



200-00	STATION NO. 100, PAR. 110, SINGLE LINE
200-01	SYSTEM CONTROL & LOGIC DIAGRAMS
200-02	GENERATION, SINGLE LINE DIAGRAM
200-03	23715EM CONTROL MATRIX
200-04	WSSD CRT ARRANGEMENT TYPICAL SCHEMATIC

2WJONGEAR MANUFACTURER, ITE EMPIRIAL CORPORATION
 CONTRACT NUMBER 75K5-85583

- NOTES:
1. ALL CIRCUIT BREAKERS ARE 1200 AMPS CONTINUOUS, 500 MVA INTERLOCKING, 7.2 KV NOMINAL, 20000 AMPS MOMENTARY, 25000 AMPS CLOSE AND LATCH. THE SWITCHGEAR MAIN BUS RATING IS 1200 AMPS CONTINUOUS, 30,000 AMPS MOMENTARY AT 7.2 KV NOMINAL.
 2. AUTOMATIC TRANSFER BETWEEN POWER SOURCES IS INITIATED BY BUS UNDERVOLTAGE (27V) RELAYS AND IS FROM NORMAL TO ALTERNATE OR STANDBY, OR FROM ALTERNATE TO STANDBY. RELAYS 27V PREVENTS AUTOMATIC TRANSFER TO A DEAD ALTERNATE. RELAYS 27V PREVENTS VOLTAJE RELAYS 27V PREVENTS 52A AND 52E FROM CLOSING UNTIL BUS VOLTAGE IS LESS THAN 30% OF NOMINAL RETURN TO NORMAL OR ALTERNATE IS MANUAL.
 3. MANUAL TRANSFER BETWEEN NORMAL AND ALTERNATE SUPPLY AND STANDBY TO NORMAL OR ALTERNATE (5-PAST 5.6 CYCLES) AND IS INITIATED BY A CLOSE COMMAND TO THE SELECTED BREAKER. THIS COMMAND WILL SIMULTANEOUSLY TRIP THE CLOSED BREAKER AND COMPLETE THE CLOSE CIRCUIT OF THE SELECTED BREAKER. TRANSFER FROM THE STANDBY POWER SOURCE AND PARALLELING OF THE STANDBY WITH NORMAL OR ALTERNATE SUPPLIES IS DONE AT THE DIESEL GENERATOR CONTROL PANEL USING SYNCHRONIZING SWITCHES. ELECTRICAL INTERLOCKS IN THE SWITCHGEAR PREVENT PARALLELING THE NORMAL AND ALTERNATE POWER SOURCES.
 4. EACH DEVICE ASSOCIATED WITH THE MAIN BUS, AND THE A, B, C, OR D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, IS PART OF THE 6.9 KV CLASS I.E. AC AND PAR DISTRIBUTION SYSTEM WITH UNIT AND SYSTEM DESIGNATION. THE DEVICE UNIT IS FORMED BY PREFIXING THE DESIGNATION NUMBER ON THE UNIT WITH I.E. EXCEPT AS NOTED. ALL OTHER UNITS WITH THEIR ASSOCIATED DEVICES ARE PART OF THE SYSTEM SUPPLY. THE UNIT IS FORMED BY PREFIXING THE DESIGNATION NUMBER ON THE UNIT WITH THE UNIT AND SYSTEM DESIGNATION SHOWN IN THE HEAD ON SYMBOL. EXCEPT AS NOTED, THE SNCR AND L.O. DESIGNATIONS ARE FORMED AS FOLLOWS USING THE PHL NO. [X], AND THE TRIP DESIGNATION (Y), OR Z: I.E.G-52A-021-1.
 5. THIS EQUIPMENT IS CLASS I.E.
 6. RELAYS SHALL BE TYPES SHOWN ON THIS DRAWING.
 7. A TRIP SIGNAL WILL BE INITIATED ONLY WHEN THE NOR OR ALT BKR IS CLOSED.
 8. A TRIP SIGNAL TO THE DSL GEN IS GENERATED ONLY WHEN THE DSL GEN BKR IS OPEN.

- SYMBOLS:
- ANN - THIS FUNCTION TO BE MONITORED BY ONE OR MORE ANNUNCIATION OR ALARM SYSTEMS.
 - HEA - BREAKERS NORMALLY IN THE TRIPPED STATE WITH SPRINGS DISCHARGED AND CHARGING MOTORS SWITCHED OFF.
 - HEA - INTERFACE FOR STATUS, ENVIRONMENTAL AND ALARM MONITORING SYSTEMS (SCADA).
 - HEA - INTERFACE FOR REMOTE CONTROL.
 - HEA - REMOTE METER CONNECTION.
 - HEA - KEY INTERLOCK.
 - HEA - UNIT AND SYSTEM DESIGNATION.

5. 500
 1. 27VX-172C-B RELAY, MADE MINOR CHANGES.
4. 773
 REMOVED 27V AND ADDED EARLY RELAY.
3. 52A, 52E
 CHANGED RELAY PROTECTION FOR THE 20000VA, 55KV, 400V XFM, INC. THE NEW AND MODIFIED DESIGN REQUIREMENTS FOR BUS TRANSFERS AND 52A AND 52E. CORRECTED UNIT AND SYSTEM DESIGNATIONS AND IMPLEMENTED ANTICIPATORY RELAY SCHEME. OTHER MINOR CHANGES.
2. 303, 304, 305
 INCREASE KVA RATING OF MED TO LOW VOLTAGE XFM FROM 400-134. SELECTED ALT FOR TO INTRATE PWR STA PER ECN 84. DELETED PLY WIFE RELAYS PER ECN 84. IMPROVED BY RELAYS PER ECN 102. ENHANCED OCCASIONALITY OF PWR FAIL TO EAT ESP. TRIP PZ ECN 102. MINOR REV PER 311-CHANGES.
1. 500S, 500T, 500U, 500V
 CHG DC CONT PWR TRANS SW FROM AUTO TO MAN. PER ECN 64. INCORPORATED 1.5 AMPS PER ECN 44. INCORPORATED UNID SYS. CEN REV (SEE REV. 65) PER ECN 51.

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AUXILIARY BUILDING
 UNIT 1
 SINGLE LINE DIAGRAM
 6900V SWITCHGEAR IETI-B
 IEG-EMVS-07-B

BELLEFONTE NUCLEAR PLANT TENNESSEE VALLEY AUTHORITY DIVISION OF ENGINEERING DESIGN		
DESIGNED BY M. J. ...	RECOMMENDED BY L. ...	APPROVED BY E. R. ...
KNOWLEDGE DATE: 3-25-85		
45W717-2	FSAR	2AW1723-EG-1

PRINTS REQ'D - 1
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Control # 83040505X
 Date 3-25-85
 REGULATORY DOCKET FILE

FSAR FIG 831-7
 INSPECTED AND APPROVED FOR ISSUE
 R.M. Holger
 DESIGN PROJECT MANAGER