PI-77-0106

June 27, 1977

Chief, Eastern Region, MTP-50-EA

Acting Director, Office of Pipeline
Safety Operations

Alternatives to Section 192.755

Your memorandum of March 21, 1977, on this subject asks two separate but related questions about possible methods of compliance with Section 192.755, "Protecting cast-iron pipelines." This section is applicable where an existing buried pipeline is crossed by an earth excavation or ditch or is located in potentially unstable soil due to an excavation being dug nearby and deeper than the gas pipeline.

Section 192.755 requires When an operator has knowledge that the support for a segment of a buried cast-iron pipeline is disturbed:

(a) That segment of the pipeline must be protected, as necessary, against damage during the disturbance by:

(1) Vibrations from heavy construction equipment, trains, trucks, buses, or blasting;

(2) Impact forces by vehicles;

(3) Earth movement;

(4) Apparent future excavations near the pipeline; or

(5) Other foreseeable outside forces which may subject that segment of the pipeline to bending stress.

(b) As soon as feasible, appropriate steps must be taken to provide permanent protection for the disturbed segment from damage that might result from external loads, including compliance with applicable requirements of Sections 192.317(a), 192.319, and 192.361(b)-(d).

Following are the questions submitted and OPSO's interpretations.

Question: If an operator cuts a cast-iron pipe in two and installs a leak clamp at a point where the operator suspects soil settlement as a result of excavation by others, can this be considered as a satisfactory alternative to the requirements of Section 192.755?

Interpretation: The cutting of the pipe and installation of the coupling would possibly be of some benefit by providing flexibility. However, without providing other means of support, such as compacting the soil to an equivalent compaction as the original soil, supporting with a beam to undisturbed soil, or replacing the cast-iron pipe across the area with steel pipe extending well into the undisturbed soil, the segment would not be protected to a degree sufficient to assure the safety of the installation.

Question: In the case of a leak caused by cast-iron pipe breaking in two, can the installation of a leak clamp suffice for the requirements of Section 192.755? Or, must the operator comply with the requirements of Section 192.755 as well so as to protect the pipe segment that was excavated against possible subsequent bending stress due to soil settlement?

Interpretation: The installation of a leak clamp would be considered as adequate leak repair but it does not provide protection against further soil settlement. As indicated above, measures must be taken to stop or minimize the soil movement or some degree of resistance must be provided in the structural strength of the piping system crossing the affected area of construction.

Many operators have adopted a standard policy of replacing cast-iron pipe in this sort of a situation with steel pipe and taking necessary measures to protect the steel pipe. Attached are copies of a standard procedure that is used by one company for such construction areas.

Cesar DeLeon, MTP-1

Attachment

UNITED STATES GOVERNMENT
Memorandum

DEPARTMENT OF TRANSPORTATION
MATERIALS TRANSPORTATION BUREAU

DATE: MAR 21 1977

TO: Acting Director, MTP-1

FROM: Chief, Eastern Region, MTP-50-EA

SUBJECT: Alternative to §192.755(?)

If an operator cuts a cast iron pipe in two and installs a leak clamp at a point where the operator suspects soil settlement as a result of excavation by others, can this be considered as a satisfactory alternative to the requirements of §192.755?

Likewise, in the case of a leak caused by cast iron pipe breaking in two, can the installation of a leak clamp suffice for the requirements of §192.755? Or must the operator comply with the requirements of §192.755 as well so as to protect the pipe segment that was excavated against possible subsequent bending stress due to soil settlement?

Lance F. Heverly