

# CLOCK SPRING®

## **Application Note**

### **Department of Transportation (DOT) Approval**

#### **Summary of 49 CFR Parts 192/195 Amendments**

The Office of Pipeline Safety (OPS) published the Pipe Repair Rule, which became effective January 13, 2000. This rule permits the use of new procedures to repair pipeline defects (Clock Spring®, weld deposition, etc) and should significantly reduce the costs of pipeline maintenance.

The effort to a change the natural gas pipeline safety regulations (49 CFR Parts 192 and 195) started with Panhandle Eastern (1994) initiating a request to use the Clock Spring® repair system (actual first installation of Clock Spring® was in Wyoming in 1989 on a wet gas line) and resulted in an Interstate Natural Gas Association of America (INGAA) petition in 1994 for the "research test" of Clock Spring® composite repair system. Gas Research Institute (GRI) and Clock Spring Company conducted many tests over the period of 1995-1999 to prove the capabilities of this particular product.

#### **49 CFR Parts 192 and 195 is amended as follows;**

##### List of Subjects

###### 49 CFR Part 192

Natural gas, Pipeline safety, Reporting and recordkeeping requirements.

###### 49 CFR Part 195

Ammonia, Carbon dioxide, Petroleum, Pipeline safety, Reporting and recordkeeping requirements.

In consideration of the foregoing, 49 CFR parts 192 and 195 are amended as follows:

#### **PART 192--[AMENDED]**

1. The authority citation for part 192 continues to read as follows:

Authority: 49 U.S.C. 5103, 60102, 60104, 60108, 60109, 60110, 60113, and 60118; and 49 CFR 1.53.

2. In Sec. 192.309, paragraph (b) introductory text is revised to read as follows:

Sec. 192.309 Repair of steel pipe.

\* \* \* \* \*

(b) Each of the following dents must be removed from steel pipe to be operated at a pressure that produces a hoop stress of 20 percent, or more, of SMYS, unless the dent is repaired by a method that reliable engineering tests and analyses show can permanently restore the serviceability of the pipe:

\* \* \* \* \*

3. Section 192.485(a) is revised to read as follows:

Sec. 192.485 Remedial measures: Transmission lines.

(a) General corrosion. Each segment of transmission line with general corrosion and with a remaining wall thickness less than that required for the MAOP of the pipeline must be replaced or the operating pressure reduced commensurate with the strength of the pipe based on actual remaining wall thickness. However, corroded pipe may be repaired by a method that reliable engineering tests and analyses show can permanently restore the serviceability of the pipe. Corrosion pitting so closely grouped as to affect the overall strength of the pipe is considered general corrosion for the purpose of this paragraph.

\* \* \* \* \*

4. Section 192.487(a) is revised to read as follows:

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Sec. 192.487 Remedial measures: Distribution lines other than cast iron or ductile iron lines.

(a) General corrosion. Except for cast iron or ductile iron pipe, each segment of generally corroded distribution line pipe with a remaining wall thickness less than that required for the MAOP of the pipeline, or a remaining wall thickness less than 30 percent of the nominal wall thickness, must be replaced. However, corroded pipe may be repaired by a method that reliable engineering tests and analyses show can permanently restore the serviceability of the pipe. Corrosion pitting so closely grouped as to affect the overall strength of the pipe is considered general corrosion for the purpose of this paragraph.

\* \* \* \* \*

Sec. 192.711 [Amended]

5. In Sec. 192.711(b), remove ``Sec. 192.717(a)(3)" and add ``Sec. 192.717(b)(3)" in its place.

6. Section 192.713 is revised to read as follows:

Sec. 192.713 Transmission lines: Permanent field repair of imperfections and damages.

(a) Each imperfection or damage that impairs the serviceability of pipe in a steel transmission line operating at or above 40 percent of SMYS must be--

(1) Removed by cutting out and replacing a cylindrical piece of pipe; or

(2) Repaired by a method that reliable engineering tests and analyses show can permanently restore the serviceability of the pipe.

(b) Operating pressure must be at a safe level during repair operations.

7. Section 192.717 is revised to read as follows:

Sec. 192.717 Transmission lines: Permanent field repair of leaks.

Each permanent field repair of a leak on a transmission line must be made by—

(a) Removing the leak by cutting out and replacing a cylindrical piece of pipe;  
or

(b) Repairing the leak by one of the following methods:

(1) Install a full encirclement welded split sleeve of appropriate design, unless the transmission line is joined by mechanical couplings and operates at less than 40 percent of SMYS.

(2) If the leak is due to a corrosion pit, install a properly designed bolt-on-leak clamp.

(3) If the leak is due to a corrosion pit and on pipe of not more than 40,000 psi (267 Mpa) SMYS, fillet weld over the pitted area a steel plate patch with rounded corners, of the same or greater thickness than the pipe, and not more than one-half of the diameter of the pipe in size.

(4) If the leak is on a submerged offshore pipeline or submerged pipeline in inland navigable waters, mechanically apply a full encirclement split sleeve of appropriate design.

(5) Apply a method that reliable engineering tests and analyses show can permanently restore the serviceability of the pipe.

**PART 195--[AMENDED]**

8. The authority citation for part 195 continues to read as follows:

Authority: 49 U.S.C. 5103, 60102, 60104, 60108, 60109, 60118; and 49 CFR 1.53.

9. Section 195.416(f) is revised to read as follows:

Sec. 195.416 External corrosion control.

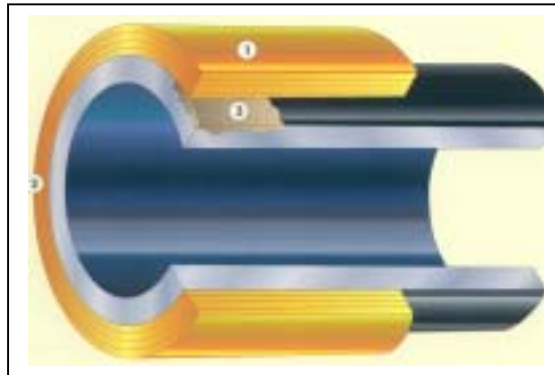
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(f) Any pipe that is found to be generally corroded so that the remaining wall thickness is less than the minimum thickness required by the pipe specification tolerances must be replaced with coated pipe that meets the requirements of this part. However, generally corroded pipe need not be replaced if--

(1) The operating pressure is reduced to be commensurate with the limits on operating pressure specified in this subpart, based on the actual remaining wall thickness; or

(2) The pipe is repaired by a method that reliable engineering tests and analyses show can permanently restore the serviceability of the pipe.

\* \* \* \* \*



**Simply the smartest pipeline repair decision you can make!**

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