

# 8-I Remedial Action

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### **1.0 SCOPE**

This chapter describes remedial actions for transmission and distribution pipelines.

### **2.0 REGULATORY REFERENCES**

49 CFR Part 192 §§ [192.483](#), [192.485](#), [192.487](#).

49 CFR Part 191 §§ [191.23](#), [191.25](#)

### **3.0 REMEDIAL ACTIONS**

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- (a) Each segment of metallic *pipe* that replaces pipe removed from a buried or submerged pipeline because of external corrosion *must* have a properly prepared surface and must be provided with an external protective coating that meets the requirements of [Chapter 8-C Protective Pipeline Coatings](#).
- (b) Each segment of metallic pipe that replaces pipe removed from a buried or submerged pipeline because of external corrosion must be cathodically protected in accordance the requirements of [Chapter 8-A Requirements for Corrosion Control](#) and [Chapter 8-D Installation of Cathodic Protection Facilities](#).
- (c) Each segment of buried or submerged pipe that is required to be repaired because of external corrosion must be cathodically protected in accordance the requirements of [Chapter 8-A Requirements for Corrosion Control](#) and [Chapter 8-D Installation of Cathodic Protection Facilities](#).
- (d) For the purpose of this procedure, corrosion pitting so closely grouped as to affect the overall strength of the pipe is considered general corrosion.
- (e) The system CP manager/supervisor or designee must be notified when significant corrosion pitting is found and *shall* be responsible for initiating any necessary remedial action.
- (f) The location of each replacement or repair must be entered into GIS.

### **3.2 Remedial Actions-Steel Transmission Pipelines [[192.485](#)]**

- (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.
- (b) Localized corrosion pitting. Each segment of transmission line pipe with localized corrosion pitting to a degree where leakage might result must be replaced or repaired, or the operating pressure must be reduced commensurate with the strength of the pipe, based on the actual remaining wall thickness in the pits.
- (c) The strength of pipe based on actual remaining wall thickness may be determined by the procedure in ASME/ANSI B31G or the procedure in PRCI PR 3-805 (R- STRENG). Both procedures apply to corroded regions that do not penetrate the pipe wall, subject to the limitations prescribed in the procedures.
- (d) All replacements and repairs of transmission lines shall be coordinated with the Transmission Integrity Department.

### **3.3 Remedial Actions-Steel High Pressure Distribution Pipelines [[192.487](#)]**

- (a) General Corrosion. 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.
- (b) Localized corrosion pitting. Each segment of distribution line pipe with localized corrosion pitting to a degree where leakage might result must be replaced or repaired.

### **3.4 Remedial Actions for Areas of Active Corrosion**

*Engineering* and cp technicians will determine those areas considered to be active corrosion in DENC and DESC's pipeline system, and also whether these areas are to be replaced or upgraded through the addition of corrosion control systems. DENC and DESC personnel shall report the *discovery* of corrosive areas to Engineering. Where it has been determined that active corrosion exists, one of the following corrective measures shall be initiated:

(1) Replacement of transmission and distribution mains

All new mains shall be installed in accordance with DENC and DESC's construction standards and corrosion control standards as set forth in the O&M procedures.

(2) Replacement of distribution services

(i) At the time a supplying *main* is replaced, all bare services shall be replaced and tied into the new main.

(ii) Coated services with coating deemed unacceptable shall be replaced or repaired.

(iii) Existing coated services in acceptable condition *should* be tied into the new main.

(iv) All new services shall be installed in accordance with DENC and DESC's Construction Standards and Corrosion Control Standards as set forth in the O&M procedures.

(3) Repair of transmission and distribution pipelines

Contact Engineering for acceptable repair options.

**3.5 Cathodically Protecting Existing Distribution Coated Pipelines [[192.483](#)]**

(a) If corrosion is detected on a Distribution line, then the P/S at the exposed location must be recorded.

(b) DENC and DESC's steel distribution systems are cathodically protected. A CP defect (short) on a distribution system can impact the cathodic protection on a significant amount of distribution piping. CP defects may be due to a number of issues, but a common one is a short at our meters. The following procedure was developed to minimize those problems:

(1) Check each meter set for proper insulation.

(2) If the meter set does not contain adequate insulation or the existing insulation is shorted, install insulators.

(3) See [Appendix 8-D-1 Corrosion Control Drawings](#) for relevant drawings on how to check for isolation.

**3.6 Cathodically Protecting Existing Transmission Coated Pipelines [[192.483](#)]**

(a) If corrosion is detected on a transmission line, then the P/S at the exposed location must be recorded. In addition, a pH test shall be taken of any moisture noted underneath the coating. If the pH is low (less than or equal to 7) and the P/S is below protection level, then troubleshoot the CP system.

(1) If no deficiency can be found in the existing CP system, then provide temporary protection as required.

(2) Perform a CIS.

(b) If an identifiable cause cannot be determined and corrected by the CP Tech, then contact the system CP manager/supervisor or designee. Additional testing or remediation efforts may be required up to and including design and installation of a new rectifier system.

**3.7 Safety-related Conditions [[191.23](#)] [[191.25](#)]**

The Manager/Supervisor is responsible for the *determination* of a safety-related condition and reporting to the designated DENC and DESC personnel. See Chapter 1-C Reports, Safety-related Conditions and Exceedances, sections [3.4.1 Recognizing Safety-related Conditions](#) and [3.4.2 Reporting Safety-related Conditions](#).

#### **4.0 TRAINING/QUALIFICATIONS**

See the appropriate system Operator Qualification Program.

#### **5.0 DOCUMENTATION/FORMS**

System specific forms should be used where applicable.

Completed Forms, including corrective measures and remarks shall be sent to GIS Services and the system CP manager/supervisor.

##### **State Specific: South Carolina**

- [CP Deficiency Report \(DESC Form OM-405\)](#) (PDF file) \*

\* C.P. exceptions are documented either in the Essentials system or by the paper CP Deficiency Report.

#### **6.0 RELATED DOCUMENTS**

None at this time.

#### **7.0 APPENDICES**

None at this time.

(UNCONTROLLED IF PRINTED)