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**DEALERS & IMPORTERS OF POWER PLANTS & ALLIED MACHINERY**

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### **1 No. 10MW BRAND NEW IPS make, 10-GT Gas Turbine Generator Set :**

IPS 10-GT 10MW turbine generator (based on GE Model LM 1500 gas turbine) to operate at 50 Hz, 3 phase, 11,000 Volts. Heat rate 13,400 btu/kw

Generator set will be supplied with all ancillary equipment to provide a fully operational power unit; to include but not limited to the following:

1. Generator conforms to API 616, 3 Ph 50 Hz synchronous 11 KV alternating current.
2. Constructed to NEMA standards
3. Drip proof/air cooled and suitably enclosed for outdoor operation
4. Voltage adjustment range +/- 10% between No Load and Full rated load and Power Factor
5. Stator + Rotor have Class F insulation with a temperature rise not exceeding that specified for Class B insulation
6. Capable of continuous operation at rated voltage and frequency with a 20% unbalanced load.
7. Capable of supplying an overload of 10% rated current within a period of 1 hr. every 12 hrs.
8. Short circuit protection as per NEMA

Generator is capable of Continuous Parallel Operation. Automatic reactive load sharing is possible with Generator Pf (0.8) remaining approximately constant during Paralleling Operations. A KW controller (power limiter) provided to ensure no overloading of Generators during Paralleling Operations.

Current transformers/Main Power transformers

Main Circuit Breakers etc.

### ***General Design Criteria for Turbine***

Single shaft generator, modular industrial, simple cycle, dual fuel natural gas/or liquid (diesel), with a fuel fired turbine.

The make/model is standard design, currently in regular production.

The turbine generator set is unitized and is suitable for installation with the minimum number of connections from external sources. Each unit comprises of a gas turbine with speed reduction gearbox to a generator supplying power at 50 Hz (cycles).

### ***Miscellaneous***

Starter – Electro hydraulic type with all equipment in order to provide “push button” remote starting.

1. Turbine Inlet System – Each unit has individual air intake systems, including filter, which is suitable for a marine environment. Expansion joint, rain hood over inlet, equipped with high pressure alarms + shutdown (tech info to be supplied).

2. Insect screens are provided ahead of the filter with total pressure drop across the inlet system to be less than 4 inches of water (moisture drainage, etc.)

3. Air inlet system has adequate provision for maintenance and filter removal. All access ways required for the maintenance of the filters are included.

4. Inlet system has no natural (resonant) frequencies within 100% of maximum gas turbine running speed.

5. The filters remove particulate of 5 micron size (and above) with efficiency of 99% at regular air flow rates.

### ***Turbine Exhaust System***

The exhaust system is designed to direct heat away not to create heat build up on adjacent units.  
The subject system has:

1. SS expansion bellows
2. Exhaust silencer, floor standing type, internally insulated
3. All attached hardware
4. Support and insulation
5. Smooth, low loss exhaust gas path

Exhaust is fitted with drains to remove any water contamination entering into the turbine.

### ***Lubrication System***

Furnished complete, self-contained lubrication system for each unit.

Consisting of: main oil reservoir/pre + post lube oil pumps/duplex filter/instrumentation/pressure regulators/control valves/oil/air cooler/ + other related devices (essential to operation)

Fuel Control and Fuel System to burn RAG (spec of Gas/fuel provided)

Capable of operating on either natural gas or diesel fuel, also a mixture of natural gas and diesel fuel.

Fuel system allows:

1. Start up on either diesel or natural gas

2. Allow for manual transfer from gas to diesel and vice versa
3. Allow for automatic transfer of the differing fuels under any load conditions without making any power output fluctuations that can harm effective operations.
4. In the event of gas failure the transfer to diesel fuel shall be instantaneous
5. System includes turbine protection devices against both high and low fuel gas pressure.

The Fuel Gas System has as a minimum:

1. Primary + secondary fuel shut off valves.
2. Blow down valve
3. Fuel gas straine
4. Gas fuel control valve
5. Electronic fuel governor
6. Throttle valve
7. Fuel injector + ignition assembly
8. Stainless steel fuel piping
9. Full instrumentation

The Liquid Fuel System has as a minimum:

1. Boost Pp driven by an electric motor
2. Low pressure duplex filters with bypass + replaceable elements

3. Electric Hp fuel Pp
4. Hp filtration system
5. Fuel control valve
6. Pressurizing valve
7. Fuel manifold distributing to fuel injectors, etc.

### ***Instrumentation***

#### General

The system is supplied with all instrumentation, controls, remote and local control panels, and all other necessary devices for the safe and practical operation of the Complete Turbo Generating System (i.e. complete with switchboard panels to connect up to an external distribution system – wires to this system, etc. being outside scope of supply).

All control wiring has minimum rating 600v, 90°C. Minimum size #22 AWG  
General control and meter wiring #16AWG.

1. System inlet ESD valve block and bypass valve
2. Relief + blow down valves as required
3. Control panel and safety shutdown systems as required
4. Lube oil filters

5. Automatic recycle valve

6. Manual shut down + purge connections

A full set of schematic drawings and equipment manuals included.

**PRODUCT IMAGES :**





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