

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9205200041    DOC. DATE: 92/05/14    NOTARIZED: NO    DOCKET #  
 FACIL: 50-397 WPPSS Nuclear Project, Unit 2, Washington Public Powe    05000397  
 AUTH. NAME    AUTHOR AFFILIATION  
 SORESEN, G.C.    Washington Public Power Supply System  
 RECIP. NAME    RECIPIENT AFFILIATION  
                  Document Control Branch (Document Control Desk)

SUBJECT: Submits rept on flaw in reactor recirculation piping, per  
 Generic Ltr 88-01. Indication in ISI weld 20RRC(6)-8  
 reexamined on 920421 to determine any size change. Results  
 listed on encl submitted for approval for restart on 920629.

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	NRR/DST 8E2	1 1	NRR/DST/SELB 7E	1 1
	NRR/DST/SICB8H7	1 1	NRR/DST/SRXB 8E	1 1
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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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May 14, 1992  
G02-92-123

9205200041 920514  
PDR ADDCK 05000397  
P PDR

Docket No. 50-397

U.S Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D.C. 20555

Gentlemen:

Subject: WNP-2, OPERATING LICENSE NPF-21  
REPORT ON FLAW IN REACTOR RECIRCULATION PIPING (TAC No. 80358)

- References: 1) Letter, G02-91-098, dated May 15, 1991, GC Sorensen (SS) to NRC, "Report on Flaw in Reactor Recirculation Piping Additional Information (TAC No. 80358)"
- 2) Letter, G02-91-096, dated May 10, 1991, GC Sorensen (SS) to NRC, "Report on Flaw in Reactor Recirculation Piping (TAC No. 80358)"
- 3) Letter, G02-92-085, dated April 10, 1992, GC Sorensen (SS) to NRC, "Request for Amendment to Technical Specification in Accordance with Generic Letter 88-01"
- 4) Letter dated February 14, 1992, PL Eng (NRC) to GC Sorensen (SS), "Safety Evaluation of a Flaw in the Reactor Recirculation Piping at the Washington Public Power Supply System (WPPSS) Nuclear Project Number 2 (TAC No. M80358)"

The indication in ISI weld 20RRC(6)-8, as reported in References 1 and 2, was reexamined April 21, 1992 to determine any size change. No significant changes in the indication depth nor signal characteristics were noted. The flaw depth was found to be 0.17 inch (0.15 inch at R-6) and the length was unchanged at 4.5 inches. The slight difference in depth is attributed to the minor differences in calibration and data point locations along the indication length. The indication does not exhibit the UT signals characteristic of IGSCC.

Between R-6 and R-7, the Supply System enhanced the construction radiographs. No reason for the indication could be seen on the enhanced film.

190112

Aool  
111

Page Two

May 14, 1992

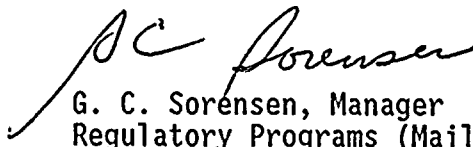
REPORT ON FLAW IN REACTOR RECIRCULATION PIPING

During this same period, the fracture mechanics analysis was also refined. The analysis predicts a crack depth of 0.29 inches after 365 days if the IGSCC mechanism is active. The analysis also predicts that the depth would exceed the maximum allowable depth of 0.62 inches after 5 additional years. The current flaw depth is 0.17 inches. This depth is approximately 14% of the predicted growth as determined by analysis. Review of the program output for both the fatigue analysis and the IGSCC analysis showed the current crack size is well within the limits of our evaluation that was previously performed. Therefore, based on the analysis and the examination results, the indication is determined to be acceptable for continued operation without repair until the next examination.

The Supply System will continue to monitor this indication. At refueling outage R-8, Spring 1993, the indication will be resized. If it still does not show any signs of growth, it will be reanalyzed to justify increasing the examination frequency. This weld is still classified as an IGSCC, Category "F" weld. This also requires augmented leak detection as described in Reference 3.

The results of this reexamination and evaluation are submitted for your review and approval for plant restart scheduled for June 29, 1992 (Reference 4).

Sincerely,



G. C. Sorensen, Manager  
Regulatory Programs (Mail Drop 280)

DPR/bk

Enclosure: Ultrasonic Report Number 1RRU-166

cc: JB Martin - NRC RV  
NS Reynolds - Winston & Strawn  
WM Dean - NRC  
DL Williams - BPA/399  
NRC Site Inspector - 901A



⑤ DIC = 1104.1  
MID = 20 RRC(6)-8

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

Report # IRRU-166  
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ULTRASONIC FLAW SIZING DATA SHEET

PROJECT: WNP-2	SYSTEM: RRC	ISI DRAWING NO.: RRC-105 Rev. 2
WELD/PART DESCRIPTION: PIPE TO VALVE	WELD/PART NO.: 20 RRC(6)-8	
IGSCC DETECTION REPORT NO: R-6 REPORT IRRU-155, 156 & 157	UT SIZING CALIBRATION REPORT: 344	
FLAW LENGTH: 4.5"	CALIBRATION BLOCK NO.: UT-9S	
FLAW AREA THICKNESS: 1"	CALIBRATION BLOCK THICKNESS: 1.02"	
INSTRUCTION NO.: QCI 6-25 Rev. 1	EXAMINER: P.L. Tompkins (PLT)	LEVEL: II
DATE: 4-21-92	EXAMINER: n/a	LEVEL: n/a
TIME START: 13:15	TIME STOP: 13:40	PART TEMP: 106°F

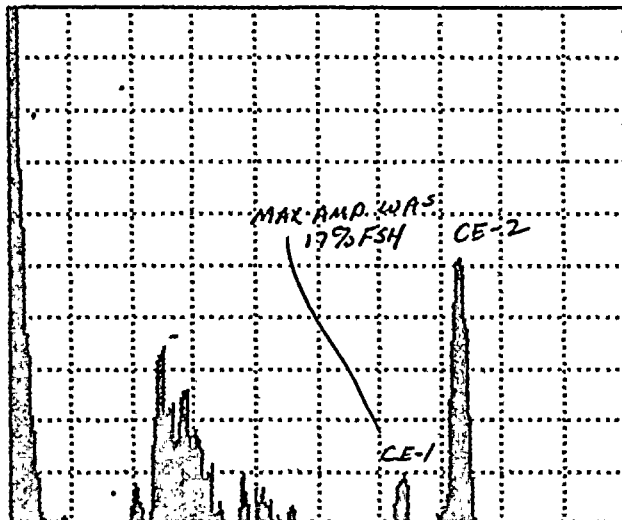
FLAW NO.	30-70-70	HIGH ANGLE L WAVE	MOST	AATT	RATT	FULL VEE	%TWD	CRACK DEPTH	ACTUAL
# 1	CE-1 17% FSH LENGTH 3 5/8" AT REFERENCE GAIN = 0.14" BY AMP.	NO INDICATION	17% FURTHEST TIP	15%	12% MAX	n/a	17%	.17"	
	NOTE: FLAW LENGTH OF 4.5" WAS LAST YEAR'S R-6 LENGTH BASED ON 12db over reference to determine initial length of flaw based on CE-2 signal disappearing into baseline. Length of 3 5/8" is based on EPRR NDE practice for IGSCC detection of length based on a reference gain. No change in length was noted.								
								(PLT)	

FINAL REPORTED CRACK DEPTH: .17"	COMMENTS: I FOUND NO SIGNIFICANT CHANGES IN THE INDICATIONS DEPTH OR SIGNAL CHARACTERISTICS OVER LAST YEAR. THE VERY SLIGHT INCREASE IN THE INDICATIONS TWP MAY BE DUE TO MINOR DIFFERENCES IN CALIBRATION AND DATA POINTS AMONG LOCATIONS ALONG INDICATIONS' LENGTH. CALIBRATION & EXAMINATION WITNESSED BY ANII, (PLT)
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REVIEWED BY LEVEL III: [Signature]	DATE: 4-25-92	REVIEWED BY: [Signature] ANII	DATE: 4/27/92
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STORED DISPLAY

30-70-76



RANGE  
 RANGE 5.40in  
 DELAY 0.324in  
 VEL 0.227 in/us  
 UNITS in

RECEIVER  
 GAIN 67.0dB  
 DISPLAY FILT2  
 FREQ 2.25MHz  
 REJECT OFF

GATE  
 LEVEL OFF  
 POSN 1.45in  
 WIDTH 3.40in  
 POLARITY +

PULSER  
 PULSE 222ns  
 DAMPING 500Ω  
 PULSE ECHO  
 REP RATE 2 KHz

GAIN REFERENCE  
 GAIN 67.0dB  
 REF LVL 67.0dB  
 % CHANGE 0.0  
 dB CHANGE 0.0

## INSPECTION REPORT

COMPANY

Supply System

ADDRESS

OPERATOR

P. L. TOMPKINSTIME 13:20

INSP. PROCEDURE

QLI 6-25 Rev. 1

CODE/SPEC

IGSCC SIZING

ACCEPTANCE LEVEL

N/A

JOB NUMBER

OBJECT

20 RRC (6)-8

MATERIAL

STAINLESS STEEL

TRANSDUCER TYPE

WS4 70-2

COMMENTS

30-70-70 Techniqueslight CE-1 signal indicating approx. depth of 15% TWB

SIGNATURE

Paul L. Tompkins  
Dan Hoggan ANII

DATE

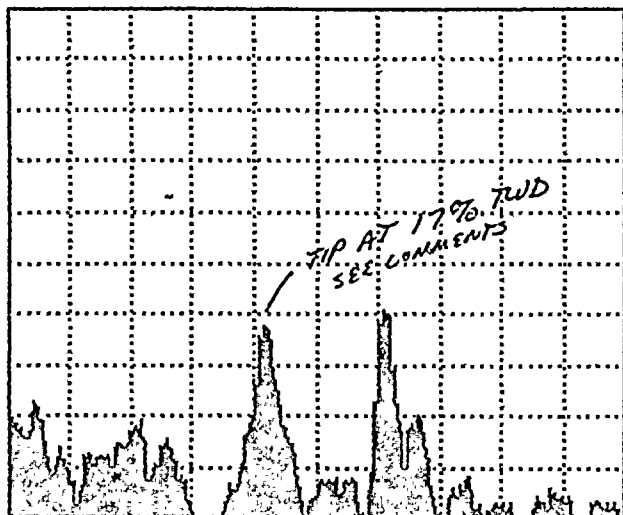
4-21-924/27/92

IRRU-166

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## STAVELEY INSTRUMENTS - SONIC 136 PLUS DATA REPORT

STORED DISPLAY # 2



RANGE		RECEIVER	
RANGE	2.95in	GAIN	73.0dB
DELAY	1.13in	DISPLAY	FILT2
VEL	0.227 in/us	FREQ	2.25MHz
UNITS	in	REJECT	OFF
GATE		PULSER	
LEVEL	OFF	PULSE	222ns
POSN	1.75in	DAMPING	500 $\Omega$
WIDTH	1.86in	DUAL	
POLARITY	+	REP RATE	2 KHz
GAIN REFERENCE			
GAIN	73.0dB		
REF LVL	67.0dB		
% CHANGE	99.5		
dB CHANGE	6.0		

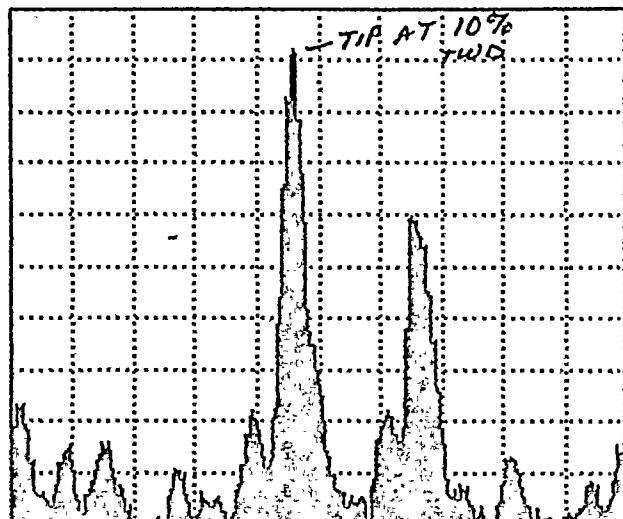
## INSPECTION REPORT

COMPANY Supply System  
 ADDRESS \_\_\_\_\_  
 OPERATOR P. L. Tompkins TIME 13:28  
 INSP. PROCEDURE QCI 6-25 Rev. 1  
 CODE/SPEC IGSC SIZING  
 ACCEPTANCE LEVEL N/A  
 JOB NUMBER \_\_\_\_\_  
 OBJECT 20 RRC (6)-8 MATERIAL STAINLESS STEEL  
 TRANSDUCER TYPE ADEPT-60  
 COMMENTS THICKNESS APPEARED TO BE SLIGHTLY LESS THAN 1" AT LOCATION  
17% TWD IS A GOOD READING.  
PROBABLY VERY TIP EDGE OF INDICATION  
(SEE STORED DISPLAY #3)  
 SIGNATURE Paul L. Tompkins DATE 4-21-92  
Don Hoggan ANII 4/27/92

IRRU-166  
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## STAVELEY INSTRUMENTS - SONIC 136 PLUS DATA REPORT

STORED DISPLAY # 3



RANGE  
 RANGE 2.95in  
 DELAY 1.13in  
 VEL 0.227 in/us  
 UNITS in

RECEIVER  
 GAIN 73.0dB  
 DISPLAY FILT2  
 FREQ 2.25MHz  
 REJECT OFF

GATE  
 LEVEL OFF  
 POSN 1.75in  
 WIDTH 1.86in  
 POLARITY +

PULSER  
 PULSE 222ns  
 DAMPING 500 $\Omega$   
 DUAL  
 REP RATE 2 KHz

GAIN REFERENCE  
 GAIN 73.0dB  
 REF LVL 67.0dB  
 % CHANGE 99.5  
 dB CHANGE 6.0

## INSPECTION REPORT

COMPANY Supply System  
 ADDRESS \_\_\_\_\_  
 OPERATOR P.L. Tompkins TIME 13:28  
 INSP. PROCEDURE QCI 6-25 Rev.1  
 CODE/SPEC IGSCC SIZING  
 ACCEPTANCE LEVEL N/A  
 JOB NUMBER \_\_\_\_\_  
 OBJECT 20 RRC (6)-8 MATERIAL STAINLESS STEEL  
 TRANSDUCER TYPE ADEPT 60  
 COMMENTS TIP SIGNALS MAX AMPLITUDE AT 10% TWD  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SIGNATURE Paul L. Tompkins DATE 4-21-92  
Don Hoggan AVEF 4/27/92

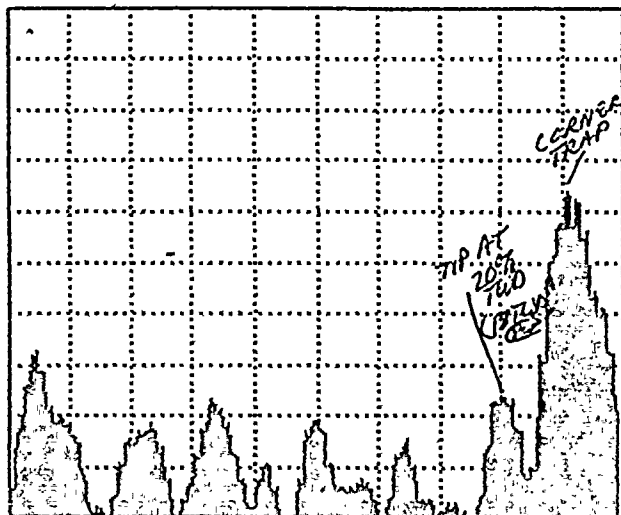
IRRU-1166  
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## STAVELEY INSTRUMENTS - SONIC 136 PLUS DATA REPORT

45° SHEAR AATT

STORED DISPLAY # 4



RANGE  
RANGE 0.762in  
DELAY 1.14in  
VEL 0.127 in/us  
UNITS in

RECEIVER  
GAIN 67.2dB  
DISPLAY FILT1  
FREQ 5MHz  
REJECT OFF

GATE  
LEVEL OFF  
POSN 1.30in  
WIDTH 0.480in  
POLARITY +

PULSER  
PULSE 100ns  
DAMPING 500Ω  
PULSE ECHO  
REP RATE 2 KHz

GAIN REFERENCE  
GAIN 67.2dB  
REF LVL 53.0dB  
% CHANGE 412.9  
dB CHANGE 14.2

HIGH GAIN OVER  
REFERENCE REQUIRED

## INSPECTION REPORT

COMPANY Supply System

ADDRESS \_\_\_\_\_

OPERATOR PAUL L. TOMPKINS TIME 13:35

INSP. PROCEDURE RCI 6-25 Rev 1

CODE/SPEC TBSCU SIZING

ACCEPTANCE LEVEL N/A

JOB NUMBER \_\_\_\_\_

OBJECT 20 RRC (6)-8 MATERIAL STAINLESS STEEL

TRANSDUCER TYPE 45° SHEAR

COMMENTS SLIGHT THICKNESS DIFFERENCES - DETERMINE TIP TO CORNER

SEPARATION MAKE THIS PROBABLY 15% TWD

17%

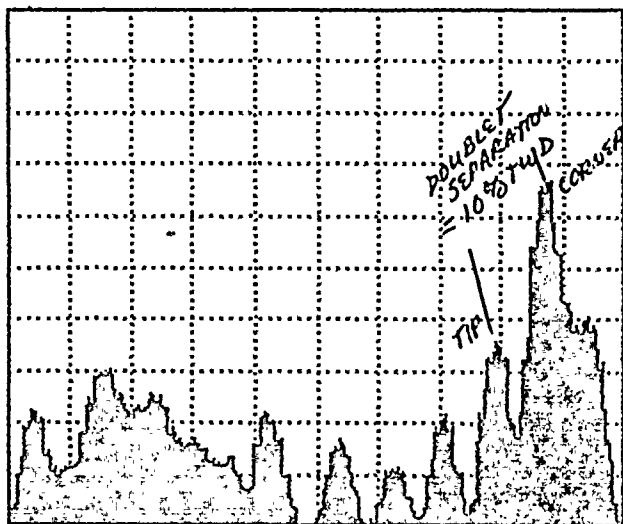
SIGNATURE Paul L. Tompkins DATE 4-21-92

Dan Hoggan - AWT 4/27/92

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# STAVELEY INSTRUMENTS - SONIC 136 PLUS DATA REPORT

STORED DISPLAY # 5



RANGE  
 RANGE 0.762in  
 DELAY 1.14in  
 VEL 0.127 in/us  
 UNITS in

RECEIVER  
 GAIN 67.2dB  
 DISPLAY FILT1  
 FREQ 5MHz  
 REJECT OFF

GATE  
 LEVEL OFF  
 POSN 1.30in  
 WIDTH 0.480in  
 POLARITY +

PULSER  
 PULSE 100nS  
 DAMPING 500Ω  
 PULSE ECHO  
 REP RATE 2 KHz

GAIN REFERENCE  
 GAIN 67.2dB  
 REF LVL 53.0dB  
 % CHANGE 412.9  
 dB CHANGE 14.2

HIGH GAIN OVER  
 REFERENCE REQUIRED

## INSPECTION REPORT

COMPANY Supply System  
 ADDRESS \_\_\_\_\_  
 OPERATOR P.L. TOMPKINS TIME 13:40  
 INSP. PROCEDURE QCI 6-25 REV.1  
 CODE/SPEC TGSCC BIZING  
 ACCEPTANCE LEVEL N/A  
 JOB NUMBER \_\_\_\_\_  
 OBJECT 20 RRC(6)-8 MATERIAL STAINLESS STEEL  
 TRANSDUCER TYPE 45° SHEAR RAT TECHNIQUE  
 COMMENTS DOUBLET SEPARATION MAX SEPARATION 1.2 DIV = 12%

SIGNATURE Paul L. Tompkins DATE 4-21-92  
Dan Hoggan ANIE 4/27/92

IRRU-166  
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