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G A S B U L L E T I N

Subject: Inspection for Stress Corrosion Cracking

- * Distribution
- * Transmission

To gather data on the susceptibility of PG&E's gas transmission system to stress corrosion cracking (SCC), all excavated and exposed pipe sections which meet both of the following conditions should be inspected for SCC.

1. Pipe coating is disbonded.
2. Operating pressure is over 50% of SMYS or there are indications of unusual high stress conditions.

SCC inspections require special preparation of the pipe and NDE inspection by trained personnel. For exposed pipe sections meeting the above conditions, please contact the GSM Pipe Corrosion Engineer (Dave Craig) at 583-4012 for scheduling the inspection.

For your information, the following is some background information on SCC:

WHAT IS SCC?

Stress Corrosion Cracking (SCC) is a failure mechanism where small cracks, initially invisible to the eye, develop on the outside surface of buried pipelines. It has been responsible for multiple ruptures of aging transmission pipelines in the U.S. and Canada. Stress corrosion cracks develop slowly providing opportunity for early detection.

HOW DOES IT FORM?

SCC is caused by a combination of stress and corrosion. For SCC to form, you must have disbonded pipe coating and inadequate cathodic protection. Environmental conditions such as moisture and temperature are other factors which affect SCC development. High stress levels in the pipe enhance the development of SCC. Key indicators which are often associated with SCC have been identified, but work is still in progress to more fully understand the conditions which lead to SCC formation.

PG&E'S RESPONSE TO SCC

PG&E began a program to investigate the susceptibility of its transmission system to stress corrosion cracking (SCC) in 1996. Transmission lines 300 and 400 were reviewed to attempt to identify susceptible areas. Pipe has been inspected at 10 locations to date throughout the system, and SCC has been found at one location where a crack grew through the pipe and created a leak. In addition, personnel at PG&E's TES Department have been trained to perform on-site inspections for SCC.

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