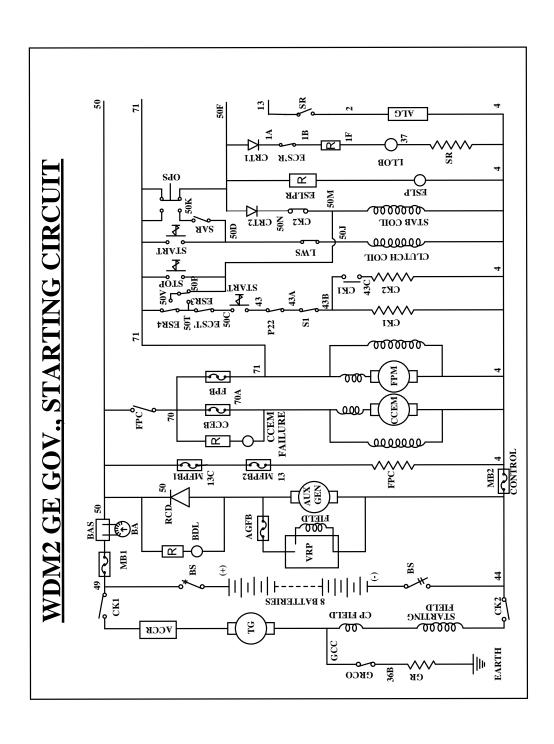
ENGINE STARTING SYSTEM (GE GOVERNOR.)



Engine starting system can be divided into three parts.

- 1. Engine cranking,
- 2. Engine Firing and
- 3. Engine holding.
- 1. <u>Engine Cranking</u>: Means CK1 & CK2 contactors closing and battery supply is feeding to main generator to work as a motor to crank the Diesel engine.
 - a. Battery knife switch to be switched on.
 - **b**. MB1 (Battery) breaker to be switched on.

Result: Battery discharging lamp (Auxiliary Generator failure) indication will glow.

c. MB2 (Control) breaker to be switched on.

Result: Switch on all the lighting breakers and switches (except doom light and flasher light), lamps will glow.

d. .MFPB1 & MFPB2 to be switched "on" on both control stands.

Result: FPC contactor coil will be energized and with click sound contactor will close.

e. If FPC contactor closed properly,

Result: CCE motor failure indication will glow.

f. *CC*EM breaker to be switched on.

Result: CCE motor failure indication will goes off and CCEM starts working.

g. FPB breaker to be switched on.

Result:

- i) Fuel pump motor will start and fuel oil pressure will build up to 3.8 kg/cm2.
- ii) Engine starting lamp will glow.

 In governor, stabilizing coil will energize with click sound.
- h. ECS to be kept in run position for 3 times.

Result: With low lube oil indication SR will energize and bell will ring.

i. MUSD in both control stands must be in run condition.

- j. ECS must be in idle condition.
- **k**. Start button to be pressed (This will have two switches).

Result: (Switch no.1): Through ESR-4 N/C interlock, through ECS RUN closed interlock, through start button, through P-22 power contactor N/C interlock, through S1 power contactor N/C interlock, CK1 contactor will pick up. Through CK1 closed bridge interlock, CK2 contactor will energize When CK1 and CK2 contactors are closed, Generator will work as a motor and engine is going to crank.

- 2. **Firing**: Means stabilizing coil energizing, clutch coil energizing and stabilizing coil de-energizing.
 - a. Already stabilizing coil energized when FPB switched ON.
 - b. (Start Switch No.2): Clutch coil will energize through LWS (if sufficient water is available).
 - c. When CK2 contactor picks up CK2 bridge interlock will open and makes stabilizing coil to de-energize.

Result: Fuel racks will move towards Fuel increasing and engine will get firing.

- 3. **Holding**: If engine starting lamp goes off, leave start button. Engine will run on its own then it is called Holding.
 - a) SAR will pick up whenever engine speed reaches more than 220 RPM.
 - b) OPS will pickup whenever lube oil pressure builds up 1.6 kg/cm2

Result: Clutch coil will get permanent supply and engine will hold.