



**Commonwealth Edison**

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

May 6, 1985

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

Subject: Braidwood Station Units 1 and 2  
Reactor Vessel Materials  
NRC Docket Nos. 50-456 & 50-457

Dear Mr. Denton:

Enclosed is information concerning the Braidwood Unit 2 reactor vessel material surveillance capsules. In addition there is a withdrawal schedule for both Braidwood Units 1 and 2.

This information is provided for your review in order to close safety evaluation report confirmatory Issue Part A Item 5.

Please address any additional questions regarding this matter to this office.

One signed original and fifteen copies of this letter are provided for your use.

Very truly yours,

David H. Smith  
Nuclear Licensing Administrator

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# BRAIDWOOD UNIT 2 REACTOR VESSEL BELTLINE MATERIAL

<u>Component</u>	<u>Material</u>	<u>Heat No.</u>	<u>Code No.</u>	<u>Melting Process</u>
Upper Shell	A508 CL.3	49D963/49C904-1-1	MK 24-2	Basic Elect. Furnace(Vac. Treated)
Lower Shell	A508 CL.3	50D102/50C97-1-1	MK 24-3	Basic Elect. Furnace(Vac. Treated)

<u>Weld Location</u>	<u>Weld Process</u>	<u>Weld Qual. No.</u>	<u>Weld Wire</u>		<u>Flux</u>	
			<u>Type</u>	<u>Heat No.</u>	<u>Type</u>	<u>Lot No.</u>
Upper to Lower Shell Girth Weld Seam	Submerged Arc	WF 562	Linde MnMoNi	442011	Linde 80	0344

## CHEMICAL COMPOSITION (Wt %)

<u>Component</u>	<u>Weld or Code No</u>	<u>C</u>	<u>Mn</u>	<u>P</u>	<u>S</u>	<u>Si</u>	<u>Ni</u>	<u>Cr</u>	<u>Mo</u>	<u>Cu</u>	<u>V</u>	<u>Co</u>
Upper Shell	Mk 24-2	.20	1.33	.007	.007	.25	.71	.08	.53	.03	≤.01	.012
Lower Shell	Mk 24-3	.22	1.30	.006	.004	.28	.75	.08	.49	.06	≤.01	.011
Upper to Lower Shell Weld	WF 562	.066	1.44	.015	.012	.48	.67	.10	.44	.04	.005	.011

## Surveillance Material

Lower Shell MK 24-3

## Heat Treatment

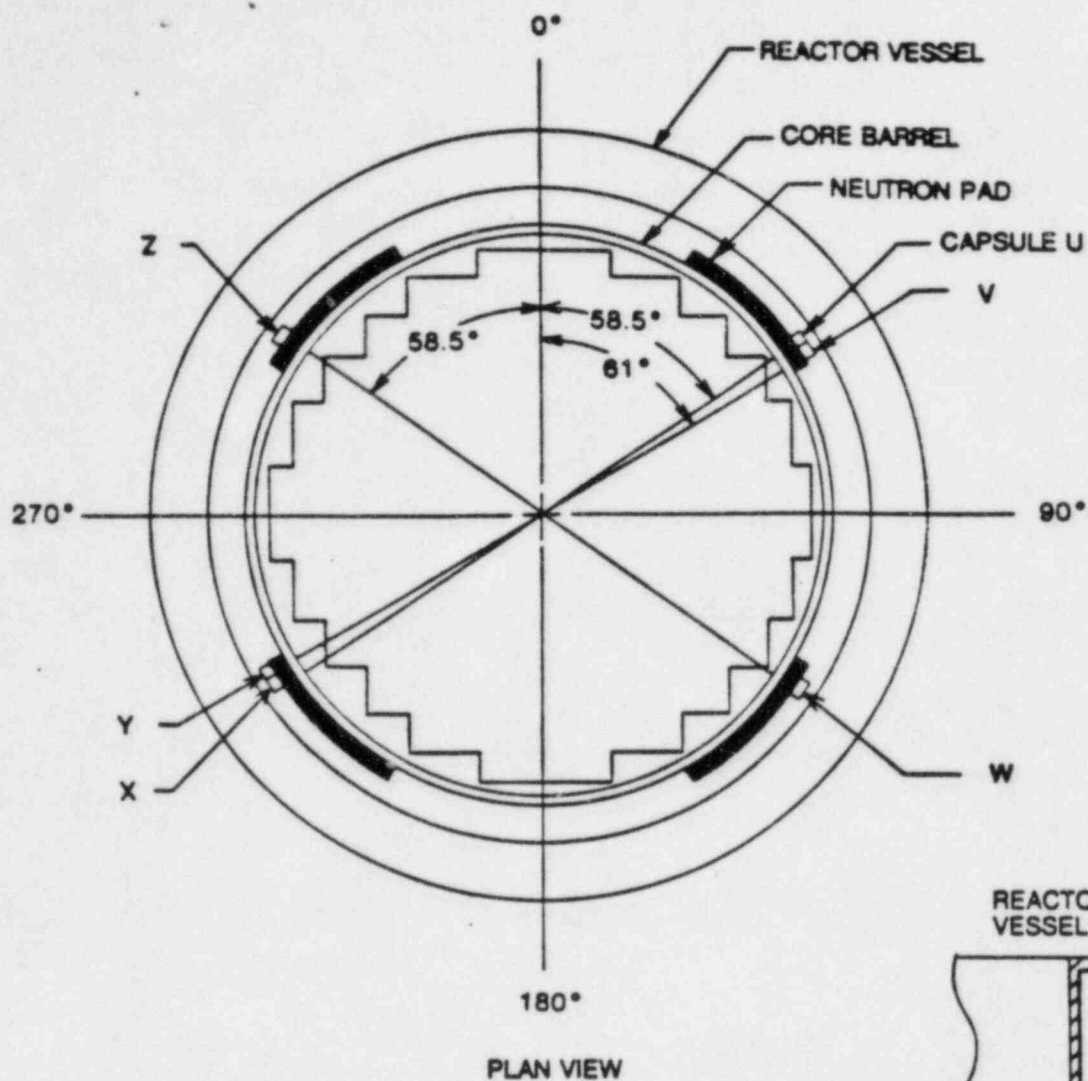
1598-1652°F-6½HR-Water Quench  
1202-1224°F-12½HR-Air Cool  
1100-1150°F-12 1/5 HR-Furnace Cool

Weld Metal (WF 562)

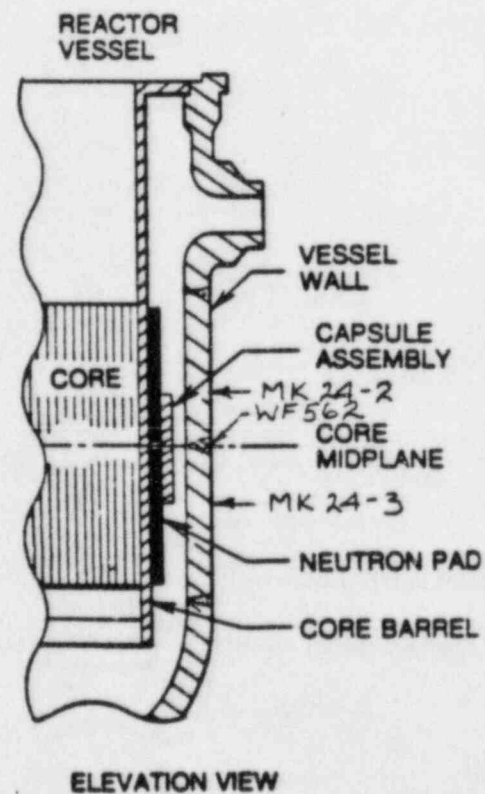
1100-1150°F-12½HR-Furnace Cool

## SURVEILLANCE CAPSULE CONTENTS

<u>Material</u>	<u>Orientation</u>	<u>Capsules U,V,W,X,Y&amp;Z</u>		<u>1/2T-Compact</u>
		<u>Charpy</u>	<u>Tension</u>	
Lower Shell (Mk 24-3)	Axial	15	3	4
Lower Shell (Mk 24-3)	Tangential	15	3	4
Weld Metal (WF 562)	Transverse	15	3	4
Haz Metal (Mk 24-3)	Axial	15	-	-



**FIGURE 1-1. LOCATION OF THE IRRADIATION TEST CAPSULES IN THE UNIT NO. 2 REACTOR VESSEL**



SURVEILLANCE CAPSULE LOCATIONS & LEAD FACTORS

<u>Capsule Ident.</u>	<u>Vessel Location</u>	<u>Lead Factor</u>
U	58.5	4.05
X	238.5	4.05
V	61.0	3.37
Y	241.0	3.37
W	121.5	4.05
Z	301.5	4.05

(a) Factor by which Capsule Neutron Fluence lead  
the maximum fluence on the Vessel Inner Wall.

Braidwood  
Reactor Vessel Material Surveillance Program  
Withdrawal Schedule

Unit 1

<u>Capsule Number</u>	<u>Vessel Location</u>	<u>Withdrawal Time (EFPY)*</u>
U	58.5 <sup>0</sup>	1st refueling
X	238.5 <sup>0</sup>	6
V	61 <sup>0</sup>	10
Y	241 <sup>0</sup>	15
W	121.5 <sup>0</sup>	standby
Z	301.5 <sup>0</sup>	standby

Unit 2

U	58.5 <sup>0</sup>	1st refueling
W	121.5 <sup>0</sup>	4.5
X	238.5 <sup>0</sup>	8.0
V	61 <sup>0</sup>	15.0
Y	241 <sup>0</sup>	standby
Z	301.5 <sup>0</sup>	standby

\* Withdrawal time may be modified to coincide with those refueling outages or reactor shutdowns most closely approaching the withdrawal schedule.

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