

UPDATED REPORT

Surry Power Station, Unit Nos. 1 & 2
Docket Nos: 50-280 & 50-281
Report No.: 79-004/01X-2
Event Date: 03-09-79

Attachment 1, page 1

Title of Report: Pipe Stress Analysis Evaluation

1. Description of Event:

The Architect-Engineer (AE) notified VEPCO of possible non-conservatism in pipe stress code used to analyze some piping systems at Surry. Inaccurate valve weights were also identified in some instances. The health and safety of the public were not affected. This event is reported per Technical Specification 6.6.2.a.9.

2. Probable Consequences and Status of Redundant Systems:

Possible non-conservatisms are being investigated by the Architect Engineer to determine their extent and magnitude.

3. Cause:

In reviewing the Beaver Valley piping design, the AE discovered an error in the pipe stress analysis and the valve weight used to analyze stress in some piping systems. It was found that the discrepancy also applies to Surry.

Evaluations of the problem have identified the need for modifications to some of the supports installed, and the work to achieve the required safety factor on these supports has been accomplished to enable Unit No. 1 to return to power.

Continuing evaluation and modification are in progress to complete the work on Unit No. 1 as well as to determine the extent of modifications which will be required for Unit No. 2.

4. Immediate Corrective Action:

The immediate corrective action was to begin an investigation to determine if the significance of any non-conservatisms are of sufficient magnitude to require corrective action. Unit 2 was already shutdown for steam generator repairs. Unit 1 was shutdown pending the investigation of the discrepancy.

5. Subsequent Corrective Action:

Analysis of piping and supports within the containment has been completed, with a portion of the systems outside containment yet to be analyzed. Attachment 2 gives basic details of modifications completed as of this time on Unit No. 1. It should be noted that while some of the modifications effected were required because of analysis results, many others were initiated to rectify as-built deficiencies.

UNIT NO. 1 MODIFICATIONS

SYSTEM	LINE NUMBER	ITEM MODIFIED	SYSTEM	LINE NUMBER	ITEM MODIFIED
CC	18"-CC-10-121	CONSTRAINT	CC	4"-CC-113-151	CONSTRAINT
CC	18"-CC-231-121	CONSTRAINT	CC	3"-CC-112-151	SUPPORT
CC	18"-CC-232-121	CONSTRAINT	CC	3"-CC-107-151	CONSTRAINT
CC	18"-CC-16-121	SWAY-STRUT	CC	3"-CC-38-151	CONSTRAINT
CC	18"-CC-16-121	CONSTRAINT	CC	2 1/2"-CC-104-151	SWAY-STRUT
CC	18"-CC-8-121	CONSTRAINT	CC	1 1/2"-CC-330-151	ANCHOR
CC	18"-CC-8-121	CONSTRAINT	CFPD CN (FW)	3/4"-CFPD-1CN 8	"U" BOLT
CC	18"-CC-16-121	CONSTRAINT	C & RS	10"-CS-3-153	SNUBBER
CC	18"-CC-16-121	CONSTRAINT	C & RS	10"-RS-12-153	SWAY STRUT
CC	18"-CC-16-121	CONSTRAINT	C & RS	10"-RS-12-153	SPRING HANGER
CC	18"-CC-17-121	SWAY-STRUT	C & RS	10"-RS-12-153	CONSTRAINT
CC	18"-CC-17-121	CONSTRAINT	CS	10"-CS-3-153	CONSTRAINT
CC	18"-CC-17-121	CONSTRAINT	CS	10"-CS-3-153	CONSTRAINT
CC	18"-CC-17-121	CONSTRAINT	RS	10"-RS-12-153	CONSTRAINT
CC	18"-CC-229-121	CONSTRAINT	RS	10"-RS-4-153	CONSTRAINT
CC	18"-CC-228-121	CONSTRAINT	CS	10"-CS-4-153	CONSTRAINT
CC	18"-CC-235-121	CONSTRAINT	CS	10"-CS-3-153	CONSTRAINT
CC	18"-CC-17-121	SNUBBER	CS	10"-CS-4-153	CONSTRAINT
CC	18"-CC-10-121	SUPPORT	CS	10"-CS-3-143	CONSTRAINT
CC	18"-CC-230-121	CONSTRAINT	CS	10"-CS-4-153	SPRING HANGER
CC	18"-CC-5-121	CONSTRAINT	CS	10"-CS-4-153	CONSTRAINT
CC	10"-CC-70-121	CONSTRAINT	CS	10"-CS-4-153	SNUBBER
CC	10"-CC-70-121	CONSTRAINT	CS	10"-CS-4-153	CONSTRAINT
CC	10"-CC-101-121	SWAY-STRUT	CS	10"-CS-3-153	CONSTRAINT
CC	8"-CC-70-151	CONSTRAINT	CS	10"-CS-3-153	SPRING HANGER
CC	8"-CC-69-151	CONSTRAINT	CS	8"-CS-22-153	SWAY-STRUT
CC	6"-CC-207-151	CONSTRAINT	CS	8"-CS-22-153	SWAY-STRUT
CC	6"-CC-81-151	ANCHOR	CS	8"-CS-22-153	SWAY STRUT
CC	6"-CC-161-151	ANCHOR	CS	8"-CS-34-153	ROD HANGER
CC	6"-CC-474-121	CONSTRAINT	CS	8"-CS-34-153	CONSTRAINT
CC	6"-CC-474-121	CONSTRAINT	CS	8"-CS-33-153	HANGER
CC	6"-CC-474-121	CONSTRAINT	CS	8"-CS-34-153	CONSTRAINT
CC	6"-CC-473-121	CONSTRAINT	CS	8"-CS-33-153	CONSTRAINT
CC	6"-CC-473-121	CONSTRAINT	CS	8"-CS-34-153	SNUBBER

6. Future Corrective Action:

Analysis will continue and modifications will be made to assure overstress conditions are relieved. Upon completion of the entire program, a compiled list of all modifications made will be submitted as a followup report.

7. Generic Implications:

This event is applicable to Surry Units 1 and 2.

UNIT NO. 1 MODIFICATIONS

SYSTEM	LINE NUMBER	ITEM MODIFIED	SYSTEM	LINE NUMBER	ITEM MODIFIED
CS	8"-CS-34-153	CONSTRAINT	RHR	4"-RH-15-152	ROD HANGER
CS	8"-CS-33-153	SPRING HANGER	RHR	4"-RH-15-152	ROD HANGER
CS	8"-CS-33-153	CONSTRAINT	RHR	4"-RH-15-152	CONSTRAINT
CS	8"-CS-33-153	CONSTRAINT	RHR	4"-RH-15-152	"U" BOLT
CS	8"-CS-33-153	CONSTRAINT	RHR	4"-RH-15-152	"U" BOLT
CV	8"-CV-8-151	SUPPORT	RHR (CH)	2"-CH-122-152	ANCHOR
FP (FC)	12"-FP-32-152	PLATE	RS	10"-RS-11-153	CONSTRAINT
FP (FC)	12"-FP-2-152	CONSTRAINT	RS	10"-RS-1-153	CONSTRAINT
FP (FC)	12"-FP-2-152	CONSTRAINT	RS	10"-RS-4-153	SNUBBER
FP (FC)	12"-FP-1-152	CONSTRAINT	RS	10"-RS-3-153	CONSTRAINT
LHSI	10"-RH-16-1502	SNUBBER	RS	10"-RS-11-153	CONSTRAINT
LHSI (RHR)	10"-RH-16-1502	CONSTRAINT	RS	10"-RS-3-153	ANCHOR
LHSI	10"-RH-16-1502	CONSTRAINT	RS	10"-RS-11-153	ANCHOR
LHSI	10"-RH-16-1502	CONSTRAINT	RS	10"-RS-4-153	ANCHOR
LHSI	10"-SI-6-153	CONSTRAINT	RS	10"-RS-11-153	CONSTRAINT
LHSI	8"-SI-92-153	CONSTRAINT	RS	10"-RS-3-153	CONSTRAINT
LHSI	8"-SI-14-153	CONSTRAINT	RS	10"-RS-12-153	"U" BOLT
PZR (RC)	4"-RC-14-1502	ANCHOR	RS	10"-RS-3-153	CONSTRAINT
RHR	14"-RH-2-602	CONSTRAINT	RS	10"-RS-12-153	CONSTRAINT
RHR	14"-RH-2-602	SNUBBER	RS	10"-RS-4-153	CONSTRAINT
RHR	14"-RH-1-1502	SNUBBER	RS	10"-RS-3-153	CONSTRAINT
RHR	14"-RH-18-602	SNUBBER	RS	10"-RS-9-153	CONSTRAINT
RHR	14"-RH-18-602	CONSTRAINT	RS	10"-RS-10-153	CONSTRAINT
RHR	14"-RH-1-1502	SNUBBER	RS	10"-RS-3-153	CONSTRAINT
RHR	14"-RH-2-602	CONSTRAINT	RS	10"-RS-11-153	CONSTRAINT
RHR	12"-RH-6-602	SWAY-STRUT	RS	10"-RS-4-153	ANCHOR
RHR	12"-RH-6-602	SNUBBER	RS	10"-RS-12-153	ANCHOR
RHR	12"-RH-19-602	SNUBBERS	RS	10"-RS-11-153	CONSTRAINT
RHR	12"-RH-19-602	ANCHOR	RS	10"-RS-3-153	CONSTRAINT
RHR	10"-RH-5-602	CONSTRAINT	RS	10"-RS-12-153	CONSTRAINT
RHR	10"-RH-5-602	SNUBBER	RS	10"-RS-4-153	CONSTRAINT
RHR	10"-RH-4-602	CONSTRAINT	RS	8"-RS-21-153	CONSTRAINT
RHR	10"-RH-16-1502	CONSTRAINT	RS	8"-RS-23-153	CONSTRAINT
RHR	6"-RH-20-152	CONSTRAINT	RS	8"-RS-21-153	CONSTRAINT

UNIT NO. 1 MODIFICATIONS

SYSTEM	LINE NUMBER	ITEM MODIFIED	SYSTEM	LINE NUMBER	ITEM MODIFIED
SHP (MS)	3"-SHP-31-601	SPRING HANGER	SI	6"-SI-49-1502	CONSTRAINT
SHP (MS)	3"-SHP-57-601	SNUBBER	SI	3/4"-SI-44-602	"U" BOLT
SHP (MS)	3"-SHP-29-601	SWAY-STRUT	SW	24"-WS-30-10	SUPPORT
SHP (MS)	3"-SHP-29-601	CONSTRAINT	WAPD AUX FD	6"-WAPD-2-601	CONSTRAINT
SHP (MS)	3"-SHP-30-601	CONSTRAINT	WCMU AUX FD	8"-WCMU-5-151	SNUBBER
SHP (MS)	3"-SHP-30-601	SWAY STRUT	WCMU AUX FD	8"-WCMU-5-151	SNUBBER
SHP (MS)	3"-SHP-30-601	CONSTRAINT	WCMU AUX FD	6"-WCMU-6-151	SNUBBER
SHP (MS)	3"-SHP-29-601	CONSTRAINT	WCMU AUX FD	6"-WCMU-7-151	SNUBBER
SHP (MS)	3"-SHP-31-601	CONSTRAINT	WCMU AUX FD	6"-WCMU-6-151	SNUBBER
SHP (MS)	3"-SHP-57-601	SNUBBER	WCMU AUX FD	6"-WCMU-7-151	SNUBBER
SHP (MS)	3"-SHP-31-601	SNUBBER	WFPD (FW)	14"-WFPD-9-601	SNUBBER
SHP (MS)	3"-SHP-57-601	SPRING HANGER	WFPD (FW)	14"-WFPD-13-601	CONSTRAINT
SHP (MS)	3"-SHP-57-601	SPRING HANGER	WFPD (FW)	14"-WFPD-17-601	CONSTRAINT
SI	10"-SI-148-153	SNUBBER	WFPD (FW)	14"-WFPD-9-601	CONSTRAINT
SI	10"-SI-6-153	SUPPORT	WFPD (FW)	14"-WFPD-17-601	SPRING HANGER
SI	10"-SI-6-153	SUPPORT	WFPD (FW)	14"-WFPD-13-601	SPRING HANGER
SI	10"-SI-6-153	SUPPORT	WFPD (FW)	14"-WFPD-9-601	SPRING HANGER
SI	10"-SI-6-153	CONSTRAINT	WFPD (FW)	14"-WFPD-9-601	SPRING HANGER
SI	8"-SI-92-153	CONSTRAINT	DIESEL	24" EE	SNUBBER
SI	8"-SI-14-153	CONSTRAINT	MUFFLER	24" EE	SNUBBER
SI	8"-SI-14-153	SUPPORT	EXHAUST	24" EE	SNUBBER
SI	8"-SI-92-153	SUPPORT	CS	8"-CS-22-153	SWAY STRUT
SI	8"-SI-14/92-153	SUPPORT			
SI	8"-SI-92-153	CONSTRAINT			
SI	8"-SI-14-153	CONSTRAINT			
SI	8"-SI-92-153	ANCHOR			
SI	8"-SI-14-153	ANCHOR			
SI	8"-SI-92-153	CONSTRAINT			
SI	8"-SI-14-153	CONSTRAINT			
SI	6"-SI-50-1502	CONSTRAINT			
SI	6"-SI-48-1502	PLATE			
SI	6"-SI-153-1502	CONSTRAINT			
SI	6"-SI-144-1502	CONSTRAINT			
SI	6"-SI-145-1502	CONSTRAINT			