

LOGIC SYMBOLS

SYMBOL	LOGIC FUNCTION	DESCRIPTION
	OR	A DEVICE WHICH PRODUCES AN OUTPUT WHEN ANY ONE INPUT (OR MORE) EXISTS.
	NOT	A DEVICE WHICH PRODUCES AN OUTPUT ONLY WHEN THE INPUT DOES NOT EXIST.
	AND	A DEVICE WHICH PRODUCES AN OUTPUT ONLY WHEN EVERY INPUT EXISTS.
	COINCIDENCE (2 OUT OF 3 SHOWN)	A DEVICE WHICH PRODUCES AN OUTPUT WHEN THE PRESCRIBED NUMBER (OR MORE) OF INPUTS EXIST (EXAMPLE: 2 INPUTS MUST EXIST FOR AN OUTPUT).
	ADJUSTABLE TIME DELAY	A DEVICE WHICH PRODUCES AN OUTPUT FOLLOWING A DEFINITE INTENTIONAL TIME DELAY AFTER RECEIVING AN INPUT.
	OFF RETURN MEMORY	A DEVICE WHICH RETAINS THE CONDITION OF OUTPUT CORRESPONDING TO THE LAST ENERGIZED INPUT (REGARDLESS OF POWER INTERRUPTION) UPON INTERRUPTION OF POWER; CONDITION STATUS IS MAINTAINED (NO RESET OCCURS) AND THE SAME OUTPUT SIGNAL IS RE-ESTABLISHED WHEN POWER IS RESTORED.
	RETENTIVE MEMORY	A DEVICE WHICH RETAINS THE CONDITION OF OUTPUT CORRESPONDING TO THE LAST ENERGIZED INPUT (REGARDLESS OF POWER INTERRUPTION) UPON INTERRUPTION OF POWER; CONDITION STATUS IS MAINTAINED (NO RESET OCCURS) AND THE SAME OUTPUT SIGNAL IS RE-ESTABLISHED WHEN POWER IS RESTORED.
	RETENTIVE MEMORY WITH ACTUATION BLOCK	A DEVICE HAVING RETENTIVE MEMORY AND ACTUATION SIGNAL BLOCK LOGIC FUNCTIONS AS INDICATED BY THE DIAGRAM BELOW.

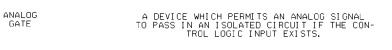
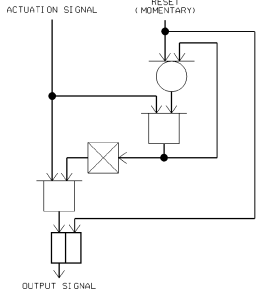
ADDITIONAL SYMBOLS

	INSTRUMENT CHANNEL BISTABLE
	OUTPUT INDICATOR
	BISTABLE OUTPUT IS A LOGIC '1' WHEN THE MEASURED PARAMETER IS GREATER THAN THE SETPOINT VALUE.
	BISTABLE OUTPUT IS A LOGIC '1' WHEN THE MEASURED PARAMETER IS LESS THAN THE SETPOINT VALUE.
	BISTABLE OUTPUT IS A LOGIC '1' THEN THE MEASURED PARAMETER DEVIATES FROM THE NORMAL VALUE BY MORE THAN THE SETPOINT AMOUNTS
	SAME AS ABOVE EXCEPT WITH AN AUTOMATICALLY ADJUSTED SETPOINT
	SAME AS ABOVE EXCEPT WITH REQUIRED HYSTERESIS.
	NON-INSTRUMENT BISTABLE
	OUTPUT INDICATOR (SAME AS EXPLAINED ABOVE)
	ALARM ANNUNCIATOR (ALARMS ON THE SAME SHEET WITH THE SAME SUBSCRIPT SHARE A COMMON ANNUNCIATOR WINDOW)
	REACTOR TRIP 'FIRST OUT' ANNUNCIATOR
	TURBINE TRIP 'FIRST OUT' ANNUNCIATOR
	INDICATOR LAMP
	A - ACTUATION STATUS LIGHTS, T - TRIP STATUS LIGHTS, P - PERMISSIVE STATUS LIGHTS, B - BYPASS STATUS LIGHTS
	COMPUTER INPUT
	LOGIC INFORMATION TRANSMISSION
	ANALOG INFORMATION TRANSMISSION
	ANALOG DISPLAY
	I - ANALOG INDICATOR, R - RECORDER, R2 - RECORDER 2 PEN, R3 - RECORDER 3 PEN, R8 - RECORDER 8 POINT
	ANALOG SUMMER

DEVICE FUNCTION LETTERS AND NUMBERS

FB	FLOW CHANNEL
LB	LEVEL CHANNEL
NC	NUCLEAR CHANNEL
PB	PRESSURE CHANNEL
RC	RADIATION CHANNEL
SB	SPEED CHANNEL
TB	TEMPERATURE CHANNEL
ZB	POSITION CHANNEL
Z8	ELECTRIC OPERATED VALVE
Z7	UNDERVOLTAGE RELAY
Z3	POSITION SWITCH

52	AC CIRCUIT BREAKER
63	PRESSURE SWITCH
71	LEVEL SWITCH
80	FLOW SWITCH
81	UNDERFREQUENCY RELAY



GENERAL NOTES (FOR ALL SHEETS)

- ON ALL LOGIC CIRCUITS THE INDICATED ACTUATION OF A SYSTEM OR DEVICE OCCUR WHEN A LOGIC '1' SIGNAL IS PRESENT EXCEPT WHERE INDICATED OTHERWISE. ALL BISTABLES ARE "DE-ENERGIZED TO ACTUATE" SUCH THAT A LOGIC '1' SIGNAL IS DEFINED TO BE PRESENT WHEN THE BISTABLE OUTPUT VOLTAGE IS OFF.
- EXCEPT WHERE INDICATED OTHERWISE, THE FOLLOWING IS TRUE: ALL LOGIC CIRCUITS ARE REDUNDANT, THAT IS, EVERY LOGIC CIRCUIT SHOWN HAS A DUPLICATE LOCATED IN A SEPARATE CABINET. ALL BISTABLES, CIRCUIT BREAKERS, ANNUNCIATORS, COMPUTER INPUTS, AND INDICATOR LAMPS ARE NOT REDUNDANT. MANUAL CONTROLS DO NOT HAVE REDUNDANT ACTUATORS, BUT DO HAVE REDUNDANT CONTACTS WHERE LOGIC IS REDUNDANT. ALL INDICATOR LAMPS, ANNUNCIATORS, AND COMPUTER INPUTS ARE CONNECTED TO BOTH TRAINS (WHERE LOGIC IS REDUNDANT) SO THAT A SIGNAL IN EITHER TRAIN WILL ACTUATE.
- WHEREVER A PROCESS SIGNAL IS USED FOR CONTROL AND IS DERIVED FROM A PROTECTION CHANNEL, ISOLATION MUST BE PROVIDED.
- THIS SET OF DRAWINGS ILLUSTRATES THE FUNCTIONAL REQUIREMENTS OF THE REACTOR CONTROL AND PROTECTION SYSTEM (INCLUDING ENGINEERED SAFEGUARDS). THESE DRAWINGS DO NOT REPRESENT ACTUAL HARDWARE IMPLEMENTATION. FOR HARDWARE IMPLEMENTATION, REFER TO THE FOLLOWING LIST:
 FUNCTIONAL DIAGRAM BLOCK OR WIRING DIAGRAM
 REACTOR PROTECTION SYSTEM DRAWING NUMBERS: 565048, 565050, 565051, 5756037, 1189E15, 271C335, 7243058, 1984H37
 REACTOR CONTROL SYSTEM DRAWING NUMBERS: 565052, 271C335, 8756037
- FOR THIS SET OF DRAWINGS ALL SWITCHES, PUSHBUTTONS, ANNUNCIATORS, AND INDICATORS (EXCEPT FOR THE N.E.S. PROCESS SYSTEMS INDICATORS, CONTROLLERS, AND MANUAL-AUTO STATIONS) WHICH ARE MOUNTED ON THE MAIN CONTROL BOARD ARE SUPPLIED BY OTHERS. IN ADDITION TO THE ABOVE, SCOPE BY OTHERS IS ALSO INDICATED DIRECTLY ON SHEETS WITHIN THIS SET.

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ESSENTIAL DRAWING

REVISIONS: INCORPORATED CHANGE PER: THIS Dwg. SUPERSEDES: P-744-0008 REV. 05
 01/08/82 01/08/82 7243058, 1984H37 01/08/82 SUPERSEDES BY

REVISION NOTES: ELECTRONICALLY CONVERTED PER AP 05-010

WOLF CREEK NUCLEAR OPERATING CORPORATION

ELECTRONIC APPROVAL

USAR FIG. 7.2-1-01
 M-744-00018 W06

SNUPPS PROJECTS
 FUNCTIONAL DIAGRAM
 INDEX AND SYMBOLS

SCALE: NONE DRAWING NUMBER: 7250D64 SHEET: 1 REV: 1

22934 D SIZE

