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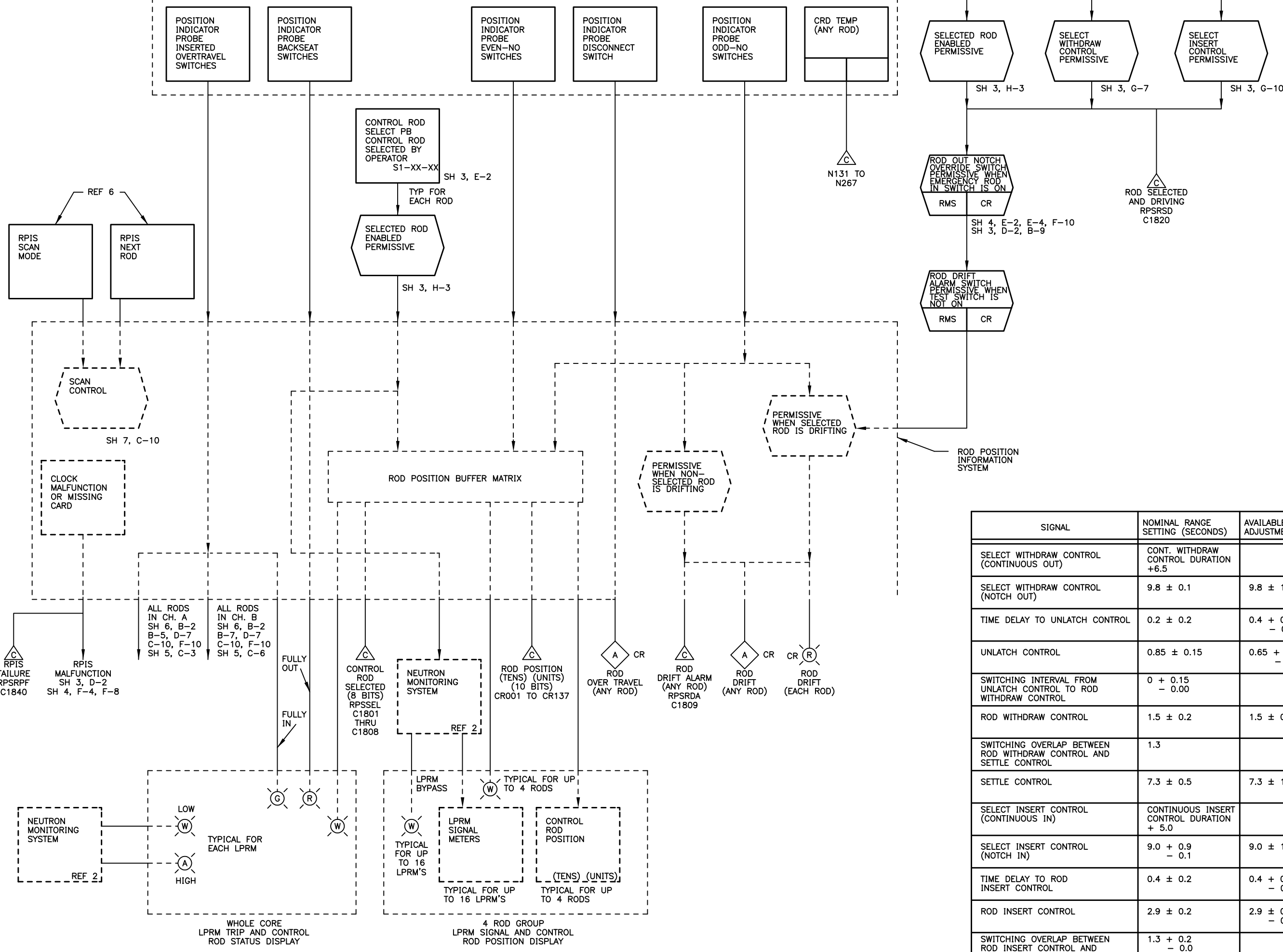
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CONTROL ROD POSITION INDICATOR PROBE (TYP FOR EACH ROD) (REF 5 & 7) NOTE 2



SIGNAL	NOMINAL RANGE SETTING (SECONDS)	AVAILABLE RANGE ADJUSTMENT (SECONDS)
SELECT WITHDRAW CONTROL (CONTINUOUS OUT)	CONT. WITHDRAW CONTROL DURATION +6.5	
SELECT WITHDRAW CONTROL (NOTCH OUT)	9.8 ± 0.1	9.8 ± 1.0
TIME DELAY TO UNLATCH CONTROL	0.2 ± 0.2	0.4 + 0.6 - 0.4
UNLATCH CONTROL	0.85 ± 0.15	0.65 + 0.35 - 0.15
SWITCHING INTERVAL FROM UNLATCH CONTROL TO ROD WITHDRAW CONTROL	0 + 0.15 - 0.00	
ROD WITHDRAW CONTROL	1.5 ± 0.2	1.5 ± 0.5
SWITCHING OVERLAP BETWEEN ROD WITHDRAW CONTROL AND SETTLE CONTROL	1.3	
SETTLE CONTROL	7.3 ± 0.5	7.3 ± 1.0
SELECT INSERT CONTROL (CONTINUOUS IN)	CONTINUOUS INSERT CONTROL DURATION + 5.0	
SELECT INSERT CONTROL (NOTCH IN)	9.0 + 0.9 - 0.1	9.0 ± 1.0
TIME DELAY TO ROD INSERT CONTROL	0.4 ± 0.2	0.4 + 0.6 - 0.4
ROD INSERT CONTROL	2.9 ± 0.2	2.9 ± 0.6 - 0.4
SWITCHING OVERLAP BETWEEN ROD INSERT CONTROL AND SETTLE CONTROL	1.3 + 0.2 - 0.0	
SETTLE CONTROL	5.8 ± 0.5	5.8 ± 1.5



UNLATCH CONTROL - - - - -
 ROD WITHDRAW CONTROL - - - - -
 SETTLE CONTROL - - - - -
 ROD INSERT CONTROL - - - - -
 SETTLE CONTROL - - - - -

TABLE I FUNCTIONS OF CONTROL ROD TIMING

* THIS DRAWING GENERATED BY NPPD

- NOTES:
- THE ROD CIRCUIT SHALL BE DESIGNED TO INSURE THAT:
 - ONLY ONE ROD ROD MAY BE SELECTED AT A TIME.
 - WHEN MOVEMENT IS INITIATED THE SELECTED ROD SHALL BE SEALED IN TO INHIBIT SELECTION OF ANOTHER ROD DURING THE MOVEMENT CYCLE (EXCEPT FOR THE LOSS OF CONTROL CIRCUIT POWER).
 - EACH CONTROL ROD, AS IT TRAVELS UP (INSERTED) OR DOWN (WITHDRAWN) PASSES BY A NUMBER OF SWITCHES. THE TOP TWO POSITION SWITCHES ARE CALLED "OVERTRAVEL" AND THE BOTTOM TWO POSITION SWITCHES ARE CALLED "WITHDRAWN". BACKSEAT AND DISCONNECT SWITCHES IN BETWEEN ARE DIVIDED INTO ODD (DRIFT) AND EVEN (LATCH) POSITIONS. AS THE ROD TRAVELS OVER ANY SWITCH AN INDICATING SIGNAL IS ACTUATED.
 - FOR LOCATION AND IDENTIFICATION OF INSTRUMENTS SEE INSTRUMENT DATA SHEET LISTED IN MPL FOR EACH INSTRUMENT.
 - DESIGNATIONS LISTED ARE PER RPIS/RWM DATABASE.

- REFERENCE DOCUMENTS
- MPL NO.
- 104R907BB P&ID CONTROL ROD DRIVE HYD SYSTEM
 - 729E223BB NEUTRON MONITORING SYSTEM IED
 - FEEDWATER CONTROL SYSTEM IED
 - 6-1 DESIGN SPEC FEEDWATER CONT SYSTEM
 - 3-5 DESIGN SPEC CONTROL ROD DRIVE HYD SYSTEM
 - 9-40-1 PROCESS COMPUTER SYSTEM INPUT REQUIREMENTS
 - 104B2505 CONNECTION DIAGRAM POSITION INDICATOR PROBE
 - 209A4756 LOGIC SYMBOLS
 -
 - 730E805BA NEUTRON MONITORING SYSTEM FCD
 - 729E222BB REACTOR PROTECTION SYSTEM FCD

INFORMATION ONLY

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REVISIONS

** FOR PREVIOUS REVISIONS, SEE SUPERSEDED CARDS.

NO.	REV & REDRAWN PER	DCN	DR	JAC	WCF	DATE
**	N02	REV & REDRAWN PER	APA	DCN	C93-1814	DR JAC WCF 10-26-93
		REVISIONS	DFT	CKD	APP	DATE
		DCN REVISIONS BY N.P.P.D.				

SIGNIFICANT NUMBER GROUP 1 2 3 4 5 6	DRAWN DR DATE 10-12-93	GENERAL ELECTRIC* COOPER NUCLEAR STATION FUNCTIONAL CONTROL DIAGRAM CONTROL ROD DRIVE HYDRAULIC SYSTEM	REVISION NO. 1 FILED 729E471BB SH. 1
	CHECKED DATE		
	APPROVED DATE		
	REVISION NO. 2		

CARD FILE: CO011080