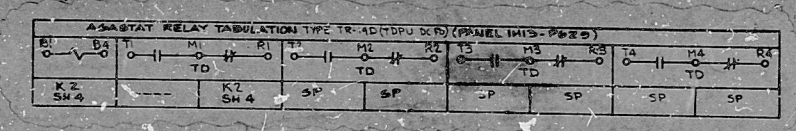
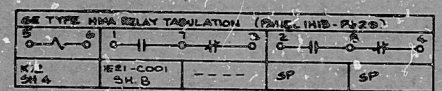


REF DESIG	DEVICE	FUNCTION	SWITCH	INDICATOR LAMPS	LOCATION
E21-F001	LPES PUMP SECTION VALVE	51	X X	X X	12
E21-F002	LPES INJECTION SUPPLY VALVE	52	X X	X X	11
E21-F003	TESTABLE CHECK VALVE	53	X X	X X	10
E21-F011	XIR-LOW TO SUPPLY VALVE	54	X X	X X	10
E21-F012	TEST RETURN TO SUPPLY VALVE	55	X X	X X	13
E21-L001	LPES PUMP	56	X	X	8
E21-L002	WATER LEG PUMP	57	X	X	9
E21-L003	REBERT	58			4
E21-L004	LPES INITIATION LOGIC	59			4
E21-L005	LPES OUT OF SERVICE	60			5
REMOVED					
E21-L006	DIESEL OIL TEST	61			4
E21-L007	LOSS OF PHA OR OVD OF ANY LPES VALVE	62			5
E21-L008	LPES/ROA IN TEST STATUS	63			5
E21-L009	LOGIC POWER FAILURE	64			5
E21-L010	MOTOR INHALE NOT IN SERVICE AS TEST VALVE	65			5
E21-L011	LPES PUMP MOTOR AND TEST VALVE	66			5
E21-L012	MINIMAL LPES INJECTION VALVE	67			9
REMOVED					
E21-L013	WATER LEG PUMP AND TEST VALVE	68			9
E21-L014	TRIP UNIT IN CAL OR OVD	69			5
E21-L015	TRIP UNIT CR OF THE LPES VALVE	70			5
E21-L016	WATER AVAILABILITY	71			2,4
E21-L017	LOGIC POWER	72			4
E21-L018	LOGIC POWER FAILURE	73			5
E21-L019	UNEXPECTED PUMP TRIP	74			8
E21-L020	LOGIC POWER FAILURE	75			8
E21-L021	LOGIC POWER FAILURE	76			8



**LEGEND**

LOCATION USED ONLY WHEN NECESSARY FOR CLARITY

XXXXX PART NUMBER OR TERMINAL NUMBER

SYSTEM NUMBER OR TERMINAL BOARD IDENT

MATCH NUMBER

INDICATES SIGNAL COMMON ISOLATED BUS

INDICATES PANEL (CHASSIS) GROUND BUS

XXX INDICATES PGC LINE CODE WHEN REQUIRED

INDICATES PERFORMANCE MONITORING SYSTEM COMPUTER INPUT

DIV. 1, CLASS 1E, CLEAR SAFETY RELATED

DIV. 1, ASSOCIATED (TREAT AS CLASS 1E)

NON-SAFETY RELATED

TRANSIENT TEST PANEL

INTERNAL WIRE MARK

EXTERNAL WIRE MARK

- NOTES**
- VALVES
    - ALL MANUALLY OPERATED VALVES SHALL HAVE STATUS LIGHTS ON THE CONTROL ROOM PANEL. STATUS LIGHTS SHALL BE AS FOLLOWS:
      - RED ON FOR OPEN POSITION
      - RED & GREEN ON FOR INTERMEDIATE POSITION
      - GREEN ON FOR CLOSED POSITION
    - VALVE CIRCUITS ARE BASED ON LIMITORQUE TYPE SHO CONTROLS.
    - NOTIVE POWER FOR VALVES IN EACH SYSTEM SHALL ORIGINATE FROM THE SAME BUS SUPPLYING PUMP POWER.
    - VALVE MOTOR CIRCUITS ARE PROTECTED WITH SHORT CIRCUIT PROTECTIVE TRIPS AND LOSS OF VOLTAGE ALARMS.
  - PUMP
    - STATUS LIGHTS SHALL BE LOCATED IN THE CONTROL ROOM AND SHALL BE AS FOLLOWS:
      - RED ON FOR RUNNING
      - GREEN ON FOR STOPPED
    - PUMP MOTORS SHALL BE TRIP-CRUIED WITH OVERLOAD PROTECTION. OVERLOAD RELAYS TO BE APPLIED SO AS TO MAINTAIN POWER TO MOTOR AS LONG AS POSSIBLE WITHOUT IMMEDIATE DAMAGE TO MOTOR OR HARM TO EMERGENCY POWER SYSTEM.
  - SEE REFERENCE 3 FOR DEVICE AND WIRING SEPARATION REQUIREMENTS.
  - PINS "01", "02", "03" ARE JUMPED AT PLUG (REF. 6).
  - INTRA-PANEL PROCESS INSTRUMENTATION (4-20MA) SIGNAL LEADS SHALL BE BUNDLED & ROUTED SEPARATELY FROM AC & DC POWER WIRING.
  - REMOVED
  - UNLESS OTHERWISE INDICATED THE FOLLOWING REFERENCE DESIGNATIONS SHOWN ON THIS DIAGRAM ARE PREFIXED WITH H21A:
 

REFERENCE	NAME	REFERENCE	NAME
FXX	FUSE	CPXX	CONTROL PANEL
SWX	SWITCH	PXX	PUMP SUPPLY
JXX	JUNCTION	ZXX	TRIP UNIT FILE
RSXX	RELAY		
SRXX	SIGNAL RESISTOR UNIT		
DSXX	DIODE		
XXI	PGC LINE CODE (SEE LEGEND)		
ATXX	ISOLATORS		
  - REMOVED
  - ALL IND LIGHTS SHOWN ARE SUPPLIED WITH PANEL. SEE PDD 164C385B AND HOLDER 204B65B
  - INDIVIDUAL GROUND WIRES TO BE RUN FROM TERMINALS 3 AND 4 TO COMMON BUS BAR. TERMINALS 1, 2, 5, 6 & 7 FOR EACH TERMINAL BOARD ARE PROVIDED.
  - LAMP: TO BE LOCATED BELOW LPT'S ASSEMBLY.
  - LOADS SHOWN ON POWER DISTRIBUTION CIRCUITS ARE ESTIMATES AND NOT MEASURED. CONFIRMED AT LOADS BASED ON 80%.
  - REMOVED
  - REMOVED
  - REMOVED
  - FOR LIGHTS SEE DWG 1581003. LIGHTS ARE SUPPLIED WITH INTEGRAL SWITCH FOR TESTING. 120 VOLTS NEAR LAMP.
  - REMOVED
  - REMOVED
  - REMOVED
  - REMOVED
  - ALPHABETICAL WIRE MARKS ARE PREFIXED BY SUB-SYSTEM (LINE NO. EX. E21A07X1).
  - POTENTIAL WIRE MARKS ARE PREFIXED BY SUB-SYSTEM (LINE NO. EX. E21A07X1).
  - FOR GRAPHIC STANDARDS REFER TO DWG. 0-200-001
  - FOR ANNUNCIATOR CIRCUITS, LINE CODES AND TERMINATIONS, FOR ANNUNCIATOR LOGIC CABINET H13-P630 AND ANNUNCIATOR WINDOWS SEE 80P SYSTEM R61

PRC APERTURE CARD

- REFERENCE DOCUMENTS**
- E21-1010 LOW PRESS CORE SPRAY SYS P610.
  - E21-1030 CORE SPRAY SYSTEM P62.
  - E21-1040 SEPARATION FOR PROTECTION SYSTEMS, ELECTRICAL EQUIP.
  - E21-1010 NUCLEAR BOILER P510.
  - E21-1050 RESERVE HEAT REMOVAL SYS ELEM DIAG (E21A). 0-200-055
  - 13002344 TEST SHI SHX ASSEMBLY.
  - 462-0010 SPECIAL WIRE & CABLE SPEC.
  - 001-1060 NUCLEAR POWER PLANT PROTECTION SYSTEM.
  - 001-1060 AUTO DEPRESSURIZATION SYS ELEM DIAG (E21). 0-200-011
  - 001-1060 NEAR CORE LEAK CIRC SYS ELEM DIAG (E21). 0-200-012
  - 102-4950 LOCAL INSTRUMENT PANELS.
  - E21-1030 LEAK DETECTION SYSTEM ELEM DIAG (E21A). 0-200-010
  - 001-1060 NON-CORE STRANDED SYSTEM ELEM DIAG (E21A). 0-200-010
  - 001-1060 ROD CONTROL & INFORMATION SYSTEM ELEM DIAG. 0-200-010
  - E21-1010 LEAK DETECTION SYSTEM, H/O.
  - E21-1030 LEAK DETECTION SYSTEM, ELEM DIAG (E21).
  - E21-1060 LEAK DETECTION SYSTEM, ELEM DIAG (E21).
  - E21-1060 LEAK DETECTION SYSTEM, ELEM DIAG (E21).
  - E21-1060 LEAK DETECTION SYSTEM, ELEM DIAG (E21).
  - E21-1060 LEAK DETECTION SYSTEM, ELEM DIAG (E21).

LAST LINE CODE USED ON THIS SHEET: NONE

6/30/77	CONSTRUCTION	7/2
	OPERATIONAL	
	RELEASE FOR	
	DATE	

THE CLEVELAND ELECTRIC & CHEMICAL CO.  
 PERRY NUCLEAR POWER PLANT  
 EASTMAN, MASSACHUSETTS  
 LOW PRESSURE CORE SPRAY SYSTEM  
 NOTES & ELECTRICAL SYMBOLS

REVISED TABULATION AS PER THE DWG	ADDED NOTE 23	REVISION	DESCRIPTION	DATE
E Y Z				



RIDS

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