

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

SAFETY AND ENFORCEMENT DIVISION
UTILITIES SAFETY BRANCH

RESOLUTION SU-38
Date: February 7, 1996

R E S O L U T I O N

RESOLUTION SU-38. ORDER AUTHORIZING A DEVIATION FROM GENERAL ORDER 112-E, REFERENCE TITLE 49 OF THE CODE OF FEDERAL REGULATIONS, SECTIONS 192.485 AND 192.713(a), ALLOWING GAS OPERATORS TO INSTALL CLOCK SPRING WRAP TO REPAIR DEFECTS IN PIPELINES OPERATING AT 40 PERCENT OR MORE OF SPECIFIED MINIMUM YIELD STRENGTH.

SUMMARY

1. By letter dated November 14, 1995, Southern California Gas Company (SoCalGas) requested that the California Public Utilities Commission (Commission) authorize deviation from the following sections of General Order (G.O.) 112-E, Reference Title 49 of the Code of Federal Regulations (49 CFR):
 - a) Section 192.485, which requires each segment of a steel transmission line, with general corrosion and with a remaining wall thickness less than that required for the maximum allowable operating pressure (MAOP) of the pipeline, to be replaced.
 - b) Section 192.713(a), which describes procedures to be followed when repairing a segment of a steel transmission line operating at or above 40% of the Specified Minimum Yield Strength (SMYS).
2. This deviation would allow the use of a Clock Spring wrap to repair imperfection or damage that impairs the serviceability of steel transmission pipelines.
3. This Resolution authorizes the deviation for all investor owned gas utilities in the State of California.

BACKGROUND

1. Public Utilities (P.U.) Code Sections 702 and 768 grant the Commission authority to establish and enforce standards of

construction, maintenance and operation of utility systems. Rules governing design, construction, testing, maintenance and operation of utility gas piping systems are codified in G.O. 112-E, Reference 49 CFR.

2. The Utilities Safety Branch (USB) oversees utility compliance with G.O. 112-E. Section 192.485 of G.O. 112-E, Reference 49 CFR, titled "Remedial measures: Transmission lines" states:

"(a) General corrosion. Each segment of transmission line with general corrosion and with a remaining wall thickness less than that required for the maximum allowable operating pressure of the pipeline must be replaced or the operating pressure reduced commensurate with the strength of the pipe based on actual remaining wall thickness. However, if the area of general corrosion is small, the corroded pipe may be repaired. Corrosion pitting so closely grouped as to affect the overall strength of the pipe is considered general corrosion for the purpose of this paragraph.

(b) Localized corrosion pitting. Each segment of transmission line pipe with localized corrosion pitting to a degree where leakage might result must be replaced or repaired, or the operating pressure must be reduced commensurate with the strength of the pipe, based on the actual remaining wall thickness in the pits."

Section 192.713(a) of G.O. 112-E, Reference 49 CFR, titled "Transmission lines: Permanent field repair of imperfections and damages" states:

"(a) Except as provided in paragraph (b) of this section, each imperfection or damage that impairs the serviceability of a segment of steel transmission line operating at or above 40 percent of SMYS must be repaired as follows:

- (1) If it is feasible to take the segment out of service, the imperfection or damage must be removed by cutting out a cylindrical piece of pipe and replacing it with pipe of similar or greater design strength.
- (2) If it is not feasible to take the segment out of service, a full encirclement welded split sleeve of appropriate design must be applied over the imperfection or damage.
- (3) If the segment is not taken out of service, the operating pressure must be reduced to a safe level during the repair operations."

3. The waiver requests permission to use Clock Spring wrap to repair large areas of general corrosion on a transmission line operating at 40 percent or more of SMYS as an alternative to pipe replacement or pressure reduction.

4. G.O. 112-E, Section 101.3, authorizes the Commission to grant a waiver of a rule provided that such waiver is accompanied by a full and complete justification.

DISCUSSION

1. Clock Spring is a fiberglass composite-reinforced coil. On installation, it is tightly wound and adhesively bonded to the damaged pipe.

2. There are several advantages to this technology. One is that permanent repairs can be made while the pipeline is in operation, thus eliminating service interruptions, vented gas loss and the need to perform cutting or welding on pipe. Another advantage is that the material is highly resistant to corrosion and high in strength. Pipes repaired with Clock Spring wrap have shown sufficient strength to operate at original allowable operating pressures. From a safety perspective, these are significant advantages over the repair methods currently in use.

3. The only foreseeable concerns at this time are the long term effects of temperature, temperature change, moisture and earth movement on the material and the bonding, and the possible effect of Clock Spring wrap, if any, on the effectiveness of existing cathodic protection.

4. On February 27, 1995, the office of Research and Special Programs Administration (RSPA) of the United States Department of Transportation (U.S. DOT), waived the safety standards in 49 CFR, Sections 192.485 and 192.713(a) for twenty eight companies and their subsidiaries, all gas pipeline operators operating outside of California.

FINDINGS

1. The USB staff, of the Safety and Enforcement Division, has reviewed SoCalGas' petition and concurs with SoCalGas' request for deviation.

2. Studies and results obtained from similar projects involving Clock Spring wrap showed no indications of unsafe operations or any safety hazards associated with such practice.

3. This deviation should be granted to all regulated gas utilities in California so as to afford all of them an opportunity to implement this cost-effective practice in their service areas.

THEREFORE, IT IS ORDERED THAT:

1. Gas operators may deviate from G.O. 112-E, Reference 49 CFR, Sections 192.485 and 192.713(a), by using Clock Spring wrap to repair the imperfection or damage that impairs the serviceability of a transmission pipe operating at 40 percent or more of SMYS, provided that the following conditions are adhered to:

- a) Clock Spring wrap must be installed using procedures recommended by the manufacturer.
- b) Clock Spring wrap must be installed consistent with the program GRI WRAP, a computer program developed by the Gas Research Institute, to determine whether Clock Spring wrap would provide a reliable repair in particular instances.
- c) Clock Spring wrap must be installed consistent with GRI plan, including, at two year intervals, excavating and evaluating a statistical sample of sites, recording the results, and sending the results to the Commission.
- d) Scheduled non-emergency installations of Clock Spring wrap must be reported to USB by phone, fax or mail, within a reasonable time before installation, to allow for inspection by the USB staff.
- e) Persons installing Clock Spring wrap must be trained and certified in installation procedures either by the Clock Spring Company or by persons the Clock Spring Company has trained and certified.
- f) When Clock Spring wrap is used on an area that is damaged by corrosion, utilities must: 1) determine the cause of corrosion, and 2) remedy the situation by preventing the spread of corrosion.

2. This waiver is valid for the duration of the U.S. DOT, RSPA office waiver issued on February 27, 1995.

3. This Resolution is effective today.

I hereby certify that this Resolution was adopted by the Public Utilities Commission at its regular meeting on February 7 1996. The following Commissioners approved it:

Wesley Franklin

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