



**Commonwealth Edison**

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July 11, 1984

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

Subject: Quad Cities Station Unit 1  
Supplementary Information on  
IGSCC Weld Inspection Results  
NRC Docket No. 50-254

References (a): B. Rybak letter to H. R. Denton  
dated March 19, 1984.

(b): B. Rybak letter to H. R. Denton  
dated July 2, 1984.

Dear Mr. Denton:

In Reference (b), Commonwealth Edison provided a summary of the ultrasonic inspection and repair of the stainless steel welds for Quad Cities Unit 1. Additional questions were raised by members of your Staff upon receipt and review of our submittal. Attached in the form of an enclosure to this letter, is our response to those questions.

If you have any additional questions regarding this issue, please contact this office.

One signed original and forty (40) copies of this submittal are provided for your use.

Very truly yours,

B. Rybak  
Nuclear Licensing Administrator

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Attachment

cc: R. Bevan - NRR  
NRC Resident Inspector - Quad Cities

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ENCLOSURE

QUAD CITIES UNIT 1  
IGSCC WELD INSPECTION

RESPONSE TO NRC QUESTIONS ON OUR  
JULY 2, 1984 SUBMITTAL

8928N

Table 1  
Ultrasonic Examination - One Side Access

Quad Cities Unit 1

Weld Number	Systems	Diameter	Side Not Scanned
02AS-F8	Recirculation	28"	Valve
02AS-F9	"	28"	Valve
02AS-F14	"	28"	Cast Elbow
02AD-F12	"	28"	Pump
02AD-F9	"	28"	Valve
02AD-F8	"	28"	Valve
02BS-F6	"	28"	Valve
02BS-F7	"	28"	Valve
02BS-F14	"	28"	Cast Elbow
02BD-F12	"	28"	Pump
02BD-F9	"	28"	Valve
02BD-F8	"	28"	Valve
02A-S4	"	28"	Cross
02B-F6	"	28"	Cross
02-F1	"	22"	Valve
02A-F1	"	22"	Valve
02A-S3	"	22"	Cross
02A-F5	"	22"	Cross
02-F2	"	22"	Valve
02B-F1	"	22"	Valve
02B-F5	"	22"	Cross
02B-S7	"	22"	Cross
02F-F6	"	12"	Reducer
02L-F6	"	12"	Reducer
02BD-S5	"	4"	Sweepolet
02AS-S10A	"	4"	Sweepolet
10S-F1	RHR-SDC	20"	Tee
10AD-F1	RHR-LPCI	16"	Tee
10AD-F4	"	16"	Valve
10BD-F1	"	16"	Tee
10BD-F5	"	16"	Valve
14A-F6	Core Spray	10"	Valve
12S-F28	RWC	6"	Valve
10HS-S1	Head Spray	4"	Flange

QUESTION 1:

Provide a list of welds where only one side access was available for ultrasonic examination?

Answer:

Table 1 summarizes the welds which had only one side ultrasonic access.

QUESTION 2:

What are the applied stress components and stress ratios for welds 02J-S4 and 02K-S3?

Answer:

<u>Weld #</u>	<u>Dead Weight</u>	<u>Thermal</u>	<u>Seismic</u>	<u>Pressure</u>	<u>Ratio</u>
02J-S4	118	161	216	6811	.43
02K-S3	225	624	339	6811	.44

All stresses are in units of psi.

For 304 stainless,  $s_m = 16800$  psi

A sketch of the location of the individual circumferential indications for both 02J-S4 and 02K-S3 is attached.

QUESTION 3:

How are overlay lengths selected for repair of axial flaws?

Answer

The overlay for axial flaws is designed to function as a leak barrier. The minimum length assuming no geometric constraints is 0.75 inch beyond the edge of the weld crown. However, the overlay is sized to extend at least 1/2 inch beyond the end of the flaw. This can lead to overlays which are asymmetric with respect to weld centerline and in some cases which exceed the minimum length.

QUESTION 4:

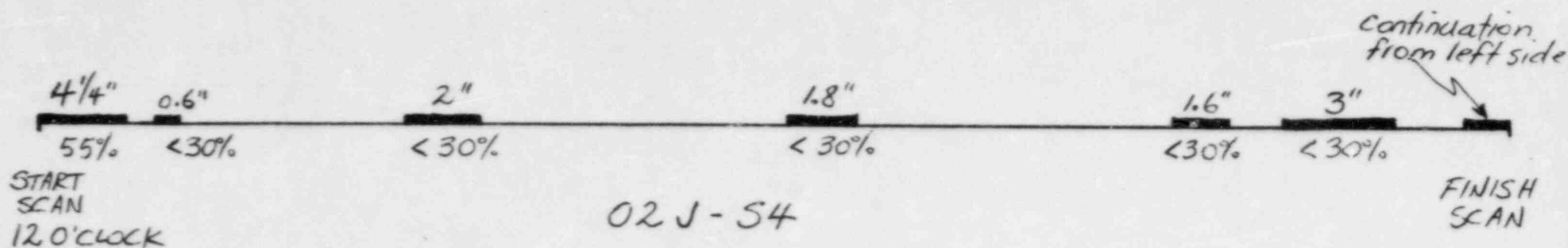
How many welds are inaccessible for UT inspection?

Answer:

Our March 1, 1984 submittal provided among other items, a summary of the inaccessible welds. That list was subject to change based on our inspection efforts this outage. Subsequently it was found that an additional weld on the Shutdown Cooling System was inaccessible. For the sake of completeness a summary of the number of inaccessible welds by system is provided below:

<u>System</u>	<u>Number of Inaccessible Welds</u>
LPCI (16")	2
Shutdown Cooling (20")	2
Head Spray (4")	1
Core Spray (10")	2
Reactor Water	
Cleanup (6")	3
	<hr/>
	Total - 10

DISPLAY OF CIRCUMFERENTIAL CRACK INDICATIONS  
12" RISER WELDS 02J-S4 AND 02K-S3  
QUAD CITIES UNIT 1



40" CIRCUMFERENCE

