

AMENDMENT

January 21, 2011

Wayne T. Lemoi
Director, Office of Pipeline Safety
PHMSA, Southern Region
233 Peachtree Street, Ste. 600
Atlanta, GA 30303

Re: **CPF 2-2011-1002M**

Dear Mr. Lemoi,

In response to the "Notice of Amendment" dated January 13, 2011 regarding an apparent procedure inadequacy found during an inspection on October 20 – October 21, 2011, Santee Cooper has chosen **not** to contest the findings, but to amend our procedure as follows:

To be in compliance with 49 CFR Part 192.605(b)(9), we have amended procedure 30.112 "Pipeline Repair" Section 3.4 of the Santee Cooper O&M Manual.

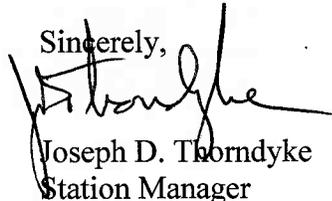
Enclosed is a hard copy of the procedure. An electronic copy is available. We would prefer to send them via electronic mail.

You may contact me or Emory Connelly for any additional information:

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Station Manager
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(864) 352-6110 ext 2902

Emory Connelly
Principal Engineer
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Sincerely,



Joseph D. Thorndyke
Station Manager
Santee Cooper Rainey Generating Station

Enclosure: *Procedure 30.112 "Pipeline Repair"*

RECEIVED JAN 24 2011

Gas Pipeline Operations & Maintenance Manual

DATE ISSUED/REVISED Rev. 01/21/11	PIPELINE REPAIR	NUMBER 30.112
SECTION PIPELINE		PAGE 1 of 5

1.0 PURPOSE

This procedure establishes a standardized method for evaluating damage indications and other imperfections found on the pipeline and for making necessary repairs. It contributes to or achieves compliance with DOT 49 CFR 192.150, 192.309, 192.485, 192.605, 192.703, 192.709, 192.711, 192.713, and 192.719.

* For welding repairs see Procedure 40.101.

2.0 RESPONSIBILITY

Station Maintenance

3.0 GENERAL

3.1 Santee Cooper shall take immediate *temporary* measures to protect the public whenever:

- A leak, imperfection, or damage is found in a section of steel transmission line operating at or above 40% of the SMYS that impairs its serviceability and
- It is not feasible to make a permanent repair at the time of the discovery

3.2 When a leak is discovered, exercise caution to limit the possibility of fire or explosion from the dispersion of gas.

3.3 After ensuring that the site is safe, evaluate the condition of the pipeline by making a preliminary visual examination for the following types of damage:

- Leaking condition
- Coating damage
- Pipe surface scratching
- Gouges
- Dents
- Cracking

Gas Pipeline Operations & Maintenance Manual

DATE ISSUED/REVISED Rev. 01/21/11	PIPELINE REPAIR	NUMBER 30.112
SECTION PIPELINE		PAGE 2 of 5

- 3.4 Determine the probable source of the gas leak. **If excavation is necessary, the excavation procedure in the American Public Power Association (APPA) Safety Manual and procedures in the Confined Space Entry Manual shall be followed in order to protect personnel from unsafe hazards.** If the leak is mechanical in nature (valve, fitting, flange, etc.), consult the manufacturer's literature to safely repair the component.
- 3.5 All repair methods established by this procedure are considered permanent. The use of mechanical sleeves and leak clamps is considered a temporary measure that may be taken to protect life and property. However, mechanical clamps are considered permanent when repairing a leaking corrosion pit.
- 3.6 Use the unpressurized repair alternate if either of the following two conditions exist:
- Pipe geometry is deformed so it prevents proper installation of a pressurized repair
 - Leakage makes pressurized repair unsafe
- 3.7 A gouge, groove, arc burn, or dent may not be repaired by insert patching or by pounding and/or jacking out.
- 3.8 Transmission replacement pipe and components must be designed and constructed to accommodate a smart pig and other internal inspection or maintenance devices..

4.0 PROCEDURE

- 4.1 Take immediate action to protect life and property from hazards resulting from a leaking, defective or damaged pipeline.
- 4.2 Inspect any exposed pipe (including welds) for leaks, external corrosion, impact damage or other abnormal condition. Expose any pipe suspected of leakage or having been struck by excavation equipment.
- 4.3 Make a preliminary assessment of the imperfection to determine the extent of the damage or defect. In most cases a visual inspection is sufficient. Use x-ray, dye penetrant inspection, or other forms of inspection that could be considered helpful if conditions warrant.

Gas Pipeline Operations & Maintenance Manual

DATE ISSUED/REVISED Rev. 01/21/11	PIPELINE REPAIR	NUMBER 30.112
SECTION PIPELINE		PAGE 3 of 5

Grinding of Imperfections

4.4 If a repair is made by grinding (pipe body or mill imperfections), the remaining wall thickness must be equal to at least one of the following:

- The minimum thickness required by the tolerances in the specification to which the pipe was manufactured OR
- The nominal wall thickness required for the design pressure of the pipeline

The design wall thickness shall be determined by the following formula:

$$t = (PD)/(2SFET)$$

Where:

- t = design wall thickness, inches
- P = design pressure, psig
- D = outside diameter, inches
- S = material yield strength, psi
For example, S = 35,000 psi for Grade B and S = 42,000 psi for Grade X-42 pipe, etc.
- F = design factor, ranges from 0.40 to 0.72 (See DOT 192.111)
- E = longitudinal joint factor (Use 1.0 for welded pipe)
- T = temperature factor (Use 1.0 at or below 250° F)

Dent Repair

4.5 Each of the following dents shall be removed from steel pipe to be operated at a pressure that produces a hoop stress of 20% or more of SMYS:

- A dent that contains a stress concentrator such as a scratch, gouge, groove, or arc burn
- A dent that affects the longitudinal weld or a circumferential weld

In a pipe to be operated at a pressure that produces a hoop stress of 40% or more of SMYS, remove any dent that has a depth of:

- More than 1/4" in pipe with an outer diameter of 12 3/4" or less OR
- More than 2% of the nominal pipe diameter in pipe with an outer diameter greater than 12 3/4"

For the purpose of this procedure, a **dent** is a depression that produces a gross disturbance in the curvature of the pipe wall without reducing the pipe wall thickness.

Gas Pipeline Operations & Maintenance Manual

DATE ISSUED/REVISED Rev. 01/21/11	PIPELINE REPAIR	NUMBER 30.112
SECTION PIPELINE		PAGE 4 of 5

The dent depth is measured as the distance between the lowest point of a depression and the original contour of the pipe.

Arc Burn Repair

- 4.6 Each arc burn on steel pipe to be operated at a pressure that produces a hoop stress of 40% or more of SMYS must be repaired or removed. If grinding is used to make a repair, the arc burn must be removed completely and the remaining wall thickness must meet the requirements of Section 4.4 of this procedure.
- 4.7 If the imperfection or damage compromises the serviceability of the transmission line, a permanent repair must be made by:
- Removing a cylinder of pipe containing the imperfection and installing a new cylinder of pipe of comparable design strength OR
 - Applying an appropriately designed full-encirclement welded split-sleeve over the imperfection or damage
- 4.8 If determined that the damage does not create a hazardous operating condition, make a thorough evaluation by taking measurements and conducting tests as necessary.

5.0 ADDITIONAL SAFETY MEASURES

- 5.1 The operating pressure must be reduced to a safe level during the repair operation if the segment is not taken out of service.
- 5.2 Schedule the repair consistent with the condition or situation as outlined in Table 1 – Repair Requirements. Verify that the repair has contained the leak and no additional leaks exist in the immediate area

Gas Pipeline Operations & Maintenance Manual

DATE ISSUED/REVISED Rev. 01/21/11	PIPELINE REPAIR	NUMBER 30.112
SECTION PIPELINE		PAGE 5 of 5

Table 1
Repair Requirements

Permanent Repair Method Defect Type	None	Grind /Sand	Type "A"	Type "B"	Bolt On	Com- posite	Cut Out
Leaking Defects (not corrosion)	N	N	N	Y	N	N	O
Leading Corrosion Pit	N	N	N	Y	Y	N	O
Corrosion < 20% Nominal Wall	Y	N					
Corrosion fails RSTRENG	N	N	O		N	Y	O
Corrosion > 80% of Wall	N	N	N	Y	N	N	Y
Dent (no scratch) <5% of OD	Y	N			N		
Dent >5% to < 10%	N	N	Y		N	Y	
Dents W/Scratch <2%	N	Y			N		
Dents on Welds <2%	N	N	Y		N	N	
All Dents >10% & Dents >5% W/Scratch	N	N	N	N	N	N	Y
All gouges & Mill defects pass RSTRENG	N	Y			N		
Gouges & Mill Defects fail RSTRENG after grinding	N	N	O		N	Y	O
All Arc Burn	N	Y			N		
Hard Spot	N	N	Y		N	O	
Steel effected by Heat	N	N	N	N	N	N	Y
Leaking Mechanical (Dresser) Coupling	Repair by tightening, using housing (pumpkin) or cutout.						
Mechanical leaks (Valves & fittings)	Repair in accordance with manufacturer's guidelines or cut out and replace.						

Y indicates the normal/preferred method.
N indicates methods that are **not permitted**.

O indicates an **optional/recommended** method.
Blanks indicate optional/not recommended methods.

Type A sleeve is a full encirclement welded steel sleeve that can be used to repair most imperfections.
Type B sleeve can be used to repair leaking defects and requires welding on pressurized pipe. A temporary repair may be made using any method deemed suitable using sound engineering judgment.

Gas Pipeline Operations & Maintenance Manual

DATE ISSUED/REVISED Rev. 01/21/11	PIPELINE REPAIR	NUMBER 30.112
SECTION PIPELINE		PAGE 6 of 5

5.3 Contact Operations and coordinate, as necessary, if there will be an immediate or future change in the operating conditions of the line as a result of the repair.

5.4 Follow applicable safety procedures when making a pressurized repair of a leak.

6.0 RECORDS

6.1 Document on the appropriate form each buried pipeline inspection, leak and repair, and any preventive maintenance other than painting.

6.2 Capture all information related to repairs of valves, relief valves, and other pipeline components affecting the maximum allowable operating pressure of the pipeline system. Retain this documentation in plant records for at least five (5) years.