



Commonwealth Edison

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May 30, 1985

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

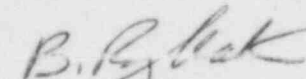
Subject: Quad Cities Station Unit 2
Inspection of Stainless Steel
Weld Overlay Design Information
NRC Docket No. 50-265

Dear Mr. Denton:

Enclosed as an attachment to this letter is specific information related to the five weld overlays done during the current Quad Cities Unit 2 refueling outage. Overlay dimensions are provided for all five welds. Also the residual stress distribution and predicted flaw growth for two weld overlays nos. 10S-F5 and Q2AS-S4 are provided.

One signed original and forty (40) copies of this letter and its attachment is provided for your use.

Very truly yours,


B. Rybak

Nuclear Licensing Administrator

lm

Attachment

cc: R. Bevan - NRR
NRC Resident Inspector - QC

8506050308 850530
PDR ADOCK 05000265
G PDR

0188K

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ATTACHMENT

QUAD CITIES UNIT 2

WELD OVERLAY INFORMATION

0188K

TABLE 1

WELD OVERLAY REPAIR DIMENSIONS

SPRING 1985 OUTAGE

QUAD CITIES UNIT 2

<u>Weld ID</u>	<u>Design Overlay Length</u>	<u>Actual Overlay Length</u>	<u>Design Overlay Thickness</u>	<u>Actual Overlay Thickness Upstream/Downstream</u>
02E-F6A	4.50"	4.5"	0.208"	0.22"/0.201"
02M-S3	4.0"	5.0"	0.208"	0.253"/0.256"
02M-F7	3.0"	3.44"	0.208"	0.242"/0.284"
10S-F5	2.5" ⁽¹⁾	2.5"	Two Layers	NA ⁽²⁾ /0.156"
02AS-S4	7.0"	8.0"	Two Layers	0.173"/0.181"

Notes:

1. From centerline of weld going away from valve.
2. Valve side of weld.

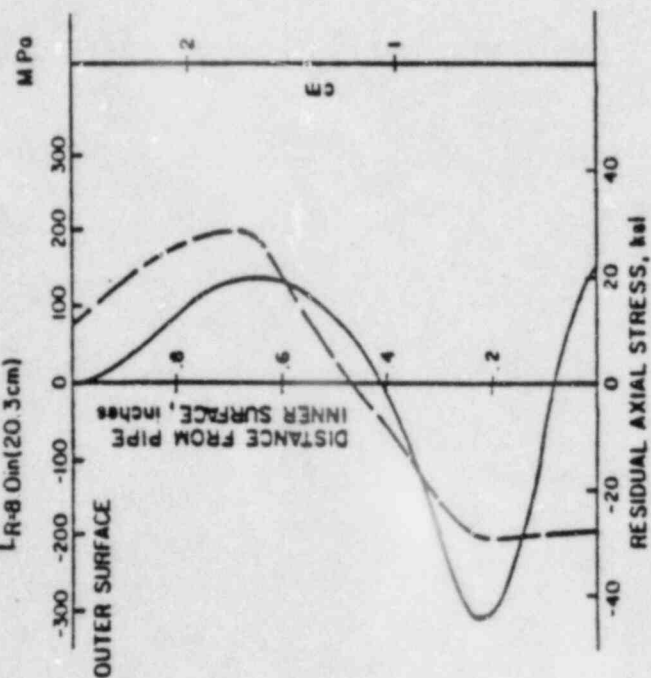
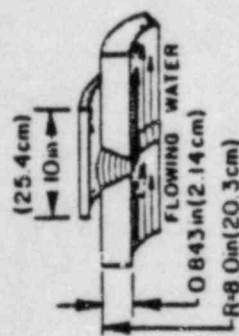
TABLE 2
PREDICTED FLAW GROWTH⁽¹⁾
FOR ONE FUEL CYCLE
QUAD CITIES UNIT 2

<u>Weld ID</u>	<u>Beginning- of-Cycle Flaw Depth Ratio</u>	<u>Predicted Flaw Depth Ratio w/o Mitigation</u>	<u>Predicted Flaw Depth Ratio w/ IHSI Mitigation</u>	<u>Predicted Flaw Depth Ratio w/ Overlay Mitigation</u>	<u>Allowable Flaw Depth Ratio (2)</u>
10S-F5	0.17	(3)	0.17	0.19	0.47
02AS-S4	0.20	0.36	0.20	0.20	0.48

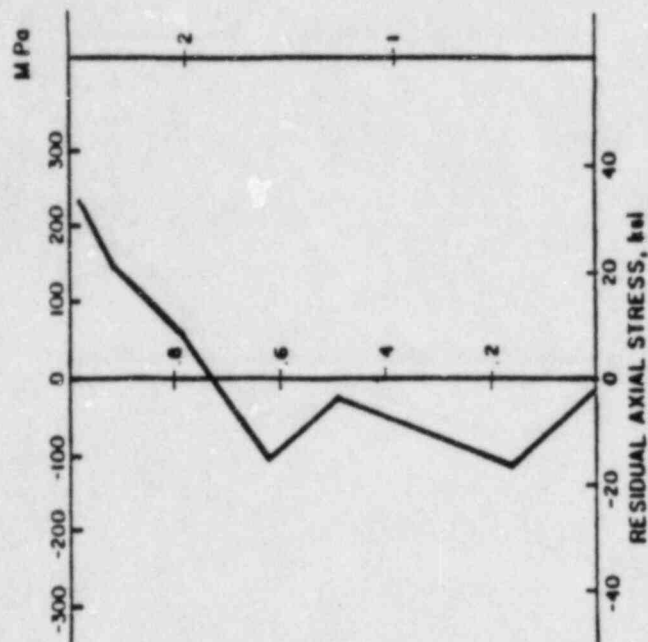
NOTES:

1. All flaws assumed to be 360° in circumferential length.
2. Allowable flaw depth ratio is 2/3 of Table IWB-3641-1 allowable depth ratios.
3. Will grow through-wall in less than one fuel cycle.

FIGURE 1

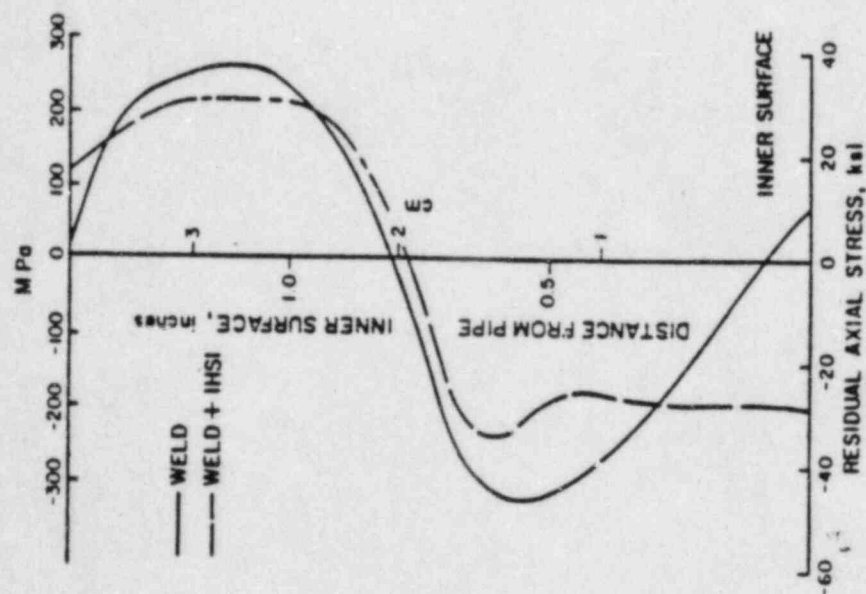
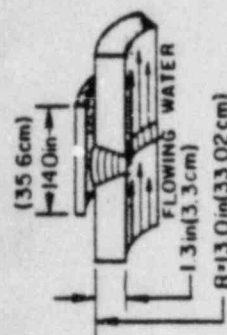


16" NPS PRE- AND POST-IHSI
THROUGH-WALL RESIDUAL STRESS
DISTRIBUTIONS (FROM EPRI
NP-2662-LD)

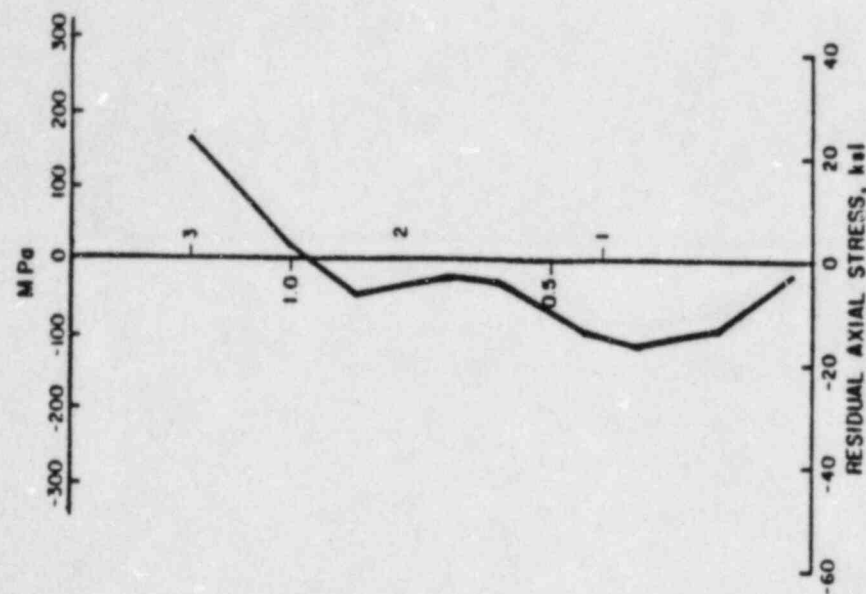


WELD 10S-F5 (20" O.D. x 0.96" WALL)
THROUGH-WALL RESIDUAL STRESS
DISTRIBUTION AFTER TWO LAYER
OVERLAY (FROM NUTECH "WELDS II" ANALYSIS)

FIGURE 2



26" NPS PRE- AND POST-IHSI
THROUGH-WALL RESIDUAL STRESS
DISTRIBUTIONS (FROM EPRI
NP-2662-LD)



WELD 02AS-S4 (28" O.D. x 1.203" WALL)
THROUGH-WALL RESIDUAL STRESS
DISTRIBUTION AFTER TWO LAYER
OVERLAY (FROM NUTECH "WELDS II"
ANALYSIS)