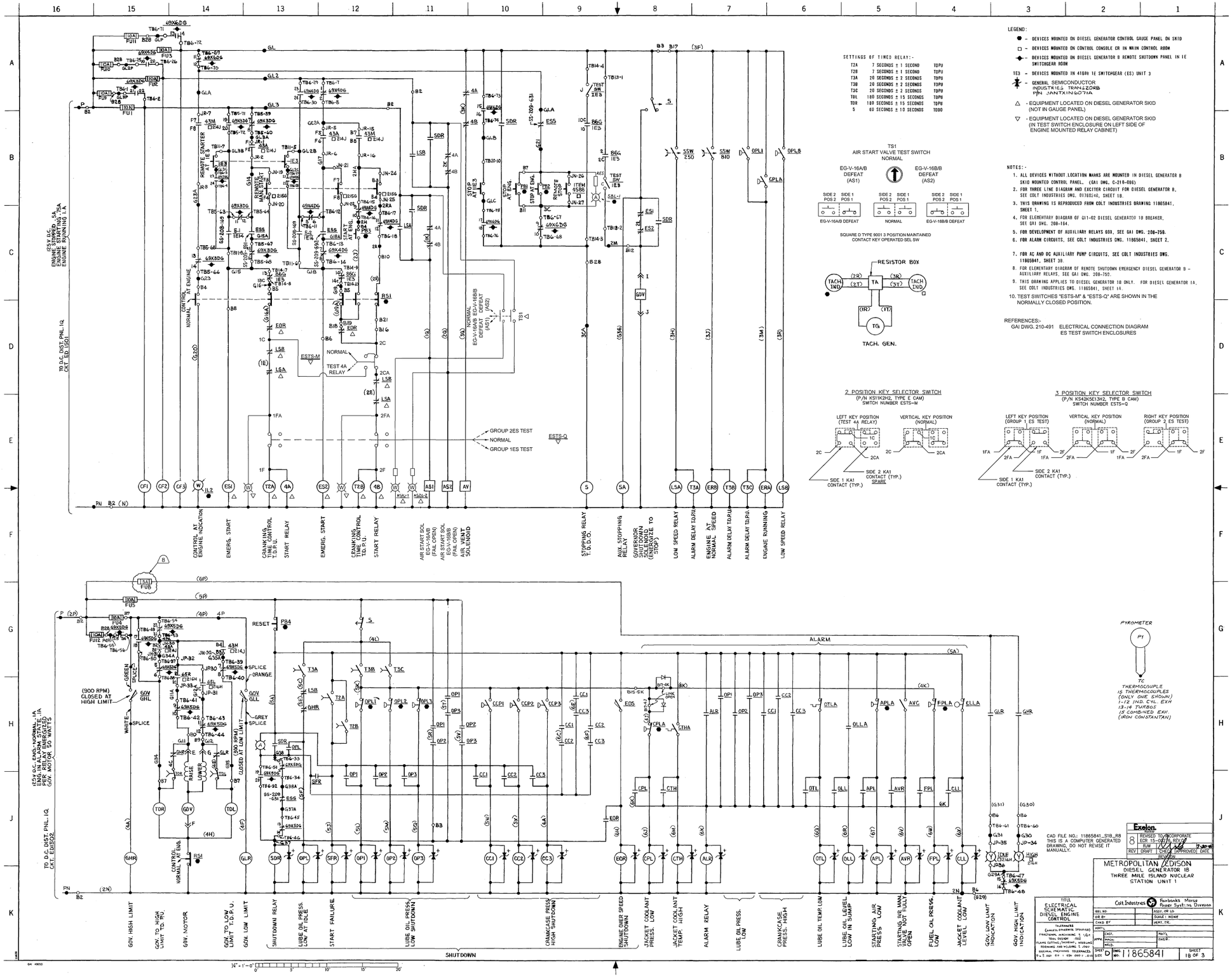
SETTINGS OF TIMED RELAY:-
T2A 7 SECONDS ± 1 SECOND TDPU
T2B 7 SECONDS ± 1 SECOND TDPU
T3A 20 SECONDS ± 2 SECONDS TDPU
T3B 20 SECONDS ± 2 SECONDS TDPU
T3C 20 SECONDS ± 2 SECONDS TDPU
TDL 180 SECONDS ± 15 SECONDS TDPU
TDR 180 SECONDS ± 15 SECONDS TDPU
5 60 SECONDS ± 10 SECONDS TDDO
LEGEND:
● - DEVICES MOUNTED ON DIESEL GENERATOR CONTROL GAUGE PANEL ON SKID
□ - DEVICES MOUNTED ON CONTROL CONSOLE CR IN MAIN CONTROL ROOM
◆ - DEVICES MOUNTED ON DIESEL GENERATOR B REMOTE SHUTDOWN PANEL IN 1E SWITCHGEAR ROOM
1E3 - DEVICES MOUNTED IN 4160V 1E SWITCHGEAR (ES) UNIT 3
GENERAL SEMICONDUCTOR INDUSTRIES TRANSZORB P/N JANTXING07A
△ - 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)
TS1
AIR START VALVE TEST SWITCH
NORMAL
EG-V-16A/B DEFEAT (AS1)
EG-V-16B/B DEFEAT (AS2)
SIDE 2 POS 2 SIDE 1 POS 1
EG-V-16A/B DEFEAT
NORMAL
EG-V-16B/B DEFEAT
SQUARE D TYPE 9001 3 POSITION MAINTAINED CONTACT KEY OPERATED SEL SW
RESISTOR BOX
TACH IND
TA
TG
TACH. GEN.
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.)
SIDE 2 KA1 CONTACT (TYP.) SPARE
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.)
NOTES:-
1. ALL DEVICES WITHOUT LOCATION MARKS ARE MOUNTED IN DIESEL GENERATOR B SKID MOUNTED CONTROL PANEL. (GAI DWG. C-210-006)
2. FOR THREE LINE DIAGRAM AND EXCITER CIRCUIT FOR DIESEL GENERATOR B, SEE COLT INDUSTRIES DWG. D116240, SHEET 1B.
3. THIS DRAWING IS REPRODUCED FROM COLT INDUSTRIES DRAWING 11865841, SHEET 1.
4. FOR ELEMENTARY DIAGRAM OF 52-02 DIESEL GENERATOR 1B BREAKER, SEE GAI DWG. 208-164.
5. FOR DEVELOPMENT OF AUXILIARY RELAYS 69X, SEE GAI DWG. 208-750.
6. FOR ALARM CIRCUITS, SEE COLT INDUSTRIES DWG. 11865841, SHEET 2.
7. FOR AC AND DC AUXILIARY PUMP CIRCUITS, SEE COLT INDUSTRIES DWG. 11865841, SHEET 3B.
8. FOR ELEMENTARY DIAGRAM OF REMOTE SHUTDOWN EMERGENCY DIESEL GENERATOR B – AUXILIARY RELAYS, SEE GAI DWG. 208-750.
9. THIS DRAWING APPLIES TO DIESEL GENERATOR 1B ONLY. FOR DIESEL GENERATOR 1A, SEE COLT INDUSTRIES DWG. 11865841, SHEET 1A.
10. 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
PYROMETER
TC
THERMOCOUPLE IS THERMOCOUPLES (ONLY ONE SHOWN) 1-12 IND. CYL. EXH 13-16 TURBOS IS COMBINED EXH. (IRON CONSTANTIN)
CONTROL AT ENGINE INDICATION
EMERG. START
CRANKING TIME CONTROL T.D.U.
START RELAY
AIR START SOL. EG-V-16B (FAIL OPEN)
AIR VENT SOLENOID
STOPPING RELAY T.D.O.
AUX. STOPPING RELAY
GOVERNOR SHUTDOWN SOLENOID (ENERGIZE TO STOP)
LOW SPEED RELAY
ALARM DELAY TDPU
ENGINE AT NORMAL SPEED
ENGINE RUNNING
GOV. HIGH LIMIT
GOV. TO HIGH LIMIT TD. 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 MAN. VALVE NOT FULLY OPEN
FUEL OIL PRESS. LOW
JACKET COOLANT LEVEL LOW
GOV. LOW LIMIT INDICATION
GOV. HIGH LIMIT INDICATION
SHUTDOWN
ALARM
CAD FILE NO.: 11865841_SIB_RB
THIS IS A COMPUTER GENERATED DRAWING, DO NOT REVISE IT MANUALLY.
Exelon.
REVISED TO INCORPORATE ECR 15-00179 REVISE
REV DRAFT CHECK APPROVED DATE
REVISION
METROPOLITAN EDISON
DIESEL GENERATOR 1B
THREE MILE ISLAND NUCLEAR STATION UNIT 1
TITLE
ELECTRICAL SCHEMATIC DIESEL ENGINE CONTROL
Colt Industries Fairbanks Morse Power Systems Division
DWG. NO. 11865841
SHEET 1B OF 3