



REFERENCE DRAWINGS	
2500-00	STATION A.C. BUS, P.M. 115, SINGLE LINE
2500-00-01	SYSTEM'S CONTROL & LOGIC DIAGRAMS
2500-00-02	GEN. GENERATION, SINGLE LINE DIAGRAM
2500-00-03	SYSTEM'S CONTROL & LOGIC DIAGRAMS
2500-00-04	WSSD CRT ARRANGEMENT TYPICAL SCHEMATIC

2WJONGEAR MANUFACTURER: ITE EMERALD CORPORATION
 CONTRACT NUMBER: 75K5-85583

- NOTES:
- ALL CIRCUIT BREAKERS ARE 1200 AMPS CONTINUOUS, 500 MVA INTERLOCKING, 7.2 KV NOMINAL, 20,000 AMPS MOMENTARY, 7,000 AMPS CLOSE AND LATCH. THE SWITCHGEAR MAIN BUS RATING IS 1200 AMPS CONTINUOUS, 30,000 AMPS MOMENTARY AT 7.2 KV NOMINAL.
 - AUTOMATIC TRANSFER BETWEEN POWER SOURCES IS INITIATED BY BUS UNDERVOLTAGE (27U) RELAYS AND IS FROM NORMAL TO ALTERNATE OR STANDBY, OR FROM ALTERNATE TO STANDBY. RELAYS 27U PREVENTS AUTOMATIC TRANSFER TO A DEAD ALTERNATE. RELAYS 27U PREVENTS AUTOMATIC TRANSFER FROM STANDBY TO NORMAL OR ALTERNATE UNTIL BUS VOLTAGES ARE LESS THAN 30% OF NOMINAL RETURN TO NORMAL OR ALTERNATE IS MANUALLY INITIATED.
 - MANUAL TRANSFER BETWEEN NORMAL AND ALTERNATE SUPPLY AND STANDBY TO NORMAL OR ALTERNATE IS INITIATED BY A CLOSE COMMAND 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.
 - EACH DEVICE ASSOCIATED WITH THE MAIN BUS AND THE A.C. BUS, OR TIE, CIRCUIT, IS PART OF THE 6.9 KV CLASS I.E. AC BUS AND DISTRIBUTION SYSTEM WITH UNIT AND SYSTEM DESIGNATION. THE DEVICE UNIT IS FORMED BY PREFIXING THE DESIGNATION NUMBER ON THE BUS WITH 'U', EXCEPT AS NOTED. ALL OTHER DEVICES WITH THEIR ASSOCIATED DEVICES ARE PART OF THE SYSTEM SUPPLY. THE UNIT IS FORMED BY PREFIXING THE DESIGNATION NUMBER ON THE BUS WITH THE UNIT AND SYSTEM DESIGNATION SHOWN IN THE DESIGN SYMBOL. EXCEPT AS NOTED, THE SWGR P.M. NO. UNIT DESIGNATIONS ARE FORMED AS FOLLOWS USING THE P.M. NO. [X], AND THE TRIP DESIGNATION [Y], OR [Z]:
 U: LEG-EMVS-071-B
 Y: LEG-EMVS-071-B
 Z: LEG-EMVS-071-B
 - THIS EQUIPMENT IS CLASS I.E.
 - RELAYS SHALL BE TYPES SHOWN ON THIS DRAWING.
 - A TRIP SIGNAL WILL BE INITIATED ONLY WHEN THE NOR OR ALT BKR IS CLOSED.
 - A TRIP SIGNAL TO THE DSG GEN IS GENERATED ONLY WHEN THE DSG 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 (SIS) (SIS).
 - HEA - INTERFACE FOR REMOTE CONTROL.
 - HEA - REMOTE METER CONNECTION.
 - HEA - KEY INTERLOCK.
 - HEA - UNIT AND SYSTEM DESIGNATION.

5	REMOVED 27U-172-B RELAY. MADE MINOR CHANGES.
4	REMOVED 27U-172-B RELAY. MADE MINOR CHANGES.
3	CHANGED RELAY PROTECTION FOR THE 2000KVA, 55KV, 480V XFMR, INC. THE NEW AND MODIFIED DESIGN REQUIREMENTS FOR BUS TRANSFERS AND UNIT AND SYSTEM DESIGNATION. IMPLEMENTED ANTICIPATORY RELAY SCHEME. OTHER MINOR CHANGES.
2	INCREASED KVA RATING OF MED-TO-LOW VOLTAGE XFMR PER ECN-134. SELECTED RELAY FOR TRIP AND L.O. BKR. DELETED PLT WIPE RELAYS PER ECN-134. IMPLEMENTED BY RELAYS PER ECN-134. DELETED RELAYS PER ECN-134. DELETED RELAYS PER ECN-134. DELETED RELAYS PER ECN-134.
1	CHG DC CONT PWR TRANS SW FROM AUTO TO MAN. PER ECN-64. INCORPORATED 1.5 AMPS PER ECN-44. INCORPORATED UNID SIS. CEN REV. SEE REV. CEN-134 PER ECN-134.

NO.	ECN NO.	DATE	DESCRIPTION	BY	CHKD
1	134	11/15/85	INCREASED KVA RATING OF MED-TO-LOW VOLTAGE XFMR PER ECN-134. SELECTED RELAY FOR TRIP AND L.O. BKR. DELETED PLT WIPE RELAYS PER ECN-134. IMPLEMENTED BY RELAYS PER ECN-134. DELETED RELAYS PER ECN-134. DELETED RELAYS PER ECN-134.		
2	134	11/15/85	INCREASED KVA RATING OF MED-TO-LOW VOLTAGE XFMR PER ECN-134. SELECTED RELAY FOR TRIP AND L.O. BKR. DELETED PLT WIPE RELAYS PER ECN-134. IMPLEMENTED BY RELAYS PER ECN-134. DELETED RELAYS PER ECN-134. DELETED RELAYS PER ECN-134.		

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

INSPECTED AND APPROVED FOR ISSUE
R.M. Holger
DESIGN PROJECT MANAGER

KNOWLEDGE DATE 3-25-85
REGULATORY DOCKET FILE