

U.S. DEPARTMENT OF TRANSPORTATION

PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION (PHMSA)

**Special Permit Analysis and Findings**

**Special Permit Information:**

Docket Number: PHMSA – 2007-27122  
Pipeline Operator: Texas Eastern Transmission, L.P, (Spectra Energy Transmission)  
Date Requested: October 10, 2006 and September 29, 2008  
Code Section(s): 49 CFR § 192.611(a)

**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 Eastern Transmission, L.P, (Spectra Energy Transmission).

**Pipeline System Affected:** This special permit applies to one *special permit segment* on the Texas Eastern Transmission, L.P. (TETLP) Delmont Compressor Station Discharge (CSD) 24-inch Line 12 pipeline, where a change has occurred from a Class 1 location to a Class 2 location in Westmoreland County, Pennsylvania, 3.10 miles downstream of the Delmont CSD. This special permit allows TETLP to continue to operate the *special permit segment* at its current maximum allowable operating pressure (MAOP) of 1050 pounds per square inch gauge (psig) for the Delmont CSD 24-inch Line 12 pipeline. The TETLP Delmont CSD 24-inch Line 12 pipeline operates at 77.6% of specified minimum yield strength (SMYS). This special permit applies to the *special permit segments* defined using the TETLP mile post (MP) references as follows:

- *Special permit segment* – Delmont CSD, 24-inch Line 12 – 8690 feet, Mile Post 3.51 to Mile Post 5.16, 3.10 miles downstream of the Delmont CSD.

***Special permit inspection area*** - the area that extends 220 yards on each side of the pipeline centerline along the entire length of the Delmont CSD, 24-inch Line 12 pipeline from:

- Delmont CSD, 24-inch Line 12: Mile Post 0.41 to Mile Post 27.87, (Delmont CSD pig launcher to the Armagh Compressor Station Suction (CSS))

The ***special permit inspection area*** is located in Westmoreland and Indiana Counties, Pennsylvania. The ***special permit inspection area*** starts downstream of the Delmont CSD - Mile Post 0.41, and ends at the Armagh CSS – Mile Post 27.87, total of 27.87 miles.

### **Special Permit Request**

On October 10, 2006, TETLP petitioned PHMSA for a special permit for the 24-inch Line 12 and 30-inch Line 19 pipelines. On September 29, 2008, TETLP modified its request for the special permit seeking relief from the Federal pipeline safety regulations in 49 CFR § 192.611(a) for one segment of TETLP's Delmont CSD 24-inch Line 12 natural gas transmission pipeline where a change has occurred from a original Class 1 (location per § 192.611) to a Class 2 location in Westmoreland County, Pennsylvania. This special permit allows TETLP to continue to operate the pipeline segment at its current maximum allowable operating pressure (MAOP) of 1050 pounds per square inch gauge (psig). The Federal pipeline safety regulations in 49 CFR § 192.611(a) require natural gas pipeline operators to confirm or revise the MAOP of a pipeline segment after a change in class location.

### **Public Notice:**

On February 8, 2007, PHMSA posted a notice of this special permit request in the Federal Register (72 FR 6043). 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–2007-27122 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 elements are evaluated as significant criteria. These significant criteria are presented in matrix form and can be reviewed in the FDMS, Docket Number PHMSA-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 TETLP 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 one segment of TETLP's Delmont CSD 24-inch Line 12 pipeline where a class location change has occurred from Class 1 to Class 2.
- 2) No bare pipe will be considered. These TETLP *special permit segments* are coated with coal tar enamel. TETLP has met this requirement.
- 3) No pipe containing wrinkle bends will be considered. There are no wrinkle bends in the *special permit segments*. TETLP 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. Texas Eastern Transmission, L.P. (TETLP) has requested an original Class 1 special permit segment to operate at 77.6% specified minimum yield strength (SMYS) in a new Class 2 location, where § 192.611 normally limits the SMYS in a Class 2 location to 72% SMYS. The special permit conditions will require additional anomaly repair criteria to account for this higher operating stress level.
- 5) Records must be produced that show a hydrostatic test to at least 1.25 times the maximum allowable operating pressure (MAOP) and 90% of SMYS. TETLP submitted records show that the sections of the Delmont CSD 24-inch Line 12 pipeline containing the *special permit segments*, have been hydrostatically tested to 1321 psig in 1954 and 1352 psig in 1987. This is 1.29 times the MAOP and 100% of SMYS. TETLP has met this requirement.

- 6) In-line inspection (ILI) must have been performed with no significant anomalies identified that indicate systemic problems. The proposed *special permit segments* were last inspected by ILI in 1986, 2000 and 2007, with no immediately actionable anomalies found in 2007. A caliper tool was run in 2007. TETLP has met this requirement for wall loss and dent survey.
- 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 (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 TETLP's integrity management program and periodically inspected with an in-line inspection technique. The *special permit inspection area* is approximately 27.87 miles long, and is the entire length of the Delmont CSD 24-inch Line 12 pipeline between the Delmont and Armagh compressor stations. This special permit will be issued contingent upon TETLP's incorporation of the *special permit segment* in its written integrity management program as a "covered segment" in a "high consequence area" (HCA) per 49 CFR § 192.903.

Criteria Matrix: The original and supplemental data submitted by TETLP for the *special permit segments* have been compared to the class location change special permit criteria matrix. Most of the data falls within the *probable acceptance* column of the criteria matrix with the following exceptions:

- 1) Class location: TETLP is requesting a class location change of Class 1 location to Class 2 location for a pipeline *special permit segment* that operates at 77.6% SMYS which places this area in the "*possible acceptance*" column..
- 2) Pipe design and construction, including pipe manufacture, material, design stress, and pipe coating: 24-inch Line 12 pipeline was installed in 1954 and consists of American Petroleum Institute Specification 5L, Specification for Line Pipe (API 5L), low frequency electric fusion welded (EFW), X-52 steel pipe manufactured by A.O. Smith. This pipe is of unknown toughness. This places the special permit segments in the "requires substantial justification" column of the criteria matrix. TETLP has hydrostatically tested the segment of the special permit segment to over 100% SMYS in 1987 to ensure the seam failure threat is stable. The pipe is coated with coal tar coating so the special permit

conditions will require a close interval (CIS) and direct current voltage gradient (DCVG) survey to identify any areas of poor coating and low cathodic protection current.

- 3) Environmental considerations, including depth of cover: TETLP has not conducted a depth of cover survey which places this area in the “*possible acceptance*” column. TETLP will be required to conduct a depth of cover survey and prepare a remediation plan for areas with inadequate cover.
- 4) Integrity management plan: TETLP has not completed an external direct assessment (ECDA) or a stress corrosion cracking assessment (SCCDA) of the special permit segment. This places the *special permit segment* in the “possible acceptance” column of the criteria matrix. To address these issues, this special permit will be conditioned upon TETLP 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 24-inch Line 12 pipeline no later than one year after the grant of this special permit.
- 5) Inspection and enforcement history: TETLP has no history of inspection or enforcement history in the *special permit inspection area* which places this area in the “*possible acceptance*” column.

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 TETLP 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 casing 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 TETLP and PHMSA's knowledge of natural gas pipeline operational requirements, PHMSA finds that granting this special permit to TETLP to operate one segment of the Delmont CSD 24-inch Line 12, a natural gas transmission pipeline, at the current MAOP of 1050 psig where a change in class location has occurred from a Class 1 location to a Class 2 location is not inconsistent with pipeline safety. We do so because the special permit analysis shows the following:

- 1) The *special permit segment* meets *five* of the seven threshold requirements.
- 2) The *special permit segment* falls in the *probable acceptance* column of the criteria matrix for all criteria except for:
  - a) Possible Acceptance: Design stress (77.6% SMYS), pipe coating (coal tar), direct assessment (ECDA and SCCDA), depth of cover (no survey) and no outstanding inspection findings (in the special permit segment and area).
  - b) Requires substantial justification: Pipe material (low or unknown toughness) and pipe manufacture (1954 EFW).
  - c) The special permit will contain numerous conditions to address the above issues.
- 3) The special permit conditions will require TETLP to implement proposed enhanced integrity management program actions for the entire *special permit inspection area*.

Completed in Washington DC on: SEP 23 2009