

# 8-A Requirements for Corrosion Control

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### **1.0 SCOPE**

This chapter covers the general requirements for corrosion control on the DENC and DESC *pipeline* system comprised of:

- Dominion Energy North Carolina (DENC) in North Carolina
- Dominion Energy South Carolina (DESC) in South Carolina

### **2.0 REGULATORY REFERENCES**

49 CFR Part 192, [Subpart I](#), [Appendix D](#), §§ [192.453](#), [192.455](#), [192.457](#), [192.463](#)

### **3.0 CORROSION CONTROL REQUIREMENTS**

[3.1 General \[192.453\]\\_\[192.455\]\\_\[192.463\]](#)

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#### **3.1 General [192.453] [192.455] [192.463]**

- (a) DENC and DESC will adhere to the procedures in this section of this manual in order to protect all of its steel pipelines from external, internal, and atmospheric corrosion.

- (b) Personnel responsible for conducting corrosion control functions, including the design, installation, operations, and maintenance of cathodic protection systems *must* be qualified, or work under the direction of a person qualified in pipeline corrosion control methods through training and/or certification or experience.
- (c) Gas operations and engineering personnel *shall* be made aware of the importance in maintaining the integrity of cathodic protection systems that have been installed. Maintaining the established electrical isolation of existing cathodically protected systems shall be regarded as particularly important. Extreme caution shall be used during new construction, meter change outs, maintenance work, and modifications of pipeline facilities to ensure that insulating fittings are not damaged or by-passed.
- (d) Buried steel pipelines shall be protected against external corrosion by use of a protective coating material and by installation of a cathodic protection system. Each new buried steel pipeline shall be coated and cathodically protected in its entirety within one year of installation.

### **3.2 External Corrosion Control Requirement [192.455] [192.457]**

- (a) All new buried or submerged pipelines installed by DENC and DESC or its contractor(s) shall be installed with:
  - (1) External protective coating meeting the requirements of this procedure
  - (2) Cathodic protection system designed to protect the pipeline from corrosion
    - (i) Cathodic protection systems *shall* be installed within one year after the completion of pipeline construction. New buried pipelines that will require a new impressed current CP system *shall* have a static or Native / CIS survey performed within one year of the installation of the pipeline. The pipeline installation is considered complete once the pipeline has passed the pressure test. The native CIS requirement is not intended to apply to new pipe related to pipe relocations or extensions of existing pipelines that do not require a new impressed current CP system. The static or native / CIS survey will be reviewed by authorized personnel before the CP system is installed on the system.
- (b) Each of the following buried or submerged pipelines shall be protected in accordance with these corrosion control requirements if active corrosion (see definition in [3.3 Determining Areas of Active Corrosion](#) below) is found:
  - (1) All transmission lines
  - (2) All distribution lines
  - (3) All pipelines at compressor, regulator and metering stations
- (c) DENC and DESC will install cathodic protection on its coated and buried steel pipelines, regardless of whether or not active corrosion is found.

### **3.3 Determining Areas of Active Corrosion [192.457]**

Areas of active corrosion will be determined by electrical survey, or where electrical survey is impractical, by the study of corrosion and *leak* history records, by leak detection survey, or by other means.

### **3.4 Criteria for Acceptable Levels of Cathodic Protection [192.455] [Part 192 Appendix D]**

One of the following criteria shall be met to achieve acceptable cathodic protection:

- (a) A potential (cathodic) voltage of at least - 0.85 VDC with reference to a saturated copper-copper sulfate half-cell. *Determination* of this voltage shall be made while the protective current is applied. IR drops other than those across the structure-to-electrolyte boundary should be considered.

(b) A minimum negative (cathodic) polarization voltage shift of 100 millivolts (-0.1 volts). The polarization voltage shift *may* be determined by formation or decay.

\* Note: The upper level of cathodic protection should be controlled so as not to damage the protective coating. A level of negative -3.0 volts "On" value, or alternatively a -1.35V "Off" value, as measured with a copper-copper sulfate half cell should not be exceeded. CP system should be referred for review by authorized personal before being installed on pipeline.

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

See the appropriate system Operator Qualification Program.

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

Documentation is identified in the respective sections for procedures addressing these requirements.

System specific forms should be used where applicable.

Corrosion control documentation shall be maintained for the life of the pipeline.

#### **6.0 RELATED DOCUMENTS**

None at this time.

#### **7.0 APPENDICES**

None at this time.

(UNCONTROLLED IF PRINTED)