UNITS KEYED TO BUS
[illegible] THRU C
2TUX-04BA THRU C
EVM-04BA THRU B
EFU2-[illegible]
EIT-04BB THRU B

UNITS KEYED TO PANEL
ECT-04AA THRU C
ECT-04CA THRU C
ECT-04EA THRU C
ECT-04FA THRU C
ECT-04LA THRU C
ECT-04MA THRU C
ECT-04NA THRU C
ECT-04AA THRU C
ECT-04BA THRU C
ECT-04LA THRU C
ECT-04MA THRU C
ECT-04NA THRU C

NORMAL SUPPLY FROM 125V DC PWR DISTRIBUTION PNL (EU-EDP-93C (5WD625-EU-4)

ALTERNATE SUP FROM 125V DC PWR DISTRIBUTION PNL (EU-EDP-94C (5WD625-EU-3)

NORMAL SUPPLY FROM UNIT STA SERV XFMR 1B (XU-ET-2 (2WD504-1E-3)

ALTERNATE FROM RESERVE STA SERV XFMR 1B (XR-ET-2 (2WD502-EB-01)

TO 6900V SWGR 1TC (EB-EMVS-05 (2TWI726-EB-1)

TO CKT FR ON 6900V SWGR 1TC TO R. SUPPLY (2TWI724-EB-1)

TRIP & L.O. 52N 141 42A 47-52N-141

ANN.

HEA 1LP

RTB 52B1

2 YDT15

NO RELAY 1B5B (MAL PWR RELAY)

1XU-87-2A 2B 2C

ECT-04CA B C (3-2000-5Y)

PNL D

EFU2-141C EFU2 141D

EPT-141A B

2<7200-120V

EXT 141

ITE-270

HEA

27X 141

EVM 141

EAS 141

EAM 141A

TO UNIT STA SERV 1FNR 1B AUTO LOAD TAP CHANGER

PREVENTS MANUAL TRANSFER TO CLEAR BUS

PREVENTS AUTO AND MANUAL TRANSFER TO DEAD BUS

ECT-04AA B 2B (3-2000-5Y)

1XR-87-2A 2B 2C

EFU2-142C EFU2-142D

EPT-142A B

2<7200-120V

EFU2-142E

PNL B

(3-2000-5Y) ECT-141A B C

INITIATE TWO UNIT TRIP, ANN

ITE-51L

ITE-51

EM T 141

EAT 141

EAM 141A B

52B 141A

52N 141

52TX 141

HMA

62-141

AGASTAT TODE 0.1-1.5SEC

SUPV CLOSE OF 52A-142

TRIP & L.O. BKR 52N 141, 52N-151 L.O. 42A-142

ITE-51L

86N 141

TRIP & L.O. 52A 142, 52N-151 L.O. 52N-141

86A 142

ITE-51L

EM T 142

EAT 142

EAM 142A B

ESS 142A

EKP 142

ITE-51S

INITIATE TWO UNIT TRIP, ANN

(3-2000-5Y) ECT-142A B C

52N 142

ITE-51S

62-142

AGASTAT TODE 0.1-1.0 SEC

*SUPV CLOSE OF 52N-141

52A 142

52TX 142

HMA

NORM. STBY ALT.

43-048

EFU2-148E

EIL 148

125V DC

2000A BUS

XU-ECT-141A B C (3-6000-5A)

PNL C

PNL E PNL F PNL G PNL H PNL J PNL K PNL L PNL M PNL N

EFU2-ED1A EFU2-ED1B

EFU2-C04A B

EFU2-C05A B

EFU2-C02A B

EFU2-C02A B

EFU2-C03A B

52-ED1

52-003

52-004

52-005

52-002

52-002

52-15A

52-

52-003

52TX-003

52TX-004

52TX-005

52TX-002

52TX-002

52TX-15A

52TX-

52TX-003

EAM-ED1

EAM-003

EAM-004

EAM-005

EAM-002

EAM-002

EAM-15A

EAM-

EAM-003

EAS-ED1

EAS-003

EAS-004

EAS-005

EAS-002

EAS-002

EAS-15A

EAS-

EAS-003

EAT-003

EAT-004

EAT-005

EAT-002

EAT-002

EAT-

EAT-003

EMM 003

EMM 004

EMM 005

EMM 002

EMM 002

EMM 002

EMM 003

SIA-003

SIA-004

SIA-005

SIA-002

SIA-002

SIA-002

SIA-003

SIAX-003

SIAX-004

SIAX-005

SIAX-002

SIAX-002

SIAX-002

SIAX-003

ECT-003A B

ECT-004A B

ECT-005A B

ECT-002A B

ECT-002A B

ECT-002A B

ECT-003A B

(2-400-5Y)

(2-400-5Y)

(2-200-5Y)

(2-100-5Y)

(2-100-5Y)

(2-100-5Y)

(2-200-5Y)

TRIP SOLENOID

TRIP BREAKER

86-003 HEA 6P → ANN (NOTE 4)

86-004 HEA 6P → ANN

86-005 HEA 6P → ANN

86-002 HEA 6P → ANN

86-002 HEA 6P → ANN

86-003 HEA 6P → ANN

IEB-ECT-04EA B C

IEB-ECT-04FA B C

IEB-ECT-04GA B C

IEB-ECT-04HA B C

IEB-ECT-04JA B C

IEB-ECT-04KA B C

IEB-ECT-04LA B C

IEB-ECT-04MA B C

IEB-ECT-04NA B C

ITE-GR-5

5085 EDI

5085-003

5085-004

5085-005

5085-002

5085-002

5085-15A

5085-003

GND SENSOR 0.50 AMP P.U. TYP

BUS DIFF & H.V. RELS (THIS CHG)

27DC 04B

EVM-04BB

EFU2-04BD

27X-04B

EVT-04B

EVM-04BA

EVS-04B

27TX-04B

ITE-27N

27N-04B

27TX-04B

SUPV. TRIP OF MOTOR FOR

PERMITS TRANSFER WHEN BUS VOLT REDUCED TO 30 PERCENT

TRIPS MOTOR BKRS AFTER TIME DELAY

(TO WHICH MOTORS THIS

INITIATES AUTO TRANSFER FROM NORMAL TO ALTERNATE SUPPLY

EFU2-04B

PNL N

EFU2-04AB B

EFU2-04BB B

EPT-148A B

2<7200-120V

CL

EFU2-142F

PNL M

COL B-72-EL 649

SEE NOTE 6

853

OED 6900-480V,16KV SWYD DIST. XFMR. (30OKVA)OED-ET-09B (9N#0758/ED-01)

CED 6900-480V,500KV SWYD DIST XFMR (30OKVA) CED-ET-09B (9N#0758-ED-01)

BED 6900-480V,POWER STORES RHSE XFMR (1P3HVA)OED-ET-09B (BOW0740-ED-08)

2900 IKH CONDENSER C.W. PUMP 1C IKH-EMOT-003

2900 IKH CONDENSER CIRC WATER PUMP 1D IKH-EMOT-004

1750 ICM CONDENSATE BOOSTER PUMP 1B ICM-EMOT-005

950 ICM HOTWELL PUMP 1B ICM-EMOT-002

1250 ICO NO. 3 HEATER DRAIN PUMP 1B ICO-EMOT-003

IED 6900 480V XFMR THEM 2000 KVA IED-ET-1B (2TWI727-ED-1)

SPARE

700 ICE NO. 6 HEATER DRAIN PUMP 1B ICE-EMOT-003

FUTURE

FUTURE

FUTURE

PRINTS REQD — AS BUILT / PROJ

DWG. SIZE	F	H
H4		
C4		
E4		
A0		
C0		
E0	2	
H0		
B1		
D1		
F1		

REFERENCE DRAWINGS

2WD720-EP-1	PLANT AC AUXILIARY POWER SYSTEM - SINGLE LINE
5WD1740-EB	ELECTRICAL SYSTEM 1B - SCHEMATICS
1WD1709-EP	MWRS OAT ARRANGEMENT TYPICAL 1C/1A/1B
2TWD700-EB	SYSTEM EB CONTROL & LOGIC DIAGRAM

SWITCHGEAR MANUFACTURER: I-T-E IMPERIAL CORPORATION

CONTRACT NUMBER: 7545-85583

NOTES:

1. A MANUAL TRANSFER IS INITIATED BY A SINGLE CLOSE COMMAND TO THE SELECTED BREAKER. THE COMMAND WILL SIMULTANEOUSLY TRIP THE CLOSED SUPPLY BREAKER AND COMPLETE THE CLOSE CIRCUIT OF THE SELECTED BREAKER, IF ANY ABNORMAL CONDITION EXISTS WHICH INHIBITS THE CLOSE COMMAND, THE TRIP SIGNAL IS SUPPRESSED, AND THE BUS WILL REMAIN ON THE CLOSED SUP BKR.
2. AUTOMATIC TRANSFER IS INITIATED AND SUPERVISED BY UNDERVOLTAGE RELAYS. AUTOMATIC TRANSFER IS FROM NORMAL TO ALTERNATE SUPPLY ONLY. RETURN TO NORMAL SUPPLY IS MANUAL.
3. PARALLELING OF THE NORMAL AND ALTERNATE SUPPLIES UNDER MANUAL OR AUTOMATIC TRANSFER IS INHIBITED BY INTERLOCKS.
4. 86 RELAYS IN MOTOR FEEDER CIRCUITS TRIP AND LOCK OUT THEIR RESPECTIVE CIRCUIT BREAKERS.
5. ALL SUPPLY BREAKERS ARE RATED AT 2000 AMPERES CONTINUOUS 500 MVA INTERRUPTING, 7.2KV NOMINAL, 80,000 AMPERES MOMENTARY AND 77,000 AMPERES CLOSE AND LATCH.
6. ALL FEEDER BREAKERS ARE RATED THE SAME AS SUPPLY BREAKERS EXCEPT 1200 AMPERES CONTINUOUS.
7. THE SWITCHGEAR MAIN BUS IS RATED AT 2000 AMPERES CONTINUOUS, 80,000 AMPERES MOMENTARY AND 77,000 AMPERES CLOSE AND LATCH.
8. FOR A COMPLETE DEFINITION OF THE UNIQUE IDENTIFICATION NUMBERS (UNID) SEE TVA EN-DES-EP-2.2, EACH NEW, ASSOCIATED WITH THE SWGR BUS AND THE NORMAL OR ALTERNATE CIRCUIT BREAKERS, IS PART OF THE 6900 VOLT AC AUXILIARY POWER DISTRIBUTION SYSTEM WITH SYSTEM DESIGNATION EB. THE DEVICE UNID IS FORMED BY PREFIXING THE DESIGNATION SHOWN ON THE DRAWING WITH EB EXCEPT AS NOTED ON DRAWING. ALL FEEDER BREAKERS WITH THEIR ASSOCIATED DEVICES ARE PART OF THE SYSTEM WHICH THEY SUPPLY. THE COMPLETE UNID IS FORMED BY PREFIXING THE DESIGNATIONS SHOWN ON THE DRAWING WITH THE UNIT AND SYSTEM DESIGNATOR SHOWN IN THE HEXAGON SYMBOL.
9. RELAYS SHALL BE THE TYPE SHOWN ON THIS DRAWING.

SYMBOLS

- XXX — UNIT & SYSTEM DESIGNATION
- V — INTERFACE WITH DECENTRALIZED SYSTEM
- V — INTERFACE FOR REMOTE CONTROL
- ▭ — INTERFACE WITH STATUS ENVIRONMENTAL ALARM MONITORING SYSTEM (SEAMS)
- R — RED INDICATING LIGHT
- W — CONNECTION TO REMOTE METERING
- ANN — THIS FUNCTION TO BE MONITORED BY ONE OR MORE ANNUNCIATION OR ALARM SYSTEMS

REV NO.	ECN NO.	WRITE	RECD	DRAFT	CHKD	SUPV	ENGR	TRSP	SUBM	RECM	APPR
5	853										
	ADDED POWER STORES RHSE LOAD										
4	624, 51										
	CHANGED XFMR OC PROT. MINOR CHANGES.										
3	242,331,51	1-14-75	CMB	7251							
	ADDED 6.9KV XFMR 1B PER ECN 242, IMPLEMENTED ANTI-SCRATCHY RELAY SCHEME PER ECN 331, REV PER SI 51 AND 124										
2	107,51	7-24-74	CMB	7251							
	IMPLEMENTED 51 VOLTS PER ECN 107, VARIOUS SUB 20V AC CKT PNR TO AUTO LOAD TAP CHANGER PER ECN 107, XFMR. REV PER SI 51 AND 124										
1	51, 49	4-17-74	TWP	RDR	LDG	WRT	CTS	TTC	JLC		
	PER ECN-EA INC. SEAMS, PER ECN-57 INC. UNIT SYSTEM DESIG. SUFFIX, ADDED RLY 27S, 27SX TO NORMAL FDR, DELETED 6.9KV SWGR SUP, ADDED PWR FAILURE XFT										

DSGN B.M. SLATER
DRWN J.R. SPENCER
CHKD J.B.D. LEE
SUPV S.M. SLATER

INSP
ENGINEER

POWERHOUSE-TURBINE BUILDING
UNIT 1
SINGLE LINE DIAGRAM
6900V SWGR 1TB
IEB-EMVS-04

BELLEFONTE NUCLEAR PLANT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

N

SUBMITTED	REC'D AMENDED	APPROVED
B.M. Slater	[illegible]	[illegible]
KNOXVILLE 2-19-74	88 1	2TWI723-EB-1 R5
45W725-2		RECORD DRAWING AS CONSTRUCTED

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

THIS DRAWING IS UNDER

PRC APERTURE CARD

Docket # 50-438
Control # 8304050536
Date 3-25-83 of Document
REGULATORY DOCKET FILE