THE FOLLOWING STEAM TURBINE GENERATOR SET IS AVAILABLE FOR SALE WITH US

WITH IMMEDIATE DELIVERY:

1 No. – 10 MW TRIVENI/ TDPS (2008) make Bleed-Condensing type Steam Turbine

Generator Set, having the Following Technical Specifications:

TECHNICAL DETAILS:

TURBINE DETAILS:

Make : Triveni (India)

Model : Frame13ER

Sr. No. : FR13ER-04

Year of make : 2008

Power : 10000 kW

Inlet Steam Pressure : 64 ata

Inlet Steam Temperature : 485 Deg. C

Inlet Steam Flow : 49.70 TPH

Bleed Steam Pressure – I : 16.71 ata

Bleed Steam Flow – I : 11.35 TPH

Bleed Steam Pressure – II : 4.74 ata

Bleed Steam Flow – II : 4.29 TPH

Steam Exhaust Pressure : 0.10 ata

Exhaust Steam Flow : 34.05 TPH

Turbine Rotor Speed : 7556 RPM

Gearbox Output Speed : 1500 RPM

Turbine Trip Speed Range : 8311 to 8690 RPM

Turbine Critical Speed Range : 2800 to 3200 RPM

Weight of Turbine and Gearbox

(With Oil) : 34000 kgs

GEARBOX DETAILS:

Make : Triveni (India)

Sr. No. : 2319X000081NCLF

Year of make : 2008

Capacity : 10500 kW

Input Speed : 7556 RPM

Output Speed : 1500 RPM

Ratio : 5.037:1

Service Factor : 1.5

No. of Teeth (Gear/Pinion) : 136/27

Lube Oil Quality : ISO-VG-46

Lube Oil Quantity : 275 LPM

Lube Oil Pressure : 1.5 bar

ALTERNATOR DETAILS:

Make : Toyo Denki Power Systems

Type : TC 145

Sr. No. : 2K805637-01

Capacity : 12500 kVA

Year of make : 2008

Speed : 1500 RPM

Voltage : 11000V

No. Of Phases : 3

No. Of Poles : 4

Current : 656A

Frequency : 50 Hz

P.F. : 0.8

Connection : Star

Enclosure : IP 54

Excitation Voltage : 163V

Excitation Current : 627A

Weight : 32500 kgs

MAIN LUBRICATION OIL PUMP DETAILS:

Make : David Brown, U.K

Type : Geared

Model : M30HSXFL –AB 5\* FW

Capacity : 140 IGPM

Driver : Gear Box

Discharge : 6.0 Kg/cm²g

AUXILLIARY OIL PUMP DETAILS:

Make : Rotodel

Model : RDN X-300I

Type : Geared

Capacity : 140 IGPM

Speed : 1440RPM

Discharge : 6.0 Kg/cm²g

Motor : 20-415 HP/ V AC

EMERGENCY OIL PUMP DETAILS:

Make : Rotodel

Model : RDNX-200L

Type : Geared

Capacity : 48 IGPM

Discharge Pressure : 2.0 Kg/cm² g

Motor : 5-110 HP/V DC

OIL COOLER DETAILS:

Make : Eskay Industries

Model : TB2SAM4680C-R2

Type : Horizontal Duplex

Capacity : 140 IGPM

Oil Temperature Inlet : 65°C

Oil Temperature Outlet : 45°C

No. of Tubes : 340-5/8” “O/D x 20 BWG

Surface Area : 67 M2

Cooling water Temp. Inlet : 35°C

Cooling water Temp. Outlet : 40°C

Cooling water Qty. : 330 IGPM

OIL FILTER (Lube Oil) DETAILS:

Make : Industrial Entpr. (IEH-1426)

Model : Duplex

Capacity : 140 IGPM

Grade of Filtration : 10-15 Microns

Element No : BT0160034

CONTROL OIL FILTER DETAILS:

Make : Micropore

Model : Duplex

Capacity : 15 IGPM

Grade of Filtration : 10-15 Microns

EOP FILTER DETAILS:

Make : Industrial Enterprises (IEH-1430)

Model : Simplex

Capacity : 45 IGPM

Grade of Filtration : 10-15 Microns

Element No : BT0160043

PRESSURE RELIEF VALVE (MOP) IMO190005 DETAILS:

Make : Hopkinsons, U.K

Duty : Lube Oil

Size : 1” NB

Set Pressure : 6.05 Kg/cm² g

Discharge Capacity : 140 IGPM

PRESSURE RELIEF VALVE (AOP) VLO100064 DETAILS:

Make : Nirmal Insudtries

Duty : Lube Oil

Size : 50 x 80 NB-ANSI 150 # RF

Set Pressure : 5.90 Kg/cm² g

Discharge Capacity : 140 IGPM

PRESSURE RELIEF VALVE (AOP) IM0190007 DETAILS:

Make : Hopkinsons, U.K

Duty : Lube Oil

Size : 1” NB

Set Pressure : 1.80 Kg/cm² g

Discharge Capacity : 25 IGPM

ACCUMULATOR DETAILS:

Make : Fawcett India Ltd

Model : 2800A-00-201

Capacity : 28 IGPM

Pre Changed Gas Pr. : 3.90 Kg/cm² g

SOLENOID VALVE DETAILS:

Make : ASCO

Volts : 110 V DC

Connection : 3/4” NPT (F)

Action : De Energise to Trip

THROTTLE VALVE LIFT DETAILS:

Throttle Valve Lift No.1 : 33 mm

Throttle Valve Lift No.2 : 19 mm

Throttle Valve Lift No.3 : 5 mm

Available lift Max. : 57

GENERAL:

HIGH SPEED COUPLING DETAILS:

Make : Euroflex Transmission 8GH-250 –S (without Spin)

Model : Drg. No. 07389.00B

LOW SPEED COUPLING DETAILS:

Make : Euroflex Transmission 10GBH-300 –S (with S pin)

Model : Drg. No. 07399.00B

GOVERNOR DETAILS:

Make : Woodward

Model : 505-Digital

ACTUATOR – HP DETAILS:

Make : Woodward

Model : 505-Digital

Operating Speed : 1006 RPM

CONDENSER DETAILS:

Make : GE Godavari Engg. LTD.

Model/Drawing No. : DD -11 -9379 -1-001 R2

Number of Passes : Two

Water Box Type : Divided

Steam Flow : 39000 Kg/Hr

Steam Pressure : 0.095ATA

Cleanliness Factor : 85 %

Cooling Water Temp. (Inlet) : 32°C

Cooling Water Temp. (Outlet) : 41°C

Cooling Water Pressure : 2.0 Kg/cm2 G

Cooling Water Quantity : 2280 M3 /Hr

Cooling water inlet/outlet Size : 20”NB x 2

Weight (working) : 39250 Kgs

No. of tubes : 2954 – ¾” BWG-20, Ad. Brass

Surface Area : 1090 M2

EJECTOR (START UP) DETAILS:

Make : Mazada Ltd

Capacity : 33.74W.V., 15.3 Air

Steam Pressure : 10 Kg/Cm2 g

Steam Temperature : 250°C

Steam Consumption for Hogger : 665Kg/Hr

Evacuation Time : 20 Min.

EJECTOR (MAIN) DETAILS:

Make : Mazada Ltd

Capacity : 15.3 Kg/cm² g, Dry Air 33.74 water Vapour

Motive Steam Pressure : 10 Kg/cm²g

Steam Temperature : 250°C

Steam Consumption : 275 kg/Hr

GLAD VENT CONDENSER DETAILS:

Make : Eskay Industries

Model : EL/GC/2871

Type : Horizontal Shell & Tube

Steam Flow : 250 kg/Hr

Condensate Flow : 43500 kg/Hr

Condensate Temp. Inlet/Outlet : 51.84 / 57.29°C

Condensate Pressure : 12 Kg/cm² g

Surface Area : 9.7 M2

GVC BLOWER DETAILS:

Make : Nadi Air technics

Model : SAW-21-ACW-11-ARRT-4

Capacity : 650Air at 2” WC

Motor Rating : 0.5-415 HP / V AC

CONDENSATE EXTRACTION PUMP DETAILS:

Make : KSB Pumps Ltd

Model : CPKGCM 50-250

Type : Horizontal

Speed : 2945 RPM

Motor : 30, 145 kW / V AC

SCOPE OF SUPPLY:

1) 1 No. 10 MW TRIVENI make steam turbine coupled to TRIVENI make reduction gear

box on common baseframe/ Oil Tank.

2) 1 No. 10 MW TDPS make alternator with Excitor and Cooler.

3) Complete governing system with Woodward TG-17E

actuator &allinterconnectedpipings/ cablings, etc.

4) Complete oil cooling system including:

a) Oil tank/ Base Frame with AOP with AC Motor mounted on the tank, EOP with DC

Motor mounted on Tank, Oil Vent, Air Bottle, Control Oil Filters, EOP Filters, etc.

with interconnected oil pipings.

b) 2 Nos. Oil Coolers with 1 Set of duplex Oil Filters and 1 No. Overhead Oil Tank and

all interconnecting oil pipelines.

c) Main oil pump mounted on gearbox shaft with it’spipings.

d) Oil Centrifuge with all interconnecting pipings.

5) Complete condensing system including:

i) Bellow & distance pieces mounted between turbine and condenser.

ii) Condenser with its mountings, inlet and outlet water pipelines, condenser bellows,

Hotwell assembly, etc.

6) Gland Vent Condenser System including controls, valves and pipelines.

7) 1 No. Turbine Control Panel (including 505 Governor).

8) Gear box with its mountings, auxiliaries and pedestals.

9) Coupling between turbine & gear box and gear box & alternator.

10) Alternator Cooling System (Mounted on alternator top) with it’s pipelines and valves.

11) Exciter with it’s pedestals (mounted separately).

12) 1 No. AVR panel.

13) 1 No. 10 MW 11 kV generator control panel with Vaccum Circuit Breaker.

14) 1 No. NGR panel.

15) 1 No. LAPT Panel.

16) 1 No. Metering and Synchronizing Panel.

17) 1 No. Generator Protection Panel with Relays.

18) 1 No. Turbine Gauge Panel.

19) 1 No. Turbine MCC Panel.

20) All locally mounted controls with interconnected pipings and cables.

21) All interconnecting Water, Steam and Oil pipings between all the TG Set accessories.

22) Manuals & Drawings pertaining to the turbine, gear box and alternator



