



TEXAS  
GAS  
SERVICE  
A DIVISION OF ONEOK



Texas 2008

Rule Changes

Risk Based Leak Survey, Leak Grading and Repair,  
and Mechanical Couplings



## History of the Rule Making

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Three major incidents resulting in deaths and property damage in 2007 (Cleburne, Wylie, and Missouri City). Each of these had mechanical coupling failures with much evidence pointing to third party damages

No standardized leaking classification system or grading system in Texas  
Some operators had no repair requirements for Grade 3 or 4 leaks

Prior attempt by the Railroad Commission of Texas to implement a risk based leak survey program

An eye toward DIMP



## Risk Based Leak Survey - TAC 8.206

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The risk model shall identify risk factors and determine the degree of hazard associated with those risk factors

The operator shall establish the leak survey frequency based on the degree of hazard for each system or segment within a system

Review and add to the Risk Based model within 30 days new additions, or segments, or if there has been a 10% increase in upgraded leaks or a 10% increase in leak inventory



## Risk Based Leak Survey - TAC 8.206

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Each operator should consider the following factors:

- (1) pipe location, which means proximity to buildings or other structures and the type and use of the buildings and proximity to areas of concentrations of people;
- (2) composition and nature of the piping system, which means the age of the pipe, materials, type of facilities, operating pressures, leak history records, and other studies
- (3) the corrosion history of the pipeline, which means known areas of significant corrosion or areas where corrosive environments are known to exist, cased crossings of roads, highways, railroads, or other similar locations where there is susceptibility to unique corrosive conditions;
- (4) environmental factors that affect gas migration, which means conditions that could increase the potential for leakage or cause leaking gas to migrate to an area where it could create a hazard, such as extreme weather conditions or events (significant amounts or extended periods of rainfall, extended periods of drought, unusual or prolonged freezing weather, hurricanes, etc.), particular soil conditions, unstable soil or areas subject to earth movement, subsidence, or extensive growth of tree roots around pipeline facilities that can exert substantial longitudinal force on the pipe and nearby joints; and
- 5) any other condition known to the operator that has significant potential to initiate a leak or to permit leaking gas to migrate to an area where it could result in a hazard, which could include construction activity near the pipeline, wall-to-wall pavement, trenchless excavation activities (e.g., boring), blasting, large earth-moving equipment, heavy traffic, increase in operating pressure, and other similar activities or conditions



## Risk Based Leak Survey - TAC 8.206

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The assignment of inspection priorities is based on the degree of hazard associated with the risk factors assigned to the pipeline system or segments within a system

Based on a risk ranking from high to low, each operator shall schedule leak inspections for a given pipeline system or segment within a system on a time interval necessary to address the risks

The time interval may range from quarterly to every five years



## Risk Based Leak Survey - TAC 8.206

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Operators electing to use a prescriptive leak survey program shall conduct leak surveys no less frequently than:

Annually for all systems within a business district;

Every five years for non-business district polyethylene systems or segments within a system;

Every three years for all other non-business district cathodically protected steel systems or segments within a system;

Every two years for all other non-business district systems or segments within a system



## Leak Grading and Repair – TAC 8.207

Generally follows Gas Piping Technology Committee (GPTC) guidelines

3 Grades of Leaks (1, 2, & 3)

Grading by GPTC guidelines

Repair Grade 1 immediately and clear leak after repair

Repair Grade 2 within 6 months and monitor every 30 days, clear after repair

Some leaks may need to be repaired within 5 days and 30 days

Repair Grade 3 within 3 years and monitor every 30 days, clear after repair



## Mandatory Removal & Replacement TAC 8.208

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For leaks identified on any underground compression coupling used to mechanically join steel pipe, each operator shall either replace the leaking compression coupling or repair it using a sleeve welded over the compression coupling

**Each operator shall repair or replace any compression coupling used to mechanically join steel pipe that is exposed during operation and maintenance activities unless the operator can determine the coupling was installed after 1980**

For leaks identified on any underground compression coupling used to mechanically join plastic pipe, each operator shall remove and/or replace the leaking compression coupling

**For plastic pipe two inches or less in diameter, replace or remove such coupling unless the operator can determine that the coupling is designated as an ASTM (American Society for Testing and Materials) D2513 Category 1 type fitting.**

**(2) For plastic pipe greater than two inches in diameter, replace or remove such coupling unless the operator can determine that the coupling is designated as an ASTM D2513 Category 1 or Category 3 type fitting**



## Mandatory Removal & Replacement TAC 8.208

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Each operator shall remove and replace all compression couplings at currently known service riser installations, identifiable by a meter number or a street address, if they are not manufactured and installed in accordance with ASTM D2513 for Category 1 fittings.

Each operator shall complete the removal and replacement of such compression couplings by November 30, 2009

Any coupling installed on plastic pipe after September 1, 2008, shall be designed to meet the requirements of ASTM D2513 Category 1.

Any coupling installed on steel pipe after September 1, 2008, shall be designed to meet the requirements of 49 CFR Part 192, §192.273.

Beginning November 1, 2008, every six months thereafter until all compression couplings on the operator's system subject to known service riser locations have been removed and replaced, each operator shall file with the division a progress report



## ASTM D 2513 Coupling Categories

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Category 1: A mechanical joint design that provides a seal plus a resistance to a force on the pipe end equal to or greater than that which will cause a permanent deformation of the pipe.

Category 2: A mechanical joint design that provides a seal only. A mechanical joint designed for this category excludes any provisions in the design or installation of the joint to resist any axial pullout forces; therefore, tensile test are not required.

Category 3: A mechanical joint design that provides a seal plus a pipe restraint rating equivalent to the anticipated thermal stresses occurring in a pipeline . This category has a manufacture's rated pipe end restraint less than the value required to yield the pipe as outlined in category 1.



## Links to the Rules

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This link should be good for a while

<http://www.sos.state.tx.us/texreg/archive/June202008/adopted/16.ECONOMIC%20REGULATION.html#387>

Otherwise check this link

[http://info.sos.state.tx.us/pls/pub/readtac\\$ext.ViewTAC?tac\\_view=4&ti=16&pt=1&ch=8](http://info.sos.state.tx.us/pls/pub/readtac$ext.ViewTAC?tac_view=4&ti=16&pt=1&ch=8)