

भाकृअनुप - राषुुीय अंगूर अनुसंधान केन्द्र
ICAR-NATIONAL RESEARCH CENTRE FOR GRAPES
MANJARI FARM POST, PUNE – 412 307

F. No. NRCG/5(431)/2015-Stores

Dated 16.11.2015

NOTIFICATION

In continuation to this office Notification dated 16.11.2015 the revised specification for 300/320 KVA Diesel Generator along with Sketch are placed for information to all concerned.

Sd/-
(O. Babu)
For Administrative Officer

Revised Specifications for 300/320 KVA Diesel Generator

300/320 KVA, SILENT Diesel Generating Set with latest CPCB approved specification and with complete standard accessories.

1. Inline fuel pumps with suitable electronic governor.
2. Optimized turbocharger
3. Stainless steel exhaust flexible coupling
4. Radiator
5. Coolant inhibitor
6. Plate type or tube and shell lube oil cooler
7. Spin on filters coolants, fuel and lube oil
8. Heavy duty replaceable paper element air cleaner with restriction indicator
9. Flywheel housing
10. Flywheel to suit single bearing alternator.
11. Electrical starter motor
12. Battery charging alternator
13. Alternator- self excited, self regulated, Class 'H' insulation, salient pole revolving field, single bearing, digital automatic voltage regulator
14. Genset controller: Digital voltage control, engine control, operator interface, and advanced control functions.
15. Silencer suitable optimized to meet stringent sound emission standards as per CPCB (latest).
16. Base rail with suitable integral fuel tank provided with drain plug, air vent, inlet and outlet connection, level indicator etc.
17. Charged batteries with connecting leads and terminals.
18. Control panel: CRCA sheet with powder coated for weather-proof and long lasting finish
 - a) MCCB of suitable rating with overload and short circuit protection.
 - b) Combined meter for kW, kVA, kWh meter
 - c) Intuitive operator interface which includes LED backlit LCD display with tactile feel soft-switches & generator set status LED lamps).
 - d) Digital AVR for shunt or PMG excitation with torque matching.
 - e) Digital electronic governing with temperature compensation and smart starting.
 - f) fSAE J1939 interface to Full Authority Electronic (FAE) engines.
 - a) current transformers
 - a) Busbars of suitable capacity with incoming and outgoing terminations
 - b) indicating lamps for “**DG On**” and “**Load on**”
 - c) Suitable quality of Fuses/ MCBs.
19. Engine: Engine coolant with thermostatic switch.
 - a) Full Authority Electronic Engine
 - b) Well designed air handling system with
 - Dry type, Replaceable paper element air cleaner with restriction indicator
 - Air to air after cooling
 - Optimised turbocharger for increased altitude capabilities
 - c) Best in class fuel economy with
 - class electronic governing
 - Dual fuel filter system: Pre filter including water separator and Water In Fuel (WIF) sensor and main filter
 - d) Electrical lift pump for faster response
 - e) Standard integral set-mounted radiator system, designed and tested for 50°C ambient temperature
 - f) Full flow spin on lube oil filter

- g) Plate type lube oil cooler
 - h) First fill of lube oil and coolant
 - i) Electrical starter motor with soft start engagement feature
 - j) Battery charging alternator
 - k) 2 x 12 V DC batteries
20. Alternator:
- a) Brushless type, Screen protected, Revolving field, Self excited alternator conforming to IS/IEC 60034-1
 - b) 3 Phase reconnectable winding with 12 terminals brought out for connection
 - c) Better motor starting capability
 - d) Best in class efficiency
 - e) Compact design with sealed bearings for longer life and lesser maintenance.
 - f) Impregnation on all wound components for better mechanical strength.
21. Battery charger, remote /auto start panel, auto/ manual synchronizing panel, autovisual annunciation and indication lamps for engine faults.
22. System should meet stringent exhaust emission tests as per revised MoEF norms, thus offering environment friendly power.
23. Installation pre-requisite will be fulfilled by supplier only.
 (Foundation, unloading, Digging of earth pit and filling, G.I. Plates, G.I.Pipes, G.I.strips, Charcoal salts, supply and laying power cable and neutral cable, lugs and glands, electrical approval of D.G. set, registration with PWD, fuel for installation (100 L))
 Distance from Transformer to Panel: ≈ 25 Mtr.
 DG-Set to Panel: ≈15 Mtr.
 Panel to distribution panel: ≈25 Mtr.
 DG-Set to earthing point: ≈5 Mtr.
- (For the kind reference, the sketch of the existing set-up is attached)

Technical specifications for 300/320KVA

Duty	Prime
Power Rating kVA	300/320
No. of Phases	3
Output Voltage and Frequency (V and Hz)	415 V, 50 Hz
Power Factor	0.8 (lagging)
Current (A)	417 (459)
RPM	1500
Engine specification	
MoEF Certified Power (hp)	300-450
Required Power for Rated kVA (hp)	300-450
Cooling	Liquid cooled (EG Compleat 50:50)
Aspiration	Turbocharged, Charge Air Cooled
No. of cylinders	6, In-line
Bore (mm) x Stroke (mm)	As per manufacturer (should be mentioned in specification)
Compression ratio	Please specify
Displacement (litre)	Please specify
Fuel	High Speed Diesel
Fuel consumption @25, 50, 75, 100% load with radiator and fan* (litre/hr)	Please specify
Performance class of generator set	ISO 8528-5 G2
Starting system	Please specify

Lube oil specification	Please specify
Lube oil sump capacity, High-Low level (litre)	Please specify
Total lubrication system capacity (litre)	Please specify
Lube oil consumption @ full load** (litre/hr)	Please specify
Total coolant capacity (litre)	Please specify
Exhaust pipe size (mm)	Please specify
Total wet weight (Engine+Radiator) ## (kg)	Please specify
Length x Width x Height (Engine) (mm)	Please specify
Mean piston speed (m/s)	Please specify
Combustion air intake @100% load (±5%) (cfm)	Please specify
Exhaust Temperature (°C)	Please specify
Alternator specification	
Alternator Frame	Please specify
Enclosure	IP 23
Voltage regulation (Max.)	±1%
Class of Insulation	H Class
Winding Pitch	2/3
Stator Winding	Double layer lap
Rotor	Dynamically Balanced
Waveform distortion/ Total Harmonic Distortion	No load < 1.5 %, Non distorting balanced linear load < 5 %
Maximum unbalanced load across phases	less than or equal to 25%
Telephonic harmonic factor	< 2%

Common & composite Auto Load sharing panel for New 1x 100+ 1x 200 + 1x 300 KVA DG Set **With:**

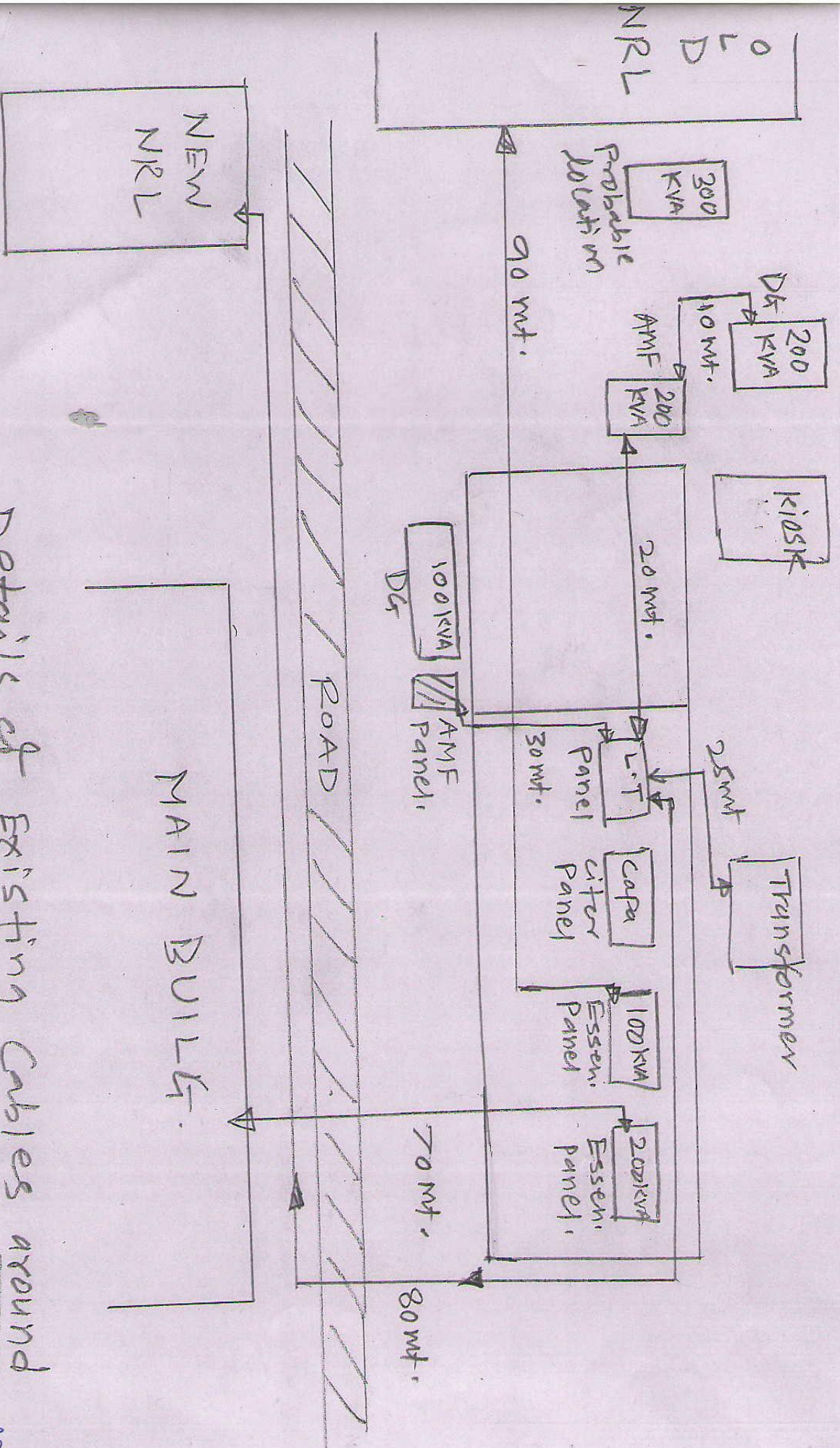
- DG incomer Power Contactor of suitable capacity
- Bus coupler of suitable capacity
- Mains Incomer - of suitable capacity
- **PLC for Load dependant start stop function.**
- Aluminum Busbar of suitable capacity
- Make of switch gear is L&T or equivalent

Warranty:

2 years or 5000 working hours un-conditional warranty for entire DG-set.

Per unit operating cost (including servicing, lube oil change, fuel consumption, spares etc.) for 2000 hours @ 75% load should be provided

Before quoting interested firms may visit the existing electrical set up



Details of Existing Cables around
ELE. Substation

M. D. S. Pillai

Pravin