMSA's knowledge of natural gas pipeline operational requirements, PHMSA finds that granting this special permit to TXGT to operate five segments along Mainlines EUT 20-1 TT, 26-1 TT and 30-1 TT in Louisiana and MLS 26-1 TT & MLS 26-2 TT in Kentucky, of their natural gas transmission pipeline system at the current MAOP where the class location has changed from an original Class 1 pipe location to a Class 3 location, is not inconsistent with pipeline safety. We do so because the special permit analysis shows the following:

- 1) The five *special permit segments* will meet all of the seven threshold requirements after implementation and completion of the Class Location Special Permit Conditions.
- 2) The five *special permit segments* falls in the *probable acceptance* column of the criteria matrix for all criteria except for pipe design and construction, including pipe manufacture, material and design stress; girth welds; ILI time frame; and, direct assessment (ECDA & SCCDA). The special permit will contain numerous conditions to address these issues.
- 3) The special permit conditions will require TXGT to implement proposed enhanced integrity management program actions for the entire *special permit inspection area*.

**FEB 27 2009**

Completed in Washington DC on: \_\_\_\_\_