

STATE OF CALIFORNIA  
**PUBLIC UTILITIES COMMISSION**  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298

August 1, 1995

Cesar DeLeon,  
Deputy Associate Administrator  
Office of Pipeline Safety  
Research & Special Programs Administration  
U.S. Department of Transportation  
400 Seventh Street, S.W.  
Washington, D.C. 20590

Re: Waiver of Safety Regulations

Dear Mr. DeLeon:

The California Public Utilities Commission is in the process of reviewing the enclosed "draft" resolution that will be before it on September 7, 1995. This resolution waives compliance of 49 C.F.R. 192.150 (a) for Pacific Gas & Electric Company (PG&E), so as to allow PG&E to install "PALTEM" pipe lining in 11,400 feet of Line 109 (26" steel) along Alemany Blvd. in San Francisco. The waiver is necessary in order to satisfy a strict interpretation of the internal inspection requirements which could require metal-to-metal contact during pigging operations.

The Utilities Safety Branch (USB) believes a waiver is not necessary for the installation of the liner due to the fact that the existing pipe will a) remain fully capable of carrying the line pressure, b) be hydro-tested to the appropriate pressure before being lined, and c) remain under cathodic protection during the life of the pipe. Nevertheless, the USB is hereby applying for a waiver to satisfy Section 60118 of the Pipeline Safety Act. The existing pipe appears to be in good condition, and it will be thoroughly inspected before being lined. The liner has been tested in a laboratory at over six times (900 plus psi) the proposed operating pressure (150 psi) without failure.

The lining will be used as an alternative to replacing the pipe which was installed in 1932 using oxy-acetylene welding technology. The oxy-acetylene welds tend to be brittle and are subject to failure under high stress levels such as in the event of a major earthquake. The lining appears to have adequate flexibility to contain the gas if minor ruptures occur on the line during a seismic event. The added safety of using the lining, coupled with the economic benefit of not having to dig up and replace the pipe, appear to be excellent reasons for installing this relatively new technology.

As added safety precautions, PG&E will install monitoring points on the pipe to detect any leaks or defects in the lining. The monitoring points will be checked periodically (weekly at first, then declining to monthly and possibly quarterly depending on circumstances). At the end of the first year of operations, PG&E will shut down the line and video its entire length to determine the liner's condition. The USB will make special efforts to monitor this project so as to assure the lining's integrity and efficacy.

Pursuant to Section 60118 of the Pipeline Safety Act, we hereby provide this written notification to the Secretary. We request that this waiver be approved, and would appreciate a response on or before August 10, 1995, so as to give PG&E sufficient time to complete the construction of this project in 1995.

Thank you for your attention to this matter, and, if you have any further questions, please contact Sunil Shori at (415) 557-0226.

Sincerely,

(signed)  
Harry Strahl, Acting Chief  
Utilities Safety Branch

Enclosure

cc: Al Garnett - DOT  
Dick Sanders - DOT TSI  
Zack Barrett - DOT Western Region  
PG&E

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**PUBLIC UTILITIES COMMISSION**  
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**PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

**SAFETY AND ENFORCEMENT DIVISION  
UTILITIES SAFETY BRANCH**

**RESOLUTION SU-3?  
August XX, 1995**

**RESOLUTION**

**DEVIATION FROM GENERAL ORDER 112-E, SECTION 192.150 (a) OF THE  
FEDERAL REGULATIONS TO ALLOW THE INSTALLATION OF A LINING IN  
A STEEL PIPE WHICH PRECLUDES STEEL TO STEEL CONTACT WHEN  
PERFORMING INTERNAL INSPECTION OF THE PIPE**

**SUMMARY**

1. General Order (GO) 112-D is expected to become GO 112-E in August of 1995. GO 112-E adopts the federal code which requires internal inspection of natural gas transmission lines.
2. Pacific Gas and Electric Company (PG&E) wishes to line 11,400 feet of a 26-inch steel pipe with a "Paltem" cured-in-place-lining on a section of Line 109 located along Alemany Boulevard in San Francisco. Once this pipe lining is installed, it cannot be inspected with a metal-

to-metal inspection device (pig). This appears to be in violation with the Code of Federal Regulations, Title 49 as stated in section 192.150 (a).

3. PG&E plans to maintain the original steel pipe in accordance with federal regulations and testing procedures, and discontinue this maintenance at a point in time when all parties can agree that the liner is fully capable in maintaining the integrity of the pipe. PG&E claims that the liner itself is capable of holding the proposed pipeline pressures without failing.

4. The Utilities Safety Branch (USB) recommends that the waiver be granted for this specific project. USB believes the new technology has been adequately tested by PG&E, and this is an appropriate project for evaluating the merits of using this technique. USB recommends, for any and all future applications, that this lining technique be authorized through the deviation request process until such time when the technique is adopted as an approved pipeline rehabilitation method.

## **BACKGROUND**

1. PG&E would like to begin rehabilitating transmission pipelines in lieu of pipeline replacement. The rehabilitation process proposed by PG&E consists of a double polyester woven liner and jacket, which is fitted to the inner wall of the pipeline (host pipe), and sealed at both ends with an end ring. Several variations of this process, classified as a cure-in-place liner, are now patented by various manufacturers and are available to the gas industry.

2. PG&E has tested various lining processes, and has plans to begin actual field testing of a cure-in-place process on distribution piping. The host pipe will continue to be maintained under the applicable rules for the host pipe material (i.e. cathodic protection continues to be applied). In this project, PG&E plans to line a transmission pipe which will operate at a pressure of 150 psi. The host pipe will remain under the applicable rules for buried steel pipe, and cathodic protection will be maintained on the steel pipe indefinitely.

3. In preparation for lining the transmission pipe, PG&E and the Utilities Safety Branch (USB) raised common concerns regarding two facts: 1) the composite materials which compose the liner, and the resins which are utilized to add structural definition to the liner, are not recognized materials within Code of Federal Regulations (CFR) 192; and 2) as the liner is composed of insulating material, it would restrict the operation of internal inspection devices (pigs) which require metal-to-metal contact.

4. According to CFR Subpart 192.150(a), "...each new transmission line and each line section of a transmission line where the line pipe, valve, fitting, or other line component is replaced must be designed and constructed to accommodate the passage of instrumented internal inspection devices." Due to the pigging restrictions discussed above, USB requested PG&E to file for a waiver from Subpart 192.150(a).

5. After discussions with the federal Office of Pipeline Safety in Washington D.C. and the Transportation Safety Institute in late June 1995, it was decided that more information was needed and that a waiver should be filed concerning the internal inspection requirements of the pipe.

## **FINDINGS**

1. GO 112-E adopts the federal code which requires internal inspection of natural gas transmission lines.
2. PG&E's use of the liner for its transmission pipe along Alemany Blvd. in San Francisco will not jeopardize public safety.
3. The use of the liner will significantly improve gas pipelines' ability to withstand seismic events.
4. The use of the liner for pipeline rehabilitation is far more economical than outright replacement of the pipe, thereby allowing the ratepayers to benefit from reduced capital construction requirements.

**THEREFORE, IT IS ORDERED THAT:**

1. A deviation from General Order 112-E, which refers to the Code of Federal Regulations, Title 49, Section 192.150(a), for the internal inspection of a transmission line, is granted.
2. PG&E and USB shall closely monitor this liner project to ensure public safety.
3. This Resolution is effective today.

I hereby certify that this Resolution was adopted by the Public Utilities Commission on.

The following Commissioners approved it:

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Acting Executive Director

August 11, 1995

Mr. Harry Strahl  
Acting Chief Utilities Safety Branch  
California Public Utilities Commission  
505 Van Ness Avenue  
San Francisco, CA 94102-3298

Dear Mr. Strahl:

Your letter of August 1, 1995, and the draft resolution of General Order 112-E describe the Commission's intention to approve an application by Pacific Gas & Electric Company (PG&E) for a waiver of 49 CFR section 192.150(a).

PG&E is requesting authority to install the Paltem cured-in place-liner (CIPP) in 11,400 feet of 26-inch gas transmission line located in Alemany Boulevard, San Francisco, CA. This transmission line was installed in 1932 with Oxy-Acetylene girth welds. PG&E is concerned that these old welds are brittle and may fail if subjected to stresses induced by a major earthquake. If such an event were to cause minor ruptures in the existing line, the CIPP double liner would be a replacement for the pressure carrying capacity of the failed host pipe.

The CIPP liner is not able to accommodate the currently available smart pigs. Notice 3, Passage of Instrumented Internal Inspection Devices: Limited Suspension of Compliance Dates, published on February 7, 1995, announced a suspension of enforcement of certain requirements in 49 CFR section 192.150(a). Nonetheless, the final paragraph of that notice advises that the provisions in section 192.150(a) for the accommodation of smart pigs, remain in effect for the actual replacements made in onshore gas transmission lines. Consequently, a waiver is required to install the CIPP liner.

The information provided to support the application indicates that the host pipe will be cleaned, inspected with a video camera and hydrostatically tested to 1.5 times the maximum allowable operating pressure. After the liner is in place, another video inspection will be made to confirm its proper installation. When the liner is in service, a program will be implemented to monitor the integrity of the liner and cathodic protection will be applied to the pipe.

The added safety from seismic induced stresses together with the economic benefits from installing the liner rather than replacing this 26-inch transmission line are not inconsistent with the pipeline safety regulations. For these reasons, we do not object to the granting of a waiver by the California Public Utilities Commission.

Sincerely,

Richard B. Felder  
Associate Administrator  
for Pipeline Safety

AGarnett:jmd:64046:8-9-95  
cc: DPS-1, 2, 10, TSI-EMail  
RDG File, Regions, AnnMarie