



**Commonwealth Edison**

One First National Plaza, Chicago, Illinois  
Address Reply to: Post Office Box 767  
Chicago, Illinois 60690

May 7, 1982



Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Subject: LaSalle County Station Units 1 and 2  
Teledyne Open Item and Error/Deviation  
Reports for the LaSalle Independent  
Design Review  
NRC Docket Nos. 50-373 and 50-374

Reference (a): C. W. Schroeder letter to H. R. Denton  
dated March 16, 1982, "Independent  
Design Review Initial Status Report for  
the Period of February 11 through March  
12, 1982.

Dear Mr. Denton:

The purpose of this letter is to provide you with  
controlled copy #8 of:

TES Proj. No. 5539  
Date: 5-05-82  
Open Item and Error/Deviation  
Report for the LaSalle Independent  
Design Review

Under separate cover, controlled copy #9 is being provided  
to Mr. James G. Keppler.

This report has also been provided to our Architect  
Engineer (Sargent and Lundy) for preparation of responses to open  
items and findings.

If there are any questions regarding this matter, please  
contact this office.

Very truly yours,

*CW Schroeder* 5/7/82

C. W. Schroeder  
Nuclear Licensing Administrator

Boo!  
5  
1/1

1m  
Attachment  
cc: NRC Resident Inspector - LSCS - 1/0

8205110197 820507  
PDR ADOCK 05000373  
S PDR

May 6, 1982

Mr. L.O. DelGeorge:

Subject: Teledyne Open Item and Error Deviation  
Reports for the LaSalle Independent  
Design Review

Enclosed are copies of the subject report which you should transmit to the NRC. I am in the process of having the items identified in this report reviewed by Sargent & Lundy. I will provide you with a copy of their response for transmittal to the NRC as soon as it is complete. I will advise you of that schedule as soon as it is determined.

I have made distribution of the ten copies as follows:

<u>Copy #</u>	<u>Recipient</u>
6	B.R. Shelton
7	L.O. DelGeorge
8	H. Denton (NRC)
9	J. Keppler (NRC)
10	R.J. Mazza (S&L)
11	R.H. Holyoak
12	T.E. Watts
13	C. Reed
14	J.J. Maley
15	B.B. Stephenson

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*B. R. Shelton 5/6*

B.R. Shelton

BRS/bmb/1498L

TELEDYNE ENGINEERING SERVICES  
CONTROLLED  
DOCUMENT

TES PROJ. NO. 5539  
DATE 5-5-82

COPY 8

TELEDYNE  
ENGINEERING SERVICES

130 SECOND AVENUE

WALTHAM, MASSACHUSETTS 02254

(617) 890-3350 TWX (710) 324-7580

May 5, 1982  
5539-7

Mr. Brent Shelton  
Project Engineering Manager  
for LaSalle County Station  
Commonwealth Edison  
One First National Plaza  
Chicago, Illinois 60690

Subject: Open-Item and Error/Deviation Reports for the LaSalle Independent Design Review

Dear Mr. Shelton:

Enclosed are Open-Item and Error/Deviation reports which have been found to date. Attachment 2 contains eleven Error/Deviation reports and Attachment 3 contains eleven Open-Item reports.

The Open-Item reports list those items which require further clarification from S&L.

All Open-Items and Error/Deviations reports have been reviewed by the Project Review Internal Committee.

The definitions used for this project are given in Attachment 1 to this letter.

In accordance with the TES Project QA Program, this letter with attachments has become part of the TES Project QA Records and is therefore a controlled document.

In order to maintain the independence on the project, any and all comments should be transmitted to TES in a controlled manner, care of TES Document Control.

Distribution of this letter with enclosures is as follows:

- Copy 1 Record copy - TES Document Control
- Copy 2 J. A. Flaherty - TES Project Manager
- Copy 3 L. J. DiLuna - TES Assistant Project Manager
- Copy 4 N. S. Celia - TES Project Review Internal Committee Chairman

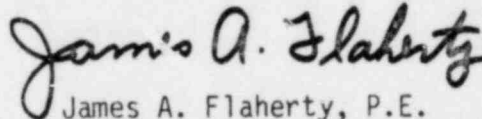
Mr. B. R. Shelton  
May 5, 1982  
5539-7  
Page Two

Copy 5            D. Messinger - TES Project Quality Assurance Engineer  
Copies 6-15     B. R. Shelton - Commonwealth Edison Company  
Copies 16-20    TES Document Control

If you require additional copies, please let us know.

Sincerely,

TELEDYNE ENGINEERING SERVICES



James A. Flaherty, P.E.  
Manager, Engineering Design and Testing

JAF:jej

enclosures

ATTACHMENT 1

For clarification, the following definitions are being used for the subject project:

Open-Item: A possible error or inconsistency that has not been verified or fully understood, and its significance assessed. An **Open-Item** can become an **Error**, **Deviation** or a **Closed Item**, but cannot remain an **Open-Item** in the TES Final Report.

Error: An incorrect result that has been verified as such. It may be due to any of several reasons:

Math Mistake

Omission of Data

Use of Inappropriate Data

Deviation: Not an error in analysis, design or construction, but a departure from standard procedure(s).

Closed Item: An **Open-Item** which, after further review, can be closed. Prior to completion of the Independent Design Review, all **Open-Items** must be defined as an **Error**, **Deviation** or **Closed Item**.

Observation: An item that does not impact the adequacy of the design or QA process but which the reviewer feels is a departure from standard practices which he is accustomed to.

Potential Finding: An item which the reviewer and TES Project Manager feel could have an impact on the adequacy of the design or QA process. A **Potential Finding** can become an **Error**, **Deviation**, or an **Observation**, but cannot remain a **Potential Finding** in the TES Final Report.

All **Potential Findings** and **Open-Items** will be submitted to the Project Review Internal Committee for disposition.

ATTACHMENT 2

OPEN-ITEM REPORTS FOR PERIOD THROUGH APRIL 30, 1982

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Open-Item Report No.: 1

Reference: S&L Piping Stress Report for Subsystem RH-07, Revisions 3 and 4

Statement: Report RH-07, Revisions 3 and 4, do not contain calculations substantiating that the flanges used were analyzed, evaluated and meet the requirements of NC-3647 of the ASME Code.

Request: Are calculations available? If not, how were the acceptability of the flanges determined?

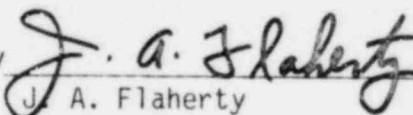
Please supply TES with this information.

By



N. S. Cella  
Project Review Committee Chairman

By



J. A. Flaherty  
Project Manager

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Open-Item Report No.: 2

Reference: FSAR

Statement: There is a difference in the location of the fill line as shown on two S&L documents.

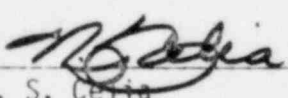
Figure 5.4-13 of FSAR does not agree with the P&ID Drawing No. 96, Sheet 3, Revision V, dated 9/18/81.

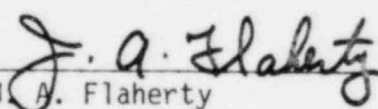
FSAR Figure 5.4-13 shows the fill line connecting to the discharge side of the RHR Loop C between valves F031C and F098C. Drawing 96, Sheet 3, shows the line connecting to the discharge side of the RHR Loop C after both valves.

Request: S&L should respond to the following questions:

1. Has S&L updated Figure 5.4-13 of the FSAR?
2. Has Drawing M-93, Sheet 3, been issued "As Built"? What is revision of "As Built"?

Please supply TES with revised documents, if they exist.

By   
N. S. Ceria  
Project Review Committee Chairman

By   
J. A. Flaherty  
Project Manager



Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Open-Item Report No.: 3

Reference: RHR Loop C, Subsystem RH-63, QUAD Report 1-80-70, Revision 2,  
Dated 11/27/81

Statement: This subsystem is a branch line from a much larger line.

The displacements that were used as input for the thermal cases cannot be verified. TES has reviewed the RH-07 analysis and cannot duplicate the values used.

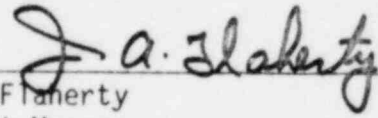
Request: Please supply TES with the information required to verify the values used.

By

  
N. S. Cella

Project Review Committee Chairman

By

  
J. A. Flaherty

Project Manager

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Open-Item Report No.: 4

Reference: RHR Loop C, Subsystem RH-63, QUAD Report 1-80-70, Revision 2,  
Dated 11/27/81

Statement: TES cannot ascertain if the analysis of baseplates and concrete  
expansion bolts includes the effects of prying action for this  
subsystem.

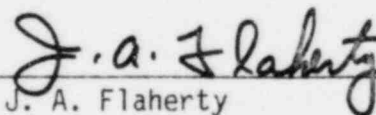
Request: TES requests the QUADREX procedure for the analysis of anchor  
bolts. If this procedure is the same as the S&L procedure  
PI-LS-16, then S&L should state this.

By



N. S. Cella  
Project Review Committee Chairman

By



J. A. Flaherty  
Project Manager

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Open-Item Report No.: 5

Reference: Subsystem RH-06, S&L Stress Report 4266-10, Revision 4

Statement: TES has reviewed the applicable Reactor Vessel Thermal transients as they apply to the RHR system.

In reviewing Tables 5.3, 5.4, 7.1 and 7.2, it appears that the signs of  $T_a-T_b$ , discontinuity stress, should be opposite for down transients (Groups 1, 2, 3 and 4) and up transients (Groups 5, 6, 7, and 8). However, Group 1 has a minus value and all the other groups have plus values.

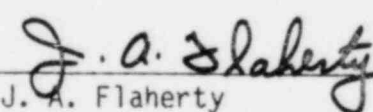
The highest  $T_a-T_b$  values from the AXTRAN thermal computer code are from Group 7 with a designated thermal rate of 100°F/hr. Group 2 has a higher thermal rate, 4320°F/hr, yet does not have the largest  $T_a-T_b$  stress values.

There is no discontinuity temperature value input for lugs at support RH-53-1006. However, at this location (node 25 in computer model), the comparable PIPSYS computer run shows a  $T_a-T_b$  discontinuity value (from AXTRAN computer run).

Request: S&L should substantiate the development and choice of the values used in the thermal analysis. TES does not have a write-up of AXTRAN.

S&L should supply the AXTRAN computer write-up and computer runs associated with this Open-Item.

By   
N. S. Cella  
Project Review Committee Chairman

By   
J. A. Flaherty  
Project Manager

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

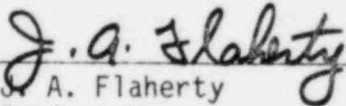
Open-Item Report No.: 6

Reference: Subsystem RH-06, S&L Stress Report 4266-10, Revision 4

Statement: The PIPSYS computer input with calculated stress indices, for Node 35B, branch connection, shows zero moment values for both run and branch components for all loading cases. However, computer inputs for the individual components give moment values.

Request: S&L should define which computer input is correct and why the difference.

By   
N. S. Celli  
Project Review Committee Chairman

By   
J. A. Flaherty  
Project Manager

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Open-Item Report No.: 7

Reference: Subsystem RH-06, S&L Stress Report 4266-10, Revision 4

Statement: In reviewing this report, it was noted that Node 15 of the piping model is designated as the reactor pressure vessel nozzle with gamma plug (branch connection).


Point 15, RPV nozzle, a terminal end, has reported stresses which exceed the allowable of Subsection 2.3.4.2. Therefore, it should be designated as a postulated pipe break location.

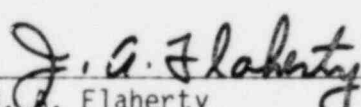
Request: S&L is requested to supply the following information.

Where does the S&L jurisdiction begin? Is GE responsible for this data point? What is the Class 1 analysis point?

Why wasn't point 15, RPV nozzle, a terminal end, chosen as a postulated pipe break location.

TES requests the analysis and evaluation for this location.

By   
N. S. Cella  
Project Review Committee Chairman

By   
J. A. Flaherty  
Project Manager

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Open-Item Report No.: 8

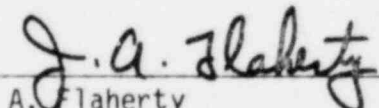
Reference: Subsystem RH-06, S&L Stress Report 4266-10, Revision 4

Statement: Node 20A (elbow) of the piping model is designated to have gamma-plug (branch connection) indices.

This is typical for many Class 1 nodes in the model.

Request: S&L should explain why the choice of the gamma-plug indices for this node. Also, why is the index typical for many of the Class 1 nodes in the model.

By   
N. S. Golia  
Project Review Committee Chairman

By   
J. A. Flaherty  
Project Manager

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Open-Item Report No.: 9

Reference: Subsystem RH-06, S&L Stress Report 4266-10, Revision 4

Statement: Reference pages 48 and 49 of S&L Stress Report, Revision 3: Three thermal expansion cases are listed on page 48 applicable to the fatigue analysis. Page 49 lists a thermal mode calling for the entire line (RH-06) to be at 550°F. How is this possible? Also, if entire line is 550°F, why are there zero thermal displacements given for Node 100? All these thermal flexibility cases were run on PIPSYS program; however, only the three correct cases, as listed on page 48, were applied to the Class 1 fatigue analysis.

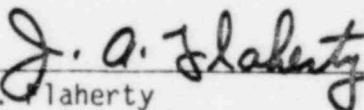
Request: S&L should explain the note contained on page 49, and the questions contained above.

By



N. S. Cella  
Project Review Committee Chairman

By



J. A. Flaherty  
Project Manager

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Open-Item Report No.: 10

Reference: Subsystem RH-06, S&L Stress Report 4266-10, Revision 4

Statement: Node 100 of the piping model is designated as a penetration.  
The indices input for the PIPSYS Class 1 evaluation is for a  
branch connection.

Request: S&L should supply the following information:

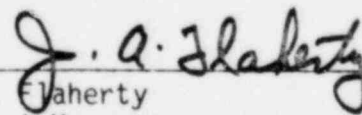
1. What is the justification for the choice of stress index?
2. What is the analysis point? Is it the girth butt weld  
between fluid head and pipe?

By



N. S. Cella  
Project Review Committee Chairman

By



J. A. Flaherty  
Project Manager



Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

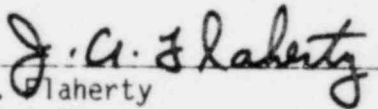
Open-Item Report No.: 11

Reference: Subsystem RH-06, S&L Stress Report 4266-10, Revision 4

Statement: Pipe material for Line 1RH53B12 is specified as SA-106-GR. B. Spool piece drawing on page 35.17 of Revision 4 to Stress Reports calls for pipe material to be SA-333, GR.6. The Class 1 allowable values are indentical for the two materials.

Request: S&L should define which material call-out is correct. The choice of material does not affect the analysis or evaluation but could affect fabrication and material requirements.

By   
N. S. Cerra  
Project Review Committee Chairman

By   
J. A. Flaherty  
Project Manager

ATTACHMENT 3

ERROR/DEVIATION REPORTS FOR PERIOD THROUGH APRIL 30, 1982

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Error/Deviation Report No.: 1

Classification of Finding: Error

References: 1) FSAR  
2) Project Instruction PI-LS-16

Statement: The FSAR paragraph 3.7.3.3.1, Modeling of Piping Systems, requires that "the pipe lengths between mass points are not greater than the length which would have a natural frequency of 33 Hz when calculated as a simply supported beam."

Project Instrumentation PI-LS-16, Revision 16, Appendix R, page 10 of 16 requires that the designer check to see if the length/diameter ratio is less than 15.

The PIPSYS computer code prints a "Warning" message if the L/D ratio exceeds 10. However, the computer code does not default if this limit is exceeded.

Conclusion: The use of an L/D of 15 could result in a natural frequency less than 33 Hz which is not in compliance with the FSAR. The attached calculations demonstrate this for 24-inch schedule 40 and 24-inch standard weight pipe. The spacing (length) given in the examples are not unusual. The lengths are consistent with hanger spacing tables for deadweight given in B31.1.

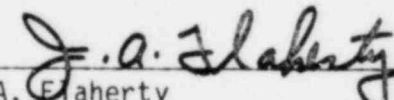
Therefore, there is no objective evidence to ensure that the FSAR requirement was met.

By

  
N. S. Celis

Project Review Committee Chairman

By

  
J. A. Flaherty

Project Manager

# TELEDYNE ENGINEERING SERVICES

BY SAE DATE 4/27/85  
 CHKD. BY LJD DATE 4-28-82

SHEET NO. 1 OF 2  
 PROJ. NO. 5539

Calculation of frequency based on  $L/D$   
 Ratio

For RHR Loop C

24 inch sch 40 pipe

$$I = 3420 \text{ in}^4$$

$$W = 28.77 \text{ #/in}$$

$$f = 1.57 \sqrt{\frac{EI}{WL^4}}$$

$$f = 1.63 \times 10^5 \sqrt{\frac{I}{WL^4}}$$

$$f = \frac{1.78 \times 10^6}{L^2}$$

Reference	$\frac{L}{D}$	L	f
FSAR	9.7	232	33 Hz
PIPSYS	10	240	30.9 Hz
PI-LS-16	15	360	13.73 Hz

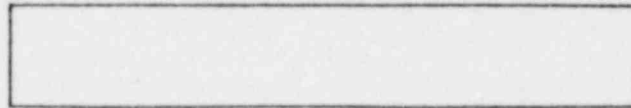
Note: FSAR Based on frequency  
 PIPSY and PI-LS-16 Based on  $L/D$

Deadweight stress for 15D;  $L = 360 \text{ in}$

$$\sigma = \frac{28.77 (360)^2}{8 \times 285} = 1635 \text{ psi}$$

# TELEDYNE ENGINEERING SERVICES

BY JAF DATE 4/23/82  
 CHKD. BY LJD DATE 5-5-82



SHEET NO. 2 OF 2  
 PROJ. NO. 5539

For RHR Loop C

24"  $\phi$  Standard Weight Pipe

$$I = 1943 \text{ in}^4$$

$$Z = 161.9 \text{ in}^3$$

$$W = 23.2 \text{ \#/in}$$

$$f = 1.57 \sqrt{\frac{EI\delta}{WL^4}}$$

$$f = \frac{1.49 \times 10^6}{L^2}$$

Reference	L/D	L	f
FSAR	8.85	212	33 Hz
PIPSYS	10	240	25.9 Hz
PI-LS-16	15	360	11.5 Hz

Dead weight stress for 15 D

$$\sigma = \frac{(23.2)(360)^2}{8 \times 161.9} = 2321.5 \text{ psi}$$

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Error/Deviation Report No.: 2

Classification of Finding: Deviation

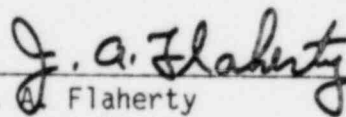
Reference: S&L Stress Report RH-07, Revisions 3 and 4

Statement: Report RH-07 does not state that those portions of the Sub-system classified Class B meet the requirements of the applicable Subsections (i.e., NC-3650) of Section III.

There is only a certification that the Class 1 portion meets the applicable Code requirements.

Conclusion: There is no apparent error in the analysis, design or construction, but there is a departure from standard practice.

By   
N. S. Ceria  
Project Review Committee Chairman

By   
J. A. Flaherty  
Project Manager

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Error/Deviation Report No.: 3

Classification of Finding: Error

Reference: S&L Piping Stress Report RH-07, Revisions 3 and 4

Statement: Two supports on RH-58 (Loop C) are mislabeled. These are RH-58-1004S and RH-58-1007X.

Support RH-58-1004S is labeled as a Y-skew. It should be a Z-skew.

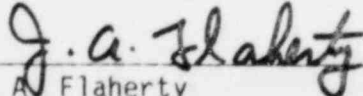
Support RH-58-1007X is labeled as a Z-skew. It should be Y-skew.

Support RH-58-1004S calls for a 3/4" diameter anchor bolt. Actual field verification shows 1" diameter anchor bolts.

Conclusion: The support drawings are mislabeled and are therefore incorrect.

Also, the anchor bolt call-out does not agree with the "As-Built" condition.

By   
N. S. Cella  
Project Review Committee Chairman

By   
J. A. Flaherty  
Project Manager

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Error/Deviation Report No.: 4


Classification of Finding: Deviation


Reference: RHR, Loop C, Subsystem RH-11, Stress Report, Revisions 3, 4, 5

Statement: The report is certified to the Design Basis Report which includes hydrodynamic loads only. Reference should be made to the Design Specification DS-RH-01-LS, Revision 3.

This statement is applicable to most of the RHR subsystem stress reports.

Conclusion: The actual analysis and evaluation do consider the requirements of the Design Specification. However, this important document is not referenced.

By   
N. S. Cella  
Project Review Committee Chairman

By   
J. A. Flaherty  
Project Manager



Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Error/Deviation Report No.: 5

Classification of Finding: Error

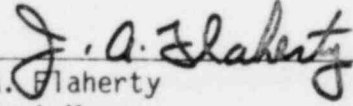
Reference: RHR, Loop C, Subsystem RH-63

Statement: The maximum temperature of the piping system was specified as 170°F in GE Specification 22A2817, Revision 3, Sheet 4.

The temperature analyzed in the line from which the subsystem draws water is 212°F.

Conclusion: The temperatures should be consistent or justification should be given that the choice of temperatures used are conservative.

By   
N. S. Cella  
Project Review Committee Chairman

By   
J. A. Flaherty  
Project Manager

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Error/Deviation Report No.: 6

Classification of Finding: Error

Reference: RHR, Loop C, Subsystem RH-63, QUAD Report 1-80-70, Revision 2,  
dated 11/27/81

Statement: This Subsystem is a branch from a much larger line. Only  
displacements have been applied. Rotations were ignored.

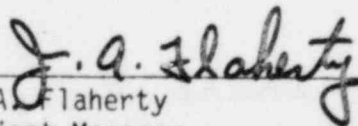
Conclusion: Rotations could have a significant effect on the loads and  
stresses in the branch line. Justification was not given for  
ignoring them.

By



N. S. Cella  
Project Review Committee Chairman

By



J. A. Flaherty  
Project Manager

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Error/Deviation Report No.: 7

Classification of Finding: Error

Reference: S&L Stress Report, Subsystem RH-06, Revision 4

Statement: The FSAR specified the Code edition of the RHR System as the 1974 Edition without Addenda. The evaluation used several Code Edition Dates.

The PIPSYS computer input for Class 1 piping components utilized stress index values from the 1980 Edition of the Code.

The Lug computer program results state that the 1977 Edition of the Code with Summer 78 Addenda is applicable for Equations 10 and 11.

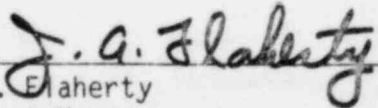
The stress report contains calculations of stress indices for branch connections. The calculation sheets reference the 1971 Edition. However, the values listed are from Table NB-3681(a)-1 of the 1980 Code.

The PIPSYS computer input for nodes 28 and 35B, branch connections, shows the branch outside diameter and thickness values to be those of the branch fitting, which is allowed by the 1980 Code; but the 1974 Code specifies the use of branch pipe properties.

Conclusion: The Code evaluation is inconsistent and certification to the 1974 Code is incorrect.

The change in stress index values within the Code and their use in the evaluation make it very difficult to determine if the stress report results are conservative or unconservative.

By   
N. S. Ceria  
Project Review Committee Chairman

By   
J. A. Flaherty  
Project Manager

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Error/Deviation Report No.: 8

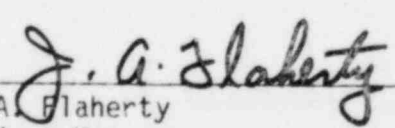
Classification of Finding: Error

Reference: S&L Stress Report, Subsystem RH-06, Revision 4

Statement: Node 35B is a 1 1/2" 6000 lb half-coupling on 12" schedule 100 long radius elbow. The half-coupling is located 5 7/8" from the end of the elbow. The orientation of fitting on the elbow is vertically up (off curved portion)., Stress index values for a branch connection are used in the Class 1 analysis. These values are for a branch fitting in straight pipe, and do not consider any possible additional intensification effects from the elbow.

Conclusion: Therefore, the stresses computed are unconservative.

By   
N. S. Celia  
Project Review Committee Chairman

By   
J. A. Flaherty  
Project Manager

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Error/Deviation Report No.: 9

Classification of Finding: Error

Reference: S&L Stress Report, Subsystem RH-06, Revision 4


Statement: Elbows 30 and 35 are welded together (per field inspection), and stress indices for elbow should be multiplied by those for a girth butt weld, per Footnote 11 of Table NB-3683.2-1 of Code. The following indices were input for each elbow; they represent a branch connection (gamma plug) in straight pipe (1980 Code).

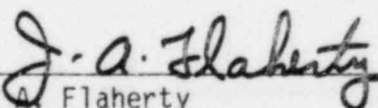
$B_1 = 0.5;$	$C_1 = 1.5;$	$K_1 = 2.2$
$B_2 = 1.13;$	$C_2 = 1.5'$	$K_2 = 2.0$
$C_3 = 1.0$	$C_3 = 1.8;$	$K_3 = 1.7$

The following indices should have been input (1974 or 1980 Codes):

$B_1 = 1.0;$	$C_1 = 1.25;$	$K_1 = 1.2$
$B_2 = 2.58;$	$C_2 = 4.8;$	$K_2 = 2.5$
$C_3 = 0.5;$	$C_3 = 1.0;$	$K_3 = 1.7$

Conclusion: The above comparison shows that the moment indices used are unconservative.

By   
N. S. Cella  
Project Review Committee Chairman

By   
J. A. Flaherty  
Project Manager

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Error/Deviation Report No.: 10

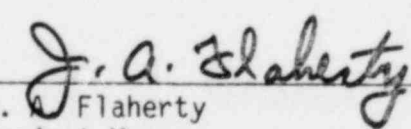
Classification of Finding: Error

Reference: S&L Stress Report, Subsystem RH-06, Revision 4

Statement: For lugs at supports RH53-1550S and -1551S (nodes 63 and 63A); the cumulative fatigue usage factor value is  $U = 0.3517$ , from LUG computer output. This value is not included in Table 5.7 of the Stress Report listing locations of highest usage factor.

Conclusion: This value is higher than any value listed in Table 5.7 and should have been included.

By   
N. S. Cella  
Project Review Committee Chairman

By   
J. A. Flaherty  
Project Manager

Project 5539 - LaSalle Independent Design Review - RHR System

Date: May 4, 1982

Error/Deviation Report No.: 11

Classification of Finding: Error

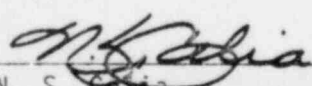
Reference: S&L Stress Report, Subsystem RH-06, Revision 4

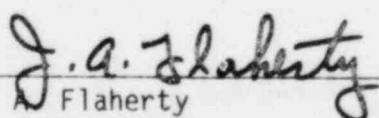
Statement: Reference 302.11 of S&L Design Specification DS-RH-01-LS, Rev. 3, states:

"Class 1 piping, 2" nominal pipe size and under, will not be examined per the rules of Section III of the Code, Subarticle NB-2500. As such, the optional reduction in design stress intensity permitted by Paragraph NB-3673.1 is mandatory."

The requirements of NB-3673.1 for the reduction of design stress intensity ( $S_m$ ) values, and allowed fatigue cycles (N), have not been carried out for Class 1 analysis points 110, 120 and 130. Point 110 is modeled as a 3/4" straight pipe component with 3/4" half-coupling geometric properties. This point can be excluded from Class 1 evaluation per Footnote 10 of Table 3.2-1 of LaSalle FSAR. Point 120 is modeled as a 1½" socket-weld with 1½" half-coupling geometric properties and point 130 is modeled as a 1½" straight pipe component with 1½" thick fitting geometric properties.

Conclusions: The requirements of NB-3673.1 have not been carried out.

By   
N. S. Ceria  
Project Review Committee Chairman

By   
J. A. Flaherty  
Project Manager