

March 31, 1981

Mr. C. Edward Mills  
Senior Utilities Engineer  
Electric & Gas Department  
Florida Public Service Commission  
Fletcher Building, 101 East Gaines Street  
Tallahassee, Florida 32301

Dear Mr. Mills:

Your letter of February 26, 1981, to Mr. L. D. Santman, Director, Materials Transportation Bureau (MTB), asks four specific questions relative to methods to be used to determine compliance with 49 CFR Part 192, Appendix D, Criteria 1-A(5). Following are your questions and the MTB answers:

Question 1. Does the current reversal technique of applying sacrificial anodes to corrosion "Hot Spots" on steel gas distribution pipelines meet the criteria for cathodic protection as defined in 49 CFR Part 192, Appendix D, Criteria 1-A(5)?

MTB Answer. Yes! Any one of the five criteria listed in Appendix D may be used.

Question 2. If the technique described in the above question is acceptable, is it also acceptable when the current reversal has been measured only on one side of the pipeline?

MTB Answer. Measuring current reversal only on one side of the pipeline may not be adequate to show a net protective current from the electrolyte (soil) into the structure surface. Stray currents and the pattern of protective current flow could give false indications from measurements taken on only one side of the pipeline that would show what appears to be adequate cathodic protection when in fact the pipeline is corroding.

Question 3. Is the same technique acceptable when the remote-from-pipe reference half-cell electrode (two electrode method) is placed over, across or in the immediate vicinity of other underground metallic structures?

MTB Answer. MTB is now conducting a contract study that involves the conducting of electrical surveys on pipelines located under paving and in areas with other underground structures. At this time, we do not believe that the corrosion of other underground structures would produce enough current to override the protective current unless the other underground structure is bare and under high levels of cathodic protection.

Question 4. Is the same techniques acceptable when conventional HRVM (high resistance volt-meters) instruments are used to ascertain current reversal in lieu of the McCollum earth meter method of determining current flow to anodic areas of pipeline surface?

MTB Answer. Yes! Several MTB staff members have experience using HRVM with the two electrode method for measuring earth currents. Qualified personnel should be able to do this adequately.

We trust this information meets your needs relative to assuring compliance with 49 CFR Part 192.

Sincerely,

Melvin A. Judah  
Acting Associate Director for  
Pipeline Safety Regulation  
Materials Transportation Bureau