



MEE/ GC6 / 122 / 2023 / Dy. CME(ES)

BUDGETARY OFFER

FOR

**PROVIDING UN – INTERRUPTED POWER SUPPLY TO SIGNAL
STATION AT CHENNAI PORT AUTHORITY**

SUBMISSION ON OR BEFORE 23.02.2024

THE CHIEF MECHANICAL ENGINEER

7TH Floor, Centenary Building

Rajaji Salai, Chennai – 600 001.

**BUDGETARY OFFER FOR PROVIDING UN – INTERRUPTED POWER SUPPLY TO
SIGNAL STATION AT CHENNAI PORT AUTHORITY**

TECHNICAL SPECIFICATION

SCHEDULE - 'A'

1.0 GENERAL:

Chennai Port Authority is proposed to install 100 KVA CPCB IV + emission compliant silent (Acoustic enclosure) DG Set with AMF panel combined with L.T. switch gears for Chennai Port Authority at signal station.

2.0 SCOPE OF WORKS:

- i) Design, Supply, Installation, testing and commissioning of 100 KVA, 3Ph., 415 V, 50 HZ, CPCB IV + emission compliant silent (Acoustic enclosure) DG Set including CPCB certificate and reports.
- ii) Supply, Construction of required RCC foundation with base frame for 100 DG set with standard materials and accessories etc.,
- iii) Design, Fabrication, Supply, Installation, testing and commissioning of microprocessor based AMF panel combined with L.T. distribution cubicle switch gears and standard accessories etc.,
- iv) Supply and installation of Thyristor controlled Battery charger unit with 12V/24V 90 Ah or manufacturer recommended capacity (AH) of Maintenance free Battery as per requirement.
- v) Supply and installation of 100 KVAR AFPC panel.
- vi) Supply and laying of L.T. cables as per standard.
- vii) Supply and making Straight through joints and end terminations of L.T. cables with gland, Lugs and all other required accessories.
- viii) Supply and Installation of maintenance free earth.
- ix) Supply and Laying of G.I. Flats. All the materials and accessories shall be supplied and executed as per relevant IS Standard and IER by the contractor.
- x) Supply and Installation of safety equipment's.
- xi) Disconnection, dismantling, shifting, loading, transporting, unloading of Existing DG Set & its accessories along with LT Panel and handed over to RSA yard / Power supply section.
- xii) The entire work shall be executed as per direction of Engineer – in – Charge.

Note:1 - The 100 KVA CPCB-IV+ Compliant silent (Acoustic enclosure) DG Set, AMF panel shall be supplied along with similar or above rating of test Certificate issued by CPRI / ERDA in the name of the company. The supplier/contractor shall be submitted test certificate of Engine, Alternator, MCCB, Battery, Relays and metering, etc. The contractor shall obtain necessary approval of the drawing of silent (Acoustic enclosure) DG Set with AMF panel, concrete bed construction from Ch. P. A. before fabrication.

3.0 STANDARDS

The design, manufacturer supply and testing of the various equipment's and accessories covered in this specification shall comply as per relevant IS standards with latest amendments.

4.0. TECHNICAL SPECIFICATIONS: -

4.1 TECHNICAL SPECIFICATION OF 100 KVA CPCB IV+ EMISSION COMPLIANT SILENT (ACOUSTIC ENCLOSURE) DG SET.

The atmosphere in the premises is hot, humid, highly saline and heavily laden with dust particles. 100 KVA CPCB IV + emission compliant silent (Acoustic enclosure) DG Set's is factory assemble pre-aligned and pre-tested ready to use with latest standard complies with current CPCB IV + emission norms. DG Set's capable of delivering not less than 100 KVA at 0.8 pf at site conditions including all accessories like base frame, hospital grade silencer, exhaust flexible piping, in-build fuel tank with fuel supply and fuel return lines with valves, hoses and fittings and clips, suitable capacity of battery for starting on MS frame, battery charging dynamo/alternator necessary Anti vibration mounting arrangements, with manual/Auto control panel, Engine instrument panel, armoured copper conductor control cable with suitable glands from DG set to control panel etc., completely conforming to the attached specifications as required.

Robust, Compact, Fuel efficient Diesel Generator sets with Latest Technology & Highly Reliable. → Highly Engineered for Optimized Power Solutions. designed to operate under Hazardous site conditions → can be connected to laptop / computer using USB port and monitor all the engine performance related data. → Better Fuel Consumption. → Low Running cost. → Compact Foot Print. → Easy access for maintenance with required safety protection features.

Note:-

The contractor quoted rate includes the inspection, reports and certification of CPCB

DIESEL ENGINE: -

Diesel Engine shall be radiator cooled capable of developing required BHP at 1500 RPM confirming to BS 5514/ISO 3046. Engine shall be of four strokes and shall be of reciprocating compression ignition (Diesel) type, Multi cylinder with electronic fuel governor suitable for the 100 KVA generating set. Electric starting by DC self-starter shall be provided. The engine and alternator shall be directly coupled. The Engine shall be fitted with electronic governing

system as per relevant BS specification amended up to date. The starter battery shall conform to IS 7372 amended up to date and to meet the Engine starting and control gear requirements.

It shall comprise of the following:

- a) Starting switch with key
- b) Lube oil pressure gauge
- c) Lube oil temperature gauge
- d) Battery charging ammeter
- e) Stop push button or lever.
- f) Water temperature indicator
- g) Safety control auto cut off for low lube oil pressure, High water temperature and over speed with audio and visual lamp indication on control panel.
- h) Hour meter cum RPM indicator.

INTAKE AND EXHAUST SYSTEM

The M.S. exhaust pipe line shall be of suitable dia. as per manufacturer standard for fixing the hospital grade silencer to let out the exhaust gas to open to sky with suitable supports at suitable intervals with all its accessories such as bends, flanges, couplings etc. (including rain cap at the end to prevent the water entering inside) providing sleeves at the wall crossing complete as required. The exhaust pipe line shall be with thermal insulation with glass wool, covered with wire mesh and gladded with 24 -gauge aluminium sheet. The hospital grade silencer shall be capable to provide about 20-30 db suppression in noise. A test certificate to this effect shall be furnished.

LUBRICATION

Lubrication shall be positive pressure type lubricating for all moving parts. No moving parts shall be required lubrication by hand either prior to the starting of the engine or while it is in operation. Lubrication oil shall conform to relevant IS amended up to date. Necessary lubricating oil filter shall be provided for operation at normal conditions for a period of 250 hours, without any necessity of replacement and cleaning. Temperature and pressure gauges shall be fitted to the lubricating system.

FUEL TANK: -

The sub base fuel tank shall be designed as per manufacturer standard for continuous running with full load for a period of 24 Hrs. The tank shall have level indicator marked in litres, filling inlet with removable filter.

SPEED & GOVERNING

The engine speed shall be regulated through Electronic Governing system (AVR) which shall also provide the over speed protection.

ACCOUSTIC ENCLOSURE

The enclosure consists of diesel engine, alternator, Battery and control panel. The **acoustic enclosure** is made of not less than 1.6 mm thick CRCA steel sheets duly powder coated and C Type sheet metal base frame of is not less than 3 mm thick CRCA Steel Sheet. The walls of the enclosure are insulated with fire retardant foam so as to comply with the **75 dB at 1mtr sound levels specified by CPCB**. It should be sound proof, weather proof & environment friendly, the finished sheet metal component shall undergo seven tank treatment process.

The firm should clearly give details of specification with a copy of certificate issued by the designated agencies as per Environment Act along with the tender. In the absence of these enclosures, the tenders shall be liable for rejection.

ALTERNATOR

100 KVA alternator suitable for operation at 1500 rpm, 0.8 pf (lag), 415 V, 50 Hz, 3 phase, 4 wire system. The alternator shall be copper wound of totally enclosed The Alternators are brushless type, screen protected, drip proof, revolving field, self-excited, self-regulated through an AVR conforming to BS 5000/IS 4722 amended up to date as applicable. Class – H insulation. suitable for direct coupling with the above diesel engine. Alternator shall be brushless type with IP 23 protection enclosure.

GENSET CONTROLLER

Controls the engine Speed, high temperature of engine and coolant, Low lube oil pressure, Alternator's differential protection, short circuit protection, under/ over voltage protection, Supports Auto Mains Failure (AMF) Functions for 3 Phase Gen-set. Low Fuel Level Supports Manual Control (MCP) Functions for 3 Phase Gen-set. Measures Gen-set Voltages and Currents Measures Mains Supply Voltages and Currents. Measures electrical Parameters like Frequency, Power Factor, Generator Power. Monitor critical engine safety parameters. Starts / Stops the Gen-set. Have Counters for Gen-set Start / Stop, Run Hours, KWh, Power Factor.

OVER LOAD

The DG set shall be capable of taking 10% overload for a period of one hour during any 12 hours' period while operating continuously at full rated load.

ELECTRICAL SYSTEM

12V/24V DC electrical system with digital control panel with safety Sensors.

4.2 MICROPROCESSOR BASED AMF PANEL COMBINED WITH L.T. DISTRIBUTION CUBICLE SWITCH GEARS:

Design, Fabrication, Supply, Installation Testing and commissioning of AMF panel combined with L. T. switchgear. This panel shall be three phase, 415 Volt, 3 Phase, 50 Hz, dust and vermin proof, metal enclosed, indoor type and weather proof compartmentalized, Switchboard frame load bearing members shall be fabricated using suitable mild steel

structural section or pressed and shaped CRCA sheet of thickness not less than 2 mm. Frame shall be enclosed in CRCA of thickness not less than 2 mm.

AMF panel combined with L. T. switchgear shall be of insulated electrolytic grade copper bus bar of **400 Amps rating for three phases and neutral** including colour code. The current density of the bus bar not less than **120 Amps /cm²**. All the bus bar shall be supported on insulators. The Bakelite sheet of 12 mm thickness (minimum) shall be provided in side enclosures of panel and wherever it is found necessary under relevant IS specification & IER-1956 rules. The temperature raises of the bus bar, contacts when carrying rated current shall not exceed 55 deg. Cover the ambient temperature. Temperature rise while carrying maximum permissible current under site ambient condition at all cables bottom of the entry and connection shall not exceed 20 deg. C. The degree of protection required will be IP-52 conforming to IS 2147/12063. All control wiring panel shall be done with 2.5 sq. mm copper conductor PVC insulated and 1100 volts' grade. Suitable colour coding can be adopted. All ends shall be identified with ferrules at the ends. powder coating and 7 tanks process. automatic operation on main failure and as well as for manual operation

Switchboard shall be comprising of a completely enclosed bus bar compartment for running horizontal and vertical bus bars. Completely enclosed switchgear compartment, one for each circuit for housing circuit breaker, switch fuses etc. A compartment for meter and other control devices associated with a circuit breaker. Switch board shall be easily extensible on both sides by adding of vertical sections after removing the end cover.

All **incomer feeder and all out going feeders** shall be provided multifunctional **meter** three phase LED indication lamp with control switch. The multi-function meters shall be single digital type it consists of Amps, Volts, MD, KVA, KW, KWHr, KVAR, PF and Frequency. 2 Nos. indicating lamps with fuses for ON and OFF indication. All the cables are connected at bottom of the panel.

The AMF panel combined with L. T. switchgear shall be supplied from CPRI/ERDA laboratories approved authorized manufacturer. The AMF panel combined with L. T. switchgear design shall be based on similar rating of CPRI/ERDA laboratories confirmed panel and shall produce the test report (CPRI/ERDA) along with panel. The panel is to be provided with suitable earthing terminal as well as 2 Nos. lifting lugs on top of panel required. The wiring of the panel is to be provided with ferrules, also two danger board of LT Voltage in three languages English / Tamil / Hindi are to be provided on the panel.

The AMF panel consists of microprocessor based controller, 2 Nos. 4 Pole, 400 Amps, 50 KA MCCB for incomer of TANGEDCO supply and Alternator supply, 2 nos. 400 Amps contactors, LED indication lights. The DG set shall be provided with automatic start within 0-30 seconds facility whenever power interruption. The DG set shall be able to start Auto / Manual mode. Audio / Visual alarm for LLOP, HWT and over speed. Gen Sets Under voltage relay Overvoltage relay Earth fault Relay DC shunt trip Mains supply voltage sensing relay Emergency stop push button. The Contractor shall supply and lay suitable size and required length of copper cable from DG set to AMF Panel for control cabling.

400 AMPS MICROPROCESSOR BASED AMF PANEL COMBINED WITH L.T. DISTRIBUTION CUBICLE SWITCH GEARS

AMF PANEL

The AMF panel consists of 400 Amps four pole, 50 KA, MCCB for incomer and outgoing supply along with required relay and contactor.

SECTION-1 (NON ESSENTIAL)

Incomer

630A, 4P, MCCB, 50 KA : 3 Nos.

Outgoing

400A, 4P, MCCB, 50 KA : 2 Nos.

250A, 4P, MCCB, 50 KA : 2 Nos.

100A, 4P, MCCB, 50 KA : 2 Nos.

Three incomers shall be Mechanically Inter Locked. To switched ON one MCCB at a time

CURRENT TRANSFORMER

The current transformers shall withstand stresses originating from short circuits. They shall be mounted on the switchboard.

Incoming feeder 3 Nos. 600/5 Amps,

Outgoing

2 Nos. 400 / 5 Amps

2 Nos. 250 / 5 Amps

2 Nos. 100 / 5 Amps

SECTION-2 (ESSENTIAL)

Incomer

400A, 4P, MCCB, 50 KA : 1 No.

Outgoing

250A, 4P, MCCB, 50 KA : 3 Nos.

100A, 4P, MCCB, 50 KA : 5 Nos.

63A, 4P, MCCB, 25 KA : 2 Nos.

CURRENT TRANSFORMER

The current transformers shall withstand stresses originating from short circuits. They shall be mounted on the switchboard.

Incoming feeder 1 No. 400/5 Amps,

Outgoing 3 Nos. 250/5Amps

5 Nos. 100 / 5 Amps

4.3 100 KVAR APFC Capacitor Panel:

100 KVAR APFC capacitor bank shall be of automatic switching type with facilities for manual control. The capacitor bank shall be equipped with Microprocessor based intelligence version APFC relay with 3 phase CT sensing, Switch Fuse Units with HRC fuses (feeder Control), Heavy duty contactors and metering equipment and controlling banks of capacitor mounted in ventilated compartments with IP:54 protections with bottom lowers. The switch units, contactors, etc. shall be selected to suitable for Capacitor ratings.

The APFC capacitor bank shall be connected the individual capacitor. All main bus bar connection shall be of insulated tinned copper and link cable shall be copper. The switching of capacitor bank by a re-strike free breaker shall not cause first peak of transient over voltage not to exceed $2\sqrt{2}$ times the applied voltage (rms) for maximum duration of 1/2 cycle and shall be suitable for performing 5000 switching operation/year under these conditions.

LT capacitor bank shall be improving the power factor from 0.8 to 0.97 and above lagging.

The rated voltage of 3 phase capacitor bank shall be 415 V (Phase to Phase), 50Hz. The capacitor offered shall be non-self-heating type, super heavy duty long life MPP type conforming to IS 13585. Capacitors shall be suitable for operation at rated voltage level and frequency plus harmonics. Capacitor modules shall be provided with in-built fuses to isolate individual faulty units from the total bank. Capacitors are also to be provided 0.2% series Reactor to limit the fault current or inrush current during switching operations along with ON delay timer on individual feeder.

Capacitors bank shall be provided with directly connected discharge device suitable to reduce the residual voltage from crest value of the rated voltage to 50 volts or less within 1 min. after the same is disconnected from the supply.

Relay shall be suitable for operation at low load and current sensitivity shall be equivalent to 1%. The capacitor bank should be provided **25 KVAR x 4 Nos. The APFC capacitor bank control switch gear consists of 1 No. 200 amps MCCB as incomer and each individual capacitor shall be provided 4 Nos 63 Amps MCB for 25 KVAR capacitor** along with MFM meter and three phase indication LED indication lamp. Each individual

4.4 MOULDED CASE CIRCUIT BREAKER – 4 POLE: -

The MCCBs shall be microprocessor based over load release and short circuit protection. All the MCCB shall be as per IS 13947 it shall be of 415V, 3 phase, 50 Hz, 4P, the variable setting ranges from 80–100 % All the breakers shall have current limiting and isolation features.

The interconnection required from MCCBs, instruments, bus bars etc. shall be done with suitable size of copper bus bar with PVC sleeves with colour code of adequate capacity with lugs.

All Incoming and outgoing feeder of MCCB shall be complete with one set of CT shall be provided as per clause of technical specification. It shall have **multifunctional meter in incomer feeder MCCB and all out going feeder MCCBs**, three phase LED indication la

mp with control switch. The multi-function meters shall be single digital type it consists of Amps, Volts, MD, KVA, KW, KWHr, KVAR, PF and Frequency. 2 Nos. indicating lamps with fuses for ON and OFF indication.

4.5 INSTALLATION OF 100 KVA CPCB IV+ EMISSION COMPLIANT SILENT (ACOUSTIC ENCLOSURE) DG SET, MICROPROCESSOR BASED AMF PANEL COMBINED WITH L.T. DISTRIBUTION CUBICLE SWITCH GEARS AND APFC PANEL:

100 KVA CPCB IV+ EMISSION COMPLIANT SILENT (ACOUSTIC ENCLOSURE) DG SET

Installation of 100 KVA Diesel generator set shall be properly dynamically balanced and RCC Foundation for housing the DG Set in the ratio 1:2:4 (M-20 grade) Foundation should be constructed by providing additional 1 feet extension of the acoustic enclosure on each side. Also the height one feet above the ground level and depth of the foundation as per manufacturer standard.

MICROPROCESSOR BASED AMF PANEL COMBINED WITH L.T. DISTRIBUTION CUBICLE SWITCH GEARS

The Microprocessor based AMF panel combined with L.T. distribution cubicle switch gears and APFC panel shall be installed at signal station. All the civil works including surface levelling, **construction of pedestal 500 mm above the surface level** with other required materials and accessories for the installation of the Microprocessor based AMF panel combined with L.T. distribution cubicle switch gears and APFC panel by the contractor. Microprocessor based AMF panel combined with L.T. distribution cubicle switch gears and APFC panel shall be equipped with base frames made of structural steel sections along with necessary mounting hardware required for bolting / welding the base frame installed on the constructed pedestal.

All alignment, levelling, grouting, anchoring, adjustments shall be carried out in accordance with manufacturer's instruction / as per directed by the engineer-in-charge. All cables shall be connected with, MCCBs with required gland and other materials and accessories. All connections in Microprocessor based AMF panel combined with L.T. distribution cubicle switch gears and APFC panel shall be completed, checked and adjusted to ensure safety and satisfactory operation of the equipment.

After installation Microprocessor based AMF panel combined with L.T. distribution cubicle switch gears and APFC panel shall be tested and commissioned along with other associated electrical equipment's in the presence of the Authority's Engineers in accordance with the Indian Electricity Rules and relevant Indian Standards.

4.6 SUPPLY AND LAYING OF 3 ½ Core 185 sq.mm L.T. UNDER GROUND XLPE CABLES:

Supply of 3 ½ core 185 Sq.mm, Aluminium XLPE L.T. underground cable of 1.1KV voltage grade having stranded compacted aluminium conductor with XLPE insulation, R, Y & B colour for phases and Black colour for Neutral core, extruded PVC inner sheathed, single layer of galvanized steel wire / strip armoured, over all PVC sheathed conforming to IS 7098 Part I 1985 with latest amendments with ISI mark.

Laying of 3 ½ core 185 Sq.mm, Aluminium XLPE L.T. underground cable through Excavation of Earth / Cutting of cement concrete / Cutting of concrete road / Cutting of Tar road of size 60 cms. width x 60 cms. depth to lay each run of the cable and re-closing the same and make the surface as original. Laying of underground cables through Earth / cement concrete shall be closed with RCC Trough, and Laying of underground cables through cement concrete road / Tar road and railway line crossing the cable shall be laid through G.I. pipe. The size of G.I. pipe shall not be less than 6" in diameter for **each cable**. The G.I. pipe shall be supplied by the contractor.

The cable shall be laid in the RCC cable trench and opening the RCC cable trench cover without damaging after laying of the cables the same shall be closed as per original.

Laying of cables inside the substation / building shall be done after removing the trench covers carefully. After laying the cable inside the trench, the trench shall be closed properly with the same cover which was removed already. If any damage is the responsibility of the contractor. The damaged slab should be replaced as original by the contractor. Any hole or breaking the wall etc. if required for laying cable it shall be done by the contractor. After completing the cable laying work the hole or breaking in wall shall be closed in original.

Where ever not possible to cut the concrete road and other areas as per direction of engineer – in- charge the contractor to make core drill for laying of L.T. cables. The required tools and machineries are scope of the contractor. The depth of the core drill is not less than 1 Mtrs. to lay each run of the cable with suitable size of Corrugated pipe shall be 100 mm. While on laying of the L.T. cables test pit to be constructed for future maintenance work as per direction of engineer – in- charge.

4.7 STRAIGHT THROUGH JOINT OF 3 ½ CORE 185 SQ.MM L.T. UNDER GROUND XLPE CABLES:

The L.T. 1.1 KV, 3 ½ Core X 185 sq. mm. XLPE(E) aluminium cable straight joint kit shall be done with heat shrink jointing kits. All jointing accessories and other material shall conform to IS specifications wherever available. On both sides of joint a loop of sufficient length of 3 to 5 Mtrs. shall be kept for future requirement.

The cable shall be provided with suitable **identification indicator mark**. The work includes all labour and required material and shall be done as required by E.I.C. The heat shrink straight joints of the cables shall be installed by highly skilled personnel.

4.8 END TERMINATION OF 3 ½ CORE 185 SQ.MM L.T. UNDER GROUND XLPE CABLES:

Supply and making end termination of each end of the L.T. cables in the L.T. panel with cable glands, lugs and all other required materials, and accessories etc. The work includes all labour charges shall be done by the contractor. The complete work shall be carried out as per standards.

All the tests shall be carried out as per relevant IS specifications and IER 1956 before charging the feeder.

Note:-

The cable measurements are tentative and varies as per site condition. Hence the contractor ensures the quantity before order the cable.

Test certificates from the manufacturers for the cable shall be submitted along with the supply of cable.

Each end termination for 1100 V grade underground cables shall be of crimping type lugs shall be supplied by the contractor along with cable gland and other required materials and accessories. The crimping type lugs shall be installed by highly skilled personnel.

4.9 END TERMINATION OF VARIOUS SIZES OF L.T. cables:

Supply and making end termination of each end of the various sizes of the existing L.T. cables at signal station with cable glands, lugs and all other materials, and accessories etc. The work includes all labour charges shall be done by the contractor. The complete work shall be carried out as per standards. The details of end termination are follows:

- 1) 400 sq.mm - 2 No., 2) 300 sq.mm -4 No., 3) 185 sq.mm - 2 No, 4) 70 sq.mm - 3 No, 5) 50 sq.mm - 3 No, 6) 25 sq.mm - 5 No

Note: -

Each end termination for 1100 V grade underground cables shall be of crimping type lugs shall be supplied by the contractor along with cable gland and other required materials and accessories. The crimping type lugs shall be installed by highly skilled personnel.

4.10 DISCONNECTION AND SHIFTING OF DG SET AND PANELS:-

Disconnection of existing cables from L.T panels and alternator, removed unwanted cables, dismantle the DG set and L.T. panel, shifting, loading, transporting and unloading and handed over to RSA yard / power supply section as per direction of Engineer – In – Charge. The required man power, vehicle and transport arrangement is scope of the contractor.

4.11 BATTERY AND THYRISTOR CONTROLLED STATIC BATTERY CHARGER -

Supply, Installation, Testing and commissioning of the battery and battery charger unit with 12 V / 24 V, 90 AH or manufacturer recommended suitable capacity (AH) of battery. The battery charger shall be suitable rating shall be of semiconductor type with automatic boost cum trickle selection with auto cut off facility and with suitable ammeter and voltmeter for charging from AC mains. suitable for 12 V / 24 V, 90 AH or manufacturer recommended suitable capacity (AH) of battery and floor mounting and air cooled type. The input supply of the unit shall be 230V / 250V. Single-phase AC 50HZ and the output supply of the unit shall be 12 V / 24 V DC. Suitable for tripping / closing / Indication lamp of the system.

4.12 MAINTENANCE FREE EARTH:

The earth system shall be designed and installed so as to meet the requirement of CEA. The value of resistance of earth system should not exceed value acceptable to the Central Electricity Authority.

The earth value shall be obtained accordance with relevant standards and the earth values shall be measured after installation in the presence of Authority Engineer.

All noncurrent carrying parts with conducting surface such as frame works of circuit breakers and medium / low voltage switch gears, cable glands, cable supports, any steel

works should be efficiently grounded for the protection of equipment's and operating personnel by connecting to the earth ring bus with two distinct and separate earth leads.

The earth connection shall be made of G.I. flat for earth and section of the conductor conforming to IS 3043 to safely carry the maximum fault current for a short period without burning the conductor and pass on the fault current is in excess of this, additional earth connections under fault condition and at no time the potential shall exceed 10 volts between the equipment and earth. The earth system shall be mechanically robust and joints shall be capable of retaining low resistance even after many passages of fault current. Interconnections and joints for earth conductors shall be riveted and soldered for retaining low resistance. Each earth bar should be connected to the main earth through a bolted removable link. All ground connections shall be compounded and braided.

Maintenance free earthing shall be carried out in accordance with Indian Electricity Rules and Regulations amended till date and also the Earth electrodes shall be provided in conformity with BIS 3043/ BS 7430 of the latest version expecting the specified values detailed herein.

The Maintenance free earth electrodes shall be of high tensile low carbon steel circular rods, molecularly bonded copper or clad copper on the outer surface 25 mm dia. And not less than 3.0 M length and shall be driven to a depth in the ground below the ground level and 3 meters away from any other earth electrodes or as per latest BIS 3043. The premixed power set carbon based backfill compound shall be poured in the bore with water and re-close the bore.

Microprocessor based AMF panel combined with L.T. distribution cubicle switch gears Panel, Alternator Neutral, **body earth, APFC panel G.I flat size 25 x 6 mm and interconnected of earth pits**

A suitable brick cemented enclosure for neutral and body earth will be as per IE Rule (i.e.) 450 mm x 450 mm with 125 mm wall thickness. The depth of the masonry work will be not less than 600 mm below the ground level and with suitable cover provided by the contractor enclosing the earth electrodes and shall be able to take up the load of lorries, etc., operating in that area. The top surface of the earth pit shall be in level with the finished surface level of the surrounding area.

4.13 SUPPLY AND LAYING OF GI FLAT:

Supply and laying of 25 x 6 mm hot dip G.I flat from the earth pits to Neutral, body earth AMF panel and APFC panel and inter connection.

4.14 DRAWING LIST: -

Necessary drawings shall be prepared and submitted to Authority's Engineer for approval before fabrication.

All catalogues, technical drawings, details etc., for Engine, Alternator, Microprocessor based AMF panel combined with L.T. distribution cubicle switch gears and APFC panel with operation and maintenance manuals shall be furnished to the Authority's Engineer by the contractor.

5.0 SPECIFICATION OF SAFETY EQUIPMENTS:

The following safety equipment's shall be supplied in the substation as per the IER.

5.1 FIRE EXTINGUISHERS: -

Portable chemical fire extinguishers 1 No. of suitable range of carbon tetra chloride conforming to IS 935 latest versions shall be supplied and installed at the proposed 11KV substation.

5.2 FIRE BUCKETS: -

Adequate number of fire buckets with M.S. angle stands each consists of 4 Nos. of round bottom fire buckets painted with red and marked fire and filled with clear dry river sand shall be supplied and installed at convenient locations at proposed 11KV substation. The fire extinguishers and fire buckets shall be provided conspicuously marked to comply with Indian Electricity Rules

5.3 FIRST AID CHART AND FIRST AID BOX: -

The first aid boxes and first aid charts equipped fully with such contents as stipulated by the CEA conspicuously marked shall be supplied and installed in the switch gear room at 11KV proposed substations.

5.4 INSTRUCTION FOR RESTORATION OF PERSONS SUFFERING FROM ELECTRIC SHOCK: -

Instruction in English and Tamil for providing artificial respiration as per CEA regulations shall be supplied and affixed in a frame board at convenient location in the proposed 11KV substations. Safety posters for vigilance against electrical accidents as per CEA regulations shall also be provided by the contractor.

5.5 DANGER BOARD:

Required number of Bone and skull Danger board for L.T. 415 V in three languages English / Tamil / Hindi are to be provided.

6.0. LETTER PAINTING: -

All incomer cables / all outgoing cables / P.T. & C.T. details shall be painted in front and rear sides of the CSS / LT panel specifying the full details and furnishing the amperage, voltage, size of the cable in the red letters on white back ground. Should be written in both L.T. & H.T. panels.

7.1 TEST REPORT AND USER MANUAL: -

Routine test, acceptance test for Engine, Insulation test for Alternator shall be carried out as per standard and manufacturer guidelines in presence of EIC and also submit the test report. The contractor is also produced data sheet for Engine, Alternator and test report and data sheet for Battery, AMF panel, Battery charger, shall be produced.

Engine Operational and maintenance manual, Engine parts catalogue, Alternator Operational and maintenance manual, Installation Guideline of DG set.

7.2 APPROVAL OF INSTALLATION AND COMPLETION CERTIFICATE

Obtaining approval of statutory bodies i.e. CPCB/Electrical Inspectorate etc. as required shall be the responsibility of the contractor duly preparing/approval of installation drawings within the quoted price of this turnkey work. The statutory fees/charges required to be paid to these bodies shall be within the quoted price.

8.0 COMPLETION PERIOD: -

The entire work will be completed 180 days from the 7th day of issue of the order.

9.0 GUARANTEE ;

The installation shall be guaranteed for one year from the date of acceptance of the work and free maintenance shall be done during the guarantee period as per manufacturer standard.

10.0 OPERATION INSTRUCTIONS AND DRAWINGS :-

The Contractor shall provide 3 sets of operation and maintenance manual, complete layout drawings of DG set, AMF panel with wiring, earthing system and battery charger for DC source compiled in the spiral binding hard copy and soft copy and hand over to the Port's representative.

11.0 SAFETY:-

In the course of the work, personnel working in the system at site should take utmost care for their safety and work purely at individual's/ party's risk. Ch.P.A. will not be responsible for any untoward accidents for the party's working personnel.

12.0 TRANSPORTATION :-

The prices also include packing charges, transportations charges and insurance as required. All necessary clearances as per the prevailing rules shall be obtained by the supplier for transportation of the DG set, AMF panel, etc. to the site. The packing shall be in such way as to prevent damages or deterioration in transit and final destination as mentioned in the tender. The packing should be sufficient to withstand rough handling and atmospheric condition.

13.0 LIST OF APPROVED MAKES FOR ELECTRICAL SPARES :-

S.No.	ITEM	Name of Manufacturers
1	Volt meter and Ammeter	AE / MECO / YOKINS / NIPPEN
2	Selector switches, Push buttons, Emergency Switches	KAYCEE / L & T / GE / BCH / LEGRAND
3	HRC Fuses	L & T / GE / SIEMENS / ABB / INDOASIAN

S.No.	ITEM	Name of Manufacturers
4	Indicating light	AE / KAYCEE / VAISHNAV / L & T /SIEMENS
5	MCCB / MCB	L & T / LEGRAND / SIEMENS / ABB / SCHNEIDER / HAVELLS / INDOASIAN/ ANCHOR / HAGER / SNCAB
6	FRLS PVC insulated copper conductor single/multi core stranded wires of 650/1100 volt grade	HAVELLS / FINOLEX / RPG /UNIFLEX /NICCO /RR Kables / ANCHOR / Q FLX/ AVOCAB / SNCAB
7	LED Light Fixtures and Lamps	PHILIPS / HAVELLS / CROMPTON GREAVES / GE / BAJAJ / WIPRO / READY LED/ SYSKA/ SURYA / HOLONIX / JAGUAR/ LUKER / PANASONIC/ EVEREADY / REGENT / VOLMONT
8	Cable lug & Cable Gland	DOWELLS / JHONSON / RAYCHEM
9	Terminal Blocks	WAGO & CONTROLS / PHOENIX CONTACTS / OBO BETTERMANN
10	Multi-function Meter	ABB / SIEMENS / L&T / HPL SOCOMEC/CONZERVE (ENERCON)
11	Push Buttons	SIEMENS / ABB / TELEMECANIQUE / L&T / SCHNEIDER
12	Relays	L&T / ABB / SIEMENS / SCHNEIDER/AREVA
13	Timers	L&T / SIEMENS / TELEMECANIQUE/ABB / INDOASIAN
14	Indicating Light	L&T / SIEMENS / TELEMECANIQUE / ABB / GE
15	Indicating Instruments	AE / MECO / CONZERVE / L&T
16	CTs	L&T / AREVA / JYOTI / KAPPA / PRAGATHI
17	LT Panels	SIEMENS / L&T / SCHNEIDER / ABB / INDOASIAN/ APPROVED BY CPRI / ERDA LABORATORIES
18	Selector Switch	KAYCEE / L&T / SIEMENS / BCH / GE / SALZAR

S.No.	ITEM	Name of Manufacturers
19	Capacitor Banks	EPCOS / L&T / SCHNEIDER
20	Trivector Meter (Digital)	L&T / SCHNEIDER / SIEMENS / HPL SOCOMEK
21	Capacitor Panels	ABB / L&T / EPCOS / SCHNEIDER
22	Maintenance free batteries	EXIDE / AMARON / PANASONIC
23	ENGINE	CUMMINS / KIRLOSKER /CATERPILLAR/ASHOKLEYLAND
24	ALTERNATOR	STAMFORD / KIRLOSKAR

14.0 GENERAL TERMS AND CONDITIONS:

- i) The Contractor shall inspect the site before quoting the offer to acquaint themselves to know the constraints, works involved etc.
- ii) The technical specification – “Schedule-A” and Price Schedule – A1” to be read in conjunction to make sure of the supply and installation works and other works involved.
- iii) The Contractor is required to offer rates as per Authority’s format “Schedule-A1” without fail and mention taxes and duties.
- iv) The Contracting firm shall not do any damage to the existing service / live of cables/ pipe lines/ RCC slab and if any damages happened on the above the actual charges incurred for rectification to restore as normal shall be re-covered from the firm or it shall be rectified by their own cost.
- v) Necessary precautions shall be taken by the contractor or his labours while working near the Road, Railway Track, Power supply cables, etc.
- vi) Safety and safe custody of materials tools and plants that are required by the firm during works, testing, commissioning and till handing over to the Authority shall entirely be the responsibility of the Contractor.
- vii) The Authority shall not be responsible for any damage or loss of any of the firm’s men and materials and for any damage / accident to the firm’s personnel. Further, it is mandatory to inform concern authorities in case of Accident.
- viii) The loading, transporting and unloading of the D/G set and panels and other items shall be the responsibility of the contractor and own cost.
- ix) The contractor if required power supply for the work. Power supply will be provided on payment basis as per Ch. P. A. norms.

x) The clarifications, if any and site inspection the firm may contact Ex.E(PS) "S.E.(ES) / Dy. CME(ES) at II floor of Old Administrative Office, Chennai Port Authority, Telephone Nos.25312346/ 25312428 /25312542.

**Dy. CHIEF MECHANICAL ENGINEER(ES)
CHENNAI PORT AUTHORITY**

**BUDGETARY OFFER FOR PROVIDING UN – INTERRUPTED POWER SUPPLY TO
SIGNAL STATION AT CHENNAI PORT AUTHORITY**

SCHEDULE OF QUANTITIES AND PRICES

SCHEDULE- 'A1'

Sl. No.	Description of the work	Unit	Qty.	Rate per Unit	Amount in Rupees
1.	Supply and construction of RCC foundation for 100 KVA CPCB IV + emission compliant silent (Acoustic enclosure) DG Set as per manufacturer standard and other required materials and accessories as per Technical specification of schedule 'A'.	L.S	L.S		
2.	Supply of 100 KVA CPCB IV + emission compliant silent (Acoustic enclosure) DG Set including approval of CPCB as per Technical specification of schedule 'A'.	Set	01		
3.	Installation of 100 KVA CPCB IV + emission compliant silent (Acoustic enclosure) DG Set and other required materials and accessories as per Technical specification of schedule 'A'.	Set	01		
4	Providing extension of DG exhaust system as per Technical specification of schedule 'A'.	Mtr.	10		
5.	Supply of AMF panel consists of microprocessor based controller, contactors, 2 Nos. 400 Amps four pole, 50 KA, MCCB for TANGEDCO AND ALTERNATOR incomer supply, LED indication lights. combined with L.T. switch gears <u>Section – I. (NON ESSENTIAL)</u> Incomer 630A, 4P, MCCB, 50 KA : 3 Nos Outgoing 400A, 4P, MCCB, 50 KA : 2 Nos. 250A, 4P, MCCB, 50 KA : 2 Nos. 100A, 4P, MCCB, 50 KA : 2 Nos.	Set	01		

	<p>Three incomers shall be Mechanically Inter Locked. To switched ON one MCCB at a time.</p> <p>Section – II: (NON ESSENTIAL)</p> <p>Incomer 400A, 4P, MCCB, 50 KA : 1 No.</p> <p>Outgoing 250A, 4P, MCCB, 50 KA : 3 Nos. 100A, 4P, MCCB, 50 KA : 5 Nos. 63A, 4P, MCCB, 25 KA : 2 Nos. as per Technical specification of schedule 'A'.</p>				
6.	Installation of AMF panel combined with L.T. switch gears panel as per Technical specification schedule 'A'.	Set	01		
7.	Supply of 100 KVAR APFC unit as per Technical specification of schedule 'A'.	Set	01		
8.	Installation of 100 KVAR APFC unit as per Technical specification of schedule 'A'.	Set	01		
9.	Supply of Thyristor controlled Battery charger unit with.12V/24V 90 Ah or manufacturer recommended capacity (AH) of Maintenance free Battery as per Technical specification of schedule 'A'	Set	01		
10.	Supply of 3.5 core 185 sq.mm. LT Aluminum XLPE cable including as per Technical specification of schedule 'A'.	Mtrs.	630		
11.	<p>Laying of 3.5 core 185 sq.mm. LT Aluminum XLPE cable as per Technical specification of schedule 'A'</p> <p>a) Through cable Trench</p> <p>b) Through Earth with RCC Troughs</p> <p>c) Through Concrete with RCC Troughs</p> <p>d) Through Corrugated pipe with core drill</p> <p>e) Through Concrete road / Tar road cutting through G.I. pipes</p>	<p>Mtrs.</p> <p>Mtrs.</p> <p>Mtrs.</p> <p>Mtrs.</p> <p>Mtrs.</p>	<p>200</p> <p>250</p> <p>100</p> <p>50</p> <p>30</p>		
12.	Supply of Heat shrinkable Straight through joint kit for L.T. 1.1KV, 3 ½ X 185 Sq. mm XLPE Aluminum cable as per Technical specification of schedule 'A'.	No.	03		
13.	Installation of Heat shrinkable Straight through joint kit for L.T. 1.1KV, 3 ½ X 185 Sq. mm	No.	03		

	XLPE Aluminum cable as per Technical specification of schedule 'A'.				
14.	Supply of all materials for End terminations of L.T. 1.1KV, 3 ½ X185 Sq. mm XLPE Aluminum cable in both ends and connect in the Feeder Pillar / LT Panel including glands, Lugs and other accessories as per Technical specification of schedule 'A'.	No.	04		
15.	Installation of all materials for End terminations of L.T. 1.1KV, 3 ½ X185 Sq. mm XLPE Aluminum cable in both ends and connect in the Feeder Pillar/ LT Panel including glands, Lugs and other accessories as per Technical specification of schedule 'A'.	No.	04		
16.	Installation of Battery charger unit with 12V/24V 90 Ah or manufacturer recommended capacity (AH) of Maintenance free Battery as per Technical specification of schedule 'A'.	Set	01		
17.	Supply of Gland, Lugs and other required materials and accessories for end termination of various sizes of the cable i.e. 1) 400 sq.mm - 2 No., 2) 300 sq.mm -4 No., 3) 185 sq.mm - 2 No, 4) 70 sq.mm - 3 No, 5) 50 sq.mm - 3 No, 6) 25 sq.mm - 5 No, as per Technical specification of schedule 'A'.	No.	19		
18.	Making of one end termination of various sizes of the cables (item No. 17) as per Technical specification of schedule 'A'.	No.	19		
19	Supply of following electrical materials and accessories as per IER (i) First aid box (ii) Shock treatment chart and safety rules mounted on acrylic sheet with suspension clamp and front clear plastic sheet lamination	No. No.	01 01		

	(iii) Fire extinguisher- 1 No. and Fire bucket 4 Nos. filled with river sand with pedestal stand	Set.	01		
20	Supply of maintenance free earthing accordance with BIS 3043 / BS 7430 or latest as per Technical specification of schedule 'A'	No.	06		
21	Installation of maintenance free earthing accordance with BIS 3043 / BS 7430 as per Technical specification of schedule 'A'	No.	06		
22	Supply of 25mm x 6 mm G.I. flat for L.T. panels as per Technical specification of schedule 'A'	Mtr.	600		
23	Laying of above item 25mm x 6 mm G.I. flat as per Technical specification of schedule 'A'	Mtr.	600		
24	Disconnection, dismantling, shifting, loading, transporting and unloading the removed DG set, L.T. panels at RSA yard / Power supply section as per Technical specification of schedule 'A'.	L.S.	1		
25	Testing and commissioning of the system and submit the report	L.S.	1		
Total					

Note:- Required cable will be supplied by Ch.P.A.

Rupees only exclusive of GST)

Note: i) The rate quoted by the firm shall be inclusive of all Taxes and duties excluding GST.

ii) The firm shall furnish the Tax invoice for GST separately as per GST Act/ Rules.

Firm's Sign and Seal

SPECIAL CONDITIONS OF CONTRACT

SCHEDULE - 'B'

1. The Tenderer shall examine carefully the General Rules and Directions, General and Special Conditions of Contract, Technical Specifications and inspect the site to acquaint himself with the nature of work local working conditions etc., for the purpose of making his offer on his own responsibility.
2. It shall be open to the Chief Mechanical Engineer to nominate one or more of his representatives to supervise the work and to satisfy about the quality of materials and workmanship as required by the relevant regulation and as mentioned in technical specifications. The decision of the Chief Mechanical Engineer shall be final as regards the quality of materials and workmanship shall be binding on the contractor.
3. The prices shall be firm and not subject to fluctuation at any stage till the completion of the contract. The prices quoted must be filled in ink both in figures and words in the Schedule of prices attached with the Tender Document the prices quoted shall be inclusive off taxes, duties, freight, insurance, unloading etc. and any correction shall be supported by the Tenderer's signature there against.
4. The offers with specifications very near to those stated in the Technical Specifications may also be given consideration as alternate besides the main offer with full specification. The Tenderer shall give clear indication in his tender of the items he does not propose to include in the tender. Where such clear mention is not given it will be construed that the tender covers all parts required for completion of work.
5. The Tenderer shall quote separately for any items which have not been specifically mentioned in the specification but which are found necessary for completion, efficient installation works of Gen set and other than those items which are not covered under 'works not included'.
6. The tender shall be accompanied by sufficient details of materials included in the offer with catalogue and sketches wherever if necessary for comprehensive assessment of its merits and performance
7. It will be entirely the Tenderer's responsibility to take required steps to adequately safeguard the personnel carrying out the work and to ensure that the work is carried out in such a manner that maximum safety to the personnel is assured.
8. All materials and components included in the contract shall conform to the relevant Indian Standard Specification wherever they exist.
9. The decision of the Chief Mechanical Engineer or his representative regarding the quality of any materials used on the work will be final and binding on the Tenderer. The Tenderer shall remove from the site of work any material rejected as unfit for use on the work at his own cost as soon as he is ordered to do so, failing which the Chief Mechanical

Engineer or his representative shall remove such material from the site of work and shall deduct the cost incurred by such removal by the Board from any money due to the Tenderer.

10. The Tenderer shall co-ordinate his work with that of other Tenderers executing other works in the site and plan his work as to minimise inconvenience to others in the work site.
11. The watch and ward and storage of materials will be Tenderer's responsibility and the Board shall not be held responsible for any loss of the material.
12. The Tenderer shall be deemed to have satisfied himself before submitting the tender as to the correctness and sufficiency of his tender for the work and of his price stated in the schedule as to cover his entire obligation under the contract for completion of the work.
13. For Harbour entry pass and direction to site of work for inspection for the purpose of making the offer, the Tenderer shall contact the "Dy.CME (ES) / S.E.(ES) / Ex.E.(PS) 2ND floor of the Old Admn. Building, Chennai Port Authority. Telephone Nos. 25312542/ 25312428 / 25312346.

**Dy.CHIEF MECHANICAL ENGINEER(ES)
CHENNAI PORT AUTHORITY**

GENERAL CONDITIONS OF CONTRACT

SCHEDULE - 'C'

1. DEFINITIONS AND INTERPRETATIONS

In the contract (as hereinafter defined) the following words and expressions shall have the meanings hereby assigned to them except where the context otherwise requires:

- (a) "BOARD" means the Board of Authorities of the Port of Chennai as constituted under the Major Port Authority's Act, 1963 as amended from time to time.
- (b) "CHAIRMAN" means the Chairman of the Chennai Port Authority.
- (c) "CHIEF MECHANICAL ENGINEER" means the Chief Mechanical Engineer of the Chennai Port Authority.
- (d) "CHIEF MECHANICAL ENGINEER'S REPRESENTATIVE" means any Resident Engineer or Assistant of the Chief Mechanical Engineer or any clerk of works detailed from time to time by the Chief Mechanical Engineer to perform the duties as may be specified in the contract.
- (e) "CONSTRUCTIONAL WORKS" means all appliances or things or whatsoever nature required in or about the execution, completion or maintenance of the 'Works' or 'Temporary Works' (as hereinafter defined) but does not include materials or other things intended to form or forming part of the permanent work.
- (f) "CONTRACT" means the General Conditions, Specifications, Drawings, Priced Bill or Quantities. Schedule of Rates, Prices if any) tender and contract agreement.
- (g) "CONTRACTOR" means the person or persons, firm or company whose tender has been accepted by the Board and Tenderer's permitted assigns.
- (h) "CONTRACT PRICE" means the sum named in the tender subject to such conditions thereto or deductions there from as may be made under provisions hereinafter contained.
- (i) "DRAWINGS" means the drawings referred to in the contract agreement and any modifications of such drawings approved in writing by the Chief Mechanical Engineer and such other drawings as may from time to time be furnished or approved in writing by the Chief Mechanical Engineer.
- (j) "SITE" means the lands and other places on/under/in/of, through which the work ' are to be executed or carried out and any other lands or places provided by the Board for the purposes of the contract.
- (k) "TEMPORARY WORKS" means temporary works of every kind required in the execution, completion or maintenance of the works and which do not form an item of the 'work' or 'works'.
- (l) "WORKS" means the works to be executed in accordance with the contract under the relevant schedules.

- (m) "AUTHORITY'S STORES" means the storage yards for materials of the Authority anywhere in the Harbour premises.

2. **EXTENT OF CONTRACT**

The contract comprises, the construction, completion and maintenance of the 'works' and the provision of all labour, materials constructional Generator, temporary works and everything whether of a temporary or permanent nature required in and for such construction, completion and maintenance so far as the necessity for providing the same is specified in or reasonably to be inferred from the contract.

3. **COMPLETION PERIOD**

The entire work will be completed 180 days from the 7th day of issue of the order.

- a) In case of delay in the progress of work, the Chief Mechanical Engineer shall issue to the Tenderer a memo in writing pointing out the delay in the progress and calling upon the Tenderer to explain the causes for the delay within three days of the receipt of the memo. If the Chief Mechanical Engineer is not satisfied with the explanation offered, he may forfeit the security deposit and/or withhold payment of pending bills in whole or in part. The Tenderer may appeal to the Chairman against the order of the Chief Mechanical Engineer forfeiting the Security Deposit and withholding of bills within a week of the said order and the decision of the Chairman shall be final and binding on the Tenderer.
- b) If the security deposit or any part thereof is forfeited by an order of the Chief Mechanical Engineer and such order become final, the Tenderer shall make good the security deposit or part of such deposit so forfeited within a fortnight thereafter or such further time as the Chief Mechanical Engineer may grant failing which the Chief Mechanical Engineer may determine the Contract

4. **GUARANTEE PERIOD**

- (a) The supply / works shall be guaranteed for a period of 12 months (one year) from the date of acceptance of the work. Any defect observed during the guarantee period, the same shall be rectified by the firm free of cost.
- b) The contractor shall ensure no damage to the any Authority Properties during contract period. If any, the same shall be rectified and / or replaced at free of cost by the Tenderer.
- (b) If during this twelve months guarantee period any defects are noticed, which in the opinion of the Chief Mechanical Engineer are due to bad materials used and/or defective workmanship the Tenderer shall be required to carry out at the Tenderer's cost, such repairs, as the Chief Mechanical Engineer considers necessary or in the event of the Tenderer failing to do this within a notified time the Chief Mechanical Engineer may arrange for such repairs to be carried out and deduct the cost of such rectification of the defects from the amount retained,

without prejudice to the recovery of any amount that may have been spent in excess of the deposit. For purposes, the period of 12 months shall count from the date of handing over of the completed part or whole of works by the Tenderer to the Chief Mechanical Engineer.

5. CONTRACTOR'S SUPERINTENDENCE

- (a) The Chief Mechanical Engineer reserves to himself the right to cancel the contract for unsatisfactory progress in the work at any stage.
- (b) The Tenderer shall give or provide all necessary superintendence to the complete satisfaction of the Chief Mechanical Engineer during the execution of the works and as long thereafter as the Chief Mechanical Engineer may consider necessary. The Tenderer or a competent and authorised agent or representative approved in writing by the Chief Mechanical Engineer which approval may at any time be withdrawn is to be constantly on the work and shall give his whole time to the superintendence of the same. Such authorised agent or representative shall receive on behalf of the Tenderer directions and instructions from the Chief Mechanical Engineer or (subject to the limitations of Clause 9 hereof) the Chief Mechanical Engineer's representative.

6. PROGRAMME TO BE FURNISHED

As soon as practicable, after the acceptance of his tender, the Contractor shall, if required, submit to the Chief Mechanical Engineer for his approval a detailed programme showing the order of procedure and method in which he proposes to carry out the works and shall whenever required by the Chief Mechanical Engineer furnish for his information particulars in writing of the Contractor's arrangements for carrying out the works and of the constructional plant and temporary works which the Contractor intends to supply, use or construct, as the case may be submission to and

approval by the Chief Mechanical Engineer of such programme or furnishing of such particulars shall not relieve the Contractor of any of his duties or responsibilities under the contract.

- 7. If the progress of work is held up owing to circumstances which, in the opinion of the Chief Mechanical Engineer are beyond the control of the Tenderer, such as war, stormy weather etc., the Chief Mechanical Engineer may at his discretion, grant to the Tenderer such extension of time as he considers reasonable for the completion of the works. The grant of such extension of time shall not bestow on them for any claim or compensation/extra payment at a future date whatsoever.
- 8. The materials used on the work must be of first class variety corresponding to relevant ISS and other specifications laid in the contract. The work must be carried out in a workmanlike and expeditious manner and quality of work at each stage shall be subject to approval of the Chief Mechanical Engineer. The Chief

Mechanical Engineer's decision as to the quality of such materials and work shall be final and binding on the Tenderer.

9. The Tenderer shall maintain at the site or work an Inspection Register, which must be produced by the Tenderer or his agent whenever called upon to do so by the Chief Mechanical Engineer or his representative during their inspection of the work. If the rectifications ordered to be done are not carried out within the time specified by the Chief Mechanical Engineer, the Chief Mechanical Engineer shall have the right to get such work done by any other agency and to recover the cost thereof from the Tenderer. This inspection register shall be the duplicate copying type so that one copy of the entries get recorded in the Chief Mechanical Engineer's Office. The Tenderer shall not make any entry of any kind in this register.

10. **CHIEF MECHANICAL ENGINEER'S REPRESENTATIVE**

The duties of the Chief Mechanical Engineer's Representative are to watch and supervise the works and to test and examine any materials to be used or workmanship employed in connection with the works. He shall have no authority to relieve the Contractor of any of his duties or obligations under the contract or except as expressly provided hereunder to order any work involving delay or any extra payment by the Board or to make any variation or of in the works.

11. **WORK TO BE TO THE SATISFACTION OF THE CHIEF MECHANICAL ENGINEER:**

The Tenderer shall execute, complete and maintain the works strictly in accordance with the contract to the satisfaction of the Chief Mechanical Engineer and shall comply with and adhere strictly to the Chief Mechanical Engineer's instructions and directions on any matter (whether mentioned in the contract or not). The Tenderer shall take instructions and directions only from the Chief Mechanical Engineer or his representatives.

12. **LIQUIDATED DAMAGES/LATE DELIVERY CHARGES:**

The Liquidated Damages/Late Delivery Charges shall be deducted from any amount payable to or to be payable to the contractor/supplier including encashment of Bank Guarantee or any securities/guarantees, if any available with the Port.

The maximum amount of Liquidated Damages/Late Delivery Charges shall be worked out based on the total contract/supply order value inclusive of all taxes and duties. In case of part/portions of the contract work/supply order completed and taken possession by the Authority and the Authority operates/can be made for operation of the part portion/supply order, the calculation of Liquidated Damages will be restricted to the uncompleted/undelivered value of the work/supply order subject to the amount of the maximum percentage prescribed

for the Liquidated Damages/Late Delivery Charges of the total value of the contract/supply.

The Liquidated Damages/Late Delivery Charges shall be ½ % of the contract value per week or part thereof (a week is defined as 7 days inclusive of holidays) subject to a maximum of 5 % of the contract value.

If the contract/supply order is delayed after giving due notice, the contract/supply order may be cancelled by the competent authority with the condition that any additional expenditure incurred by the Port Authority in completing the work/supply order will be recovered from the contractor/supplier of the cancelled contract/supply order for non-performance/delay in the execution of the contract/supply.

13. SUPPLY OF MATERIALS AND LABOUR

Except where otherwise specified in the contract the Tenderer shall at his own expense supply and provide all the temporary works, materials both for temporary and for works under the contract, labour (including the supervision thereof) transport to or from the site and in and about the works and other things of every kind required for the construction, completion and maintenance of the works. The Tenderer shall

not hire out any item or equipment brought by him in connection with the execution of the work under the contract to any other party in connection with any work of the latter in the Port, without the written permission of the Chairman. Such permission may or may not be granted by the Chairman.

14. The Tenderer shall at his own cost make due arrangements for the proper watch and safety of all materials and supplied to him by the Board for the use on this work. He shall not remove such constructional or materials from the site without the permission of the Chief Mechanical Engineer. If any of these materials are lost or damaged in any way due to negligence or carelessness on the part of the Tenderers or any of his employees, the cost for the materials lost or damaged and penalty for such negligence or carelessness of the Tenderer as determined by the Chief Mechanical Engineer shall be recovered from the Tenderer from any moneys due to him or to become due to him.

15. ASSIGNMENT AND SUB-LETTING

The Tenderer shall not assign the contract or any part thereof or any benefit or interest therein or there under without the written consent of the Board. The Tenderer shall not sublet the whole of the works. The Tenderer shall not sublet any part of the works without the written consent of the Board and such consent if given shall not relieve the Tenderer of any liability or obligation under the contract and he shall be responsible for the acts, defaults and neglects of any Sub-Tenderer and his agents, servants or workmen as if they were the acts, defaults, or neglects of

the Tenderer, his agents, servants or workmen provided always that the provision of labour on a piece work basis shall not be deemed to be a subletting of assignment of benefit or interest under this clause.

16. The Tenderer shall be solely responsible for any accident, damage or injury caused to any of his employees or the Board's employees in the execution of the works and shall hold the Board blameless in respect thereof and also in respect of any claims made by any person in the employment of the Tenderer for any reason whatsoever.
17. (a) The Tenderer shall be responsible for all structural or decorative damage to Board's or his own property and injury caused by the works or workmen in his employment to persons, animals or things and shall indemnify the Board against any claims or actions arising there from. He shall also be responsible for any injuries or damage caused to the works by inclemency of weather outbreak of fire and shall rectify at his own cost all such damage and thoroughly complete the works.

(b) The Tenderer shall be solely responsible for reporting the Board and Police Department immediately any serious or fatal accidents at any place belonging to the Board including premises leased to the Board to any of his employees/workmen engaged by him.
18. The Tenderer shall not house any of his workmen at or near the site. He shall not construct any structure even of a temporary nature for any other purpose on Board's premises except with the written permission of the Chief Mechanical Engineer and any such construction so put up shall be removed by the Tenderer whenever the Chief Mechanical Engineer calls upon the Tenderer to remove.
19. The Tenderer shall not operate the workshop at the site for the purpose of this contract beyond what is absolutely necessary for the execution of this contract, the necessity for and extent of which the Chief Mechanical Engineer's decision shall be final. Such necessary structures shall be non-inflammable materials as approved by the Chief Mechanical Engineer. Only vehicles licensed by the Board will be allowed inside the Harbour premises.
20. Measurements taken by the person authorised by the Chief Mechanical Engineer to take them will be binding on the Tenderer who will always be given the opportunity of witnessing the measurements. The contractor should submit a bill in the Authority's prescribed billing format.

21. PAYMENT TERMS:

- (a) 70% payment will be made for the **Supply Items** after the receipt of entire supply materials in good condition at site against Supply items of BOQ and acceptance of the same.

- (b) Balance 30 % payment for the **Supply Items** and 100% payment for all other items will be paid after installation and taking over of entire systems.

Applicable statutory recoveries including TDS under Income Tax, TDS under GST provisions etc., will be deducted/recovered while accounting for or making payment to the Contractor/Supplier as per the applicable law under U/S 194 (c) of Income Tax Act 1961. In case of exemption from the above levy necessary non-deduction certificate shall be produced by the offerer from Income tax office. The tenderer shall quote the Bank Account details for the payment through ECS along with PAN. A copies of the Pan Card, ESI regn No. and Service Tax Regn No. shall be furnished.

Deposited 10 % of total contract value by the contractor as security deposit under the agreement will be refunded to the contractor after satisfactory completion of the guarantee period or extended guarantee period.

22. TAXES

- (i) The Tenderer should possess GST Certificate issued by GST department and the status of the GST Registration should be in Active Status.
- (ii) In such cases where GSTIN status is inactive / cancelled / Dormant, the tenderer should get certified by their Chartered Accountant / Cost Accountant with UDIN that the GSTIN is Active and Proof of latest GSTR -3B is to be submitted along with Tender Document.
- (iii) Tenderers will examine the various provisions of the Central Goods & Services Tax Act-2017 (CGST)/ Integrated Goods & Services Tax (IGST)/ Union Territory Goods & Services Tax (UGST) respective State's State Goods & Services Tax Act (SGST) also, as notified by Central/State Government and as amended from time to time and applicable taxes before bidding.
- (iv) The rate quoted by the Contractor/Supplier shall be inclusive of all Taxes and Duties other than GST. Applicable GST will be paid by ChPA based on the Tax Invoice.
- (v) The firm shall furnish the Tax invoices as per GST Act/Rules in the name of the Chennai Port Authority as per the GST Invoicing rules / provisions by mentioning the GSTIN of ChPA and indicating amounts of GST Separately. The GSTIN of ChPA is **33AAALC0025B1Z9**.
- (vi) The contractor /Firm shall remit the GST amount indicated in the invoice to the Government within the due dates and also file the returns by mentioning the GSTIN of ChPA to enable ChPA to avail eligible Input Tax Credit (ITC).
- (vii) The contractor/ firm shall indemnify Chennai Port Authority from any loss of eligible ITC of GST paid by it to the Contractors/Suppliers based on their tax invoice, due to non-payment of GST or non-filing of GST returns by the contractor/firm or noncompliance of GST Act/provisions. The

contractor/firm shall remit such GST amount with applicable interest and penalties to the ChPA within 7 days from the date of intimation by the ChPA about non-availing of eligible ITC. ChPA also reserves its right to retain such GST amount with interest and penalties from the subsequent bills, Security Deposit or any amount due to the contractor by ChPA”.

- (viii) Applicable statutory recoveries including TDS & TCS under Income Tax 1961 and GST-TDS under GST provisions etc., will be deducted/recovered while accounting for or making payment to the Contractor/Supplier as per the applicable law and as amended from time to time .
- (ix) Bill amount along with GST shall be released for payment only if GST amount is reflected in the GST portal or if the tenderer / supplier submit Tax Invoice and copy of the GSTR – 1 filed showing the Invoice details.
- (x) If the Tenderer / supplier submits Tax Invoice and undertaking along with Tax Invoice duly indemnifying Chennai Port Authority from any loss of eligible Input Tax Credit of GST due to non payment of GST or non filing of GST Returns or non compliance of GST Act / Provision. Bill amount along with GST shall be paid.
However,
 - a) If such Tenderer / Supplier does not comply with GST Act, ie Filing of Returns / Remittance of GST within stipulated date, the Port shall not release the subsequent Running Account bills:
 - b) In First & Final Bill passed cases, the Port will adjust the defaulted GST from security deposit / any amount payable to them.
- (xi) In case of exemption / short recovery of TDS / TCS u/s 197of Income tax Act 1961, necessary non – deduction / short Deduction certificate under ChPA PAN AAALC0025B shall be produced by the tenderer from Income tax Department before release of payment for the respective Financial year.
- (xii) For the purpose of any Evaluation, GST / Service Tax / Vat components of the work orders should not be considered.
- (xiii) The Tenderers should submit their Income Tax returns along with Trading and / or Profit and Loss Account and Balance Sheet certified by Chartered Accountant bearing the membership no of the Chartered Accountant where the Tax Audit is applicable.
- (xiv) In such cases where the Tax Audit is not applicable to the Tenderes, the Tenderer may submit self-certified Trading and /or Profit and Loss Account and Balance sheet along with the Income Tax Return copies filed with the Income Tax department (ITR-3 /ITR -4 /ITR-5) and turnover Certificate for the last 3 financial years duly certified by Chartered Accountant with UDIN and Membership No.

23. TDS under GST

- (i) Section 51 of CGST Act and 1st proviso to section 20 of IGST Act make it obligatory for CHPA to deduct TDS @ 2% on the “amounts paid to vendor” or amounts credited to the account of the Vendor/Contractor.
- (ii) If the purchase is made from a vendor located in Tamilnadu, then the TDS of 2% will be @ 1% under SGST and another 1% will be under CGST. If the purchase is made from a vendor located in a State/UT other than Tamilnadu, then the TDS of 2% will be under IGST.
- (iii) This GST TDS is mandatory in the payments/purchase are made for the contract value more than Rs.2,50,000/-. It does not depend on the individual invoice values, but it depends on the “Value of Contract”.

24. FINANCIAL EVALUATION:

The completed works are evaluated based on total value of work order excluding Taxes (Service tax / GST).

- 25. In the event of the death, insanity or insolvency of the Tenderer or in the case of the Tenderer being a partnership on a dissolution of the firm of Tenderer or in the case of the Tenderer being a company governed by Companies' Act 1956, the winding up of the company the contract shall be terminated on the happening of the event above said and all accepted and acceptable work shall be measured up and paid for, to the person or persons legally entitled to receive payment for work done and on his or their executing a bond indemnifying the Board against all claims that may be made in respect of payments made by the Board by persons claiming from the Tenderer or others, in respect of work done by the Tenderer prior to the termination of the contract.
- 26. In the event of the contract being terminated at any stage due to unsatisfactory progress of work as per Tender Specification, the Chief Mechanical Engineer shall have the right to execute the portions of works left incomplete using the Board's labour or any other agency and the Tenderer shall be liable to make good any loss incurred by the Board on this account. Such amounts shall be recovered from any moneys due to or to become due to the Tenderer.
- 27. (i) If the Tenderer claims that the decisions or the instructions of the Chief Mechanical Engineer are unjustified and that accordingly he is entitled to extra payments on account thereof, he shall forthwith notify this to the Chief Mechanical Engineer to record his decisions and the reasons therefore in writing and shall within two weeks state his claims in writing to the Chief Mechanical Engineer thereafter. The Chief Mechanical Engineer shall thereafter within four weeks of the receipt of the claim reply negotiations or discussions immediately thereafter within a further four weeks, the question of liability for such payments will be treated as one of disputes.

li) In the Contract whenever there is a discretion or exercise or will by the Chief Mechanical Engineer during the progress of work, the mode or manner of the exercise or discretion shall not be a matter of legal adjudication.

lii) Wherever the Board is given discretion to do any act under the contract, the exercise of the discretion by the Board shall be final, conclusive and binding on all parties and the manner of exercise of such discretion shall not be called in question and the matter cannot be referred to court of law.

iv) The decision of the Chief Mechanical Engineer shall be final, conclusive and binding on all parties to the contract upon all questions relating to the meaning of the specifications, designs, drawings and instructions and as to the quality of workmanship or material used on the work or any matter arising out of or relating to the specifications, designs and drawings and instructions concerning the works or the execution of or failure to execute the same arising during the course of works. The above shall not be the subject of Legal adjudication and in no case shall the work be stopped consequent on such a dispute arising and the work shall also be carried out by the Tenderer strictly in accordance with the instructions of the Chief Mechanical Engineer.

v) Any litigation arising out of this agreement, shall only be adjudicated before the competent court of law within the jurisdiction of the Hon'ble High Court of Madras.

28. REMOVAL OF WORKMEN

The Tenderer shall employ in and about the execution of the works only such persons as are careful, skilled and experience, in their several trades and callings to the approval of the Chief Mechanical Engineer. The Chief Mechanical Engineer shall be at liberty to object to and require the Tenderer to remove from the works any persons employed by the Tenderer in or about the execution of the works who in the

opinion of the Chief Mechanical Engineer, misconducts himself or incompetent or negligent in the proper performance of his duties and such persons shall not be again employed upon the works without the written permission of the Chief Mechanical Engineer.

- 29.** (i) The Tenderer shall confirm to and comply with the regulations and byelaws of the State or Central Government or of the Board and of all other local authorities such as Corporation of Madras, the Tamil Nadu Electricity System, the Chief Electrical Inspector to the Government of Tamil Nadu, the Government Customs and Police Departments, Fire Services, the provisions contained in the various Labour Acts enacted by the State Legislature and Central Parliament in force and the rules made thereunder including those under Minimum Wages Act, Factories Act, the Indian Electricity Act and rules framed under it, Workmen Compensation Act, Provident Fund Regulations Act, Employees Provident Fund Act, 1961 and scheme made under the said Act, Health and Sanitary arrangements for workers etc. and Contract Labour (Regulation and Abolition) Act, 1970 and the Contract (Regulation and Abolition) Central Rules, 1971 etc. for welfare and protection of works, workers or for the safety of the public and other insurance provisions.

(ii) The Board shall not be liable for the failure of the contractor in confirming to the provision of the Acts, Rules and regulations etc., referred to in the above para and in case of any contravention of the provisions of the Acts, Rules regulations etc. the contractor shall keep the Board indemnified against any loss, cost and damage in the event of any action being taken for contravention.

(iii) If any enhancement in the rates of wages becomes payable as a result of the implementation of the Chief Labour Commissioner's interpretation of the Contract Labour (Regulation and Abolition) Central Rules, 1971 up to and including an increase of 10% of the wages shall be borne by the Tenderer and enhancement in excess of 10% would be borne by the Port Authority.

30. SAFETY CLAUSE:

I) FIRST AID FACILITIES:

The contractor shall provide and maintain upon the work sufficient proper and efficient life saving appliances and first aid equipment to the approval of the Employer's Engineer and in accordance with the requirements of International Labour Organisation (I.L.O). Convention No.62. The appliances and equipment shall be available for use at all times. For work carried out within the dock area or in the vicinity of any wharf or quay, the contractor shall abide by all the provisions of Dock workers (Safety, Health and Welfare) Scheme, 1961. The contractor's particular attention is drawn to Clause 43 of the above said Regulation in respect of erection and maintenance of staging. Contractor shall indemnify the Port from the cases booked by the Labour Enforcement Officer (L.E.O) for his negligence.

II) SAFETY AND SECURITY MEASURES:

- a) The method of work for successful completion of work shall be at the sole discretion of the contractor. The contractor shall take all preventive and precautionary measures to ensure complete safety of all site personnel, inhabitants of the buildings including any third party, together with all buildings on or around the site. Temporary and permanent including adjacent building and buildings completed or partly completed by any third party, till satisfactory completion of work in respect to each existing building.
- b) The contractor shall comply with all applicable laws, Regulations and Standards. The contractor shall be responsible for the coordination of all safety matters and shall promptly comply with any specific safety instructions given by the Employer's Engineer or by the respective authorities.
- c) When any work is performed at night or where day light is shut off or obscured, the contractor shall, at his cost provide appropriate lighting facilities to continue execution and permit inspection. During such periods the access to the place of work shall also be clearly illuminated. All wiring for electric lights and power shall be installed and maintained, securely fastened in a place at the points and shall be kept away as far as possible from telephone and signal wires. All wiring shall be subject to approval by the Employer's Engineer.
- d) The contractor shall adequately safeguard the site, products, materials, plant and the works from the damage and theft.

The contractor shall provide his and his subcontractor's staff and work people with permits required for admittance to restricted areas.

Any security procedures as demanded by local authorities / Port Authority such as passes, badges interruptions to work etc., shall be strictly adhered to. The cost for security measures under this Clause shall be borne by the contractor.

III) SAFETY PRECAUTIONS:

- a) Proper Personnel Protective Equipments such as Fire resistance Aprons, Welding Shields, safety Goggles, Helmets and safety shoes, Hand Gloves shall be worn by all staffs at site.
- b) All practicable safety measures have to be taken to prevent accident of fire.
- c) Contractor shall comply with provisions of Dock Workers (Safety, Health and Welfare) Act and Rules & Regulation made there under, as applicable, as amended from time to time.

IV) Dock workers (Safety, Health & Welfare) Act - 1986

Regulation 67: Handling objects having sharp and protection parts.

Docks Workers handling with sharp edges fins, slivers splinters or similar dangerous projecting parts shall be provided with suitable protective equipment.

Regulation 73: Protective Equipment:

1. Where other means of protection against harmful agents are impracticable or insufficient, dock workers shall be provided with adequate protective clothing and personal protective equipment to shield them from the effects of such agents.
2. Protective clothing personal protective equipment shall be of suitable quality and maintained in good condition and shall be cleaned and disinfected at suitable intervals.
3. Where protective equipment and clothing may be contaminated by poisonous or other dangerous goods, it shall be stored in separate accommodation where it will not contaminate the dock workers clothing and other belongings.
4. Suitable protection equipment shall be issued to the dock workers employed in the reefer holds or chambers or reefer containers for affording complete body protection.

V) ACT -11

1. No young person shall work at any machine to which this regulation applies, unless in the opinion of the Director, such person has been fully instructed as to the dangers arising in connection with the machine and the precautions to be observed, and –
 - i) has received a sufficient training in work at the machine;
 - or
 - ii) is under adequate supervision by a person who has a thorough knowledge and experience of the machine.
2. This regulation applies to such machines as are specified in the schedule to these regulations, being machines which in the opinion of the Director are of such a dangerous character that young person sought not to work at them unless the foregoing requirements.

31. ESI CLAUSE

The details of employees proposed to be engaged shall be furnished to this office before the commencement of the work.

(a) As per the Govt. Notification dated 20.07.2009, Chennai Port Authority has registered under the ESI Act on 26.09.2012 with ESI Corporation and provision of ESI Act, 1948 are applicable to Chennai Port Authority, a Social Security Act, is applicable to Factories using power and employing 10 or more personnel and establishment employing 20 or more persons and drawing wages/salary up to Rs. 21,000/- per month. Workers covered under ESI Act, are entitled for full medical care for self and family. Besides, cash benefit in the event of sickness, maternity and employment injury. Accordingly, the contractual/casual employees drawing wages up to Rs. 21,000/- per month employed either directly by Port Authority or through contractor are covered under ESI Act, 1948. It is obligatory on the part of the employer to calculate and remit ESI contribution comprising of employers' share of 3.25% plus employees' share of 0.75% which is payable on or before 21st of the following month, to which the salary relates

(b) In case of Contractor employs more than 20 employees, they should register their name with ESI as per ESI Act, 1948 and obtain ESI Code. Both Employers share of 3.25% and Employees contribution of 0.75% (recovered from employees), totally 4 % to be paid as contribution to ESI in their Code on or before 21st of following month to which the salary relates and acknowledgement for the same shall be submitted to the

Port while claiming the bill. The bill without the acknowledgment of ESI contribution will not be entertained. In case the contractor has not paid the ESI contribution same will be recovered in the running bill and paid to the ESI Corporation in contractor's code. The delay in payment of contribution payable under the Act may be recovered as an arrear of Land Revenue.

(c) In case the contractor employs less than 20 employees, the list of employees' names, their father's name, identification proof, one passport photo shall be submitted to the Port Authority. The contribution of ESI amount, both Employers share of 3.25% and Employees contribution of 0.75% (recovered from Employees salary), totally 4 % shall be paid by the Contractor in the Chennai Port Authority Code on or before 21st of the following month to which the salary relates or otherwise payment to the contractor will be withheld. If the contractor fails to comply with the

above instruction, then the Principal Employer (Chennai Port Authority) will make payment to the ESI Corporation. Such amount will be deducted from any amount due to the contractor. The delay in payment of contribution payable under the Act may be recovered as an arrear of Land Revenue.

d) As per the above government Notification

- i) All intending tenderer at the time of Tender shall disclose all necessary documents as to whether they are covered under ESI Act or not.
- ii) In case they are covered under ESI Act, they have to furnish the details of registration.
- iii) In case the tenderer does not possess ESI Registration at the time of participation in the Tender, then they should obtain registration under ESI Regulations before award of the work by Chennai Port Authority and submit the same within 30 days from the date of issue of work order. Any payment towards the work order will be made only after the ESI registration.
- iv) The Tenderer shall submit his first bill together with evidence of having obtained registration under ESI regulations and only then the bill will be processed for payment. Subsequently, the Tenderer should periodically submit to Chennai Port the Form 6 prescribed under ESI Regulations along with the proof for having remitted his dues under ESI Regulations in respect of the workers / labours employed for the work awarded by Chennai Port to facilitate making payment for the bills of the Contractor.
- v) In case, the Tenderer is not covered under ESI Act or exempted, they would furnish necessary documents along with an affidavit in original affirming before a first class Judicial Magistrate in a Non Judicial Stamp Paper worth Rs.20.00 to that effect.
- vi) In case they are not covered under ESI Act, they must additionally indemnify ChPA against all damages & accident occurring to his labour in a Non – Judicial Stamp paper worth Rs.100/-

32. EMPLOYEES P.F. & MISCELLANEOUS PROVISION ACT 1952:

The Act provides for monthly contributions by the employer plus workers @ 12% of Basic DA. The benefits payable under the Act are:

- (i) Pension or family pension of retirement or death, as the case may be.
- (ii) Deposit linked insurance on the death in harness of the worker.
- (iii) Payment of P.F. accumulation on retirement/death etc.

33. Insurance

The Tenderer advised to take necessary insurance at his cost for his employees, materials and machineries etc.

34. Foreclosure of Contract:

- I. Notwithstanding anything in the contract agreement the contractor agrees that the Authority (on its own or acting on behalf of the Government of India) or the Government of India shall be entitles to foreclose the contract on occurrence of the following events:

- i. In the event of breach of contract by the Contractor
 - ii. An emergency or
 - iii. for national security and /or national interest and /or public reasons.
- II. Upon the occurrence of the events specified in the above I (i),(ii) and (iii) above the Authority or Government of India reserve the right to fore close the contract at any point of time during the contract period on the issue of the termination notice under provision of the termination clause , the Authority shall not be liable to compensate the contractor or any other person for any losses or estimated loss of profits during such period.
35. The Chief Mechanical Engineer reserves to himself the right to alter the specification or design of the works at any stage of the work and also to make additions or omissions or alterations.

36. Further Instructions

The Chief Mechanical Engineer shall have full power and authority to supply to the Contractor from time to time during the progress of the works such instructions as necessary for the purpose of the proper and adequate execution and maintenance of the works and the Contractor shall carry out and be bound by the same.

37. Any notice to the Tenderer shall be deemed to be sufficiently served if given or left in writing at his usual or last known place of abode or business or at site.
38. All payments made by the Board to the Tenderer under this contract shall be rounded off to the nearest paisa.
- (i) The contract is liable for cancellation if either the Tenderer himself or any of his employee is found to be a person who has held a Class I post under the Board immediately before retirement and has, within two years of such retirements, accepted without obtaining the previous permission of the Board of the Chairman as the case may be an employment as Tenderer for, or in connection with the execution of public works, as an employee of such Tenderer.
- (ii) If any contract is terminated on account of the failure of the Tenderer to comply with the above clause the Board shall be entitled to recover from him such damages as may be determined by the Chief Mechanical Engineer with due regard to the inconvenience caused to the Authority on account of such termination without prejudice to the Authority's right to proceed against such officer.
39. It must be clearly understood that the rates mentioned in Schedule `A1' are inclusive of everything required to be done by the conditions of the contract and specifications or by the drawings therein referred to and also all such work as is necessary for the proper completion of the Tenderer although special mention thereof may have been omitted in the specification or drawings.
40. In these conditions unless there is something in this subject or context inconsistent therewith words importing the singular shall include the plural and vice versa words importing the masculine gender shall include feminine and words importing persons shall include bodies corporate.

41. The technical specification – “Schedule-A” and Price Schedule – A1” to be read in conjunction to make sure of the supply and works involved.
42. The contractor is required to offer rates as per Authority’s format “Schedule- A1” without fail and mention taxes and duties.
43. Necessary paid entry passes to be obtained by the contractor at their own cost.
44. The contractor is advised to visit the site if required.
45. The Authority will not be responsible for any loss or damage of Men/materials/plants engaged during the work.
46. The Contractor shall arrange their own tools and plants and other materials and components required for the above work.
47. All transport required for the work shall be arranged by the contractor at their own cost.

48. TERMINATION:

- a) The employer, without prejudice to any other remedy for breach of contract, by written notice of default sent to the contractor, may terminate the contract.
 - i) If the contractor fails to deliver any or all of the Goods with in the period specified in the contract, or with in any extension thereof granted by the Employer.
 - ii) If the contractor fails to perform any other obligation under the contract (or)
 - iii) If the contractor, in the judgement of the Employer has engaged in fraud and corruption.
- b) In the event the Employer terminates the Contract in whole or in part, the Employer may procure, upon such terms and in such manner as it deems appropriate, goods or related services similar to those undelivered or not performed, and the contractor shall be liable to the Employer for any additional cost for such similar goods or related services. However, the contractor shall continue performance of the contract to the extent not terminate. In such terminations Security deposit will be forfeited.

49. VARIATION:

- (i) Variation means variation in quantities of items i.e. Where there is increase of quantities of items of work in the agreement. On other words, the nomenclature of work remains the same, but the quantity of variation is maximum / minimum 30% against the Tender cost shown in the agreement. The said variation shall be executed after approval of the competent authority.
- (ii) The quantity of items in Schedule’A1’ are only Tentative.
- (iii) Payment shall be made to the Tenderer as per the actual work carried out at site.

**Dy. CHIEF MECHANICAL ENGINEER(ES)
CHENNAI PORT AUTHORITY**