

PI-98-0102

July 31, 1998

Mr. David A. Hippchen
Gas Pipeline Safety Section
West Virginia Public Service Commission
PO Box 812
Charleston, WVA 25323

Dear Mr. Hippchen:

This responds to your letter of May 6, 1998, regarding the gas pipeline safety standard on electrical isolation in 49 CFR 192.467(f). Our answers to your inquiries are set out below.

Section 192.467(f) reads as follows: "Where a pipeline is located in close proximity to electrical transmission tower footings, ground cables or counterpoise, or in other areas where fault currents or unusual risk of lightning may be anticipated, it must be provided with protection against damage due to fault currents or lightning, and protective measures must also be taken at insulating devices."

Question 1. Is close proximity an absolute distance or some minimum distance at which interference with the pipeline corrosion control system or damage to the pipeline coating can be measured or calculated?

Answer. Considering the purpose of § 192.467(f), "close proximity" means near enough to the listed structures to reasonably expect that a lightning strike on the structure might harm the pipeline's corrosion control system. Close proximity is not an absolute or minimum distance, and it could vary depending on site conditions. Under § 192.453, the distance must be determined by a person qualified in pipeline corrosion control methods. Thus, we have not determined whether the distances you listed in situation #2 are within a close proximity of the structures.

Question 2. Can an operator adopt an absolute distance standard to define close proximity?

Answer. An absolute distance would be all right as long as a qualified person would reasonably expect that a pipeline located outside that distance would not likely be harmed.

Question 3. What threshold voltage measurement/calculation is reasonable to determine if protective measures must be taken?

Answer. Section 192.467(1) does not specify a threshold voltage in connection with protective measures. This voltage would be determined by a person qualified in pipeline corrosion control methods.

Question 4. What constitutes an electrical transmission line (and thus, tower) for which this section applies?

Answer. Under § 192.467(f), the term "electrical transmission tower" is used in its ordinary sense to refer to tall aboveground steel structures that support cables used to transmit electricity over long distances. The term does not include poles that support cables used to distribute electricity throughout a community.

Question 5. Can this section be read to include protecting the pipeline from induced currents?

Answer. No, protection is required only against fault currents and lightning.

I trust you find this information helpful. If we can be of any further assistance, please call me at (202)366-4565.

Sincerely,
Richard D. Huriaux, P.E.
Director, Office of Technology and Standards
Office of Pipeline Safety

Public Service Commission Of West Virginia
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May 6, 1998

U. S. Department of Transportation
Research and Special Programs Administration
400 Seventh Street, SW
Washington, DC 20590

Gentlemen:

Several gas transmission pipeline operators have asked our field inspectors for definition or clarification of certain provisions of the Code in regard to external corrosion control, electrical isolation. Specifically, the questions pertain to Part 192 Section 192.467(f) which provides:

" Where a pipeline is located in close proximity to electrical transmission tower footings, *ground* cables or counterpoise, or in other areas where *fault* currents or unusual risk of lightning may be anticipated, it must be provided with protection against damage due to fault currents or lightning, and protective measures must also be taken at insulating devices."

Situation 1:

One of our situations involves a response by a Columbia Gas Transmission engineer during a routine field inspection, in which he stated: "There is no pipeline located in close proximity to electrical transmission tower footings, ground cables or counterpoise, or in other areas where fault currents may be anticipated, even though (notwithstanding) in several instances there are electrical transmission lines crossing or running approximately parallel to the Columbia Gas Transmission pipeline, and in several situations induced voltages have been recorded." No recommended violation was forwarded to the Eastern Region for this inspection, and I am not aware of any other inspections in which our pipeline safety personnel have pursued a violation enforcement action regarding this Code section. We are interested in your thoughts or interpretations on the following questions so that we may more thoroughly evaluate an operator's performance and compliance with this Code section:

1. Is close proximity an absolute distance or some minimum distance at which interference with the pipeline corrosion control system or damage to the pipeline coating can be measured or calculated?
2. Can an operator adopt an absolute distance standard to define close proximity?
3. What threshold voltage measurement/calculation is reasonable to determine if protective measures must be taken?
4. What constitutes an electrical transmission line (and thus, tower) for which this section applies?
5. Can this section be read to include protecting the pipeline from induced currents?

Situation 2:

The relative position of a pipeline with respect to the electrical transmission tower footings is as follows:

<u>System</u>	<u>Distance from structure</u>
1. 2300 V Wheeling Electric power line	TIE Rt. 55' to pole (structure)
2. 2300V WE power line	TIE Rt. 40' to pole (structure)
3. Wheatley power line	TIE Rt. 123' to power pole (structure)
4. 66000V WE power line	TIE Rt. 200' to steel power tower
5. 32000V WE power line	TIE Rt. 61' to steel power tower
6. 25000V WE power line	TIE Rt. 74' to steel power tower

How do you determine, test, or calculate "close proximity" for the above examples?

Your consideration of these issues is greatly appreciated. If you need further information please let me know.

Sincerely,
David A. Hippchen, PE
Transportation Division
Gas Pipeline Safety Section