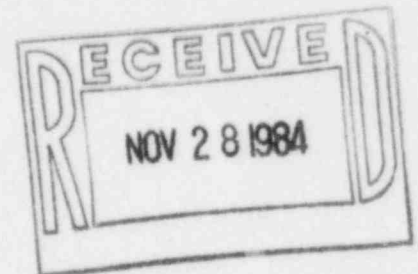


The Light company

Houston Lighting & Power P.O. Box 1700 Houston, Texas 77001 (713) 228-9211

November 26, 1984
ST-HL-AE-1150
File No.: G12.215

Mr. Robert D. Martin
Regional Administrator, Region IV
Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76012



Dear Mr. Martin:

South Texas Project
Units 1 & 2
Dockets Nos. STN 50-498, STN 50-499
First Interim Report Concerning
Trapeze Type Support Assemblies

On October 22, 1984, pursuant to 10CFR50.55(e), Houston Lighting & Power Company (HL&P) notified your office of an item concerning trapeze type support assemblies. Attached is the first interim report concerning this item. This deficiency has been determined to meet the reporting requirements of 10CFR50.55(e).

HL&P will provide the next report on this item by March 22, 1985.

If you should have any questions concerning this matter, please contact Mr. Michael E. Powell at (713) 993-1328.

Very truly yours,

A handwritten signature in cursive script, appearing to read "G. W. Oprea, Jr.".

G. W. Oprea, Jr.
Executive Vice President

MEP/wm

Attachment: First Interim Report Concerning
Support Assemblies

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CC:

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Docketing & Service Section
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555

South Texas Project
Units 1 & 2
First Interim Report Concerning
Trapeze Type Support Assemblies

I. Summary

A deficiency has been identified in the design of trapeze type support assemblies with mechanical snubbers used to support a feedwater line in the Reactor Containment Building (RCB). The design was such that if left uncorrected, the trapeze assemblies could become misaligned such that an overstress condition could develop in the pipe during dynamic events. In addition, these assemblies used U-Straps around the pipe for which there was no analysis showing that these straps were qualified for lateral loads.

This deficiency is being investigated on a generic basis to assess the implications relative to all similar type of designs used at STP. The preliminary investigation revealed that the same problem exists for approximately 75 other support assemblies per unit.

The following corrective actions are being taken to resolve this issue.

1. The affected pipe support assemblies in the feedwater line will be redesigned to preclude misalignment and will be properly qualified for lateral loads.
2. Other piping systems will be reviewed to identify deficient assemblies. Deficient assemblies identified will be redesigned to preclude misalignment and qualified for lateral loads.
3. Pipe support design personnel have been made aware of the deficiency and training sessions have taken place to prevent recurrence of such problems.

Based on the evaluation of the identified feedwater supports, we have determined that, if left uncorrected a significant safety hazard exists which is reportable pursuant to 10CFR50.55(e).

II. Description of Deficiency

On October 22, 1984, pursuant to 10CFR50.55(e), Houston Lighting & Power Company (HL&P) notified the NRC Region IV of an item concerning trapeze type support assemblies. Bechtel engineering identified a concern that

three trapeze type supports used in a feedwater line would have a tendency to slide or rotate around the pipe.

The support concept in question is identified in Figure 1. This support is commonly used in the industry in those locations where the pipe is located too close to a wall to allow for adequate room for snubber placement. In those situations, a beam is placed outboard of the pipe from the wall and the snubbers connected to the beam. Typically the support is held in place by friction between the beam and pipe that is developed by the tensioning of a U-Bolt that goes around the pipe. The deficiency concerned supports that used a welded strap to attach the support to the pipe, such that a gap existed between the strap and pipe. This clearance between the strap and pipe would allow the assembly to slide down the pipe in the case of a vertical pipe or to rotate around the pipe in the case of a horizontal pipe. The stress analysis is performed assuming that snubbers are correctly oriented and acting as designed. If, due to misalignment, these supports fail to act during the dynamic event for which they are designed, then the piping system can be overstressed. In the case of the feedwater line, the trapeze assemblies are designed for waterhammer as well as seismic loads. An additional item of concern was that there was no documentation to show that the U-Straps used in the trapeze assemblies were qualified for side loads.

Further investigation into the use of similar supports identified approximately 78 supports per unit that utilized welded straps or U-bolts to attach the support to the pipe. A review of the design drawings revealed that the U-bolt designs also included a gap between the U-bolt and pipe. In addition the applicable construction specifications and design drawings did not specify a required torque value for the U-bolts necessary to hold the support tight to the pipe. There was also no documentation to show that the U-bolts used were qualified for lateral loads.

During the investigation of the deficiency, it was determined that similar designs had been provided by EDS and NPSI for the previous A/E. All such designs were voided or superseded by Bechtel designs. However, a review of the previous design documents did not substantiate that required torque or preload values had been specified. Bechtel has discussed the lack of required torque or preload with both companies in as much as the potential misalignment could occur depending on construction practices used on other projects. HL&P does not know if this problem exists in the designs supplied by Bechtel, EDS or NPSI for any other projects.

Bechtel will process a Deficiency Evaluation Report on this subject through their Corporate Problem Investigation Request (PIR) process. The PIR process involves a transmission of a description of the deficiency to other Bechtel projects for information or action. The PIR process resolution includes a required response for all action assignees with documentation maintained in applicable project files and at Bechtel's Western Power Division offices.

III. Corrective Action

The following corrective actions have been taken to resolve this issue.

1. Pipe support designs currently issued for construction will be reviewed to identify the number of supports that are subject to the deficient conditions identified herein. The identified supports will be placed on construction hold to preclude installation. A corrective action program for these supports will be developed and described in the next report.
2. Pipe support personnel have been given additional training in the design of pipe support trapeze assemblies.
3. The three trapeze assemblies in the feedwater line will be corrected and revised drawings issued by December 31, 1984.

IV. Recurrence Control

Recurrence control has been provided in the form of additional training of the pipe support design personnel to assure that these types of deficiencies will not occur in future pipe support designs.

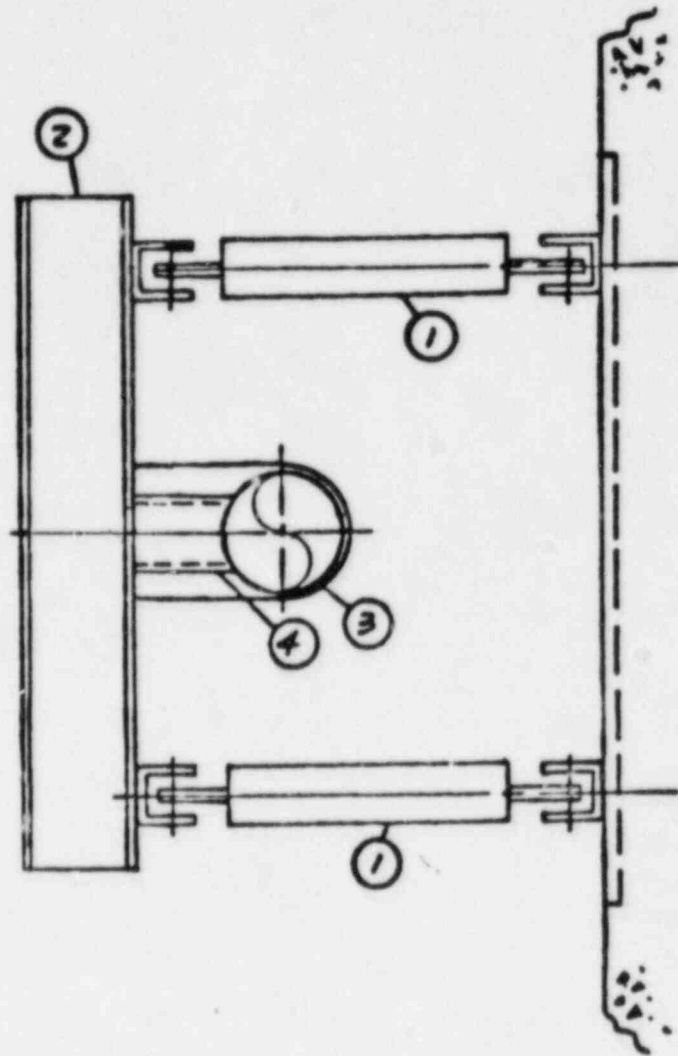
V. Safety Analysis

We have determined, that if left uncorrected, a safety hazard exists in the case of the feedwater line supported by the three deficient trapeze assemblies. A failure of these assemblies to perform their intended function during a waterhammer event would overstress the feedwater line. No detailed analyses have been performed for the consequences of overstress. The overstress condition is assumed to result in the failure of the line. The waterhammer event could result from an assumed high energy line break of another feedwater line. Significant propagation of secondary side line break violates the initial conditions and inputs used in the FSAR Chapter 15 analyses.

Based on the evaluation of the identified feedwater supports, we have determined that, if left uncorrected a significant safety hazard exists which is reportable pursuant to 10CFR50.55(e).

Figure 1

TRAPEZE TYPE SUPPORT



PLAN VIEW (VERTICAL PIPE)
SECTION VIEW (HORIZONTAL PIPE)

- ① SNUBBER
- ② STEEL BEAM
- ③ U-STRAP OR U-BOLT
- ④ STEEL BEAM/PIPE STANCHION