

| DEVICE NO | FUNCTION | RATING | MFR. | TYPE | CA. NO. OR REF. NO. | REMARKS |
|-----------|---|-----------|--------|----------|---------------------|-------------------------------|
| 3HG1 | DIESEL AUTO TRANSFER INTERLOCKING RELAY | 125VDC | 7825DD | ELECTRIC | 7825DD | ELECTRIC RESET |
| 4HG | CONTROL RELAY | 125VDC | 7825DD | ELECTRIC | 7825DD | ELECTRIC RESET |
| 4HG5 | CLOSE RELAY | W | 5G | 1342925 | | |
| 4HG14 | START-UP AUTO TRANSFER CLOSE RELAY | W | 5G | 1342925 | | |
| 5HG15 | TRIP RELAY | W | 5G | 1342925 | | ELECTRIC RESET |
| 27HG DC | DC CONTROL BUS UNDERVOLTAGE RELAY | W | 5G | 1342925 | | 2.1.6 |
| 27HG1 | 4KV BUS G AUTO TRANSFER U/V RELAY | W | 5G | 1342925 | | 1-3 G, RESIDUAL VOLTAGE DECAY |
| 27HG2 | START DIESEL U/V RELAY | W | 5G | 1342925 | | 2.1.6 |
| 27HG2 | U/V AUX. RELAY | 125VDC | W | 5G | 1342925 | |
| 27HG2 | U/V TRIP RELAY (1ST LEVEL) | W | 5G | 1342925 | | 2.1.6 |
| 27HG2 | U/V TRIP RELAY (2ND LEVEL) | W | 5G | 1342925 | | 2.1.6 |
| 27HG2 | START DIESEL U/V AUX. RELAY | 125VDC | W | 5G | 1342925 | REF. 33 |
| 27HG2 | 4KV BUS G TRIP RELAY | 125VDC | W | 5G | 1342925 | ELECTRIC RESET |
| 27HG2 | 27HG2 FLUID CUTOFF SWITCH | ABB | 35 | | | 10 POLE SW ASSY |
| 4HG14 | START UP AUTO TRANSFER CLOSE AUX. RELAY | 125VDC | W | 5G | 1342925 | |
| 27HG2 | GENERATOR UNDERVOLTAGE AUX. RELAY | W | | | | |
| 51XHG14 | 4KV BUS G FDR. Q.C. RELAY (AUX. TRANSFER) | W | | | | |
| 51XHG14 | (U/V TRANSFER) | W | | | | |
| 52HG5 | CKT. BKR. (DIESEL GENERATOR) | W | | | | (2.1.6) |
| 52HG5 | (AUX. TRANSFER) | W | | | | (2.1.6) |
| 52HG14 | START-UP TRANSFORMER | W | | | | (2.1.6) |
| 59HG14 | Q.V. RELAY (START-UP TRANSFORMER) | W | | | | INSTANTANEOUS |
| 59HG14 | (DIESEL GENERATOR) | W | | | | 2.1.6 |
| 62HG1 | START-UP AUTO TRANSFER TIMER BUS G | 48/125VDC | W | T0-5 | 273830A15 | 2.2 TO 4 SEC. |
| 62HG2 | DIESEL AUTO TRANSFER TIMER BUS G | 120VDC | W | MASTAT | ETK | ETK740D33 0.5G-15 SEC. |
| 86G2 | UNIT TRIP LOCKOUT RELAY | W | | | | 17 |
| 86G2 | UNIT TRIP LOCKOUT RELAY | W | | | | 13 |
| 87XHG5 | 4KV BUS G DIFF. AUX. RELAY | W | | | | 18 |
| 89XG | 25 KV MOTOR OP. DISC. AUX. SWITCH | W | | | | 20 |
| 53Y2 | 500 KV P.C.B. AUX. RELAY | W | | | | 18 |
| K609/S15 | SAFETY INJECTION AUX. RELAY | W | | | | 32 |
| K609/S15 | | W | | | | 32 |
| K611/S15 | | W | | | | 32 |
| K611/S15 | SPRAY ACTUATION AUX. RELAY | W | | | | 32 |
| 62HG3A | START DIESEL TIME DELAY BUS G | 125VDC | MASTAT | ETK | ETK740D33 | TIMER SET @ 10 SEC. |
| 62HG3B | XFR TO DIESEL TIME DELAY BUS G | 125VDC | MASTAT | ETK | ETK740D33 | TIMER SET @ 20 SEC. |
| 2KG17 | KG17/S15 TRAIN B AUX. TUNING RELAY | 120VAC | AGASAT | ETK | ETK740D33 | TIMER SET @ 2.5 SEC. |

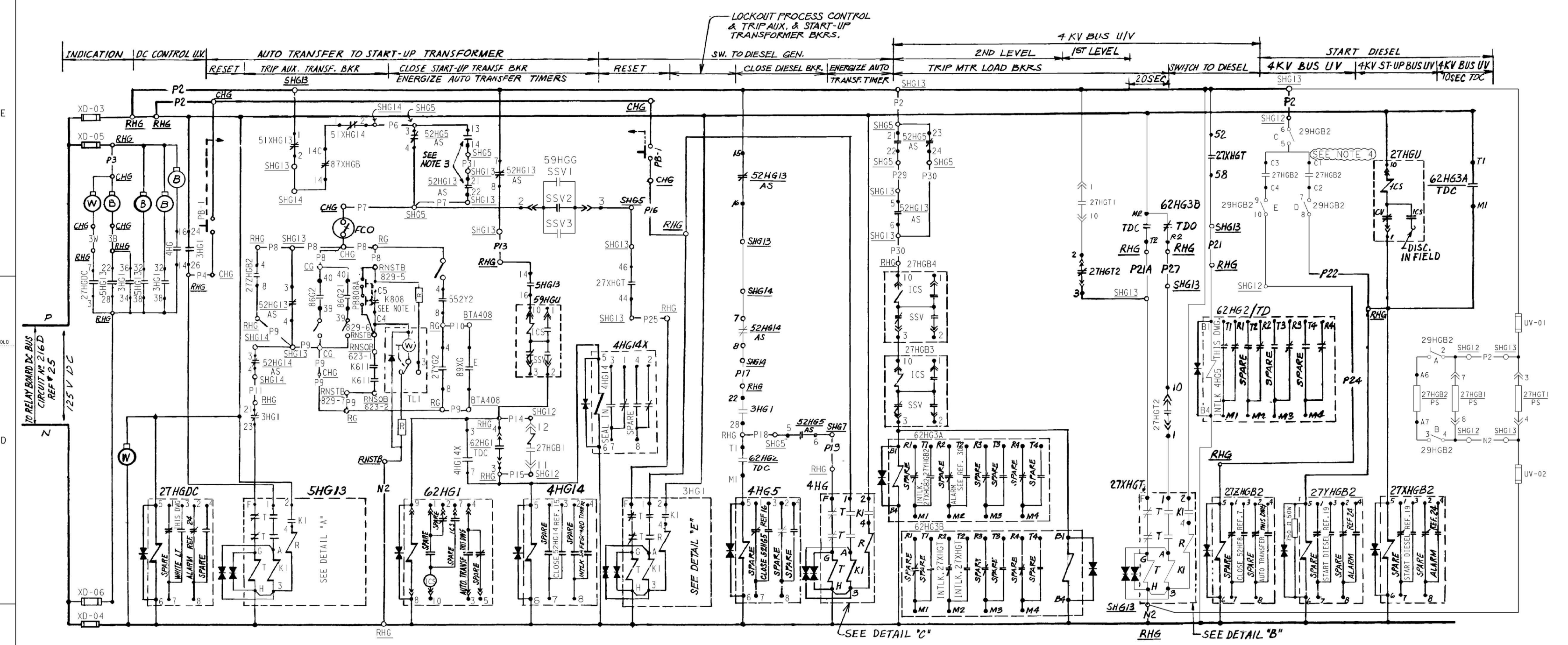
- NOTES**
- TEST RELAY CONTACT OPEN DURING TEST
 - CONTACTS ARE SHOWN IN RESET POSITION
 - THESE CONTACTS PERMIT TRIPPING OF THE UNIT AUX. TRANSF. BKR. ON 2ND LEVEL U/V WHEN THE DSL, GEN. AND THE UNIT AUX. TRANSF. ARE PARALLELED
 - CONTACT C1-C2 MAY ALLOW VOLTAGE READING ACROSS AN INTERNAL HIGH IMPEDANCE TRIP CIRCUIT MONITOR (TCM) WHERE NO VOLTAGE IS EXPECTED DURING POST MAINTENANCE TESTING. THE TCM FUNCTION IS NOT USED WITH AUTO TRANSFER SCHEME TO START D/G NOR WILL IT AFFECT ITS FUNCTION. (REF: 663332-220 PAGES 12-11, 6-17)

EQUIPMENT LOCATION

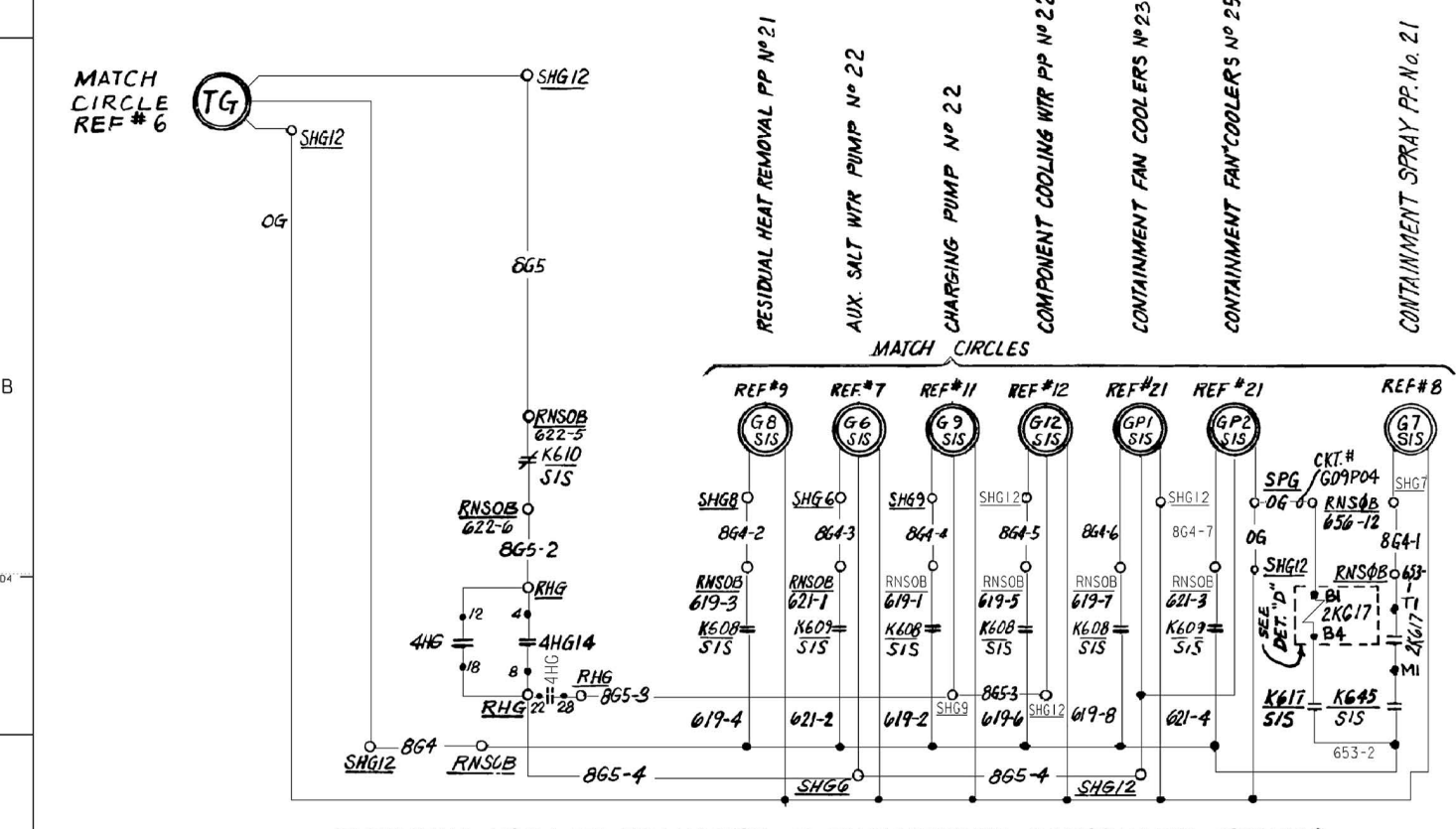
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|-------|------------------------------------|--------|-------------------------------|
| BTH01 | TERMINAL BOX H107 | RN5TB | RACK NU SAFEGD TEST B |
| RHG | ENG SAFEGUARD RELAY BOARD BUS G | BT440B | TERM BOX 440B FOR DEVICE 89AG |
| CHG | CONTROL BOARD ENG. SAFEGUARD BUS G | | |
| CG | CONTROL BOARD MAIN GENERATOR | | |
| SG | GENERATOR RELAY BOARD | | |
| SHG5 | SHOR. 4KV BUS G CUBICLE 5 | | |
| RNS0B | RACK NUCLEAR SAFEGUARD OUTPUT B | | |

REFERENCES

| | | |
|-----|--|---------------|
| 1. | DESCRIPTION OF ELECT. SCHEMATIC DIAG. SYMBOLS & CIRCUIT DESIGNATIONS | DWG NO 050003 |
| 2. | SINGLE LINE METER & RELAY DIAG. 4160V SYSTEM BUS SECT G (4.4) | 441230 |
| 3. | SCHEMATIC DIAG. 4KV SYSTEM AUTOMATIC TRANSFER (BUS SECT D & E) | 441351 |
| 4. | " " " " (BUS SECT F) | 441352 |
| 5. | " " " " (BUS SECT H) | 441354 |
| 6. | AUX. TRANSFORMER NO 22 & ASSOCIATED CIRCUIT BREAKERS SH. 2 | 441349 |
| 7. | START-UP TRANSFORMER NO 22 & ASSOCIATED CIR. BREAK. SH. 2 | 441345 |
| 8. | DIESEL GENERATOR & ASSOCIATED CIRCUIT BREAKERS SH. 2 | 441356 |
| 9. | GENERATOR CONTROL SHEET NO 1 | 441245 |
| 10. | " " SHEET NO 2 | 441246 |
| 11. | 4KV DIESEL GENERATORS CONTROL SHEET NO 1 | 441357 |
| 12. | 25 KV ISOPHASE BUS MOTOR OP. DISC. SWITCH | 441267 |
| 13. | CONTAINMENT FAN COOLERS | 441373 |
| 14. | CHARGING PUMPS | 441312 |
| 15. | COMPONENT COOLING WATER PUMPS | 441311 |
| 16. | 4160V BUS DIFFERENTIAL SH. 2 | 441343 |
| 17. | AUX. TRANSFORMER NO 22 & ASSOCIATED CIRCUIT BREAKERS SH. 2 | 441349 |
| 18. | START-UP TRANSFORMER NO 22 & ASSOCIATED CIR. BREAK. SH. 2 | 441345 |
| 19. | DIESEL GENERATOR & ASSOCIATED CIRCUIT BREAKERS SH. 2 | 441356 |
| 20. | GENERATOR CONTROL SHEET NO 1 | 441245 |
| 21. | " " SHEET NO 2 | 441246 |
| 22. | 4KV DIESEL GENERATORS CONTROL SHEET NO 1 | 441357 |
| 23. | 25 KV ISOPHASE BUS MOTOR OP. DISC. SWITCH | 441267 |
| 24. | CONTAINMENT FAN COOLERS | 441373 |
| 25. | LOGIC DIAG. 4160V BUS SECTIONS "G" AUTOMATIC TRANSFER | 441337 |
| 26. | SCHEMATIC DIAG. ANNUNCIATOR DIGITAL INPUTS | 500786.7 |
| 27. | SINGLE LINE METER & RELAY DIAG. 125V & 250V DC SYSTEM | 441240 |
| 28. | LIST OF EQUIPMENT LOCATION CODES | 441247 |
| 29. | SOLID STATE PROTECTION SYSTEM MFR DWGS. | 103 D13 |
| 30. | FUNCTIONAL DIAGRAMS MFR DWGS | 663231 |
| 31. | SCHEM. DIAG. MAIN ANNUNCIATOR SH. 2G | DWG. 502092 |
| 32. | SCHEM. DIAG. CNT. SPRAY MOTOR OPERATED VALVES | 441308 |
| 33. | SCHEM. DIAG. SSPS OUTPUT RELAYS, TRAIN B | 503093 |
| 34. | SCHEMATIC DIAGRAM CHARGING PUMP NO. 23 | DWG 4008751 |
| 35. | WIRING DIAGRAM - 4KV SWITCHGEAR BUS "G" | 441583 |



SCHEMATIC DIAGRAM 4160V. BUS SECTION "G" AUTOMATIC TRANSFER CKT. NO. GATH



POTENTIAL FOR AUTO-TRANSFER & ENGINEERED SAFEGUARD TIMERS CKT. NO. GATH

ALARM CIRCUIT TABLE

| DEVICE | 4KV BUS SECT. G UNDER-VOLTAGE | 4KV BUS SECT. G AUTOMATIC TRANSFER | 4KV BUS G BUS OR ST-UP FOR U/V | DC CONTROL UNDER-VOLTAGE |
|--|-------------------------------|------------------------------------|--------------------------------|--------------------------|
| 27XHG7 <td></td> <td></td> <td></td> <td></td> | | | | |
| SHG13 | | | | |
| 3HG1 | | | | |
| 27XHG2 | | | | |
| 27XHG2 | | | | |
| AV4306 DG | | | | |

