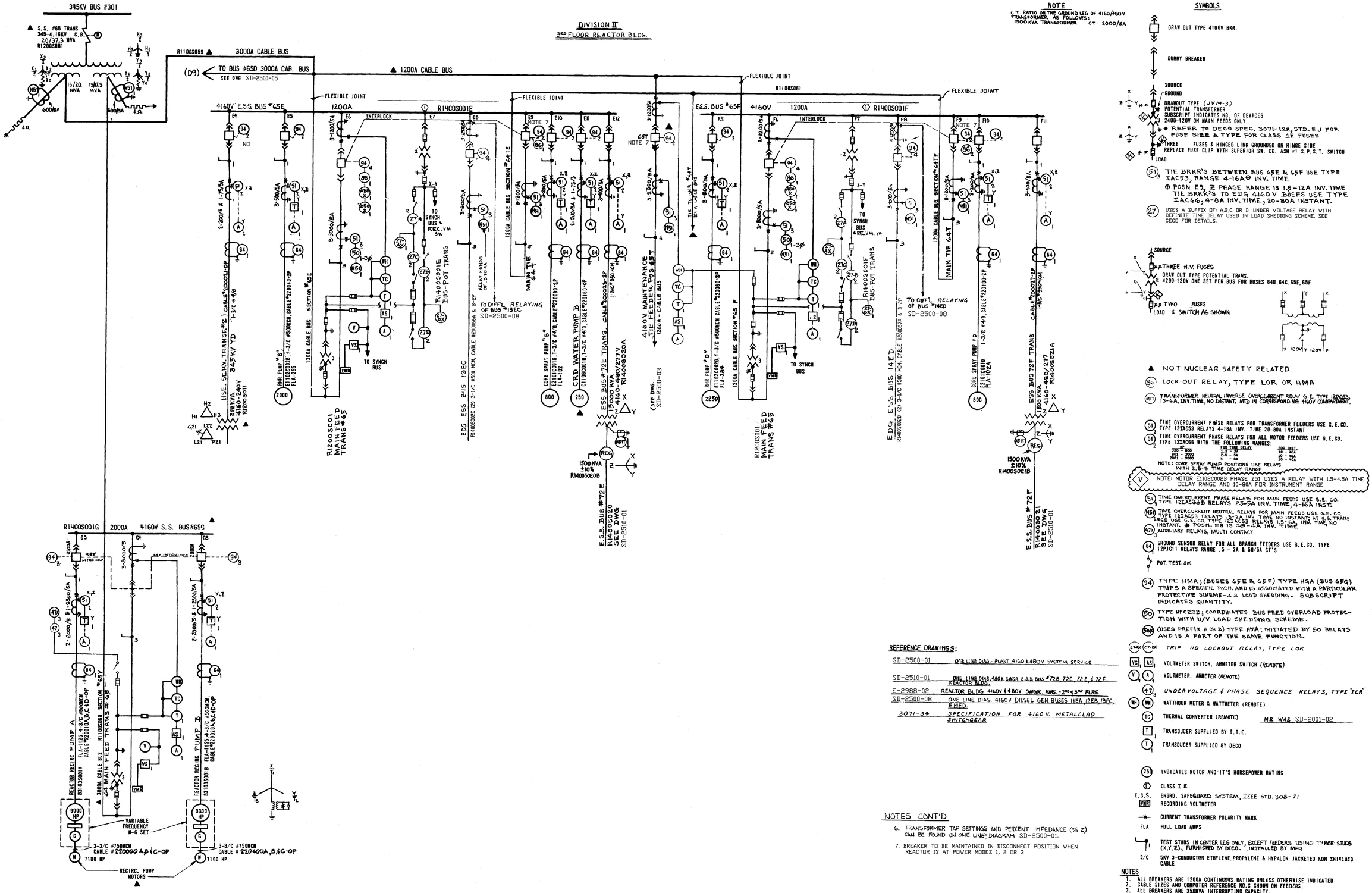

NOTE

C.T. RATIO ON THE GROUND LEG OF 4160/480V TRANSFORMER AS FOLLOWS:
1500 KVA TRANSFORMER C.T. 2000/5A

SYMBOLS

- DRAW OUT TYPE 4160V BKR.
- DUMMY BREAKER
- SOURCE
- GROUND
- DRAWOUT TYPE (JVM-3) POTENTIAL TRANSFORMER SUBSCRIPT INDICATES NO. OF DEVICES 2400-120V ON MAIN FEEDS ONLY
- ** REFER TO DECO SPEC. 3071-128, STD. E.J FOR FUSE SIZE & TYPE FOR CLASS 1E FUSES
- THREE FUSES & HINGED LINK GROUNDED ON HINGE SIDE REPLACE FUSE CLIP WITH SUPERIOR SW. CO. ASW #1 S.P.S.T. SWITCH
- LOAD
- (51) TIE BRKR'S BETWEEN BUS 65E & 65F USE TYPE IAC53, RANGE 4-16A @ INV. TIME. @ POSN E9, 2 PHASE RANGE IS 1.5-12A INV. TIME TIE BRKR'S TO EDG 4160V BUSES USE TYPE IAC66, 4-8A INV. TIME, 20-80A INSTANT.
- (27) USES A SUFFIX OF: A,B,C OR D. UNDER VOLTAGE RELAY WITH DEFINITE TIME DELAY USED IN LOAD SHEDDING SCHEME. SEE CECO FOR DETAILS.
- SOURCE
- ** THREE H.V. FUSES
- DRAW OUT TYPE POTENTIAL TRANS. 4200-120V ONE SET PER BUS FOR BUSES 64B, 64C, 65E, 65F
- ** TWO FUSES
- LOAD & SWITCH AS SHOWN
- X Y Z — X 120V Y 120V Z

▲ NOT NUCLEAR SAFETY RELATED

- (3c) LOCK-OUT RELAY, TYPE LOR OR HMA
- (67T) TRANSFORMER NEUTRAL INVERSE OVERCURRENT RELAY G.E. TYPE 12ICV53, 1.5-6A, INV. TIME, NO INSTANT. MTD IN CORRESPONDING 4160V COMPARTMENT.
- (51) 2 TIME OVERCURRENT PHASE RELAYS FOR TRANSFORMER FEEDERS USE G.E.CO. TYPE 12IAC53 RELAYS 4-16A INV. TIME 20-80A INSTANT
- (51) 2 TIME OVERCURRENT PHASE RELAYS FOR ALL MOTOR FEEDERS USE G.E.CO. TYPE 12IAC66 WITH THE FOLLOWING RANGES:

2500 HP	FOR TIME DELAY	FOR INST.
251 - 800	1.5 - 5A	10 - 80A
801 - 2000	2.5 - 8A	10 - 80A
2001 - 3000	4 - 6A	10 - 40A

NOTE: CORE SPRAY PUMP POSITIONS USE RELAYS WITH 2.5-5 TIME DELAY RANGE

(V) NOTE: MOTOR E1102C002B PHASE 251 USES A RELAY WITH 1.5-4.5A TIME DELAY RANGE AND 10-80A FOR INSTRUMENT RANGE.

- (51) TIME OVERCURRENT PHASE RELAYS FOR MAIN FEEDS USE G.E.CO. TYPE 12IAC66B RELAYS 25-5A INV. TIME, 4-16A INST.
- (N51) TIME OVERCURRENT NEUTRAL RELAYS FOR MAIN FEEDS USE G.E.CO. TYPE 12IAC53 RELAYS .5-2A INV. TIME NO INSTANT. AT S.S. TRANS USE G.E.CO TYPE 12IAC53 RELAYS 1.5-6A INV. TIME, NO INSTANT. * POSN. E8 IS 0.5-3A INV. TIME
- (47X) AUXILIARY RELAYS, MULTI CONTACT
- (64) GROUND SENSOR RELAY FOR ALL BRANCH FEEDERS USE G.E.CO. TYPE 12PJC11 RELAYS RANGE .5 - 2A & 50/5A CT'S
- POT. TEST. SW.
- (94) TYPE HMA; (BUSES 65E & 65F) TYPE HGA (BUS 65G) TRIPS A SPECIFIC POSN. AND IS ASSOCIATED WITH A PARTICULAR PROTECTIVE SCHEME-√ & LOAD SHEDDING. SUBSCRIPT INDICATES QUANTITY.
- (50) TYPE NFC23B; COORDINATES BUS FEED OVERLOAD PROTECTION WITH U/V LOAD SHEDDING SCHEME.
- (50N) (USES PREFIX A OR B) TYPE HMA; INITIATED BY 50 RELAYS AND IS A PART OF THE SAME FUNCTION.
- (27AX) (27-BX) TRIP HD LOCKOUT RELAY, TYPE LOR
- VS, AS VOLTMETER SWITCH, AMMETER SWITCH (REMOTE)
- V, A VOLTMETER, AMMETER (REMOTE)
- (47) 3 UNDERVOLTAGE & PHASE SEQUENCE RELAYS, TYPE ICR
- WH, VAR WATTHOUR METER & WATTMETER (REMOTE)
- TC THERMAL CONVERTER (REMOTE) NR WAS SD-2001-02
- T 1 TRANSDUCER SUPPLIED BY I.T.E.
- T 1 TRANSDUCER SUPPLIED BY DECO
- (250) INDICATES MOTOR AND IT'S HORSEPOWER RATING
- (1E) CLASS 1 E
- E.S.S. ENGRD. SAFEGUARD SYSTEM, IEEE STD. 308-71
- VAR RECORDING VOLTMETER
- CURRENT TRANSFORMER POLARITY MARK
- FLA FULL LOAD AMPS
- TEST STUDS IN CENTER LEG ONLY, EXCEPT FEEDERS USING THREE STUDS (X,Y,Z), FURNISHED BY DECO., INSTALLED BY MFG.
- 3/C 5KV 3-CONDUCTOR ETHYLENE PROPYLENE & HYPALON JACKETED NON SHIELDED CABLE

REFERENCE DRAWINGS:

SD-2500-01	ONE LINE DIAG. PLANT 4160 & 480V SYSTEM SERVICE
SD-2510-01	ONE LINE DIAG. 480V SWGR. E.S.S. BUS #72B, 72C, 72E, & 72F. REACTOR BLDG.
E-2988-02	REACTOR BLDG. 4160V & 480V SWGR. RMS. - 2ND & 3RD FLRS.
SD-2500-08	ONE LINE DIAG. 4160V DIESEL GEN BUSES 11EA, 12EB, 13EC & 14ED.
3071-34	SPECIFICATION FOR 4160 V. METALCLAD SWITCHGEAR

NOTES CONT'D

6. TRANSFORMER TAP SETTINGS AND PERCENT IMPEDANCE (% Z) CAN BE FOUND ON ONE LINE DIAGRAM SD-2500-01.
7. BREAKER TO BE MAINTAINED IN DISCONNECT POSITION WHEN REACTOR IS AT POWER MODES 1, 2 OR 3

NOTES

1. ALL BREAKERS ARE 1200A CONTINUOUS RATING UNLESS OTHERWISE INDICATED
2. CABLE SIZES AND COMPUTER REFERENCE NO.'S SHOWN ON FEEDERS.
3. ALL BREAKERS ARE 350MVA INTERRUPTING CAPACITY.
4. ALL LUGS FOR POWER FEEDS TO BE 2 HOLE DOUBLE INDENT PRESSURE TYPE
5. ALL POWER AND CONTROL CABLES REQUIRE BOTTOM ENTRANCE.

6SD721-2500-04
LATEST REVISION V

NUCLEAR SAFETY RELATED

THIS IS A MICROSTATION PRODUCED DRAWING. CHANGES OR REVISIONS MUST BE BROUGHT TO THE ATTENTION OF THE PLANT ENGINEERING DESIGN GROUP TO ENSURE THAT CONFIGURATION CONTROL IS MAINTAINED.

THIS DRAWING WAS REFORMATTED BY MICROSTATION AT REVISION "P". ALL PREVIOUS APPROVAL SIGNATURES ARE ON FILE ON MICROFILM IN DOCUMENT CONTROL.

V DCD'S INCORPORATED: RID-88596, REV. Ø

OTHER REVISIONS:

A PORTION OF THIS DRAWING IS AFFECTED BY THE FOLLOWING:

TC	CHANGE DOCUMENT

EDP POSTING ENTRIES REQUIRE THE ADDITION OF THE ARMS STATUS CODE EITHER "APC" OR "ARB"

PREPARED BY			DATE
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OTHER APPROVALS			DATE

PREPARED BY	MOHAMED NUMAN	01-09-19	
CHECKED BY			01/15/2019
APPROVED BY	Michael McLaughlin for T. Murphy III		01/15/2019

INC. CODE U

Detroit Edison Fermi 2

TITLE: ONE LINE DIAGRAM 4160V SYSTEM SERVICE BUSES #65E, 65F, 65G - REACTOR BLDG. UNIT #2

APERTURE CARD TITLE: O/L/D 4160V SYS SER BUSES RX/B

PLANT IDENTIFICATION SYSTEM NUMBER: R1400 — ARMS RECIPIENT #

DOCUMENT TYPE CODE: DDDELE — NUC OPS FILE NO. 1801 — DATE ISSUED TO IS 1/21/2020

DRAWING NUMBER: 6SD721-2500-04 — REV. V