

November 10, 1977

Mr. Harold E. Janes
Director - Engineering Department
Florida Public Service Commission
700 South Adams Street
Tallahassee, FL 32304

Dear Mr. Janes:

Your letter dated May 20, 1977, to Mr. J. C. Thomas concerning Information Bulletins GS-26 and GS-26A sent to all gas system operators under jurisdiction to the Florida Public Service Commission (PSC) has been sent to this Office for response.

Based on our review, we find that the guidelines for electrical survey contained in the bulletins are inconsistent with the Office of Pipeline Safety Operations' (OPSO) interpretations of 49 CFR Section 192.457 concerning electrical surveys (copy enclosed). Under Section 192.457(b), an operator must use an electrical survey method which identifies all areas of continuing corrosion along a pipeline with enough detail so that the operator can determine whether a condition detrimental to public safety could result.

Although we have no objection to the intent of the bulletin, we recommend that you consider the following:

- * With regard to soil resistivity surveys, the intervals specified in the guidelines are misleading and are not adequate for some pipelines. It would be difficult to meet compliance with 49 CFR Section 192.457 using these guidelines.
- * With regard to the Florida PSC recommendation that "P/S potential measurements need not be made in soils of resistivity above 50,000 ohm-cm, unless the operator has knowledge of environments or corrosion leak histories which warrant investigation in high resistivity environments," this encourages noncompliance with the electrical survey requirement. Furthermore, pipelines do corrode at resistivities higher than 50,000 ohm-cm.

- * With regard to the Florida PSC recommendation that "Corrosion control is only recommended on underground pipelines which lay [sic] in soils of resistivity of 50,000 ohm-cm or less when the combination electrical survey indicates that active corrosion does exist," OPSO has not received any information or evidence to show that active corrosion does not exist on pipeline buried in resistivities higher than 50,000 ohm-cm.

Mr. George Mocharko of my staff has discussed this matter with your Mr. Lamar Cockrell. If you have any additional question, please advise.

Sincerely,

Cesar DeLeon
Acting Director
Office of Pipeline
Safety Operations

Enclosure

MEMORANDUM

5/23/77

SUBJ: Interpretation of Section 192.457(b)

FROM: Chief, Southern Region

TO: Acting Director, OPSO
MTP-1

Attached is correspondence arising from a guideline published by the Florida Public Service Commission. I have discussed this guideline with George Mocharko and find it, in part, to be incompatible with current OPSO interpretation.

I notified the Commission of this conflict and by their letter of May 20, 1977 I have not received assurance that corrective action will be taken. Further, Mr. Janes has raised additional questions. Therefore, in the interest of all concerned, would you please comment directly to Mr. Janes so that this conflict can be resolved at the earliest possible date.

James C. Thomas

Attachments:

1. FPSC Informational Bulletin GS-26, 26A
2. MTP-50-SO letter of May 13, 1977
3. FPSC letter of May 20, 1977
4. MTP-50-SO letter of May 23, 1977

May 23, 1977

Mr. Harold E. Janes
Director of Engineering Department
Florida Public Service Commission
700 South Adams Street
Tallahassee, Florida 32304

Dear Mr. Janes:

With reference to your letter of May 20, 1977 concerning Informational Bulletin GS-26 and as I discussed this further with Mr. Charley White; the interpretation I quoted in my letter of May 13, 1977 remains the guidance for this office.

Further, since you continue to question this interpretation and have raised additional questions, I am forwarding this information to the Acting Director, Office of Pipeline Safety Operations for his comments direct to you.

Sincerely,

James C. Thomas
Chief, Southern Region

PUBLIC SERVICE COMMISSION

May 20, 1977

Mr. James C. Thomas
Chief, Southern Region
Department of Transportation
Materials Transportation Bureau
Office of Pipeline Safety Operations
1568 Willingham Drive--Suite 2078
Atlanta, Georgia 30337

Dear Mr. Thomas:

This is in reference to your letter of May 13, 1977 concerning our Informational Bulletin GS-26. This reference bulletin has been amended by GS-26A due to an omission in the original bulletin (see attachment).

We are somewhat in a quandary over your letter. This informational bulletin was published after various meetings with consultants working in Florida and Florida operators because of misunderstandings, misinterpretations, and requirements for conducting an appropriate electrical survey.

It is our view that if operators follow our bulletin, electrical surveys made in Florida are more comprehensive, are more meaningful and use more good engineering practices than are probably followed in many other parts of the country. The interpretation of section 192.457(b) contained in your letter requires a more definitive interpretation as to what an electrical survey is and how a proper electrical survey should be made. It is one that this Commission was unaware of and leads us to question as to whether or not this is an official opinion of OPSO and whether or not it is published and required nationally.

This interpretation does present some problems to us not only due to its lack of specifics but also the first sentence of the interpretation. Should a gas operator decide to use the 300 milovolt [sic] shift criteria then in our opinion original pipe/soil potential measurements would be needed.

We would appreciate receiving your response to this inquiry before this Commission decides what further action, if any, should be taken.

Yours very truly,

HAROLD E. JANES
Director
Engineering Department

Attachment

INFORMATIONAL BULLETIN GS-26

March 25, 1977

TO: ALL GAS SYSTEMS UNDER SAFETY JURISDICTION OF THE FLORIDA
PUBLIC SERVICE COMMISSION

FROM: ENGINEERING DEPARTMENT SAFETY SECTION

RE: CORROSION CONTROL GUIDELINES FOR ELECTRICAL SURVEY

The following guidelines are intended to supplement Commission Rule 25-12.53:

1. An electrical survey must include both soil resistivity and P/S potential measurements as a minimum. These guidelines are primarily applicable to surveys of system gas mains to determine where galvanic corrosion may exist.
2. Soil Resistivity Tests
 - a. 4-Pin Method

In urban and suburban areas soil resistivity measurements should be taken at least one/city block or approximately every 500 ft. where city blocks do not exist. In areas of variable soils or fill areas measurements should be more closely spaced or a minimum of 200 ft.

In rural areas readings may be taken at a maximum spacing of 800 ft. in stable soils and closer spacing should be used in variable soils and fill areas.

In application of the 4-pin method a minimum of two measurements should be made, one at 2-1/2 ft. and one at 5 ft. depth.
 - b. Single-Probe Soil Resistivity Instrument

For corrosion control personnel who choose to use a single-probe soil resistivity bar, it should penetrate the soil at least 40 (forty) inches; and even deeper if the pipe is at greater depth.

The spacing of test measurements should be a minimum of 50 (fifty) to 100 (one hundred) ft. apart depending upon the soil stability.

3. Pipe/Soil Potential Measurements
 - a. In conjunction with the Wenner 4-pin survey, a P/S potential measurement should be taken in the immediate vicinity of each soil resistivity measurement.
 - b. When the single-probe soil resistivity rod is being used, P/S measurements should be taken at same location as soil resistivity readings or on a minimum spacing of 200 ft.
4. P/S potential measurements need not be made in soils of resistivity above 50,000 ohm-cm, unless the operator has knowledge of environments or corrosion leak histories which warrant investigation in high resistivity environments.

Wherever soil resistivities of 50,000 ohm-cm or less are recorded, make sure that P/S potentials are taken directly above the pipeline for a minimum of 500 ft. upstream and 500 ft. downstream from the pertinent soil resistivity reading. Whenever these measurements reveal potential peak profiles it is recommended that P/S measurements be made at 20 ft. spacing directly above the pipeline plus the related 20 ft. remote reading in order to determine the anodic or cathodic status of the pipeline. It may be feasible to expose pipelines at indicated "hot spots" of active corrosion to determine if cathodic protection is warranted in the near future or at a later date. For record purposes, some gas operators may desire to photograph the pipeline corrosion and record pipe wall thicknesses plus depths of corrosion pits.

5. The intent of these guidelines is to eliminate an expensive electrical survey in environments that are not normally corrosive. Corrosion control is only recommended on underground pipelines which lay in soils of resistivity of 50,000 ohm-cm or less when the combination electrical survey indicates that active corrosion does exist.

When a gas system operator intends to cathodically protect all underground pipelines in environments below a specific soil resistivity such as 15K, 20K, 25K ohm-cm, etc., **(appears there was more to be added here, but the information was not available).**

INFORMATIONAL BULLETIN GS-26A

April 28, 1977

TO: ALL GAS SYSTEMS UNDER SAFETY JURISDICTION OF THE FLORIDA
PUBLIC SERVICE COMMISSION

FROM: SAFETY SECTION, ENGINEERING DEPARTMENT

RE: CORROSION CONTROL GUIDELINES FOR ELECTRICAL SURVEY

Informational Bulletin GS-26 dated March 25, 1977 inadvertently omitted a phrase in the first sentence of the second paragraph of section 4.

The following will replace the first sentence of the second paragraph of Section 4:

Whenever soil resistivities of 50,000 ohm-cm or less are encountered, proceed to take P/S potential measurements at 100 feet intervals directly above the pipeline for a minimum of 500 feet upstream and 500 feet downstream from the pertinent soil resistivity reading.