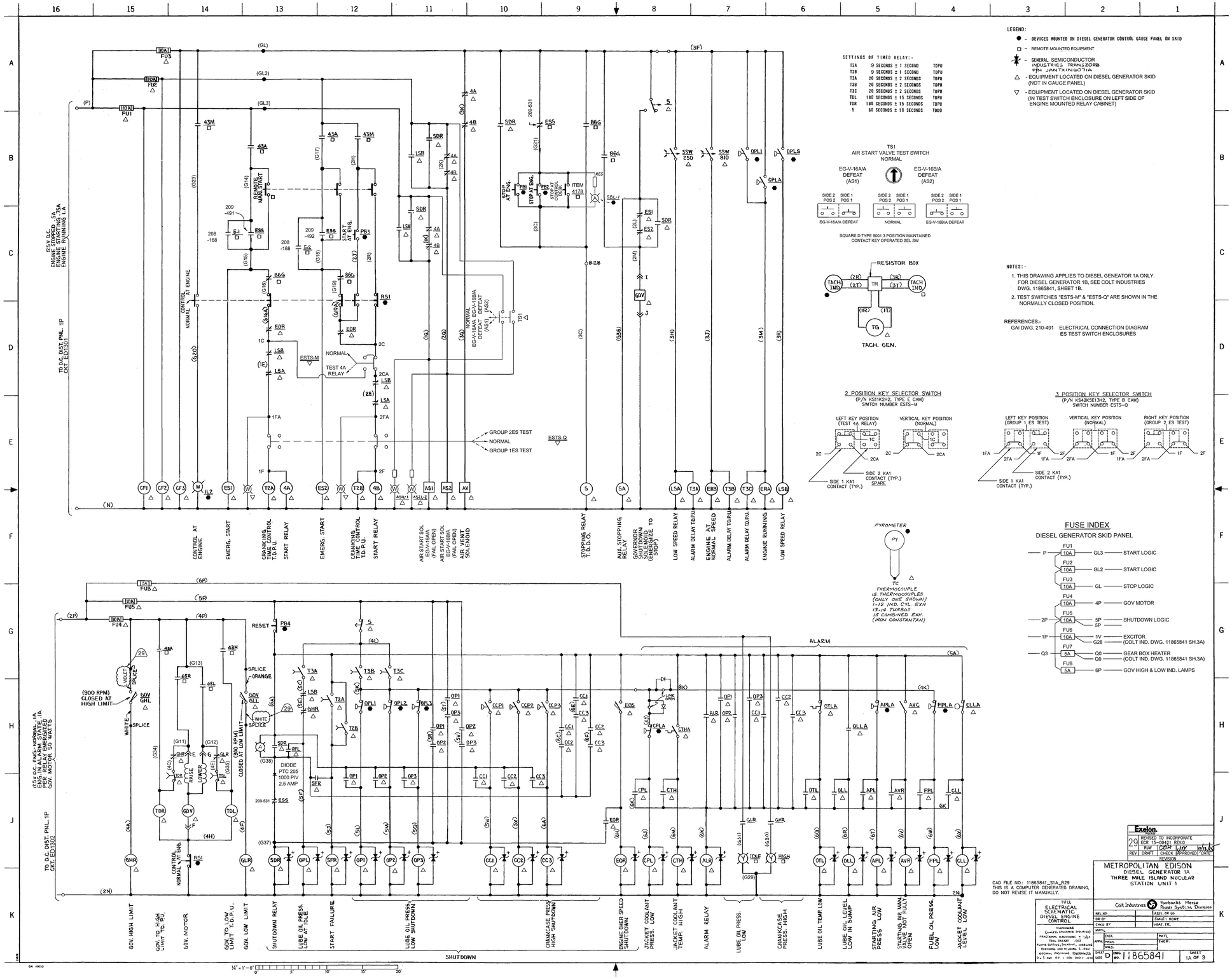
125V D.C. ENGINE CONTROL 5A ENGINE STARTING 7.75A ENGINE RUNNING 1.4A
TO D.C. DIST. PNL. 1P CKT. ED1301
(GL) (GL2) (GL3) (P) (N)
10A1 FU1
10A1 FU2
10A1 FU3
43M
43A
REMOTE MAN. START
209 -491
208 -168
F-1
ESS
CONTROL AT ENGINE NORMAL
(G10)
209 -492
208 -168
F-2
START AT ENG.
PB3
86G
BS1
EDR
1C
LSR
(1E)
LSA
ESTS-M
NORMAL
TEST 4A RELAY
2CA
LSB
(2E)
LSA
1FA
2FA
1F
2F
2C
GROUP 2ES TEST
NORMAL
GROUP 1ES TEST
ESTS-Q
CF1 CF2 GF3 W IL2 ESI T2A 4A ES2 T2B 4B AS1 AS2 AV
CONTROL AT ENGINE
EMERG. START
CRANKING TIME CONTROL T.D.P.U.
START RELAY
EMERG. START
CRANKING TIME CONTROL T.D.P.U.
START RELAY
AIR START SOL EG-V-16A/A (FAIL OPEN)
AIR START SOL EG-V-16B/A (FAIL OPEN)
LAST START SOLENOID
5DR
LSB
LSA
4A
4B
209-531
ESS
86G
STOP AT ENG.
PB2
ITEM 4178
RES
SOL-1
ESI
ES2
5DR
(2L)
(2M)
B2B
I
GOV
J
5
5SW 250
5SW 810
OPL1
OPL3
GPLA
(3F)
(3C)
(3G)
(3H)
(3J)
(3M)
(3P)
5
5A
LSA
T3A
ER8
T3B
T3C
ER4
LSB
STOPPING RELAY T.D.O.
AUX. STOPPING RELAY
GOVERNOR SHUTDOWN SOLENOID (ENERGIZE TO STOP)
LOW SPEED RELAY
ALARM DELAY TD.P.U.
ENGINE AT NORMAL SPEED
ALARM DELAY TD.P.U.
ALARM DELAY TD.P.U.
ENGINE RUNNING
LOW SPEED RELAY
NORMAL EG-V-16B/A DEFEAT (AS2)
EG-V-16A/A DEFEAT (AS1)
TS1
SETTINGS OF TIMED RELAY:-
T2A 9 SECONDS ± 1 SECOND TDPU
T2B 9 SECONDS ± 1 SECOND TDPU
T3A 20 SECONDS ± 2 SECONDS TDPU
T3B 20 SECONDS ± 2 SECONDS TDPU
T3C 20 SECONDS ± 2 SECONDS TDPU
TDL 180 SECONDS ± 15 SECONDS TDPU
TDR 180 SECONDS ± 15 SECONDS TDPU
5 60 SECONDS ± 10 SECONDS TDDO
TS1
AIR START VALVE TEST SWITCH
NORMAL
EG-V-16A/A DEFEAT (AS1)
EG-V-16B/A DEFEAT (AS2)
SIDE 2 POS 2 SIDE 1 POS 1
EG-V-16A/A DEFEAT
NORMAL
EG-V-16B/A DEFEAT
SQUARE D TYPE 9001 3 POSITION MAINTAINED CONTACT KEY OPERATED SEL 8W
RESISTOR BOX
TACH IND
TR
TG
TACH. GEN.
LEGEND:
● - DEVICES MOUNTED ON DIESEL GENERATOR CONTROL GAUGE PANEL ON SKID
□ - REMOTE MOUNTED EQUIPMENT
- GENERAL SEMICONDUCTOR INDUSTRIES TRANSZORB P/N JAN1N6017A
△ - EQUIPMENT LOCATED ON DIESEL GENERATOR SKID (NOT IN GAUGE PANEL)
▽ - EQUIPMENT LOCATED ON DIESEL GENERATOR SKID (IN TEST SWITCH ENCLOSURE ON LEFT SIDE OF ENGINE MOUNTED RELAY CABINET)
NOTES:-
1. THIS DRAWING APPLIES TO DIESEL GENEATOR 1A ONLY. FOR DIESEL GENERATOR 1B, SEE COLT INDUSTRIES DWG. 11865841, SHEET 1B.
2. TEST SWITCHES "ESTS-M" & "ESTS-Q" ARE SHOWN IN THE NORMALLY CLOSED POSITION.
REFERENCES:-
GAI DWG. 210-491 ELECTRICAL CONNECTION DIAGRAM ES TEST SWITCH ENCLOSURES
2 POSITION KEY SELECTOR SWITCH
(P/N KS11K2H2, TYPE E CAM)
SWITCH NUMBER ESTS-M
LEFT KEY POSITION (TEST 4A RELAY)
VERTICAL KEY POSITION (NORMAL)
SIDE 1 KA1 CONTACT (TYP.) SPARE
SIDE 2 KA1 CONTACT (TYP.)
3 POSITION KEY SELECTOR SWITCH
(P/N KS42K5E13H2, TYPE B CAM)
SWITCH NUMBER ESTS-Q
LEFT KEY POSITION (GROUP 1 ES TEST)
VERTICAL KEY POSITION (NORMAL)
RIGHT KEY POSITION (GROUP 2 ES TEST)
SIDE 1 KA1 CONTACT (TYP.)
SIDE 2 KA1 CONTACT (TYP.)
PYROMETER
PY
TC
THERMOCOUPLES 15 THERMOCOUPLES (ONLY ONE SHOWN) 1-12 IND. CYL. EXH 13-14 TURBOS IS COMBINED EXH. (IRON CONSTANTAN)
FUSE INDEX
DIESEL GENERATOR SKID PANEL
FU1 10A P GL3 START LOGIC
FU2 10A GL2 START LOGIC
FU3 10A GL STOP LOGIC
FU4 10A 4P GOV MOTOR
FU5 10A 2P 5P SHUTDOWN LOGIC 5P
FU6 10A 1P 1V EXCITOR G28 (COLT IND. DWG. 11865841 SH.3A)
FU7 5A Q3 Q0 GEAR BOX HEATER Q0 (COLT IND. DWG. 11865841 SH.3A)
FU8 5A 6P GOV HIGH & LOW IND. LAMPS
(150V D.C. ENG.-NORMAL, 1A ENG IN ALARM STATE, 1A PER MOTOR ENERGIZED GOV. MOTOR, 1.5A WATTS)
TO D.C. DIST. PNL. 1P CKT. ED1302
(900 RPM) CLOSED AT HIGH LIMIT
GOV GRL
GOV GLL
(300 RPM) CLOSED AT LOW LIMIT
VIOLET SPLICE
WHITE SPLICE
ORANGE SPLICE
RESET PB4
DIODE PTC 205 1000 PIV 2.5 AMP
GHR GLR SDR OPL SFR OPI OP2 OP3 CC1 CC2 CC3 EOR CPL CTH ALR OTL OLL APL AVR FPL CLL
CONTROL AT ENG. NORMAL
RSI
GOV. HIGH LIMIT
GOV. TO HIGH LIMIT T.D.P.U.
GOV. MOTOR
GOV. TO LOW LIMIT T.D.P.U.
GOV. LOW LIMIT
SHUTDOWN RELAY
LUBE OIL PRESS. LOW AT IDLE
START FAILURE
LUBE OIL PRESS. LOW SHUTDOWN
CRANKCASE PRESS. HIGH SHUTDOWN
ENGINE OVER SPEED SHUTDOWN
JACKET COOLANT PRESS. LOW
JACKET COOLANT TEMP. HIGH
ALARM RELAY
LUBE OIL PRESS. LOW
CRANKCASE PRESS. HIGH
LUBE OIL TEMP. LOW
LUBE OIL LEVEL LOW IN SUMP
STARTING AIR PRESS LOW
STARTING AIR MAIN VALVE NOT FULLY OPEN
FUEL OIL PRESS LOW
JACKET COOLANT LEVEL LOW
ALARM
SHUTDOWN
1/4" = 1'-0"
Exelon.
29 REVISED TO INCORPORATE ECR 15-00421 REV.0 RJW COSH JJP 11/4/15
REV DRAFT CHECK IMPROVED DATE
REVISION
METROPOLITAN EDISON
DIESEL GENERATOR 1A
THREE MILE ISLAND NUCLEAR STATION UNIT 1
CAD FILE NO.: 11865841_S1A_R29
THIS IS A COMPUTER GENERATED DRAWING, DO NOT REVISE IT MANUALLY.
TITLE ELECTRICAL SCHEMATIC DIESEL ENGINE CONTROL
Colt Industries Fairbanks Morse Power Systems Division
REL NO - ASSY. OR LO
DR BY SCALE: NONE
CHK'D BY HEAT. TR.
TOLERANCES (UNLESS OTHERWISE SPECIFIED) FRACTIONAL MACHINING ± 1/64 TOOL ENGINE ± 0.01 FLUID, ELECTRICAL AND WIRING ± 0.005 NON-MACHINING ± 1/16 DECIMAL MACHINING ± 0.005 0 < T. dp. dr. < 10: ± 0.010 MATL CAST: PATTL WELD: THEIR:
SHEET SIZE D DWG. NO. 11865841 SHEET 1A OF 3