

The Light company

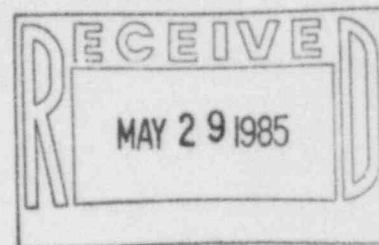
Houston Lighting & Power P.O. Box 1700 Houston, Texas 77001 (713) 228-9211

May 24, 1985
ST-HL-AE-1257
File No.: G12.236

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
Docket Nos. STN 50-498, STN 50-4⁹9
First Interim Report Concerning
Pipe Support Eye-Rod Interferences



On April 25, 1985, pursuant to 10CFR50.55(e), Houston Lighting & Power Company (HL&P) notified your office of an item concerning pipe support eye-rod interferences. Attached is the first interim report concerning this item. The next report will be submitted to your office by August 16, 1985.

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

Very truly yours,

J. T. Greenbaum for
J. H. Goldberg
Group Vice President, Nuclear

MEP/as

Attachment: First Interim Report
Concerning Pipe Support Eye-Rod Interferences

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cc:

Hugh L. Thompson, Jr., Director
Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

N. Prasad Kadambi, Project Manager
U.S. Nuclear Regulatory Commission
7920 Norfolk Avenue
Bethesda, MD 20814

Claude E. Johnson
Senior Resident Inspector/STP
c/o U.S. Nuclear Regulatory Commission
P. O. Box 910
Bay City, TX 77414

M. D. Schwarz, Jr., Esquire
Baker & Botts
One Shell Plaza
Houston, TX 77002

J. R. Newman, Esquire
Newman & Holtzinger, P.C.
1615 L Street N.W.
Washington, DC 20036

Director, Office of Inspection
and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

E. R. Brooks/R. L. Range
Central Power & Light Company
P. O. Box 2121
Corpus Christi, TX 78403

H. L. Peterson/G. Pokorny
City of Austin
P. O. Box 1088
Austin, TX 78767

J. B. Poston/A. vonRosenberg
City Public Service Board
P. O. Box 1771
San Antonio, TX 78296

Brian E. Berwick, Esquire
Assistant Attorney General for
the State of Texas
P. O. Box 12548, Capitol Station
Austin, TX 78711

Lanny A. Sinkin
3022 Porter Street, N.W. #304
Washington, D.C. 20008

Oreste R. Pirfo, Esquire
Hearing Attorney
Office of the Executive Legal Director
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Charles Bechhoefer, Esquire
Chairman, Atomic Safety & Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dr. James C. Lamb, III
313 Woodhaven Road
Chapel Hill, NC 27514

Judge Frederick J. Shon
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. Ray Goldstein, Esquire
1001 Vaughn Building
807 Brazos
Austin, TX 78701

Citizens for Equitable Utilities, Inc.
c/o Ms. Peggy Buchorn
Route 1, Box 1684
Brazoria, TX 77422

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
Pipe Support Eye-Rod Interferences

I. Summary:

A fabrication interference exists between the forged sway-strut eye-rod and the machined rear bracket (on one end of a sway-strut), and/or between the forged sway-strut eye-rod and the clamp-bolt spacer (on the other end of a sway-strut). The potential exists that additional stresses could be induced in the load pins on the struts which could potentially lead to their failure.

II. Description of the Incident:

Eye-rods are used in rigid sway struts, adjustable sway struts, and snubber transition kits. The eye-rod is a threaded rod with one end having a spherical bearing installed for a load pin to attach the eye-rod to a bracket or pipe clamp (refer to Figure 1). The bearing allows $\pm 6^\circ$ of misalignment on each eye-rod.

Excess forging "trim" on the bearing end of the eye-rod can result in an interference between the eye-rod and the rear bracket and/or between the eye-rod and the clamp-bolt spacer depending on tolerance "stack-up" of the various parts. This could reduce the freedom of motion of the strut during high temperature operation and could increase the stress on the load pin.

The eye-rods are supplied by NPSI in accordance with Bechtel Specification 4L360JS1000. There are approximately 18,400 eye-rods supplied for rigid and adjustable struts (total) and approximately 1200 eye-rods supplied for snubber transition kits. Approximately 2600 struts (with two eye-rods each) have been installed in Class 1, 2, 3 and 7 systems at this time. Only 200 struts (400 eye-rods) have been inspected by QC to date.

This deficiency was discovered by an ESI QC inspector while inspecting the strut installation in accordance with Bechtel installation specification 5L340JS1002.

The root cause of this problem appears to be a "stacking up of tolerances". As shown in Attachment 2, the calculated clearance for size 6, 10, and 14 struts with the additive "worst case" tolerances results in a zero clearance situation between the eye-rod and rear bracket even without the presence of forging trim on the eye-rod. Fabrication tolerances are apparently being met, but those specified tolerances can result in zero clearance. Additional measurements have been taken to determine if the interference exists because of the eye-rod, bracket, or both. The base thickness (K) of seven machined

rear brackets were checked at random in the yard and were found to be in tolerance. It should be noted that both the eye-rods and rear brackets are catalog items and, therefore, the shop drawings are not all available.

III. Corrective Action:

The first step in the repair process is a reinspection program to locate the eye-rods with interferences already installed in Class 1, 2, 3 and 7 applications.

The second step is to change the installation specification to require the QC inspectors to specifically look for this type of interference on the eye-rods and assure that visible clearance is available. This change would ensure that the 2400 installed struts that have not been inspected yet would have the eye-rods inspected for the forging "trim" interferences.

The third step is to repair the eye-rods affected. NPSI has authorized STP personnel to grind the forging "trim" back to within the acceptable "E" dimensions.

IV. Recurrence Control:

Recurrence control measures will be addressed in the final report.

V. Safety Analysis:

A safety analysis will be addressed in the final report.

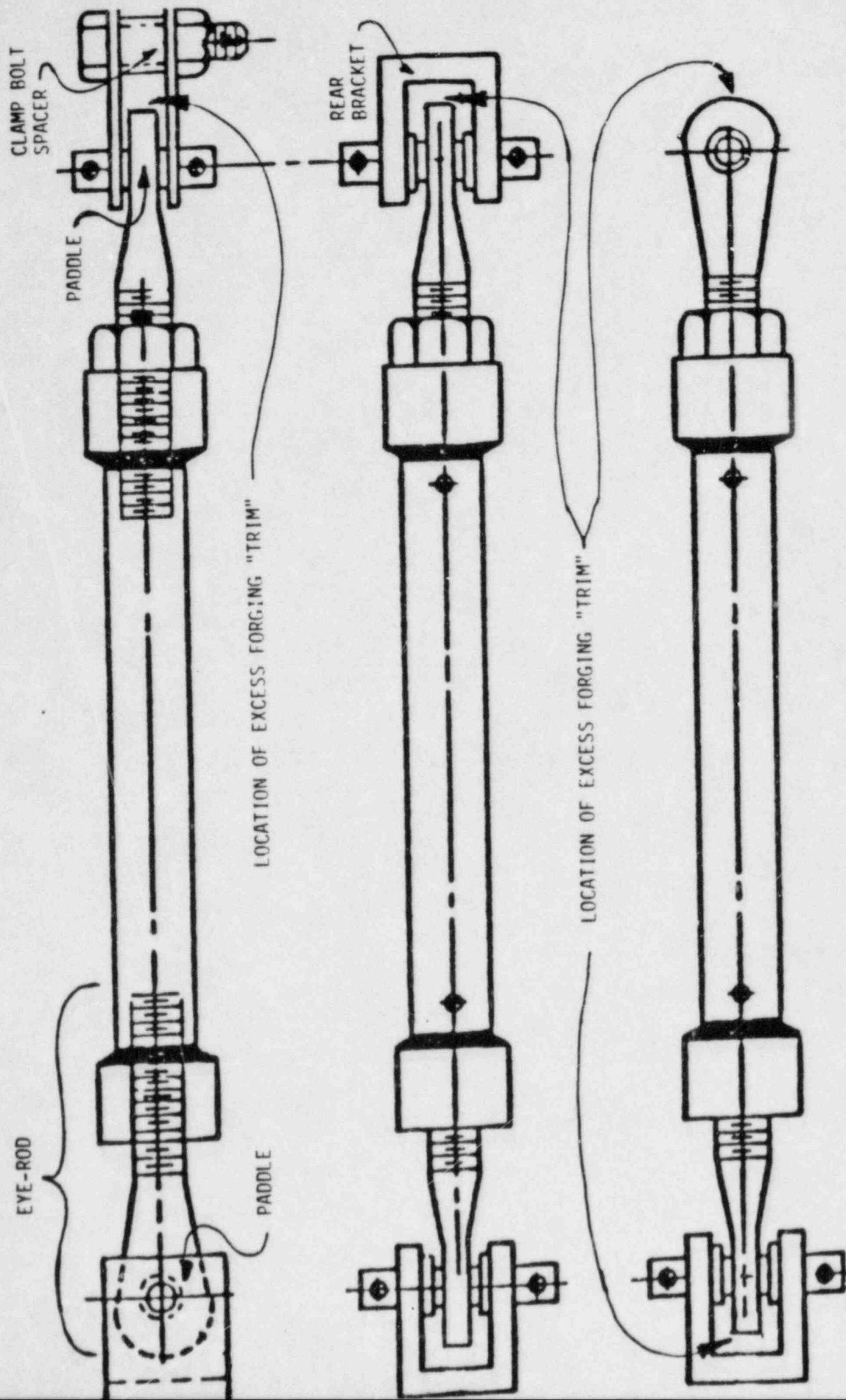
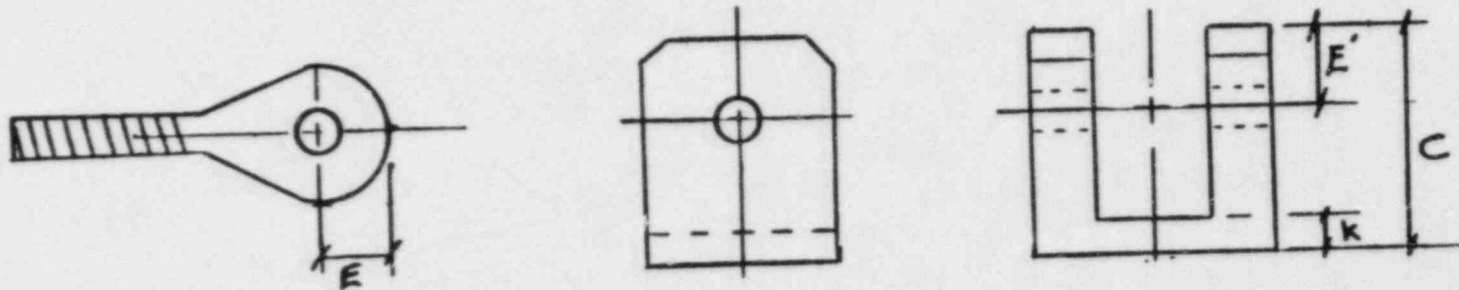


FIGURE 1

CALCULATED DESIGN CLEARANCES BASED ON NPSI DRAWINGS

Strut Size	Paddle E (Max) Inches	Machined* Rear Bracket "Worst Case" Dimensions				Calculated Clearance (C-E'-K)-E Inches
		C (Min) Inches	K (Max) Inches	E' (Max) Inches	Calculated C-E'-K Inches	
6	1.0625	2.0625	0.4375	0.5625	1.0625	0
8	1.3750	2.7500	0.5625	0.7500	1.4375	0.0625
10	1.6875	3.6250	0.8125	1.1250	1.6875	0
14	2.2500	4.5000	0.9375	1.3125	2.2500	0



*Note: Forged rear brackets have a "worst case" calculated clearance of 0.03125 inches for these strut sizes.