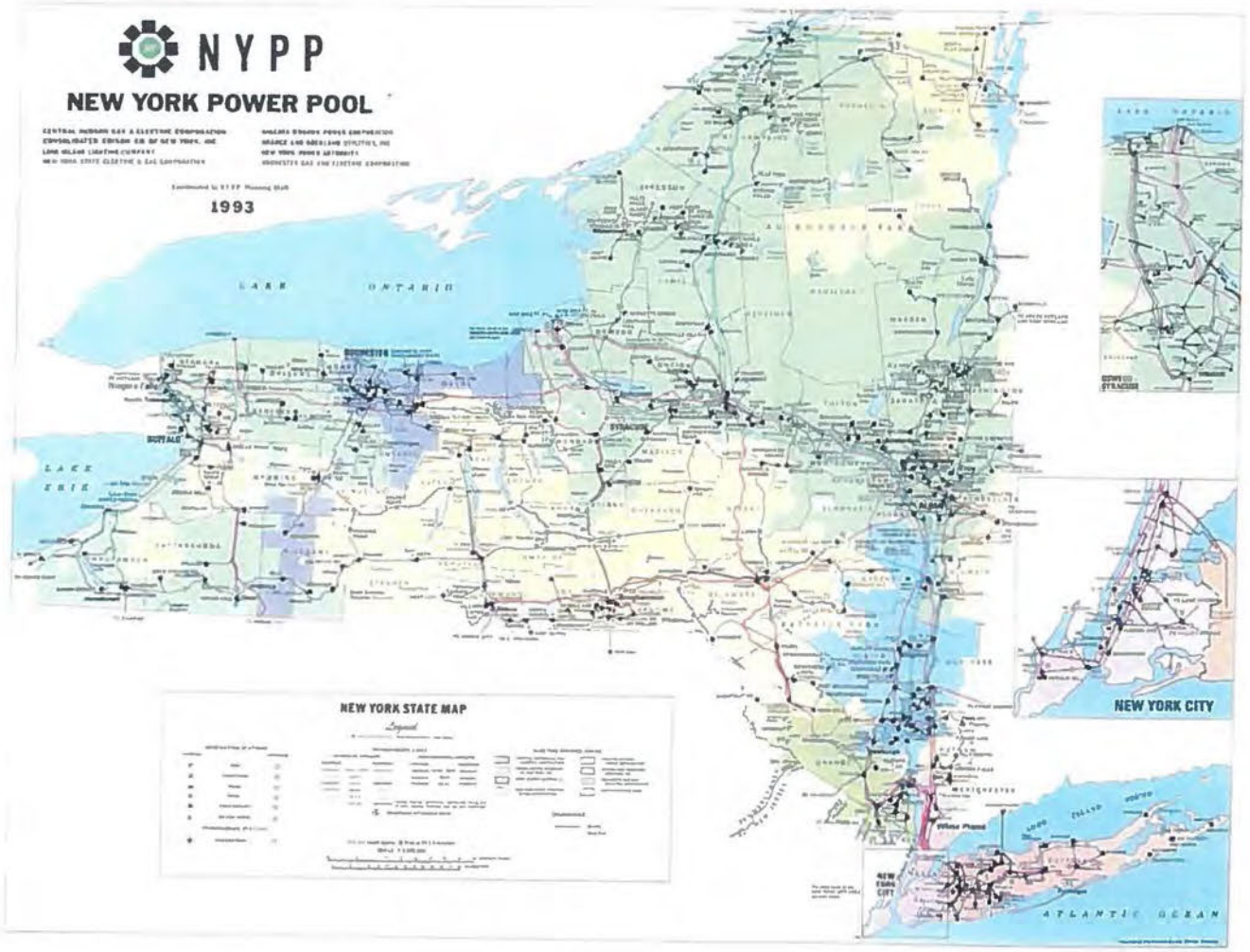
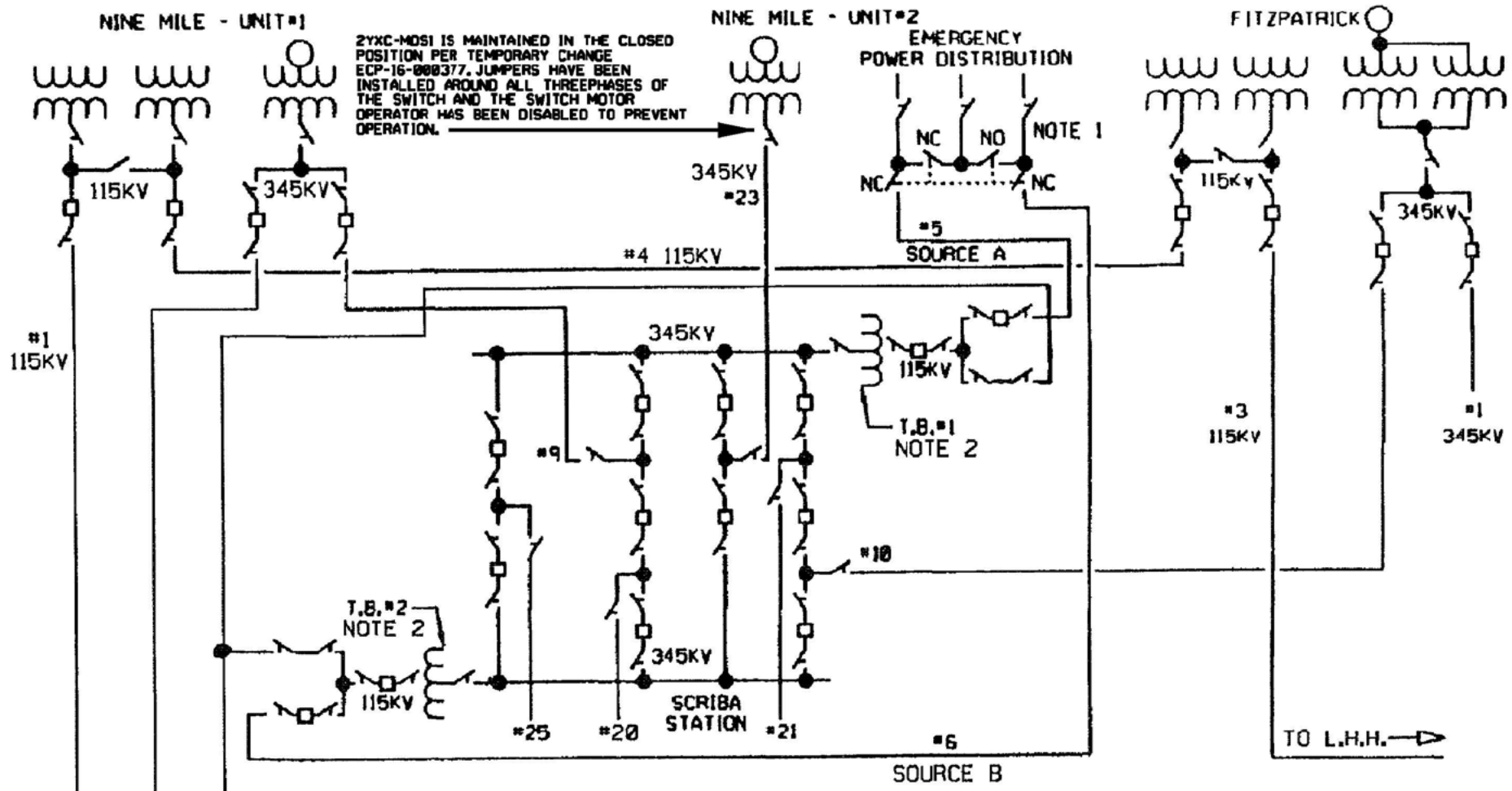


FIGURE 8.1-1

NEW YORK POWER POOL

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NINE MILE POINT COMPLEX

NOTE:

1. ELECTRICAL INTERLOCK PERMITS CLOSURE OF ONLY THREE OF FOUR SWITCHES. ALL OTHER SWITCHES NORMALLY CLOSED.
2. THE TWO 345KV/115KV TRANSFORMERS ARE LOCATED IN DIAGONALLY OPPOSITE CORNERS OF THE SUBSTATION AND ARE APPROXIMATELY 400 FEET APART.
3. 115KV LINE #2 IS AVAILABLE AS AN EMERGENCY/BACKUP OFFSITE POWER SOURCE TO EITHER LINE #5 OR #6

FIGURE 8.2-1

SITE TRANSMISSION NETWORK

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATE SAFETY ANALYSIS REPORT

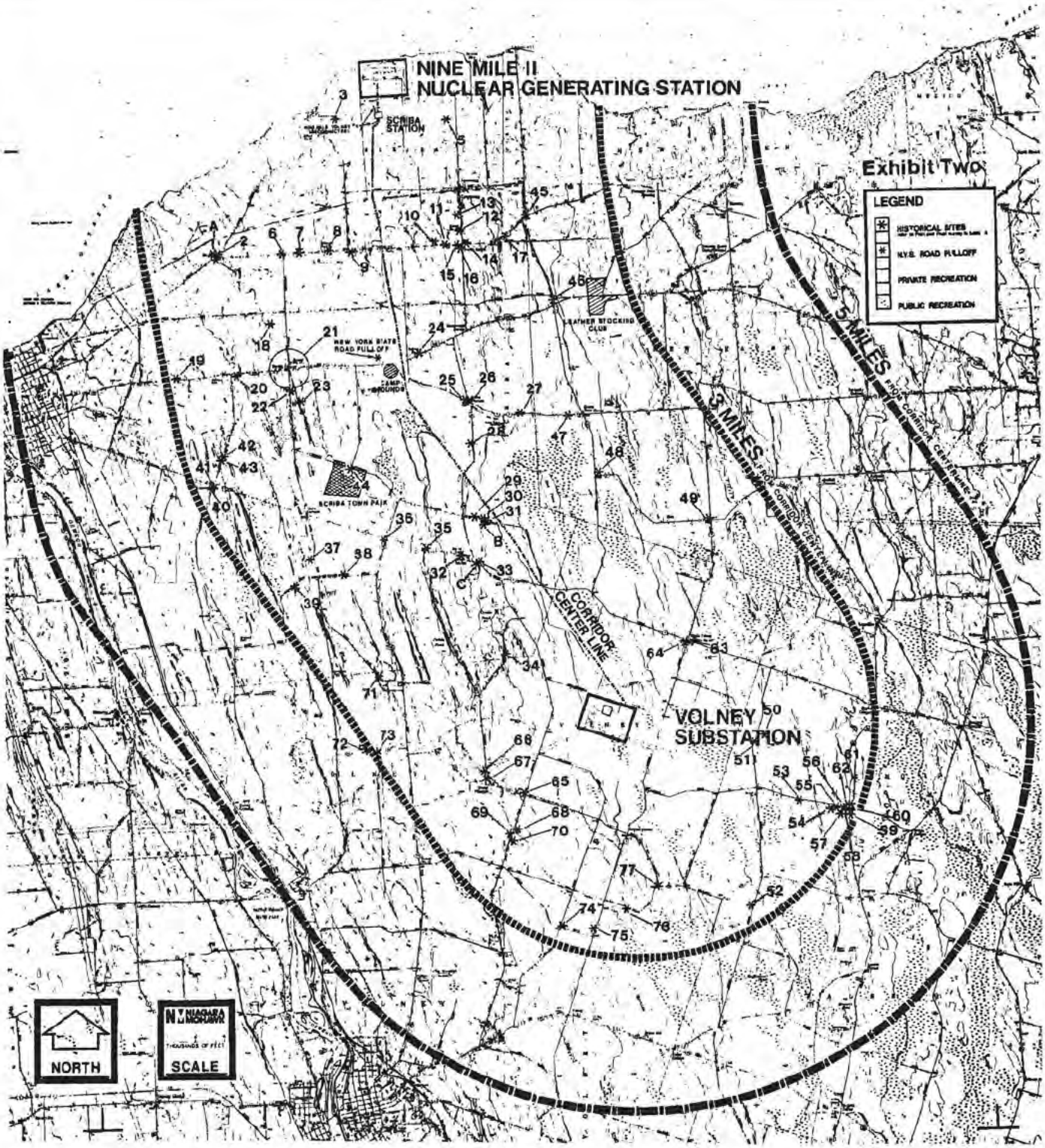


FIGURE 8.2-1a

UNIT 2 — VOLNEY TO UNIT 2
TRANSMISSION RIGHT OF WAY

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT

Security-Related Information
Figure Withheld Under 10 CFR 2.390

FIGURE 8.2-1b

TRANSMISSION PROJECT

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATE SAFETY ANALYSIS REPORT

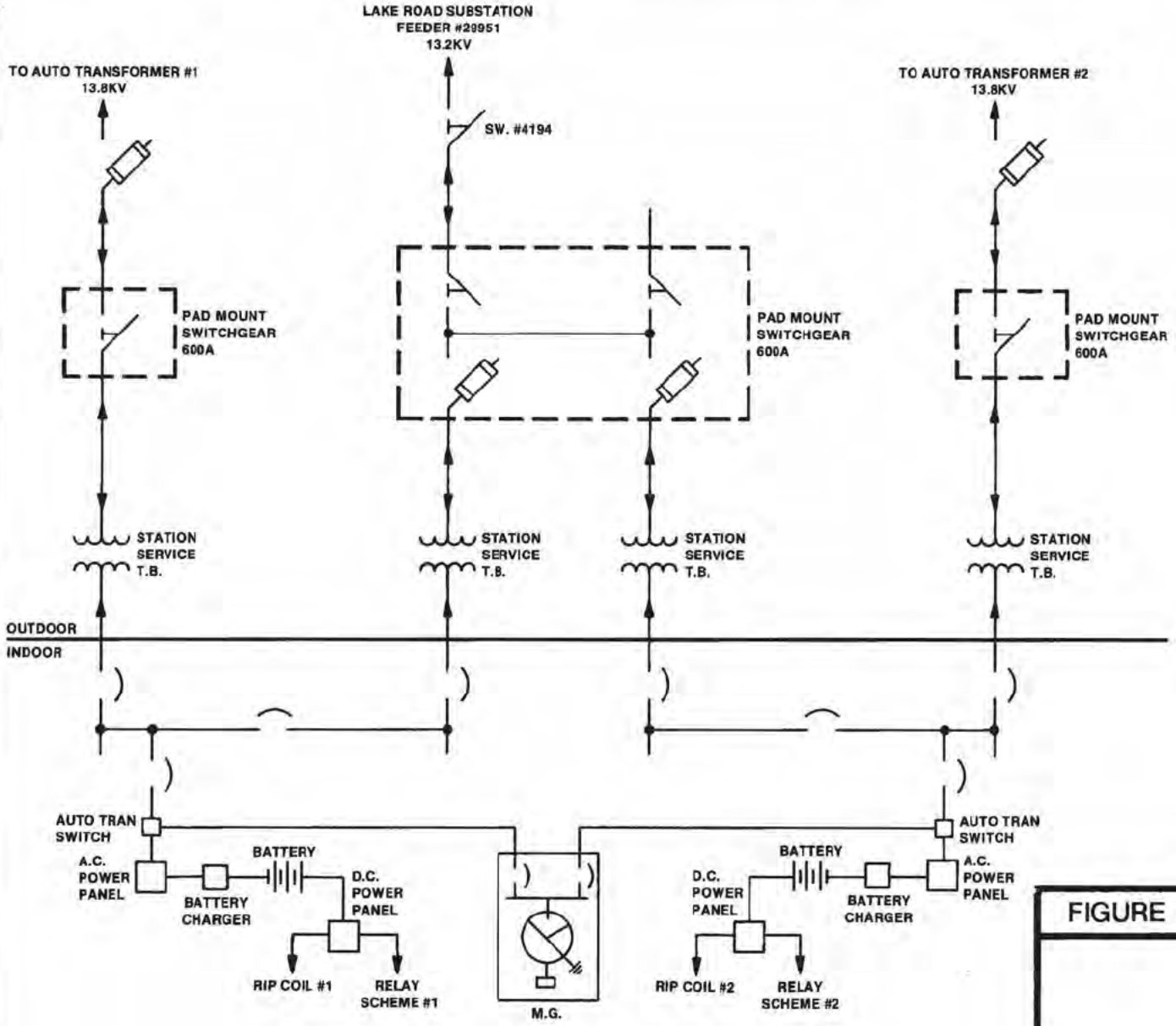
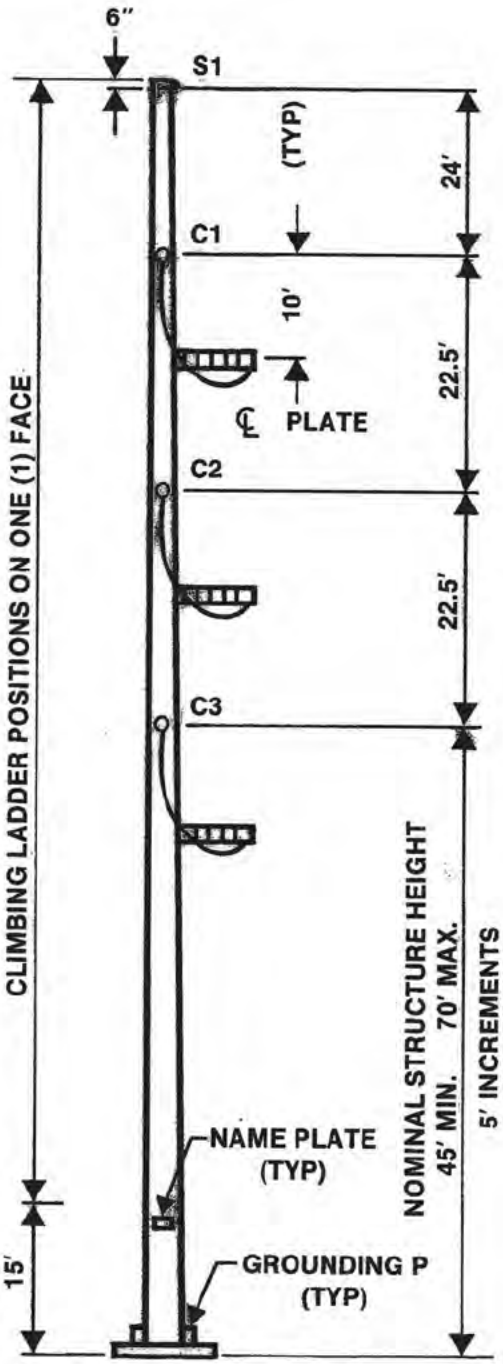


FIGURE 8.2-1c

SCRIBA STATION:
STATION SERVICE

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



345 KV SINGLE CIRCUIT STEEL POLE
TYPE 345 KV ST 1.4 DE-TS

FIGURE 8.2-2

345 KV TRANSMISSION TOWER
1 STEEL POLE STRUCTURE
TYPE 345 KV ST 1.4 DE-TS

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT

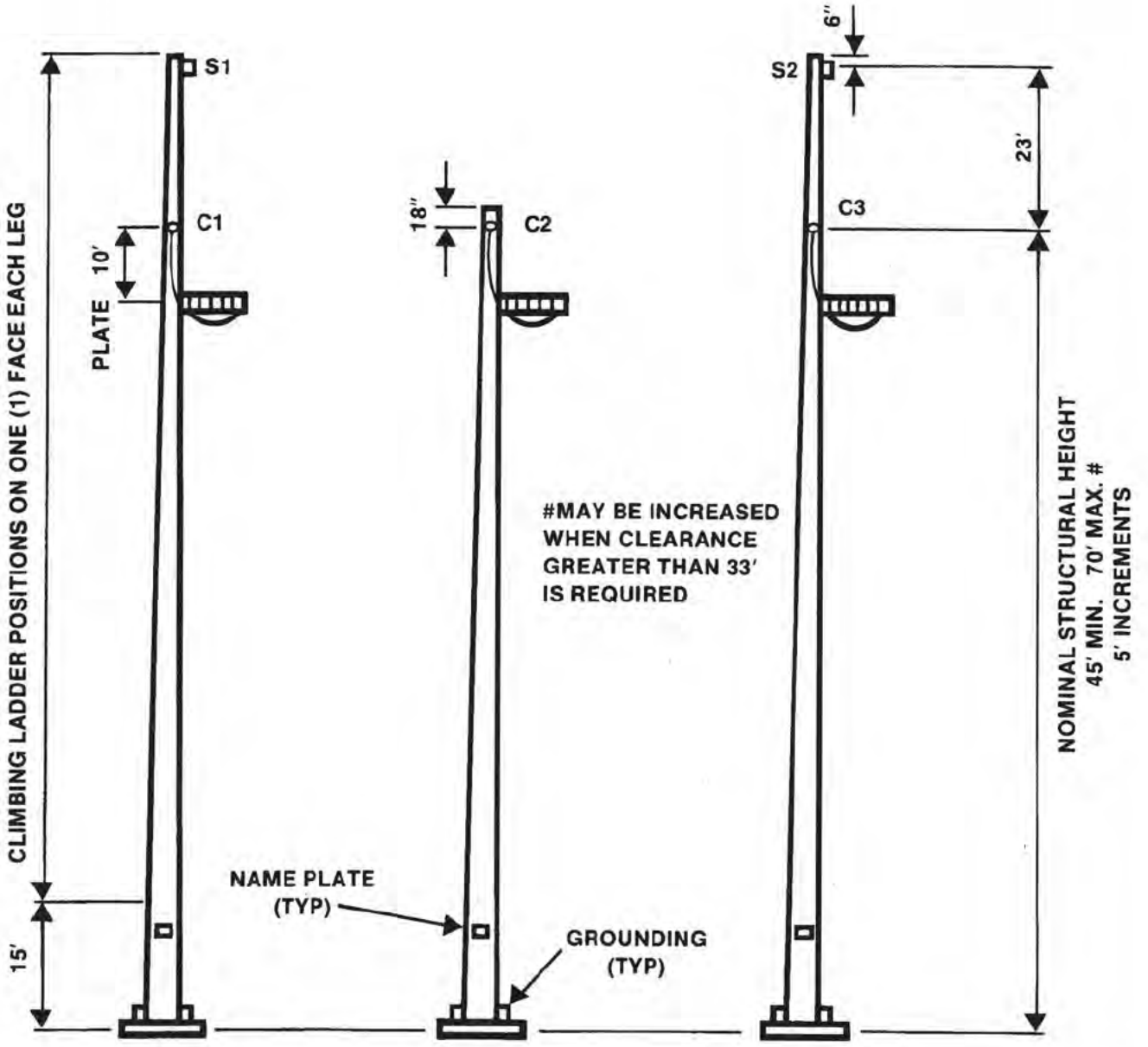


FIGURE 8.2-3

345 SINGLE CIRCUIT
- 3 STEEL POLE STRUCTURE
TYPE 345 KV ST 1.4 DE-TS-3P

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT

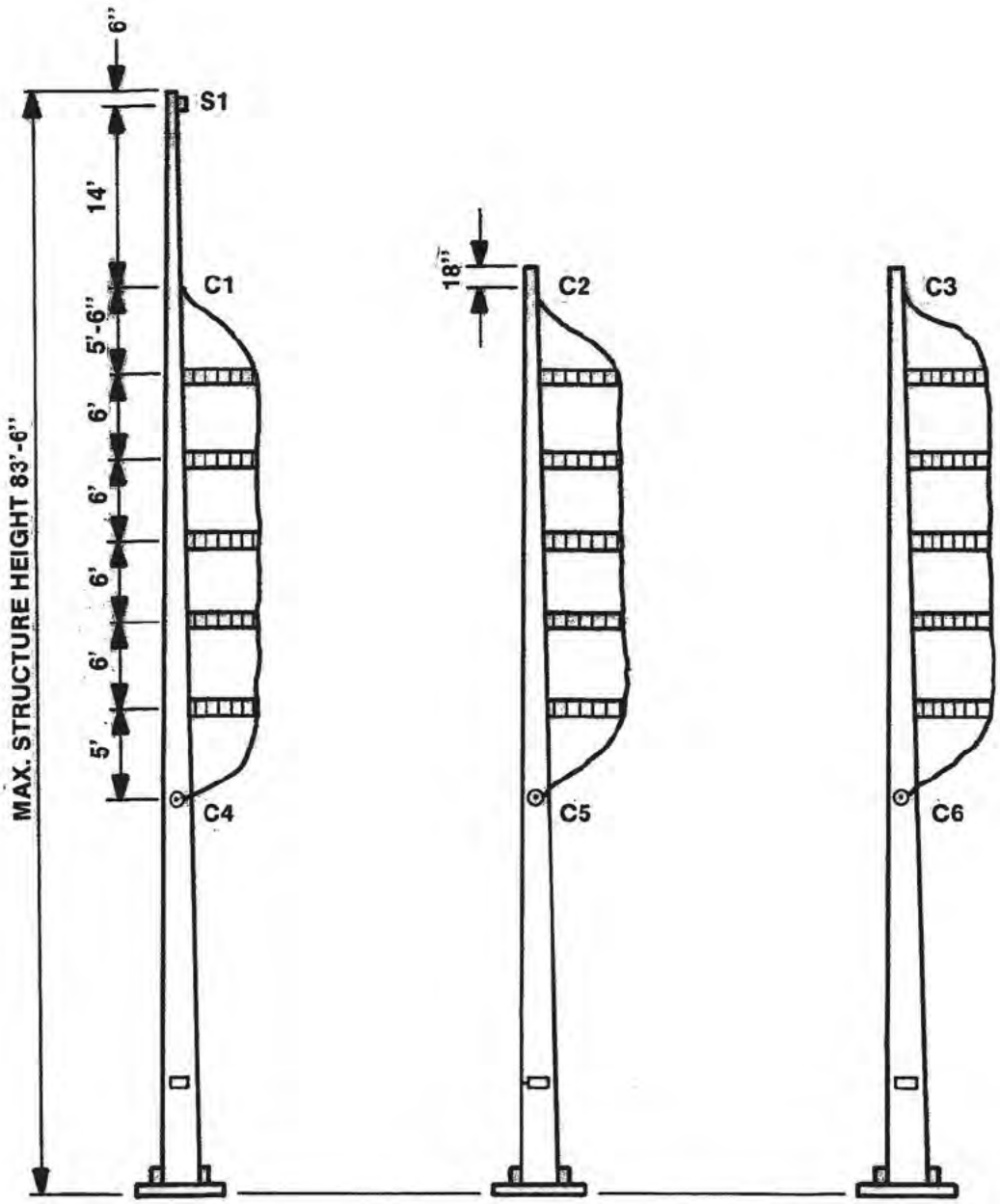
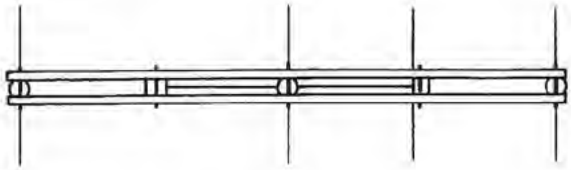


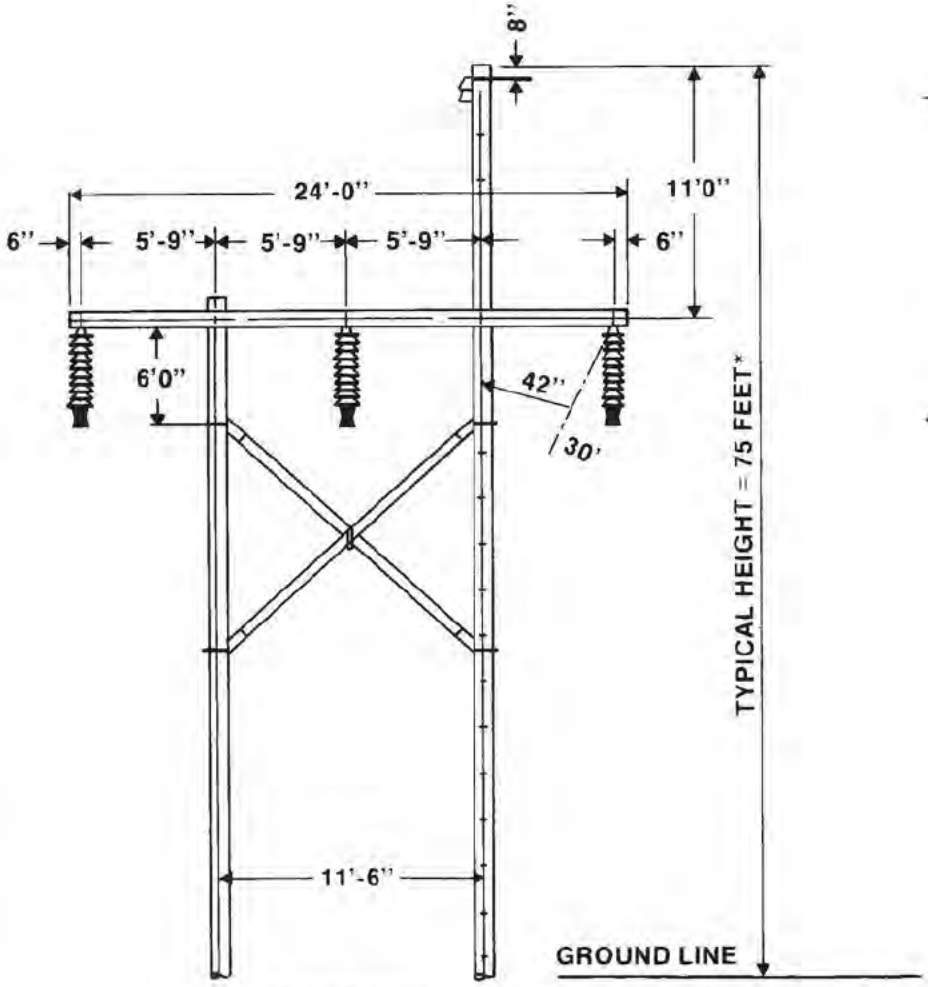
FIGURE 8.2-4

115 KV TRANSMISSION TOWERS
(SINGLE CURCUIT — 3 STEEL POLE
STRUCTURE TYPE 115 KV DE)

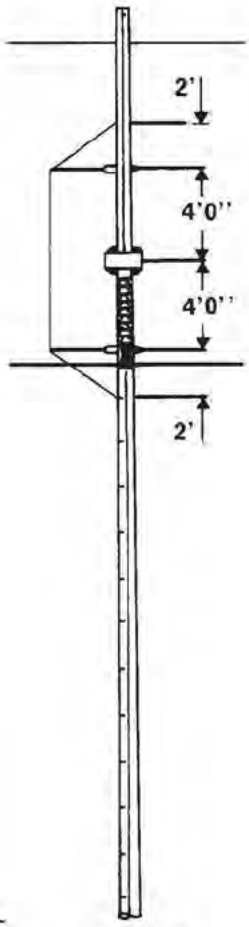
NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



PLAN



FRONT VIEW



SIDE VIEW

* ADDITIONAL HEIGHT MAY BE UTILIZED WHERE NECESSARY TO MAINTAIN REQUIRED CLEARANCE

FIGURE 8.2-5

115 KV TRANSMISSION TOWERS
(TWO POLE TANGENT "H" FRAME
— TYPE D-1331)

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT

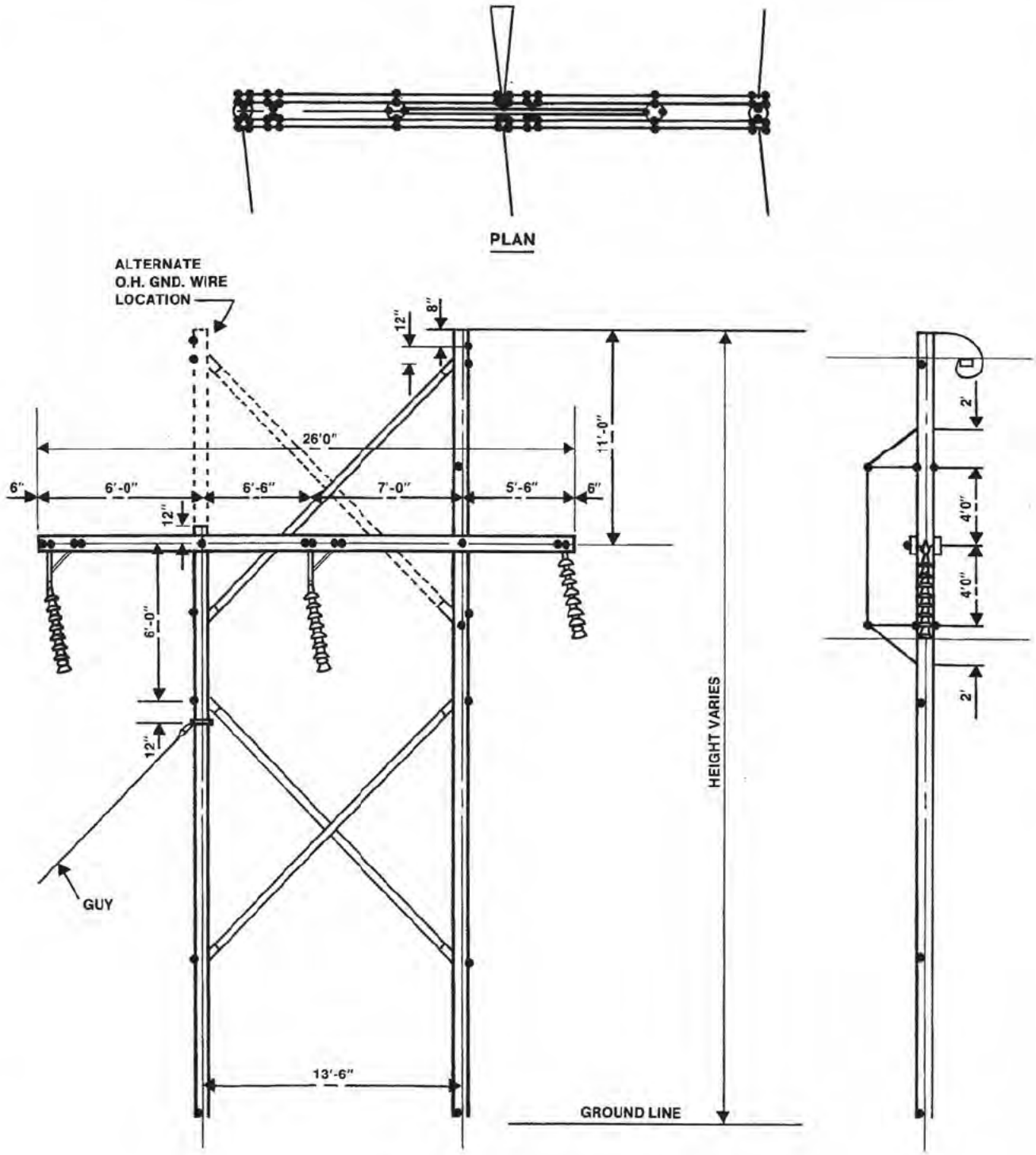
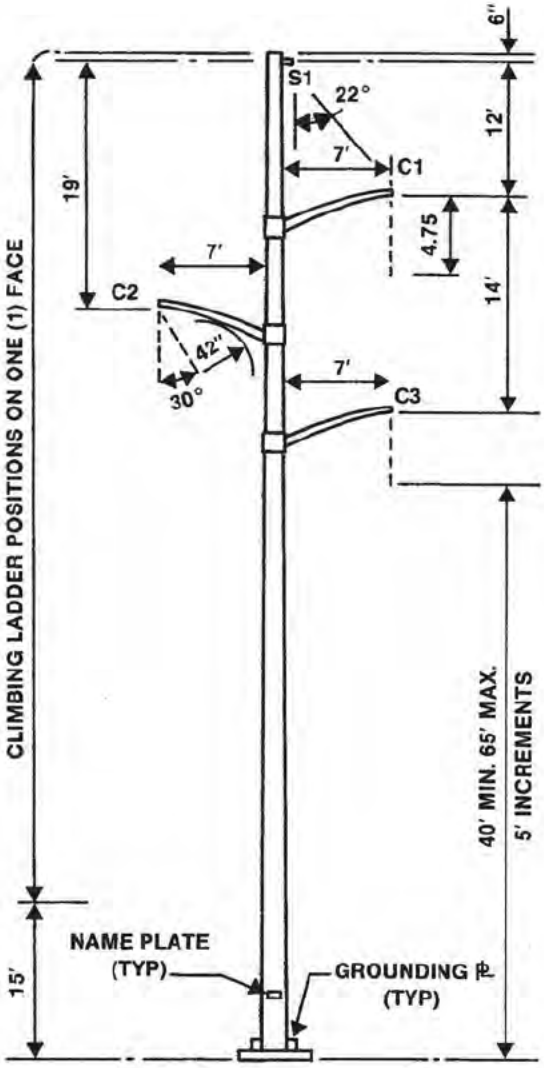


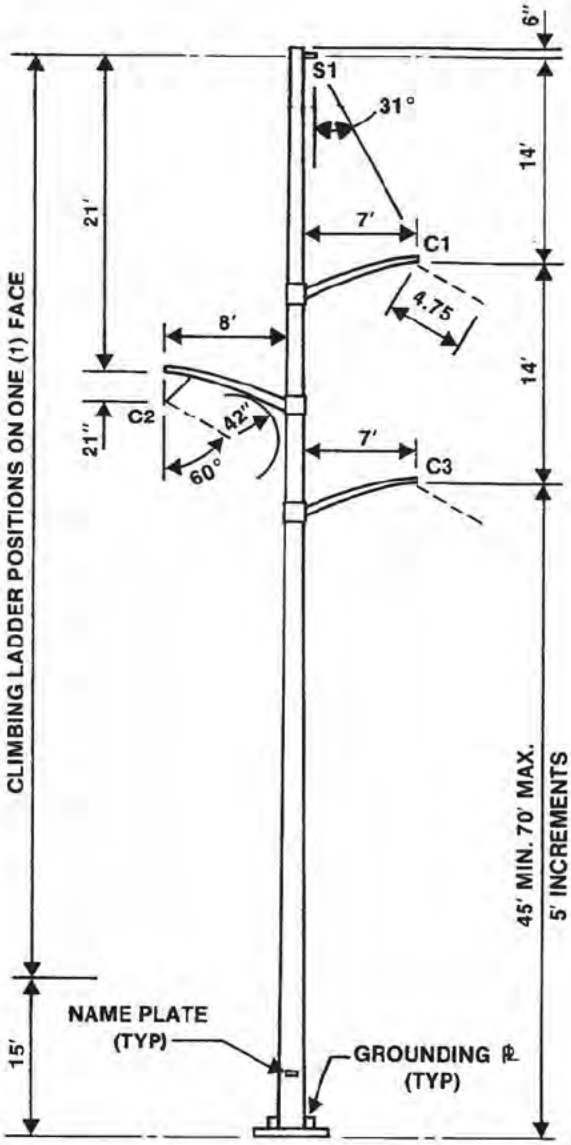
FIGURE 8.2-5a

115 KV TRANSMISSION TOWERS
(TWO POLE TANGENT "H" FRAME
-TYPE D-1332)

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



115 KV SINGLE CIRCUIT STEEL POLE
TYPE 115 KV SU 1.1 TS

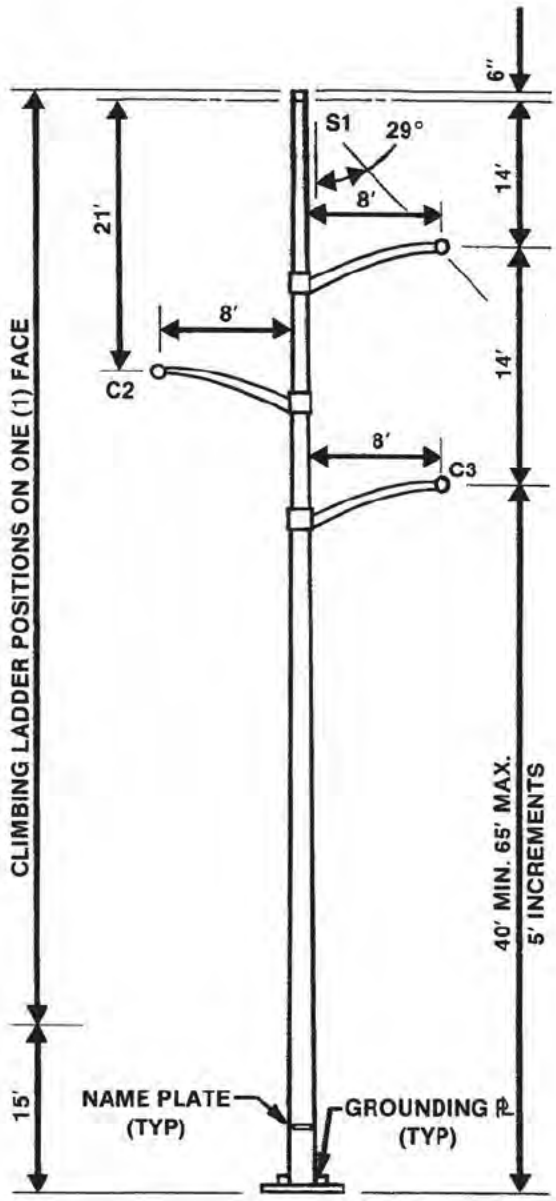


115 KV SINGLE CIRCUIT STEEL POLE
TYPE 115 KV SU 1.31 TS

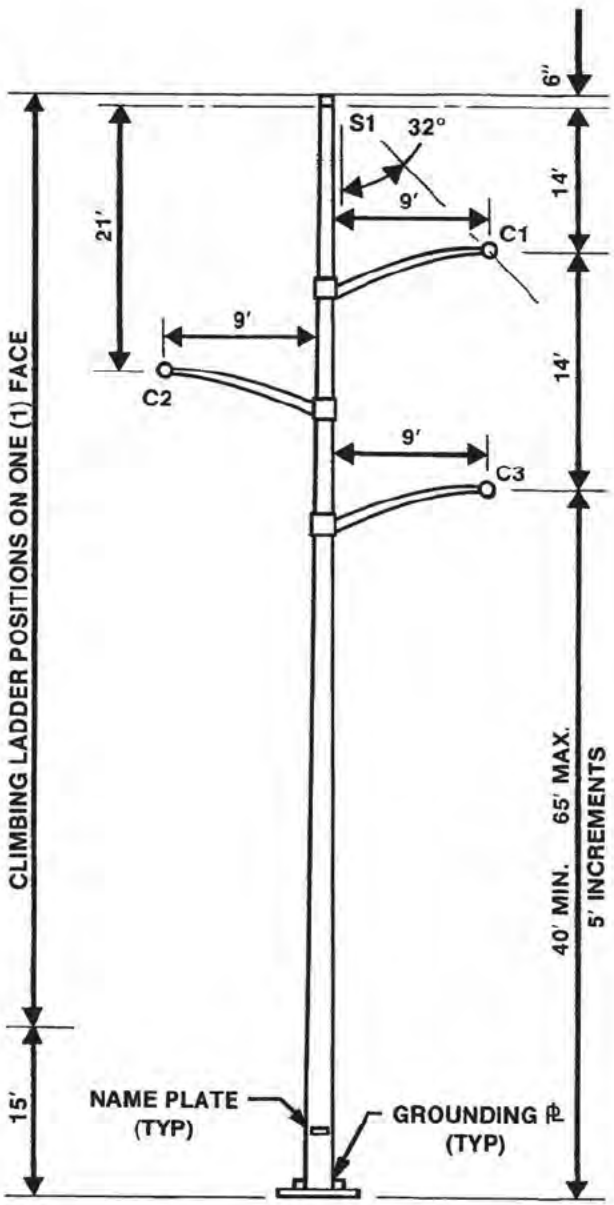
FIGURE 8.2-6

115 KV TRANSMISSION TOWERS
SINGLE CIRCUIT STEEL POLE
TYPE SU 1.1 TS & SU 1.31 TS

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



115 KV SINGLE CIRCUIT STEEL POLE
TYPE 115 KV ST 1.2 DE-TS

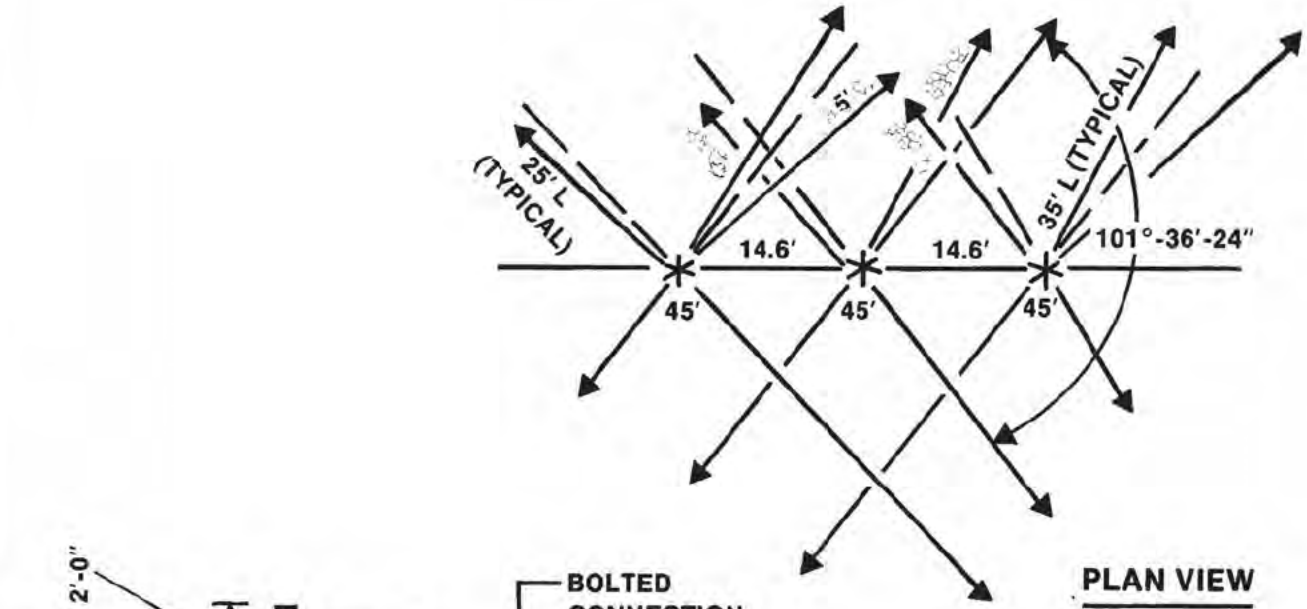


115 KV SINGLE CIRCUIT STEEL POLE
TYPE 115 KV ST 1.3 DE-TS

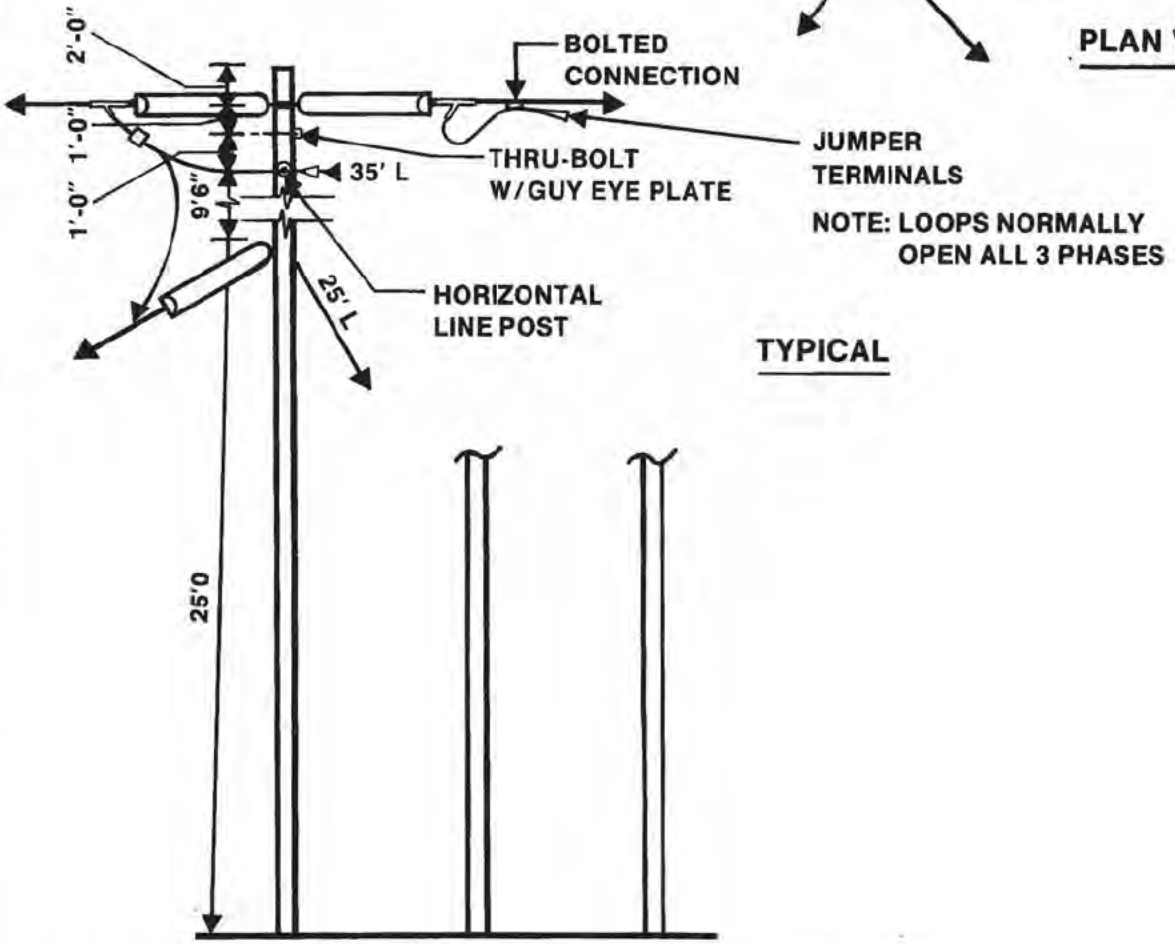
FIGURE 8.2-6a

115 KV TRANSMISSION TOWERS
SINGLE CIRCUIT STEEL POLE
TYPE ST 1.2 DE-TS & ST 1.3 DE-TS

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



PLAN VIEW



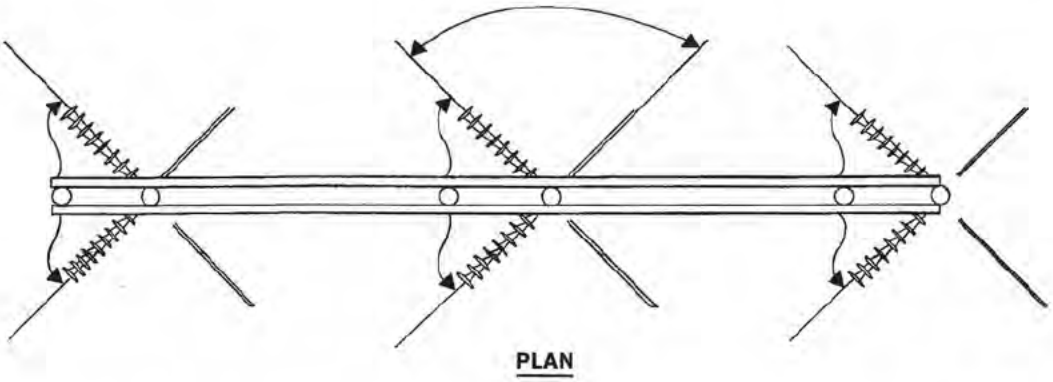
TYPICAL

FRONT VIEW

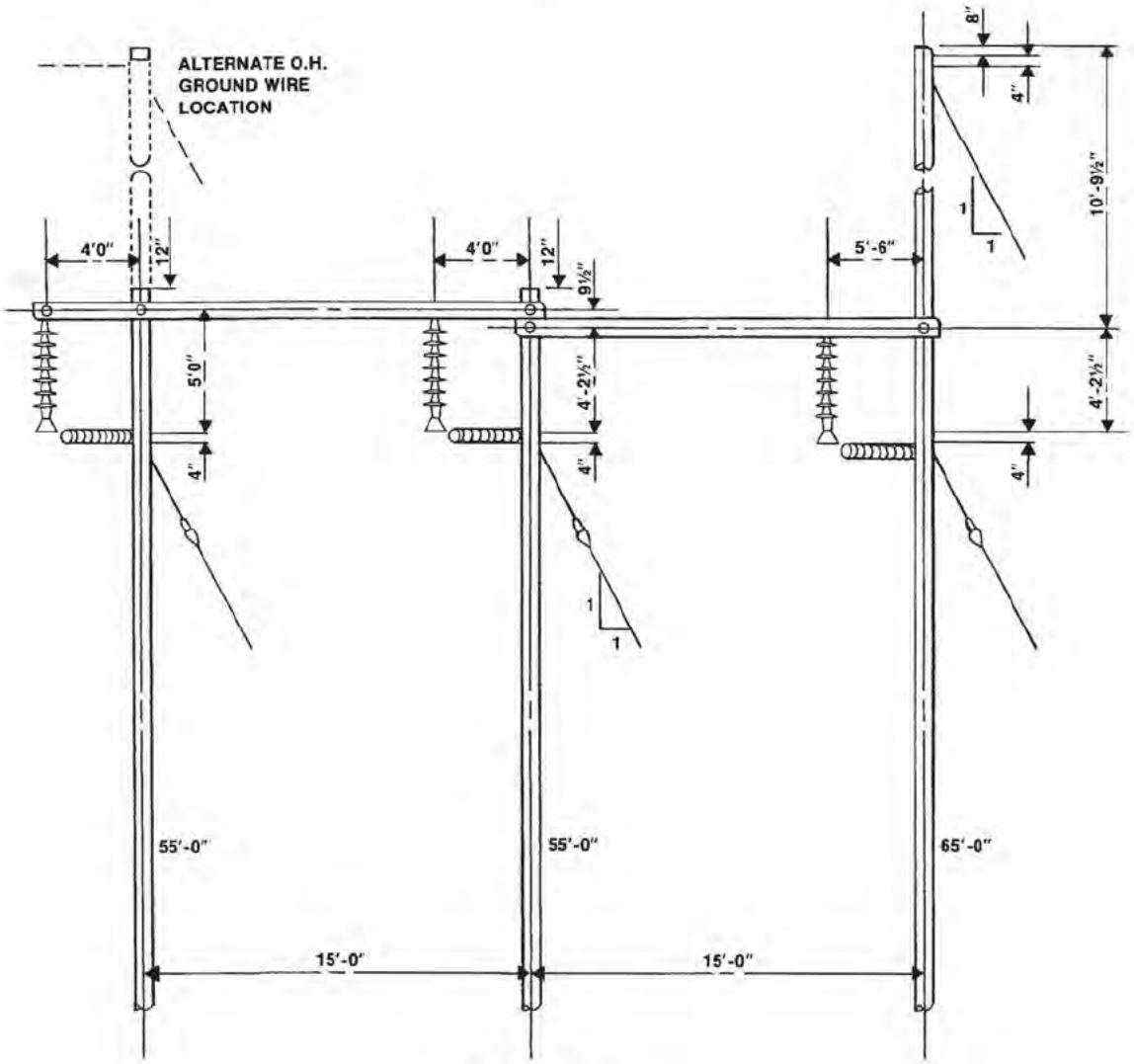
FIGURE 8.2-6b

115 KV TRANSMISSION TOWERS
3 WOOD POLE STRUCTURE

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



PLAN

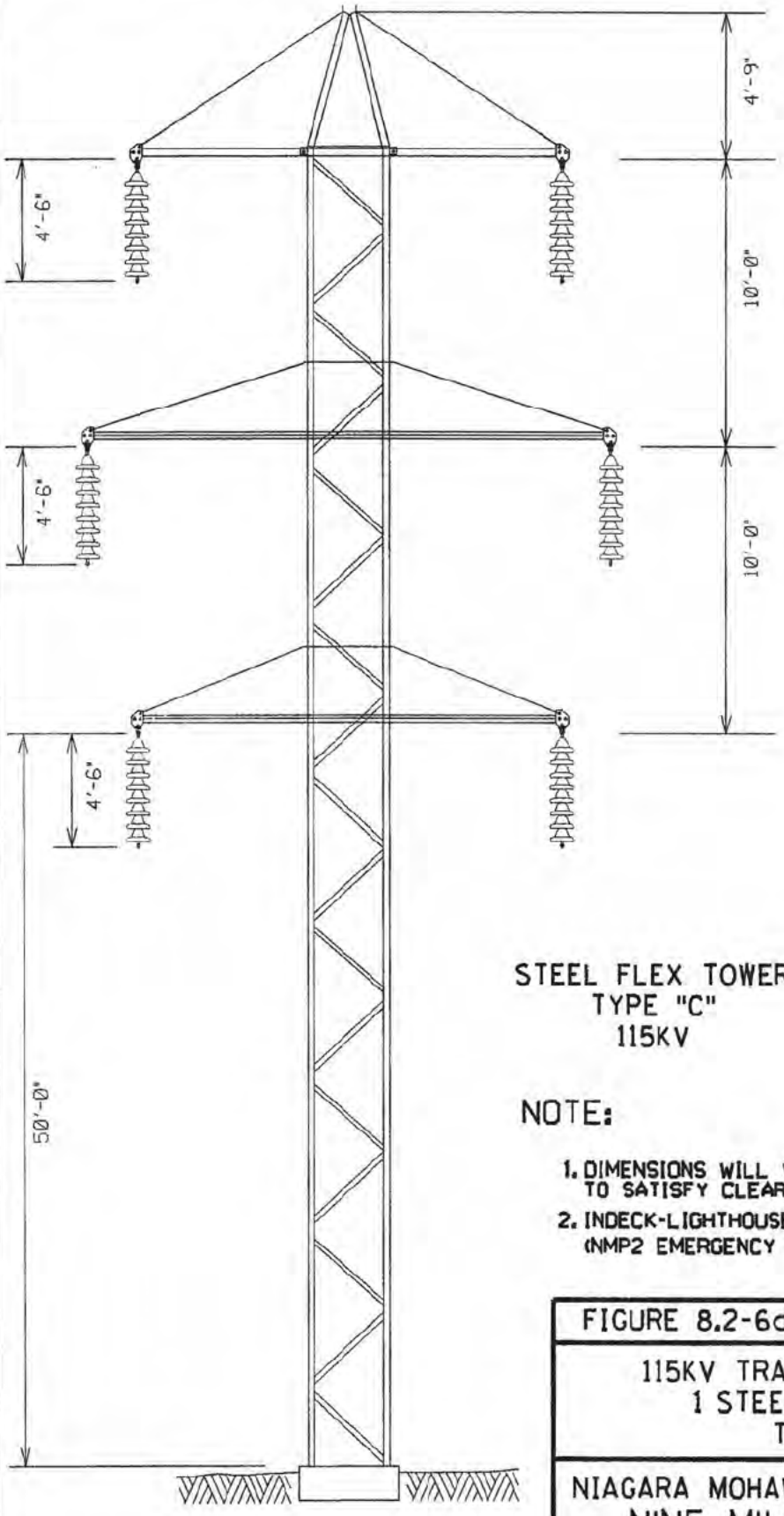


FRONT VIEW

FIGURE 8.2-6c

115 KV TRANSMISSION TOWERS
3 POLE ANGLE STRUCTURE 0°-90°
STRUCTURE TYPE D-1335

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



STEEL FLEX TOWER
TYPE "C"
115KV

NOTE:

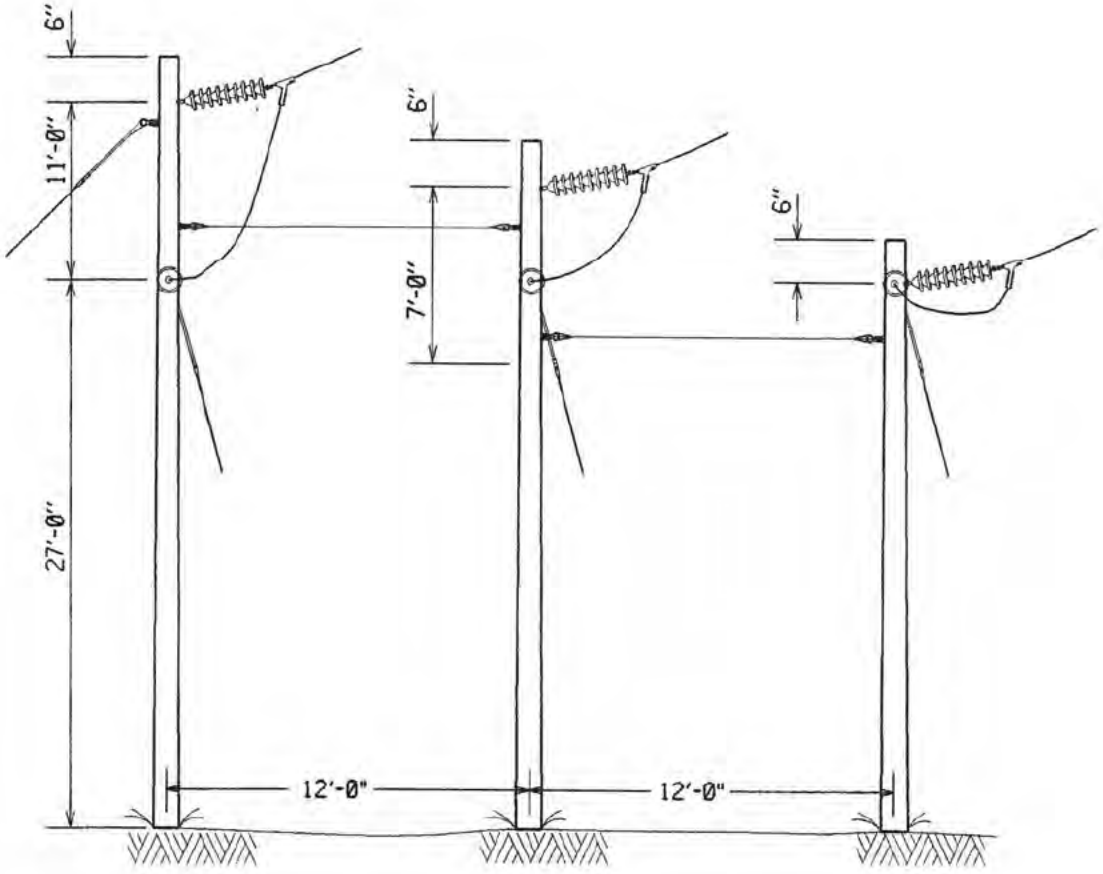
1. DIMENSIONS WILL VARY TO SATISFY CLEARANCES.
2. INDECK-LIGHTHOUSE HILL #2 (NMP2 EMERGENCY TAP)

NOT DRAWN TO SCALE

FIGURE 8.2-6d

115KV TRANSMISSION TOWER
1 STEEL FLEX TOWER
TYPE "C"

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



THREE POLE DEAD END TAP STRUCTURE
45° - 90°
115KV

NOTE:

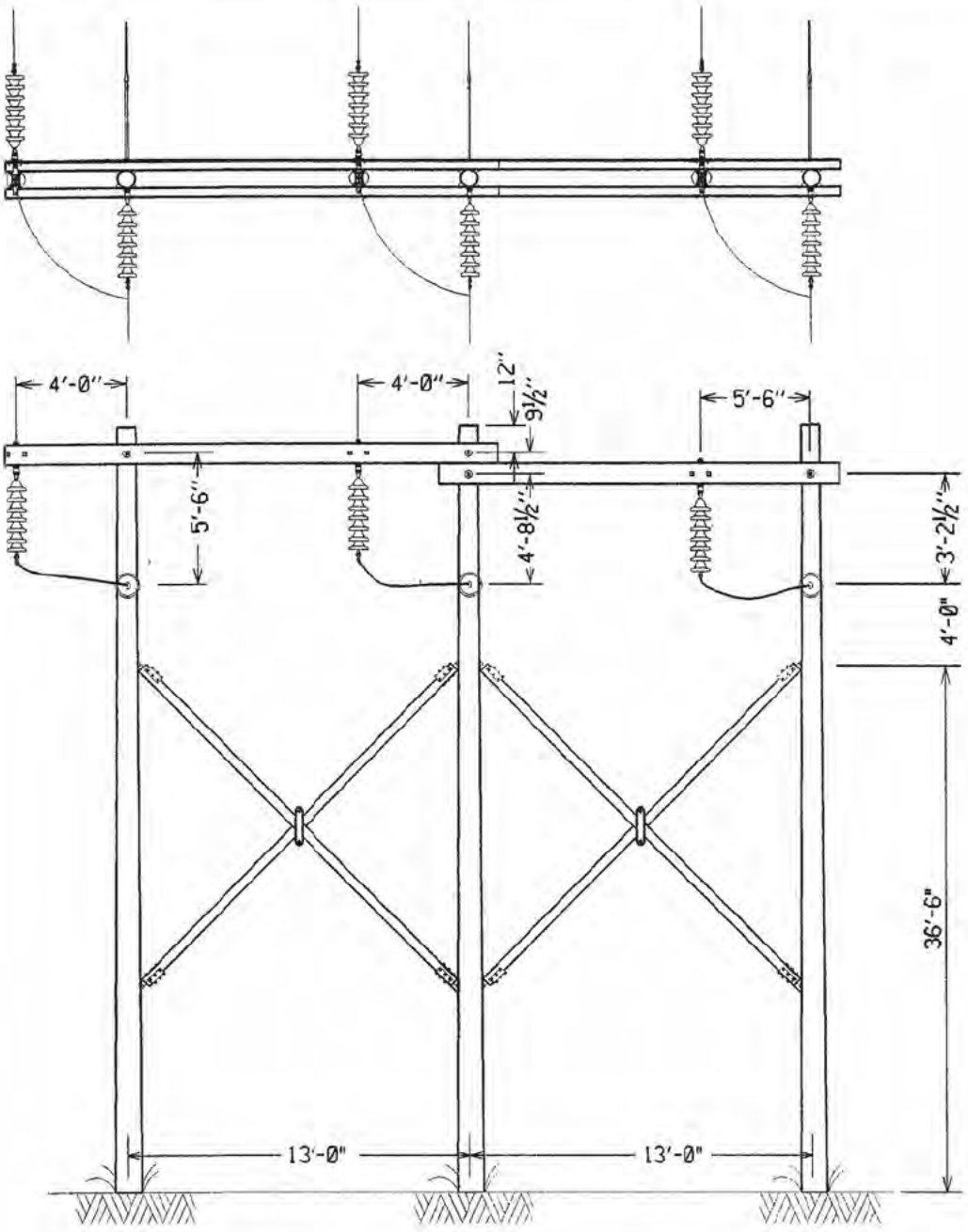
1. INDECK-LIGHTHOUSE HILL #2 (NMP2 EMERGENCY TAP)

NOT DRAWN TO SCALE

FIGURE 8.2-6e

115KV TRANSMISSION STRUCTURE
THREE POLE DEAD END TAP STRUCTURE
45° - 90°

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



THREE POLE TERMINAL DEAD END STRUCTURE
MODIFIED W/O STATIC ATTACHMENT
115KV

NOTE:

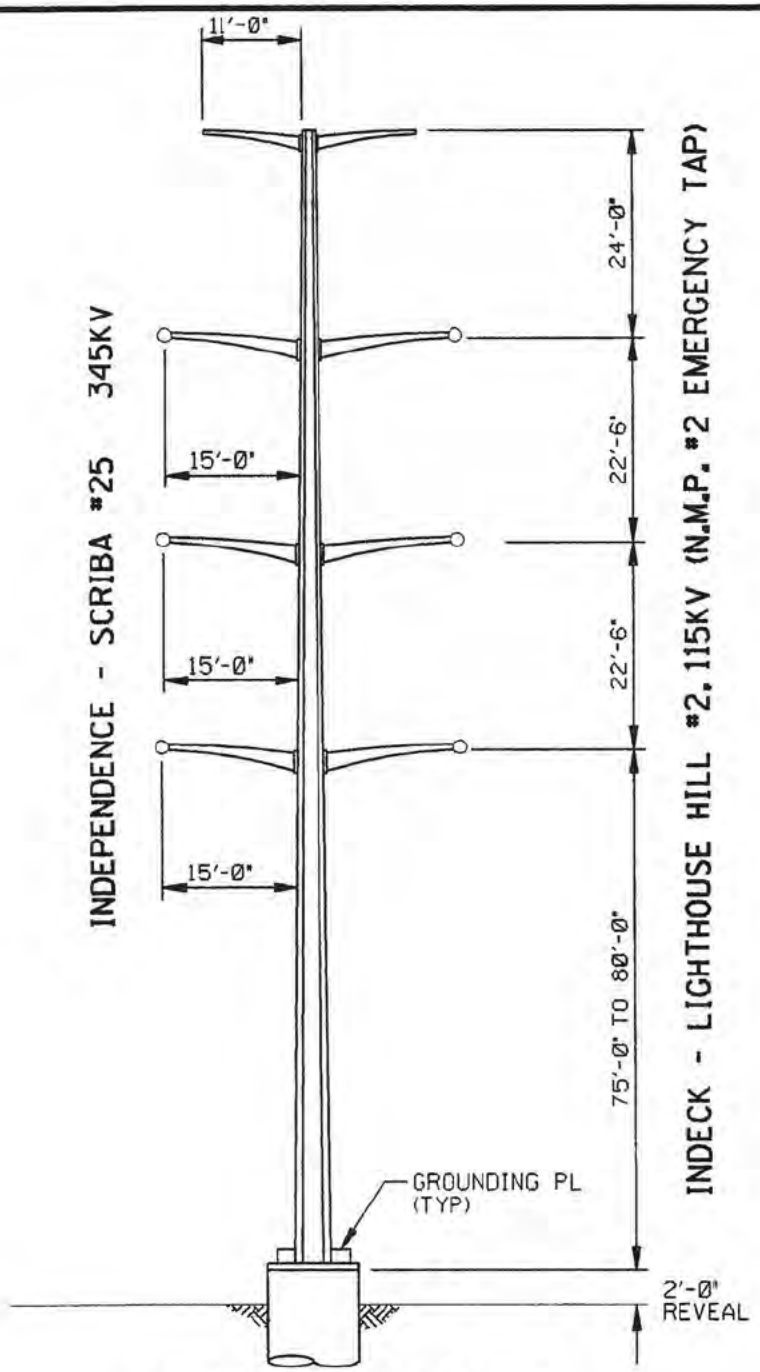
1. DIMENSIONS WILL VARY TO SATISFY CLEARANCES.
2. INDECK-LIGHTHOUSE HILL #2 (NMP2 EMERGENCY TAP)

NOT DRAWN TO SCALE

FIGURE 8.2-6f

115KV TRANSMISSION STRUCTURE
THREE POLE TERMINAL DEAD END STRUCTURE
TYPE D-1336A (MODIFIED)

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



TYPICAL TUBULAR STEEL
DOUBLE CIRCUIT STRAIN STRUCTURE
ST2.1TS 0°-15°

NOTE:

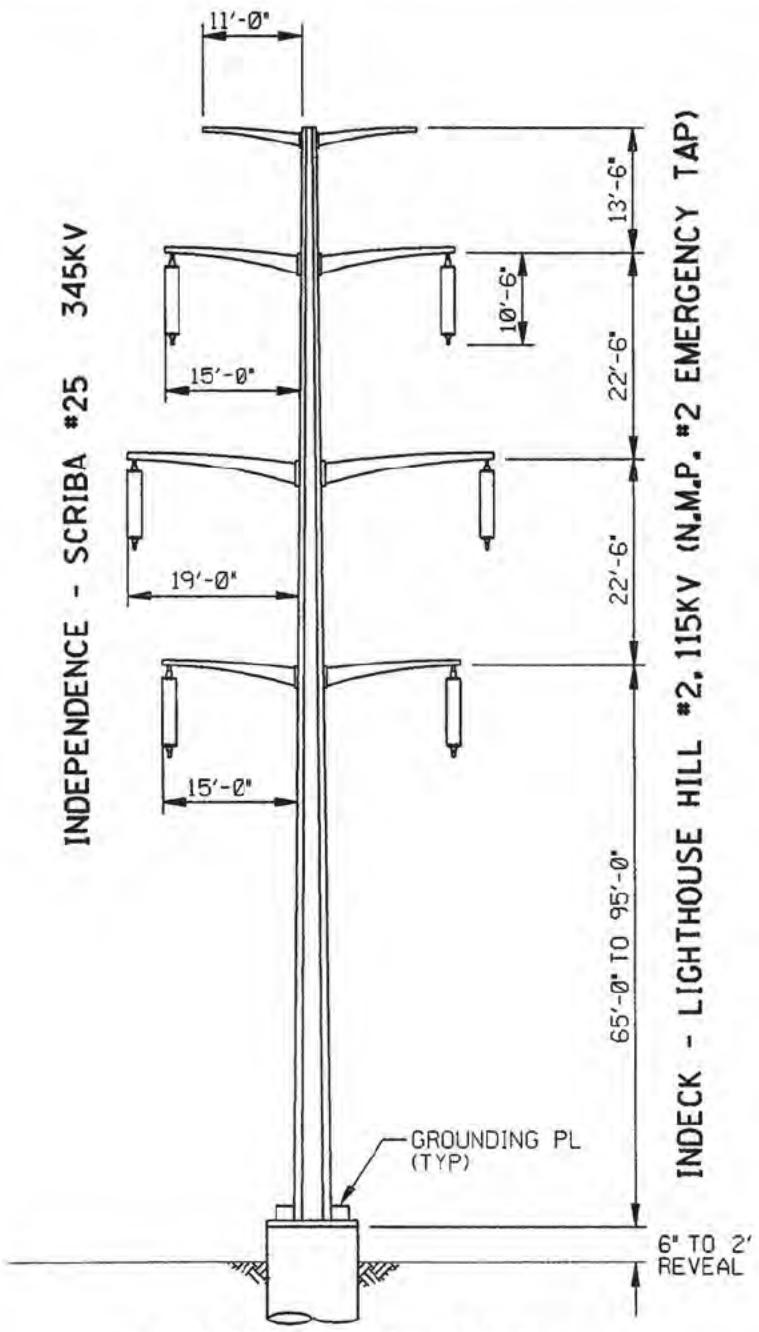
1. DIMENSIONS WILL VARY TO SATISFY CLEARANCES.
2. LOOKING NORTH

NOT DRAWN TO SCALE

FIGURE 8.2-6g

345/115KV TRANSMISSION TOWER
1 STEEL POLE STRUCTURE
TYPE 345 KV ST 2.1 TS

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



TYPICAL TUBULAR STEEL
DOUBLE CIRCUIT SUSPENSION STRUCTURE
SU2.1TS 0'-1"

NOTE:

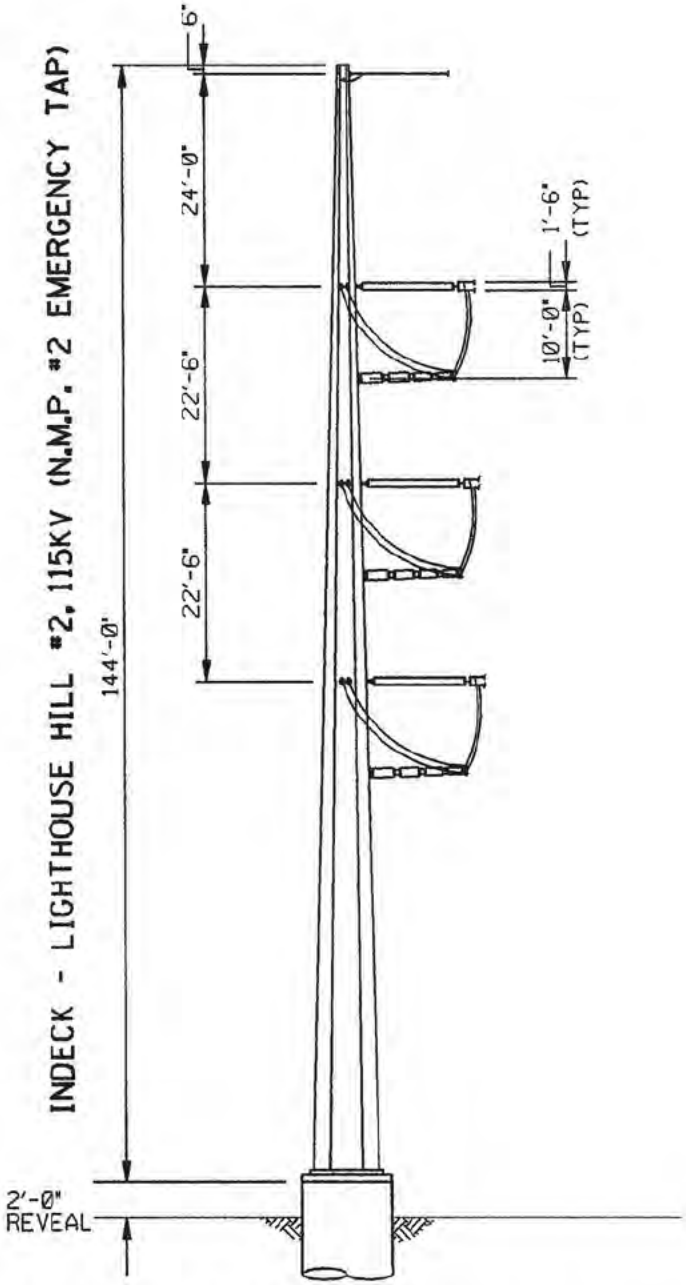
1. DIMENSIONS WILL VARY TO SATISFY CLEARANCES.
2. LOOKING NORTH

NOT DRAWN TO SCALE

FIGURE 8.2-6h

345/115KV TRANSMISSION TOWER
1 STEEL POLE STRUCTURE
TYPE 345 KV SU2.1 TS

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



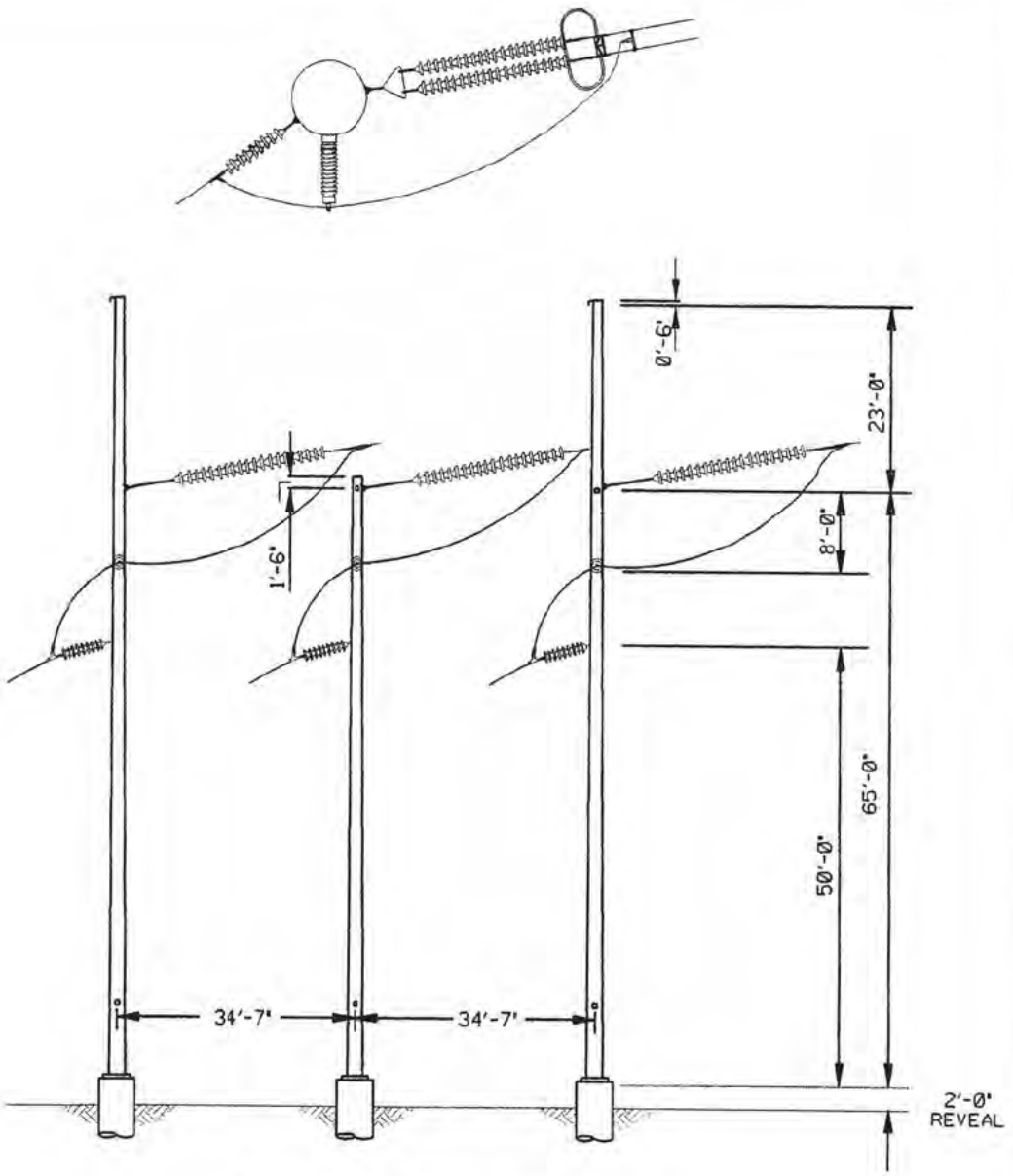
TYPICAL TUBULAR STEEL
SINGLE CIRCUIT DEAD END STRUCTURE FOR LARGE ANGLES
ST1.4DE-TS 0°-180°

FIGURE 8.2-6i

345/115KV TRANSMISSION TOWER
1 STEEL POLE DEAD END STRUCTURE
TYPE 115 KV ST 1.4 DE-TS

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT

NOT DRAWN TO SCALE



TYPICAL TUBULAR STEEL
DEAD END ANGLE STRUCTURE

ST1.1TS-3P 0°-15°
ST1.4TS-3P 45°-60°
ST1.5TS-3P 60°-75°
ST1.6TS-3P 75°-90°

NOTE:

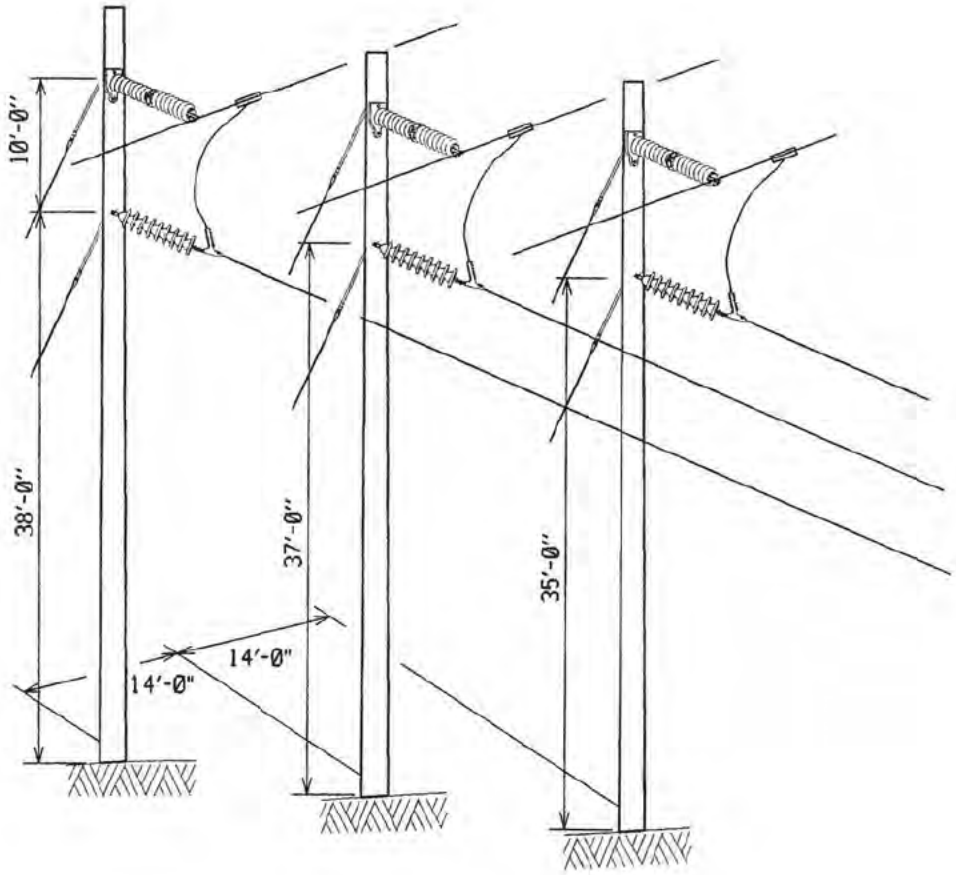
1. INDECK-LIGHTHOUSE HILL #2 (NMP2 EMERGENCY TAP)

NOT DRAWN TO SCALE

FIGURE 8.2-6j

115KV TRANSMISSION STRUCTURE
3 STEEL POLE DEAD END ANGLE STRUCTURE
TYPE 115 KV ST 1.6 DE TS-3P

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



THREE POLE STRUCTURE
115 KV

NOTE:

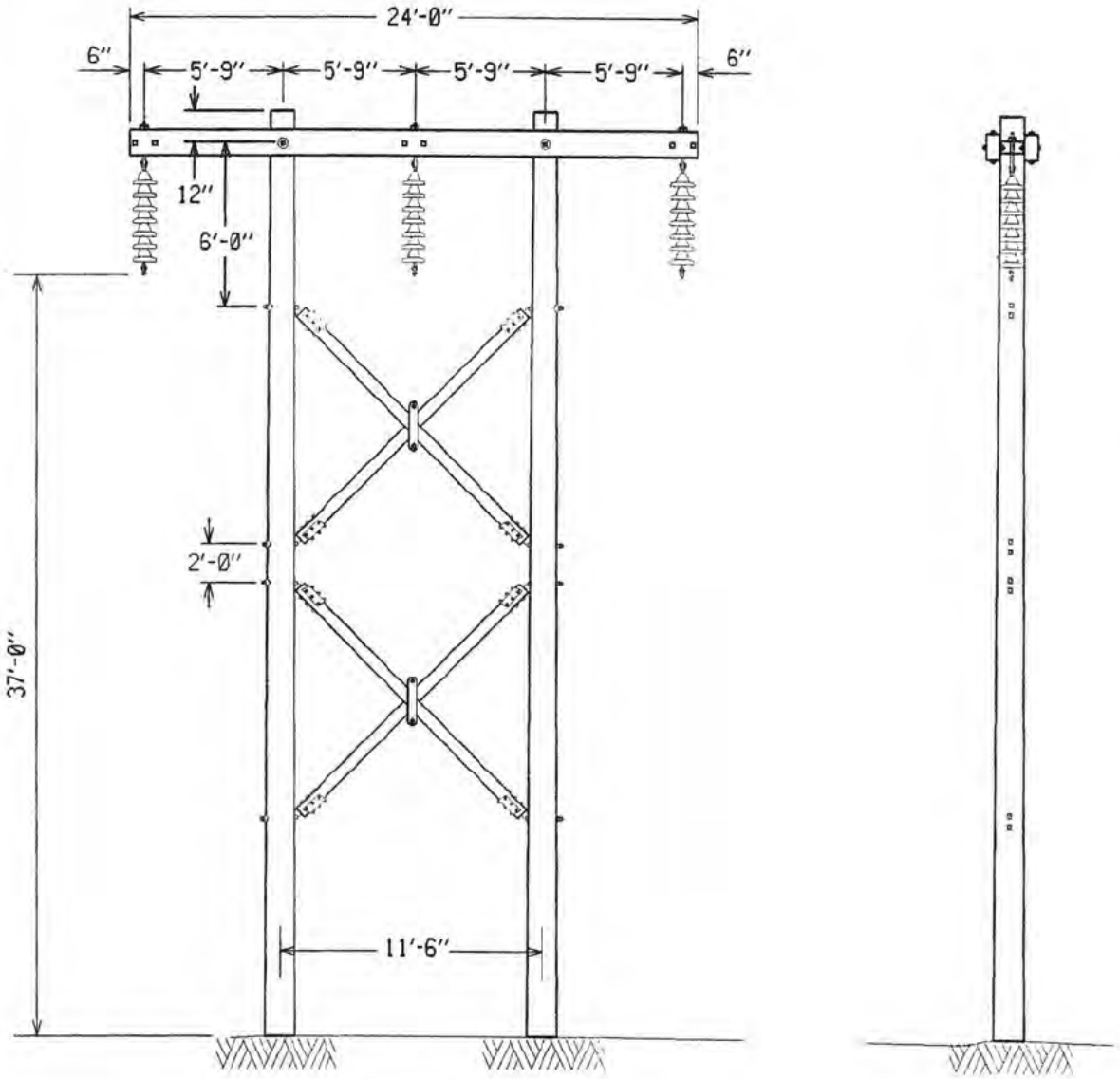
1. DIMENSIONS WILL VARY TO SATISFY CLEARANCES.
2. INDECK-LIGHTHOUSE HILL #2 (NMP2 EMERGENCY TAP)

NOT DRAWN TO SCALE

FIGURE 8.2-6k

115KV TRANSMISSION STRUCTURE
THREE POLE STRUCTURE

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



TWO POLE TANGENT "H" FRAME
115 KV

NOTE:

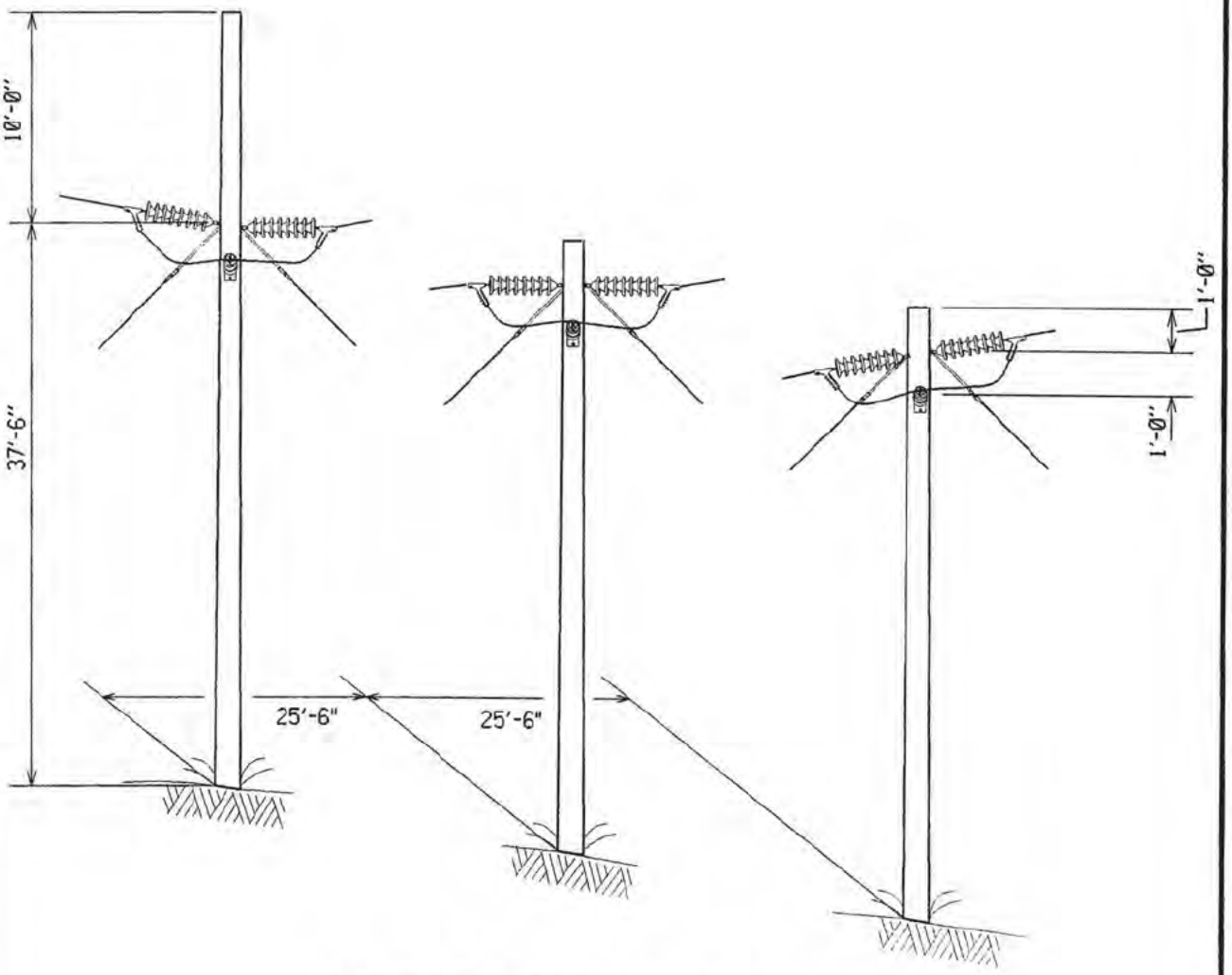
1. INDECK-LIGHTHOUSE HILL #2 (NMP2 EMERGENCY TAP)

NOT DRAWN TO SCALE

FIGURE 8.2-61

115KV TRANSMISSION STRUCTURE
TWO POLE TANGENT "H" FRAME
TYPE D-1330A (MODIFIED)

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



THREE POLE STRAIN STRUCTURE
115KV

NOTE:

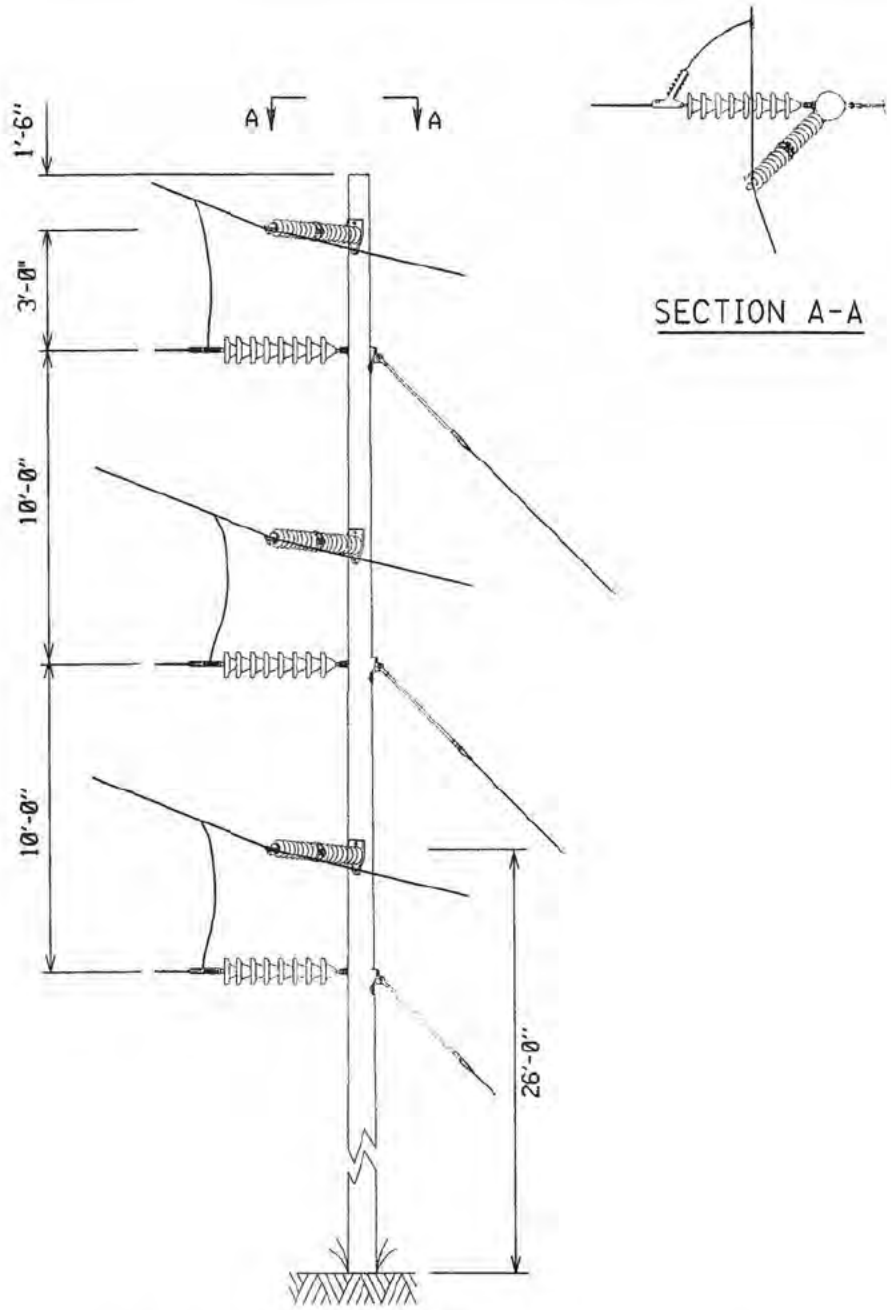
1. INDECK-LIGHTHOUSE HILL #2
(NMP2 EMERGENCY TAP)

NOT DRAWN TO SCALE

FIGURE 8.2-6m

115KV TRANSMISSION STRUCTURE
THREE POLE STRAIN STRUCTURE

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



SECTION A-A

FRONT VIEW

SINGLE POLE - VERTICAL DEAD END TAP STRUCTURE
115 KV

NOTE:

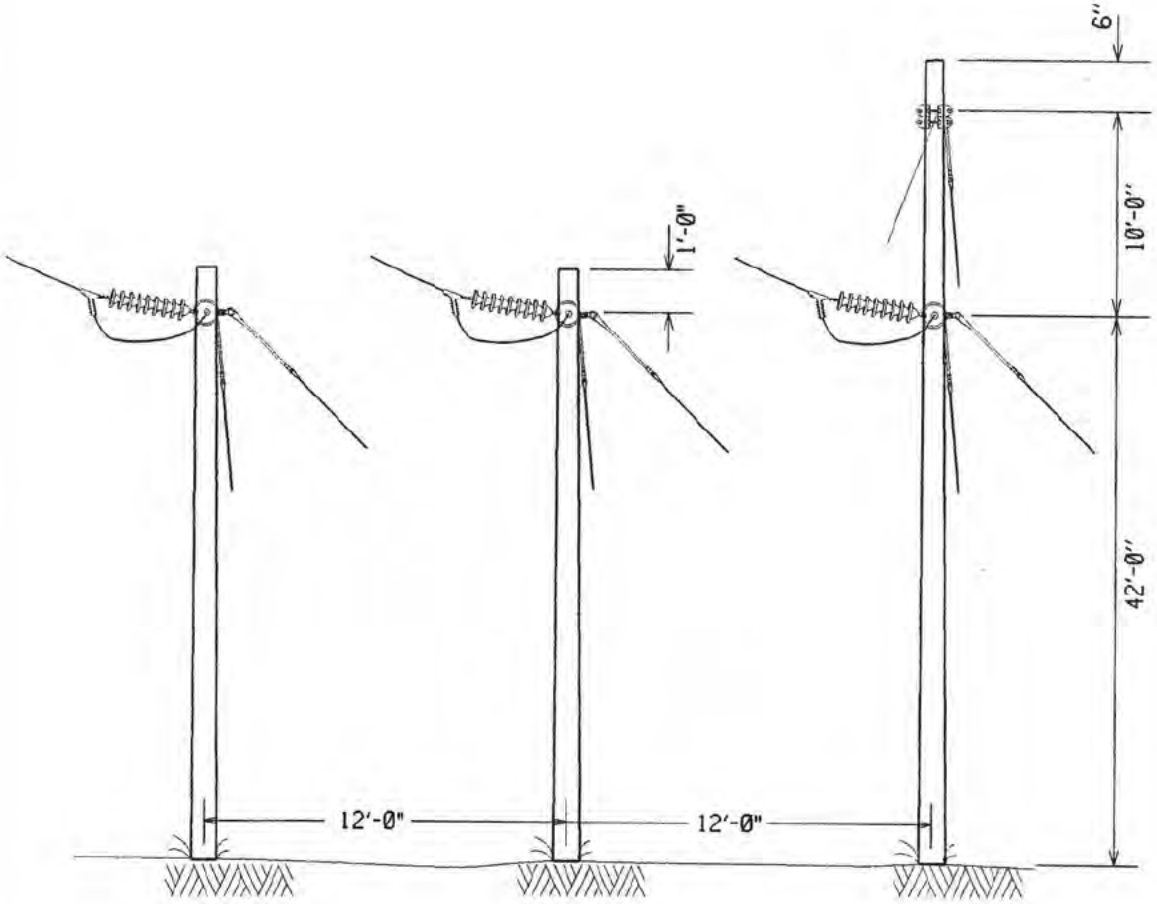
1. INDECK-LIGHTHOUSE HILL #2 (NMP2 EMERGENCY TAP)

NOT DRAWN TO SCALE

FIGURE 8.2-6n

115KV TRANSMISSION STRUCTURE
SINGLE POLE-VERTICLE
DEAD END TAP STRUCTURE

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



THREE POLE DEAD END STRUCTURE
0°-90°
115KV

NOTE:

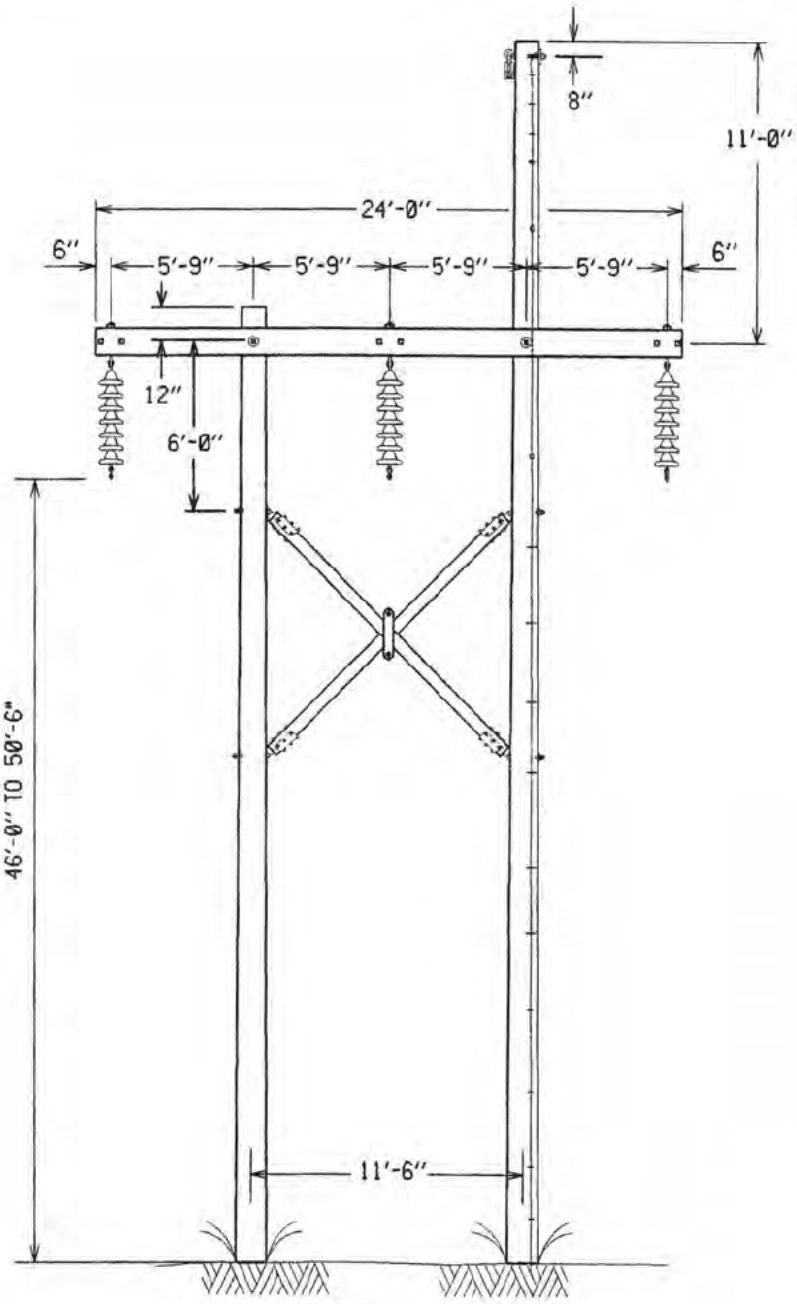
1. INDECK-LIGHTHOUSE HILL #2 (NMP2 EMERGENCY TAP)

NOT DRAWN TO SCALE

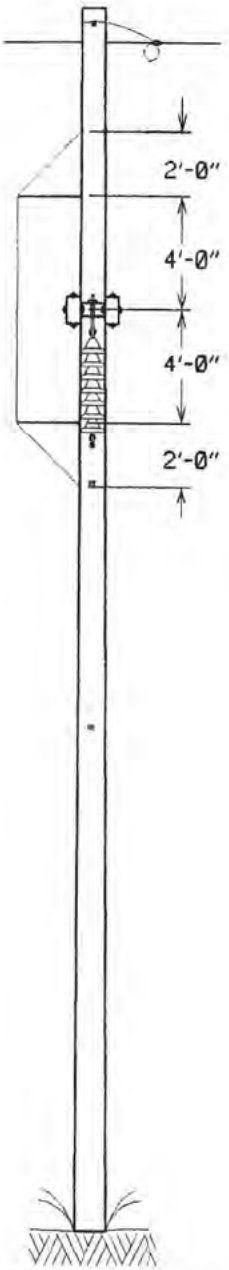
FIGURE 8.2-6o

115KV TRANSMISSION STRUCTURE
THREE POLE DEAD END STRUCTURE
0°-90°

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



FRONT VIEW



SIDE VIEW

TWO POLE TANGENT "H" FRAME
115 KV

NOTE:

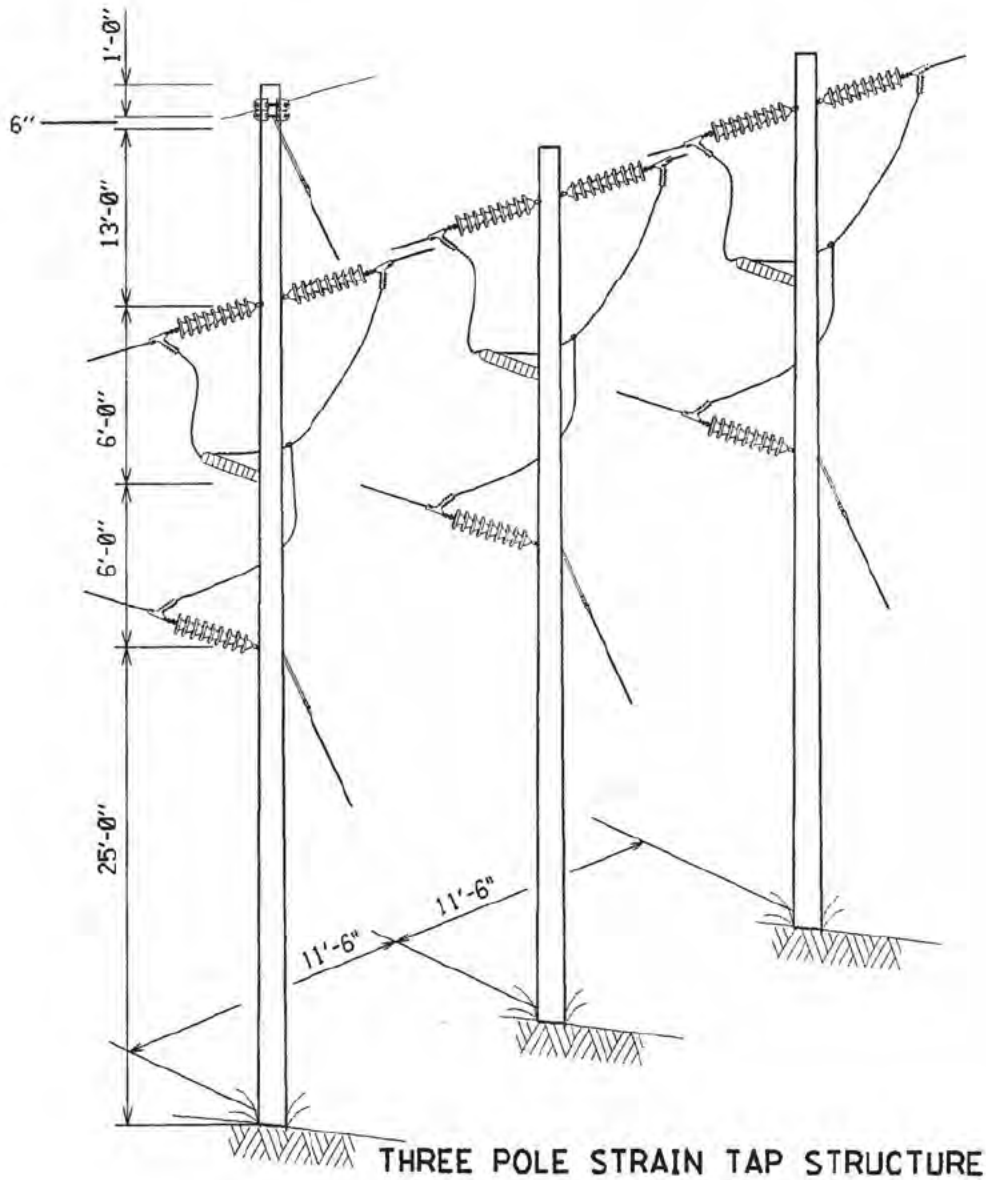
1. DIMENSIONS WILL VARY TO SATISFY CLEARANCES.
2. INDECK-LIGHTHOUSE HILL #2 (NMP2 EMERGENCY TAP)

NOT DRAWN TO SCALE

FIGURE 8.2-6p

115KV TRANSMISSION STRUCTURE
TWO POLE TANGENT "H" FRAME
TYPE D-1331A

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



THREE POLE STRAIN TAP STRUCTURE
115KV

NOTE:

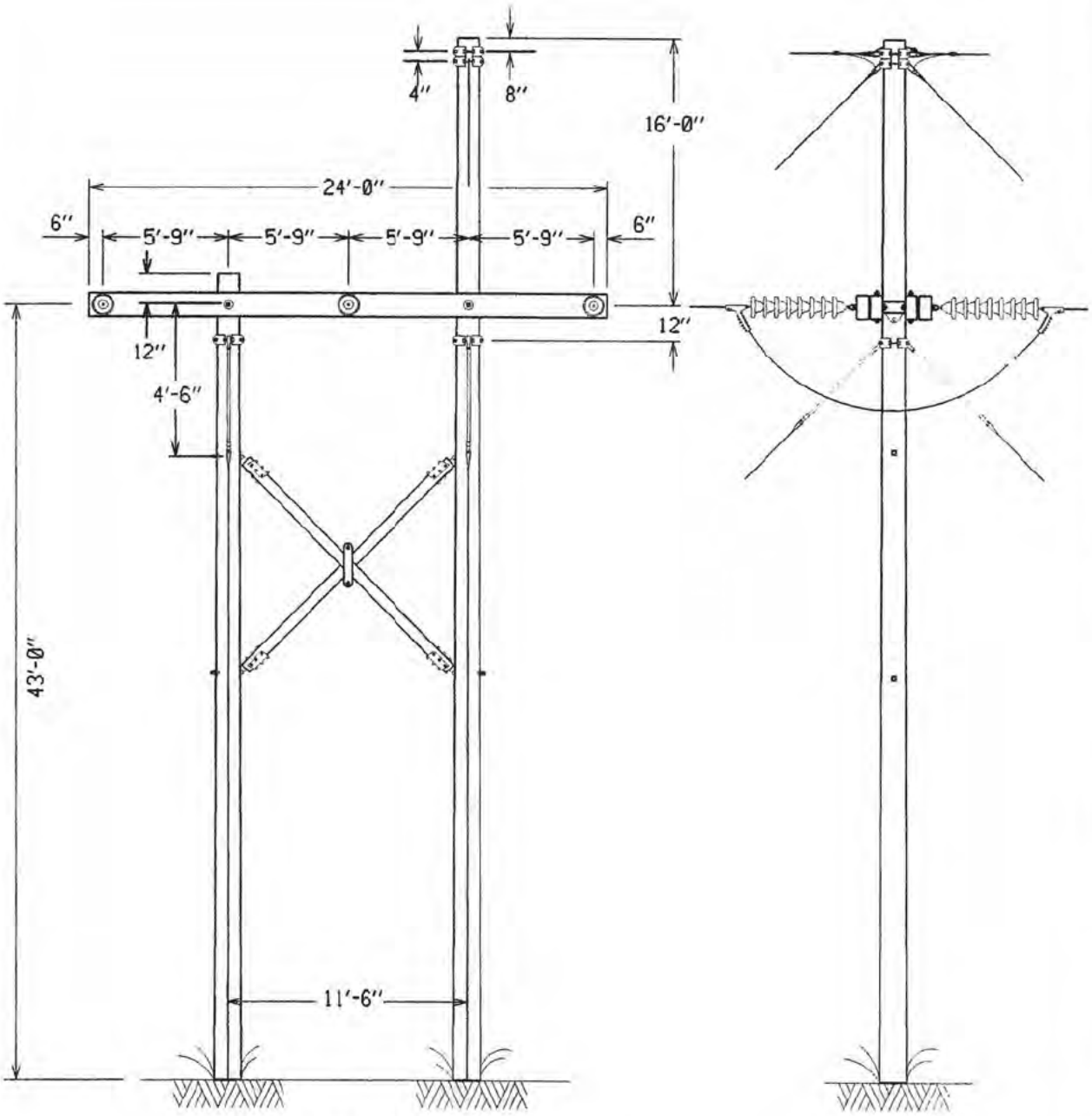
1. INDECK-LIGHTHOUSE HILL #2 (NMP2 EMERGENCY TAP)

NOT DRAWN TO SCALE

FIGURE 8.2-6q

115KV TRANSMISSION STRUCTURE
THREE POLE STRAIN TAP STRUCTURE

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



FRONT VIEW

SIDE VIEW

TWO POLE TANGENT STRAIN "H" FRAME
115 KV

NOTE:

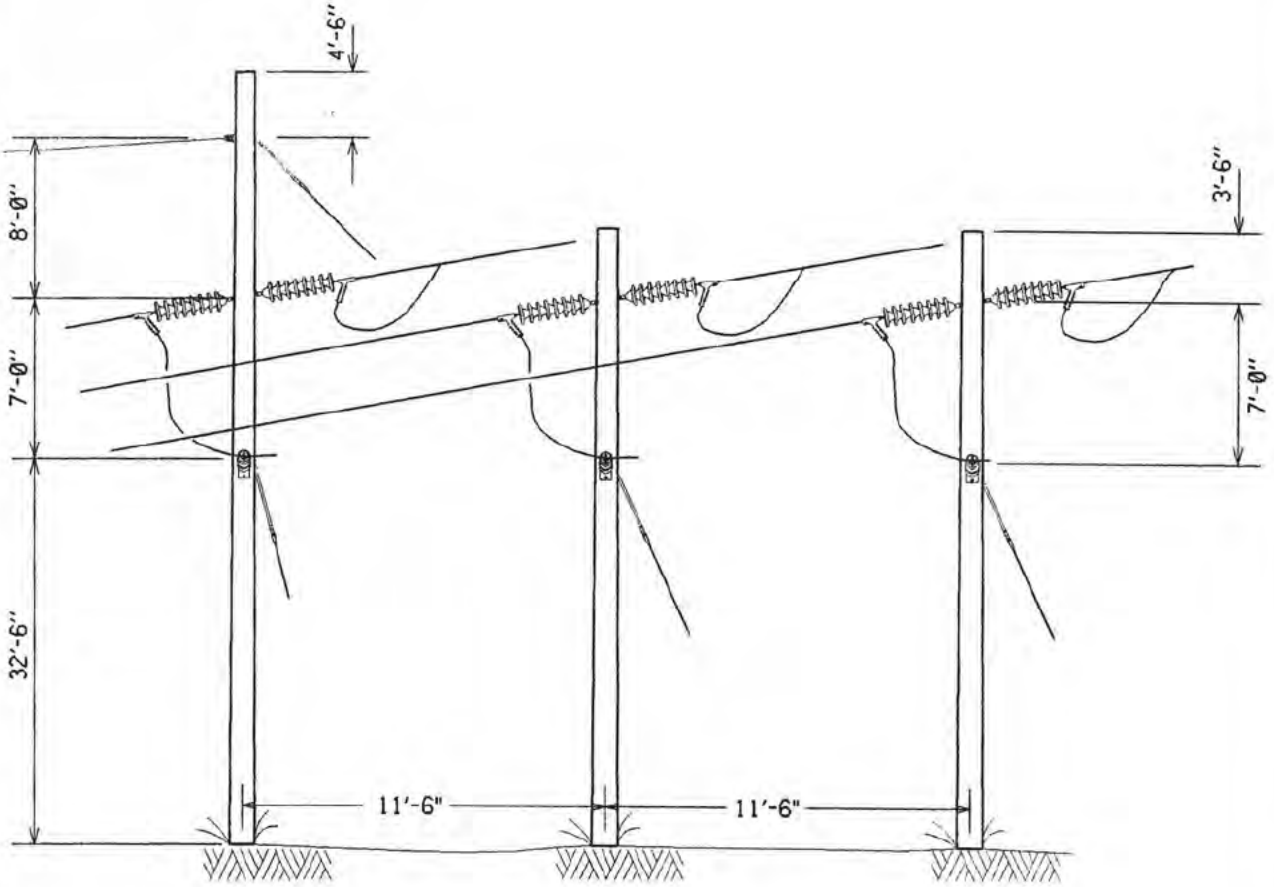
1. INDECK-LIGHTHOUSE HILL #2 (NMP2 EMERGENCY TAP)

NOT DRAWN TO SCALE

FIGURE 8.2-6r

115KV TRANSMISSION STRUCTURE
TWO POLE TANGENT STRAIN "H" FRAME
TYPE D-1337A

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



THREE POLE TANGENT STRAIN STRUCTURE
115KV

NOTE:

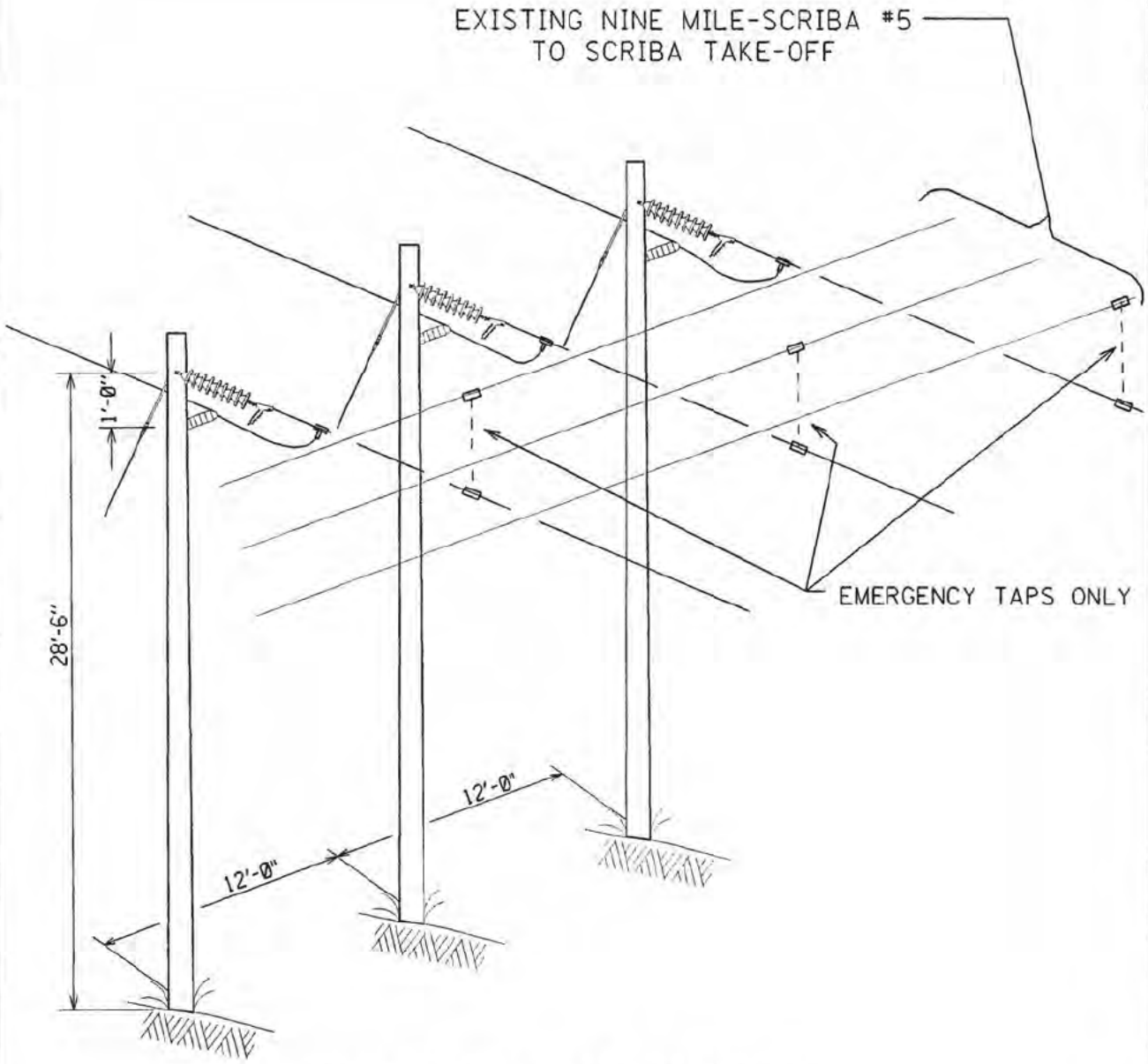
1. INDECK-LIGHTHOUSE HILL #2 (NMP2 EMERGENCY TAP)

NOT DRAWN TO SCALE

FIGURE 8.2-6s

115KV TRANSMISSION STRUCTURE
THREE POLE TANGENT STRAIN STRUCTURE

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



THREE POLE DEAD END STRUCTURE
115KV

NOTE:

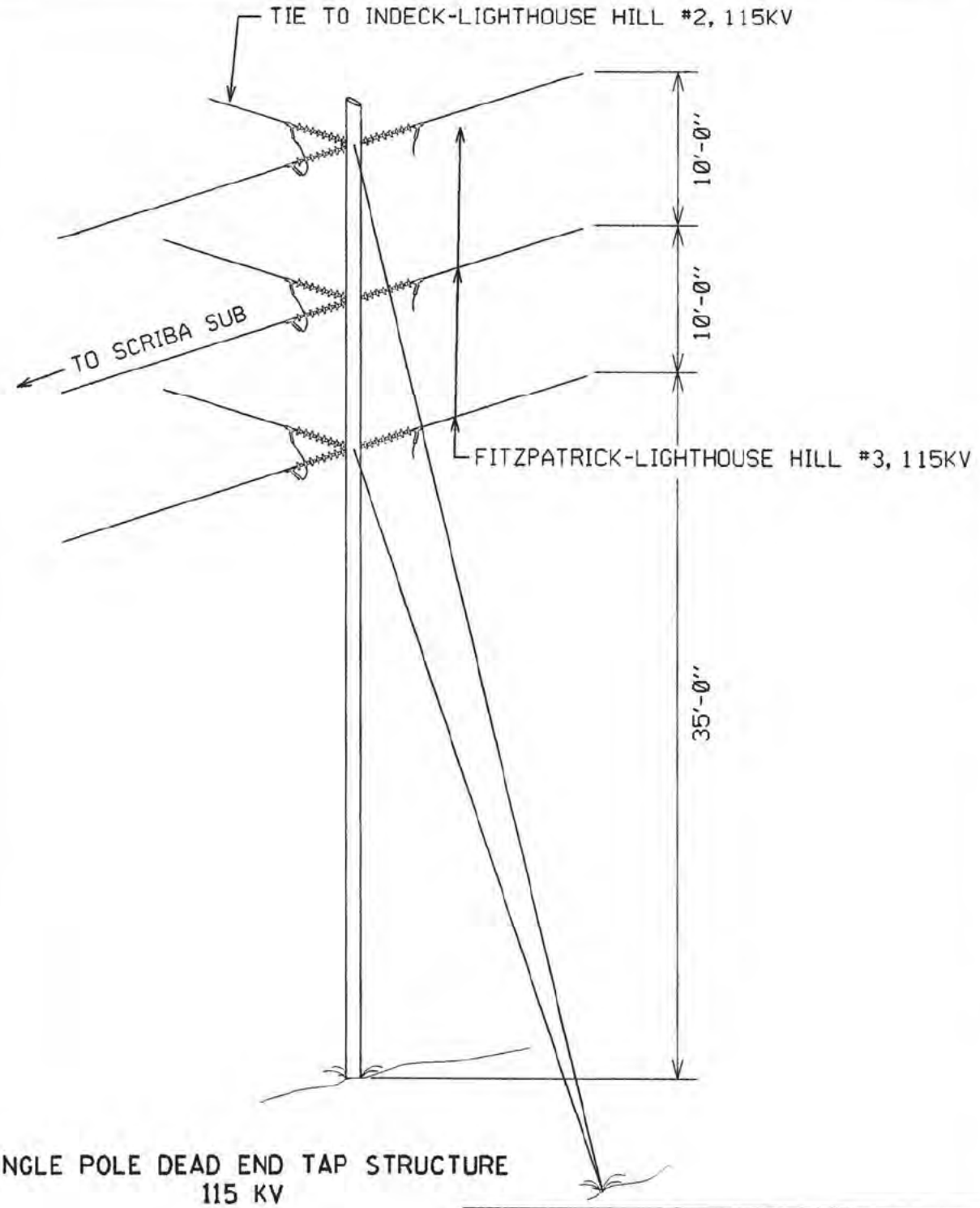
1. DIMENSIONS WILL VARY TO SATISFY CLEARANCES.

NOT DRAWN TO SCALE

FIGURE 8.2-6†

115KV TRANSMISSION STRUCTURE
THREE POLE DEAD END STRUCTURE

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



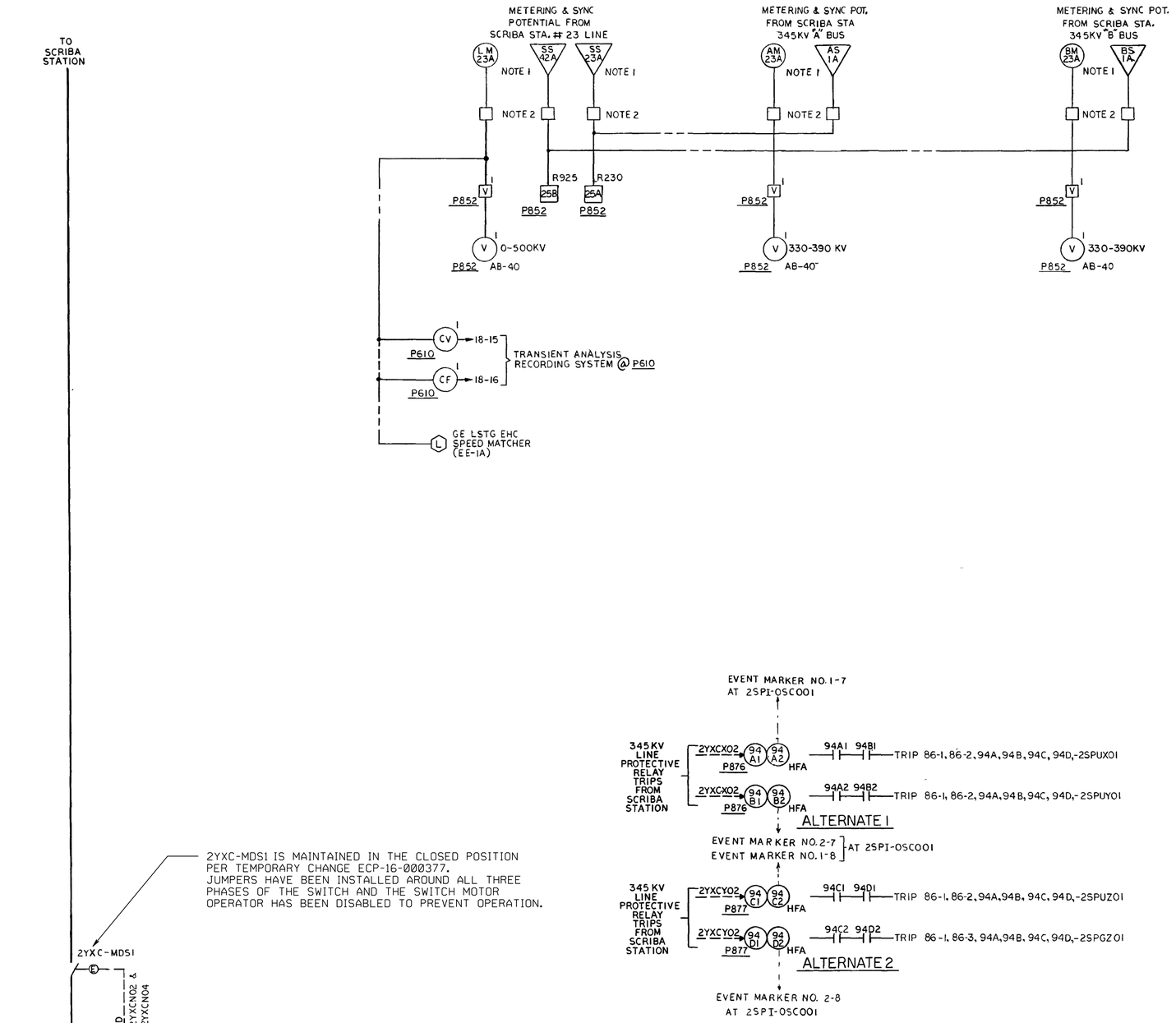
SINGLE POLE DEAD END TAP STRUCTURE
115 KV

FIGURE 8.2-6u

115KV TRANSMISSION STRUCTURE
SINGLE POLE DEAD END TAP STRUCTURE
TYPE D-1304A

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT

NOT DRAWN TO SCALE

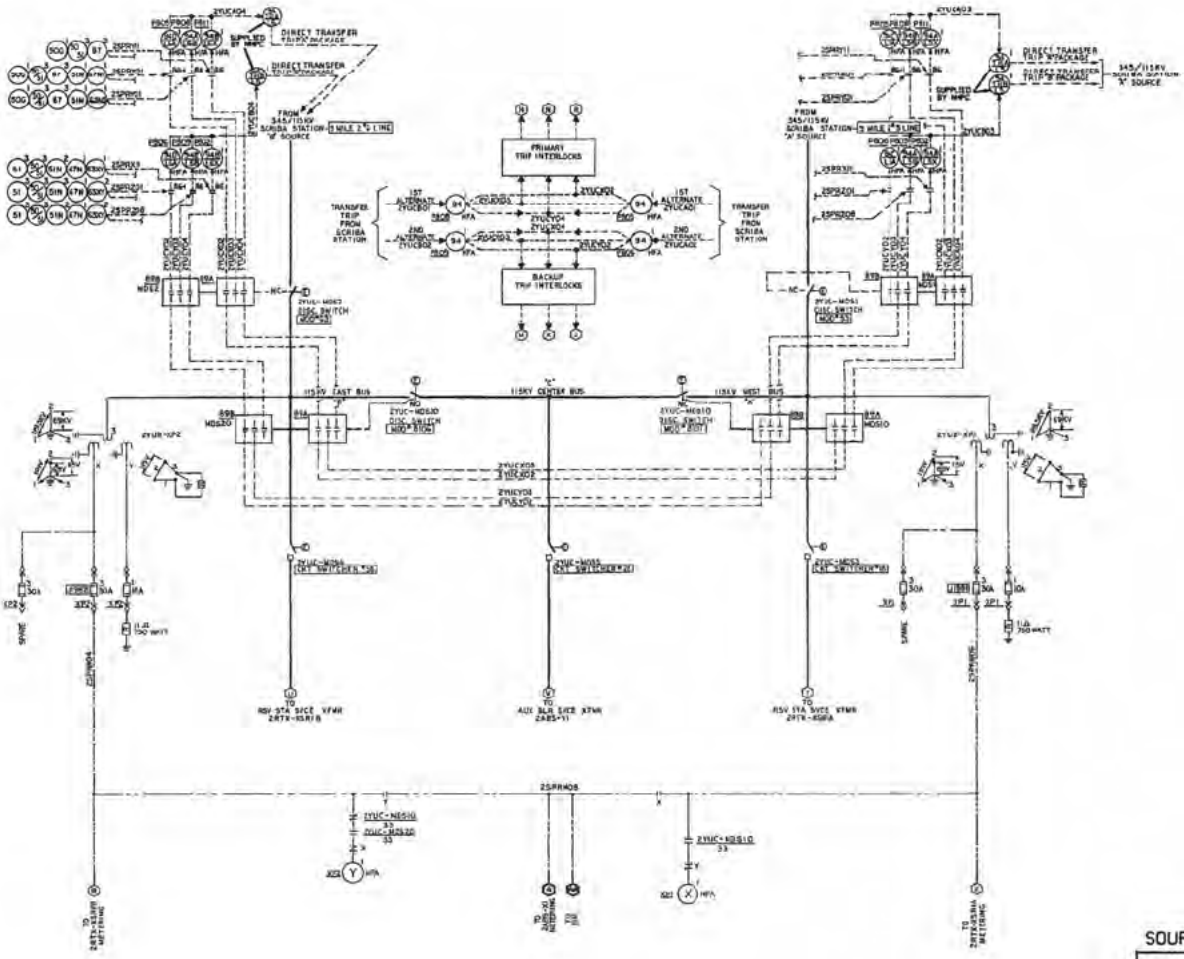


SOURCE: EE-001FA

FIGURE 8.2-7

345KV SWITCHYARD ONE LINE DIAGRAM

NINE MILE POINT
NUCLEAR STATION-UNIT 2
SCRIBA, N.Y.
UPDATED SAFETY ANALYSIS REPORT



SOURCE: EE-1EA REV. 11

FIGURE 8.2-8

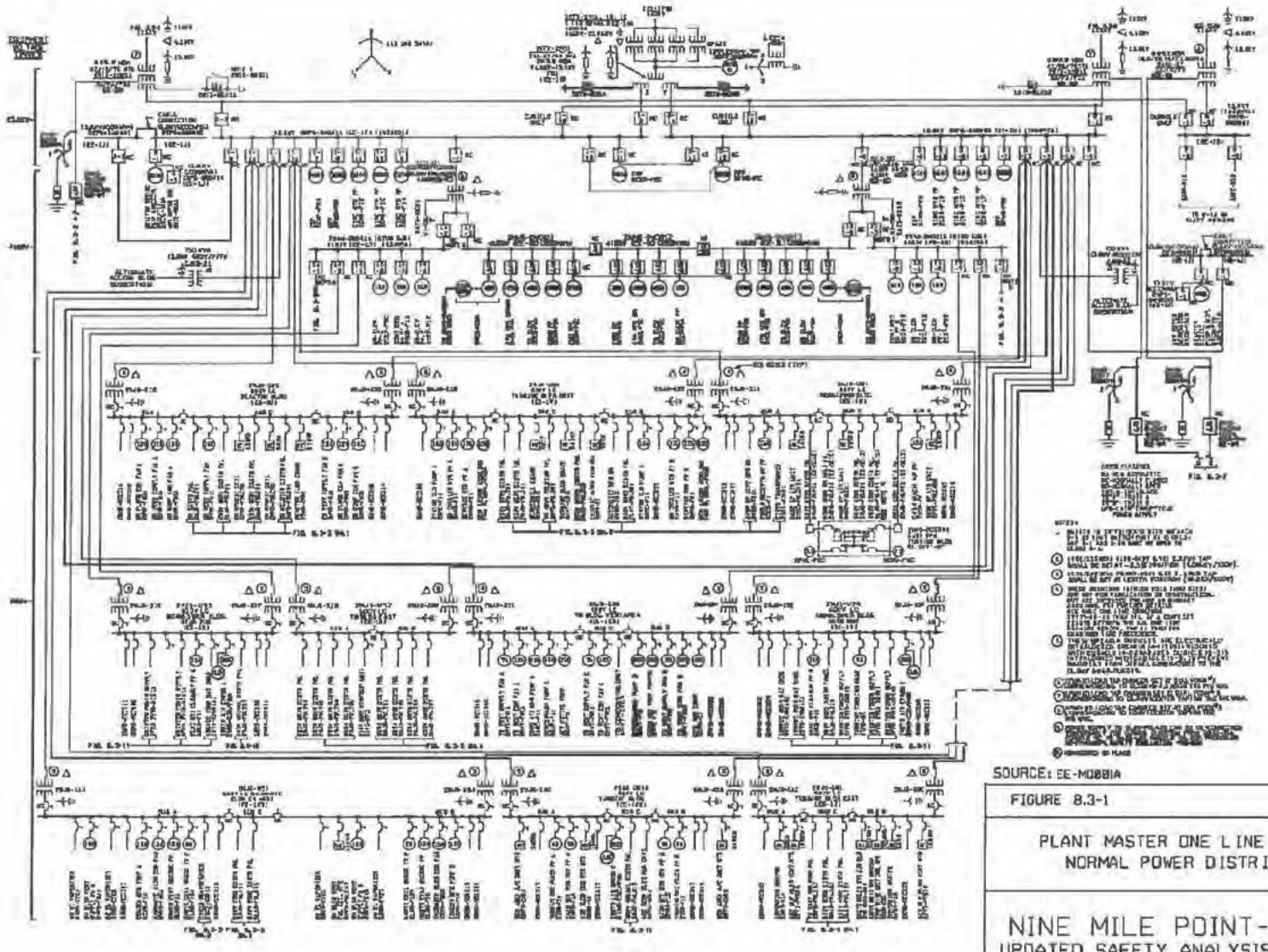
115KV SWITCHYARD

NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT

FIGURE 8.2-9

NMPC GRID

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATE SAFETY ANALYSIS REPORT

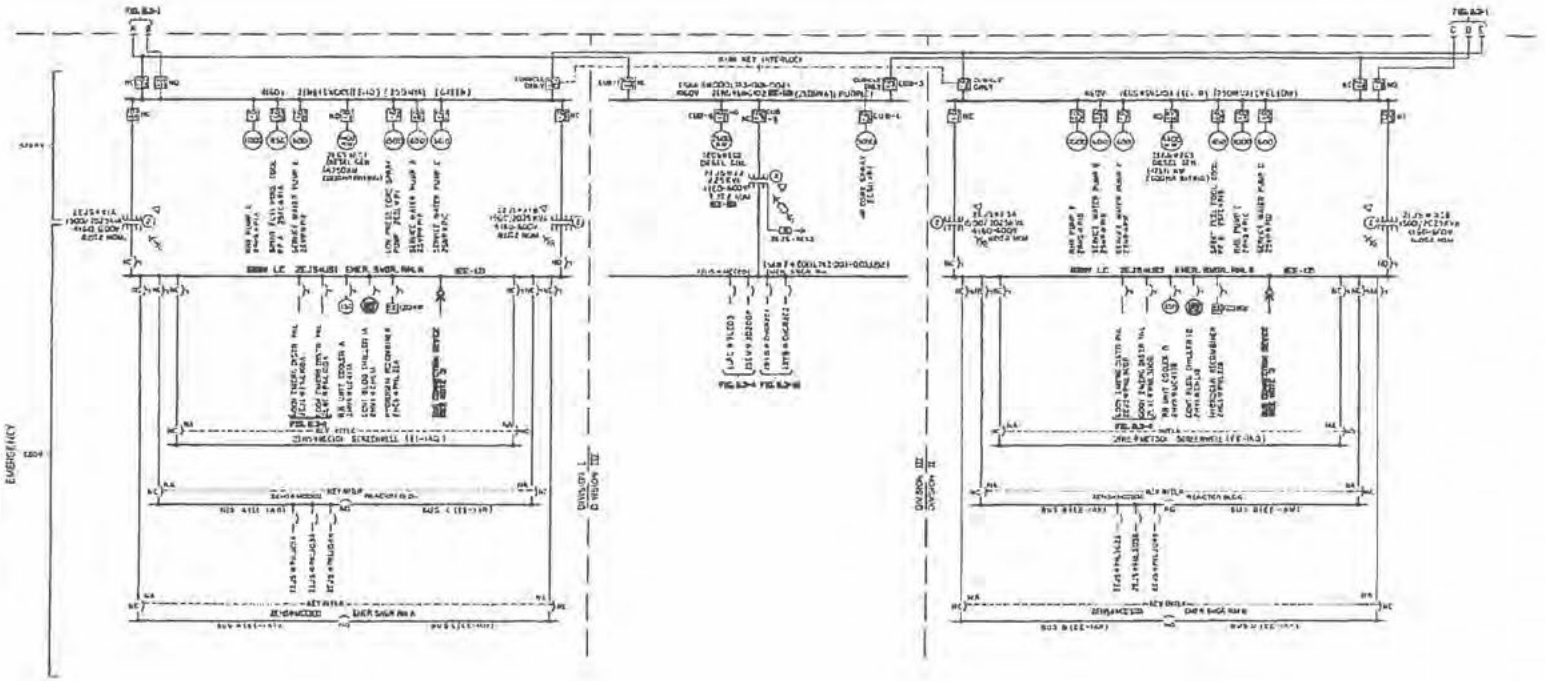


SOURCE: EE-M088A

FIGURE 8.3-1

PLANT MASTER ONE LINE DIAGRAM
NORMAL POWER DISTRIBUTION

NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



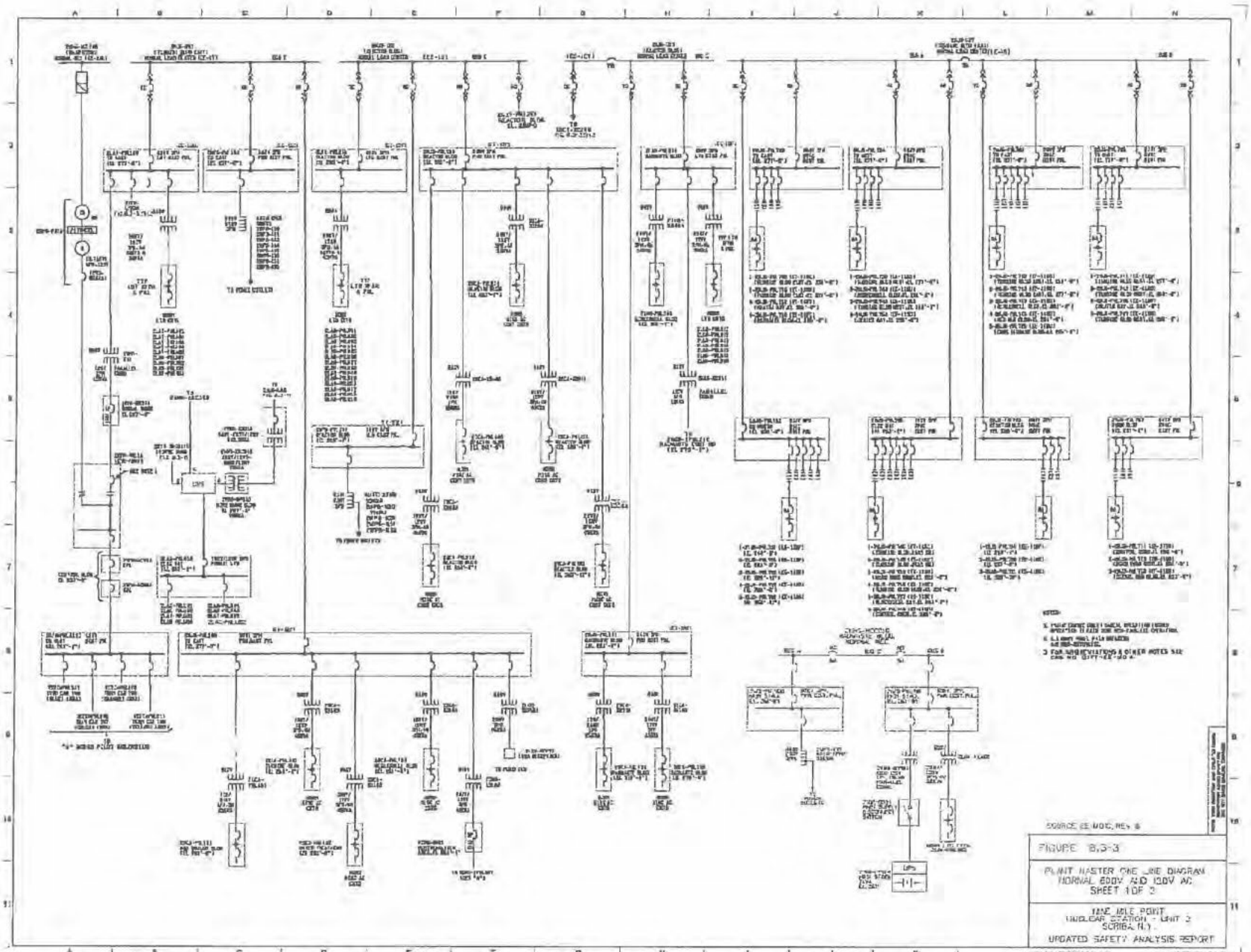
NOTES:

SOURCE: EE-M08018

FIGURE 8.3-2

PLANT MASTER ONE LINE DIAGRAM
EMERGENCY POWER DISTRIBUTION

NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



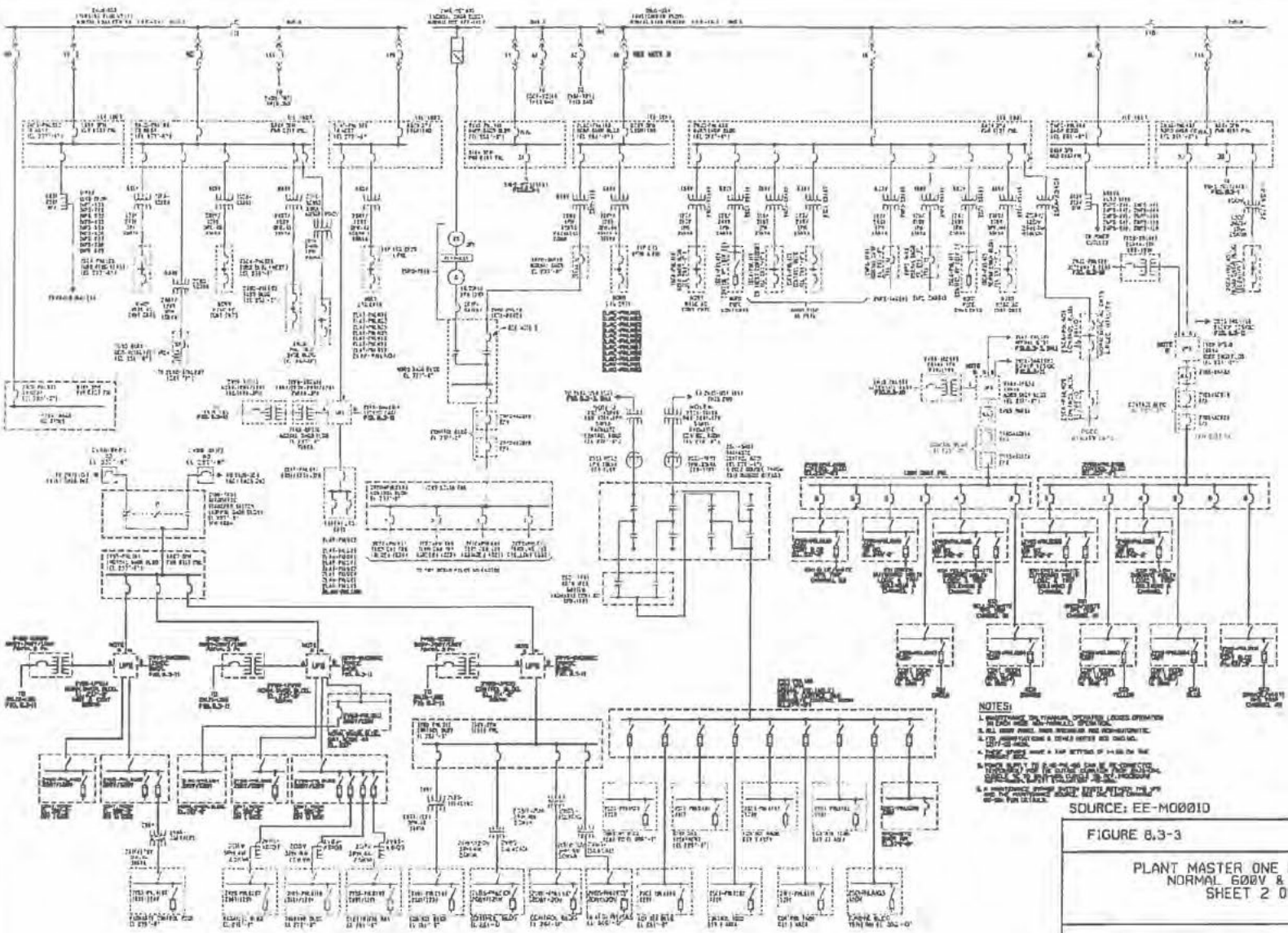
SOURCE: EE-M-0C, REV. 8

FIGURE 8.3-3

PLANT MASTER ONE LINE DIAGRAM
NORMAL 600V AND 120V AC
SHEET 1 OF 2

NINE MILE POINT
NUCLEAR STATION - UNIT 2
SCRIBA, N.Y.

UPDATED SAFETY ANALYSIS REPORT

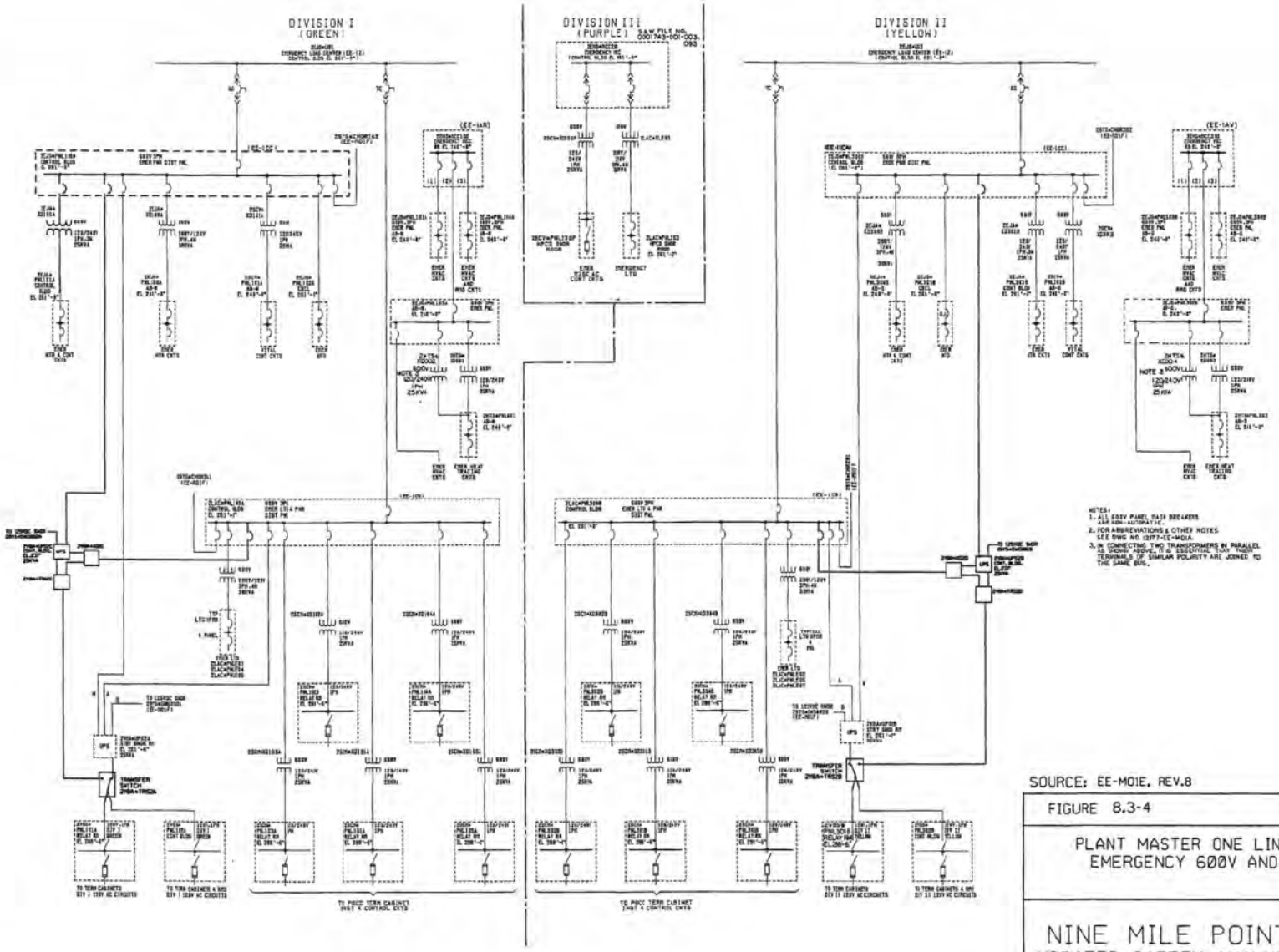


SOURCE: EE-M0001D

FIGURE 8.3-3

PLANT MASTER ONE LINE DIAGRAM
NORMAL 600V & 120VAC
SHEET 2 OF 2

NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



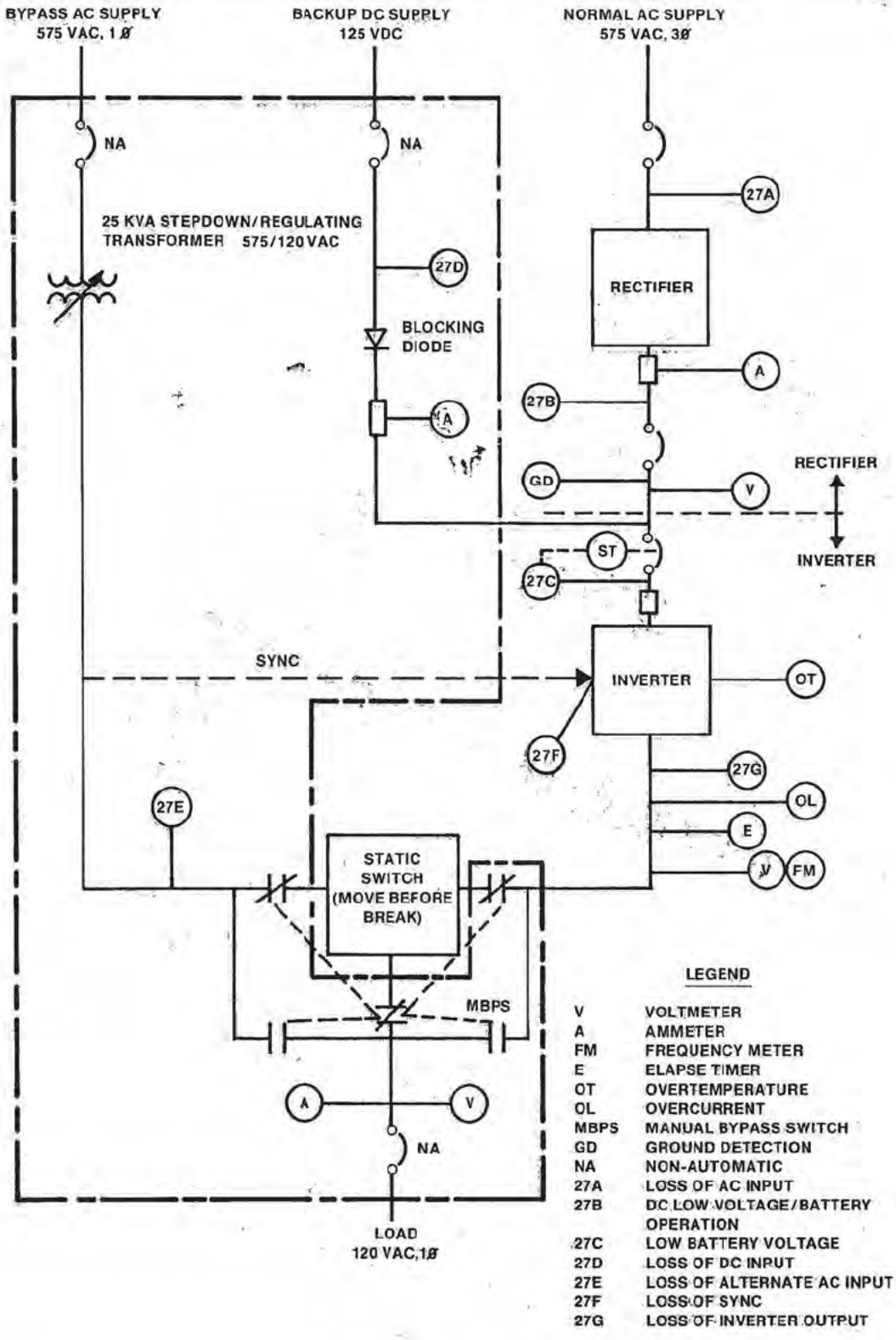
SOURCE: EE-MO1E, REV.8

FIGURE 8.3-4

PLANT MASTER ONE LINE DIAGRAM
EMERGENCY 600V AND 120V AC

NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT

...\E47546\msuser\EE-MO001E_na.dgn 10/9/2006 9:58:02 AM



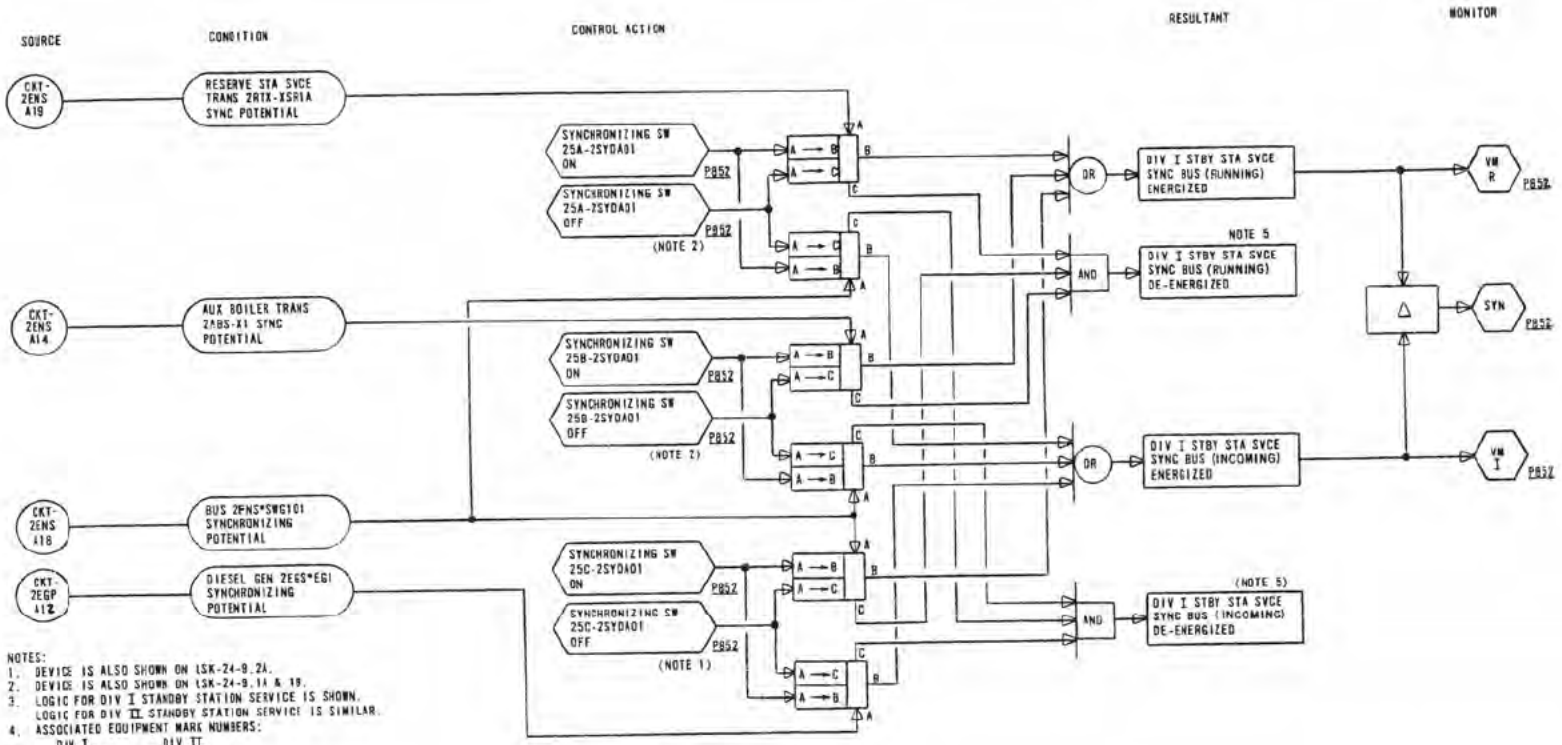
LEGEND

V	VOLTMETER
A	AMMETER
FM	FREQUENCY METER
E	ELAPSE TIMER
OT	OVERTEMPERATURE
OL	OVERCURRENT
MBPS	MANUAL BYPASS SWITCH
GD	GROUND DETECTION
NA	NON-AUTOMATIC
27A	LOSS OF AC INPUT
27B	DC LOW VOLTAGE/BATTERY OPERATION
27C	LOW BATTERY VOLTAGE
27D	LOSS OF DC INPUT
27E	LOSS OF ALTERNATE AC INPUT
27F	LOSS OF SYNC
27G	LOSS OF INVERTER OUTPUT

FIGURE 8.3-5

25 KVA SINGLE PHASE UNINTERRUPTIBLE POWER SUPPLY SYSTEM

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:
1. DEVICE IS ALSO SHOWN ON LSK-24-9.2A.
2. DEVICE IS ALSO SHOWN ON LSK-24-9.1A & 1B.
3. LOGIC FOR DIV I STANDBY STATION SERVICE IS SHOWN. LOGIC FOR DIV II STANDBY STATION SERVICE IS SIMILAR.
4. ASSOCIATED EQUIPMENT MARK NUMBERS:

DIV I	DIV II
25A-2SYDA02	25A-2SYDB02
25B-2SYDA02	25B-2SYDB02
25C-2SYDA02	25C-2SYDB02
GEN 2EGS*EG1	GEN 2EGS*EG3
BUS 2ENS*SWG101	BUS 2ENS*SWG103
CKT-2ENSA18	CKT-2ENSB18
CKT-2EGPA12	CKT-2EGPB12

5. THIS SYNCHRONIZING CONTROL BUS IS INDEPENDENT OF BUS SHOWN ON LSK-14-12.3B.

NOTE:

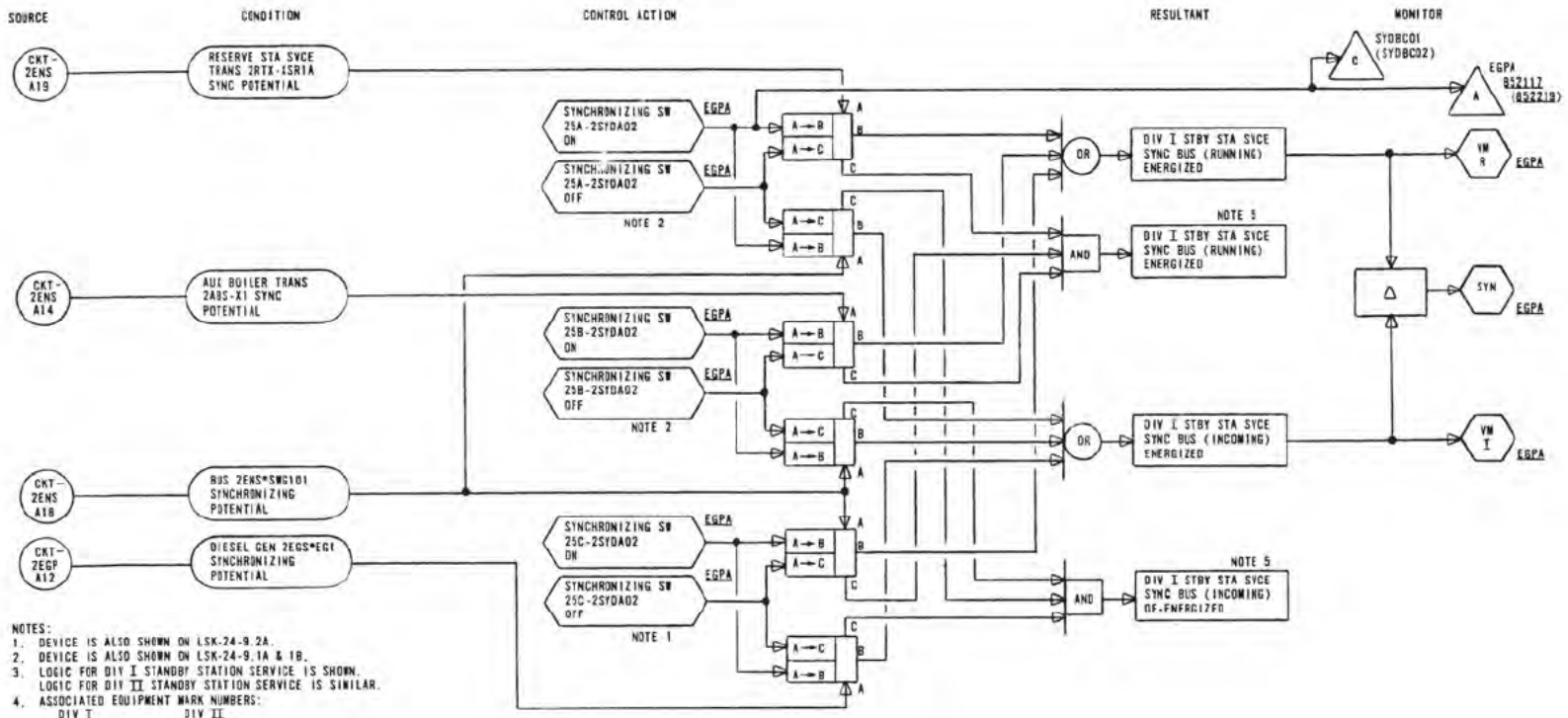
FOR LATEST SET POINT INFORMATION SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-24-12.3A REV. 4

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 1 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:
1. DEVICE IS ALSO SHOWN ON LSK-24-9.2A.
2. DEVICE IS ALSO SHOWN ON LSK-24-9.1A & 1B.
3. LOGIC FOR DIV I STANDBY STATION SERVICE IS SHOWN. LOGIC FOR DIV II STANDBY STATION SERVICE IS SIMILAR.
4. ASSOCIATED EQUIPMENT MARK NUMBERS:

DIV I	DIV II
25A-2SYDA02	25A-2SYD802
25B-2SYDA02	25B-2SYD802
25C-2SYDA02	25C-2SYD802
GEN 2EGS*EG1	GEN 2EGS*EG3
BUS 2ENS*SWG101	BUS 2ENS*SWG103
CKT-2ENSA18	CKT-2ENS2B18
CKT-2EGPA12	CKT-2EGP812

5. THIS SYNCHRONIZING CONTROL BUS IS INDEPENDENT OF BUS SHOWN ON LSK-24-12.3A.

NOTE:

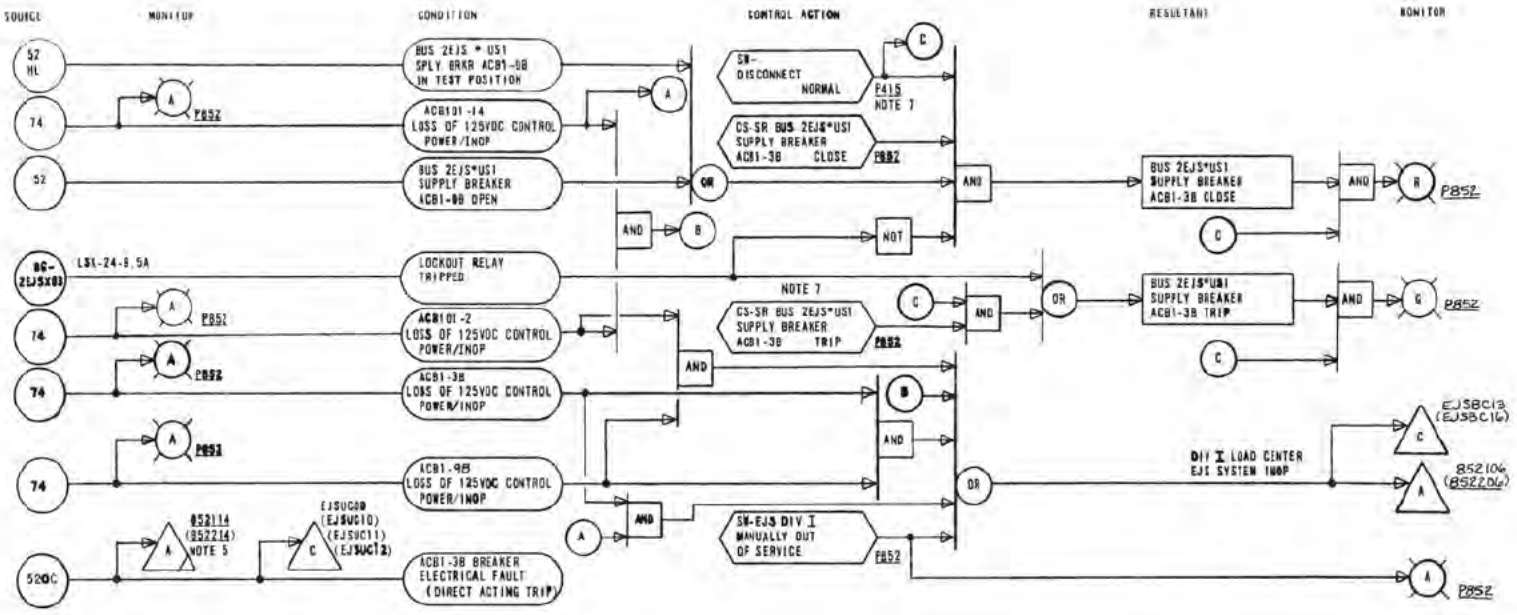
FOR LATEST SET POINT INFORMATION SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-24-12.38 REV. 4

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 2 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:

1. FOR BREAKER CONTROL, MONITOR AND OVERCURRENT TRIP LOGIC, REFER TO LSK-24-10.1.
2. LOGIC FOR 600V STANDBY LOAD CENTER BUS 2EJS*US1 SUPPLY BREAKER ACB1-38 IS SHOWN. LOGIC FOR 600V STANDBY LOAD CENTER BUS 2EJS*US1 SUPPLY BREAKER ACB1-08 AND BUS 2EJS*UB3 SUPPLY BREAKERS ACB3-38 AND ACB3-08 IS SIMILAR.
3. ASSOCIATED EQUIPMENT MARK NUMBERS:

ACB1-38	ACB1-08	ACB3-38	ACB3-08
88-2EJSX09	88-2EJSX04	88-2EJSY03	88-2EJSY04
52-2EJSX06	52-2EJSX05	52-2EJSY06	52-2EJSY05
74-2EJSX08	74-2EJSX06	74-2EJSY05	74-2EJSY06
ACB101-14	ACB101-2	ACB103-1	ACB103-13
74-2EJSX03	74-EJSX04	74-EJSY08	74-EJSY04

4. ALARM LOGIC FOR EJS DIV I BYPASS/INOPERABLE IS SHOWN. ALARM LOGIC FOR EJS DIV II BYPASS/INOPERABLE IS SIMILAR.
5. DIVISION I ACB1-38 AND ACB1-08 WILL SHARE A COMMON ALARM WINDOW. DIVISION II ACB3-38 AND ACB3-08 WILL SHARE A COMMON ALARM WINDOW.
6. DISCONNECT SWITCH USED ONLY TO ISOLATE CONTROLS & INDICATING LIGHTS IN THE EVENT THAT CONTROL ROOM AND/OR RELAY ROOM IS ON FIRE.
7. LOGIC FOR THE CONTROL ROOM FIRE DISCONNECT SWITCH IS APPLICABLE ONLY FOR 2EJS*US1 NORMAL SUPPLY BREAKER ACB 1-38 AND 2EJS*US3 NORMAL SUPPLY BREAKER ACB 3-38

NOTE:

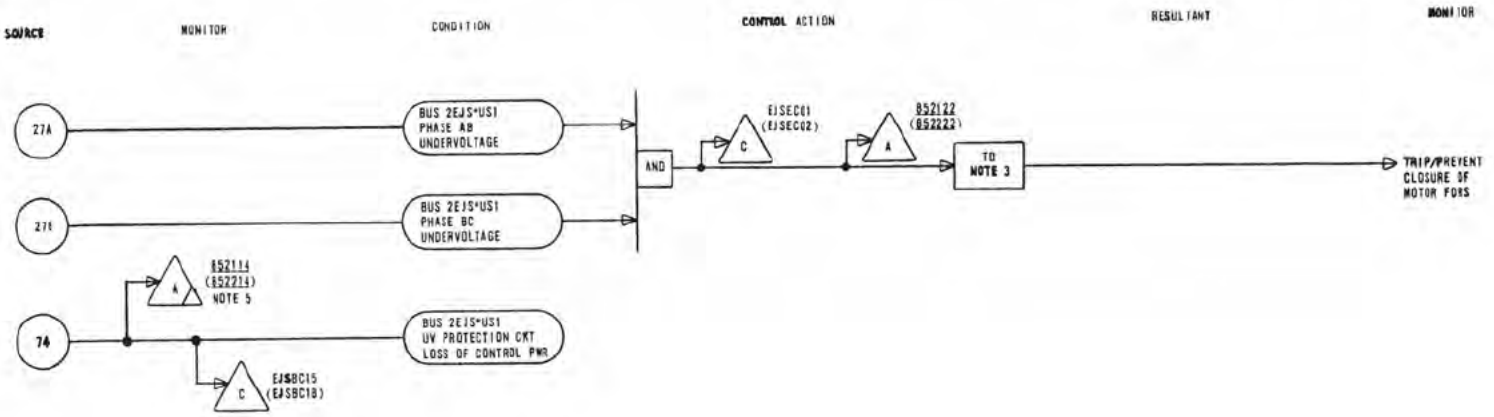
FOR LATEST SET POINT INFORMATION SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-24-11.1A REV. 7

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 3 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:
1. LOGIC FOR BUS 2EJS*US1 IS SHOWN. LOGIC FOR BUS 2EJS*US3 IS SIMILAR.
2. NOTE 5 - REFER TO LSK-24-11.1A.
3. FIELD TO SET. REFER TO ELECTRICAL ER DWGS.

NOTE:

FOR LATEST SET POINT INFORMATION
SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-24-11.1B REV. 7

FIGURE 8.3-6

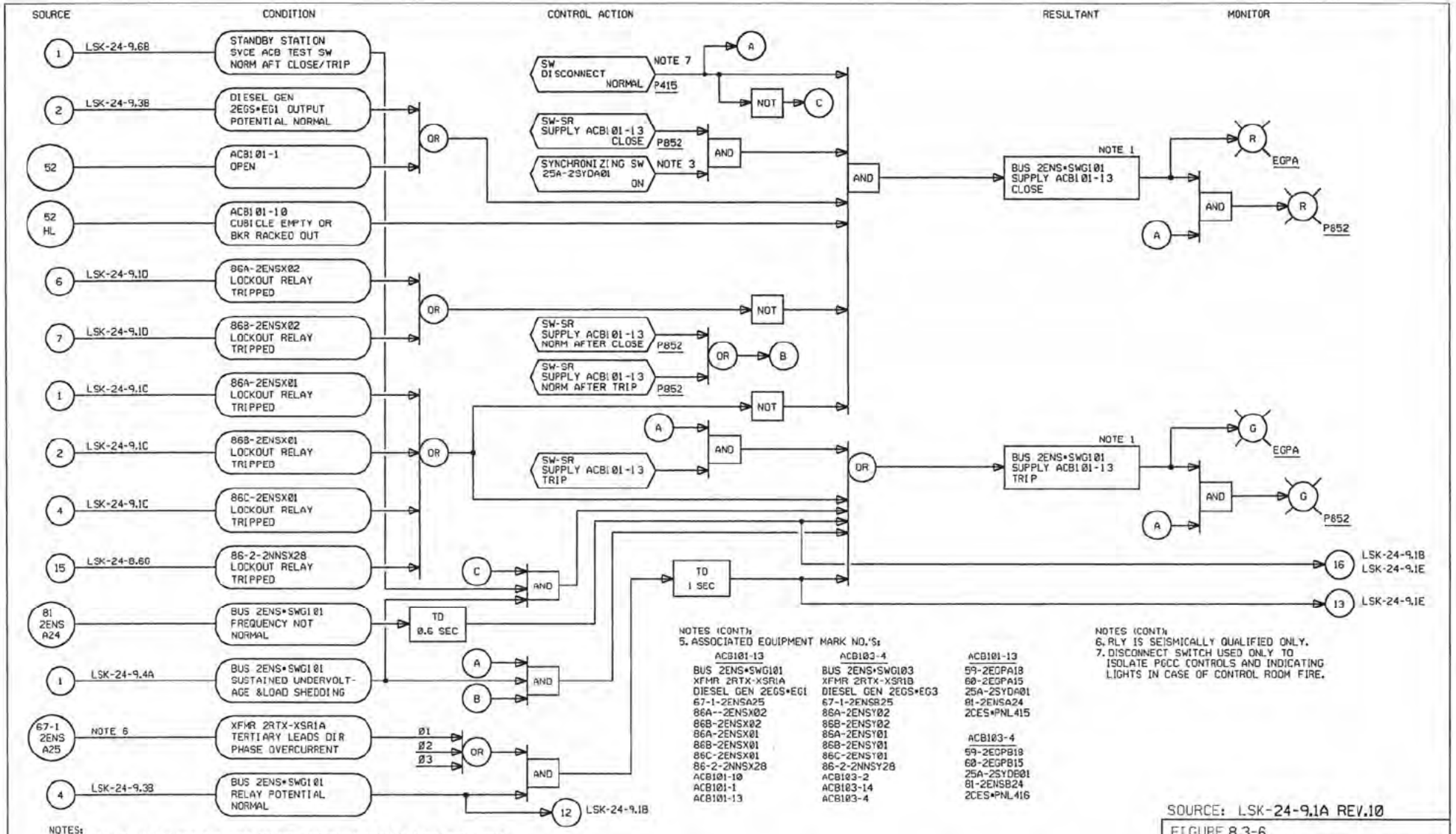
STANDBY DIESEL GENERATOR
CONTROL AND PROTECTION LOGICS
SHEET 4 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT

THIS FIGURE HAS
BEEN DELETED

FIGURE 8.3-6, SH.5

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:
1. REFER TO LSK-24-9.6 FOR BKR TEST CONTROL, COMPUTER INPUT & INDICATION LOGIC.
2. REFER TO LSK-24-9.1E, 24-9.1F & 24-9.1G FOR THE SYSTEM ANNUNCIATION LOGIC.
3. REFER TO LSK-24-12.3A FOR SYNCHRONIZING LOGIC.
4. LOGIC FOR SUPPLY ACB101-13 IS SHOWN. LOGIC FOR SUPPLY ACB103-4 IS SIMILAR.

NOTES (CONT):
5. ASSOCIATED EQUIPMENT MARK NO.'S:

ACB101-13	ACB103-4	ACB101-13
BUS 2ENS•SWG101	BUS 2ENS•SWG103	59-2EGPA18
XFMR 2RTX-XSR1A	XFMR 2RTX-XSR1B	60-2EGPA15
DIESEL GEN 2EGS•EG1	DIESEL GEN 2EGS•EG3	25A-2SYDA01
67-1-2ENSA25	67-1-2ENSB25	81-2ENSA24
86A--2ENSX02	86A-2ENSY02	2CES•PNL415
86B-2ENSX02	86B-2ENSY02	
86A-2ENSX01	86A-2ENSY01	ACB103-4
86B-2ENSX01	86B-2ENSY01	59-2EGPB18
86C-2ENSX01	86C-2ENSY01	60-2EGPB15
86-2-2NNSX28	86-2-2NNSY28	25A-2SYDB01
ACB101-10	ACB103-2	81-2ENSB24
ACB101-1	ACB103-14	2CES•PNL416
ACB101-13	ACB103-4	

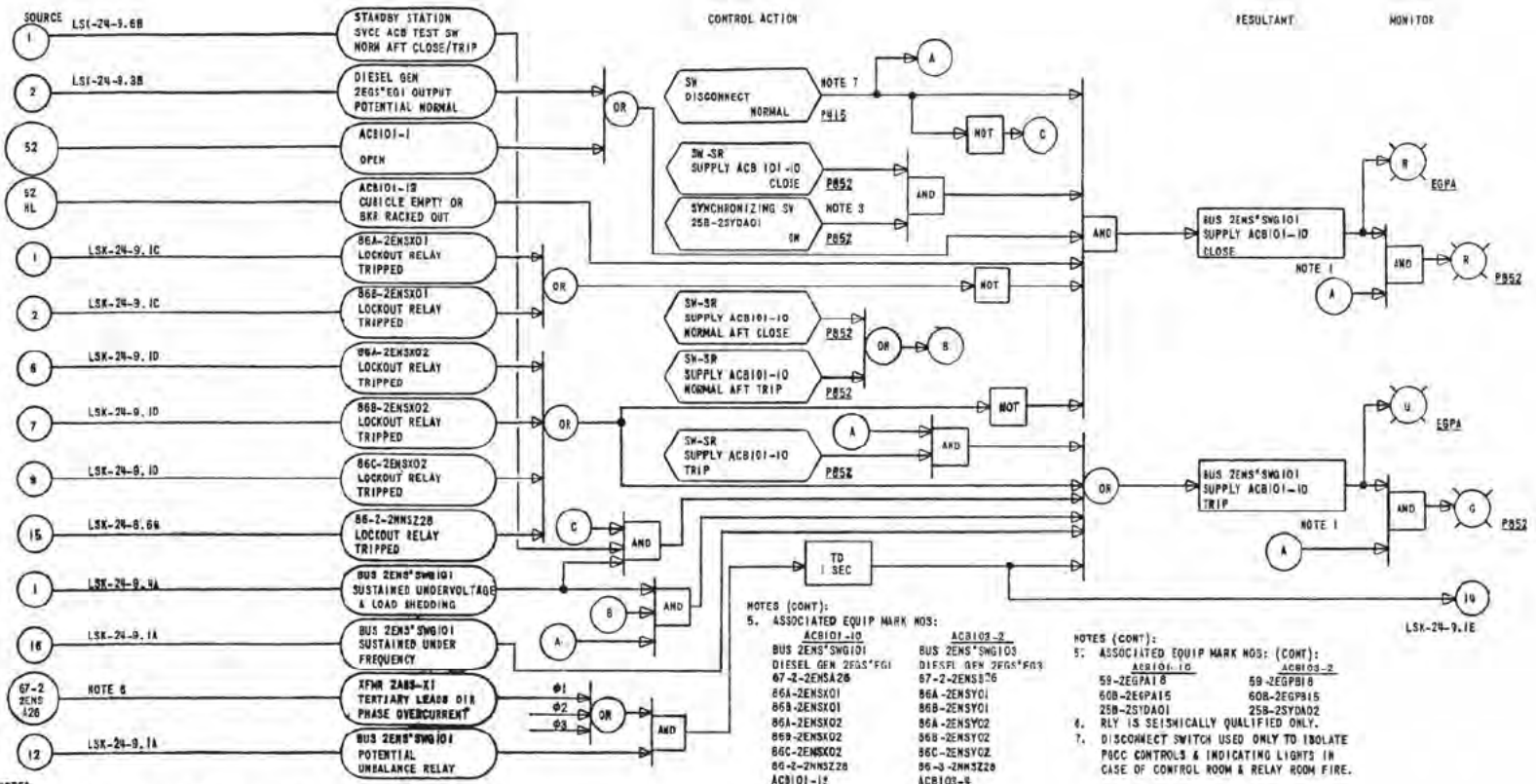
NOTES (CONT):
6. RLY IS SEISMICALLY QUALIFIED ONLY.
7. DISCONNECT SWITCH USED ONLY TO ISOLATE PCCC CONTROLS AND INDICATING LIGHTS IN CASE OF CONTROL ROOM FIRE.

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK-24-9.1A REV.10

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 6 OF 31



NOTES:

1. REFER TO LSK-24-9.6 FOR BKR TEST CONTROL, COMPUTER INPUT & INDICATION LOGIC.
2. REFER TO LSK-24-9.1E FOR THE SYSTEM ANNUNCIATION LOGIC.
3. REFER TO LSK 24-12.3A FOR SYNCHRONIZING LOGIC.
4. LOGIC FOR SUPPLY ACB101-10 IS SHOWN. LOGIC FOR SUPPLY ACB103-2 IS SIMILAR.

NOTES (CONT):

5. ASSOCIATED EQUIP MARK NOS:

ACB101-10	ACB103-2
BUS 2ENS*SWG101	BUS 2ENS*SWG103
DIESEL GEN 2EGS*EG1	DIESEL GEN 2EGS*EG3
67-2-2ENSA26	67-2-2ENSB26
86A-2ENSX01	86A-2ENSY01
86B-2ENSX01	86B-2ENSY01
86A-2ENSX02	86A-2ENSY02
86B-2ENSX02	86B-2ENSY02
86C-2ENSX02	86C-2ENSY02
86-2-2NNSZ28	86-3-2NNSZ28
ACB101-19	ACB103-19
ACB101-1	ACB103-1
2CES*PNL415	2CES*PNL416

NOTES (CONT):

5. ASSOCIATED EQUIP MARK NOS: (CONT):

ACB101-10	ACB103-2
59-2EGPA18	59-2EGPB18
60B-2EGPA15	60B-2EGPB15
25B-2SYDA01	25B-2SYDA02

6. RLY IS SEISMICALLY QUALIFIED ONLY.
7. DISCONNECT SWITCH USED ONLY TO ISOLATE PGCC CONTROLS & INDICATING LIGHTS IN CASE OF CONTROL ROOM & RELAY ROOM FIRE.

NOTE:

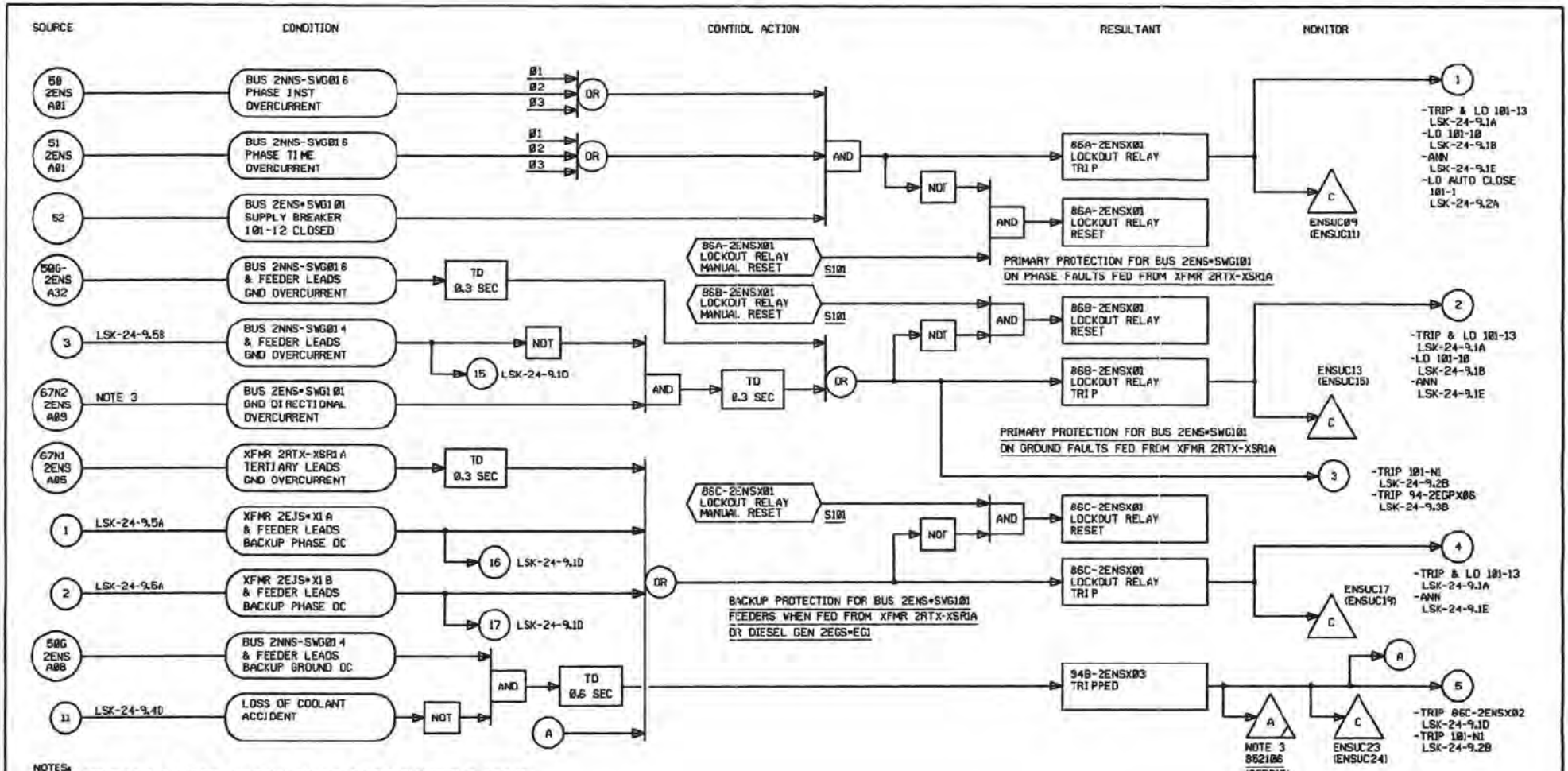
FOR LATEST SET POINT INFORMATION SEE SET POINT DATA SHEET

SOURCE: 1 21 77-LSK-24-9.1B REV.9

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 7 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:
1. LOGIC FOR 86A,B & C-2ENSX01 IS SHOWN. LOGIC FOR 86A,B & C-2ENSY01 IS SIMILAR.
2. ASSOCIATED EQUIPMENT NAMK NO.'S:

86A,B &C-2ENSX01	86A,B &C-2ENSY01	86A,B &C-2ENSX01	86A,B &C-2ENSY01
BUS 2ENS*SWG101	BUS 2ENS*SWG103	BKR 101-10	BKR 103-2
BUS 2NNS-SWG016	BUS 2NNS-SWG017	51-2ENSA01	51-2ENSB01
XFMR 2EJS*X1A	XFMR 2EJS*X3A	50G-2ENSA04	50G-2ENSB04
XFMR 2EJS*X1B	XFMR 2EJS*X3B	67N2-2ENSA09	67N6-2ENSB09
GEN 2EGS*EG1	GEN 2EGS*EG3	67N1-2ENSA05	67N5-2ENSB05
BKR 101-1	BKR 103-14	51-2EJSA01	51-2EJSB01
BUS 2NNS-SWG014	BUS 2NNS-SWG015	50-2ENSA01	50-2ENSB01
		50G-2ENSA32	50G-2ENSB32

3. SEE ADDITIONAL ALARM INPUTS ON LSK-24-9.1D & 24-9.5B.
4. RLY IS SEISMICALLY QUALIFIED ONLY.

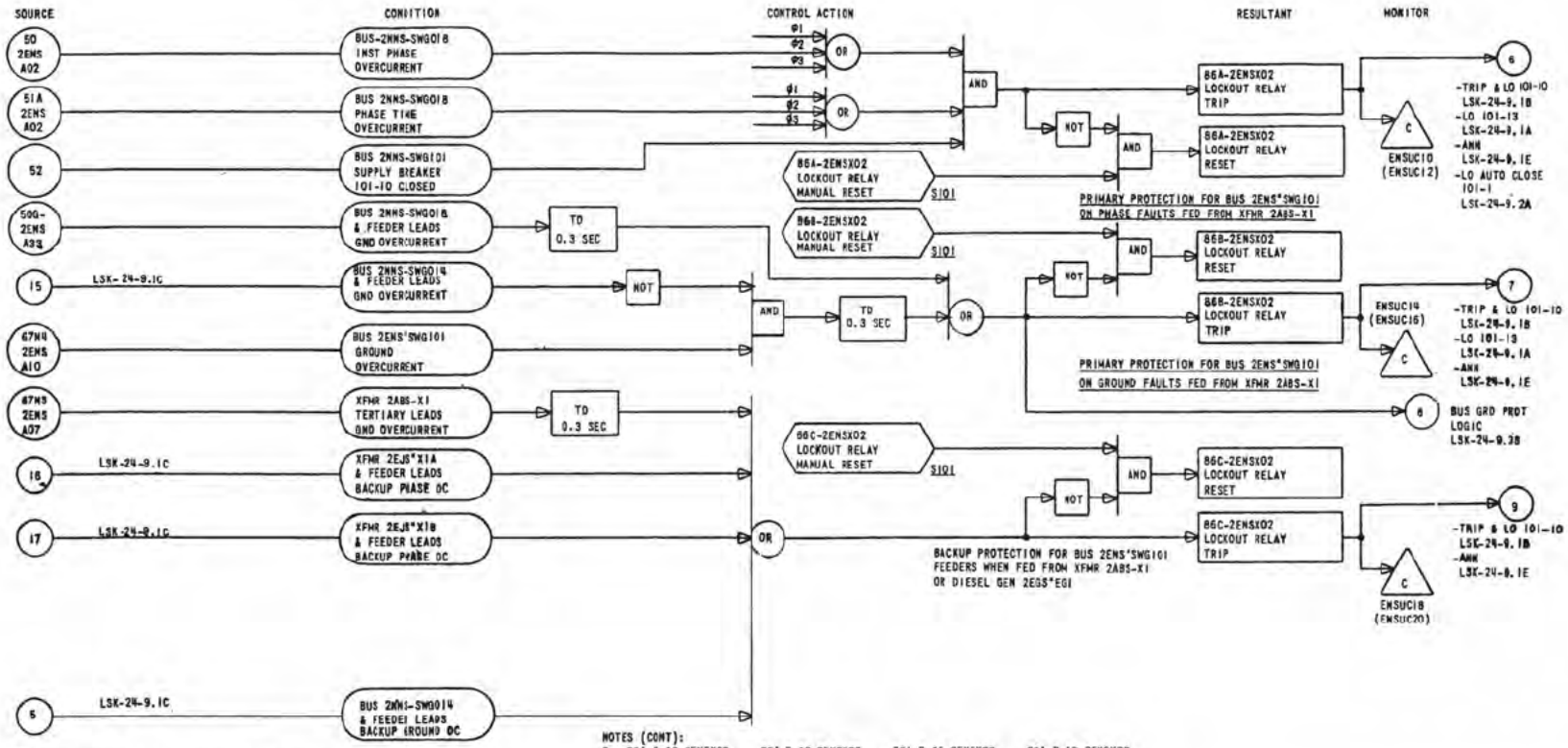
SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK-24-9.1C REV.11

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 8 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:

1. LOGIC FOR 86A,B & C-2ENSX02 IS SHOWN. LOGIC FOR 86A,B & C-2ENSY02 IS SIMILAR.
2. ASSOCIATED EQUIP MARK NOS.:

86A,B & C-2ENSX02	86A,B & C-2ENSY02	86A,B & C-2ENSX01	86A,B & C-2ENSY02
BUS 2ENS*SWG101	BUS 2ENS*SWG103	BKR 101-10	BKR 103-2
BUS 2NNS-SWG018	BUS 2NNS-SWG018	51A-2ENSA02	51A-2ENSB02
XFMR 2EJS*X1A	XFMR 2EJS*X3A	50G-2ENSA04	50G-2ENSB04
XFMR 2EJS*X1B	XFMR 2EJS*X3B	67N4-2ENSA10	67N8-2ENSB10
GEN 2EGS*EG1	GEN 2EGS*EG3	67N3-2ENSA07	67N7-2ENSB07
BKR 101-1	BKR 103-14	51-2EJSA01	51-2EJSB01
BKR 101-13	BKR 103-4	51-2EJSA04	51-2EJSB04
BUS 2NNS-SWG014	BUS 2NNS-SWG015	50G-2ENSA02	50G-2ENSB02

NOTES (CONT):

2.

86A,B,&C-2ENSX02	86A,B,&C-2ENSY02	86A,B,&C-2ENSX02	86A,B,&C-2ENSY02
BKR 101-11	BKR 103-5	50G-2ENSA33	50G-2ENSB33
		50G-2ENSA08	50G-2ENSB08

3. SEE ADDITIONAL ALARM INPUTS ON LSK-24-9.1C & 24-9.5B.

NOTE:

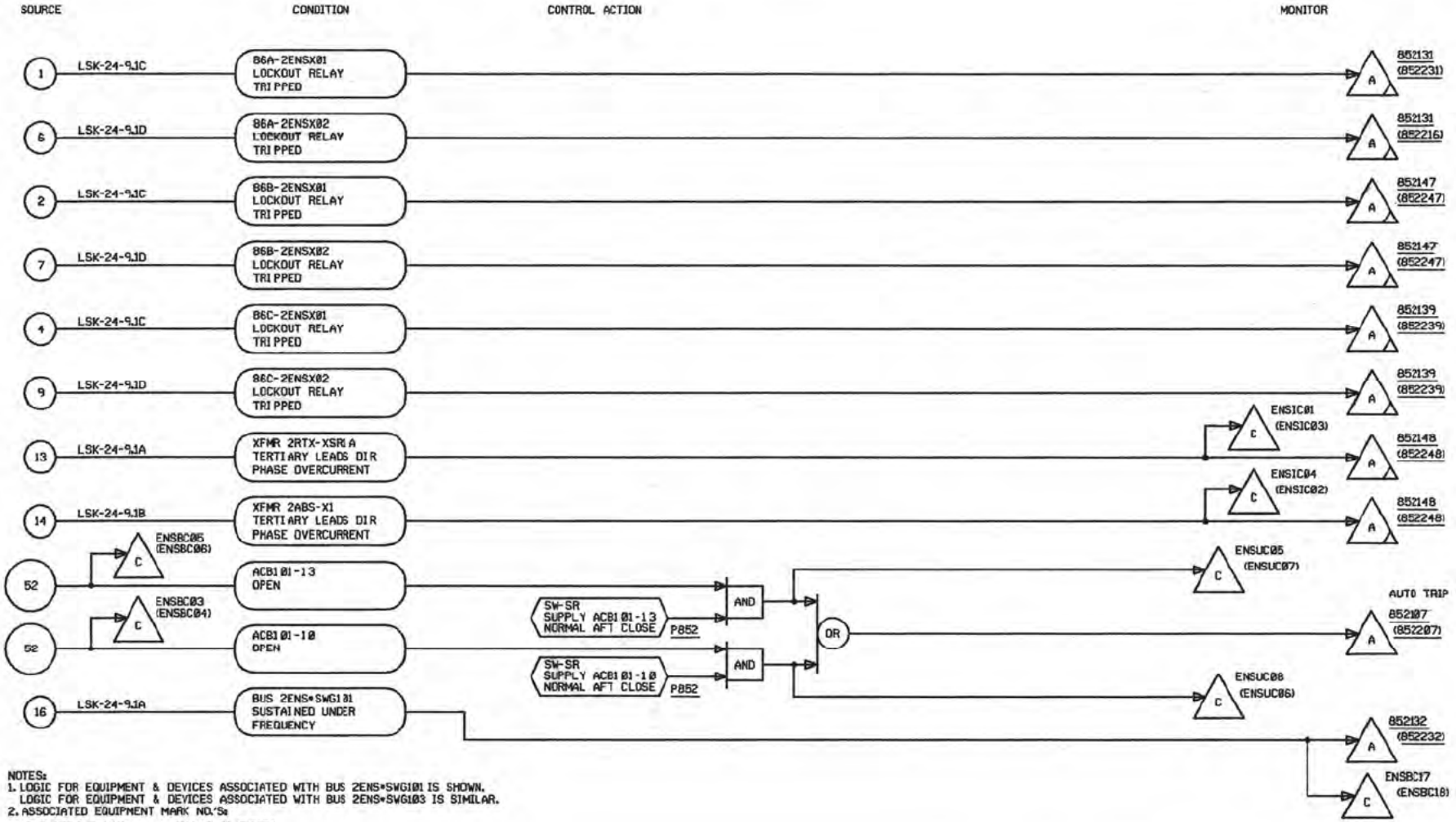
FOR LATEST SET POINT INFORMATION SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-24-9.1D REV.9

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 9 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:
1. LOGIC FOR EQUIPMENT & DEVICES ASSOCIATED WITH BUS 2ENS*SWG101 IS SHOWN.
   LOGIC FOR EQUIPMENT & DEVICES ASSOCIATED WITH BUS 2ENS*SWG103 IS SIMILAR.
2. ASSOCIATED EQUIPMENT MARK NO.'S:

BUS 2ENS*SWG101	BUS 2ENS*SWG103
86A-2ENSX01	86A-2ENSY01
86A-2ENSX02	86A-2ENSY02
86B-2ENSX01	86B-2ENSY01
86B-2ENSX02	86B-2ENSY02
86C-2ENSX01	86C-2ENSY01
86C-2ENSX02	86C-2ENSY02
67-1-2ENSA01	67-1-2ENSB01
67-2-2ENSA02	67-2-2ENSB02
ACB101-13	ACB103-4
ACB101-10	ACB103-2
XFMR 2RTX-XSR1A	XFMR 2RTX-XSR1B

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

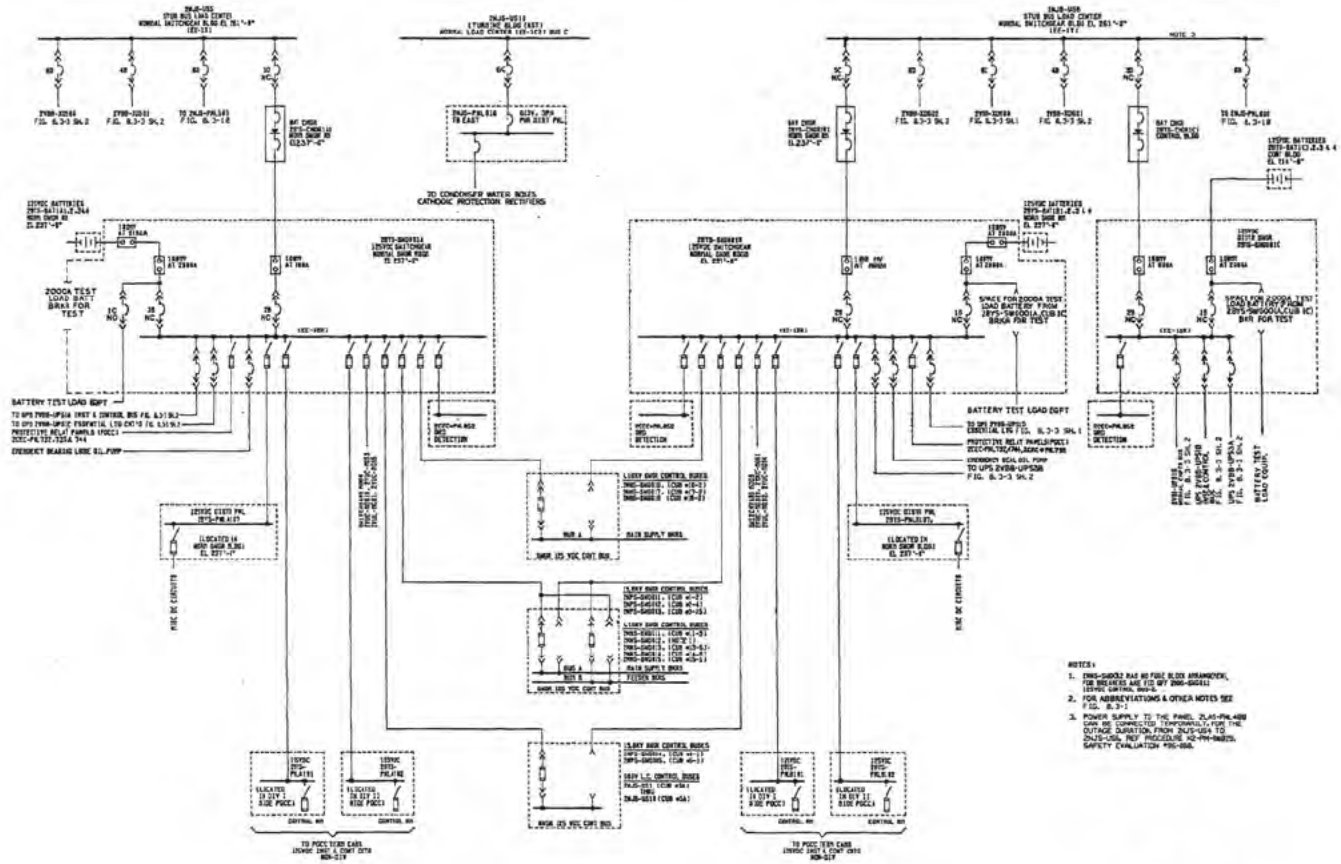
SOURCE: LSK-24-9.1E REV.11

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 10 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT

U-1323

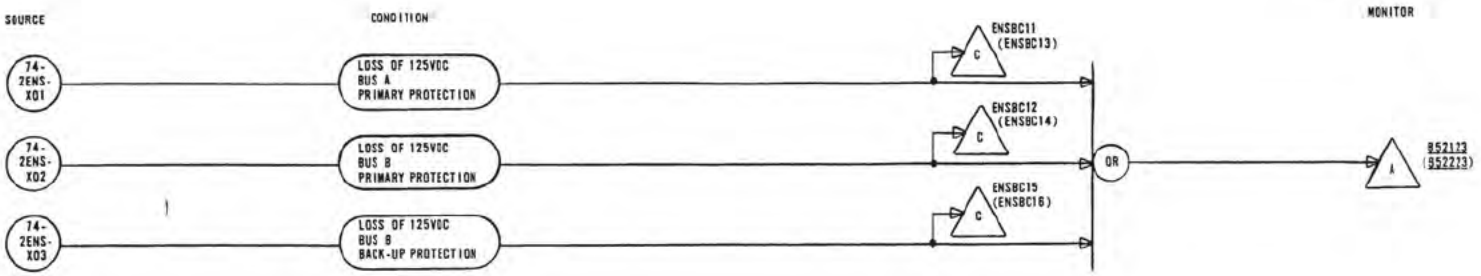


SOURCE: EE-M01G

FIGURE 8.3-11

PLANT MASTER ONE LINE DIAGRAM
NORMAL 125V DC SYSTEM

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATE SAFETY ANALYSIS REPORT



NOTES:
1. LOGIC FOR LOSS OF 125VDC DIV I BUS PROTECTION IS SHOWN.
   LOGIC FOR LOSS OF 125VDC DIV II BUS PROTECTION IS SIMILAR.
2. ASSOCIATED EQUIPMENT MARK NOS.

DIV I	DIV II
BUS 2ENS*SWG101	BUS 2ENS*SWG103
74-2ENSX01	74-2ENS101
74-2ENSX02	74-2ENS102
74-2ENSX03	74-2ENS103

NOTE:

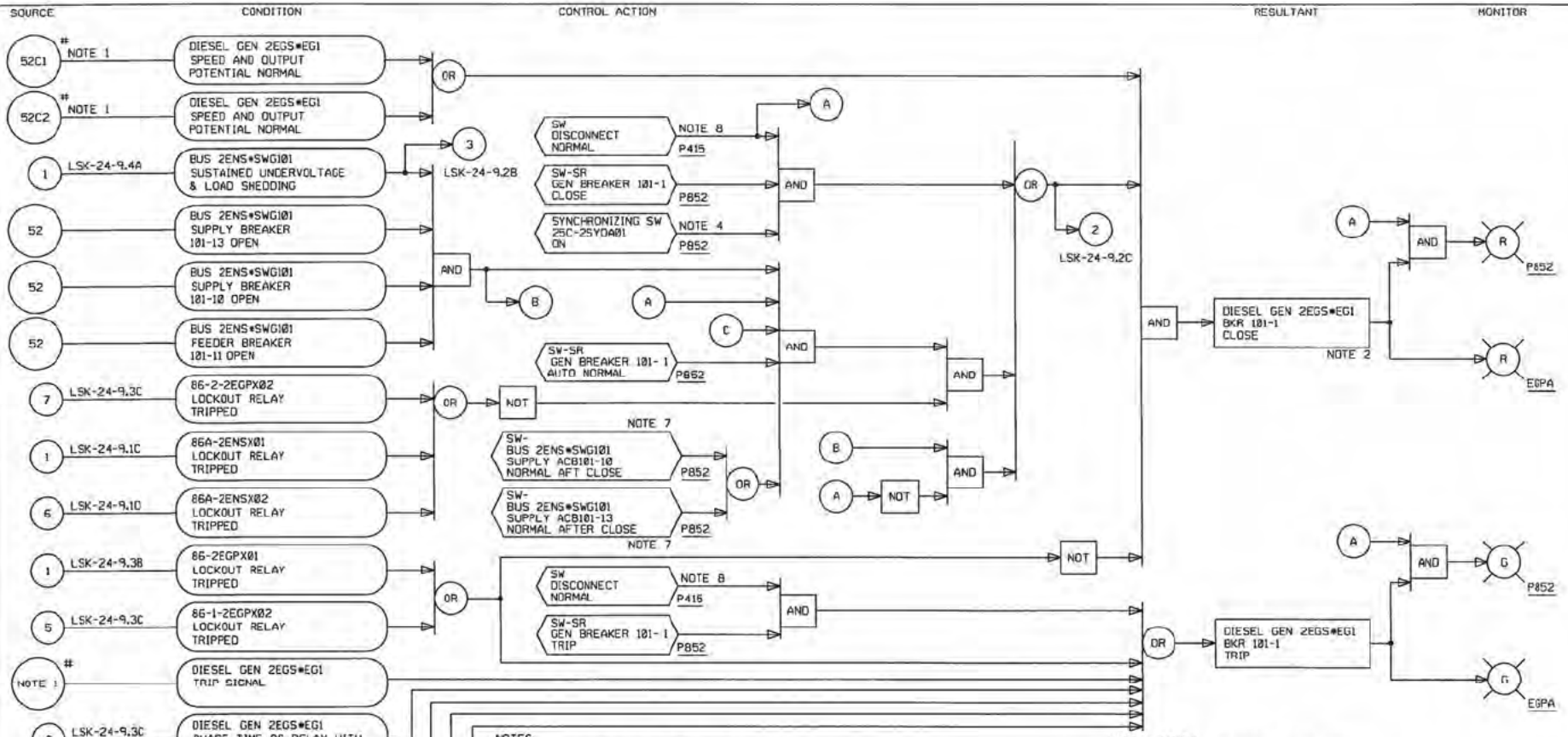
FOR LATEST SET POINT INFORMATION
SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-24-9.1G REV.9

FIGURE 8.3-6

STANDBY DIESEL GENERATOR
CONTROL AND PROTECTION LOGICS
SHEET 12 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:
1. #DENOTES MANUFACTURER SUPPLIED EQUIPMENT.
2. REFER TO LSK-24-9.6 FOR BKR TEST CONTROL, COMPUTER INPUT & INDICATION LOGIC.
3. REFER TO LSK-24-9.2C FOR ANNUNCIATION LOGIC.
4. REFER TO LSK-24-12.3A AND LSK-24-12.3B FOR SYNCHRONIZING LOGIC.
5. LOGIC FOR ACB101-1 IS SHOWN. LOGIC FOR ACB103-14 IS SIMILAR.
6. ASSOCIATED EQPT. MARK NO.'S:

ACB101-1	ACB103-14	ACB101-1	ACB103-14
BUS 2ENS*SWG101	BUS 2ENS*SWG103	EGPA(2CES*	EGPC(2CES*
GEN 2EGS*EG1	GEN 2EGS*EG3	IPNL407)	IPNL412)
59-2EGPA15	59-2EGPB15	2CES*PNL415	2CES*PNL416
86-2EGPX01	86-2EGPY01		
86-2EGPX02	86-2EGPY02		
86A-2ENSX01	86A-2ENSY01		
86A-2ENSX02	86A-2ENSY02		
ACB101-13	ACB103-4		
ACB101-11	ACB103-6		
ACB101-10	ACB103-2		
67N-2EGPA03	67N-2EGPB03		

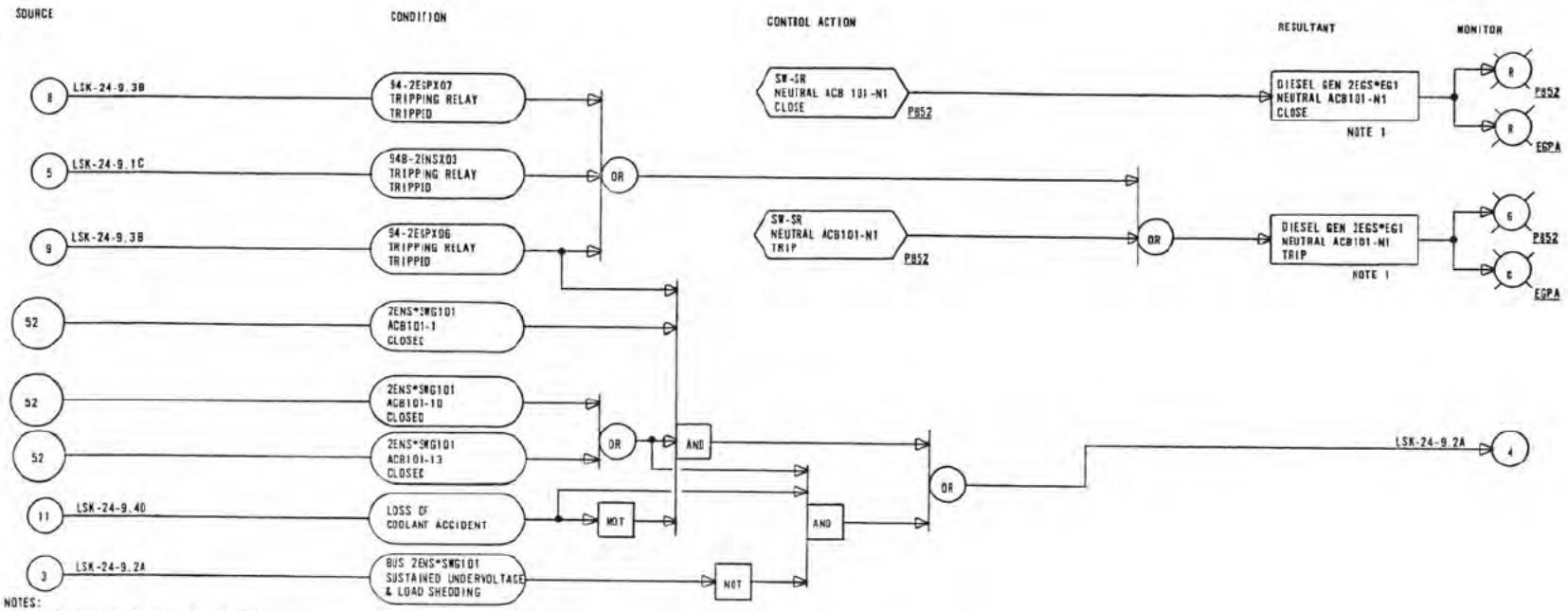
NOTES (CONT.)
7. SWITCH IS ALSO SHOWN ON LSK-24-1.
8. DISCONNECT SWITCH USED ONLY TO ISOLATE PGCC CONTROLS AND INDICATING LIGHTS IN CASE OF CONTROL ROOM OR RELAY ROOM FIRE.

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK-24-9.2A REV.12

FIGURE 8.3-6
STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 13 OF 31

NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:

1. REFER TO LSK-9.6B FOR BKR TEST CONTROL.
2. REFER TO LSK-24-9.2C FOR SYSTEM ANNUNCIATION LOGIC.
3. LOGIC FOR NEUTRAL ACB101-N IS SHOWN. LOGIC FOR ACB103-N IS SIMILAR.
4. ASSOCIATED EQUIPMENT MARK NO:

ACB101-N1	ACB103-N1
51N-2EGPA06	51N-2EGPB06
GEN 2EGS*EG1	GEN 2EGS*EG3
BUS 2ENS*SWG101	BUS 2ENS*SWG103
BUS 2NNS*SWG014	BUS 2NNS*SWG015
67N-2EGPA03	67N-2EGPB03
94-2EGPX06	94-2EGPY06
94-2EGPX07	94-2EGPY07
94B-2ENSX03	94B-2ENSY03
74-2EGPX06	74-2EGPY06
2CES*PNL415	2CES*PNL416

5. PROTECTIVE RELAY LOGIC OF CKT 2EGPX06 (2EGPY06) IS SHOWN ON LSK-24-9.3B.

NOTE:

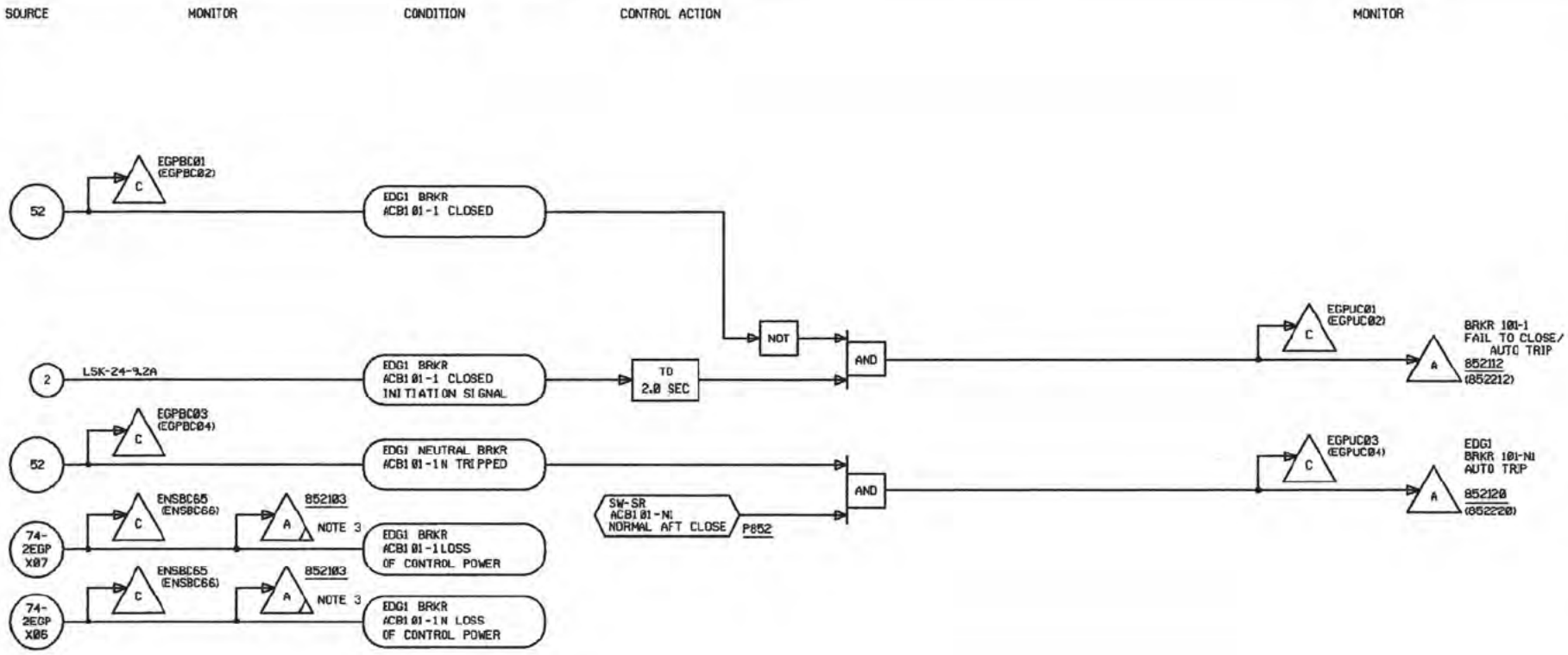
FOR LATEST SET POINT INFORMATION
SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-24-9.2B REV.9

FIGURE 8.3-6

STANDBY DIESEL GENERATOR
CONTROL AND PROTECTION LOGICS
SHEET 14 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:

1. LOGIC FOR BUS 2ENS*SWG101 EQUIPMENT & DEVICES IS SHOWN.
   LOGIC FOR BUS 2ENS*SWG103 EQUIPMENT & DEVICES IS SIMILAR.
2. ASSOCIATED EQUIPMENT MARK NO.'S:

BUS 2ENS*SWG101	BUS 2ENS*SWG103
ACB101-1	ACB103-14
ACB101-N1	ACB103-N1
ACB101-13	ACB103-4
ACB101-11	ACB103-8
ACB101-10	ACB103-2
74-2EGPX07	74-2EGPY07
74-2EGPX06	74-2EGPY05

3. COMMON ALARM: EMERGENCY DIESEL GENERATOR SYSTEM 1 INOPERABLE.
4. REFER TO LSK-24-9.6A FOR DETAILED BREAKER INOPERABLE LOGIC.

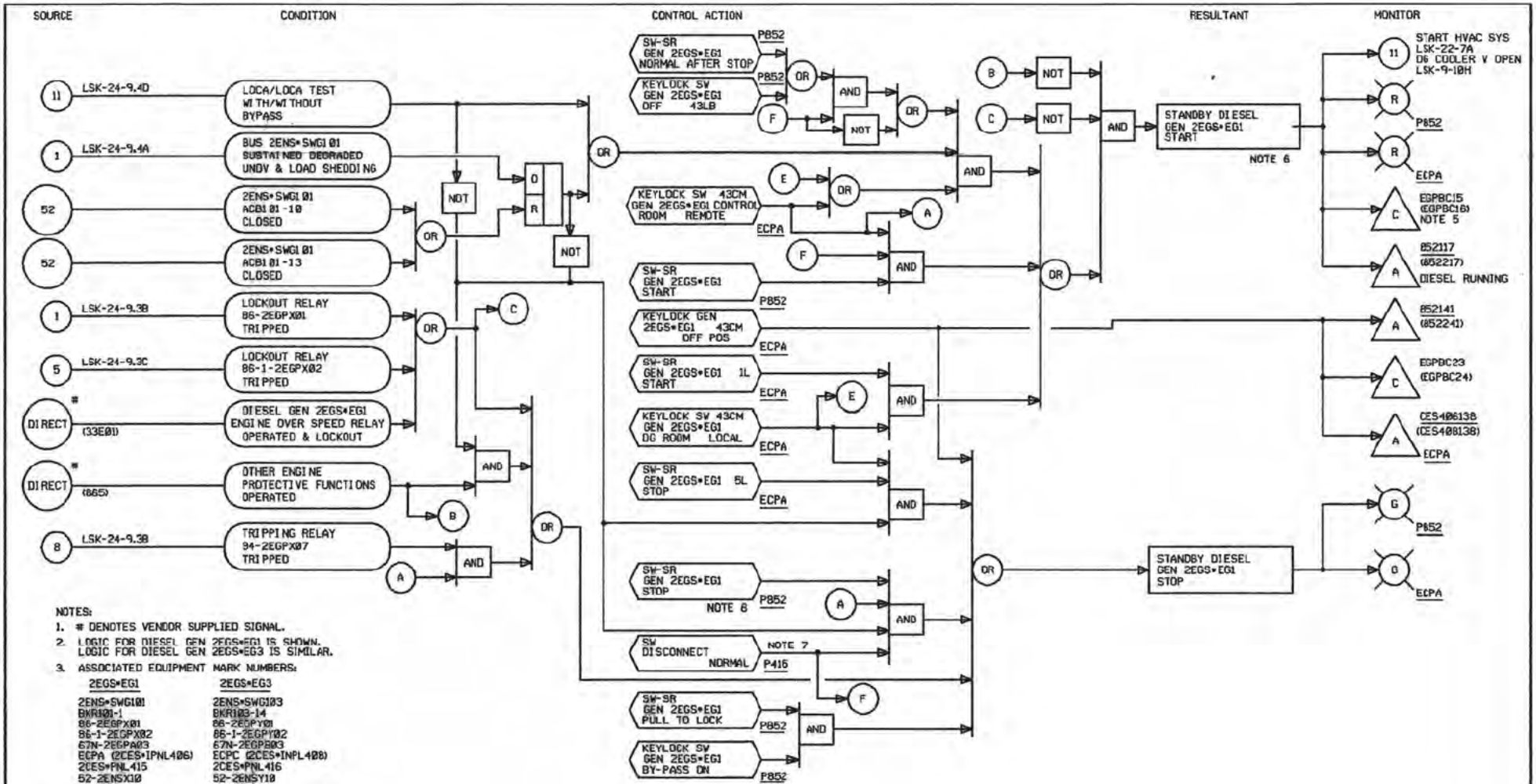
SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK-24-9.2C REV.11

FIGURE 8.3-6

STANDBY DIESEL GENERATOR
CONTROL AND PROTECTION LOGICS
SHEET 15 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:

1. # DENOTES VENDOR SUPPLIED SIGNAL.
2. LOGIC FOR DIESEL GEN 2EGS*EG1 IS SHOWN. LOGIC FOR DIESEL GEN 2EGS*EG3 IS SIMILAR.
3. ASSOCIATED EQUIPMENT MARK NUMBERS:

2EGS*EG1	2EGS*EG3
2ENS*SWG101	2ENS*SWG103
BKR101-1	BKR103-14
86-2EGPX01	86-2EGPY01
86-1-2EGPX02	86-1-2EGPY02
67N-2EGPA03	67N-2EGPB03
ECPA (2CES*INPL406)	ECPC (2CES*INPL408)
2CES*PNL415	2CES*PNL416
52-2ENSX10	52-2ENSY10
52-2ENSX11	52-2ENSY11
1-2EGSA01	1-2EGSB01

4. ANNUNCIATION LOGIC IS SHOWN ON LSK-24-9.3D.
5. THIS COMPUTER INPUT ALSO USED FOR LOGGING.
6. THE DIESEL GENERATORS 2EGS*EG1 & 2EGS*EG3 HAVE TWO INDEPENDENT START/STOP CIRCUITS WITH ONE SINGLE MANUAL/AUTO SIGNAL.
7. DISCONNECT SWITCH USED ONLY TO ISOLATE PGCC CONTROLS & INDICATING LIGHTS IN THE EVENT CONTROL ROOM AND/OR RELAY ROOM IS ON FIRE.

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

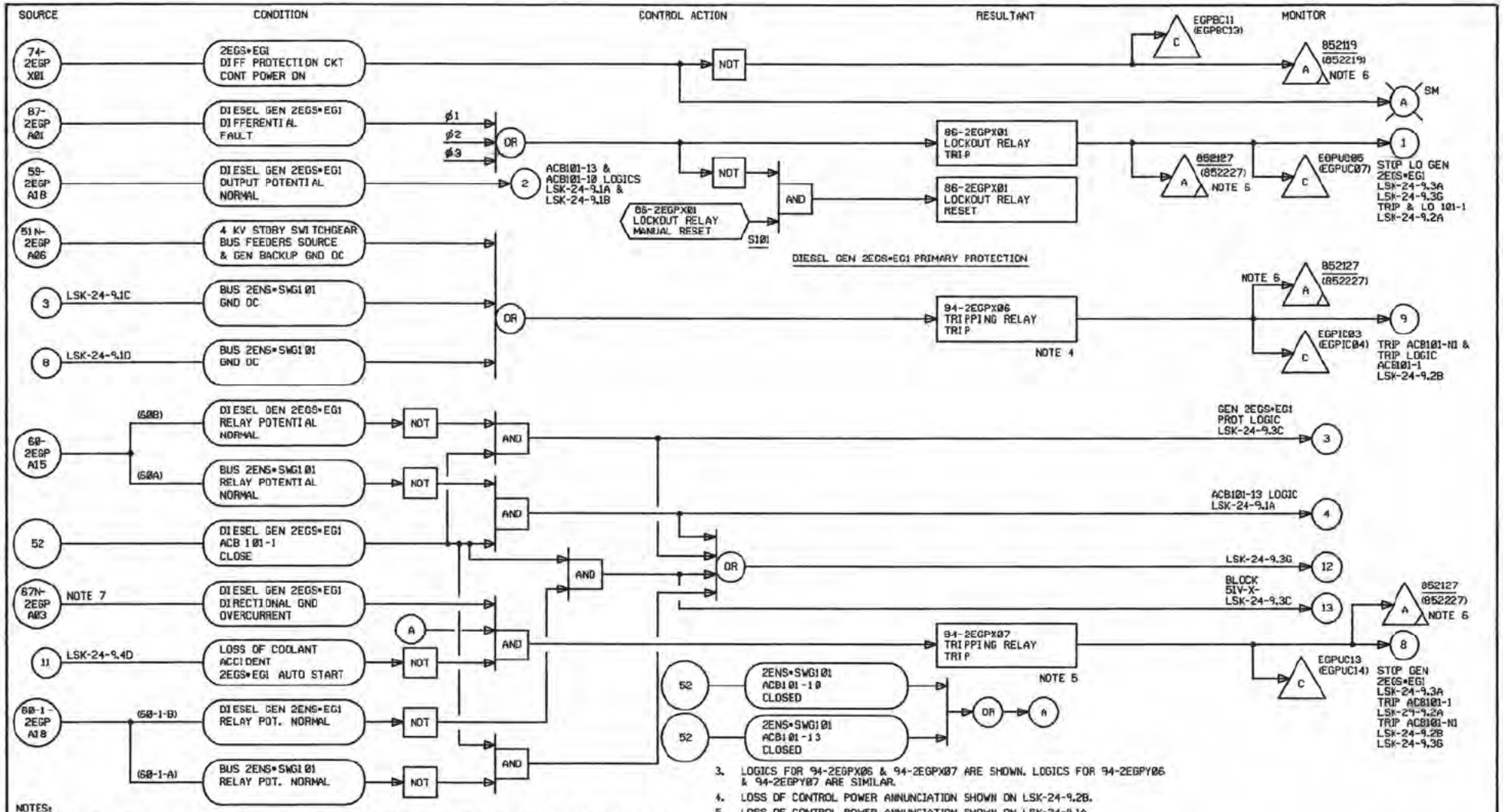
SOURCE: LSK-24-9.3A REV.11

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 16 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT

U-1297



NOTES:

1. LOGIC FOR 86-2EGPX01 IS SHOWN. LOGIC FOR 86-2EGPY01 IS SIMILAR. LOGIC FOR 59-2EGPA18 AND 60-2EGPA18 IS SHOWN. LOGIC FOR 59-2EGPB18 AND 60-2EGPB18 IS SIMILAR.
2. ASSOCIATED EQUIPMENT MARK NUMBERS:

86-2EGPX01	86-2EGPY01	94-2EGPX06	94-2EGPY05	94-2EGPX07	94-2EGPY07
GEN 2EGS•EG1 BKR 101-1	GEN 2EGS•EG3 BKR 103-14	51N-2EGPA06	51N-2EGPB06	87N-2EGPA03 2ENS•SWG101 ACB101-10 ACB101-13	87N-2EGPB03 2ENS•SWG103 ACB103-2 ACB103-4
87-2EGPA01	87-2EGPY03				
74-2EGPX01	74-2EGPY01				
60-2EGPA15	60-2EGPB15				
60-1-2EGPA18	60-1-2EGPB18				

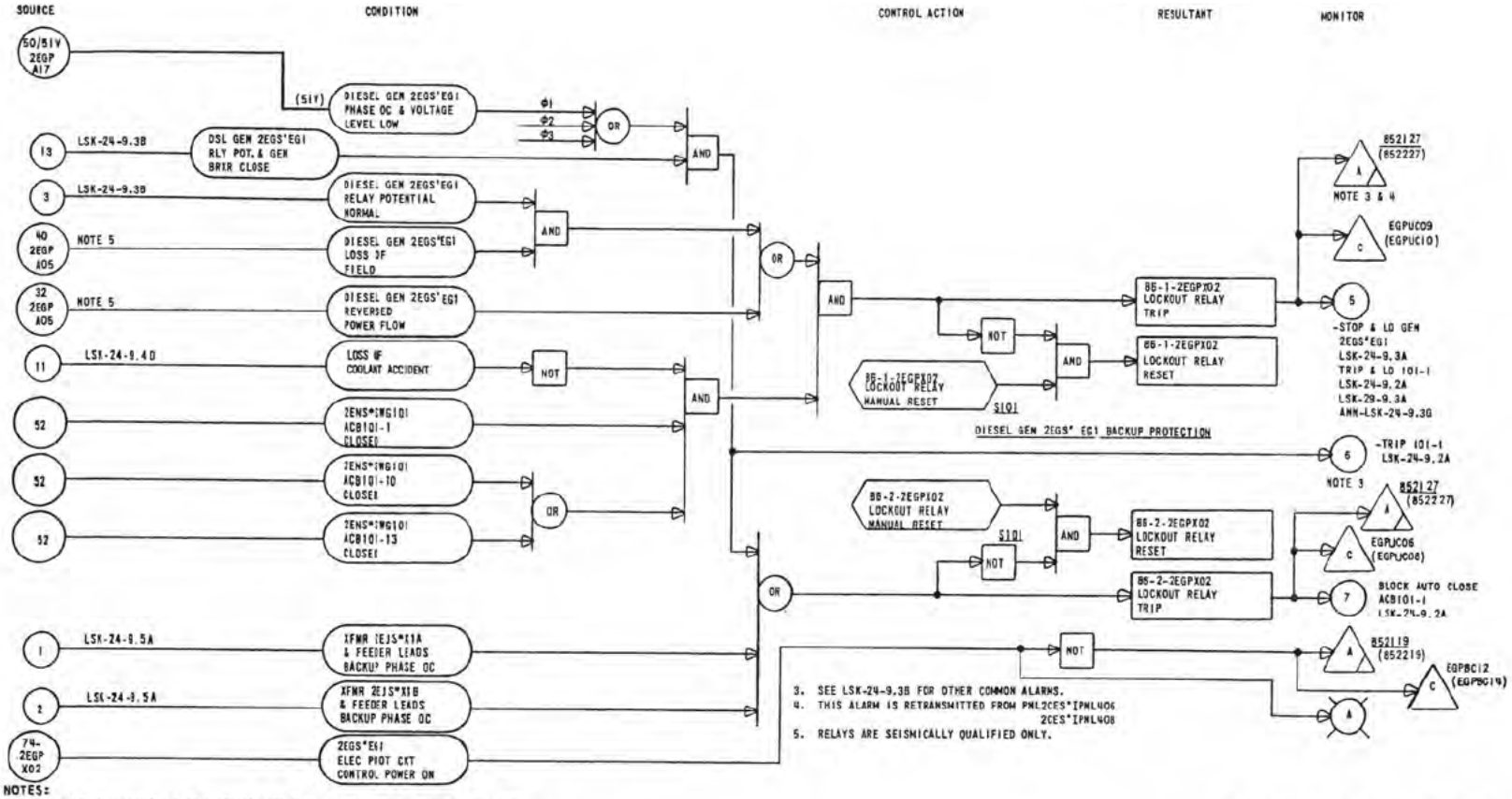
3. LOGICS FOR 94-2EGPX06 & 94-2EGPX07 ARE SHOWN. LOGICS FOR 94-2EGPY06 & 94-2EGPY07 ARE SIMILAR.
4. LOSS OF CONTROL POWER ANNUNCIATION SHOWN ON LSK-24-9.2B.
5. LOSS OF CONTROL POWER ANNUNCIATION SHOWN ON LSK-24-9.1A.
6. (a) SEE LSK-24-9.3C FOR OTHER COMMON ALARMS.
   (b) THESE ALARMS ARE TRANSMITTED FROM 2CES•IPNL406 (2CES•IPNL408).
7. THIS RELAY IS SEISMICALLY QUALIFIED ONLY.

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK-24-9.3B REV.11

FIGURE 8.3-6
STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 17 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:

1. LOGIC FOR 86-1-2EGPX02 & 86-2-2EGPX02 ARE SHOWN. LOGICS FOR 2EGPY02 ARE SIMILAR.
2. ASSOCIATED EQUIPMENT MARK NUMBERS:

86-1-2EGPX02		86-1-2EGPY02		86-2-2EGPX02	86-2-2EGPY02
GEN 2EGS*EG1	40-2EGPA05	GEN 2EGS*EG1	40-2EGPB05	2NNS-SWG014	2NNS-SWG015
50/51V-2EGPA17	32-2EGPA05	50/51Y-2EGPB17	32-2EGPB05	2EJS*X1A	2EJS*X3A
86A-3EGPA15	ACB101-1	86A-2EGPB15	ACB103-14	2EJS*X1B	2EJS*X3B
				ACB101-1	ACB103-14

3. SEE LSK-24-9.3B FOR OTHER COMMON ALARMS.
4. THIS ALARM IS RETRANSMITTED FROM PNL2CES*IPNL406 2CES*IPNL408
5. RELAYS ARE SEISMICALLY QUALIFIED ONLY.

NOTE:

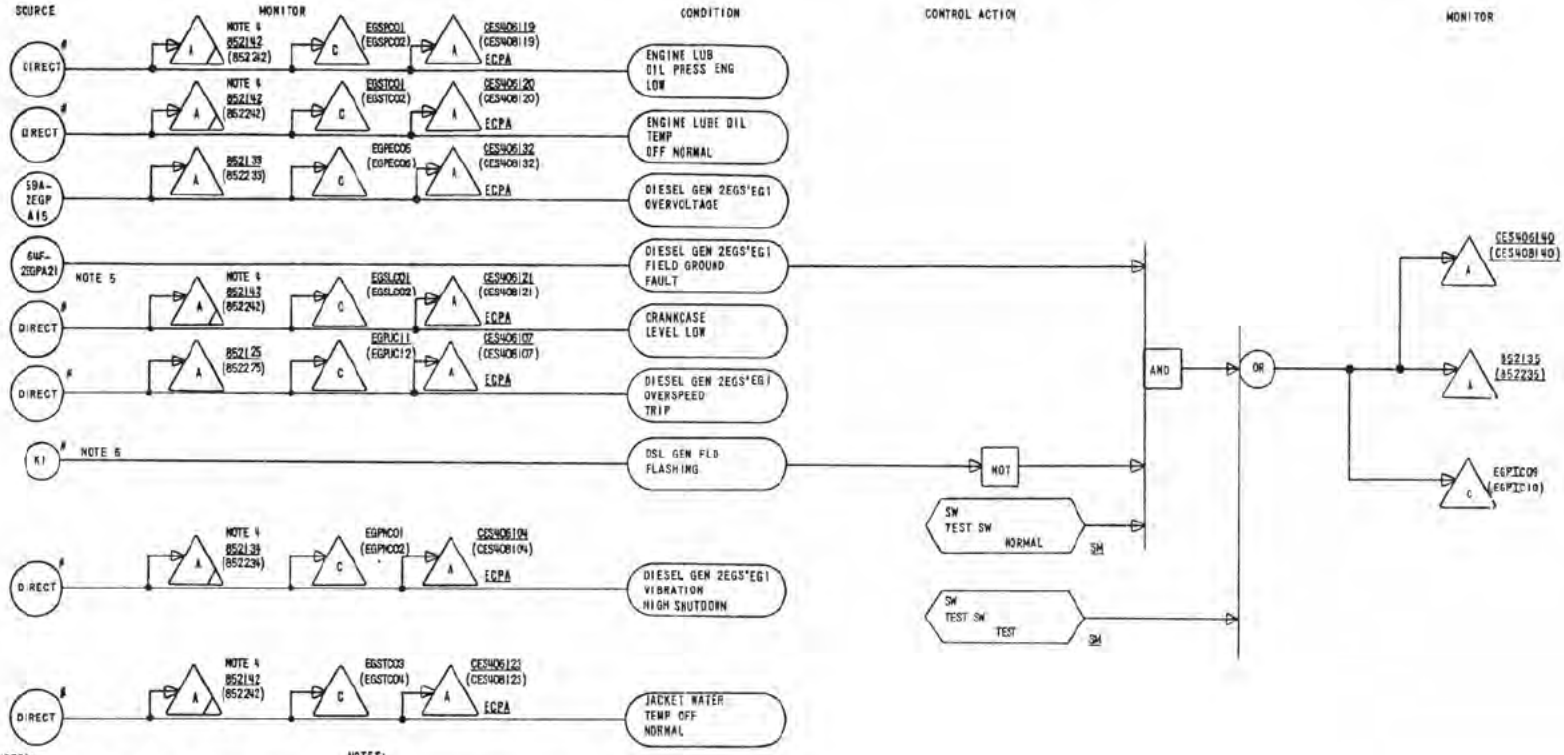
FOR LATEST SET POINT INFORMATION SEE SET POINT DATA SHEET

SOURCE: 121 77-LSK-24-9.3C REV.8

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 18 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:
1. / DENOTES VENDOR SUPPLIED SIGNAL.
2. LOGIC FOR DIESEL GEN 2EGS*EG1 IS SHOWN. LOGIC FOR DIESEL GEN 2EGS*EG3 IS SIMILAR.
3. ASSOCIATED EQUIPMENT MARK NOS:

GEN 2EGS*EG1	GEN 2EGS*EG3
86-2EGPX01	86-2EGPY01
86-2EGPX02	86-2EGPY02
59A-2EGPA15	59A-2EGPB15
74-2EGPA15	74-2EGPB15
59A-2EGPA15	59A-2EGPB15
64F-2EGPA21	64F-2EGPB21
ECPA	ECPC
2CES*1PNL406	2CES*1PNL408

NOTES:
(CONT.)
4. COMMON ANNUNCIATION INDICATING "DIESEL GENERATOR MECHANICAL" FAILURE.
5. RELAY IS SEISMICALLY QUALIFIED ONLY.
6. TO BLOCK ALARM DURING FIELD FLASHING ONLY.

NOTE:

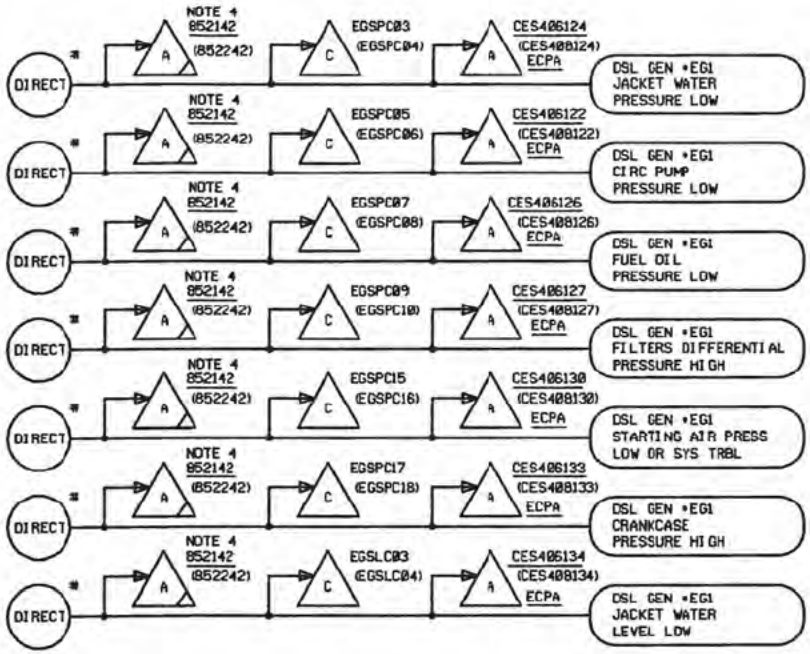
FOR LATEST SET POINT INFORMATION SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-24-9.3D REV.8

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 19 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:
1. * DENOTES VENDOR SUPPLIED SIGNAL.
2. LOGIC FOR DIESEL GEN 2EGS*EG1 IS SHOWN.
   LOGIC FOR DIESEL GEN 2EGS*EG3 IS SIMILAR.
3. ASSOCIATED EQUIPMENT MARK NO.'S:

GEN 2EGS*EG1	GEN 2EGS*EG3
ECPA 2CES*IPNL406	ECPC 2CES*IPNL408

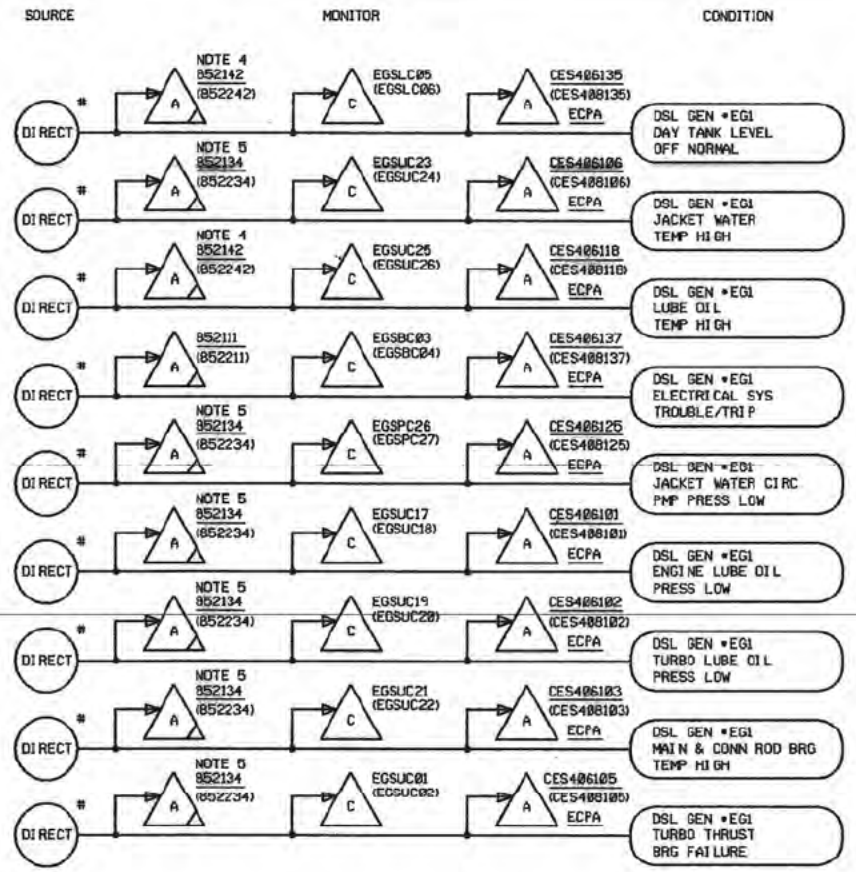
4. COMMON ANNUNCIATION INDICATING "DIESEL GENERATOR MECHANICAL" FAILURE.

SOURCE: LSK-24-9.3E REV.10

FIGURE 8.3-6

STANDBY DIESEL GENERATOR
CONTROL AND PROTECTION LOGICS
SHEET 20 OF 31

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.



NOTES:
1. #DENOTES VENDOR SUPPLIED SIGNAL.
2. LOGIC FOR DIESEL GEN 2EGS*EG1 IS SHOWN.
   LOGIC FOR DIESEL GEN 2EGS*EG3 IS SIMILAR.
3. ASSOCIATED EQUIPMENT MARK NO.'S:

GEN 2EGS*EG1	GEN 2EGS*EG3
ECPA 2CES*IPNL406	ECRC 2CES*IPNL408

4. COMMON ANNUNCIATION INDICATING 'DIESEL GENERATOR MECHANICAL' FAILURE.
5. COMMON ANNUNCIATION INDICATING 'DIESEL GENERATOR SHUTDOWN MECHANICAL' FAILURE.

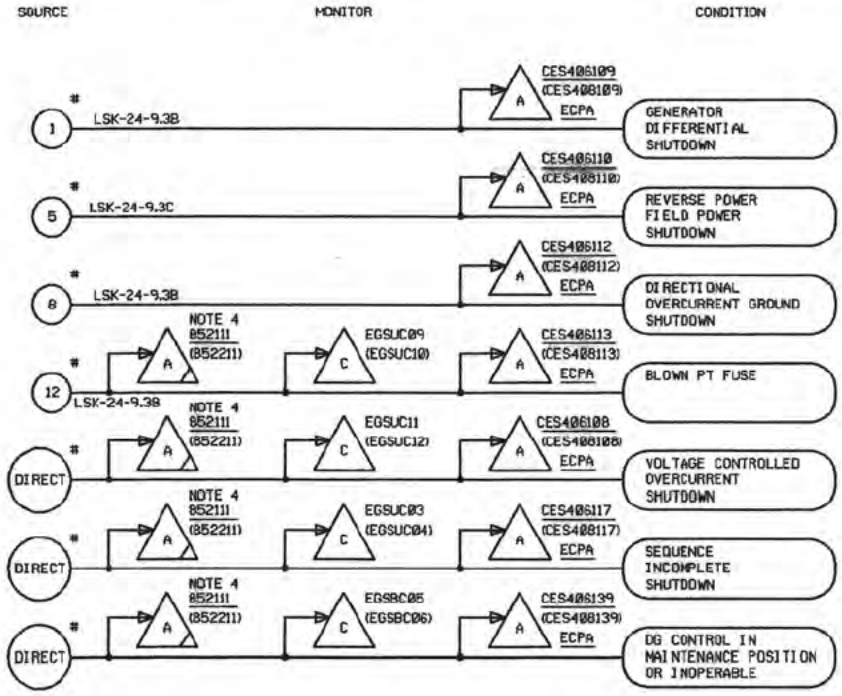
SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK-24-9.3F REV.10

FIGURE 8.3-6

STANDBY DIESEL GENERATOR
CONTROL AND PROTECTION LOGICS
SHEET 21 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:
1. # DENOTES VENDOR SUPPLIED SIGNAL.
2. LOGIC FOR DIESEL GEN 2EGS*EG1 IS SHOWN.
   LOGIC FOR DIESEL GEN 2EGS*EG3 IS SIMILAR.
3. ASSOCIATED EQUIPMENT MARK NO.'S:

GEN 2EGS*EG1	GEN 2EGS*EG3
ECPA 2CES*IPNL406	ECPC 2CES*IPNL408

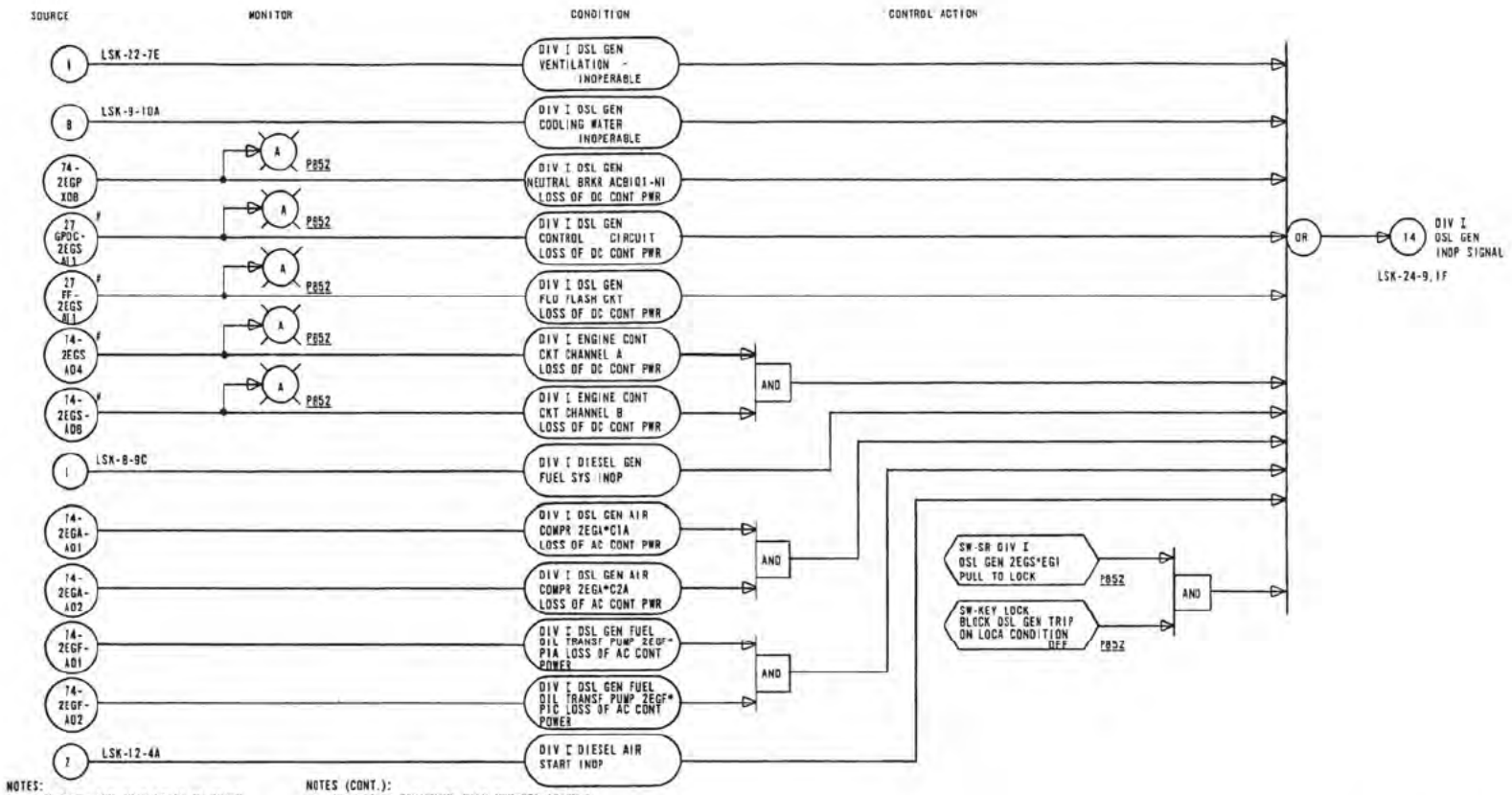
4. COMMON ANNUNCIATION INDICATING "DIESEL GENERATOR ELECTRICAL" FAILURE.

SOURCE: LSK-24-9.3G REV.11

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 22 OF 31

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.



NOTES:
1. DIV I DSL GEN INOP LOGIC IS SHOWN. DIV II DSL GEN INOP LOGIC IS SIMILAR.
2. # DENOTES SUPPLIED BY CES.
3. ASSOCIATED EQUIPMENT MARK NUMBERS:

DIV I	DIV II
74-2EGPX06	74-2EGPY06
27GPDC-2EGSA11	27GPDC-2EGSB11
27FF-2EGSA11	27FF-2EGSB11
74-2EGSA04	74-2EGSB04
74-2EGSA06	74-2EGSB06

NOTES (CONT.):
3. ASSOCIATED EQUIPMENT MARK NUMBERS (CONT.):

DIV I	DIV II
74-2EGAA01	74-2EGAB01
74-2EGAA02	74-2EGAB02
74-2EGFA01	74-2EGFB01
74-2EGFA02	74-2EGFB02

NOTE:

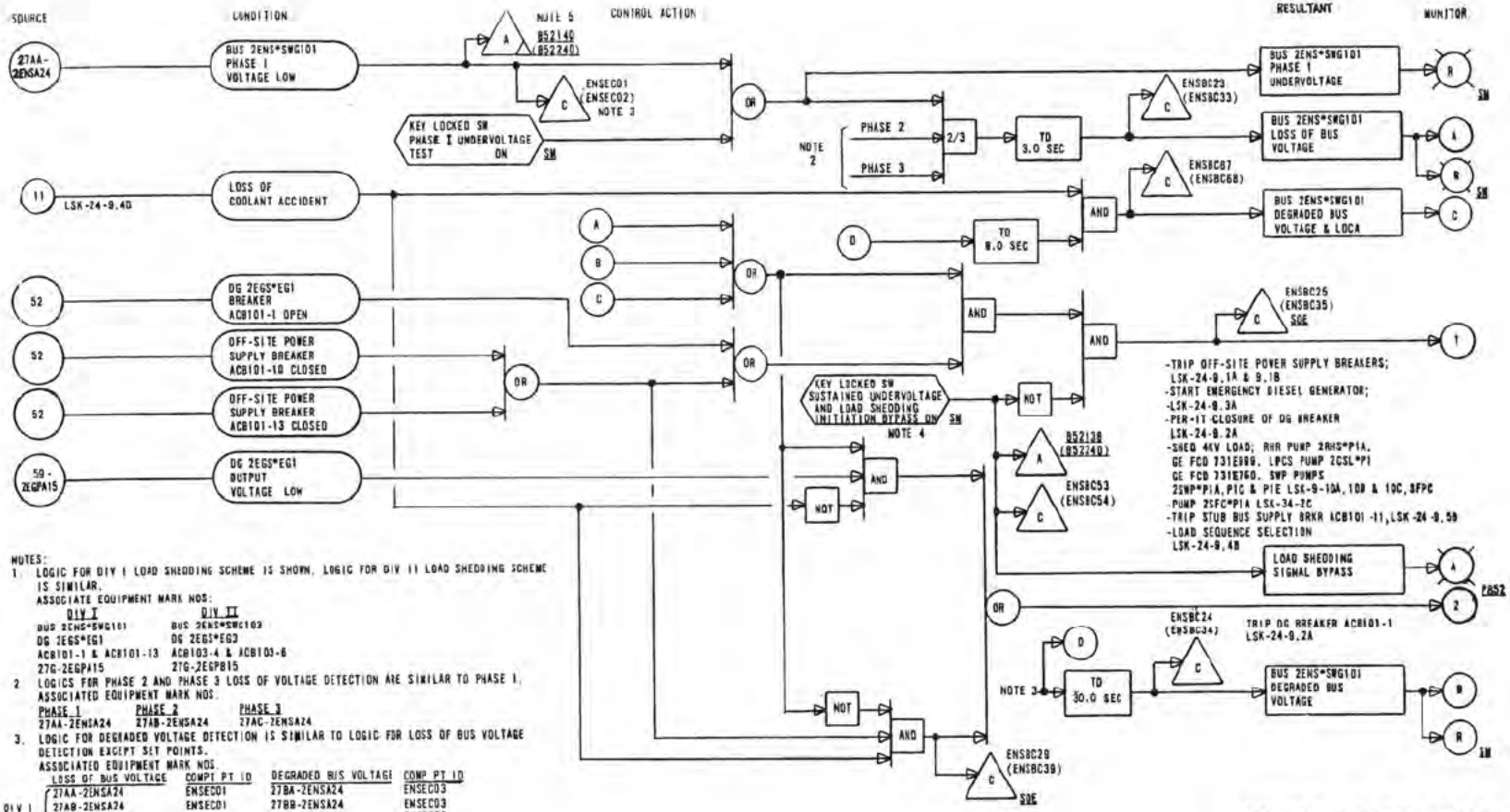
FOR LATEST SET POINT INFORMATION SEE SET POINT DATA SHEET

SOURCE: 121 77-LSK-24-9.3H REV.8

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 23 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:

1. LOGIC FOR DIV I LOAD SHEDDING SCHEME IS SHOWN. LOGIC FOR DIV II LOAD SHEDDING SCHEME IS SIMILAR.
   ASSOCIATE EQUIPMENT MARK NOS:

DIV I	DIV II
BUS 2ENS*SWG101	BUS 2ENS*SWG103
DG 2EGS*EG1	DG 2EG3*EG3
ACB101-1 & ACB101-13	ACB103-4 & ACB103-6
27G-2EGPA15	27G-2EGPB15

2. LOGICS FOR PHASE 2 AND PHASE 3 LOSS OF VOLTAGE DETECTION ARE SIMILAR TO PHASE 1. ASSOCIATE EQUIPMENT MARK NOS.

PHASE 1	PHASE 2	PHASE 3
27AA-2ENSA24	27AB-2ENSA24	27AC-2ENSA24

3. LOGIC FOR DEGRADED VOLTAGE DETECTION IS SIMILAR TO LOGIC FOR LOSS OF BUS VOLTAGE DETECTION EXCEPT SET POINTS.
   ASSOCIATED EQUIPMENT MARK NOS.

	LOSS OF BUS VOLTAGE	COMPT PT ID	DEGRADED BUS VOLTAGE	COMP PT ID
DIV I	27AA-2ENSA24	ENSEC01	27BA-2ENSA24	ENSEC03
	27AB-2ENSA24	ENSEC01	27BB-2ENSA24	ENSEC03
	27AC-2ENSA24	ENSEC01	27BC-2ENSA24	ENSEC03
DIV II	27AA-2ENSB24	ENSEC02	27BA-2ENSB24	ENSEC04
	27AB-2ENSB24	ENSEC02	27BB-2ENSB24	ENSEC04
	27AC-2ENSB24	ENSEC02	27BC-2ENSB24	ENSEC04

4. KEY IS REMOVABLE ONLY IN OFF POSITION.
5. COMMON ANNUNCIATOR: BUS 2ENS*SWG101 LOSS OF POWER/PT FUSE FAILURE.

NOTE:

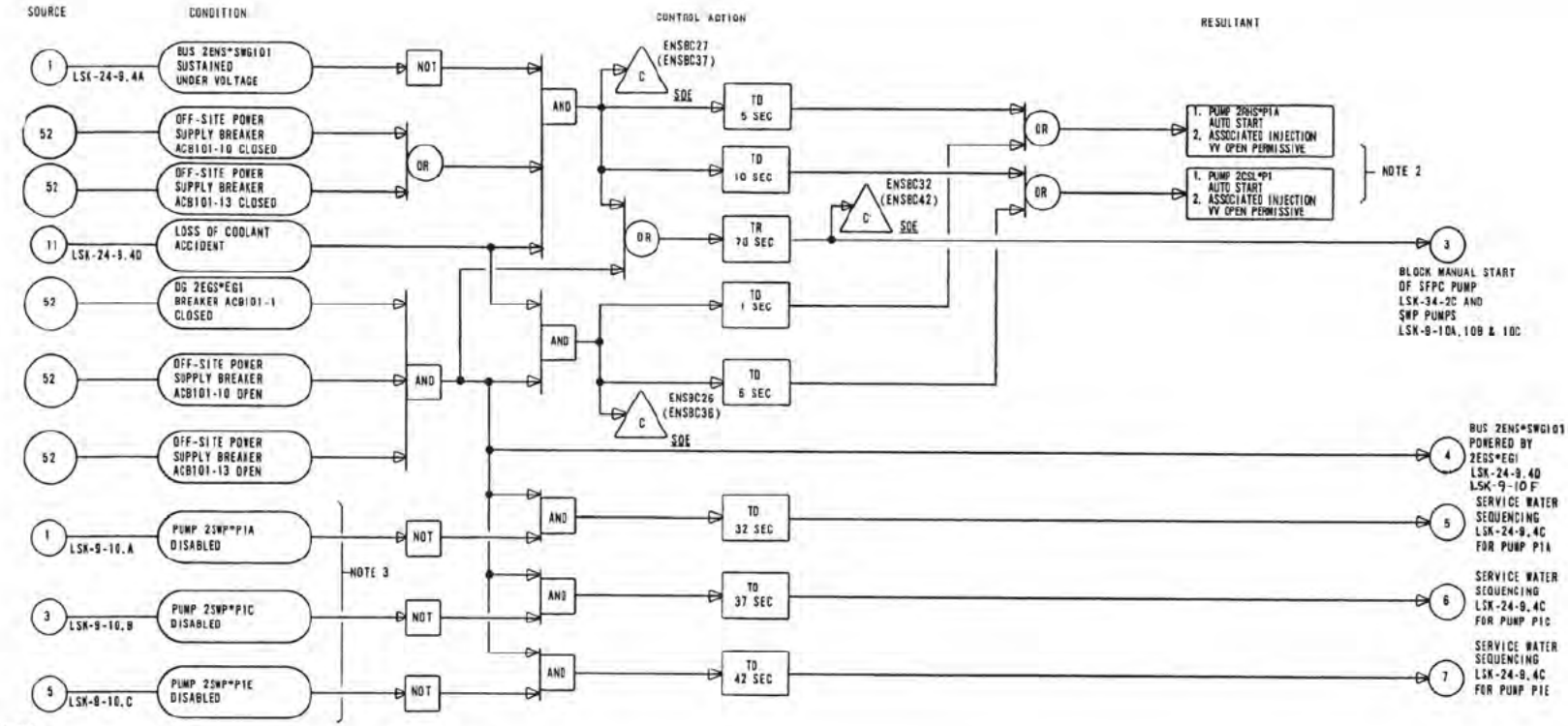
FOR LATEST SET POINT INFORMATION SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-24-9.4A REV. 11

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 24 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:
1. LOGIC FOR DIV I LOAD SEQUENCING IS SHOWN. LOGIC FOR DIV II LOAD SEQUENCING IS SIMILAR.
   ASSOCIATED EQUIPMENT MARK NOS:

DIV I	DIV II
PUMP 2RHS*P1A	PUMP 2RHS*P1B
PUMP 2CSL*P1	PUMP 2RHS*P1C
PUMPS 2SWP*P1A, 1C&1E	PUMPS 2SWP*P1B, 1D&1F

   ALSO SEE NOTE 1 ON LSK-24-9.4A FOR OTHER EQUIPMENT.
2. REFER GE FCD 731E768 & 731E999.
3. THE ELECTRICAL TRIP DOES NOT INCLUDE SUSTAINED UV TRIP AND LOP FOLLOWED BY A LOCA TRIP.

NOTE:

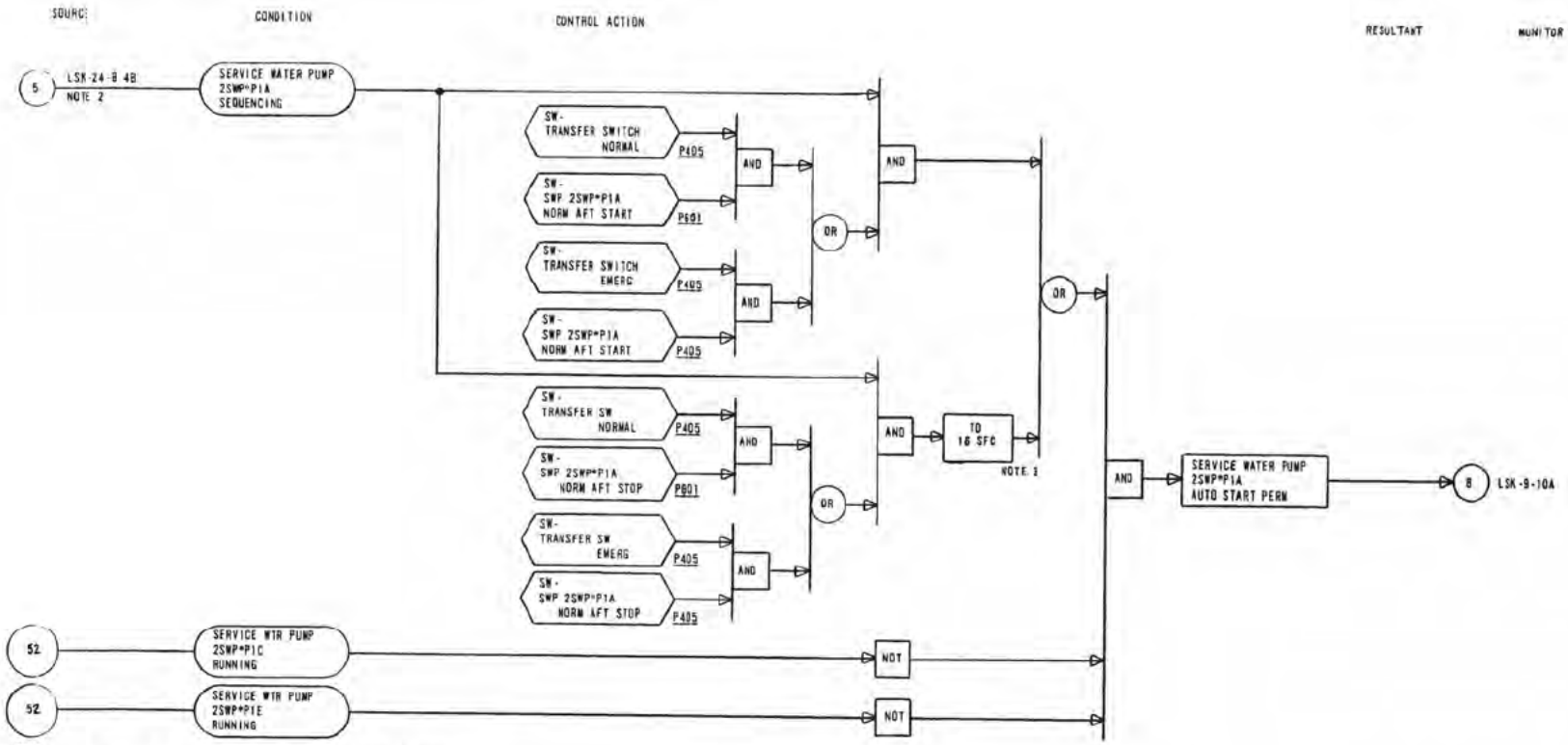
FOR LATEST SET POINT INFORMATION SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-24-9.4B REV. 12

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 25 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:
1. LOGIC FOR SERVICE WATER PUMP 2SWP*P1A AUTO LOAD SEQUENCE IS SHOWN. LOGIC FOR 2SWP*P1B THROUGH P1F ARE SIMILAR.
2. CONNECTOR-5 FOR 2SWP*P1A SEQUENCING IS SHOWN. CONNECTOR-5 FOR 2SWP*P1B, CONNECTOR-6 FOR 2SWP*P1C & 2SWP*P1D AND CONNECTOR-7 FOR 2SWP*P1E & P1F ARE SIMILAR.
3. TIME SET POINT FOR PUMP 2SWP*P1A (*P1B) IS SHOWN. TIME SET POINT FOR PUMP 2SWP*P1C (*P1D) IS 17 SEC TIME SET POINT FOR PUMP 2SWP*P1E (*P1F) IS 19 SEC

NOTE:

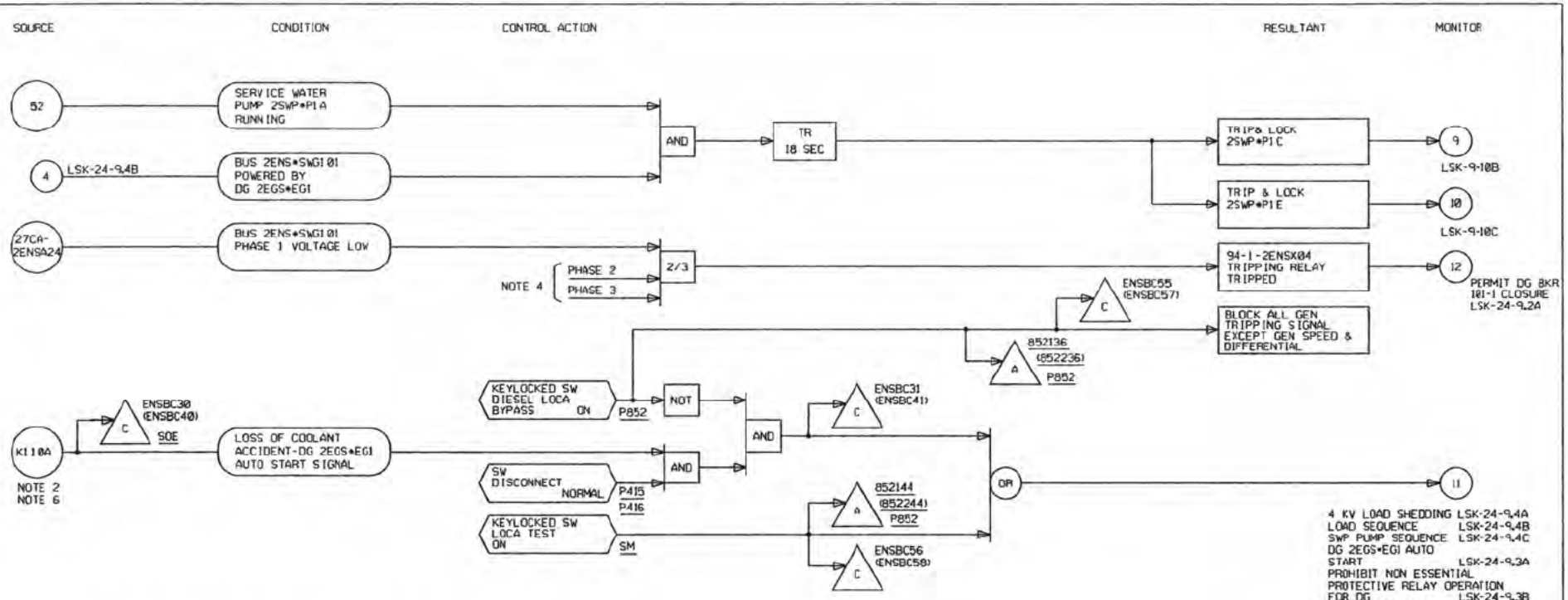
FOR LATEST SET POINT INFORMATION SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-24-9.4C REV. 11

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 26 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:
1. SEE NOTE 1 ON LSK-24-9.4A AND 9.4B FOR ASSOCIATED EQUIP FOR DIV.II.
2. FOR DIV.II K110A SEE GE DWG 807F170TY SH.A AND 9. S&W FILE NO.0007.241-001-009.
3. LOGIC SHOWN FOR DIVISION I LOSS OF COOLANT ACCIDENT SIGNAL. LOGIC FOR DIVISION II IS SIMILAR.
4. LOGICS FOR PHASE 2 AND PHASE 3 RESIDUAL BUS VOLTAGE LOW DETECTION ARE SIMILAR TO PHASE 1. ASSOCIATED EQUIPMENT MARK NO.'S.

PHASE 1	PHASE 2	PHASE 3
27CA-2ENSA24	27CB-2ENSA24	27CC-2ENSA24

5. LOGIC SHOWN FOR DIVISION I RESIDUAL BUS VOLTAGE DETECTION. LOGIC FOR DIVISION II IS SIMILAR.
6. SIGNAL PROVIDED BY GENERAL ELECTRIC. REFERENCE GE RESIDUAL HEAT REMOVAL FUNCTION CONTROL DIAGRAM 731E999AF, SHEET 1, ZONE C-7, SWEC FILE NO.0007.241-001-025.

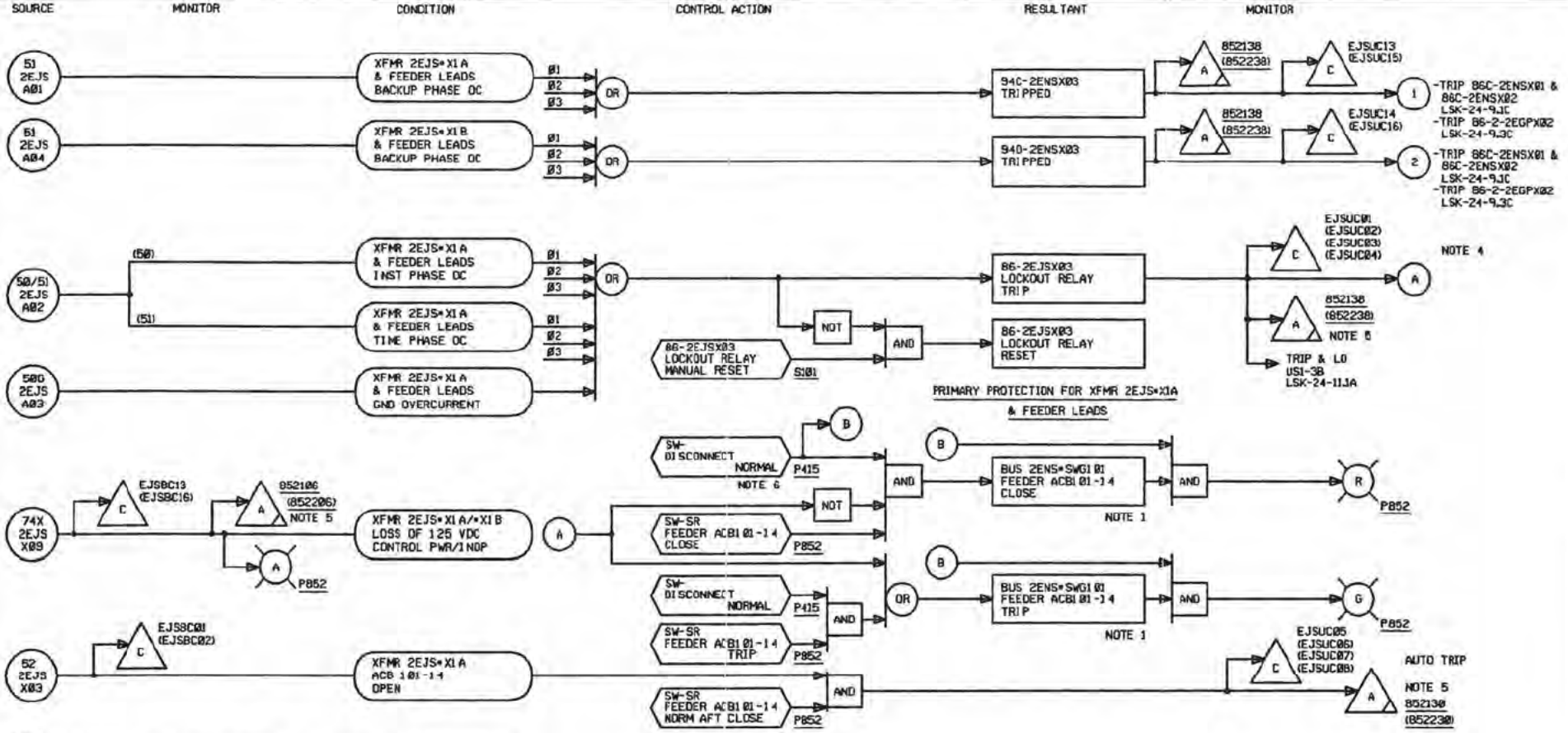
SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK-24-9.4D REV.13

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 27 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:
1. REFER TO LSK-24-9.6 FOR BKR TEST CONTROL, COMPUTER INPUT & INDICATION LOGIC.
2. LOGIC FOR LOCKOUT RELAY 86-2EJSX03 & ACB101-14 IS SHOWN. LOGIC FOR 86-2EJSX04 & ACB101-2, 86-2EJSY03 & ACB103-1 & 86-2EJSY04 & ACB103-13 IS SIMILAR.
3. LOGIC FOR RELAYS 51-2EJSA01 & 51-2EJSA04 IS SHOWN. LOGIC FOR RELAYS 51-2EJSB01 & 51-2EJSB04 IS SIMILAR.
4. ASSOCIATED EQUIPMENT MARK NO.'S:

ACB101-14	ACB101-2	ACB103-1	ACB103-13
86-2EJSX03	86-2EJSX04	86-2EJSY03	86-2EJSY04
50G-2EJSA03	50G-2EJSA06	50G-2EJSB03	50G-2EJSB06
50/51-2EJSA02	50/51-2EJSA05	50/51-2EJSB02	50/51-2EJSB05
XFMR-2EJS*X1A	XFMR-2EJS*X1B	XFMR-2EJS*X3A	XFMR-2EJS*X3B
US1-3B	US1-8B	US3-3B	US3-8B
86-2-2EGPX02	86-2-2EGPX02	86-2-2EGPY02	86-2-2EGPY02
74-2EJSX03	74-2EJSX04	74-2EJSY03	74-2EJSY04
2CES*PNL415	2CES*PNL415	2CES*PNL416	2CES*PNL416

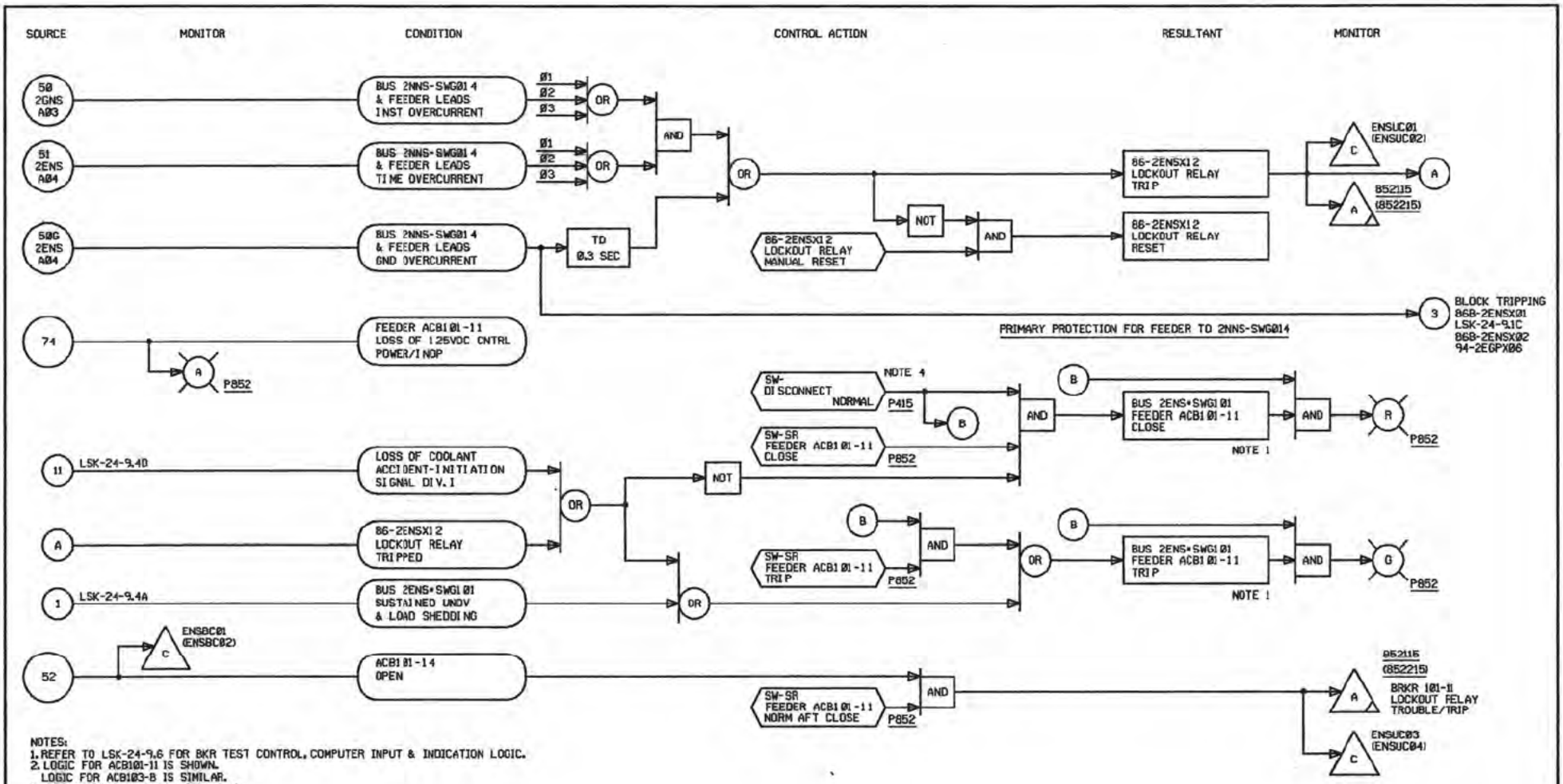
5. ACB101-14 & ACB101-2 WILL SHARE A COMMON WINDOW. ACB103-1 & ACB103-13 WILL SHARE A COMMON WINDOW.
6. DISCONNECT SWITCH-USED ONLY TO ISOLATE PGCC CONTROLS AND INDICATING LIGHTS IN CASE OF CONTROL ROOM OR RELAY ROOM FIRE.

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK-24-9.5A REV.10

FIGURE 8.3-6
STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 28 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:
1. REFER TO LSK-24-9.6 FOR BKR TEST CONTROL, COMPUTER INPUT & INDICATION LOGIC.
2. LOGIC FOR ACB101-11 IS SHOWN. LOGIC FOR ACB103-B IS SIMILAR.
3. ASSOCIATED EQUIPMENT MARK NO.'S:

ACB101-11	ACB103-B
86-2ENSX12	86-2ENSY12
51-2ENSA03	51-2ENSB03
50G-2ENSA04	50G-2ENSB04
BUS 2ENS*SWG101	BUS 2ENS*SWG103
74-2ENSX12	74-2ENSY12
50-2ENSA03	50-2ENSB03
2CES*PNL415	2CES*PNL416

4. DISCONNECT SWITCH-USED ONLY TO ISOLATE PGCC CONTROLS AND INDICATING LIGHTS IN CASE OF CONTROL ROOM FIRE.

U-1323

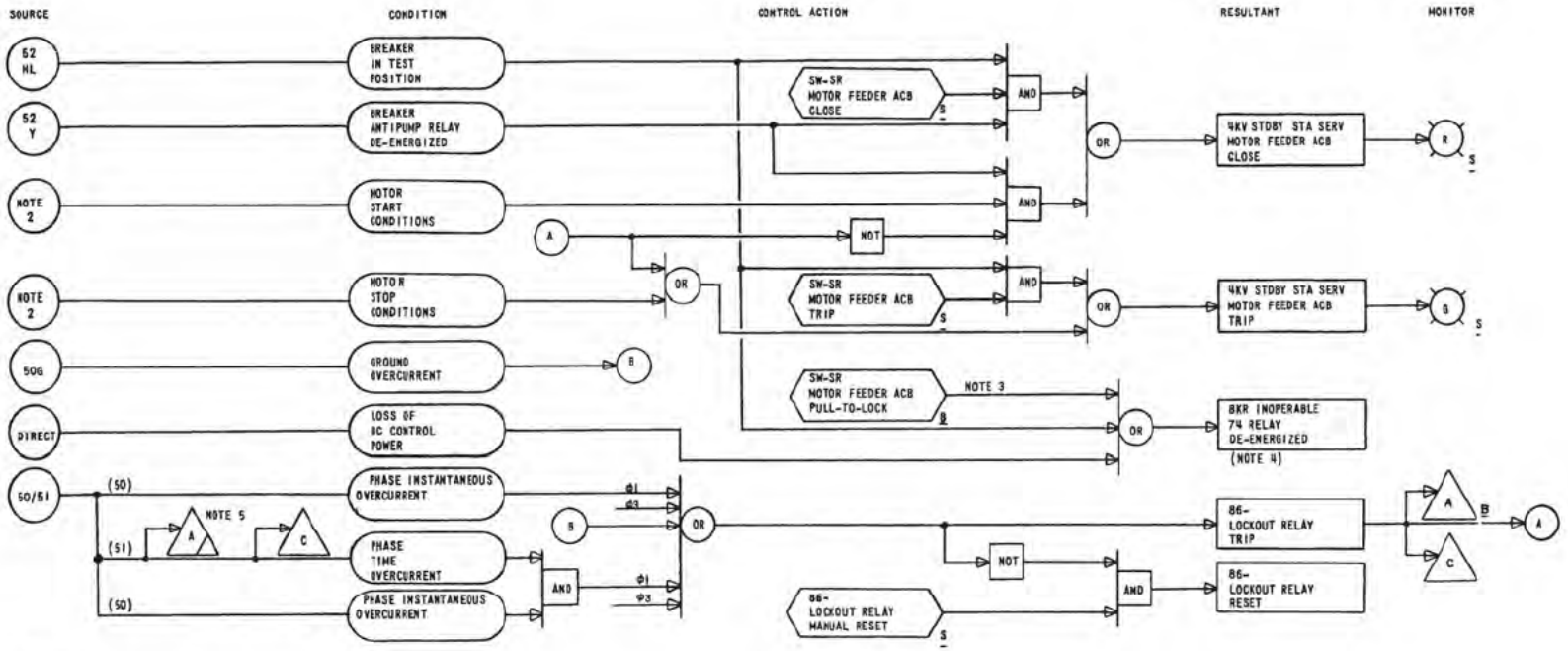
SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK-24-9.5B REV.10

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 29 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:

1. TEST CONTROL LOGIC SHOWN IS TYPICAL OF THE 4KV EMERGENCY MOTOR FEEDERS.
2. MOTOR START PERMISSIVES AND STOP CONDITIONS ARE FULLY SHOWN IN THE CORRESPONDING MOTOR CONTROL LOGIC SYSTEMS.
3. WHEN THE CONTROL SWITCH IS PLACED IN THE PULL-TO-LOCK POSITION, THE BREAKER IS TRIPPED AND THE REMOTE INDICATING LIGHTS GO OFF.
4. REFER TO APPLICABLE SYSTEM FOR THE COMPLETE SYSTEM INOPERABILITY LOGIC.
5. COMMON ANNUNCIATOR FOR Φ1 & Φ3.

NOTE:

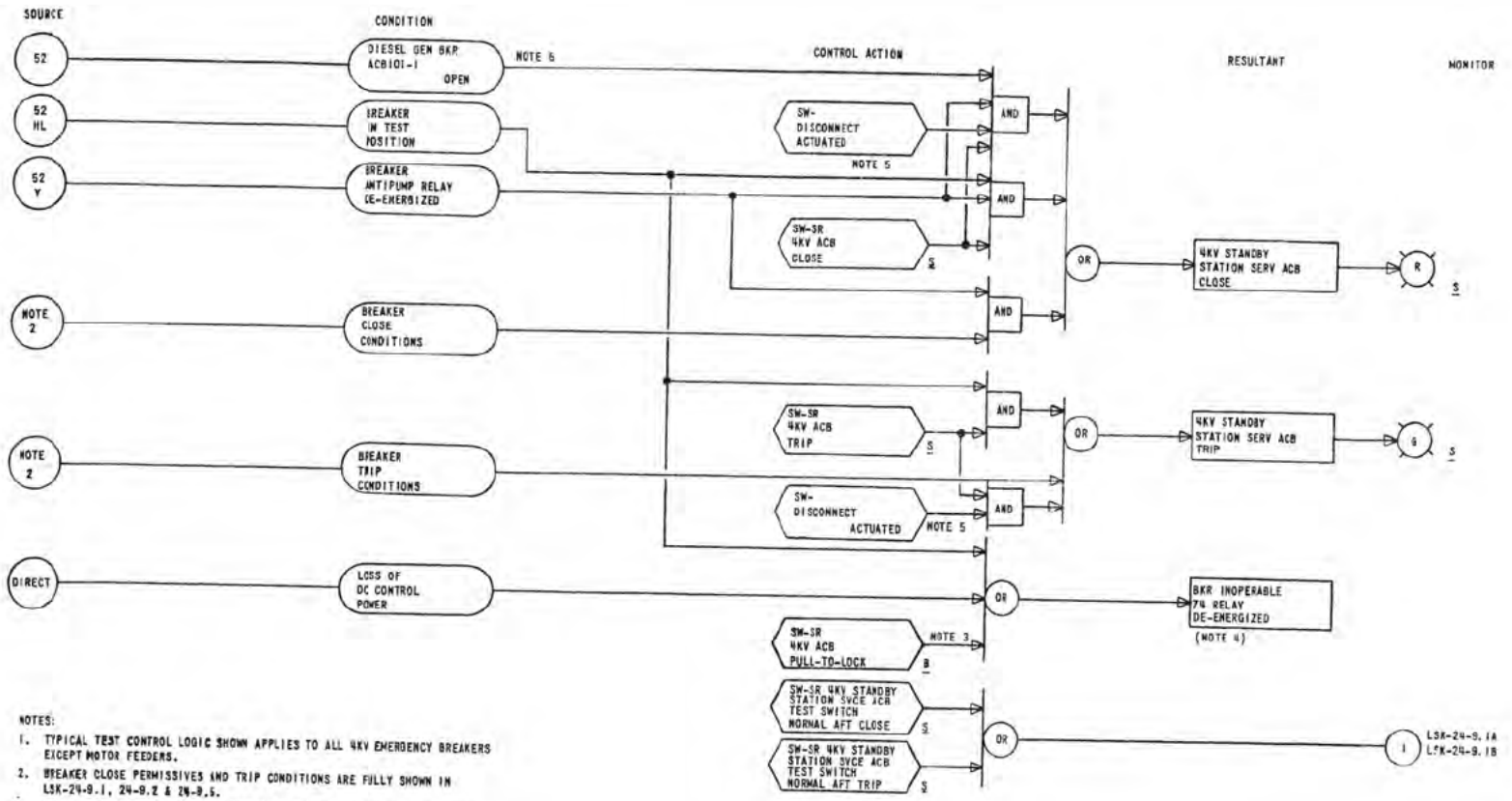
FOR LATEST SET POINT INFORMATION
SEE SET POINT DATA SHEET

SOURCE: 121 77-LSK-24-9.6A REV. 6

FIGURE 8.3-6

STANDBY DIESEL GENERATOR
CONTROL AND PROTECTION LOGICS
SHEET 30 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:

1. TYPICAL TEST CONTROL LOGIC SHOWN APPLIES TO ALL 4KV EMERGENCY BREAKERS EXCEPT MOTOR FEEDERS.
2. BREAKER CLOSE PERMISSIVES AND TRIP CONDITIONS ARE FULLY SHOWN IN LSK-24-9.1, 24-9.2 & 24-9.5.
3. WHEN THE CONTROL SWITCH IS PLACED IN THE PULL-TO-LOCK POSITION, THE BREAKER IS TRIPPED AND THE REMOTE INDICATING LIGHTS GO OFF
4. REFER TO APPLICABLE SYSTEM FOR THE COMPLETE SYSTEM INOPERABILITY LOGIC.
5. LOGIC FOR THE CONTROL ROOM FIRE DISCONNECT SWITCH IS APPLICABLE FOR ALL 4KV EMERGENCY BREAKERS WITH THE EXCEPTION OF THE DIESEL GENERATOR NEUTRAL BREAKERS ACB 101-N1 AND ACB-N1.
6. LOGIC FOR DIV I DIESEL GENERATOR BREAKER POSITION PERMISSIVE IS SHOWN. LOGIC FOR DIVISION II DIESEL GENERATOR BREAKER POSITION PERMISSIVE IS SIMILAR.

NOTE:

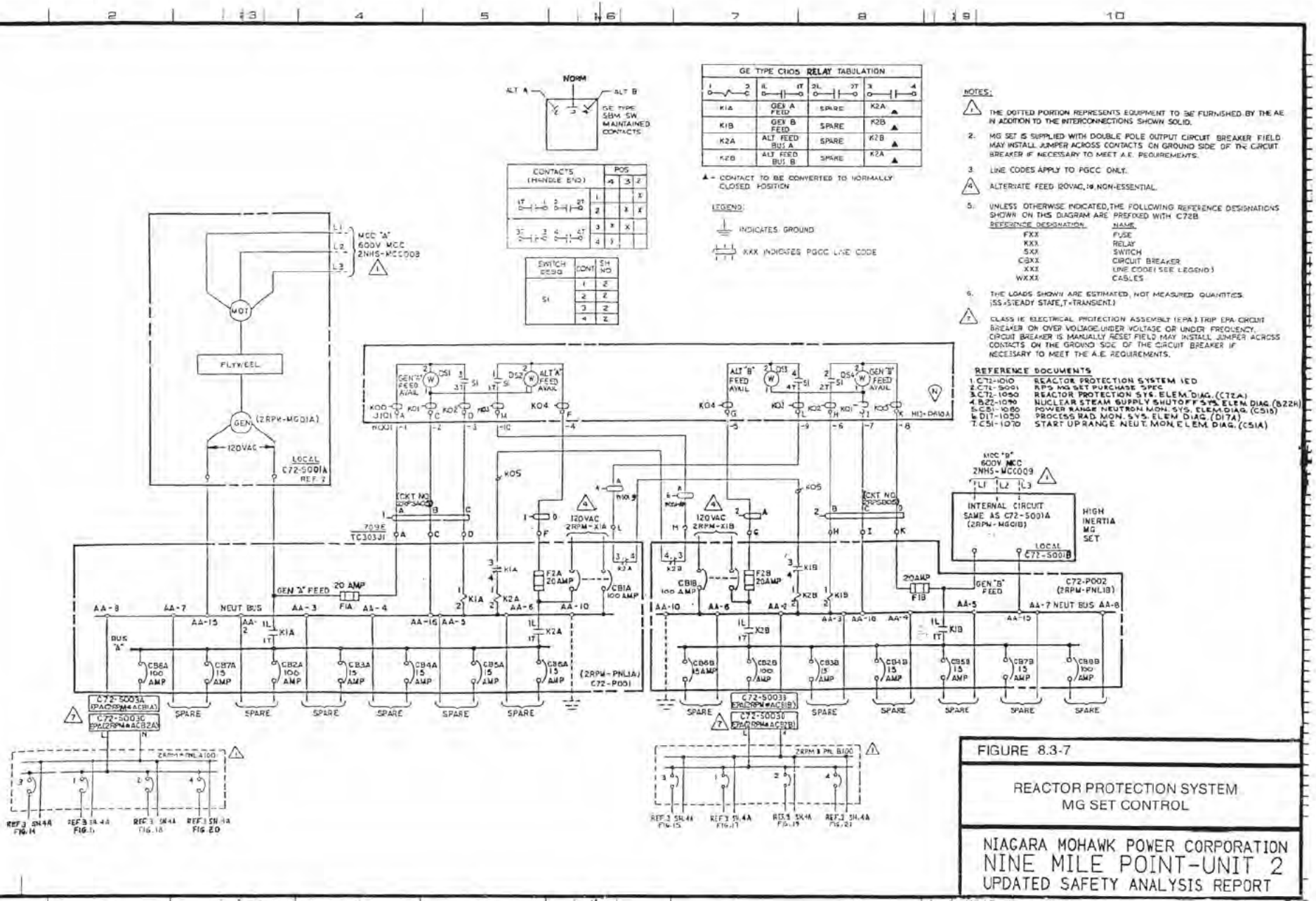
FOR LATEST SET POINT INFORMATION
SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-24-9.6B REV. 6

FIGURE 8.3-6

STANDBY DIESEL GENERATOR CONTROL AND PROTECTION LOGICS SHEET 31 OF 31

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



NOTES:

1. THE DOTTED PORTION REPRESENTS EQUIPMENT TO BE FURNISHED BY THE A/E IN ADDITION TO THE INTERCONNECTIONS SHOWN SOLID.
2. MG SET IS SUPPLIED WITH DOUBLE POLE OUTPUT CIRCUIT BREAKER FIELD MAY INSTALL JUMPER ACROSS CONTACTS ON GROUND SIDE OF THE CIRCUIT BREAKER IF NECESSARY TO MEET A.E. REQUIREMENTS.
3. LINE CODES APPLY TO PGCC ONLY.
4. ALTERNATE FEED 120VAC, 1Ø, NON-ESSENTIAL.
5. UNLESS OTHERWISE INDICATED, THE FOLLOWING REFERENCE DESIGNATIONS SHOWN ON THIS DIAGRAM ARE PREFIXED WITH C72B.

REFERENCE DESIGNATION	NAME
FXX	FUSE
KXX	RELAY
SXX	SWITCH
CBXX	CIRCUIT BREAKER
XXX	LINE CODE (SEE LEGEND)
WXXX	CABLES

6. THE LOADS SHOWN ARE ESTIMATED, NOT MEASURED QUANTITIES. (SS=STEADY STATE, T=TRANSIENT.)
7. CLASS 1E ELECTRICAL PROTECTION ASSEMBLY (EPA) TRIP EPA CIRCUIT BREAKER ON OVER VOLTAGE, UNDER VOLTAGE OR UNDER FREQUENCY. CIRCUIT BREAKER IS MANUALLY RESET FIELD MAY INSTALL JUMPER ACROSS CONTACTS ON THE GROUND SIDE OF THE CIRCUIT BREAKER IF NECESSARY TO MEET THE A.E. REQUIREMENTS.

REFERENCE DOCUMENTS

1. C72-1010	REACTOR PROTECTION SYSTEM IED
2. C72-5001	RPS MG SET PURCHASE SPEC
3. C72-1050	REACTOR PROTECTION SYS. ELEM. DIAG. (C72A)
4. B22-1090	NUCLEAR STEAM SUPPLY SHUTOFF SYS. ELEM. DIAG. (B22H)
5. C51-1050	POWER RANGE NEUTRON MON. SYS. ELEM. DIAG. (C51S)
6. D17-1050	PROCESS RAD. MON. SYS. ELEM. DIAG. (D17A)
7. C51-1070	START UP RANGE NEUT. MON. ELEM. DIAG. (C51A)

FIGURE 8.3-7

REACTOR PROTECTION SYSTEM
MG SET CONTROL

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT

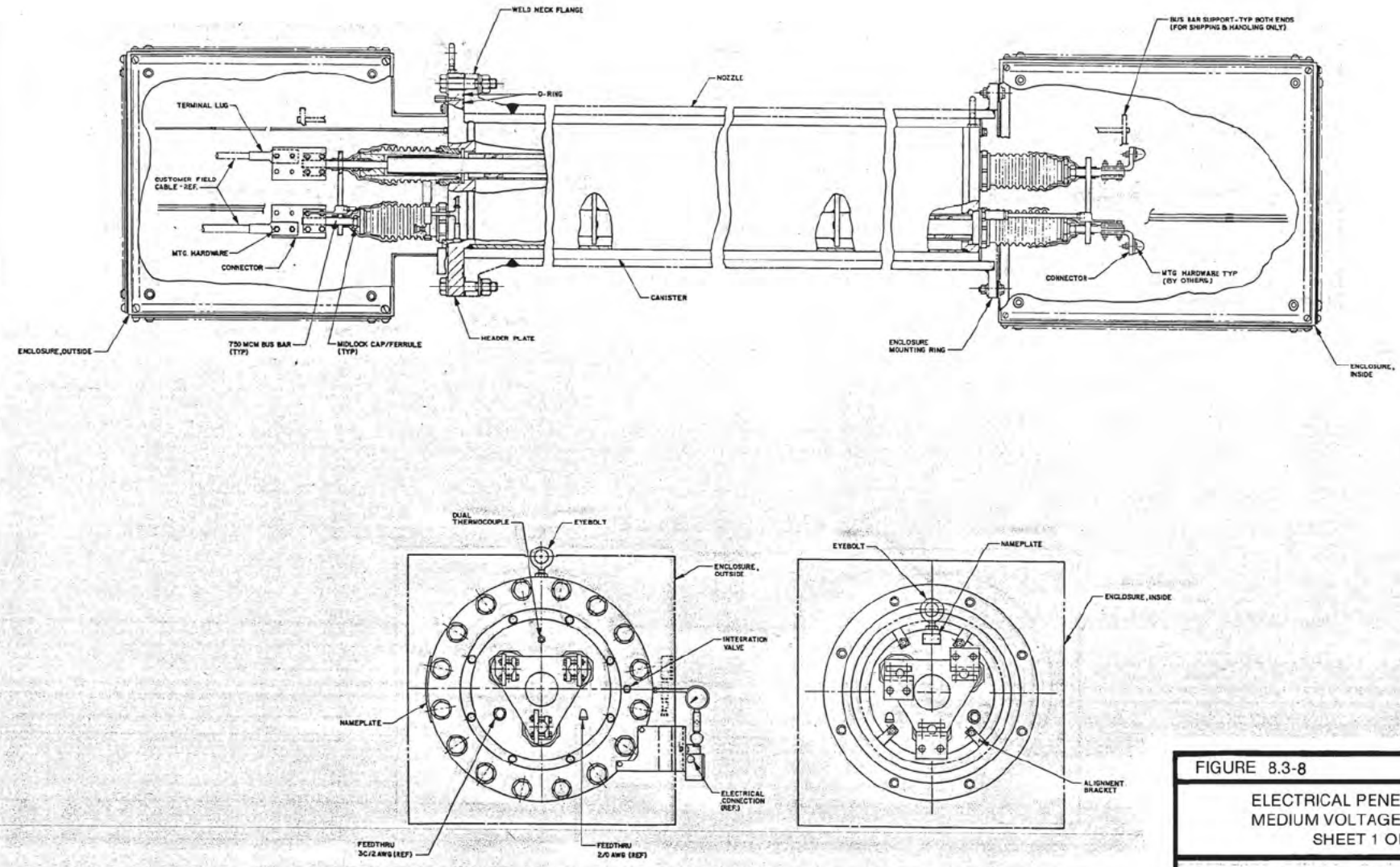
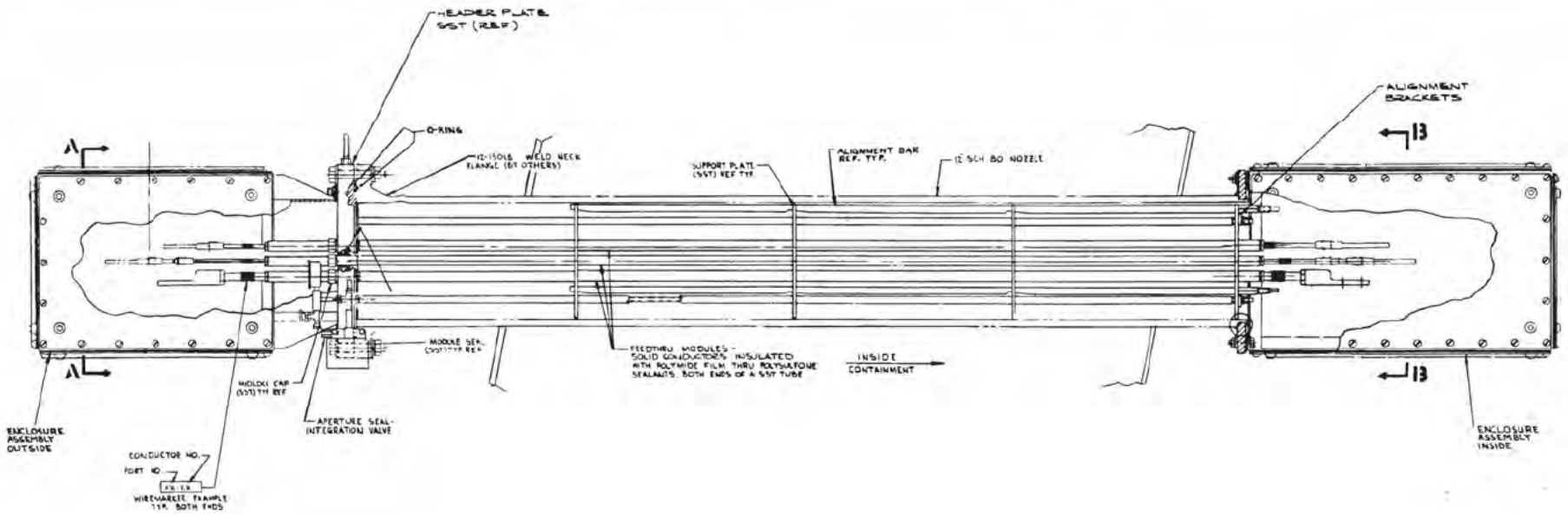
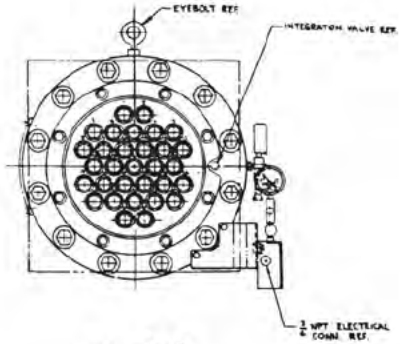


FIGURE 8.3-8

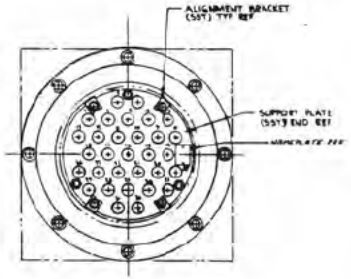
ELECTRICAL PENETRATIONS
MEDIUM VOLTAGE (TYPICAL)
SHEET 1 OF 2

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT





VIEW A-A



VIEW 13-13

FIGURE 8.3-8

ELECTRICAL PENETRATIONS
LOW VOLTAGE (TYP.)
SHEET 2 OF 2

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT

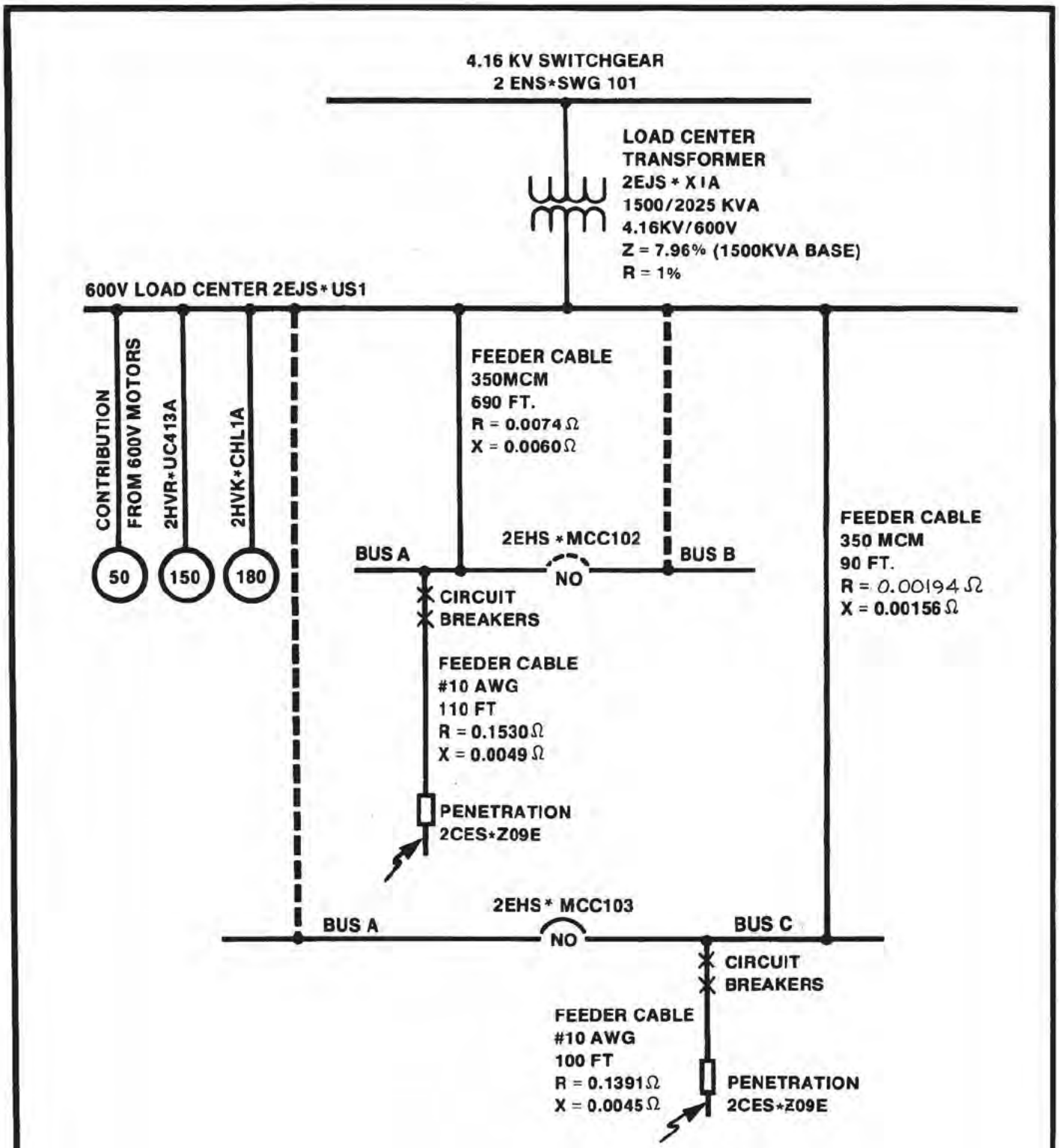
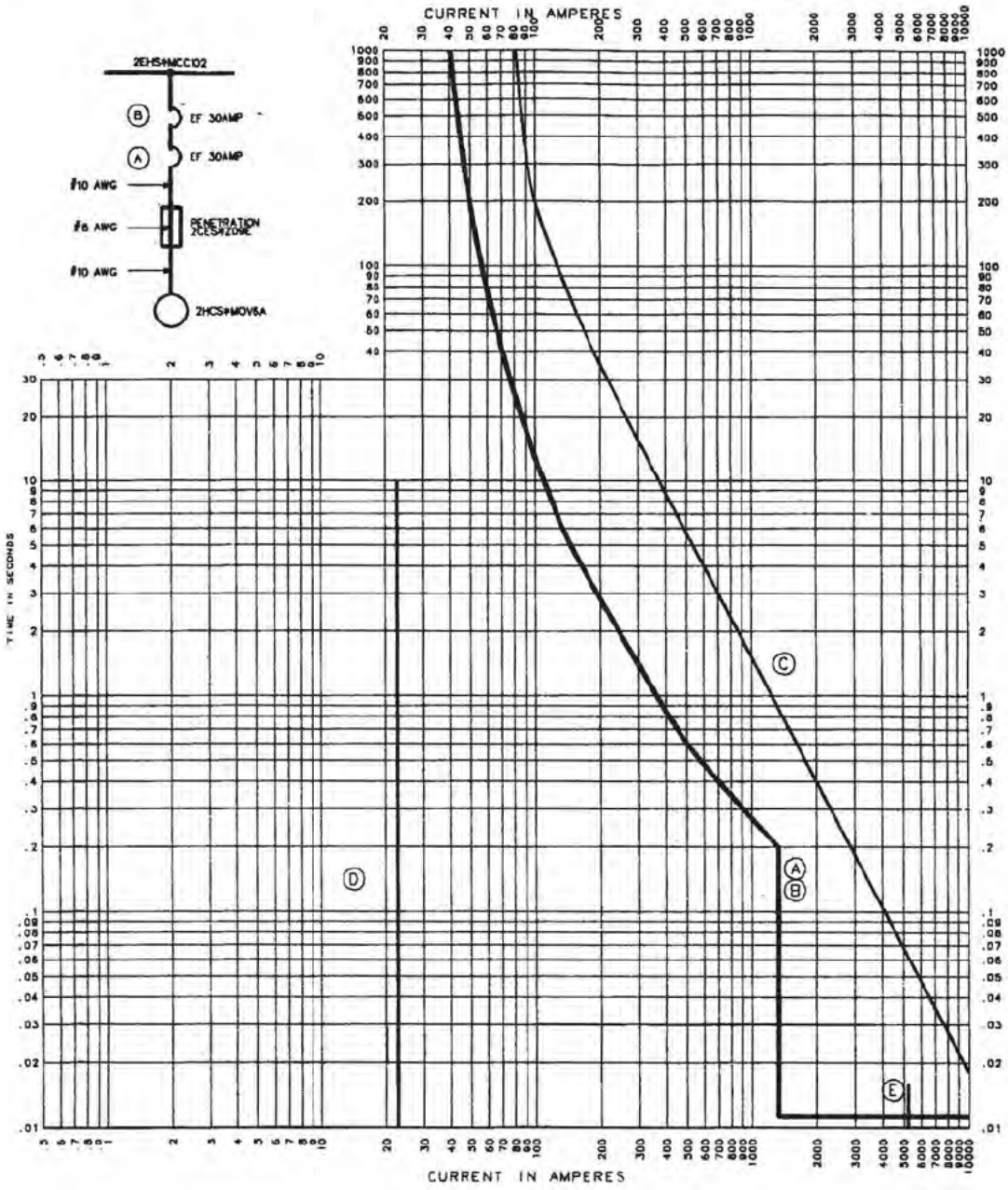


FIGURE 8.3-8A

PENETRATION I^2t CAPABILITY

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

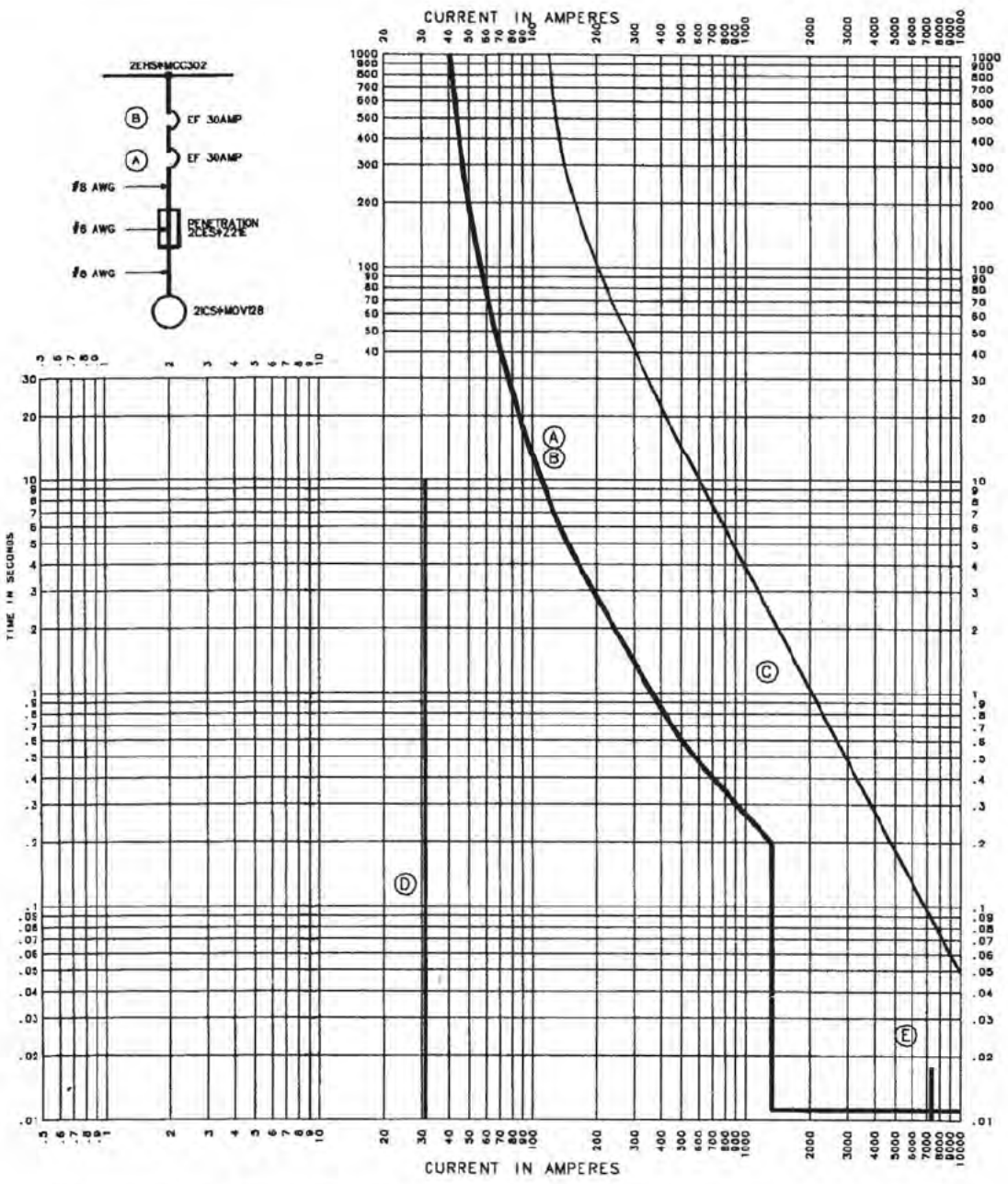
(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT PENETRATION

FIGURE 8.3-8B SH 1 OF 13

PENETRATION PROTECTION

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

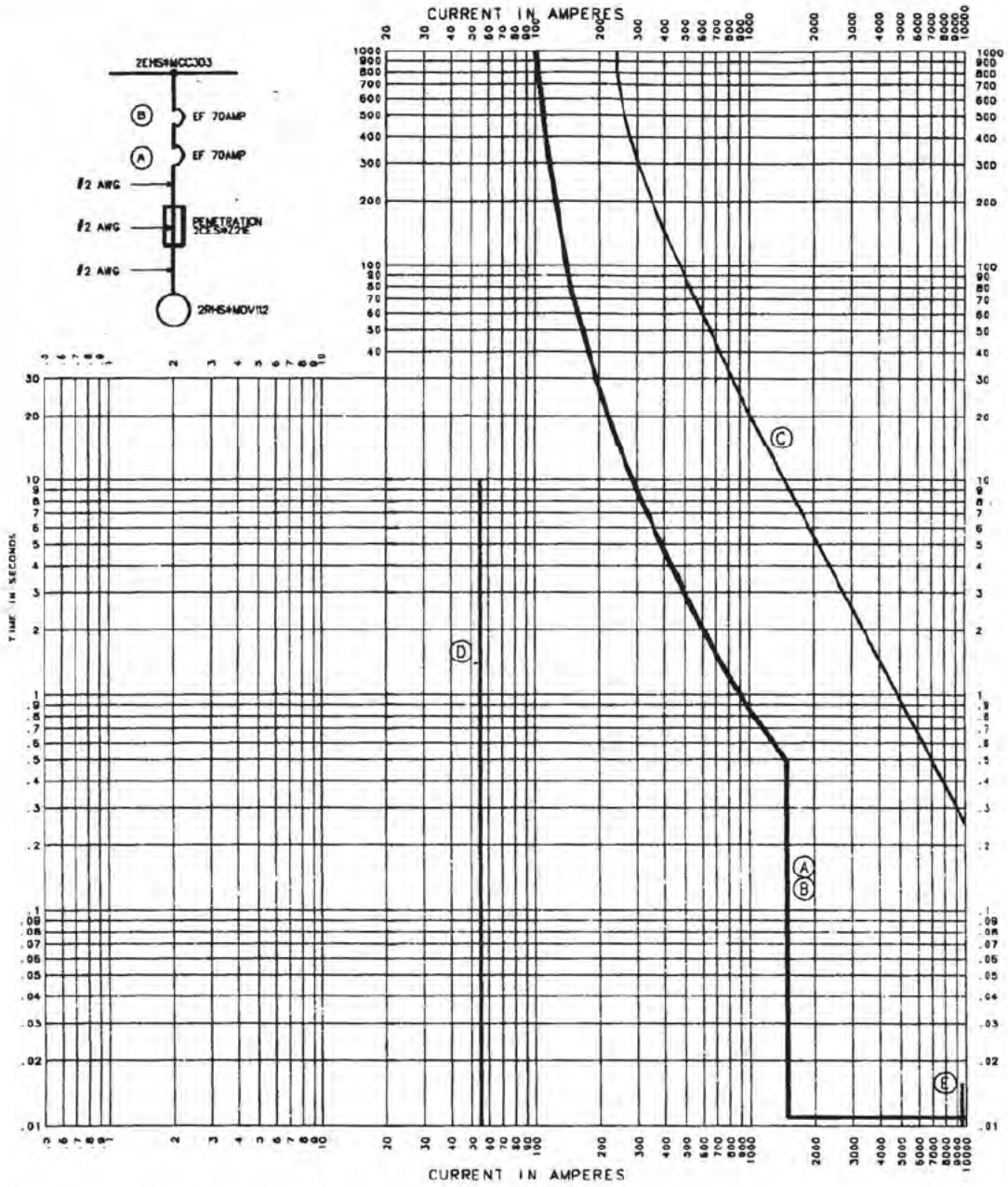
(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT PENETRATION

FIGURE 8.3-8B SH 2 OF 13

PENETRATION PROTECTION

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

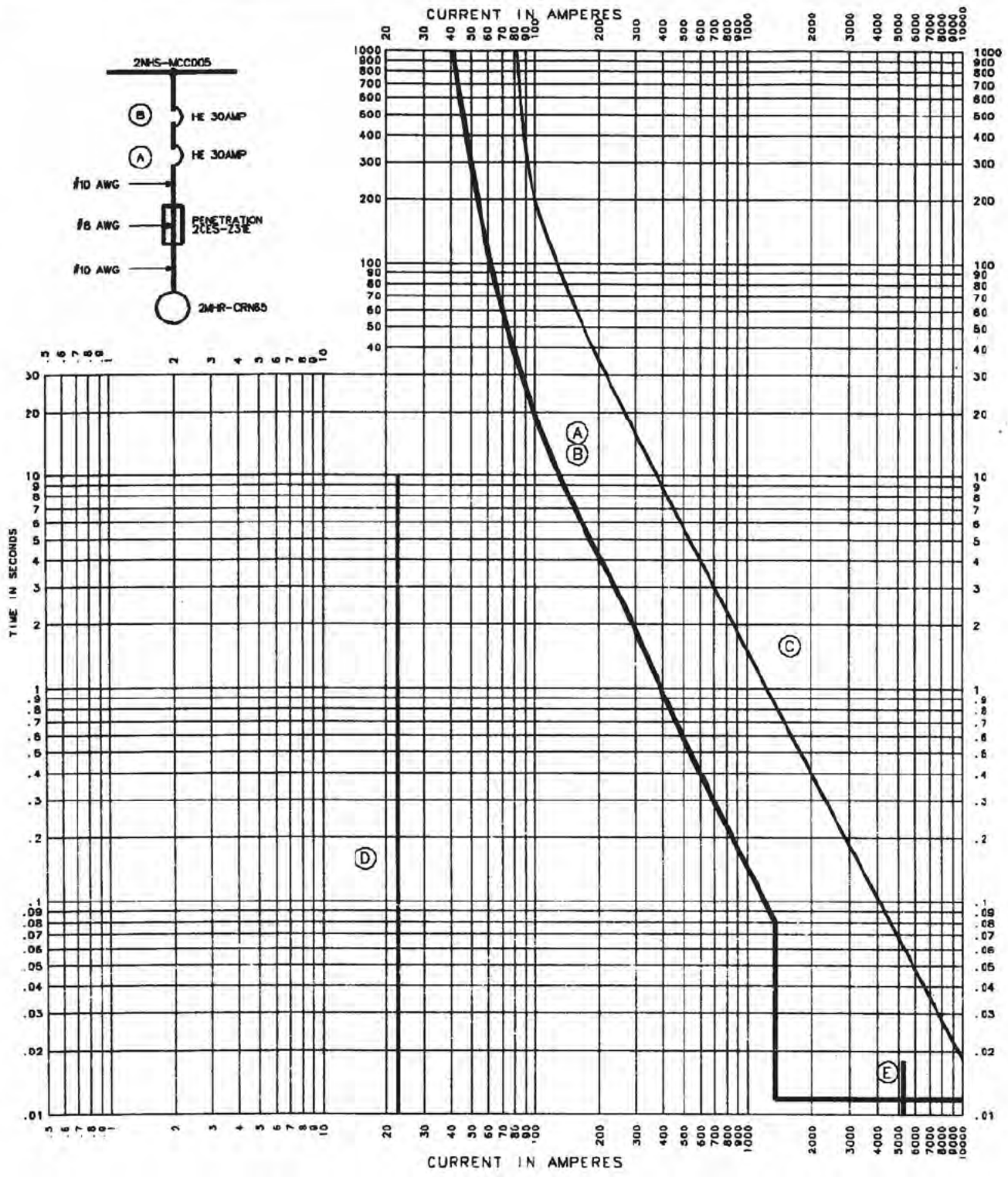
(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT PENETRATION

FIGURE 8.3-8B SH 3 OF 13

PENETRATION PROTECTION

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

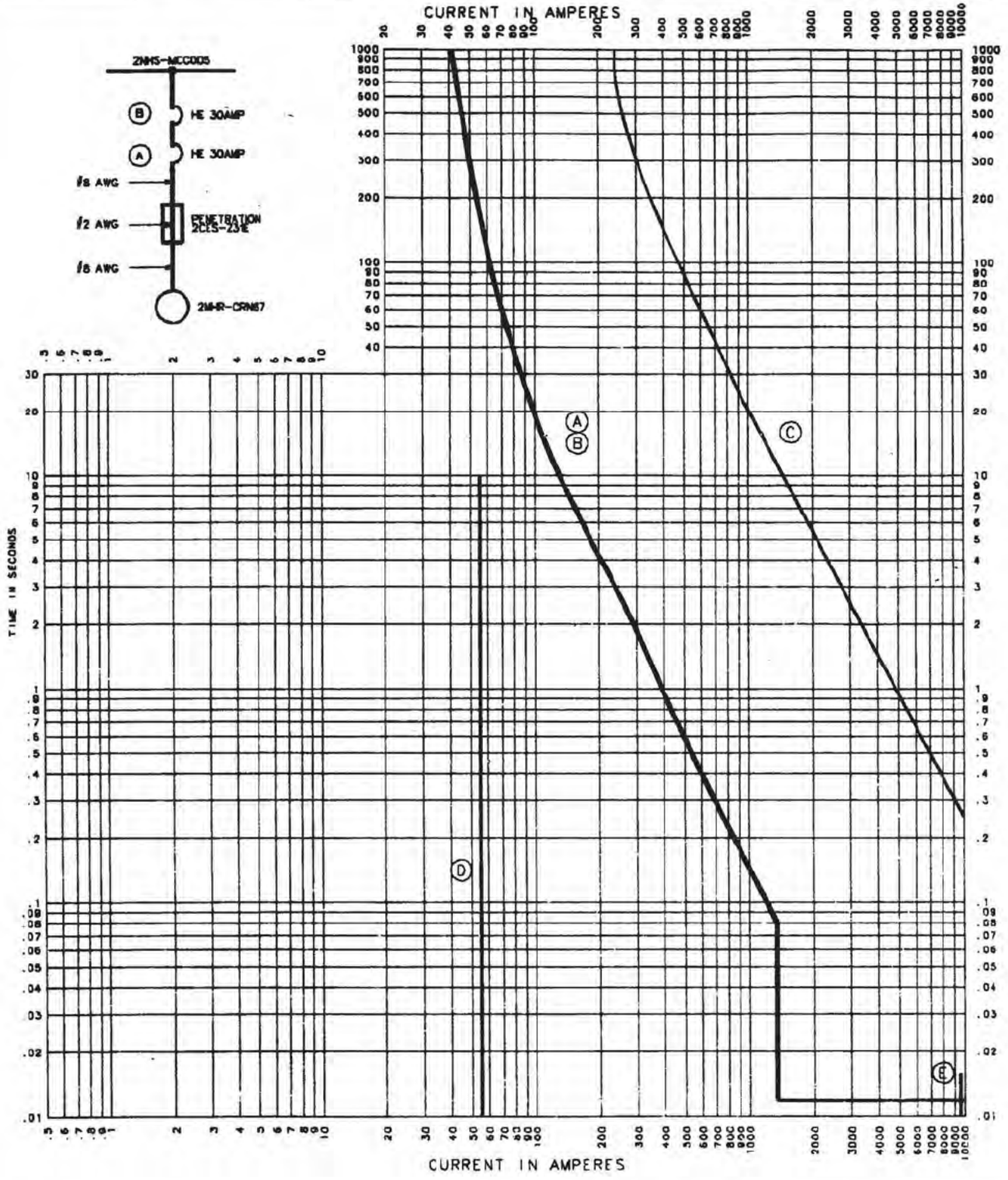
(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT PENETRATION

FIGURE 8.3-8B SH 4 OF 13

PENETRATION PROTECTION

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

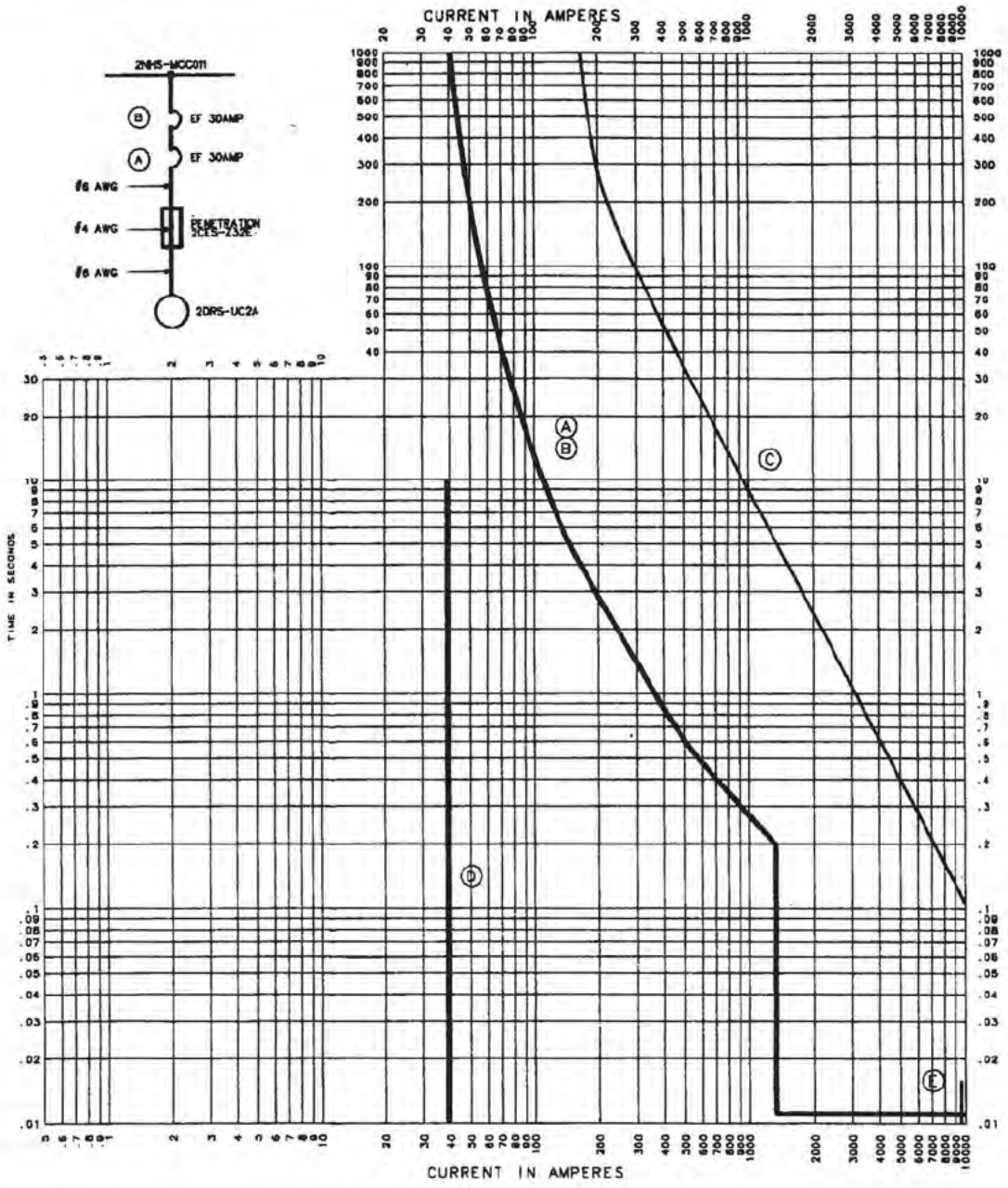
(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT PENETRATION

FIGURE 8.3-8B SH 5 OF 13

PENETRATION PROTECTION

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

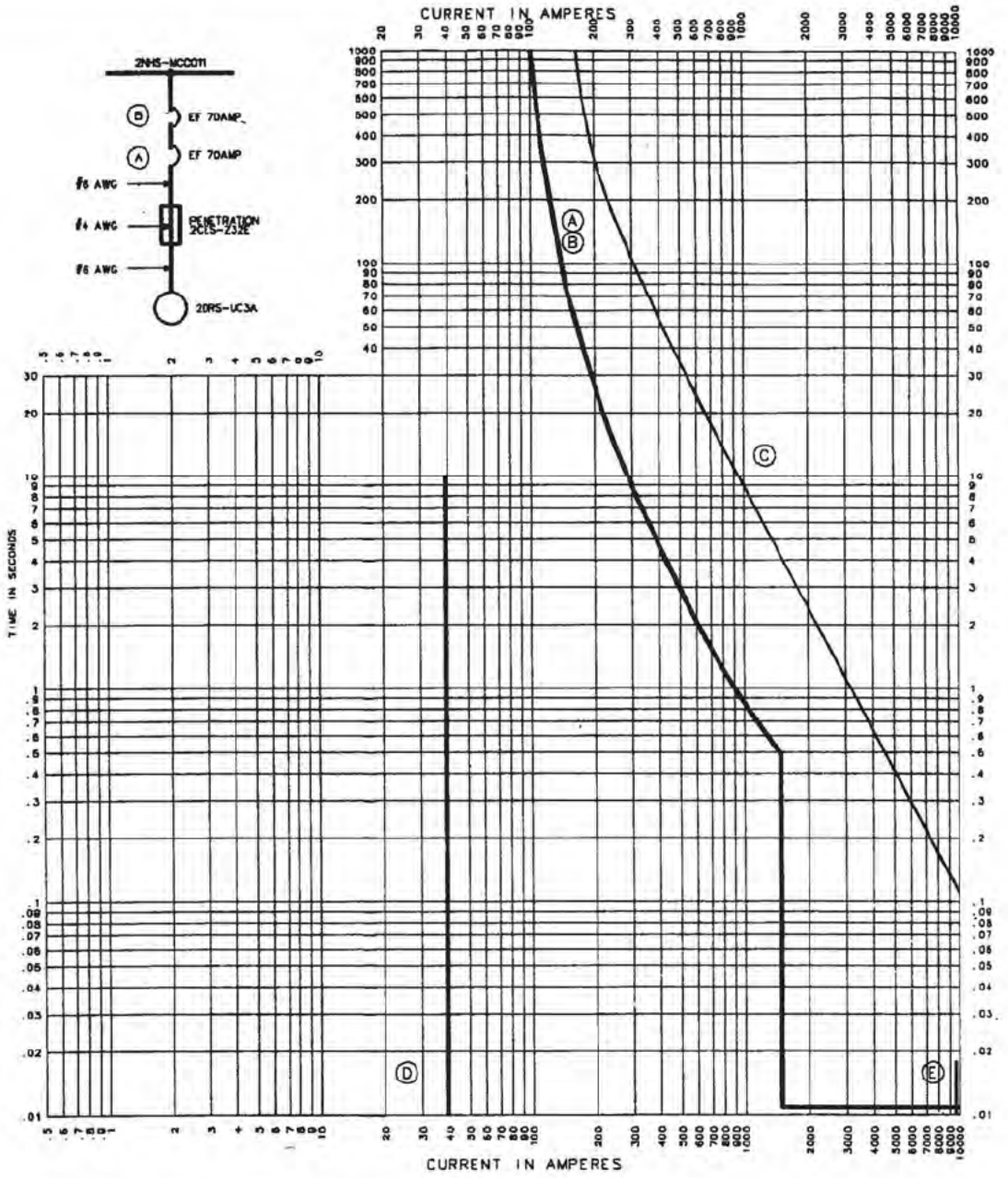
(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT PENETRATION

FIGURE 8.3-8B SH 6 OF 13

PENETRATION PROTECTION

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

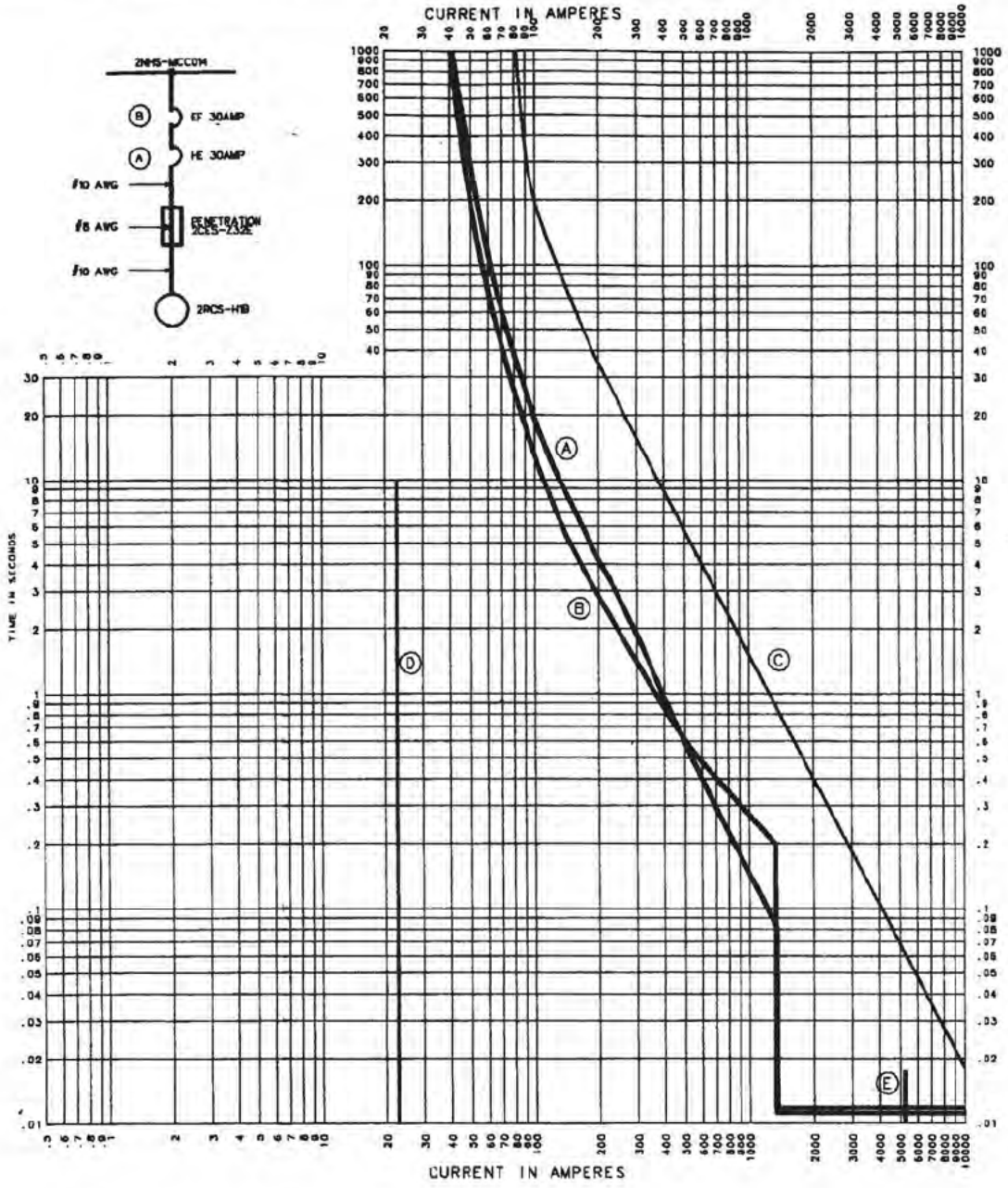
(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT PENETRATION

FIGURE 8.3-8B SH 7 OF 13

PENETRATION PROTECTION

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

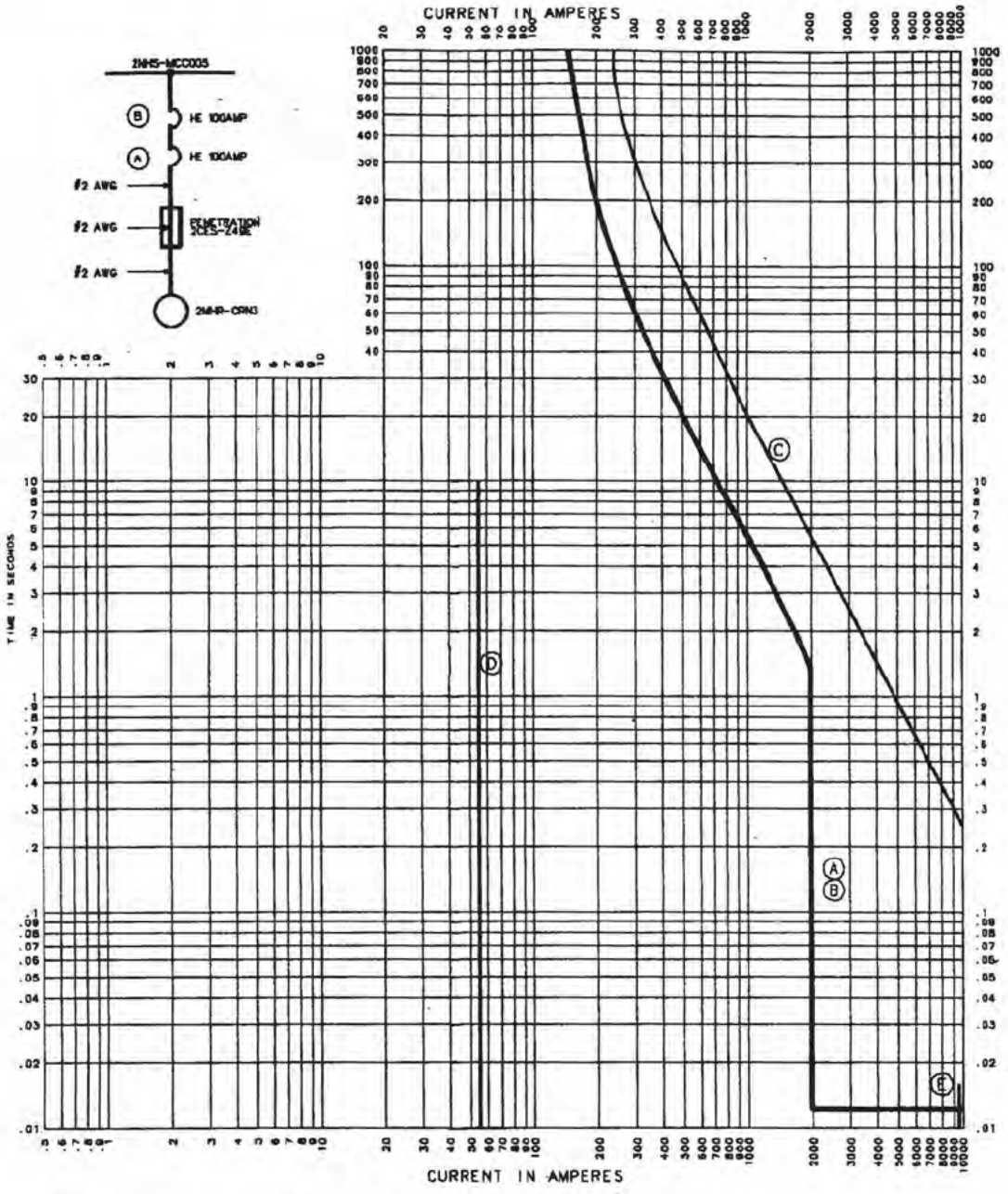
(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT PENETRATION

FIGURE 8.3-8B SH 8 OF 13

PENETRATION PROTECTION

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

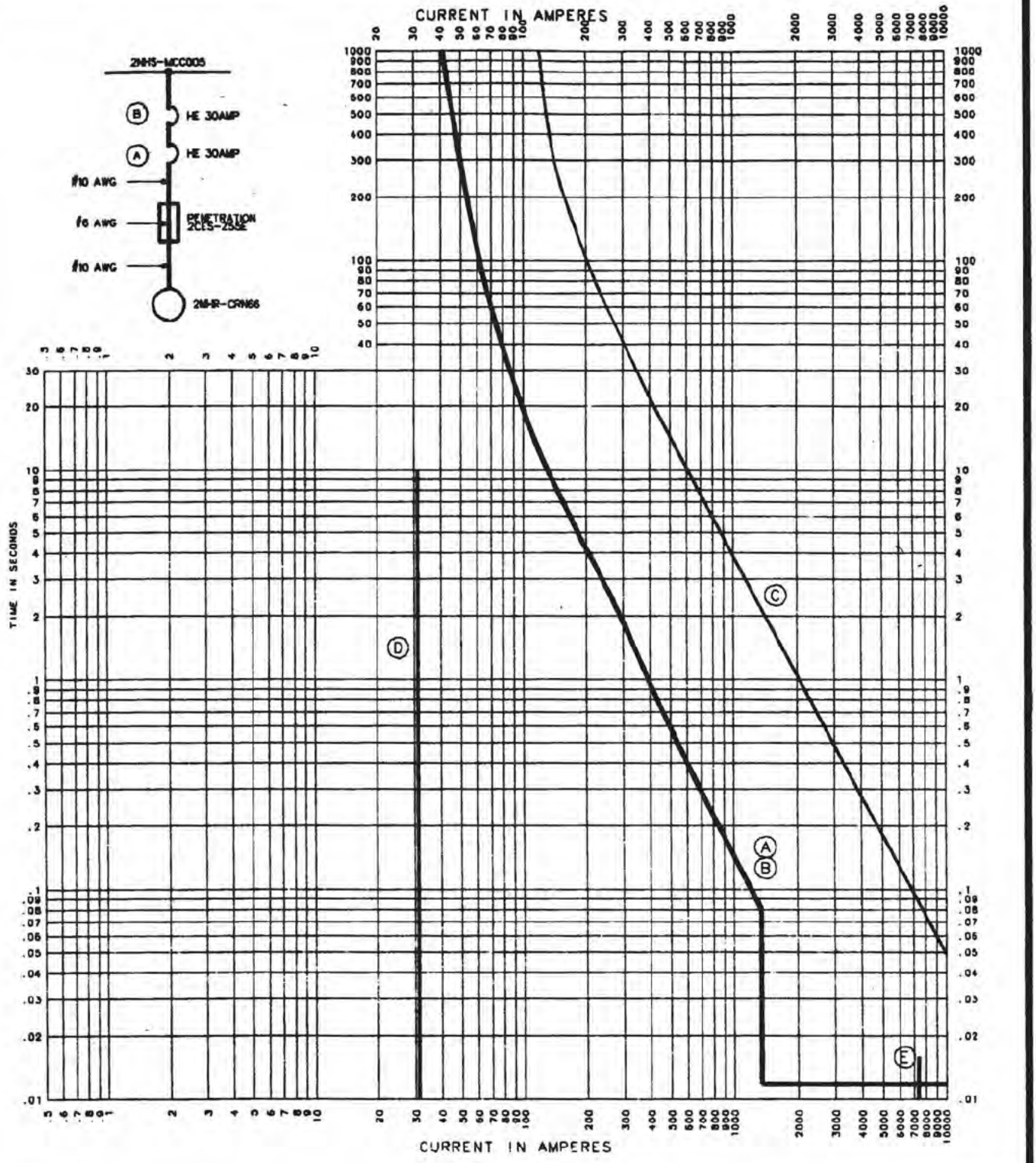
(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT PENETRATION

FIGURE 8.3-8B SH 9 OF 13

PENETRATION PROTECTION

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

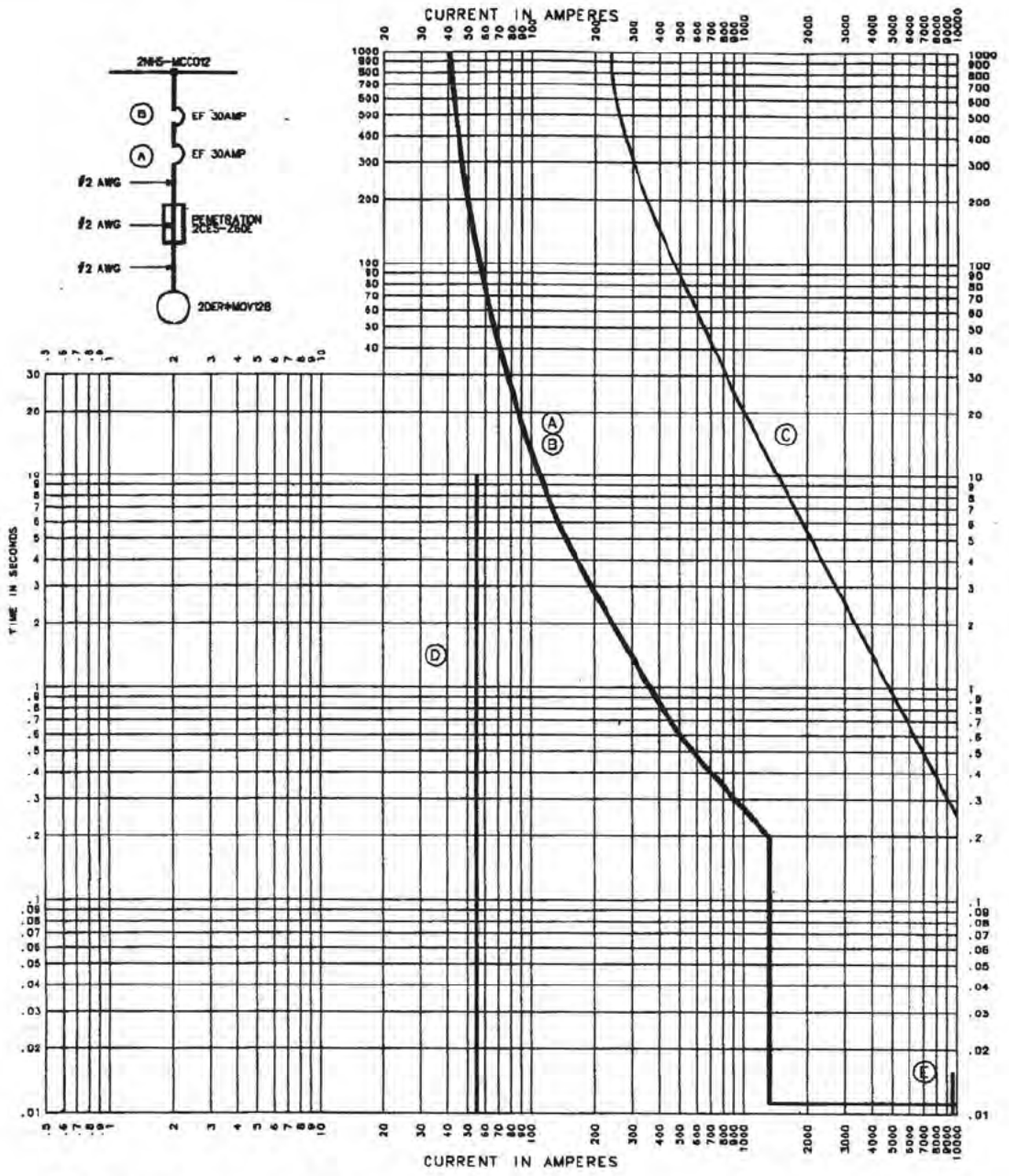
(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT PENETRATION

FIGURE 8.3-8B SH 10 OF 13

PENETRATION PROTECTION

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

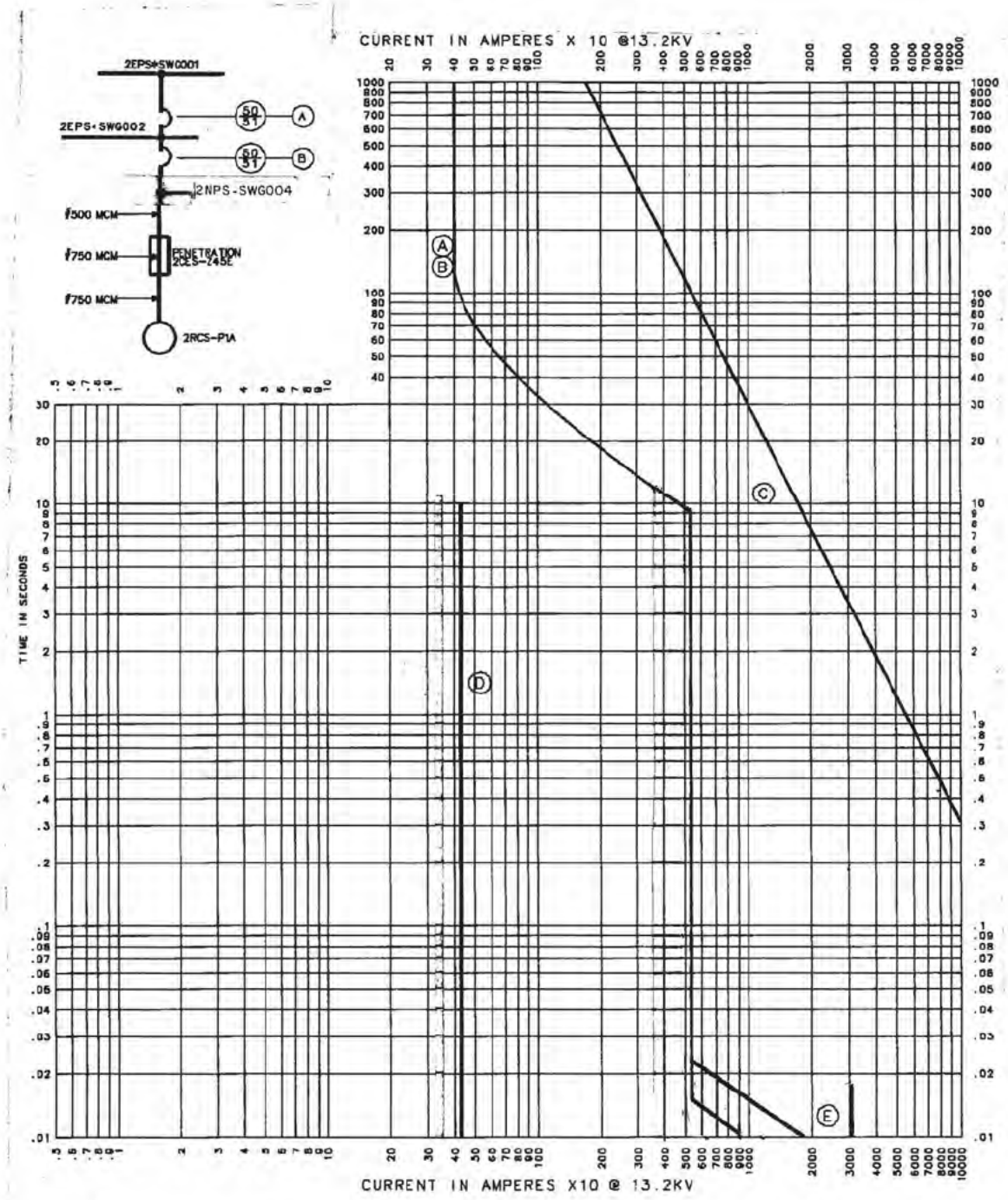
(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT PENETRATION

FIGURE 8.3-8B SH 11 OF 13

PENETRATION PROTECTION

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

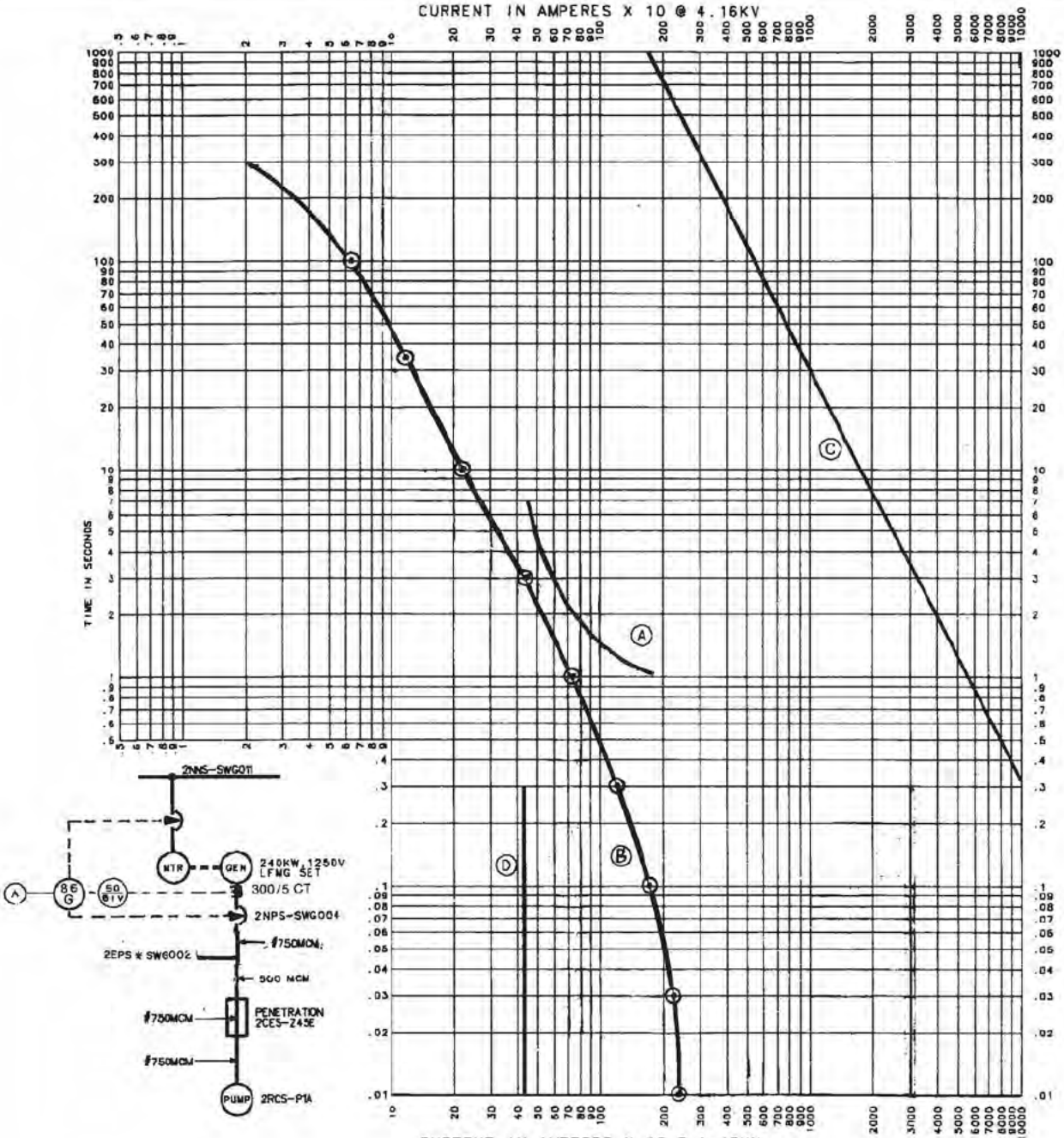
(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT PENETRATION

FIGURE 8.3-8B SH 12 OF 13

PENETRATION PROTECTION

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



(A) PRIMARY PROTECTION DEVICE #50/51V, GE TYPE IJCV99AAC01 @ 1250V

(B) SHORT CIRCUIT DECREMENT FOR LFMG SET (NOTE 1)

(C) PENETRATION CAPABILITY CURVE (I VS T)

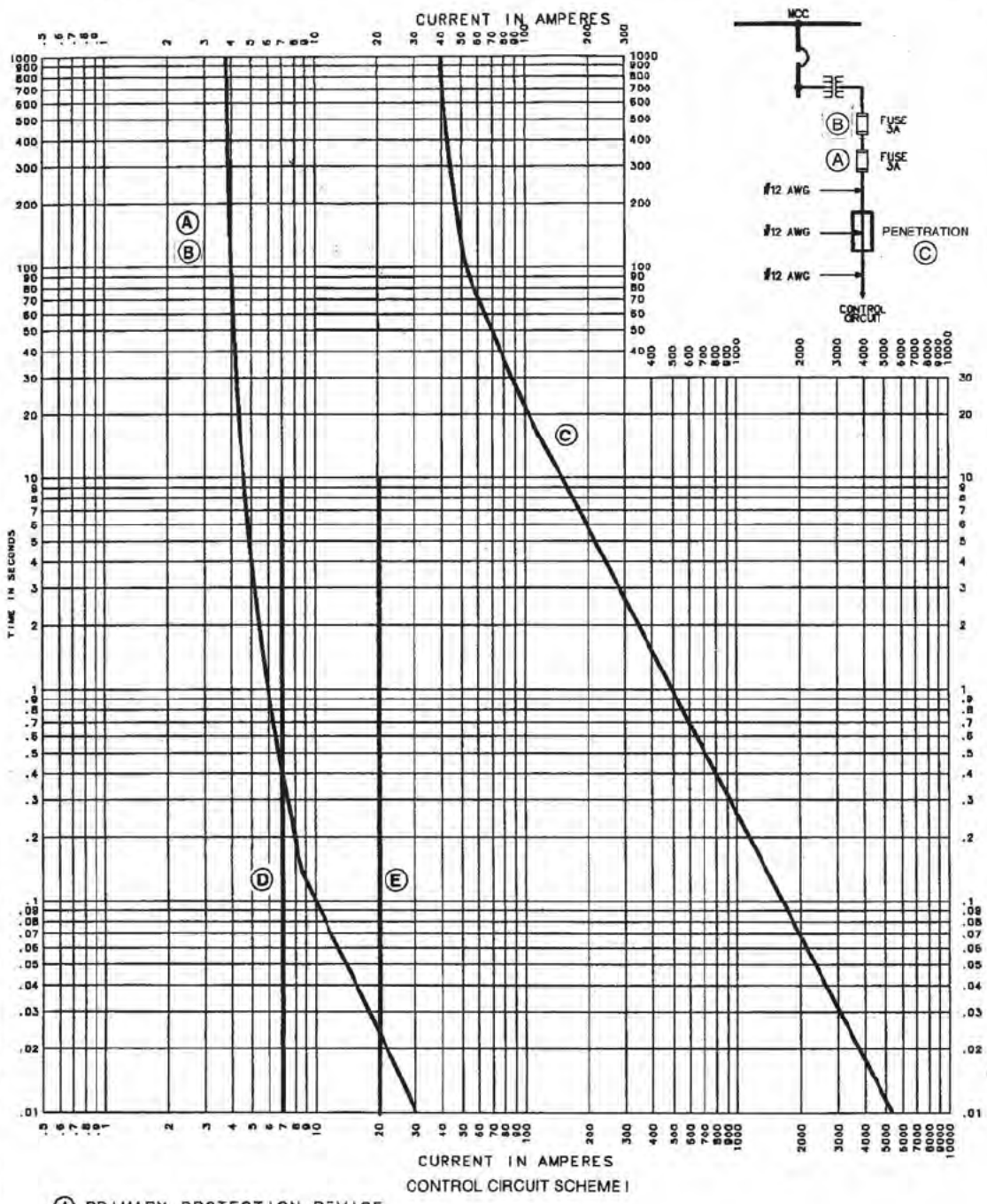
(D) PENETRATION CONTINUOUS CURRENT

NOTE 1: THE CURVE SHOWS THE CURRENT AND THE CORRESPONDING WITHSTAND TIME FOR THE LFMG SET UNDER A SIMULATED SHORT CIRCUIT CONDITION.

FIGURE 8.3-8B SH 13 OF 13

PENETRATION PROTECTION

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



CONTROL CIRCUIT SCHEME I

(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

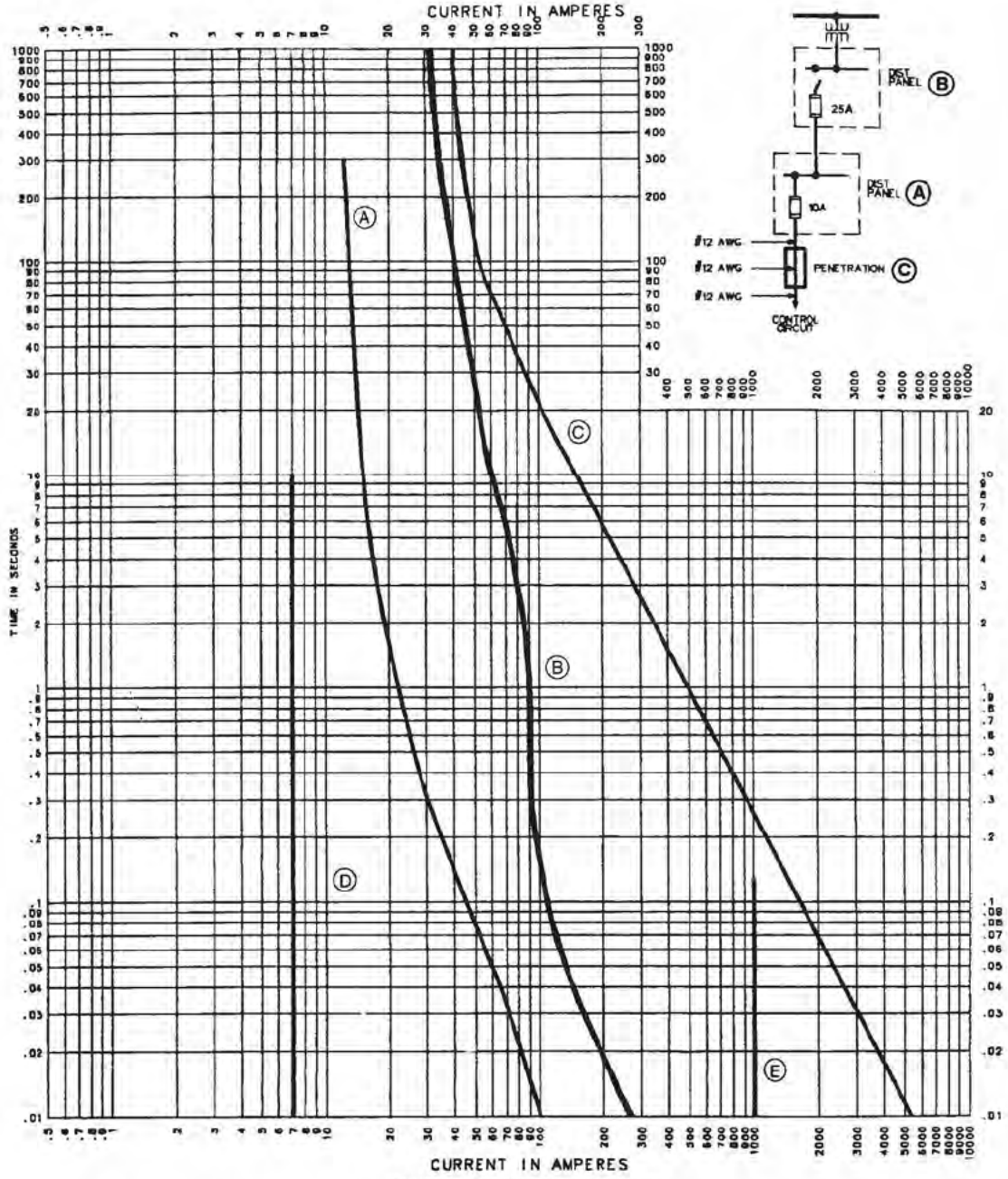
(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT PENETRATION

FIGURE 8.3-8B

PENETRATION PROTECTION
SHEET 13a OF 13

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



CONTROL CIRCUIT SCHEME IIA, IIC

(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

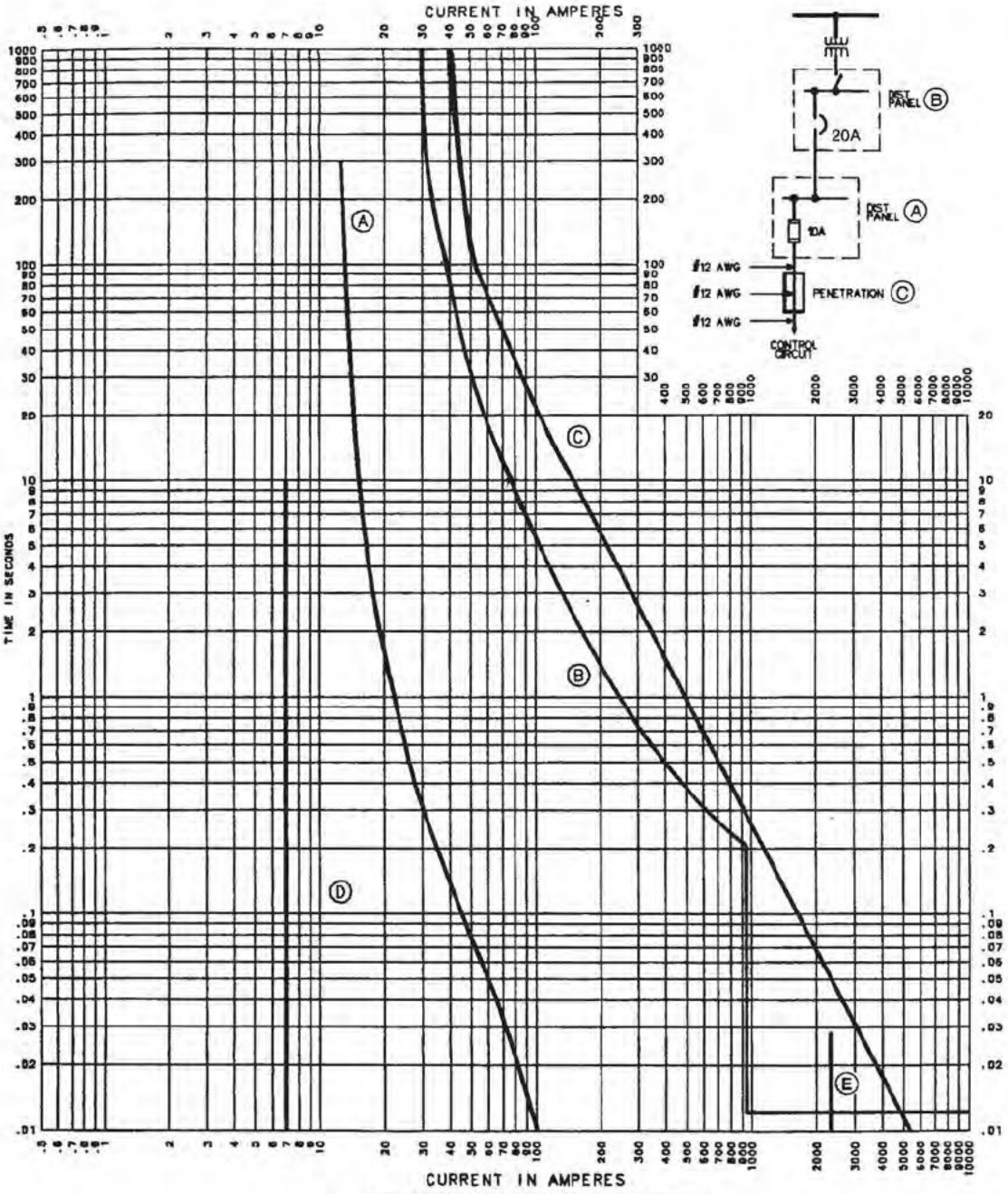
(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT PENETRATION

FIGURE 8.3-8B

PENETRATION PROTECTION
SHEET 13b OF 13

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



CONTROL CIRCUIT SCHEME IIB

(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

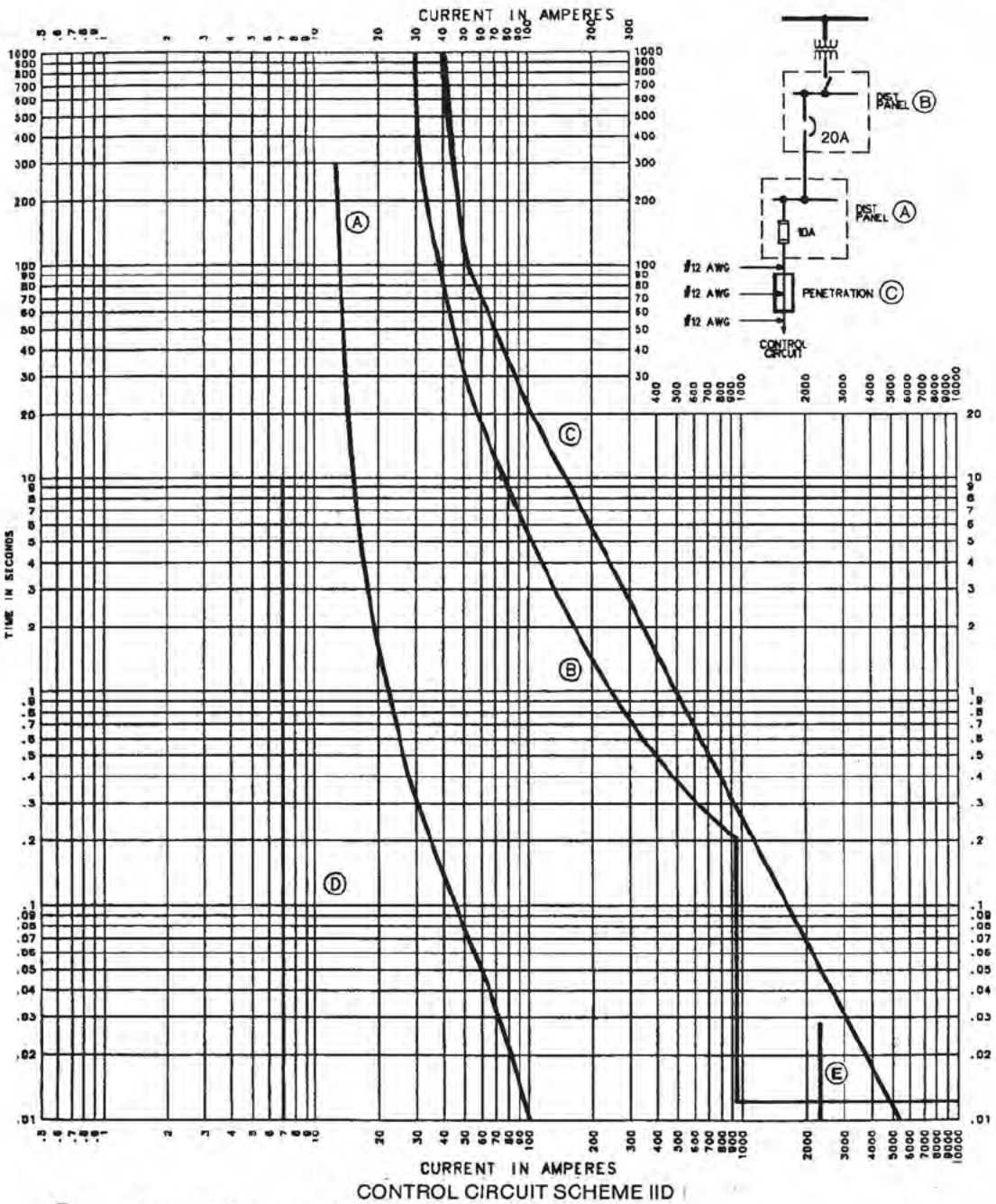
(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT PENETRATION

FIGURE 8.3-8B

PENETRATION PROTECTION
SHEET 13c OF 13

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



CONTROL CIRCUIT SCHEME IID

(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

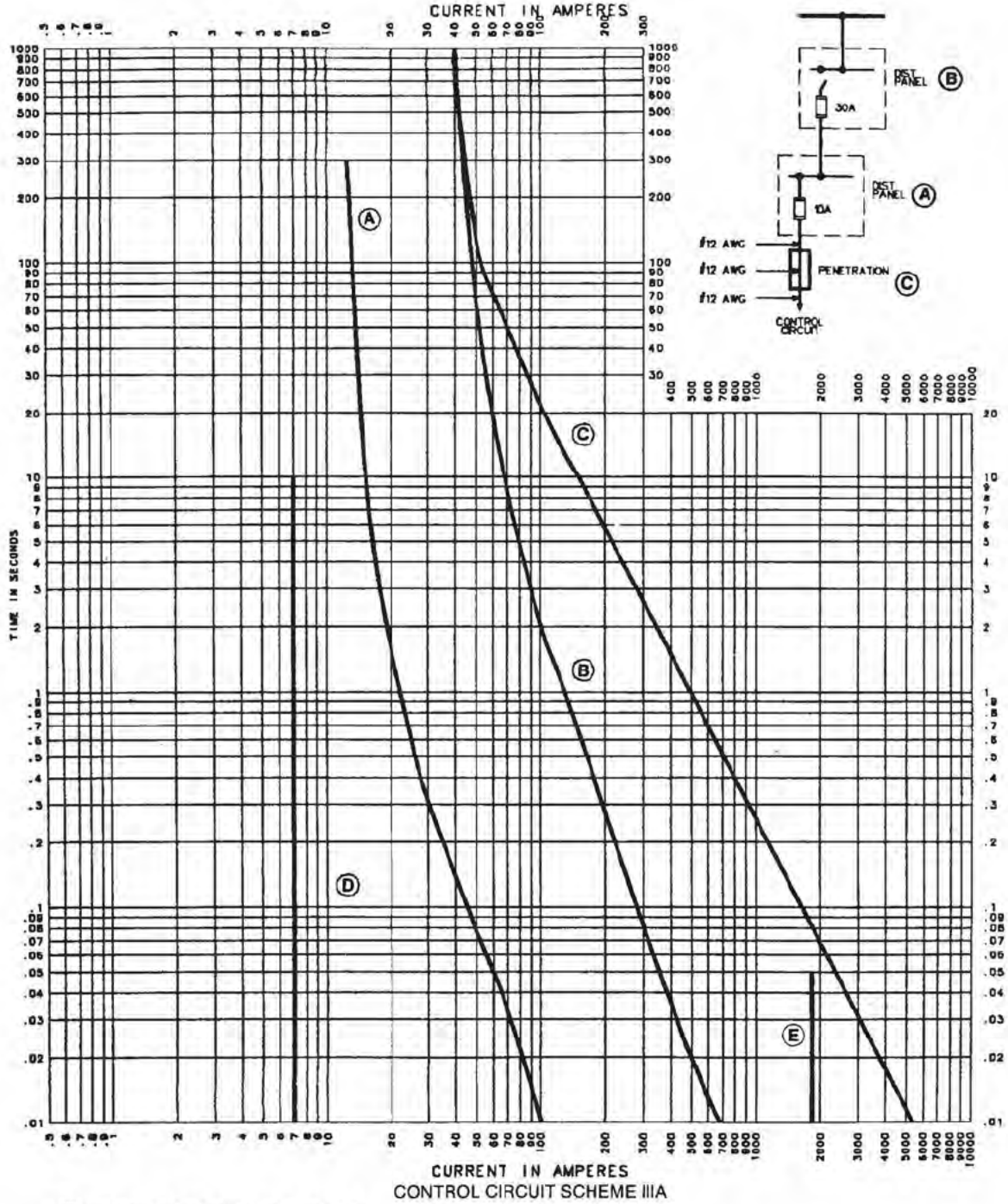
(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT PENETRATION

FIGURE 8.3-8B

PENETRATION PROTECTION
SHEET 13d OF 13

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



CONTROL CIRCUIT SCHEME IIIA

(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT DIST. PANEL

SEE NOTE ON SHEET 13e1

FIGURE 8.3-8B

PENETRATION PROTECTION
SHEET 13e of 13

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT

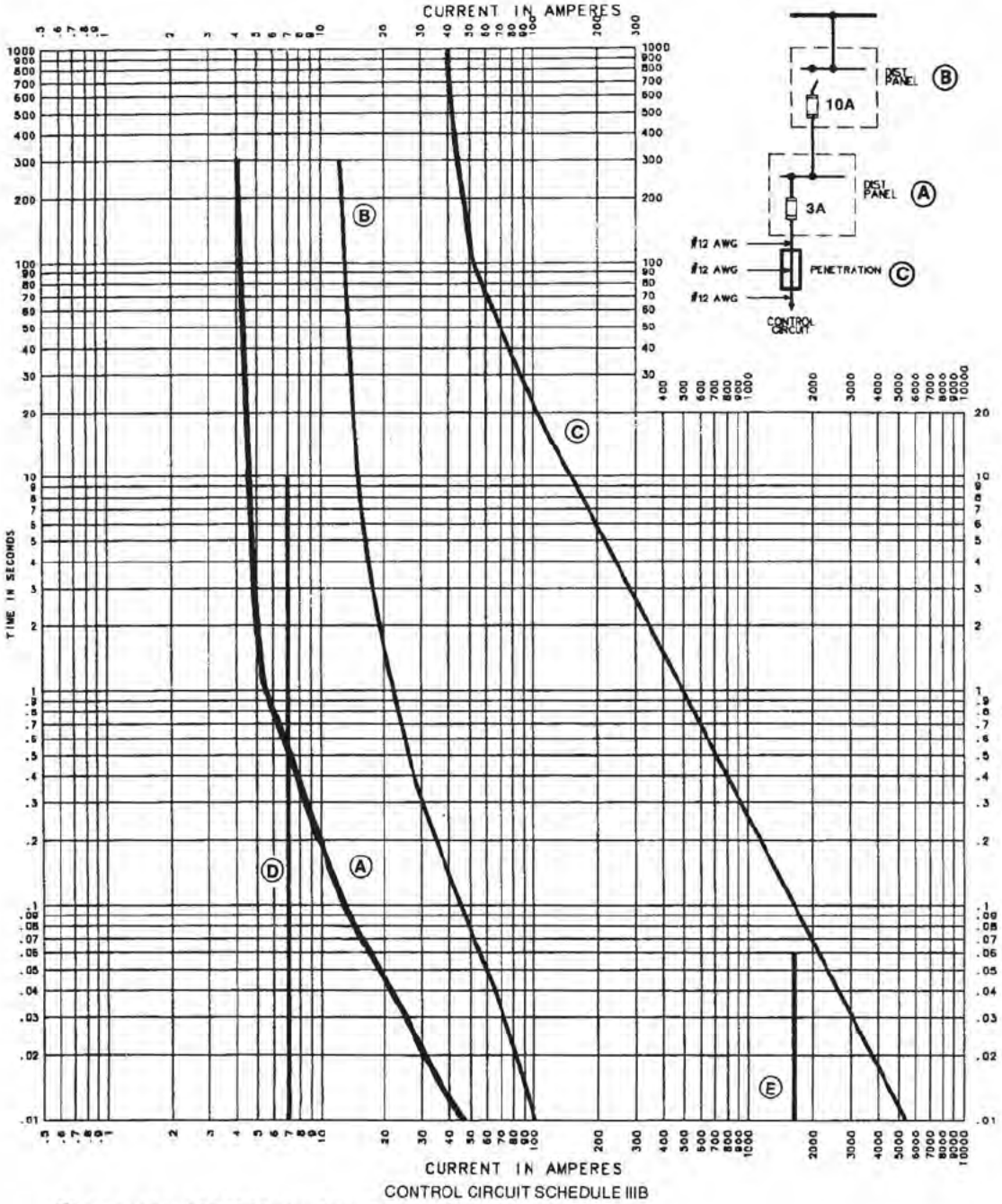
NOTE:

THE TYPICAL SCHEME IIIA ON FIGURE 8.3-8B, SHEET 13e OF 13 IS FOR DC CONTROL CIRCUITS UTILIZING A CONTACT SIGNAL FROM INSIDE CONTAINMENT. SINCE THE DC DISTRIBUTION SYSTEM IS UNGROUNDED UNDER A SINGLE LINE TO GROUND FAULT, THE SYSTEM CONTINUES TO OPERATE AS DESIGNED. UPON A LINE TO LINE FAULT OR A SHORT, THE CIRCUIT ACTS AS THOUGH THE CONTACT WAS CLOSED AND DRAWS THE SAME CURRENT AS IT WOULD UNDER NORMAL CIRCUMSTANCES (LESS THAN 7 AMPS). ALTHOUGH A BACKUP PROTECTION IS PROVIDED FOR THESE CIRCUITS, IT IS NOT CONSIDERED NECESSARY TO PROTECT THE INTEGRITY OF PENETRATIONS. THEREFORE, THE OVERLAP BETWEEN THE PENETRATION CURVE AND THE 30 AMP FUSE WOULD NOT COMPROMISE THE INTEGRITY OF THE PENETRATION. THE PROTECTION AS PROVIDED CONFORMS TO THE REQUIREMENTS OF REGULATORY GUIDE 1.63.

FIGURE 8.3-8B

PENETRATION PROTECTION
SHEET 13e1 of 13

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT



CONTROL CIRCUIT SCHEDULE IIIB

(A) PRIMARY PROTECTION DEVICE

(B) SECONDARY PROTECTION DEVICE

(C) PENETRATION CAPABILITY CURVE (I VS T)

(D) PENETRATION CONTINUOUS CURRENT

(E) MAX. AVAILABLE SHORT CIRCUIT CURRENT AT PENETRATION

FIGURE 8.3-8B

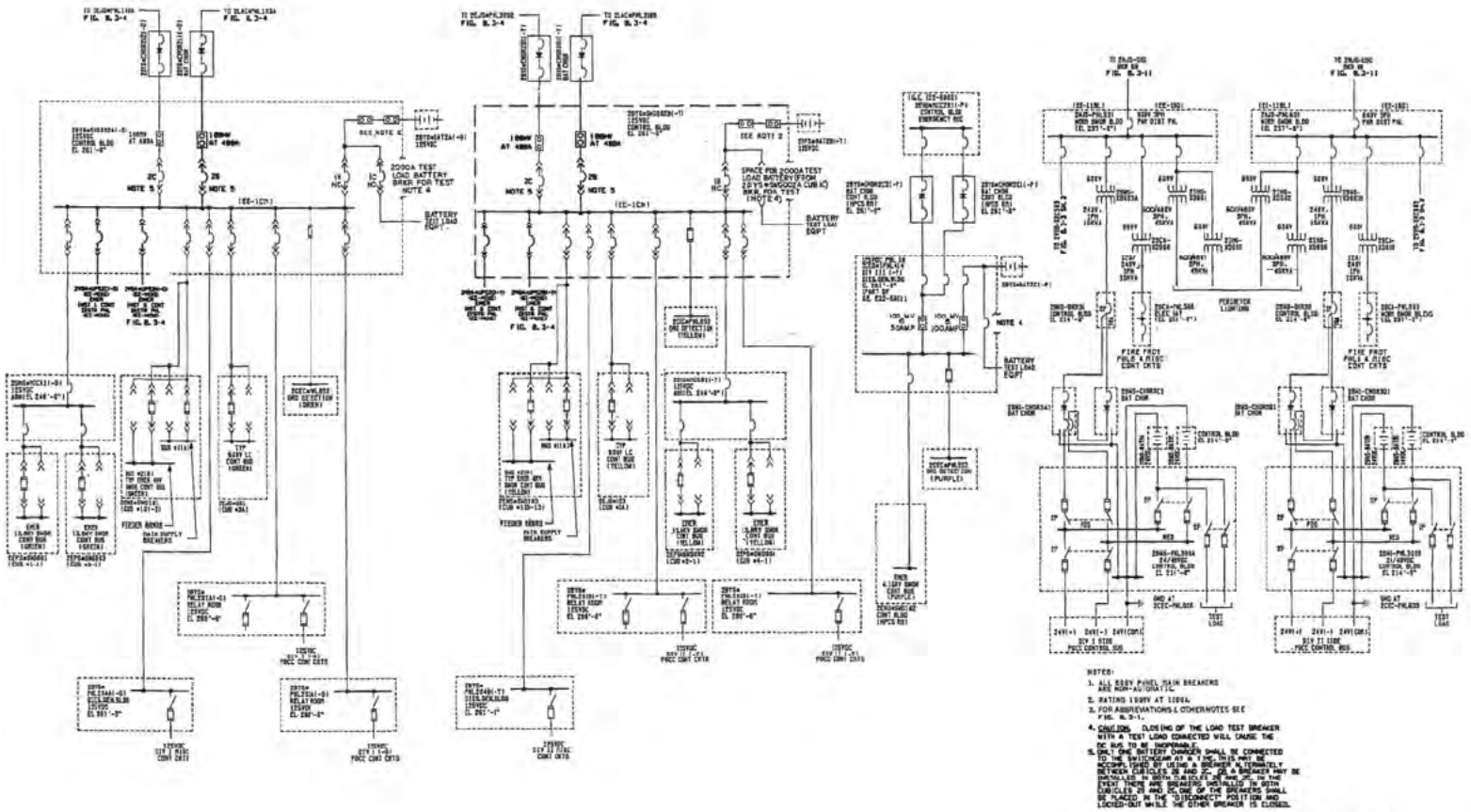
PENETRATION PROTECTION
SHEET 13f OF 13

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT

THIS FIGURE HAS
BEEN DELETED

FIGURE 8.3-9

NIAGARA MOHAWK POWER CORP.
NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT

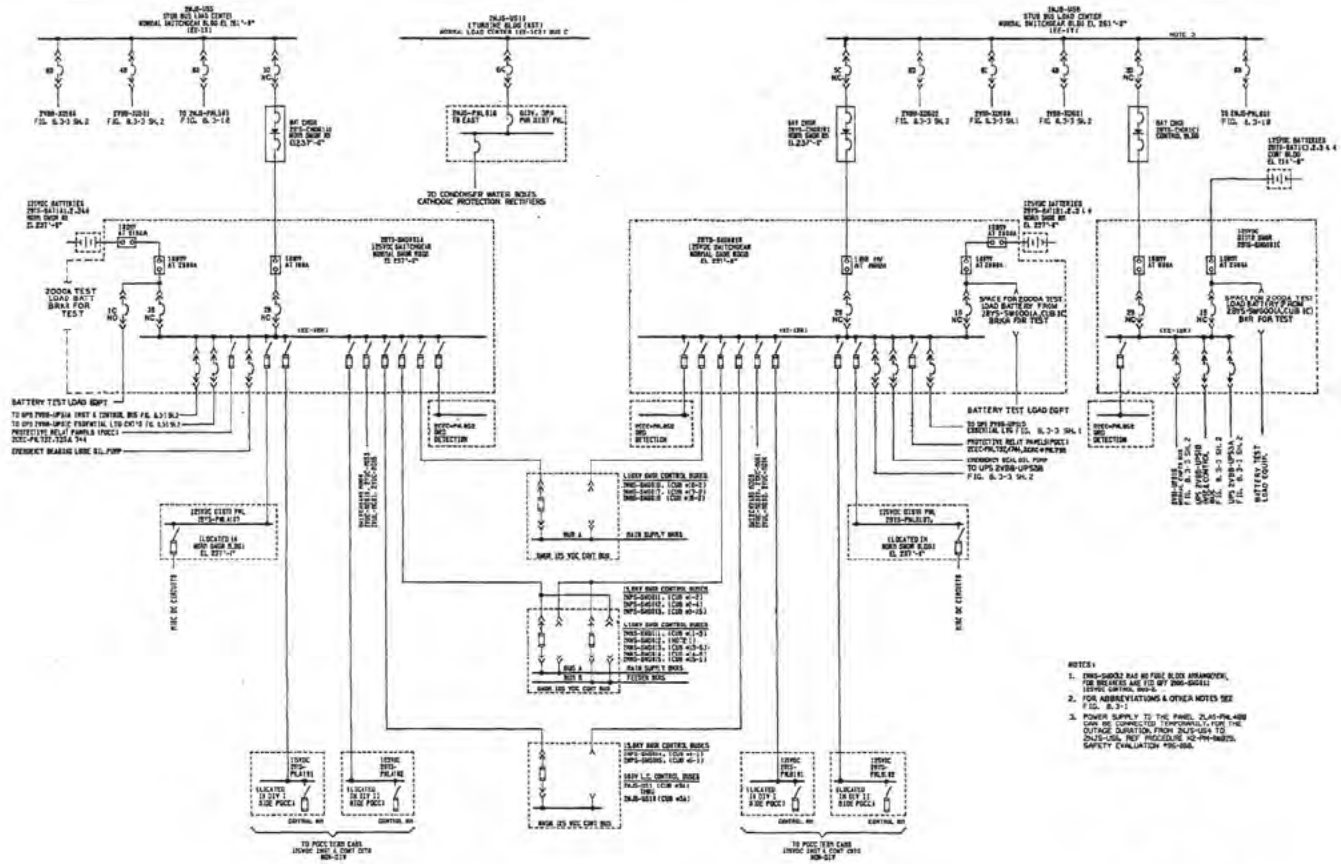


SOURCE: EE-MOIF REV. 8

FIGURE 8.3-10

PLANT MASTER ONE LINE DIAGRAM
EMERGENCY 125V DC SYSTEM
AND NORMAL ± 24V DC SYSTEM

NINE MILE POINT-UNIT 2
UPDATED SAFETY ANALYSIS REPORT



SOURCE: EE-M01G

FIGURE 8.3-11

PLANT MASTER ONE LINE DIAGRAM
NORMAL 125V DC SYSTEM

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
UPDATE SAFETY ANALYSIS REPORT