

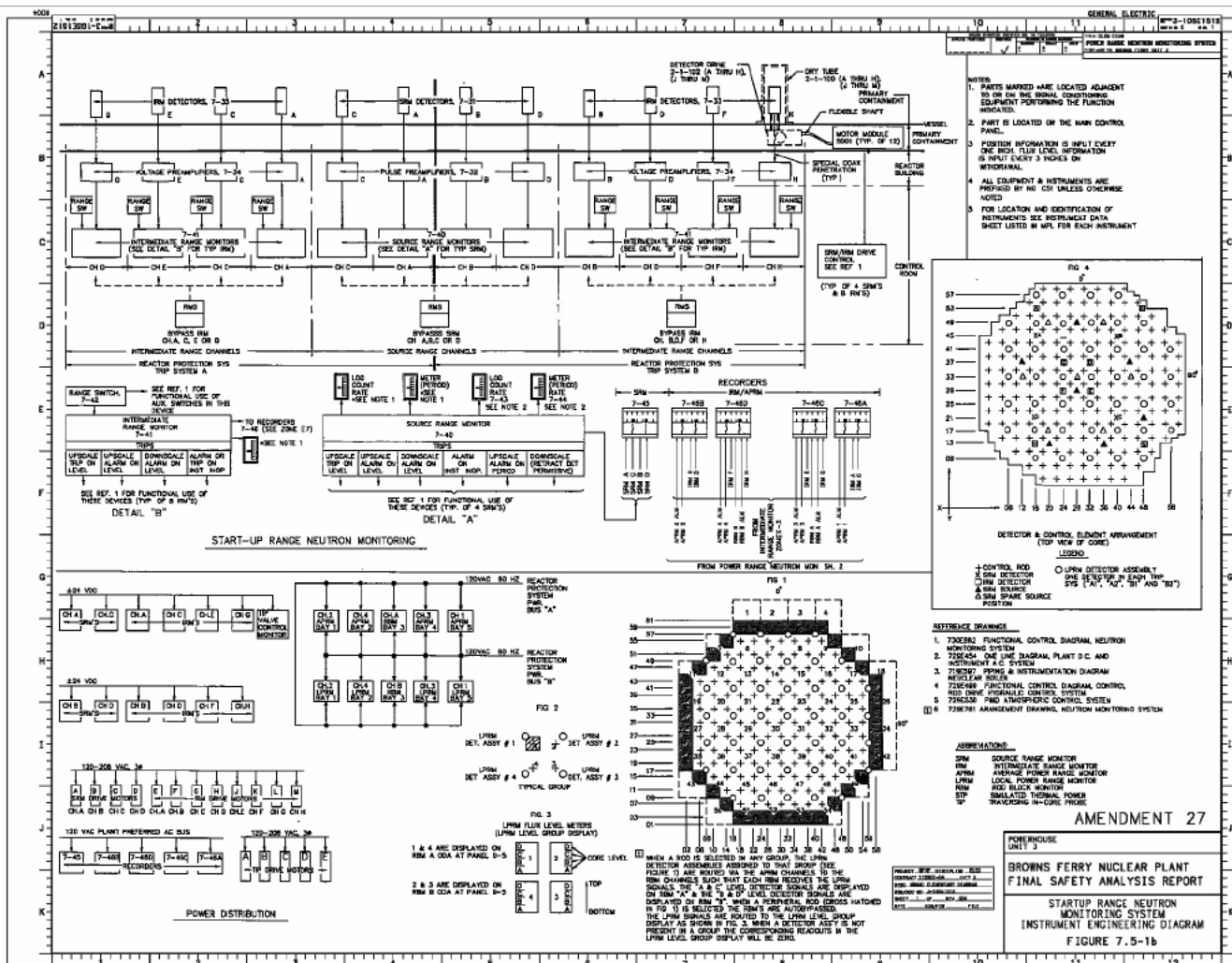
BFN-16

Figure 7.5-1

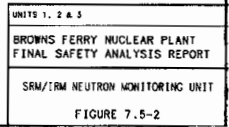
Deleted by Amendment 16

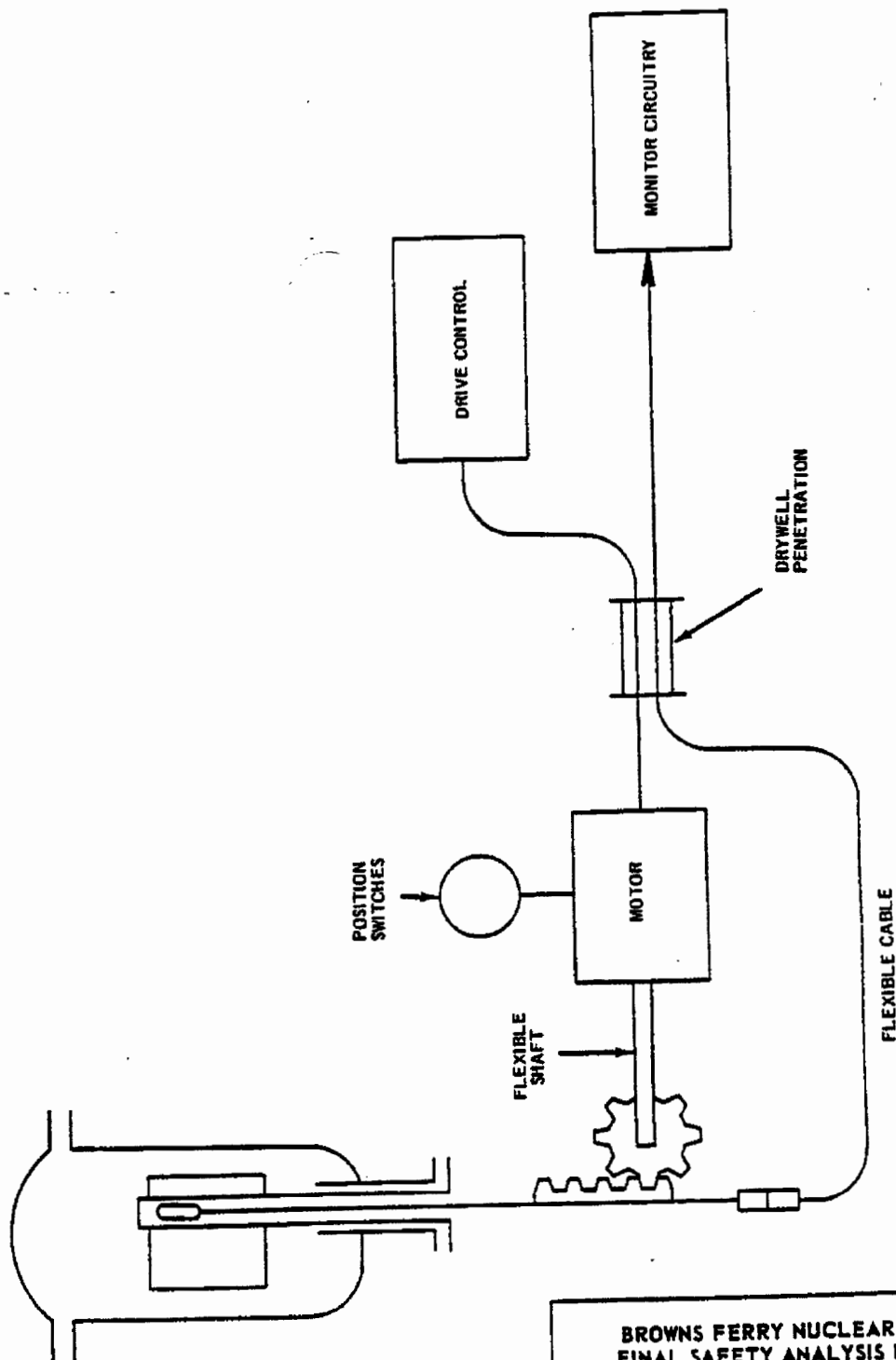
|











AMENDMENT 16

BROWNS FERRY NUCLEAR PLANT  
FINAL SAFETY ANALYSIS REPORT

Detector Drive System  
FIGURE 7.5-3a

BFN-22

Figures 7.5-3b and 7.5-3c  
(Deleted by Amendment 22)

|



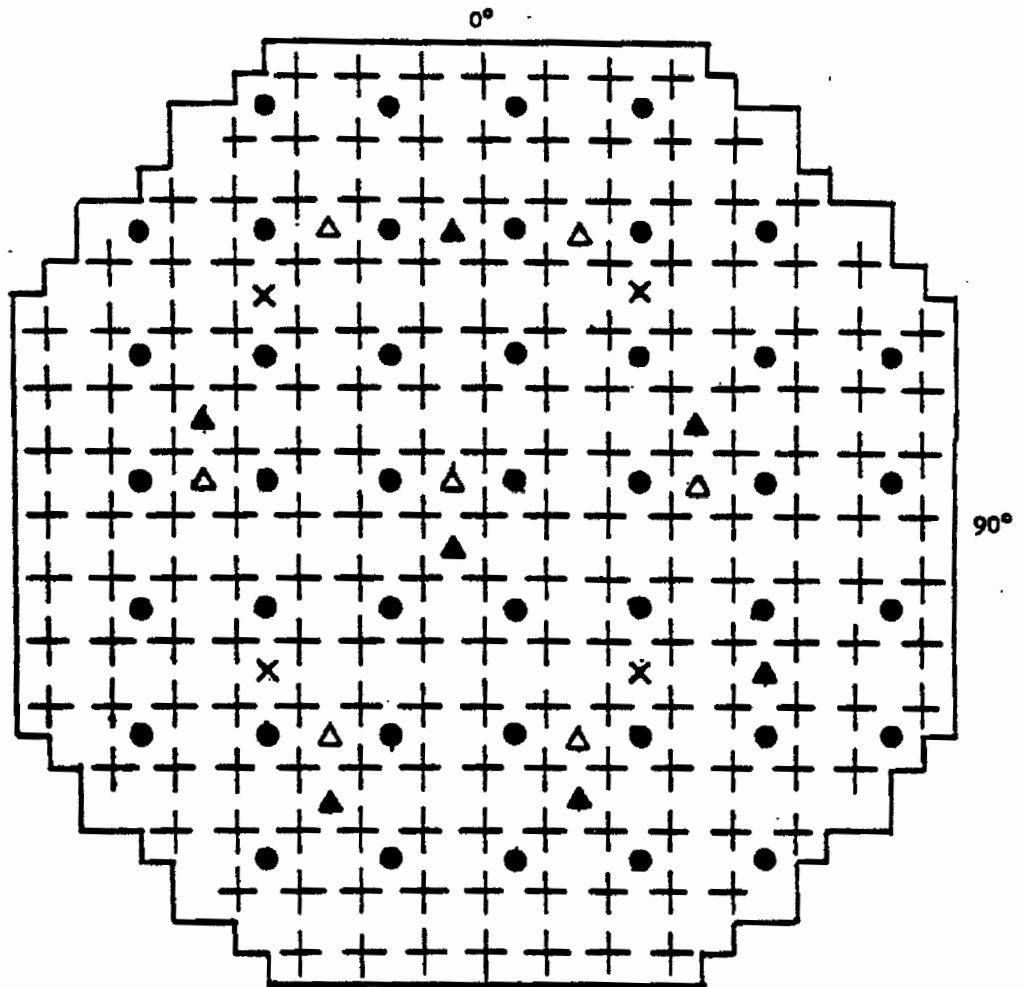


BFN-16

Figure 7.5-5

Deleted by Amendment 9.

CORE TOP VIEW

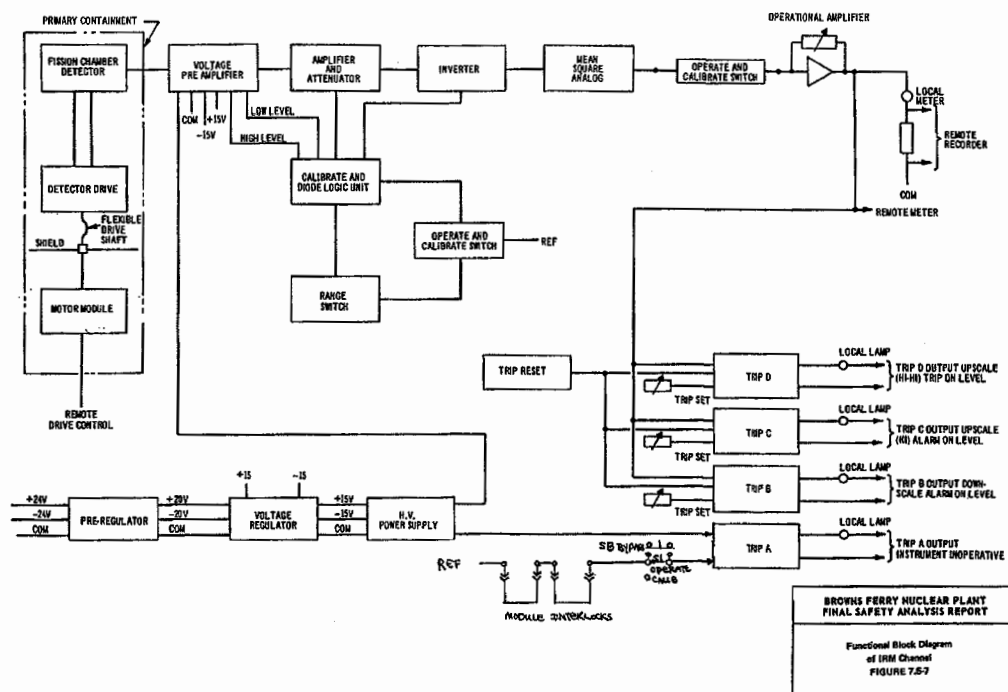


- X SRM SYSTEM DETECTOR LOCATIONS - 4
- DESIGN NEUTRON SOURCE LOCATIONS - 7
- ▲ SPARE NEUTRON SOURCE LOCATIONS - 7

AMENDMENT 16

BROWNS FERRY NUCLEAR PLANT  
FINAL SAFETY ANALYSIS REPORT

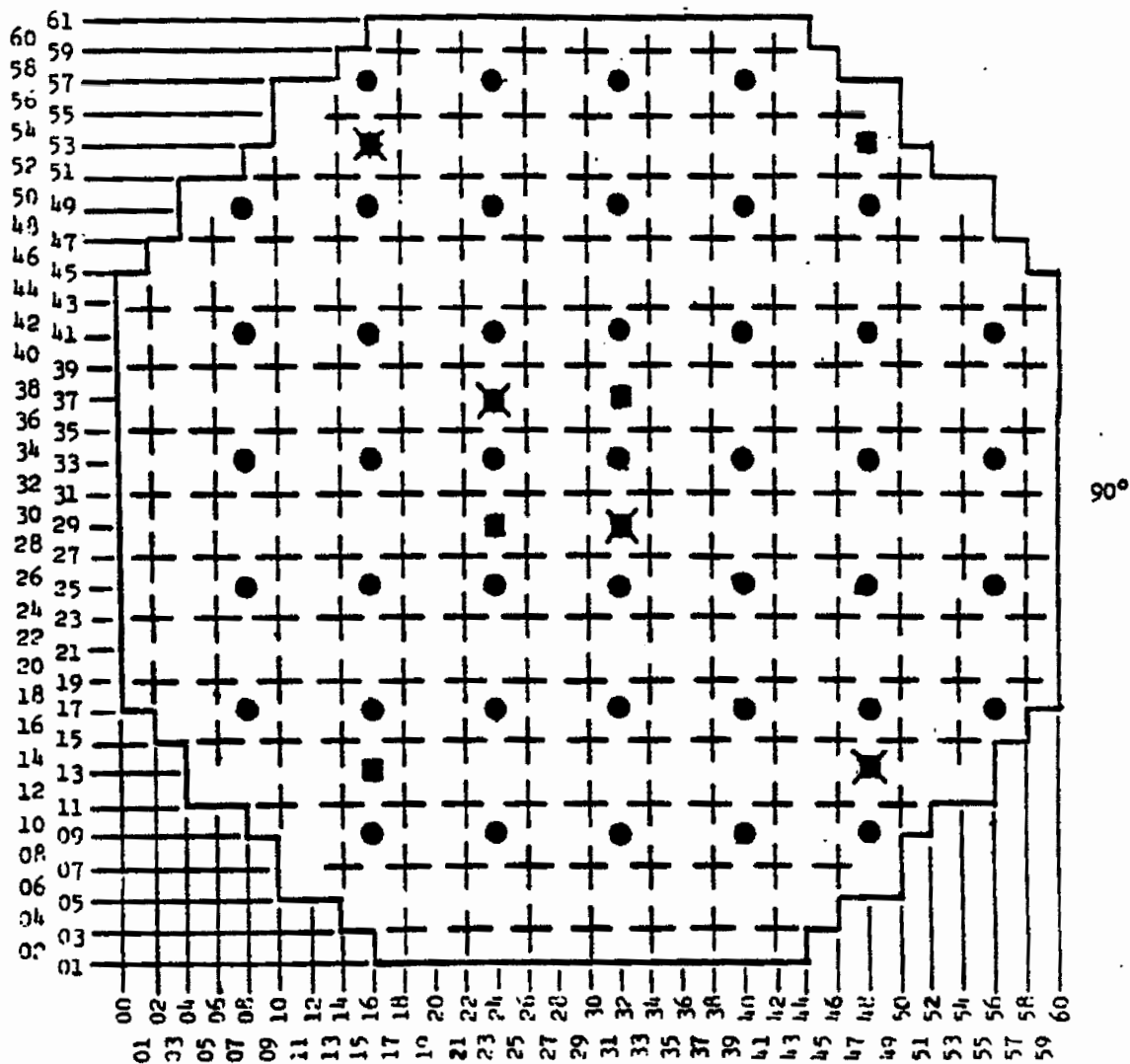
Source Range Monitoring System  
Core Locations  
FIGURE 7.5-6



AMENDMENT 19

# CORE TOP VIEW

0°



INTERMEDIATE RANGE MONITORING CHANNELS - 4  
REACTOR PROTECTION SYSTEM TRIP SYSTEM A



INTERMEDIATE RANGE MONITORING CHANNELS - 4  
REACTOR PROTECTION SYSTEM TRIP SYSTEM B

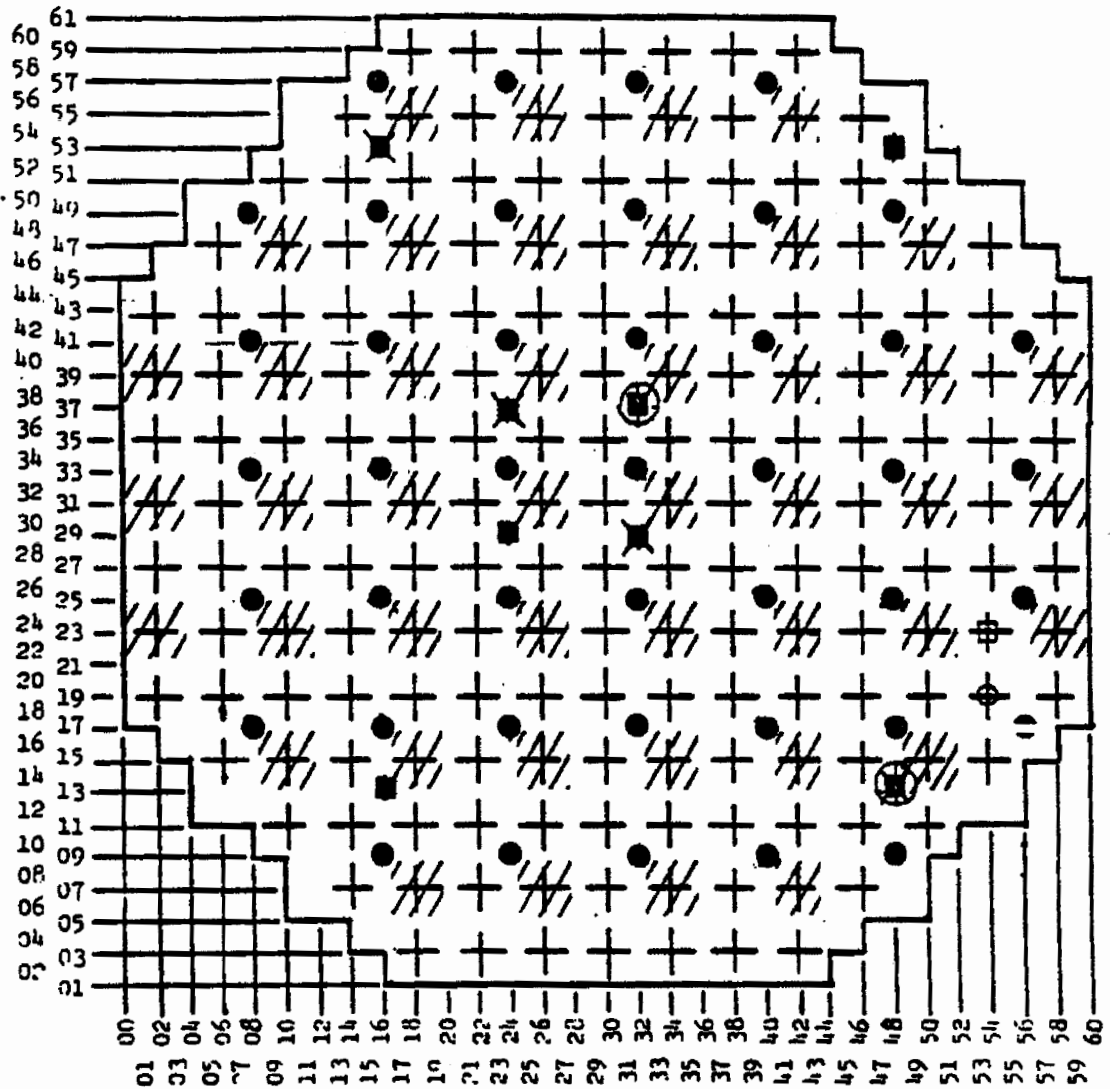
TOTAL IRM CHANNELS - 8

AMENDMENT 16

BROWNS FERRY NUCLEAR PLANT  
FINAL SAFETY ANALYSIS REPORT

IRM Locations  
FIGURE 7.5-8

# CORE TOP VIEW



IRM DETECTOR, TRIP SYSTEM A

IRM DETECTOR, TRIP SYSTEM B

CONTROL ROD WITHDRAWN

NEXT CONTROL ROD WITHDRAWN IN SEQUENCE

CONTROL ROD WITHDRAWN OUT OF SEQUENCE

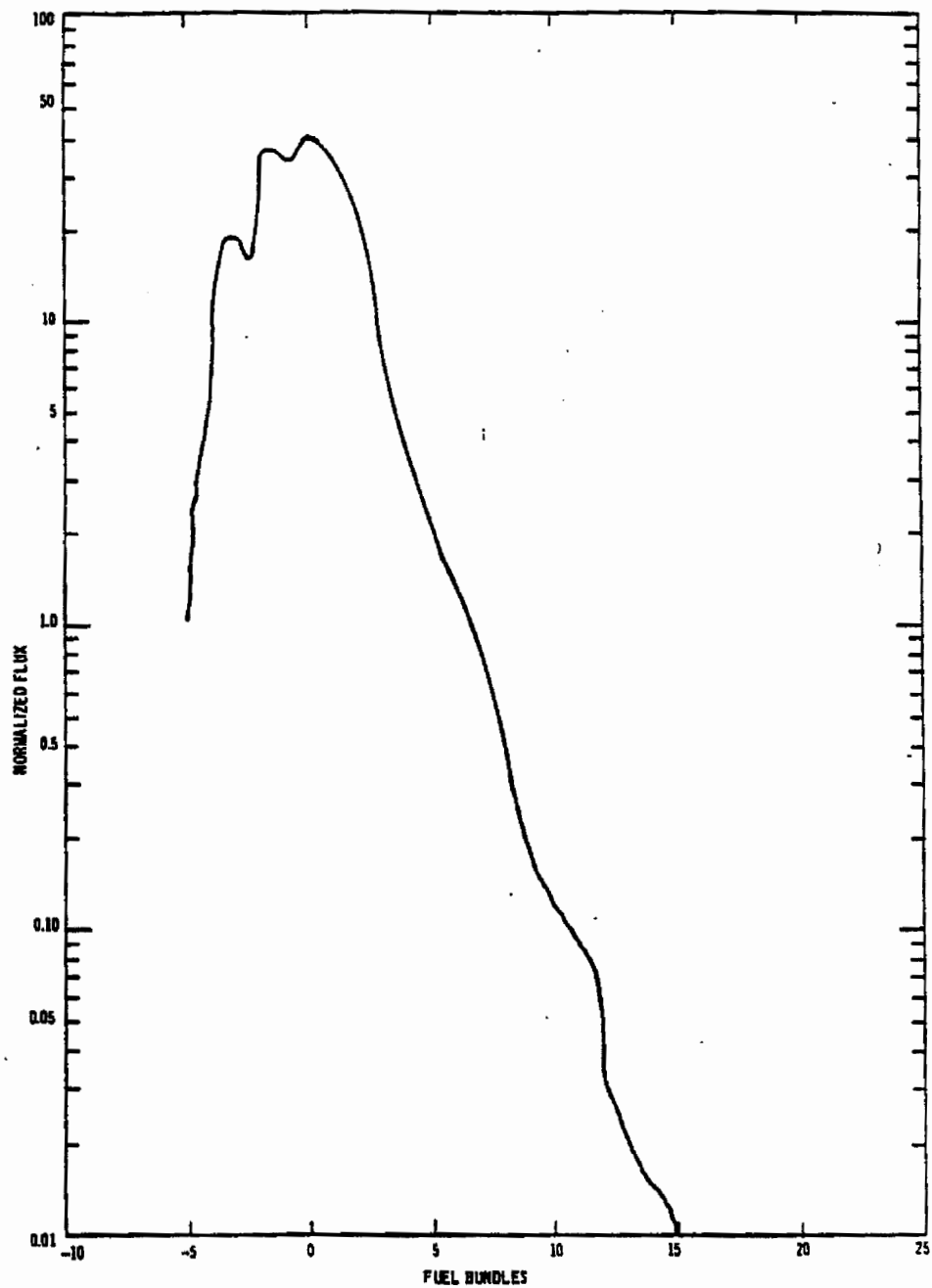
IRM DETECTOR BYPASSED

BROWNS FERRY NUCLEAR PLANT  
FINAL SAFETY ANALYSIS REPORT

Control Rod Withdrawal Error

FIGURE 7.5-9

AMENDMENT 16



AMENDMENT 16

**BROWNS FERRY NUCLEAR PLANT  
FINAL SAFETY ANALYSIS REPORT**

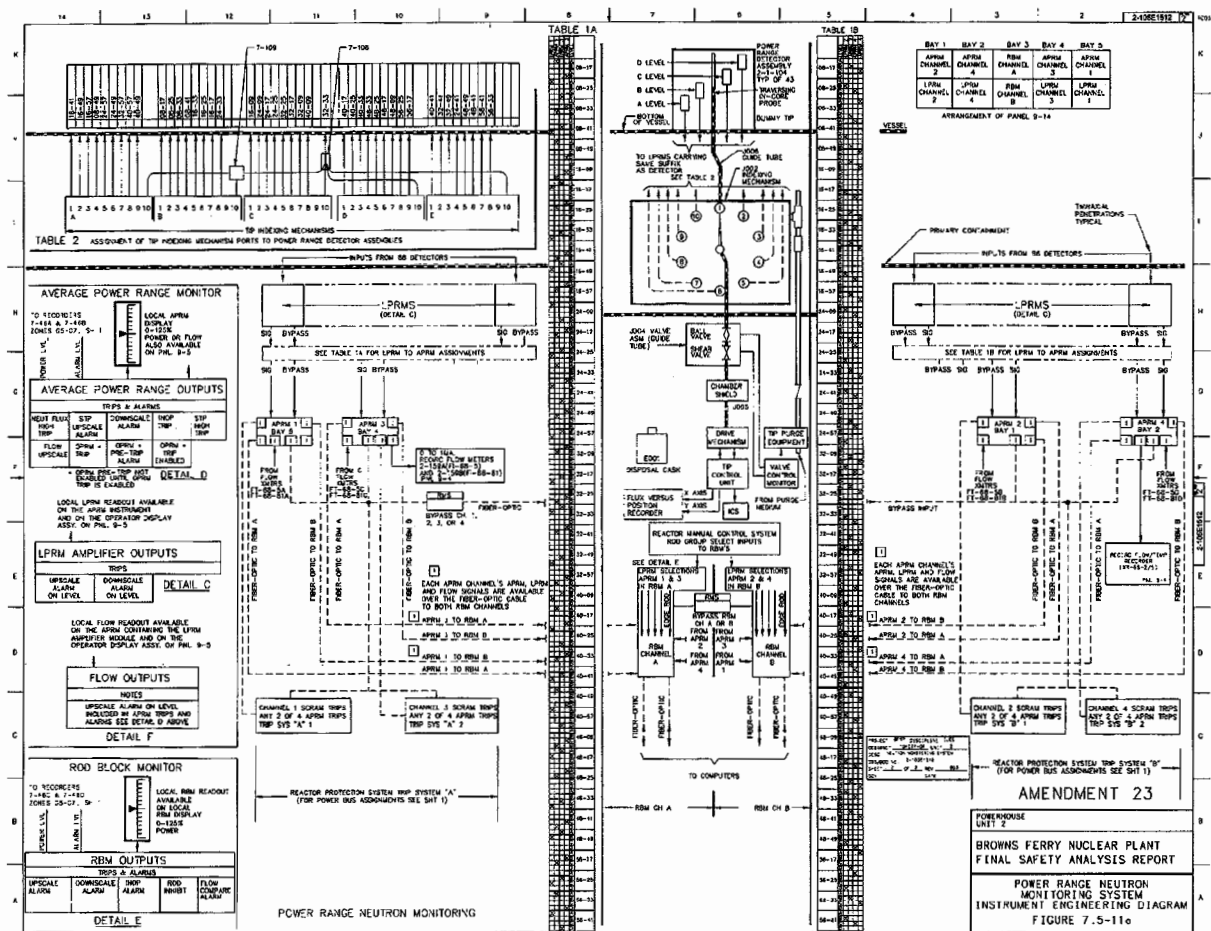
**Normalized Flux Distribution  
for Rod Withdrawal Error  
FIGURE 7.5-10**

BFN-16

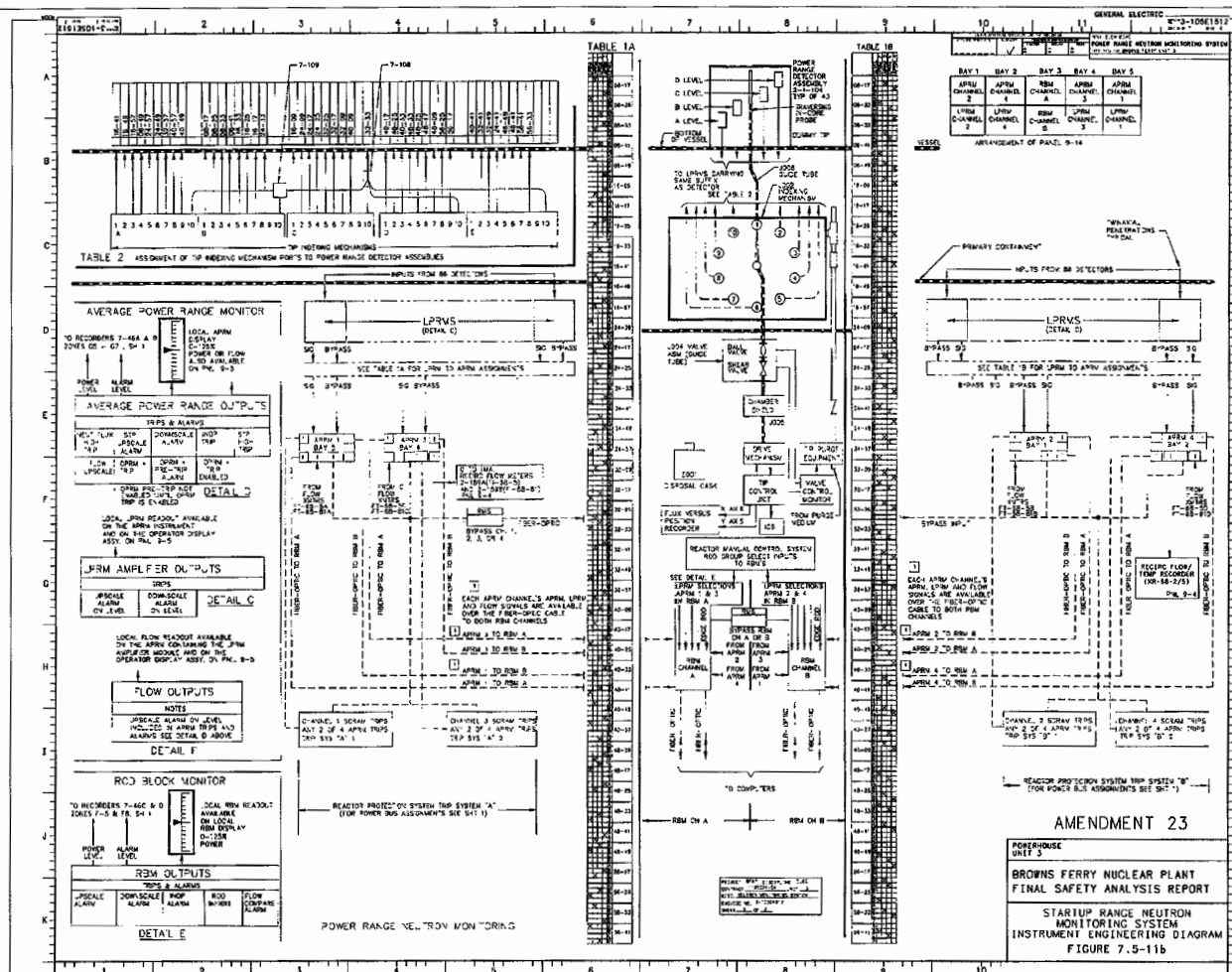
Figure 7.5-11

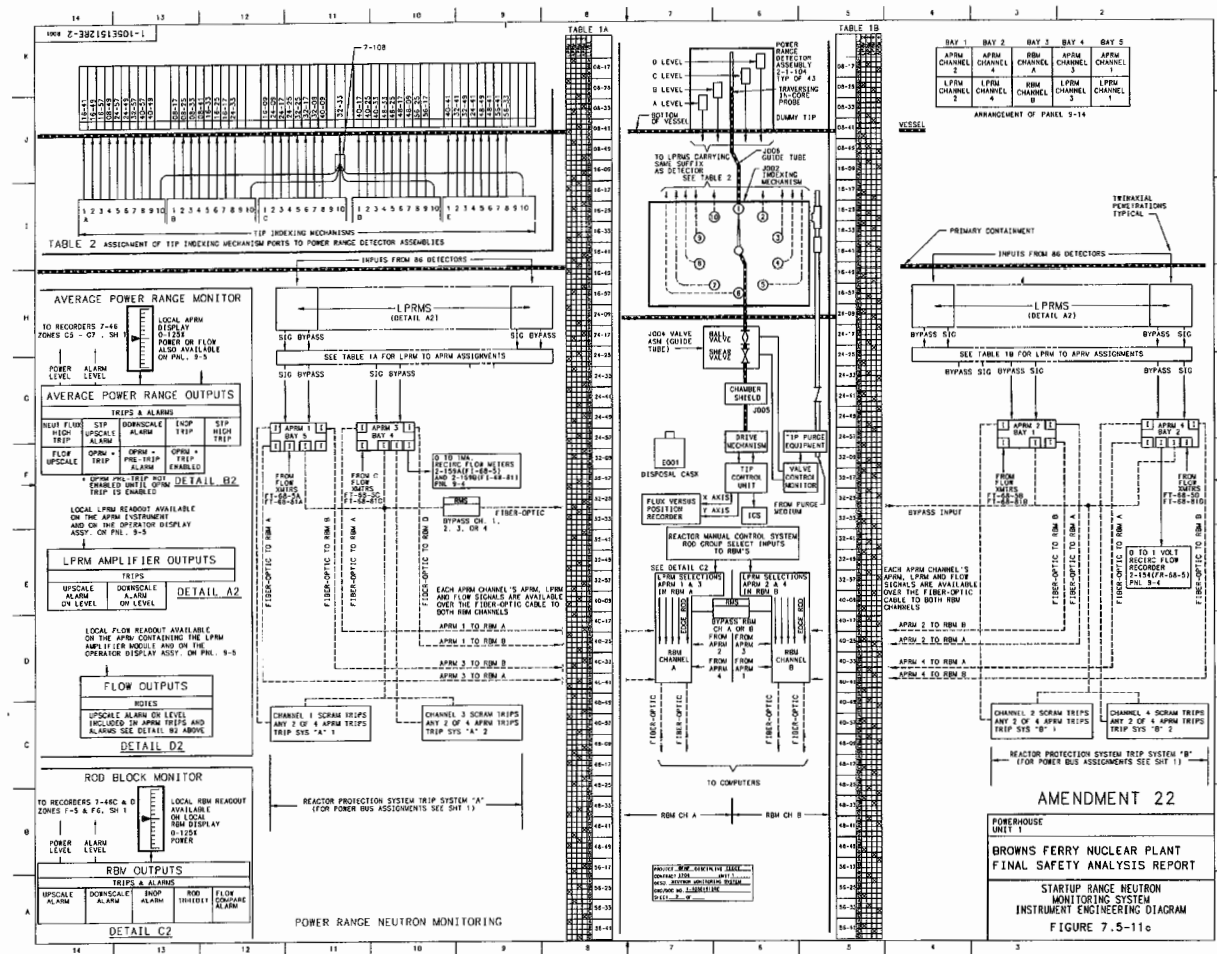
Deleted by Amendment 16

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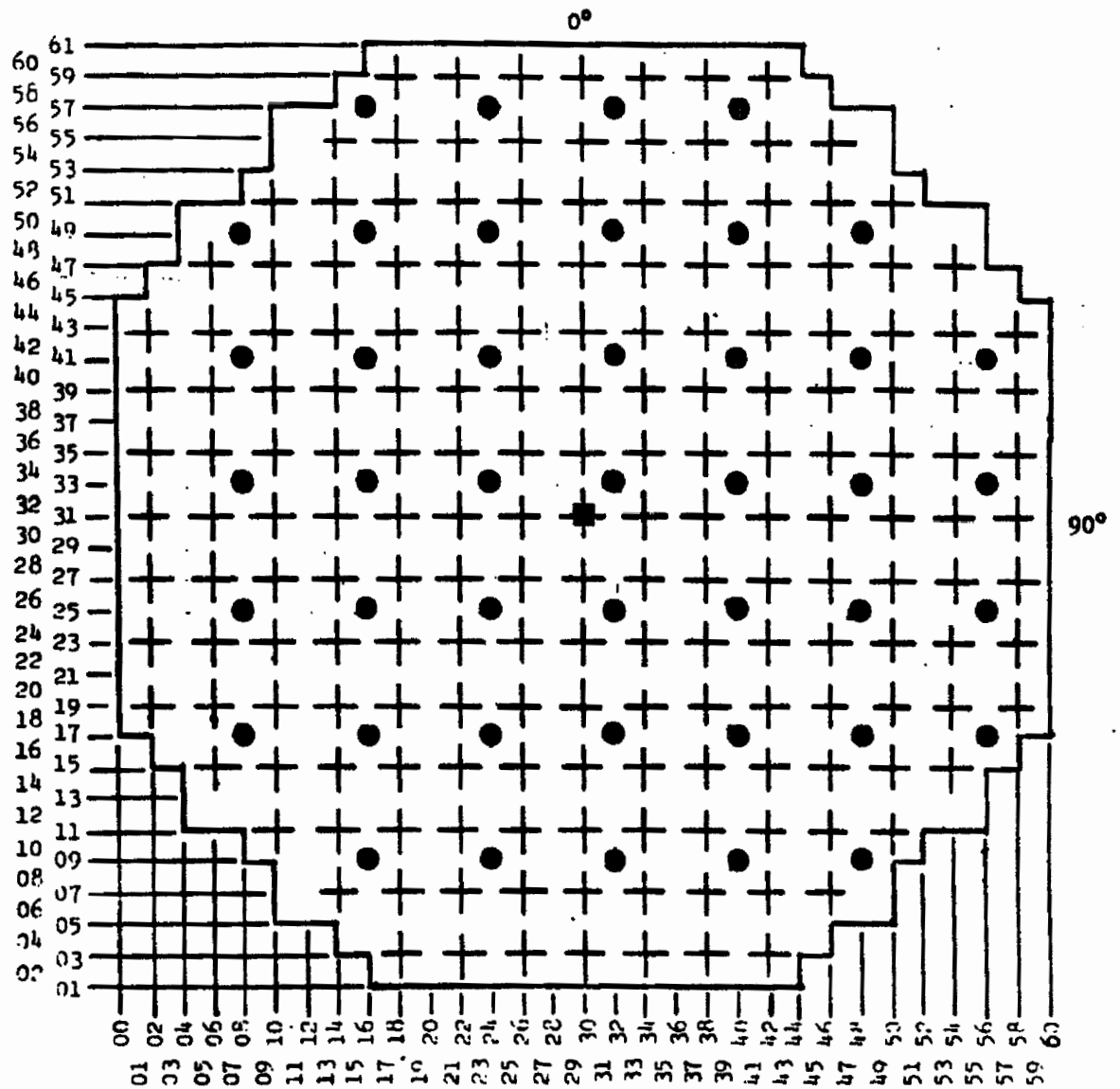








# CORE TOP VIEW

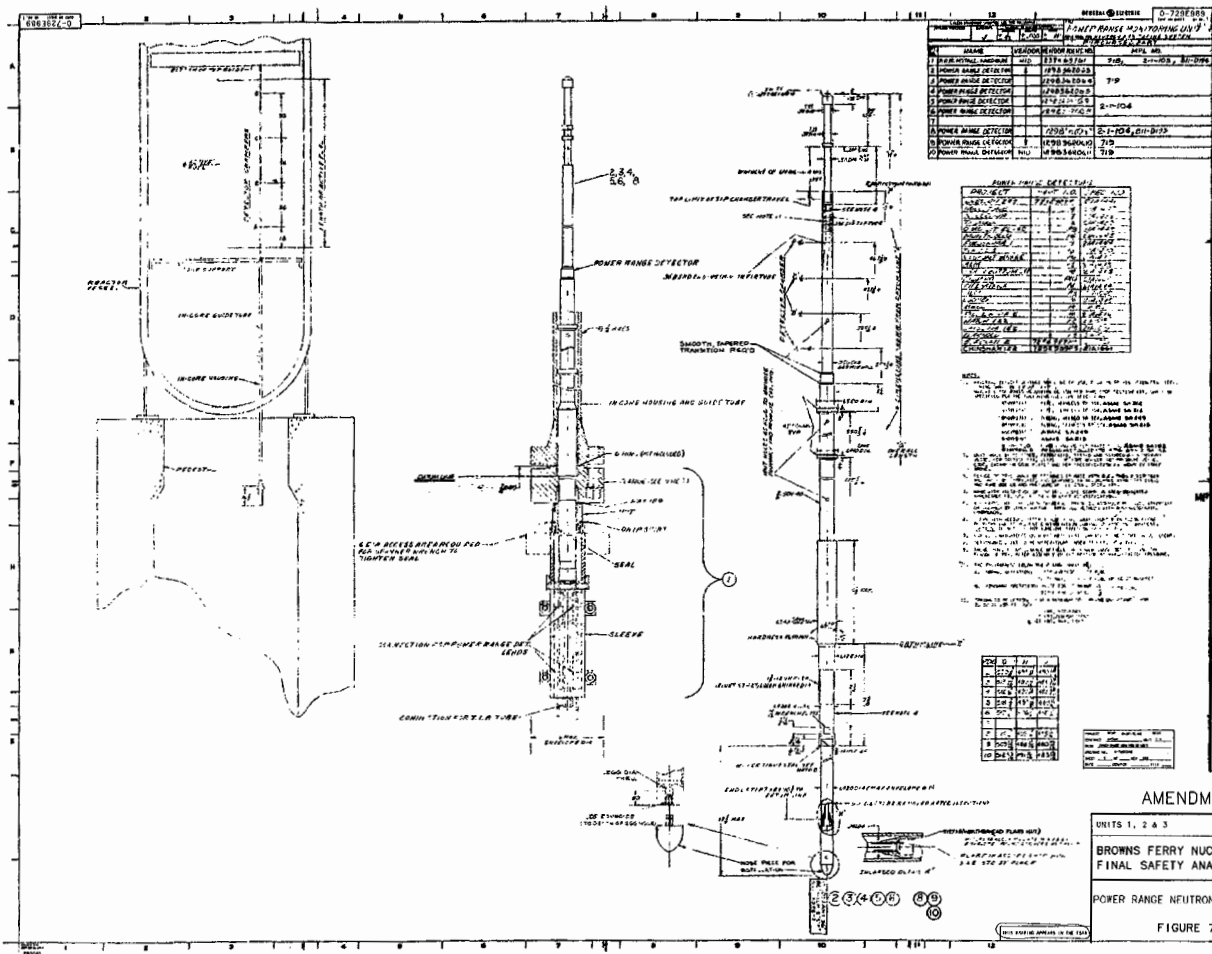


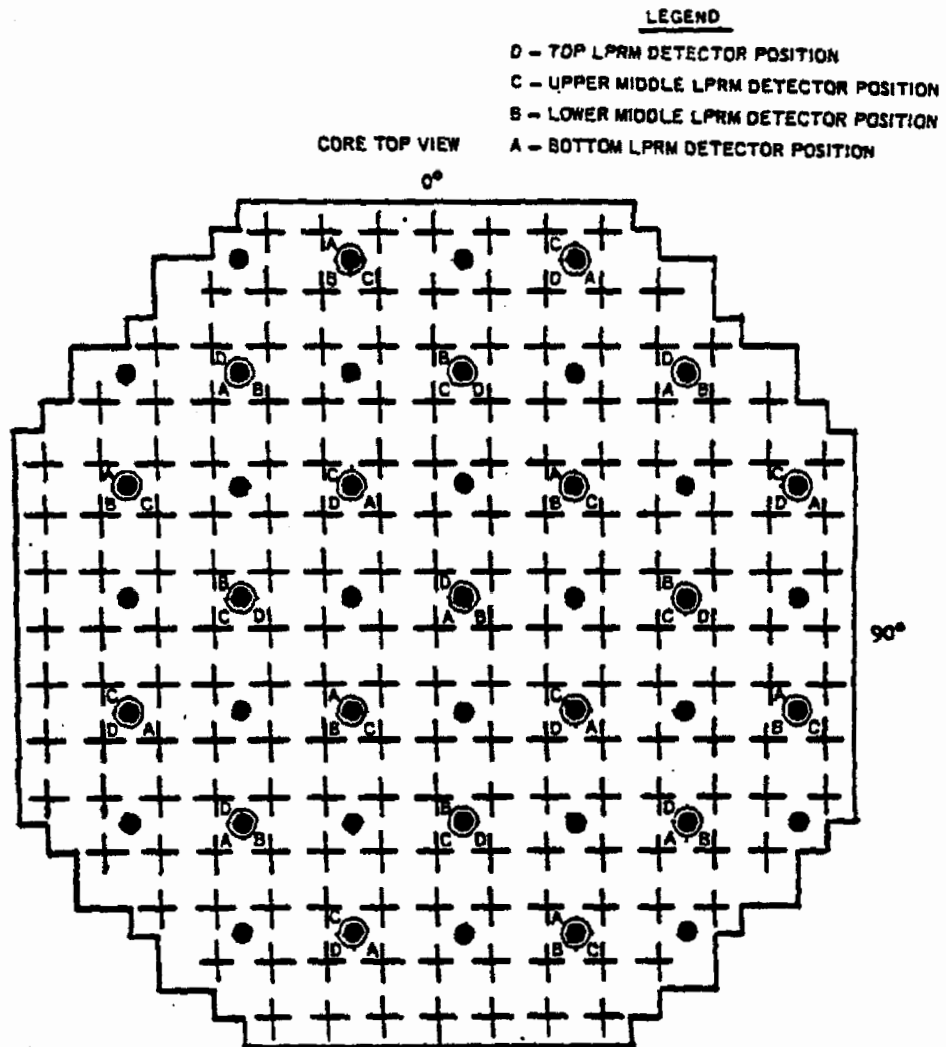
- + CONTROL RODS
- CENTRAL CONTROL ROD
- LPRM ASSEMBLIES

## AMENDMENT 16

**BROWNS FERRY NUCLEAR PLANT  
FINAL SAFETY ANALYSIS REPORT**

LPRM Locations  
FIGURE 7.5-12





● LPRM STRINGS PROVIDING INPUT TO APRM CHANNELS A, C, E

UPPER LEFT LETTER IS LPRM CHAMBER ASSIGNED TO APRM

LOWER LEFT LETTER IS LPRM CHAMBER ASSIGNED TO APRM

LOWER RIGHT LETTER IS LPRM CHAMBER ASSIGNED TO APRM

A	} FOR REACTOR PROTECTION
C	
E	
	SYSTEM TRIP
	SYSTEM A

## AMENDMENT 17

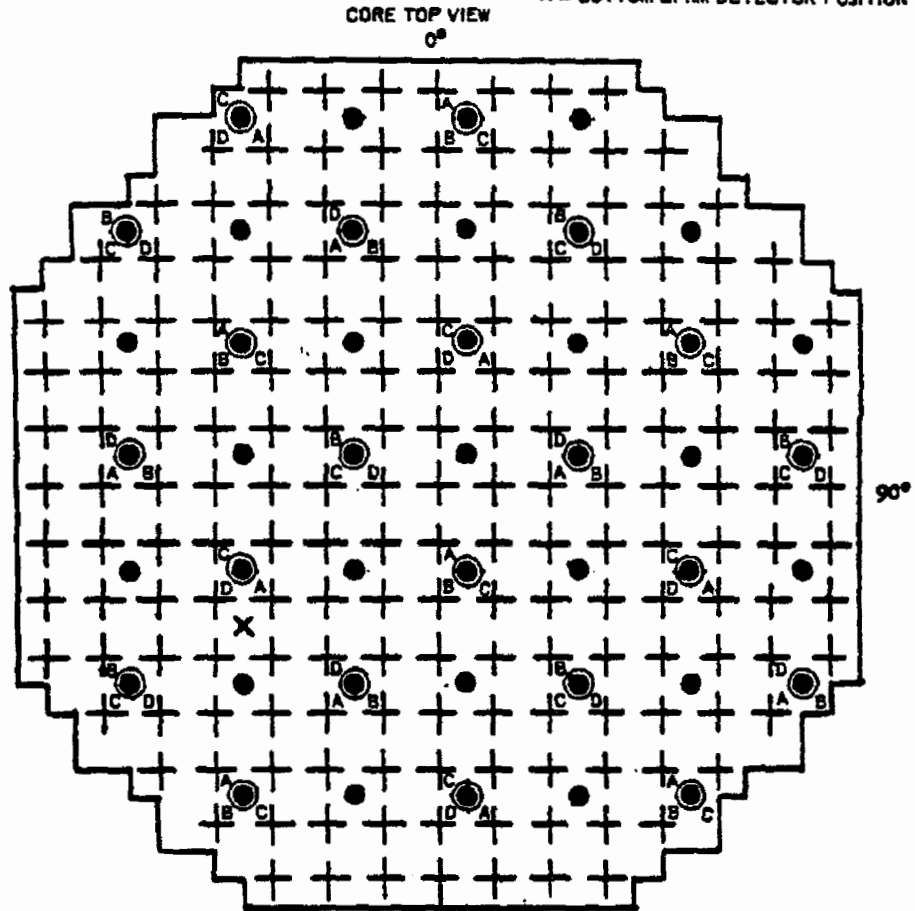
BROWNS FERRY NUCLEAR PLANT  
 FINAL SAFETY  
 ANALYSIS REPORT

Unit 1  
 LPRM to APRM Assignment Scheme  
 (System A)

FIGURE 7.5-14a

LEGEND

- D - TOP LPRM DETECTOR POSITION
- C - UPPER MIDDLE LPRM DETECTOR POSITION
- B - LOWER MIDDLE LPRM DETECTOR POSITION
- A - BOTTOM LPRM DETECTOR POSITION



● LPRM STRINGS PROVIDING INPUT TO APRM CHANNELS B,D,F

UPPER LEFT LETTER IS LPRM CHAMBER ASSIGNED TO APRM  
 LOWER LEFT LETTER IS LPRM CHAMBER ASSIGNED TO APRM  
 LOWER RIGHT LETTER IS LPRM CHAMBER ASSIGNED TO APRM

B } FOR REACTOR PROTECTION  
 D } SYSTEM TRIP  
 F } SYSTEM B

AMENDMENT 17

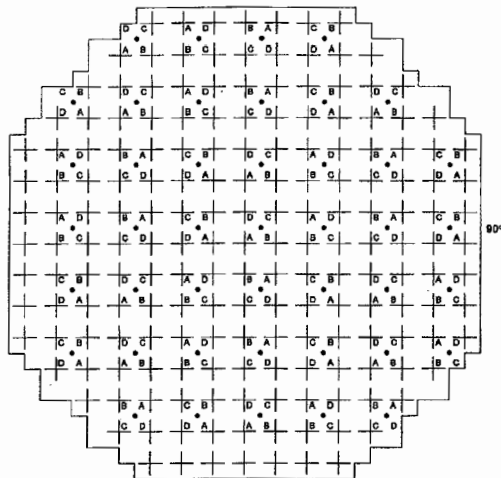
**BROWNS FERRY NUCLEAR PLANT  
 FINAL SAFETY ANALYSIS REPORT**

Unit 1  
 LPRM to APRM Assignment Scheme  
 (System B)  
 FIGURE 7.5-14b

CORE TOP VIEW  
0°

LEGEND

D - TOP LPRM DETECTOR POSITION  
C - UPPER MIDDLE LPRM DETECTOR POSITION  
B - LOWER MIDDLE LPRM DETECTOR POSITION  
A - BOTTOM LPRM DETECTOR POSITION



NOTE:  
LOWER RIGHT LETTER IS LPRM CHAMBER ASSIGNED TO APRM 1.  
UPPER RIGHT LETTER IS LPRM CHAMBER ASSIGNED TO APRM 2.  
LOWER LEFT LETTER IS LPRM CHAMBER ASSIGNED TO APRM 3.  
UPPER LEFT LETTER IS LPRM CHAMBER ASSIGNED TO APRM 4.

AMENDMENT 22

BROWNS FERRY NUCLEAR PLANT  
FINAL SAFETY ANALYSIS REPORT

UNITS 1, 2 AND 3 LPRM TO APRM  
ASSIGNMENT SCHEME  
FIGURE 7.5-14e

BFN-22

Figure 7.5-15  
(Deleted by Amendment 22)

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BFN-22

Figure 7.5-16  
(Deleted by Amendment 22)

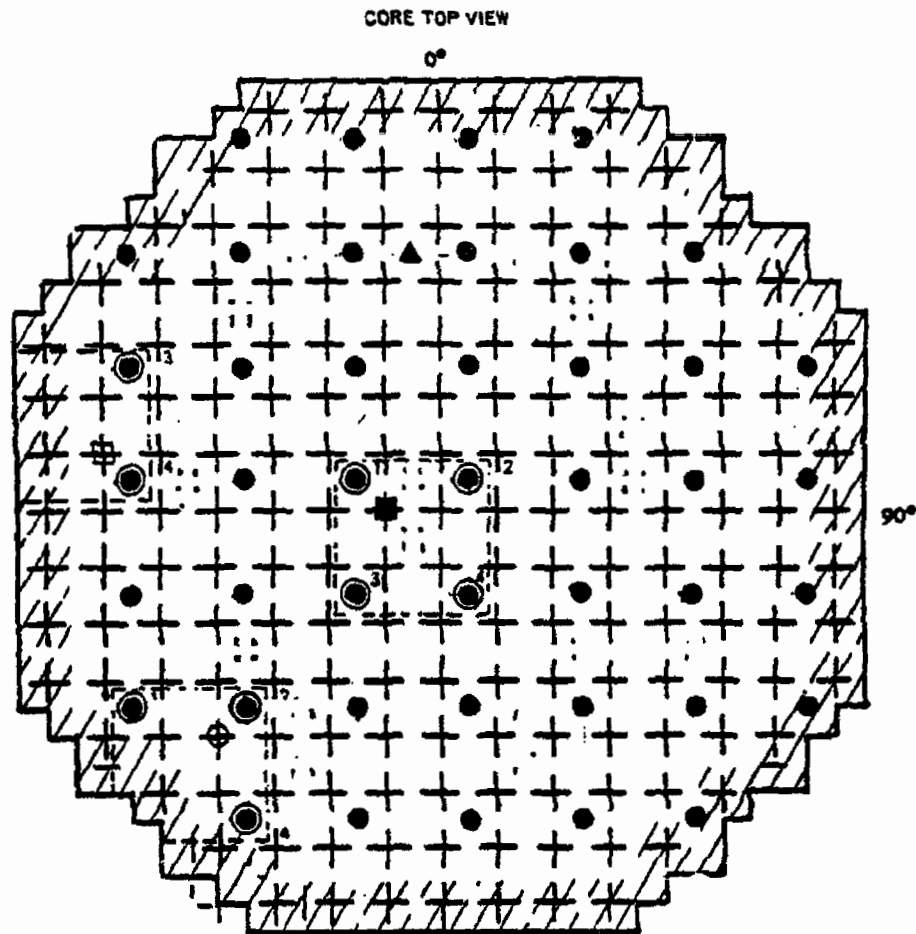
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BFN-16

Figure 7.5-17

Deleted by Amendment 16

|



- LPRM-ASSEMBLY ASSIGNED TO RBM
- ⊕ ROD SELECTION RESULTING IN TWO-ASSEMBLY ASSIGNMENT
- ⊗ ROD SELECTION RESULTING IN THREE-ASSEMBLY ASSIGNMENT
- ⊛ ROD SELECTION RESULTING IN FOUR-ASSEMBLY ASSIGNMENT
- /// RBM AUTOMATICALLY BYPASSED (READING ZEROED)

NOTE: ASSIGNMENT IS AUTOMATICALLY INITIATED UPON ROD SELECTION.

## AMENDMENT 16

**BROWNS FERRY NUCLEAR PLANT  
FINAL SAFETY ANALYSIS REPORT**

Units 1, 2 and 3  
Assignment of LPRM Assemblies to RBM'S  
FIGURE 7.5-17a

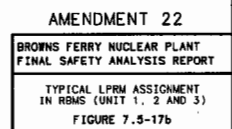
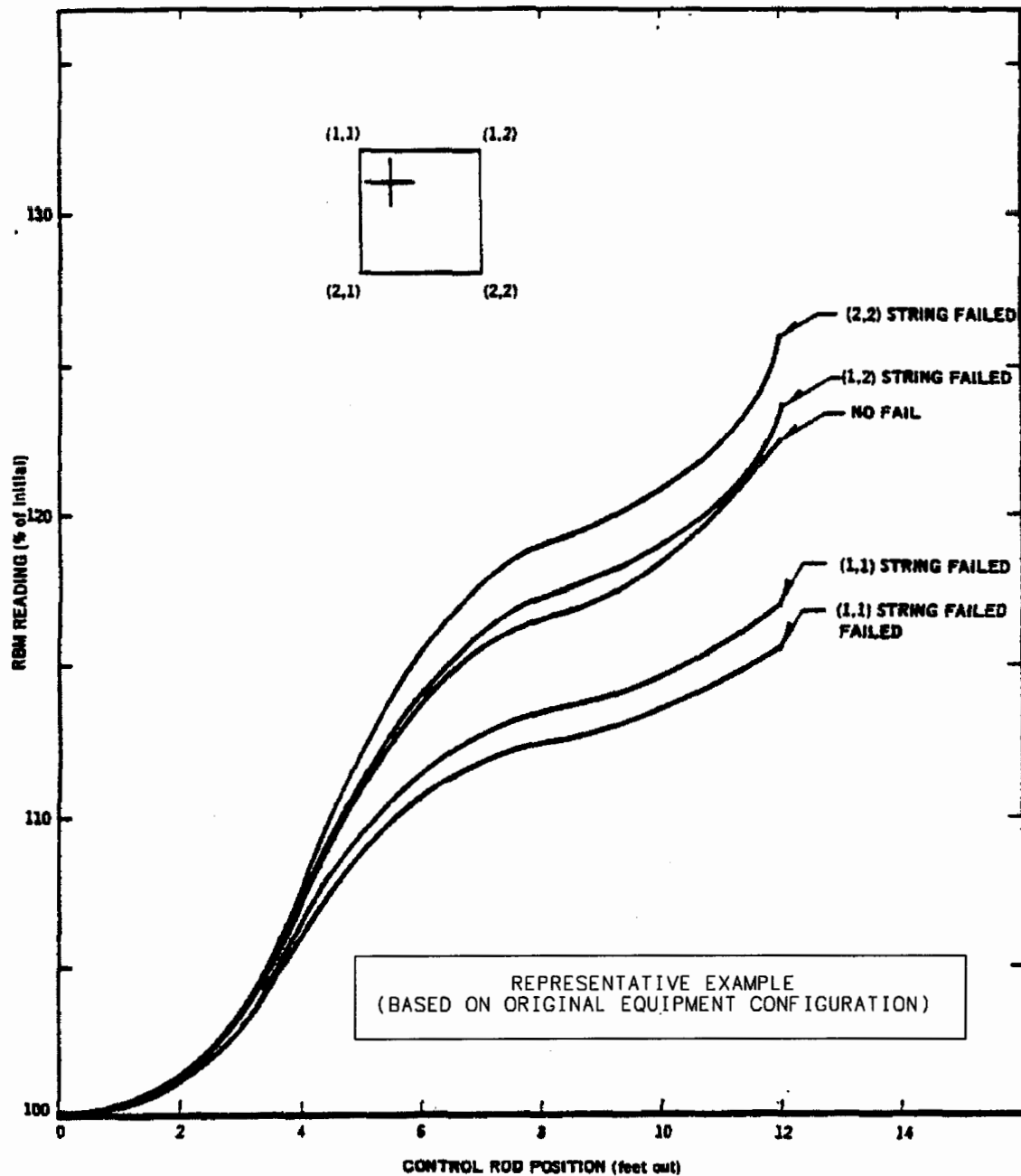


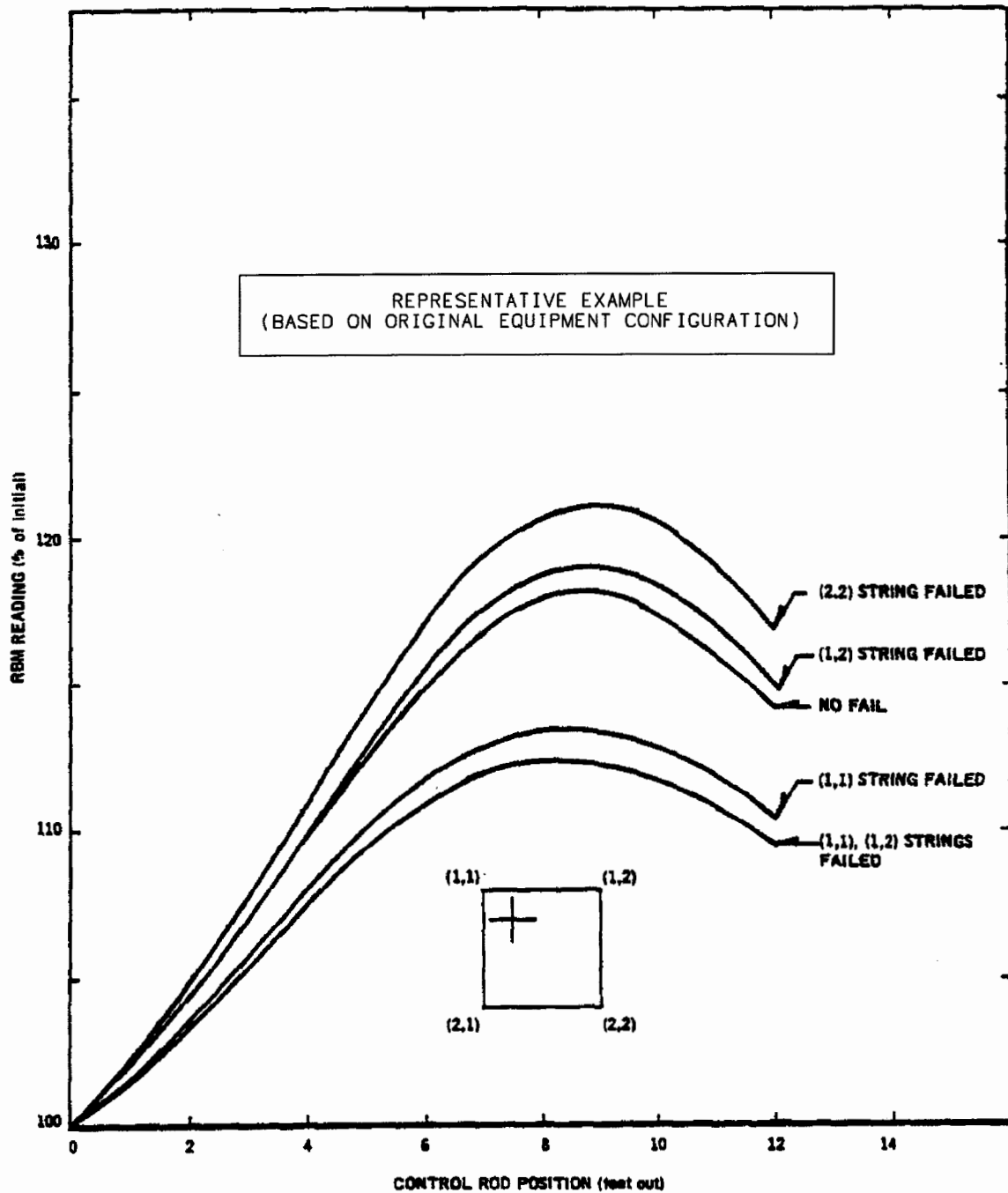
FIGURE 7.5-17b



## AMENDMENT 16

**BROWNS FERRY NUCLEAR PLANT  
FINAL SAFETY ANALYSIS REPORT**

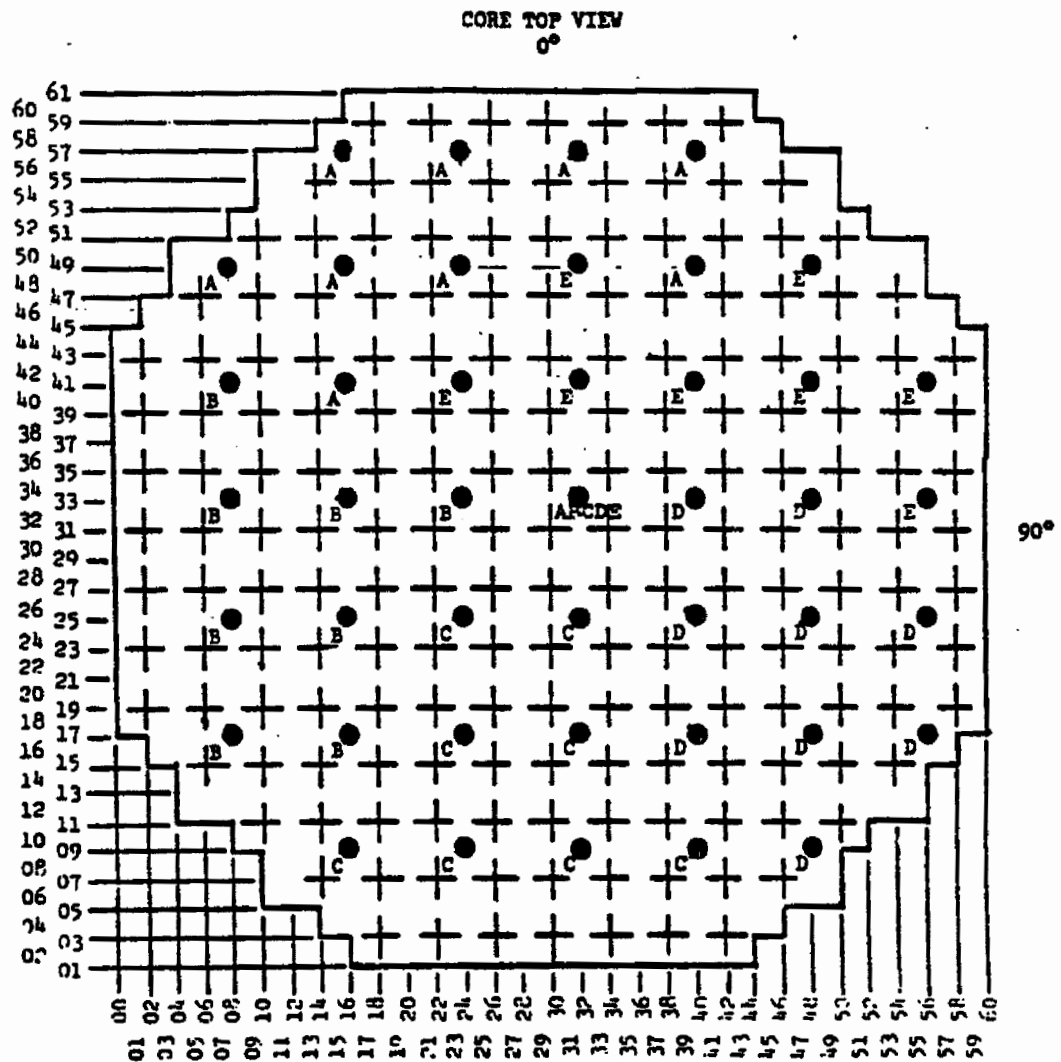
**RBM Channel A + C  
Response to Control Rod Motion  
FIGURE 7.5-18**



## AMENDMENT 16

### BROWNS FERRY NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT

RBM Channel B + D  
Response to Control Rod Motion  
FIGURE 7.5-19

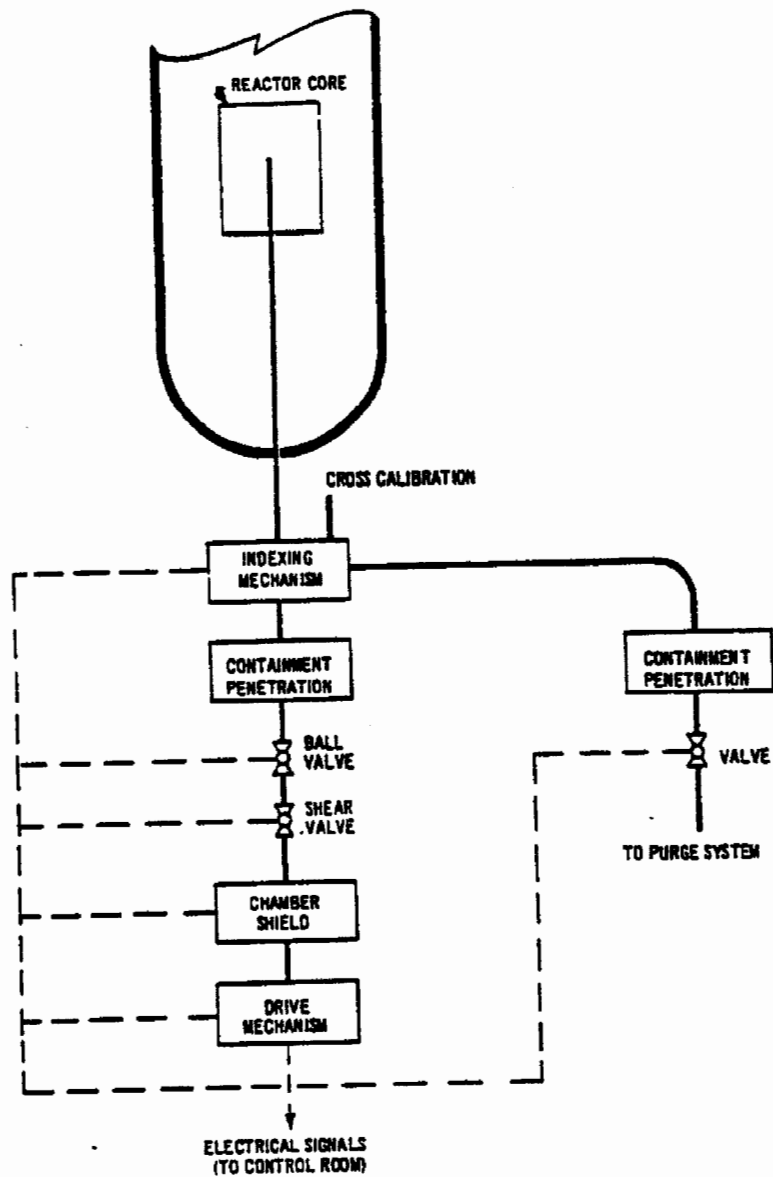


LETTER = TIP MACHINE ASSIGNED TO LPRM STRING

## AMENDMENT 16

**BROWNS FERRY NUCLEAR PLANT  
FINAL SAFETY ANALYSIS REPORT**

Assignment of LPRM Strings  
to TIP Machines  
FIGURE 7.5-20

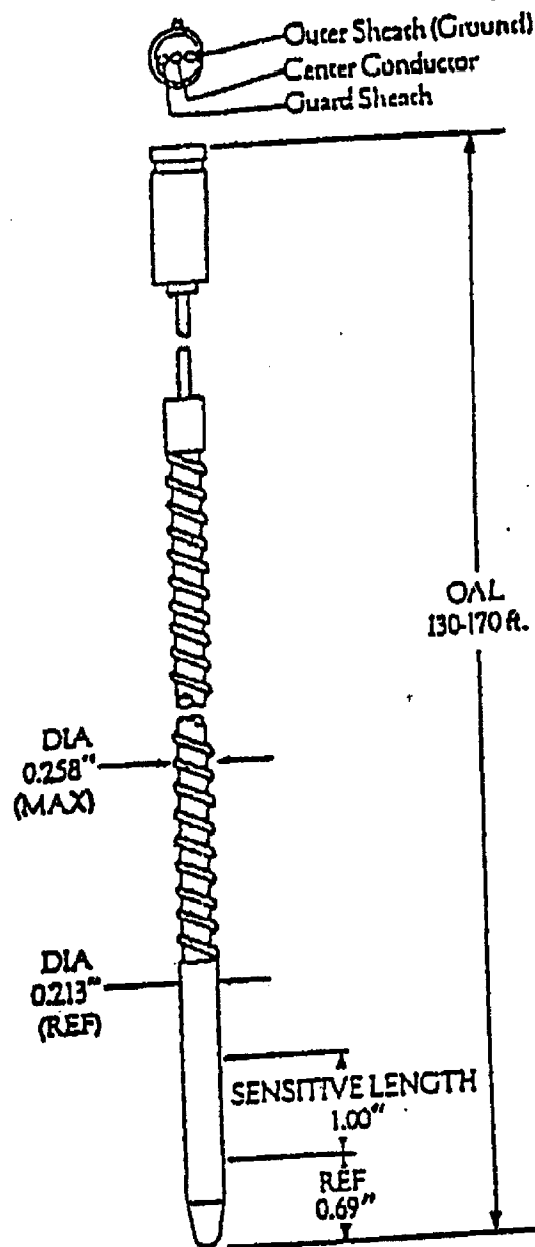


## AMENDMENT 16

### BROWNS FERRY NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT

Traversing In-Core Probe Subsystem  
Block Diagram  
FIGURE 7.5-21





AMENDMENT 16

**BROWNS FERRY NUCLEAR PLANT  
FINAL SAFETY ANALYSIS REPORT**

Traversing In-Core  
Probe Assembly  
FIGURE 7.5-22

1 2 3 4 5 6 7 8 9

# SECURITY RELATED INFORMATION

## FIGURE WITHHELD UNDER 10 CFR 2.390

POWERHOUSE UNITS 2 & 3	
BROWNS FERRY NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT	
NEUTRON MONITORING SYSTEM PHYSICAL ARRANGEMENT FIGURE 7.5-23a	
	11 12

SECURITY RELATED INFORMATION  
FIGURE WITHHELD UNDER 10 CFR 2.390

AMENDMENT 27
POWERHOUSE UNIT 2 & 3
BROWNS FERRY NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
NEUTRON MONITORING SYSTEM PHYSICAL ARRANGEMENT
FIGURE 7.5-23b

SECURITY RELATED INFORMATION  
FIGURE WITHHELD UNDER 10 CFR 2.390

POWERHOUSE UNIT 1
BROWNS FERRY NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
NEUTRON MONITORING SYSTEM PHYSICAL ARRANGEMENT FIGURE 7.5-23c

SECURITY RELATED INFORMATION  
FIGURE WITHHELD UNDER 10 CFR 2.390

FORNARD UNIT 1
BROWNS FERRY NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
NEUTRON MONITORING SYSTEM PHYSICAL ARRANGEMENT
FIGURE 7.5-23d

BFN-16

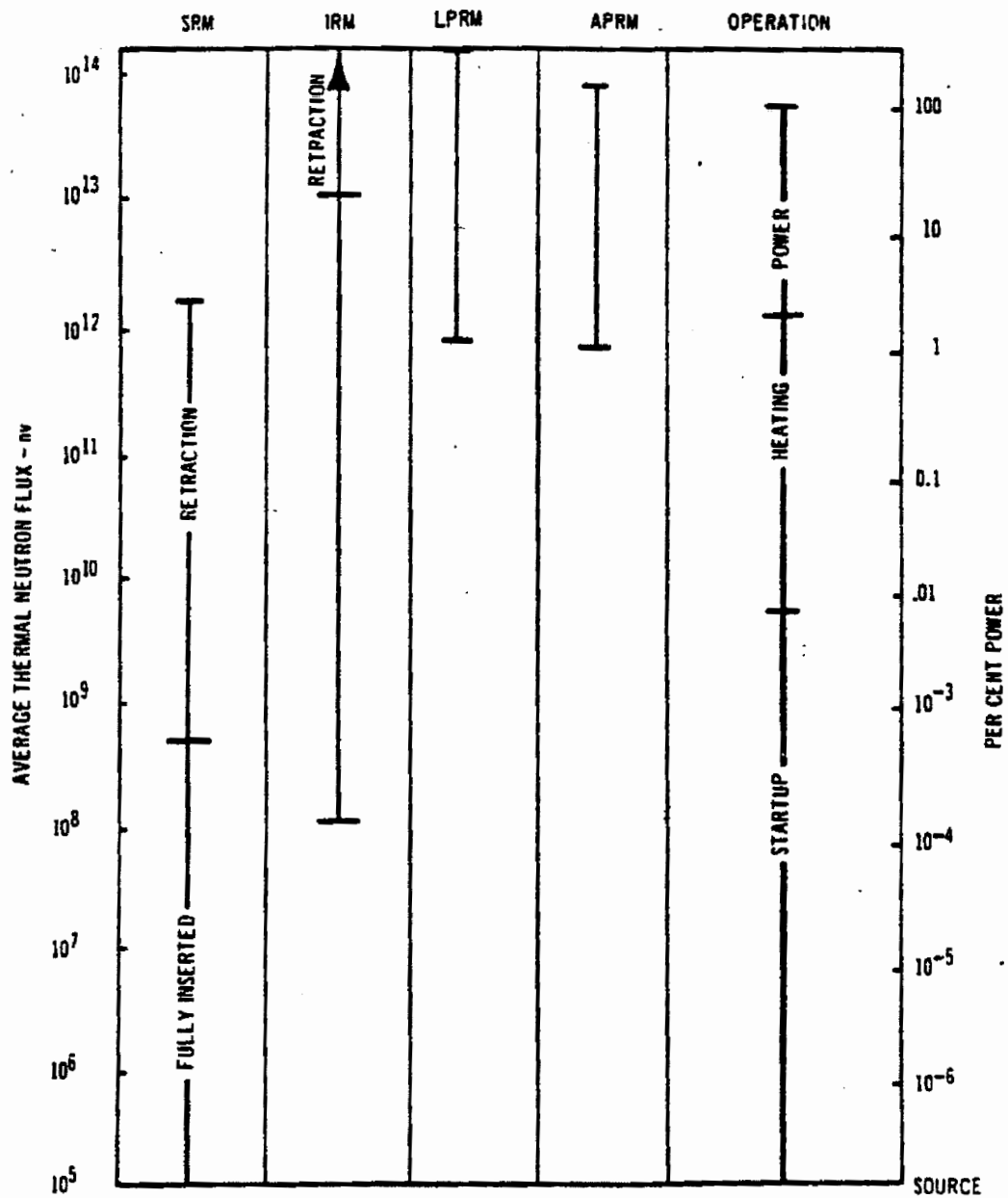
Figure 7.5-24

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BFN-22

Figures 7.5-24a through 7.5-24f  
(Deleted by Amendment 22)

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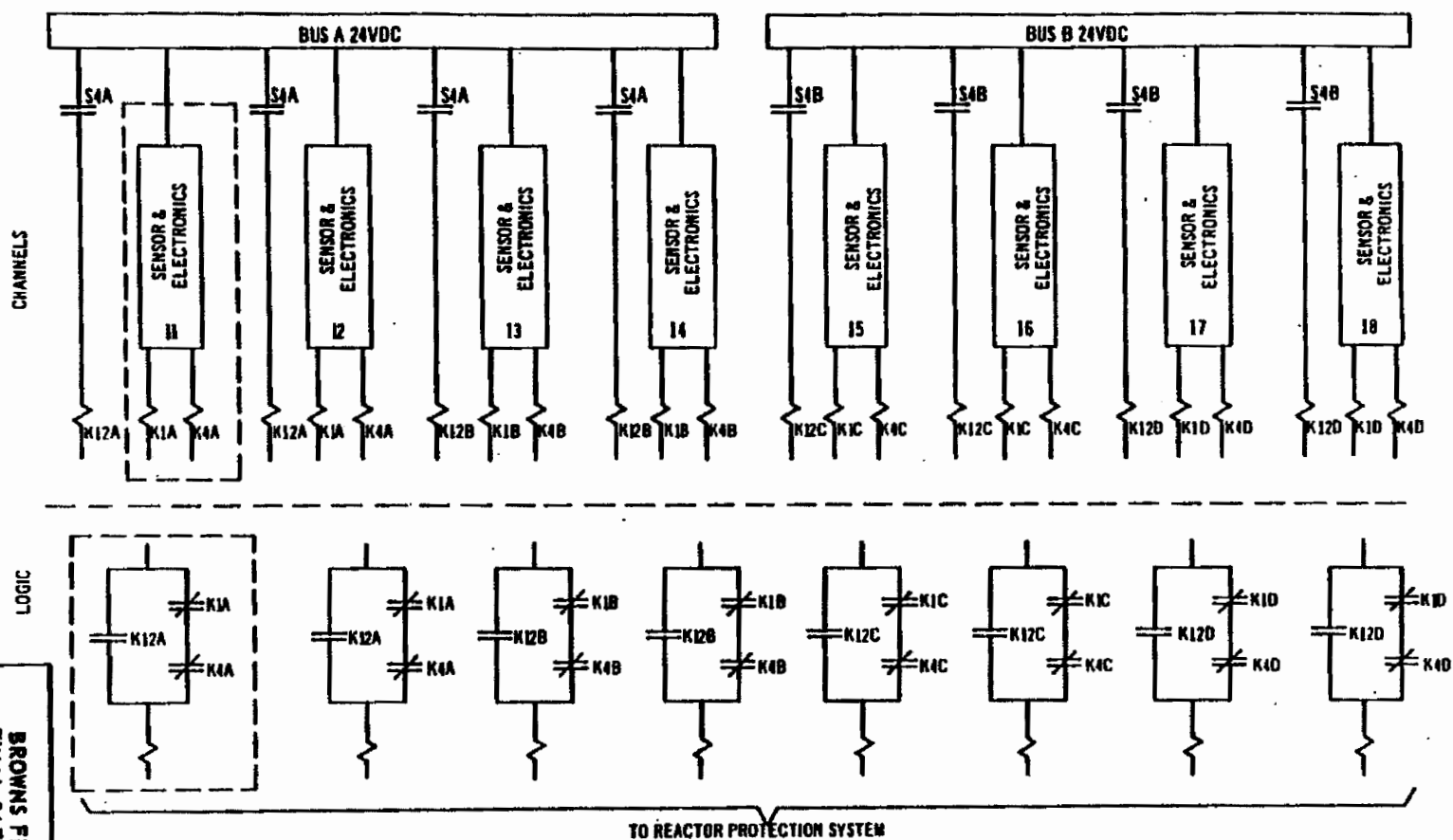
AMENDMENT 16

**BROWNS FERRY NUCLEAR PLANT  
FINAL SAFETY ANALYSIS REPORT**

Ranges of Neutron Monitoring System  
FIGURE 7.5-25



# AMENDMENT 16



LEGEND: K1A, B, C, D - INOPERATIVE TRIP  
 K4A, B, C, D, - UPSCALE TRIP  
 S4A, B - BYPASS SWITCH

NOTE: CONTACTS ALSO SHOWN IN NORMAL OPERATION POSITION

BROWNS FERRY NUCLEAR PLANT  
 FINAL SAFETY ANALYSIS REPORT

Typical IRM Circuit Arrangement  
 for Reactor Protection System Input

FIGURE 7.5-26

BFN-22

Figure 7.5-27  
(Deleted by Amendment 22)

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BFN-22

Figure 7.5-28  
(Deleted by Amendment 22)

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