

EOI NO. :RPI/2276
EXPRESSION OF INTEREST (EOI)

For

**Hiring of Man-Management Services for Operation & Maintenance of
Natural Gas Production Installations in western Rajasthan, India**

1.0 Expression of Interest :

Expression of Interest is requested by Rajasthan Project of OIL INDIA LIMITED (OIL) from reputed domestic indigenous firms for providing Man-Management Services for Operation & Maintenance of its Natural gas Production Installations in western Rajasthan, which broadly includes the following:

- (i) Operation and Maintenance of Gas Fields (viz; Tanot, Bagitibba and Dandewala covering approx. 400 Sq. Km of area and 25 Nos. of producing wells in the district of Jaisalmer in Rajasthan).
- (ii) Operation and Maintenance of Gas Production, Gathering and Processing Stations at Tanot and Dandewala including Glycol De-hydration Unit of 1 MMSCMD capacity.
- (iii) Operation and Maintenance of permanent Base Camp (TVC) at Tanot includes Catering Service, Preliminary Medical service, water supply system, Sanitary and Hygeine, House Keeping, O&M of Airconditioning Plant and Captive Power House etc.

2.0 The interested parties shall have to submit their EOI in duplicate in a sealed envelope clearly indicating the EOI number (RPI/2276) on the cover, latest by 15:15 hrs (IST) on or before 15.03.2011 at the following address:

CHIEF MANAGER (M & C)
OIL INDIA LIMITED
RAJASTHAN PROJECT
12-OLD RESIDENCY ROAD
JODHPUR – 342 011
RAJASTHAN

3.0 Based on the documents received, the qualifying parties will be invited for a pre-tender conference. The exact date and venue of the pre-tender conference will be intimated to all qualified parties nearer the time. Based on the out-come of the Pre-tender conference, the final tender document shall be prepared and published by OIL and the partiers will be intimated accordingly. The proposed “Scope of Work” and “BEC/BRC” as tentatively formulated by OIL for the Tender are enclosed for reference.

TERMS OF REFERENCE / SCOPE OF WORK / TECHNICAL SPECIFICATIONS

1.0 Description of Project :

OIL INDIA LIMITED discovered commercially viable gas fields at Tanot, Dandewala and Bagitibba in Jaisalmer district of Rajasthan. These fields are located at a distance of approx. 120 kms. North-West of Jaisalmer township. To operate the fields, OIL has two production installations viz., Gas Processing centre (GPC) at Dandewala and a Gas Gathering Station (GGS) at Tanot besides a permanent base camp (Tanot Village Complex, TVC) near Tanot BSF camp. Dandewala field and GPC is at a distance of about 35 kms. and Tanot GGS is situated at a distance of 22 kms from Tanot Village Complex. These are connected with well-built oil field road.

The climatic conditions of these areas are dry and hard. It is characterised by extreme temperature and scarce rainfall. The hot weather is very prolonged and starts from the month of April to end of August. The maximum and minimum recorded ambient temperature at the site is 60 degree and minus 5 degree celcius respectively.

The rainfall in these areas is scanty and scarce. The average normal rainfall is only 1" (25 mm). The maximum humidity recorded in this region is 40%.

The gas produced from these fields is essentially used for power generation by Rajasthan State Electricity Board (RSEB).

The project site is about 120 kms from Jaisalmer town and about 60 kms from Ramgarh Power Plant.

The various units/assets which are in operation under this project are as follows :

- i) Tanot Village Complex (TVC)**
- ii) Gas Gathering Station at Tanot (TOT-GGS)**
- iii) Gas Processing Center at Dandawala (DND-GPC)**
- iv) Gas Flowlines in the TOT, DND & BGT Fields.**
- v) 37 Nos. of wells (Producing, Shut in & Abandoned)**
- vi) Man-Management for Fire Service to all above**

(i) Tanot Village Complex : This facility has been established at Tanot (about 500 M from Tanot Mata Mandir on Tanot-Kishangarh Road.) as residential complex for operating personnel and for the officials visiting the site solely for the purpose of OIL's job/business. The establishment has a total of 44 rooms, of which 27 are bed rooms, One kitchen, Two dining hall one each for Executives and Non-executive personnel, Recreation rooms , Office Block , Power house, Water treatment plant, airconditioning plant etc. Entire residential complex including office block is centrally air conditioned.

House keeping, operation and maintenance of the complex including transportation of water from Ranao deep tube well (20 KM from TVC) / Ramgarh (60KM from TVC) and treatment of water at the R.O. plant inside TVC complex shall be Service Provider's responsibility.

Operation and maintenance of the Central air conditioning plant (capacity 75TR) including A/C ducts, windows etc. at the main building of the complex shall be Service provider's responsibility.

Power supply to the complex is from the state grid. However, standby diesel generators are already in place to supply backup power incase of failure of power supply from the grid. O & M of the generators and power supply system shall be with the Service Provider.

Custody, Safety and upkeepment of the entire complex including nourishment/watering of planted trees, Lawns etc., shall be Service Provider's responsibility.

All consumables towards this shall be arranged by the Service Provider at their cost.

Accommodation : Details of accommodation/facilities available and Occupancy pattern at TVC shall be as under :

- (I) Out of Seven rooms in the Executive Block of the TVC Complex, maximum two rooms, as allotted by Head-Production of OIL, shall be available for use by Service Provider's executive/ Managerial staff at any given point of time during the contractual period. Remaining rooms shall be exclusively for use by executive officials of OIL or any other visiting dignitaries of OIL. However, custody and maintenance, house keeping, laundry services for all the rooms shall be with the Service Provider. Hard and soft furnishing for these rooms shall be provided by OIL.
- (II) **In the office block, only One room (Room No:12)** will be available for the Service Provider to establish their field office. All necessary furniture and fixtures including stationary and consumables shall be arranged by the Service Provider.
- (III) **Dinning Hall (Room No: 8) & Recreation Hall (Room No: 9)** shall be exclusively for the use of OIL's regular executives, dignitaries visiting site from time to time. Facilities of these rooms will also be extended to the Service Provider's Directors and Managers who are serving with the Service Provider in regular executive cadre.
- (IV) **Room No: 27** shall be available for Service Provider to establish on-site first-aid dispensary cum Medical store cum residence for Doctor.
- (V) **Room No: 23, 24, 25 and 26**, shall be used by the Service Provider to accommodate their Managers & field Executives on duty.
- (VI) **Room No: 20 (Dining Hall)** shall be available for common use by the supervisory and non-executive staff of OIL as well as the Service Provider.
- (VII) **Room No: 28, 29, 30, 31, 32, 33, 34 & 35**, total 08 rooms in the complex shall be exclusively available to the Service Provider to accommodate their staff/workforce.
- (VIII) **Room No: 36** shall be used as recreation Room by OIL Employees on field duty.
- (IX) **Room No: 21** shall be used as recreation Room by the Service Provider's Employees on field duty.
- (X) **Room No: 37, 38, 39, 40, 41, 42, 43 & 44** shall be for use by supervisory and non-executive staff of OIL who are on duty at the fields or any other persons who require the same for a temporary period in connection with OIL's business and at the discretion of Company.

For any deviation to above arrangement, prior approval from Competent authority viz., Head-Production or Executive Director (RP) of OIL shall be required.

O & M of the air conditioning plant, water treatment plant and diesel generator (Power House) shall be Service Provider's responsibility. All consumables for operation and maintenance shall be arranged by the Service Provider at their cost. However, for routine maintenance & periodical overhauling of the plants, all consumables and spares shall be purchased by OIL and labour, transportation, handling costs shall be borne by the Service Provider.

Power supply, air-conditioning, water supply to the entire TVC complex, including the rooms which will be used by the Service Provider or their employees for office, residential or recreational or other purposes, shall be maintained by the Service Provider.

Kitchen House inside the TVC complex shall be operated and maintained by the Service Provider. Service Provider shall engage sufficient supervisory, kitchen and servicing hands to cater the need of OIL and Service Provider's personnel on duty/ staying/visiting TVC. All the crockeries, cutleries, utensils, cooking gas and other consumables for the purposes shall be arranged by the Service Provider at their cost. Requirement of these items to be supplied by the Service Provider is given under section –IV, Appendix-I of this document.

Repairing / replacement of fixtures and fittings pertaining to hard furnishings, window & door panes, plumbing, electrical fittings and accessories etc. shall be Service Provider's responsibility and at their cost. However, soft furnishing to all the rooms at executive wing & the rooms meant for OIL employees at the other blocks shall be done and replenished by OIL as & when required.

Hard & Soft furnishing of the Rooms at TVC: Hard and Soft furnishing of the room occupied by OIL personnel shall be provided by OIL. Rooms allotted to Service Provider for their use shall be furnished by the Service Provider as per their requirement, which shall be vacated and handed over to OIL at the end of contractual period in, as is where is condition.

Rooms allotted to Service Provider as detailed above for their use as office, Store, Kitchen, Living purposes etc., shall be free of cost basis. Cost of Electricity to these rooms shall be on OIL's account. Electrical fixtures and fittings including Light, Fan, A/C etc shall be provided by OIL. The rooms mentioned above for allotment to the Service Provider include attached & associated bathrooms and toilets.

2.0 DEFINITION OF WORK :

| SL No | Asset | Job description | Remarks |
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| 01 | DND, TOT& BGT Gas Fields consisting of gas wells with well head equipments and fittings, Flow lines, ROWs, Well head fence etc. | <ul style="list-style-type: none"> • Day to day monitoring of Gas wells, collection of well parameters, servicing of well head equipments & fittings, operating the wells as per operation & market demand. This includes all the wells in these three fields. • To carryout OFPT and other tests for the wells. • To associate with well commissioning & workover operation of the wells as and when required. • Any other jobs pertaining to O & M of the wells. | <p>(a) These jobs shall generally be carried out by OIL directly through it's own infrastructure and manpower during office hours (9-00hrs to17-00hrs). Service Provider to engage their manpower and facilities for any exigencies arises beyond office hours (17-00hrs to 0900hrs). Service Provider to quote accordingly.</p> <p>(b) Service Provider to quote for carrying out the job during office hours which shall be optional to OIL to avail the service with prior notice of 30 days.</p> <p>(c) Tools and equipments required for the job shall be provided by Company free of cost.</p> |
| 02 | <p>A. DND-GPC: This asset have the following equipment / facilities :</p> <ul style="list-style-type: none"> (i) Gas gathering manifold (ii) Multistage separation unit. (iii) Gas dehydration Plant. (iv) Gas metering station. (v) Glycol regeneration unit. (vi) Condensate recovery unit. (vii) Formation water separation and disposal system. (viii) Gas Flaring system. (ix) Condensate storage & disposal system. | <ul style="list-style-type: none"> • To operate & maintain the stations with a multidisciplinary team of skilled workforce. The job shall be carried out round the clock for 365 days a year. Minimum skilled required to carryout day to day job is given under section-V of this document. • Job involves Natural gas production, testing of wells, separation of Gas-Water-Condensate, dehydration of NG, metering and sale of gas, separation, metering, storage and disposal of Condensate and water. • Control and data acquisition and recording of the operating and other parameters pertaining to operation. | <ul style="list-style-type: none"> • Service Provider to engage manpower of required skill to carryout the jobs as described. • All office stationeries including computer, Scanner, Photocopier, printer etc shall be arranged by the Service Provider. • Maintenance of the capital equipments including provision of spares shall be Service Provider's responsibility. • For electrical job: Light bulb, tube, switches, fuse, and other fittings and fixtures for lights and fans shall be considered as consumables. • Maintenance of Earthing pits including consumables shall be Service Provider's responsibility. |

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| | <p>(x) Static fire fighting system.</p> <p>(xi) Mobile fire tenders (2 Nos.)</p> <p>(xii) Captive power plant.</p> <p>(xiii) Diesel & Water storing facilities.</p> <p>(xiv) Maintenance shop.</p> <p>(xv) SCADA system</p> <p>(xvi) Office cum Maintenance building.</p> <p>(xvii) Stores for Spares.</p> <p>(xviii) Entire station premises including area covering 3M wide periphery surrounding the perimeter/boundary walls of the stations viz., DND-GPC & TOT-GGS.</p> <p>B.TOT GGS : This is an unmanned station, under operation round the clock and has the following facilities :</p> <p>(i) A five point production header.</p> <p>(ii) Test unit.</p> <p>(iii) Up-stream end of the 8” dia TOT-DND gas line.</p> <p>(iv) 10” X 8” Pig launcher for TOT-DND line.</p> | <ul style="list-style-type: none"> • Preparation & maintaining of records on various safety parameters and statutory records pertaining to HS & E. • Preparation of well performance report on daily basis and conciliation of production statement. • To carryout maintenance job to the station as & when required. • To carryout periodical maintenance to various machineries and equipments as per schedule. • House keeping and up-keepment of the stations. • To carryout periodical internal safety audit for the stations as per safety check list. • O & M of the diesel generators at DND-GPC • O & M of all the electrical equipments and power supply system. • O & M of all the mechanical equipment and machineries. • O & M of all the fire fighting equipment & machineries. <p>An operator shall be posted as and when required basis for carrying out production testing of TOT wells and for attending other routine jobs at the station.</p> | <ul style="list-style-type: none"> • Gas flaring shall be done only under unavoidable circumstances under guidance of OIL representative. • To monitor and maintain record of condensate production. Dispatch the same thro’ approved vendor on advice of OIL. • To ensure stock of Fire fighting water, e-fill as and when required. • SCADA system shall be maintain as per advice of CE (Instrumentation), OIL • House keeping of the premise shall be the responsibility of the Service Provider. • Equipments and accessories including consumables like Phenyl, Bleaching powder, pesticides and other cleaning chemicals required for house keeping shall on Service Provider’s account. |
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| 03 | Maintenance of Field pipe lines. | <p>Service Provider to engage welding machine, mobile generator set, gas cutting set and grinding machine alongwith welder and helper for carrying out repairing/replacement of field pipelines.</p> <p>For excavation and digging and back filling of pipe track, contractor to engage sufficient number of labourers as and when required basis.</p> <p>Handling of pipes and pipe fittings at site for above jobs shall be done by the Service Provider.</p> | All consumables for the jobs shall be provided by the Service Provider. |
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Process Description :

Gas produced from the wells at Dandewala, Bagitibba and Tanot Fields are collected at the central location DND-GPC. The facility consists of manifolds, processing and well testing. The produced gas from the above three fields are brought to the common location for processing at Dandewala Gas processing Complex (DND-GPC). The processed gas are then metered using the custody transfer meter and then despatched to GAIL for further distribution to the consumer i.e. RRVUNL's Ramgarh Power Plant. The well fluid collection and testing facilities for Tanot field is located at Tanot GGS and similar facilities for well fluid produced from Dandewala and Bagitibba Fields are available at DND-GPC.

TANOT – GGS

The produced gas from the wells in Tanot Field are collected at Tanot-GGS manifold, which consists of production header and the test header. Well fluid from any well can be diverted to the Tanot test separator which is a two phase separator with metering facilities on the gas and liquid outlet lines. The test separator is operated at a pressure slightly higher, than the pressure in the production header, so that, the gas and liquid coming out from the test separator can be combined and put back into the production header. The test separator can also be operated at lower pressure (in case a particular well needs to be tested at low pressure). In such a situation the gas will be vented and liquid will be disposed off in an evaporation pit during the time of testing. The Tanot GGS is normally an unmanned station and personnel are required to be sent to the GGS as and when well testing has to be undertaken. The Tanot GGS gas is sent for processing at Dandewala GPC through a 8"dia, about 13 km long pipeline. The pigging facilities are available for this pipeline. The pig launcher is located at Tanot GGS and pig receiver is at Dandewala GPC. The natural gas is used as instrument gas at Tanot GGS after suitable pressure reduction and filtering. An instrument gas receiver provides for 10 minutes build up of instrument gas for a safe shut down in case of instrument gas supply failure. Power supply for normal operation at Tanot GGS is provided through solar power with battery bank as back up. A diesel generator set is provided for use during manned operation.

Dandewala Gas Processing Complex (DND-GPC)

Dandewala Gas Processing Complex consists of gathering and testing facilities for wells in Dandewala and Bagitibba fields as well as facilities for processing and handling the well fluid from Tanot Fields.

Gas/Condensate Processing Facilities :

The processing facilities at DND-GPC consist of separate production separators for Dandewala-Bagitibba combined production and for Tanot Field, gas dehydration units and the common condensate stabiliser and storage facility. Gas from Tanot Field is received in the Tanot production separator through 8" pipeline from Tanot GGS. The Dandewala-Bagitibba gas from the Dandewala production header goes to the Dandewala production separator. The present gas production from Tanot field is about 0.2 MMSCUMD and from Dandewala field is about 0.4 MMSCUMD. The combined design handling capacities of DND-GPC is 1 MMSCUMD and that of TOT-GGS is 0.4 MMSCUMD. The gas from the two production separators is combined and then sent to the coalscer separator.

All processed drainage is provided to the underground sump (gravity separator) where water and condensate get separated. The condensate is then pumped to the condensate storage tanks with the help of sump pump. The separated water is pumped with the help of a sump pump to the evaporation pit. A ground flare system of 1.0 MMSCUMD capacity is provided for normal/ emergency flaring of gas.

Process Description of Glycol Dehydration Unit :

Glycol dehydration unit design is based on processing 1.0 MMSCUMD of natural gas feed stream. The operation of the unit is continuous with a turndown ratio of 30%. The CO₂ gas content of the stream could be as high as 26% CO₂. The feed stream pressures can vary between 18 and 25 Kg/cm² (A). The feed temperature will vary between 15 and 30 degree celcius. The dehydrated gas is defined as bone dry and the permissible maximum water content of the dehydrated gas stream shall not exceed 7 lbs/MMSCF and acceptable dew point shall be (-) 20 degree celcius maximum.

The gas stream @ 30 degree celcius containing free water enters the Inlet Coalescer Filter Separator where free water is separated from the gas. The free water level controlled to the automated drain header for disposal off-skid.

The gas stream is then metered through a conventional simplex orifice meter run before being directed to the bottom of the Glycol Contactor Tower (V-202). In this vessel, gas flows up through bubble cap trays counter current to the flow of lean Tri-ethylene Glycol. During the process, TEG absorbs water from the wet gas. The dry gases at exits the top of the contactor and are then directed to the inlet of the Gas/Glycol Heat Exchanger (E-201) where they are heated to about 35 degree celcius by the entering hot lean glycol before entering the Glycol Scrubber (V-203). In this vessel, any glycol carried over with the gas is separated, level controlled and re-injected back into the glycol stream just down stream of LCV-1631.

Water enriched Glycol is level controlled from the Contactor, through the reflux coil located in the top of the still column (c-201) and then enters the two phase Glycol Flash Drum (V-205). In this vessel, gases, which are flashed-off, are directed to the flare header. The wet Glycol is then level controlled through diaphragm liquid control valve located just downstream of the lean/rich Glycol Heat Exchanger (E-202). Before traveling through this valve, the glycol must first flow through the Glycol Filter (F-201 A&B) where solid impurities in the glycol are removed and then through the Charcoal Filter (F-202) where any hydrocarbons caught up in the Glycol can be adsorbed.

The wet Glycol then passes through the Plate Type Heat Exchanger (E-202), exchanging with the hot dry Glycol from the Reboiler. It then enters the still column and the Glycol Regenerator (H-201). Water vapour plus some Glycol vapour are driven from the Reboiler up the still column. The Glycol vapour is condensed by the cooler entering wet Glycol. Any glycol vapour above the feed point is retained by condensing a small amount of water reflux in the top of the column. Vent gases from the Glycol still column are then vented off skid to the atmosphere.

The liquid from the two production separator goes to the MP condensate flush drum. MP condensate flush drum is a three phase Separator where water is separated and sent to evaporation pit for disposal. The Condensate after separation goes to the LP condensate flush drum. The stabilised condensate then goes to condensate Storage Tank. The condensate collected in the condensate storage tank is despatched periodically by road tankers. The condensate loading pump is provided for loading the condensate to the tankers.

The dehydrated natural gas (small quantity) is used as fuel gas and instrument gas in DND-GPC after suitable pressure reduction and filtration. An instrument gas receiver is provided at DND-GPC for safe shutdown facilities in case of instrument gas supply failure. The instrument gas receiver is provided with a 10 minute hold up of instrument gas requirement. Dry natural gas supplied to RRVUNL through GAIL after measuring at Custody Transfer meter.

Power Supply Systems:

- (a) **At DND-GPC :** Power is provided at DND-GPC through 2 Nos. 75 KVA diesel Generator sets and an underground diesel storage vessel is provided with a capacity to meet 15 days requirement for the complex. A diesel pump is provided for transferring diesel from the underground storage tank to the DG Sets.
- (b) **At TANOT-GGS :** Power supply at Tanot-GGS is maintained by Solar PV Cell system and also one 30 KVA DG Set.
- (c) **At TVC :** Tanot Village Complex is connected with 33 KV JVVNL distribution line with a stepdown transformer of 33 KV/415 V. Also as standby arrangement, one 275 KVA and one 160 KVA DG sets are kept to take care of any power failure.

Fire Fighting System:

The fire fighting facilities at DND-GPC includes portable fire extinguishers, fire water reservoir (Capacity 220 KL), 2 Nos. of diesel engine driven fire water pump alongwith fire water ring main with hydrant, hoses, monitors, drenching and foam system to cover the processing equipment. Apart from above a Fire Tender shall be in standby at DND-GPC to meet any emergency in the fields. The fire fighting facilities at Tanot GGS and at TVC are also provided with adequate number of fire extinguishers at strategic points.

3.0 INSTRUMENTATION & CONTROL SYSTEM

The control system for Dandewala and Tanot Gas Fields has been designed keeping in mind their remote location and difficult access. All the relevant data from the two fields will be acquired at the control room at Dandewala GPC and at the Monitoring Control Room (MCR) located at Tanot Village Complex through a SCADA (Supervisory Control and Data Acquisition) System. The control room at Dandewala GPC acquires data from the two stations i.e. DND-GPC and TOT-GGS and relays it to the MCR. The MCR is located at Tanot Village Complex alongwith the residential complex that caters to the operating personnel of the entire Tanot/Dandewala facilities.

i) TANOT GGS

The Tanot GGS is an unmanned facility. Personnel are deployed to the GGS as and when testing of any particular well needs to be done. A local control room is provided at the GGS where important operating parameters/alarm conditions are monitored during operation of the Test Separator. The local control room panel is switched off during unmanned mode of operation. Since, natural gas is used as instrument supply, the control is through local field controllers.

A shutdown valve is provided at the Test Separator inlet, which will close automatically if the level in the Separator is too low or pressure of separator is too high. Another shutdown valve is provided on the 8" well fluid pipeline from Tanot GGS to DND-GPC. This valve shall close on high and low pressure in the pipeline

and will guard against blockage/rupture in the pipeline. Both the valves can be closed locally by manually bleeding the solenoid valve or from control room at Dandewala GPC and also from MCR at Tanot Village.

The important parameters like production header pressures, Test Separator flow and Instrument gas receiver pressure of Tanot GGS will be transmitted to Dandewala GPC via a Remote Telemetry Unit (RTU).

ii) Dandewala GPC

The Dandewala GPC has a central room for monitoring the various parameters of the entire complex. The control room is provided with a dual hot standby computer system based data acquisition and control system for indications, alarms, recorders, interlocks and flow computations. Control is through local field mounted Controllers and RTU.

A control panel is also provided in the control room for push buttons and open/close indications of the shutdown valves and Custody Transfer Flow Metering (CTM). Data from GPC control room can be relayed to the Monitoring Control Room (MCR) at Tanot Village via RTU.

Shutdown valves are provided at the inlets of Dandewala Test Separator, Tanot production separator and Dandewala production Separator. These shutdown valves shall close in case of low level or high pressure in the respective Separators. A shutdown valve is also provided on the dry gas outlet like from the GPC. These shutdown valves can be closed remotely from GPC control room as well as from MCR at Tanot Village.

A) SCOPE OF WORK (PRODUCTION):

- 1.0 To produce the Gas from the fields of Tanot, Dandewala, Bagitibba and any other gas fields. To operate DND-GPC, TOT-GGS and Tanot Village Complex in a configured manner for ultimate supply of committed quantity and quality gas to the consumers. The dehydrated gas is defined bone dry and the permissibility of maximum water content of the dehydrated gas stream is not to exceed 7 lbs/MMSCF and maximum dew point shall be (-) 20 deg. C.
- 1.1 To check and record flowline pressure and temperatures of each producing well connected to the manifold header. The same shall be closely monitored at the manifold and shall record in Service Provider's log-sheet in each shift on hourly basis. For any abnormal increase or decrease of the same, corrective actions shall be taken instantly. For any critical situation the matter should be mutually discussed with Company's representative.
- 1.2 To maintain all the manifold header valves in perfect operative condition, a preventive maintenance schedule provided by the Company shall be maintained and executed accordingly
- 1.3 All repairing jobs including general maintenance of the valves, leakage in the manifold, gas/oil separators, GDU plant etc. and supervision of flare stack shall be carried out by the Service Provider inside the plant. The Service Provider under advice of the Company representative will carry out any emergency repair jobs at flowline, wellhead and gas transmission (8") line.

- 1.4 To monitor closely and maintain desired Separator operating back pressure at all time during time during plant operation. The desired separator operating pressure shall be decided by OIL and during the course of plant operation if OIL feels to change the same, the Service Provider shall follow the instruction. The change of operating back pressure at production separators and subsequent pressure vessels may be required for operational reasons. The operating pressure of various pressure vessels shall be recorded in Service Provider's log sheet in each shift on hourly basis.
- 1.5 To closely monitor the proper functioning of auto/manual drain valves installed in the various pressure vessels. The Service Provider shall ensure that no carry over of water or condensate shall take place. For any minor or major operational disorder, the Service Provider shall take corrective measures for smooth running of the plants at the shortest possible time.
- 1.6 To closely monitor and record differential pressures across the filters of coalescer separator and custody transfer meter unit. For any rise in differential pressure from the desired level, the reason shall be found out immediately by the Service Provider and necessary action shall be taken there of for smooth operation of the plant.
- 1.7 A preventive maintenance/cleaning schedule shall be maintained and filters shall be cleaned on routine basis.
- 1.8 The Service Provider shall monitor closely so that there shall not be accidental dumping of any liquid (water/condensate) in to the glycol contact tower. Presence of any liquid can result in excessive glycol losses and reduce efficiency due to a higher tendency to create foam.
- 1.9 The Service Provider shall monitor that there shall not be any sudden surge of gas into the contact tower so that no carry over of Glycol takes place from the vessel.
- 1.10 To check and shall record the Glycol level in the contact tower and maintain the desired level for smooth functioning of the same at all times.
- 1.11 Replacement/Refilling of Glycol to the Plant shall be done to the desired level whenever necessary. A proper record shall be maintained for the same. Necessary Tri-Ethylene Glycol required for operation of the plant including top-up quantity shall be provided by Company at its cost.
- 1.12 A schedule shall be maintained to collect Glycol sample from time to time to determine the desired quality for the same. Analysis of Glycol shall be done by OIL, but whenever advised by OIL, the Service Provider shall have to arrange for analysis of the same at some external sources.
- 1.13 The Service Provider shall monitor and record the desired operating pressures, temperatures, dew point and different requisite parameters in the Glycol dehydration unit. The aforesaid parameters shall be maintained at desired level for smooth functioning of the unit. For any malfunctioning or indication of any disorder, the same shall be immediately attended to.
- 1.14 All repairing and maintenance of glycol pumps, control valves, safety valves etc. installed in the Glycol dehydration unit shall be carried out by the Service Provider.
- 1.15 Depending on the quality of Glycol for which a routine analysis shall be made as explained elsewhere replacement of Glycol shall be necessary and the job will be done by the Service Provider. However, glycol for the same shall be provided by Company.

- 1.16 Cleaning of main and pilot burner of Re-boiler unit shall be done whenever necessary and a schedule shall be maintained for routine servicing by the Service Provider.
- 1.17 A routine schedule shall also be maintained in conjunction with OIL Engineers to test all the producing wells in a particular time limit. The Service Provider shall carry out the aforesaid job and record the desired parameters. In schedule well testing programme, minimum 15 well testing jobs shall be carried out by the Service Provider in a month. Additionally, whenever necessary and as shall be decided and advised by OIL representative, individual well testing shall be carried out by diverting the well from the main production header to the test unit to determine individual well gas production and fluid production rate etc.
- 1.18 To check and shall record daily condensate production rate in the condensate storage tank. Manual draining of water shall also be necessary from the storage tank from time to time that might be accumulated in the tank and proper record of the same shall be made.
- 1.19 The produced condensate from the storage tank shall be delivered from time to time by road tanker to any customer that shall be advised by the Company (OIL). Accurate opening, closing and delivery stock etc. shall be maintained of the storage tank and shall be recorded in the Service Provider's log sheet.
- 1.20 The Service Provider shall see the proper functioning of all pumps installed at the installation for various purposes. All the repairing/maintenance jobs of the pumps shall be carried out by the Service Provider. A preventive maintenance schedule shall be maintained and shall be followed accordingly.
- 1.21 Whenever necessary as shall be advised by OIL representative and as a scheduled routine job, the Service Provider shall send his appropriate personnel from DND-GPC to Tanot GGS for carrying out the individual well testing jobs produced through TOT-GGS. Necessary well testing parameters (Gas production/fluid production rate etc.) shall be accurately monitored and recorded.
- 1.22 The Service Provider shall make a routine schedule visit to Tanot GGS to see and shall ensure that all the equipment installed at Tanot GGS are in proper functional order. All the repairing and preventive maintenance that shall be needed for the equipment shall be carried out by the Service Provider. A calendar for the same is to be prepared and religiously followed. Apart from this calendar, the Service Provider shall have to go there for any other work related matters as and when necessary.
- 1.23 General routine maintenance for SCADA system on daily basis like checking for failure of lamps and LEDs on PCBs and their replacement, performance of the printer, check that all fans on computer equipment are functioning properly, dusting down printers, VDUs, Terminals using lint free cloths, cleaning VDU screens with anti-static spray when necessary, vacuum cleaning of the control room, checking the healthiness of batteries of RTU panels & UPS system etc. shall be done by the Service Provider.
- 1.24 General routine maintenance for field instrumentation like draining of filter regulators, applying recommended oil for internal of Turbine flow meters, checking for blockage of vent ports of solenoid valves/control valves/shutdown valves, checking for gland leakages of control valves, checking the operability of float operated level gauges, checking the healthiness of air supply to all pneumatic controllers, checking the healthiness of 24 V DC supply to all electronic field instruments, draining the manifolds of all field transmitters etc. shall be done regularly by the Service Provider. A schedule must be worked out to

carry out the above jobs on a daily/ weekly/quarterly routine basis in conjunction with Company engineer and reports have to be generated/submitted accordingly.

- 1.25 Suitable preventive maintenance schedules shall be prepared for each instrument as per recommendations of the manufacturer/OIL and to be submitted to OIL.
- 1.26 Recalibration of all field transmitters, controllers, switches, gauges, control valves, valve positioners, regulators etc. shall be done every 2 (two) months period and records to be submitted to OIL. Calibration of CTM Turbine, flow meters and flow computers at supplier's work (original equipment manufacturer), once in a year to be done by the Service Provider at their cost.
- 1.27 Any breakdown maintenance and repair of the field instruments/SCADA system shall be carried out by the Service Provider for uninterrupted operation of the plants.
- 1.28 All the test equipments of the Instrument workshop shall be kept in 100% operating condition and proper maintenance records shall be maintained by the Service Provider.
- 1.29 The Service Provider shall perform pig launching operation in 8" dia delivery line in between TOT-GGS and DND-GPC whenever operationally required and also as a routine schedule basis. The necessary pig launching equipment will be provided by OIL. A schedule shall be maintained by the Service Provider for the same.
- 1.30 Line pressures at both ends of the 8" delivery line shall be closely monitored and recorded by the Service Provider in each shift. For any abnormal increase or decrease in line pressure, necessary prompt action shall be taken by the Service Provider.
- 1.31 Service Provider shall prepare a preventive maintenance calendar/schedule and get it approved from the Company before commencement of work and religiously follow the schedule. Failure to carryout the preventive maintenance schedule shall include penalty to the extent of contractual rates and any plant shut down for such failure/negligence the penalty clause as specified in para 10.4 of SECTION – V shall be applicable.
- 1.32 All stationeries including printer ribbon, recorder, charts and pens etc. required for operation and maintenance shall be to Service Provider 's account.
- 1.33 All spares provision against routine preventive and break down maintenance shall be as stated in SECTION - V [ref. Note No. (ix) under Para no. 3.0].
- 1.34 Service Provider has to arrange for one No. Welding machine with mobile diesel generator set, gas cutting set with all the accessories and Grinding machine, One Welder qualified for carrying out welding, cutting and grinding jobs as per API -1104, AWS-D10.4-86 and ASME-B-31.3 and a Helper. All other requisite welding consumables at site as standby throughout the period of contract. Rates to be quoted on lump sum per day all inclusive basis.

B) SCOPE OF WORK (INSTRUMENTATION):

The DND-GPC, TOT-GGS and TVC-MCR have been equipped with more than 100 electronic and pneumatic instruments installed at the separators, test unit vessel, glycol dehydration unit, ground flare stake, custody transfer metering unit and so on. Custody transfer metering is done through turbine flow meters in conjunction with flow computers.

Moreover, due to remote location, hostile desert condition and for difficult access, the DND-GPC, TOT-GGS and TVC-MCR have been equipped with SCADA monitoring/controlling system with Remote Telemetry Unit (RTU) located at each station. The installation DND-GPC and TOT-GGS are also equipped with various shutdown valves which can be operated from TVC. The existing SCADA system shall be replaced by a new generation system in May'2009.

For efficient and trouble free operation of the plant one Instrument Engineer and Two Instrument Mechanics having qualification and experiences as detailed under para-2.6 below shall be required to be deployed at the installations.

2.0 PROVISION OF SERVICE PROVIDER'S PERSONNEL AND FACILITIES :

- 2.1 The Service Provider shall provide the experienced personnel for the services. All personnel to be deployed must have adequate experience in their respective field as stated in para 2.6 below. On Company's advice, Service Provider shall remove and replace, at their own expense, any of their personnel whose presence is considered undesirable in the opinion of Company. The Service Provider shall provide details of experience, qualification and other relevant data of the personnel to be deployed for scrutiny and cleared by the Company before the actual deployment. The Service Provider shall not deploy their personnel unless cleared by the Company. The Service Provider shall have to deploy the aforesaid persons after being certified by the Company only for the period of the Agreement. For any change of the appointed personnel due to extra ordinary situation, the Service Provider may do so after being permitted and approved by the Company. However, the new recruitment shall take over the responsibility prior to their release of the concerned personnel.
- 2.2 The Service Provider shall nominate one of their personnel as Service Provider 's Representative who shall be in charge of Service Provider 's personnel and who shall have full authority to resolve all day to day matters which may arise at the site.
- 2.3 The Service Provider shall have a base office at Jodhpur to be headed by competent/qualified technical personnel having minimum 8 to 10 years experience of oil field production operations and maintenance and he will represent the Service Provider as the Area Manager. Without the posting of the Area Manager, the Service Provider shall not be allowed to commence his work. The Service Provider is to submit the bio-data of the Area Manager and which has to be approved by the Company, The Area Manager shall act for the Service Provider in all matters relating to Service Provider's obligations under the Agreement and shall report to Head (Production) and Chief Engineer (TS) daily on regular basis during the contractual period.
- 2.4 The Service Provider's base Office at Jodhpur must have telephone, FAX & e-mail facility for communication.
- 2.5 The minimum requirement of Key Personnel for **production operation** and maintenance of DND-GPC, TANOT-GGS and TVC (MCR) at any point of time during the contractual period shall be as follows:

| S.N. | <u>PERSONNEL</u> | NO. OF PERSONS TO BE DEPLOYED AT ANY TIME DURING THE CONTRACT |
|------|---------------------|---|
| 1 | Field Manager | 01(General shift, shall be available for 24 Hrs) |
| 2 | Production Engineer | 01(General shift, shall be available for 24 Hrs) |
| 3 | Instrument Engineer | 01(General shift, shall be available for 24 Hrs) |
| 4 | Instrument Mechanic | 02 (1 person in 12 Hrs. shift) |

| | | |
|---|---|-------------------------------------|
| 5 | Plant Operator at DND- GPC, TOT-GGS, TVC Control Room | 10 (3+1+1 person in 12 hours shift) |
|---|---|-------------------------------------|

The above personnel are excluding the Area Manager and his office at Jodhpur. All above personnel shall be deployed on on/off basis for field duty and shall be stationed at TVC during their duty period.

2.6 **Job requirement of Key Operating Personnel (for Production jobs):-**

2.6.1 **Field Manager**

The incumbent shall be an Engineering Graduate in Mechanical/Chemical/Petroleum/Reservoir Engg. with minimum five (5) years of experience in the operation and maintenance of oil/gas production installations and fields. Alternately he may be a science graduate with P-C-M and having at least 20 years experience in operation of oil & Gas fields. He shall have overall responsibilities for entire operational/ maintenance and administrative activities of the plants and establishment. The person shall be fully conversant with the operation and maintenance activities of various gas/oil separators, glycol dehydration plant, SCADA operation, various control loops of the gas processing plant, computer operation etc. He shall also be conversant with Oil & Gas Mines Safety Rules & Regulations. He shall be in constant touch with Company representative stationed at site (DND-GPC or TVC). The Field Manager shall normally attend general shift duty but shall be available for 24 hours. He shall also have sufficient knowledge of operation and maintenance of generating sets, different pumps/ motors, water treatment plant, A/c plant etc. Additionally, he must have adequate experience and managerial skill to lead a multidisciplinary team to carry out day to day field job.

2.6.2 **Production Engineer**

The person shall be responsible for all operation and maintenance activities of the installation related to gas production and supply. The person shall be an Engineering Graduate in Mechanical/Chemical/Petroleum/Reservoir Engineering with minimum three (3) years of experience in the operation and maintenance of oil/gas production installations and fields. The person shall be fully conversant with the operation & maintenance activities of various gas/oil separators, glycol dehydration plant, SCADA operation, various control loops of the gas processing plant, computer operation etc. He shall also be conversant with Oil & Gas Mines Safety Rules and Regulations. He shall normally attend general shift duty but shall be available for 24 hrs. He shall report to Field Manager for all activities related to Gas Production and supply.

2.6.3 **Instrument Engineer/Instrument Mechanic :**

The Instrument Engineer shall be the overall in-charge of all the instrumentation and SCADA jobs and shall report to Production Engineer. He shall be degree holder in Instrumentation / electronics with specialization in instrumentation and having adequate knowledge in computer application and having a minimum of 3 years experience in the operation and maintenance of SCADA/DCS system in a continuous process plant. He should also be familiar with calibration and servicing of various electronics and pneumatic instruments, analyzing of P&I diagrams, control loop checking, instrumentation standards V-SAT communication system etc.

The Instrument Mechanic shall be a Diploma holder in instrumentation / electronics with specialization in instrumentation and having adequate knowledge in computer application

and with a minimum experience of 3years or ITI certificate holder in instrumentation/ electronics having adequate knowledge in computer application with a minimum of 5 years experience in use of various test equipments, calibration and servicing of electronic (including SMART) and pneumatic instruments in a continuous process plant etc. He shall report to Instrument Engineer.

2.6.4 Plant Operator at DND-GPC, TOT-GGS & Control Room Operator at TVC

The Plant Operator shall be deployed at DND-GPC. He shall assist Production Engineer in all the operation and maintenance activities of the plant at DND-GPC & TOT-GGS. He shall have thorough knowledge/experience about oil/gas processing plant, glycol dehydration process plant, operation of various control loops and instruments, SCADA operation, computation of gas production figures etc.

Minimum qualification shall be Diploma in Mechanical/Chemical Engineering with adequate knowledge of computer applications and shall have 3 years experience in oil/gas field production installations. He must be fluent in English & Hindi (R-W-S).

2.6.7 Area Manager at Jodhpur :

As stated in clause 2.3 above.

3.0 **EQUIPMENT LIST (Production Installation) :**

List of equipment required for the process of gas gathering at Tanot and Dandewala fields used for gas processing (i.e., separation and disposal of condensate/water and dehydration of combined gas) and also at Tanot Village Complex (TVC) is given in this section. Material of construction and quantity is also mentioned. This is a general list and not exhaustive. The list is subject to revision with deletion/ addition of the items other than the following :

| S.N. | DESCRIPTION | TAG NO. | SPECIFICATION |
|------|---------------------------------------|---------|---|
| | MANIFOLD | | |
| 1 | Tanot Well Fluid Manifold | M 101 | DP:212 Kg/Cm ² , D.T.:85 Degree C, C:C,S.: |
| 2 | Dandewala Well Fluid Manifold Vessels | M 102 | DP:212Kg/Cm ² , D.T.:85Degree C, C:SS304L |
| 3 | Tanot Gas Separator | V 101 | DP: 70 Kg/Cm ² , DT.:65 Degree C, C:MOC :CS, Dimensions : 500 mm ID x 1500 mm TT |
| 4 | Dandewala Test Separator | V 102 | DP:70Kg/Cm ² , D.T.:65Degree C, C:MOC: SS 304L, Dimensions:1200 mm IDx2400mm TT (Boot : 300 mm ID x 500 mm H) |
| 5 | Tanot Production Separator | V 103 | DP:45Kg/Cm ² , D.T.:65 Degree C, C:MOC:CS Dimensions : 750 mm ID x 1900 mm TT |
| 6 | Dandewala Production Separator | V 104 | DP:60 Kg/Cm ² , DT:65 Degree C, C:MOC :SS304L,Dimensions:1000mmIDx2500mmTT |
| 6(a) | Dandewala two-phase Separator | V104-A | DP:60 Kg/Cm ² , DT:65 Degree C, C:MOC :SS304L,Dimensions:1400mmIDx5000 mmTT |
| 7 | MP Condensate Flash | V 105 | DP : 15 Kg/Cm ² , DT.:65 Degree C,C:MOC :CS, Dimensions : 750 mm ID x 1500 mm TT (Boot : 400 mm ID x 500 mm H) |
| 8 | LP Condensate Flash | V 106 | DP:4.5Kg/Cm ² ,D.T.:65Degree C, C:MOC:CS, Dimensions : 500 mm ID x 1200 mm TT |
| 9 | Dandewala Diesel Storage Vessel | V 107 | DP:4.5Kg/Cm ² ,D.T.:65Degree C, C:MOC:CS, Capacity :8 Cubic Metre |
| 10 | Dandewala Instrument Gas Receiver | V 108 | DP:10Kg/Cm ² ,D.T.:65 Degree C, C:MOC:CS, Dimensions :1300 mm ID x 2600 mm TT |

| | | | |
|--|-------------------------------------|--------|--|
| 11 | Tanot Instrument Gas Receiver | V 109 | DP:10Kg/Cm ² ,D.T.:65 Degree C, C:MOC:CS, Dimensions : 700 mm ID x 1500 mm T T |
| 12 | Tanot Village Diesel Storage Vessel | V 110 | DP:4.5Kg/Cm ² ,D.T.:65DegreeC, C:MOC:CS, Capacity : 50 Cubic Metre |
| 13 | Condensate Storage Tank | T 101 | DP:Full of water D.T.:65 Degree C, C:MOC:CS Dimensions :4500 mm ID x4500 mm H, Net Capacity : 60 Cubic Metre |
| 14 | Condensate Storage Tank | T 101 | DP:Full of water D.T.:65 Degree C, C:MOC:CS Dimensions :4500 mm ID x4500 mm H, Net Capacity : 60 Cubic Metre |
| 15 | Time Water Tank | T 102 | Sintex Type Tank, Capacity - 1 Cubic Mtr |
| 16 | Dandewala Water Tank | T 103 | Sintex Type Tank, Capacity - 3 Cubic Mtr |
| 17 | Tanot Evaporation Pit | T 104 | Capacity - 2 Cubic Metre |
| 18 | Dandewala Evaporation Pit | T 105 | Capacity - 10 Cubic Metre |
| 19 | Dandewala Drain Sump | T 106 | Capacity (water/oil)- 7 M/3 Cubic Metre |
| 20 | U/ground Water Tank (DND) | T 107 | Capacity - 10 Cubic Metre |
| 21 | Fire Water Reservoir-DND | T 108 | Capacity - 228 Cubic Metre |
| 22 | Underground Water Tank (Tanot) | T 109 | Capacity - 5 Cubic Metre |
| 23 | Drinking Water Tank (DND) | T 110 | Capacity - 1 Cubic Metre |
| 24 | Drinking Water Tank (TVC) | T 111 | Capacity - 50 Cubic Metre |
| 25 | Service Water Tank (TVC) | T 112 | Capacity - 50 Cubic Metre |
| 26 | Fire Water Tank (TVC) | T 113 | Capacity - 50 Cubic Metre |
| <u>PUMPS</u> | | | |
| 27 | Condensate Loading Pump | P 101 | Design Flow : 5 Cu M/hr, Head : 12 M, BHP : 0.70 |
| 28 | Sump Oil Pump | P 102 | Design Flow : 5 Cu M/hr Head : 12 M, BHP : 0.70 |
| 29 | Sump Water Pump | P 103 | Design Flow : 5 Cu M/hr Head : 5 M, BHP : 0.35 |
| 30 | Tanot Water Pump | P 104 | Design Flow : 5 Cu M/hr Head : 10 M, BHP : 0.70 |
| 31 | Dandewala Diesel Pump | P 105 | Design Flow : 5 Cu M/hr Head : 14 M, BHP : 0.80 |
| 32 | Dandewala Water Pump | P 106 | Design Flow : 5 Cu M/hr, Head : 10 M, BHP : 0.70 |
| 33 | Tanot Village Diesel Pump | P 107 | A/B Design Flow : 5 Cu M/hr Head : 14 M, BHP : 0.80 |
| 34 | Dandewala Fire Water Pump | P 108 | A/B Design Flow : 500 GPM, Head : 70 M, Diesel Engine Driven, Confirming to IS 944 |
| 35 | Water Treatment Plant (TV) | P 109 | Design Flow : 1.5 Cu M/hr, Head : 45 M, |
| 36 | Drinking Water Pump-TVC | P 110 | Design Flow : 4 Cu M/hr , Head : 30 M, |
| 37 | Service Water Pump-TVC | P 111 | Design Flow : 11.5 Cu M/hr , Head : 40 M, |
| 38 | Drinking Water Pump-DND | P 112 | Design Flow : 0.2 Cu M/hr, Head : 10 M, |
| 39 | Glycol Pump | 2 Nos. | Design Flow : 90 LPM, Water Pressure:110 Bar |
| <u>LAUNCHERS/ RECEIVERS</u> | | | |
| 40 | Tanot Pig Launcher | L 101 | DP:212 Kg/Cm ² , D.T.:85,Degree C:MOC: CS, Dimensions : 10" x 8" barrel |
| 41 | Dandewala Pig Receiver | R 101 | DP:212 Kg/Cm ² , D.T.:85,Degree C:MOC: CS, Dimensions : 8" x 10" barrel |
| <u>PACKAGE UNIT/MISCELLANEOUS ITEMS</u> | | | |
| 42 | Gas Dehydration Package | X 101 | TEG Based system to dry 1.0 MMSCMD of natural gas. Outlet water content of gas to be less than 07lb water/MMSCF of gas. Design conditions for gas, DP:45 Kg/Cm ² , a DT:65 degree C |
| 43 | Custody Transfer Metering | X 102 | D P : 45 Kg/Cm ² , DT : 65 Degree C, Design |

| | | | |
|------|--------------------------|-----------|--|
| | | | capacity:1.0 MMSCMD of natural gas |
| 44 | Ground Flare Package | X 103 | Design capacity:1.0 MMSCMD of natural gas |
| 45 | Tanot Auto Drainers | X 104 | A/B D P : 10 Kg/Cm ² , DT : 65 C, Design capacity : Removal of 2 Kg/ hr of liquid |
| 46 | Dandewala Auto Drainers | X105(A/B) | DP:10 KG/Cm ² , DT:65DegreeC,Design capacity : Removal of 10 Kg/ hr of liquid |
| 47 | Water Treatment System | X 106 | Capacity : 500 LPH |
| 48 | Tanot GGS D G Set | X 107 | Rated Capacity : 30 KVA |
| 49 | Dandewala GPC D G Set | X108(A/B) | Rated capacity : 75 KVA each |
| 50 | Tanot Village D.G.Set-I | X 109 | Rated capacity : 160 KVA |
| 51 | Tanot Village D.G.Set-II | X110(A/B) | Rated capacity : 275 KVA each |
| 52-A | SCADA SYSTEM | | The New SCADA system is STARDOM network based control system supplied by M/s. Yokogawa India Limited , Bangalore. In this system, DND-GPC, TOT-GGS and TVC are connected with OFC (in place of HF radio in the earlier system) to transmit data from GGS to master station at DND-GPC and data from DND-GPC to monitoring control station at TVC. |

4.0 BRIEF INFORMATION OF THE FIELD :

Following are the preliminary information of the field :

| Srl. No. | <u>PARAMETERS</u> | <u>VALUES</u> |
|----------|--|-------------------------------------|
| 1 | Average gas composition | As per Annexure - I |
| 2 | Quantity of gas to be handled at DND-GPC | Approx. 1.0 MMSCMD |
| 3 | Location of the field, installation and layout of flow-lines from different wells to the respective installations. | As per Annexure-II |
| 4 | A general flow diagram of DND-GPC and Tanot-GGS | As per Annexure-III & IV |
| 5 | Average flowing wellhead tubing pressure at Dandewala Field | 170 Kg/Cm ² |
| 6 | Average flowing wellhead tubing pressure at Bagitibba field | 45 Kg/Cm ² |
| 7 | Average flowing wellhead tubing pressure at Tanot field | 150 Kg/Cm ² |
| 8 | Average line pressure at Dandewala Production Header (Manifold) | 40 Kg/Cm ² |
| 9 | Average line pressure at Tanot Production Header (Manifold) | 40 Kg/Cm ² |
| 10 | Average separator back pressure (DND-GPC) | 35 Kg/Cm ² |
| 11 | Average Separator back pressure (TOT-GGS) | 35 Kg/Cm ² |

5.0 CONDUCTING GAS PRODUCTION, TESTING, PROCESSING & METERING:

- 5.1 The Service Provider shall carry out all operations hereunder with due diligence in a safe and workman like manner and in accordance with accepted international oilfield practice.
- 5.2 The Service Provider shall be solely responsible for the operation of the installations at Dandewala GPC, Tanot GGS and Tanot Village Complex including but not limited to supervising various operations at fields as required by Company as well as such operations at the aforesaid installations as may be necessary or desirable for the safety of the installations.
- 5.3 **Safety** : The Service Provider shall observe such safety regulations in accordance with acceptable oilfield practice and applicable Indian laws. Service Provider shall take all measures reasonably necessary to provide safe working conditions and shall exercise due care and caution in preventing fire, explosion and maintain fire fighting equipment in sound conditions at all times.
- 5.4 **Gas Measurement** : The Service Provider shall at all time be responsible for keeping an accurate record of production, pressure, temperature and quality and total quantity of gas supplied.
- 5.5 In the event of any fire or explosion, Service Provider shall use all reasonable measures at his disposal to protect the aforesaid installations bring the said fire or explosions under control.
- 5.6 It is expressly understood that Service Provider is an independent Service Provider and that neither it nor its employees and its sub-contractors and employees or agents of Company provided, however, Company is authorised to designate its representative who shall at all time have access to the aforesaid installations, related equipment and materials and all records, for the purposes of observing, inspecting and designating the work to be performed hereunder by Service Provider. The Service Provider shall treat Company's Representative at site as the in charge of all Company's and Company designated personnel at site. The Company's representative may, amongst other duties, observe, test, check and control works performed by Service Provider or examine records kept at installations by Service Provider.
- 5.7 **Compliance with Company's instructions** : Service Provider shall comply with all instructions of Company consistent with the provision of this Agreement, including but not limited to aforesaid installations, operations, safety instructions, confidential nature of information etc. such instructions shall if Service Provider request be confirmed in writing by Company's representative.
- 5.8 **Records to be kept by Service Provider** : Service Provider shall keep and furnish to Company an accurate records of the rate of production, pressure, temperature, quality and quantity of supplied gas and other necessary parameters of the installations. A legible copy of the said records in duplicate signed by both Service Provider 's and Company's representative shall be furnished by Service Provider to the Company.
- 5.9 **Confidentiality of Information** : All information obtained by Service Provider in the conduct of operations shall be considered confidential and shall not be divulged by Service Provider or its employees to any one other than Company's representative. This obligation of Service Provider shall be in force even-after termination of the Agreement. Service Provider shall carry out normal maintenance of Company's item at the aforesaid

installation excepting for those items which Service Provider is not qualified to or cannot maintain or repair with its normal operating personnel and equipment.

- 5.10 Ingress and Egress at Installations : Company shall provide Service Provider requisite certificate for obtaining rights of ingress to egress from the installations. Should such certificate be delayed because of objections of appropriate authorities in respect of specific Service Provider 's persons, such persons should be promptly removed from the list by the Service Provider and replaced by acceptable persons.
- 5.11 Protection of property and existing facilities : The Service Provider shall perform each work in such a manner as will prevent damage to the Company's property and shall carry on the works in such a manner as to conform to and consistent with and not to interfere in any way with continuous and safe operation of the installations. Any permanent damage/loss to the Company's assets, plants, wells due to the operation of the service engaged under this Agreement shall have to be remedied by the Service Provider entirely at its own cost, which shall include and not limited to actual replacement of such damaged assets, plants, wells or payment of actual replacement cost in relation there to as may be incurred by the Company.

B) SCOPE OF WORK FOR MECHANICAL, CIVIL, ELECTRICAL, FIRE SERVICE AND TRANSPORT RELATED SERVICES :

List of main jobs connected with Technical Service Department i.e Electrical, Mechanical, Civil, Fire Services and Transport Engineering.

- 1.0 Maintenance and operation of Brush less D.G. Sets at TVC/DND-GPC / Tanot - GGS capacity 275 KVA/160 KVA/75 KVA/30 KVA respectively with associated control panels, MCC panels and various other panels and switch gears.
- 2.0 Operation and Maintenance of vapour compression chilled water circulation Central Air Conditioning system of 75 TR capacity with reciprocating compressors, chilling units, pumps (for chilled water circulation) AHU (4200/3300/3600) CFM, all are of three sets, FCU-46 Nos. Make-Blue Star. 2 Sets to run at a time and one set to be on standby. Split air conditioner, window air conditioners.
- 3.0 Operation and Maintenance of lighting transformers, various AC motors and their switchgears UPS (7.5 KVA, 2.5 KVA, 1.5 KVA) and associated battery banks.
- 4.0 Operation and Maintenance of solar lighting system and associated control panels, solar batteries, solar photovoltaic cells etc.
- 5.0 Operation and Maintenance of Water Treatment Plant operating on Electro Dialysis or on Reverse Osmosis system.
- 6.0 Operation and Maintenance of various centrifugal pumps deployed at TVC, DND-GPC, TANOT-GGS.
- 7.0 Maintenance of pipe/pipe fittings of water line/diesel line/water treatment plant/water storage tank/diesel storage tank.
- 8.0 Operation and Maintenance of fire fighting arrangement including engine driven fire pump set, fire tender and fire extinguishers etc.

- 9.0 HSD supplied to the Company by the Service Provider to water points will be reimbursed by the Company on actual basis (with documentary evidence) plus 5% as handling charge.
- 10.0 Maintenance of buildings of Gas Development Project with all fittings, painting, plumbing for water supply, roofing, boundary fencing etc.
- NOTE:-** Equipments deployed at DND-GPC, TANOT-GGS and TVC are given in **Annexure-A & B** in respect of Electrical and Mechanical Services.
- 11.0 Liaison with various original equipment manufacturers as well as government authorities to carryout breakdown maintenance on emergency basis and inspection of equipment as per statutory requirement.
- 11.1 All the above equipment/facilities are deployed for round the clock operation for providing the back up services for Gas field activities at DND-GPC, TANOT-GGS & TVC.
- 12.0 A daily monitoring report of Technical Service (T.S.) activities with details of job executed, manpower availability, running hours of the equipment, job planned for execution on the following day should reach to TS department every morning positively by 09:30 AM and the Service Provider's representative should report to TS department daily.
- 13.0 Service Provider will be responsible for operation and maintenance of all plant and equipment for above mentioned services with proper workmanship, housekeeping and compliance to all safety norms pertaining to OMR 84, OISD to the entire satisfaction of engineer-in-charge of the Company.
- 14.0 Service Provider should have all the required tools, including special tools/equipment viz. Chain block, a crane for carrying out mechanical and electrical maintenance activities smoothly without any time loss.
- 15.0 Rewinding cost of all single-phase motors as listed in Annexure-D shall be on Service Provider's account.
- 16.0 OIL reserves the right to replace any existing equipment/machine as listed in Annexure – A & B with new / similar equipment/machine and in such cases all terms and conditions for O & M shall apply to the replaced equipments/machines.

B.1 SCOPE OF WORK (ELECTRICAL ENGINEERING) :

- 1.0 Operation and Maintenance of under mentioned Brush less Alternators :
- i) 275 KVA, 415 volts-2 Nos., Make STAMFORD, Type HC 44402
 - ii) 160 KVA, 415 volts-1 No. , Make CROMPTON GREAVES FRAME 280/1
 - iii) 75 KVA, 415 volts-2 Nos., Make CROMPTON GREAVES FRAME 225/2
 - iv) 30 KVA, 415 volts-1 No. , Make CROMPTON GREAVES FRAME
 - v) Distribution of RSEB (JVVN) power supply at TVC as per OIL's requirement.
- 2.0 Operation and Maintenance of related control panels for the above DG Sets, MCC panels, AUX panels, various distribution boards, lighting transformers and street lighting system.
- 3.0 Operation and Maintenance of UPS 2 x 7.5 KVA, 2 x 2.5 KVA, 1 x 1.5 KVA with battery banks.

- 4.0 Operation and Maintenance of solar lighting system and related various panels/equipment to provide continuous power to instrumentation panels and accessories. Maintenance of solar batteries, battery charger (standby), 50 V, 225 AMP.
- 5.0 Operation and Maintenance of Central Air Conditioning system with reciprocating compressors (HERMATIC) of LCA series and packed liquid chillers-3 sets, consisting of:
 - i) Direct expansion (liquid coolers, air cooled condenser coils and fans)
Pumps - 20 HP for chilled water circulation, water flow-130 L/Min-3 sets
 - ii) Air Handling Unit - 3 Sets (4200/3300/3600) CFM
 - iii) Fan Coil Unit (FCU)-46 Nos. , 2 TR - 36 Nos., 1.5 TR - 10 Nos.
- 6.0 Operation and maintenance of Telephone Exchange-ELTEX-56, 32 lines, Make- L&T.
- 7.0 Detailed specification and details of electrical items are mentioned in Annexure-A.
- 8.0 The relevant details/documents are to be furnished by the bidders to establish their capability for the above mentioned jobs.
- 9.0 Operation and maintenance of window, split Air Conditioners, Refrigerators, Water Coolers at TVC and DND-GPC consisting of (i) Split A/C – 2T : 4 Nos. (ii) Window A/C – 1.5T : 8 Nos. (iii) Refrigerators : 3 Nos. (iv) Water Coolers : 2 Nos.
- 10.0 Operation and maintenance of one number submersible Pump and motor set at DND-GPC. This pump has to be operated once in a week for one hour at least.
- 11.0 Proper maintenance schedule/record to be made for preventive/schedule maintenance jobs. The break down maintenance to be attended by the Service Provider without loss of time for un-interrupted operation of the plant and to be reported after completion of the job with proper justifications.
- 12.0 Proper checking as well as record keeping to be maintained as per DGMS guidelines/OMR 1984 and OISD.
- 13.0 Log sheets for schedule maintenance of batteries, topping up of batteries of solar lighting system, UPS system to be adequately/religiously maintained.
- 14.0 All stationeries required for operation and maintenance shall be to the Service Provider's account.
- 15.0 275 KVA DG Sets to run at a time during peak summer when A/C system is on full load and during winter and non operation of A/C system 160 KVA DG set is required to run to feed power to auxiliaries and complete lighting system and other utilities. At any particular time 1 No. DG set at DND-GPC should be in operative condition. Also 2 Nos. Generator Sets will be running at TVC incase of interruption in RSEB power supply.
- 16.0 To maintain un-interrupted power supply round the clock for the vital equipments, viz. A/C system, Instrumentation (SCADA, RTU), UPS, Fire Alarm, Water Treatment Plant/supply, DG sets and other electrical system/equipment should be in healthy condition round the clock to provide the back up facility.
- 17.0 Normal supply of power to the control panel for field instrumentation, battery charger for various battery banks, solar power controller for charging of solar batteries, fire alarm system and solar street lighting inverter is fed through solar batteries. The complete solar system/equipment should be healthy round the clock. Solar batteries to be monitored

continuously and schedule maintenance to be done effectively to avoid any break down of the batteries.

18.0 The annual check-up of the central air conditioner system (Blue Star), Solar lighting system (Central Electronics), UPS System (GHCL) to be arranged by the respective experts /original manufacturer. Annual checking/calibration of all the protective relays and switch gears to be also done/arranged through the experts.

19.0 MANPOWER :

The manpower as mentioned in enclosed Annexure-C are to be engaged for the operation and maintenance of various electrical equipments, related control system for DG Sets (30 KVA, 75 KVA, 160 KVA, 275 KVA), alternators, MCC panels with various switch gears, relays etc. Solar lighting system with its related control panels etc. Central air conditioning system of 75 TR capacity with compressors, chilling units pumps, air handling unit, fan coil units, split air conditioners, window air conditioners various A.C. motors, starters, switch gears, UPS system, should have requisite experience for operation and maintenance of the equipments as per our scope of work.

B.2 SCOPE OF WORK (MECHANICAL ENGINEERING):

1.0 Operation and maintenance of prime-mover of various diesel gen. sets viz. :

- a) 2 Nos. of Volvo Penta Engine Model TD1210G of 275 KVA Gen Set deployed at TVC.
- b) 1 No. Kirlosker Engine, Model 6SL9098 of 160 KVA Gen Set deployed at TVC.
- c) 2 Nos. of Ashok Leyland Engine, Model ALGP 402/1 of 75 KVA Gen Set deployed at DND-GPC.
- d) 1 No. of Kirlosker Engine, Model RB.33 of 30 KVA Gen Set deployed at Tanot GGS.

2.0 Operation and maintenance of 2 Nos. Fire Pump Kirlosker, Model 2AD8 and its prime-movers Kirlosker Engine, Model RB.66 deployed at DND-GPC.

3.0 Operation and maintenance of Water Treatment Plant consisting of iron removal filters, dosers, E.D. membranes, R.O. Plant, Kirlosker Model KPDS motor driven centrifugal pumps, under ground/over head water storage tanks, pipes/pipe fittings pertaining to water lines etc. at TVC as well as water pumps and their lines deployed at Tanot GGS and DND-GPC.

4.0 Maintenance of pipe/pipe fittings related to HSD lines at TVC including underground diesel storage tanks, diesel decanting pumps of Kirlosker, Model KPDS at TVC & DND-GPC.

5.0 Operation and Maintenance of various types of motor driven centrifugal pumps deployed at DND-GPC for applications such as condensate loading, water disposal etc.

6.0 Operation and maintenance of 3 Nos. of motor driven chiller pumps deployed at TVC for central air condition system and their various chilled water circulation lines.

7.0 Operation and maintenance of various heavy duty batteries used in the prime movers of different diesel generating sets in TVC, DND-GPC and Tanot-GGS.

8.0 Supply of HSD at 3 km. and Ranau Water point stations as per requirement on reimbursement basis for operation of 30 KVA Gen Sets at the above installations.

- 9.0 At their own cost, welding and cutting set with an expert and experienced welder with a helper to be made available by the Service Provider as and when required. Consumables viz. Electrodes, oxygen cylinder, carbide, diesel etc. shall also be provided by the Service Provider.
- 9.1 For smooth running of all the equipments deployed in Gas Development Project (TVC, DND-GPC & Tanot-GGS) and to maintain uninterrupted supply of gas, proper maintenance schedule to be prepared to take care of preventive/scheduled/breakdown maintenance including top/major overhauling of various equipment. Daily log sheets consisting of equipment, running hours, jobs carried out, spares consumed, spares in stock, consumption of HSD/Lub oil, jobs planned for next 72 hours etc. to be prepared and submitted to Chief Engineer (TS) on everyday morning.

MANPOWER :

The manpower as mentioned in enclosed **Annexure – C** are to be engaged for operation and maintenance jobs should have requisite experience as per Annexure-C to handle various equipments viz. Diesel Generating Sets of various capacity (30 KVA to 275 KVA), various centrifugal pumps, water treatment plant, pipe and pipe fittings jobs etc. The personnel engaged for the jobs should be conversant with operation and maintenance of all the equipments mentioned above or should have parallel experience.

B.3 SCOPE OF WORK (CIVIL ENGINEERING):

Maintenance of buildings of TVC, Tanot-GGS and DND-GPC requiring masonry, carpentry and plumbing jobs including supply of men and materials. Jobs include touch up painting, water supply, plumbing, repairing of minor roof leakages, repair of buildings, false ceilings, repair of doors, door closers, windows, gates, change of broken glasses/frames, cleaning & maintenance of drainage system/drains, maintenance of sanitation system/ sanitary lines, septic tanks etc., maintenance and repair of RCC foundations of equipment. Maintenance of the road in side the installation premises, open area and yards, watering of tree plantation & maintenance of trees at TVC, DND-GPC and TOT-GGS.

B.4 SCOPE OF WORK (FIRE SERVICE):

- 1.0
- i) Operation and maintenance of water cum foam tender including pump, PTO and all other accessories of Fire Tenders, Make: TATA-LPT 2416/46 and TATA-LPT 1613 TC148 at TVC and DND-GPC. Proper maintenance schedule is to be made in order to take care of preventive/schedule/break-down maintenance. Daily log sheet, maintenance records, spares stock and consumption of the spares to be properly maintained and to get duly certified by Company's Engineer. Consumption stock of consumables viz. HSD, lub-oil, foam compound etc. to be recorded in daily log sheet. Weekly testing of Fire pump, monitor, all fittings etc. to be carried out and records should be maintained accordingly.
 - ii) Proper records to be maintained by the Service Provider for preventive/schedule maintenance jobs. The breakdown maintenance jobs to be attended on top priority to put back the vehicle/tender in to normal operating conditions without any loss of time. Further, the Service Provider needs to furnish a detailed report on any such breakdown with suggestions /recommendations to avoid recurrence.
 - iii) The Fire Tender/Vehicle must be operated at least for 5 minutes at the beginning of each shift daily and proper records to be maintained.

2.0 Maintenance and operation of all First Aid fire fighting equipment viz. :

- i) Foam type extinguisher (including 9 ltrs to 150 ltrs) - 24 Nos.
- ii) DCP type extinguishers (including 5 to 70 kg) - 26 Nos.
- iii) Carbon dioxide type extinguisher (4.5 kg) - 28 Nos.

Proper maintenance schedule is to be made as per IS-2190, 2000, in order to take care of preventive maintenance/statutory schedule maintenance. Quarterly maintenance record, spares stock and consumption of the spares to be properly maintained and to get duly certified by Company's engineer. Consumption stock of consumables viz. Chemical, foam refill, dry chemical powder, discharge tubes, CO₂ cartridge, refilling of CO₂ extinguisher, paints etc. to be recorded in fortnightly/monthly log sheet. All fire fighting chemical/ refilling powder, foam compound, cartridge, discharge tube/hose, CO₂ gas, any consumables/ spares will be provided by the Company. However, in case of emergency, bidder will arrange procurement of spares/consumables as per requirement and will be reimbursed on actual with 5% handling charge.

- 3.0 Weekly testing of water ring mains and associated fire-fighting equipment at DND-GPC and its record maintenance (it is under process of installation).
- 4.0 Imparting first aid fire fighting training to all employees/executives as per OIL Mines Regulations - 1984 and its record maintenance.
- 5.0 Conducting Mock drill as per OIL Mines Regulations-1984/OISD and its record keeping.
- 6.0 Weekly wet/dry fire drill for emergency preparedness and its record maintenance.
- 7.0 Maintenance and proper water storage in the above/under ground static water tank exclusively for the fire fighting purpose at DND-GPC up to the desired level.
- 8.0 Weekly testing of fire pump at DND-GPC and its record maintenance - 2 Nos.
- 9.0 Entire fire fighting responsibility in case of any outbreak of fire inside the Company area/ outside (if the management permits for outside the company area).
- 10.0 To provide class A and class B standby fire services to any Company's activities in Tanot area.
- 11.0 To monitor and test the minimax fire detection cum alarm system at TVC/GGS/DND-GPC and to keep the system in sound working conditions and its record maintenance fortnightly.

MANPOWER:

The work force as mentioned in enclosed Annexure – C are to be deployed for operation and maintenance jobs for various equipments viz. Fire Tender, First-aid fire fighting equipment of different capacity, fire pumps and fire fighting operation should have experience in line as per our requirement. Bio-data/experience of the personnel to be produced for our scrutiny before deploying them for the job. The workforce to be engaged with proper uniform as prevailing in the fire service department in India.

NOTE :- Manpower indicated in Annexure-C for Mechanical/Electrical/Fire Service is minimum requirement and. However, the Service Provider should arrange additional manpower on his own cost on temporary basis for execution of special jobs, if any, during the Agreement period.

C) **SCOPE OF WORK (ADMINISTRATION)**

1.0 **ACCOMMODATION :**

Maximum 12 Nos. of Company personnel will stay at Tanot Village Complex (TVC) at a given point of time. These Company personnel shall be comprising of both workmen and executives and shall be provided with executive and workmen accommodations at the TVC separately on double occupancy basis. Remaining rooms / space available at the TVC shall be at the disposal of the Service Provider for accommodating their personnel/office/stores/ dispensary/stores etc. as detailed under section-IV, para-1.0 of this document. Hard Furniture and furnishings of Company personnel will be provided by the Company. Service Provider will have to provide furniture and furnishings to their own personnel. Service Provider will have to provide laundry service to their employees as well as to Company employees. Service Provider will supervise operation and maintenance of housekeeping functions appropriately.

2.0 **CATERING SERVICES :**

The Service Provider will have to arrange catering services for their employees as well as for Company employees at site including the visiting officials and dignitaries. This includes bed tea, breakfast, lunch, evening tea and snacks and dinner. The food must be of standard quality. For a maximum of 12 Nos. of Company personnel a day as mentioned above, no charge will be payable by Company to the service Provider for catering services. However, for any extra Company's designated persons beyond above mentioned 12 persons in any day, catering services will be provided on payment basis as per the rate quoted/agreed. Standard menu for the Catering Services as under is enclosed vide Appendix -I.

| | |
|--------------------------------|----------|
| Bed Tea/Coffee with biscuit | Rs. |
| Breakfast | Rs. |
| Lunch | Rs. |
| Evening Tea/Coffee with snacks | Rs. |
| Dinner | Rs. |
| | ----- |
| Total : | Rs. |

NOTE : The Service Provider is to maintain a register for this and get it signed by the Company representative on daily basis. Any other catering service will be governed as per the rate quoted in the price schedule for the said item. For cooking and dining, Company will provide kitchen and dining halls for both executives and workmen. Utensils, crockery and cutlery with all other accessories/appliances and LPG stove/cylinder will have to be arranged by the Service Provider at their cost.

2.1 **CATERING INCHARGE AT TVC :**

One Catering In-charge having minimum 2/3 years of experience in catering services and management shall be deployed by the Service Provider and will be responsible for catering, general house keeping inside and outside the TVC under the supervision of the Field Manager.

3.0 MEDICAL FACILITY :

The Service Provider shall provide first aid medical services for Company personnel as well as for their own personnel round the clock. For this, a medical practitioner having valid registration with Indian Medical Council and with a minimum qualification of MBBS from a recognized University to be provided along-with a qualified Male Nurse. Proper room for doctor as well as dispensary shall be provided by Company. The Service Provider shall stock all essential medicines including life saving drugs as well as necessary medical equipment in the dispensary. Vehicle for Ambulance service will have to be provided by the Service Provider round the clock for their as well Company personnel for transferring the patient from fields/workplace to the base camp as and when required basis. First aid kit to be kept at DND-GPC, Tanot GGS, TVC at easily available locations and shall be replenished from time to time and up to date.

4.0 TRANSPORT :

The Service Provider will have to arrange own transport for movement of their personnel in the field and other services. Vehicle for Ambulance service as stated above, will have to be provided for all field personnel including Company personnel.

5.0 SANITATION :

The Service Provider will have to provide sufficient number of sanitary cleaners at TVC/GPC/ GGS alongwith necessary materials and maintain the installation/premises in clean and perfect hygienic condition. All consumables and chemicals, accessories required for the job shall be arranged by the Service Provider at their cost and shall be included in the O & M day rates.

6.0 PLANTATION & WATERING:

The Service Provider will have to maintain the existing trees & lawns etc. at all three installations and arrange for manure and regular watering adequately. Service Provider should also arrange for seeds and plants of seasonal flowers time to time for beautification of the premises. All expenses towards this shall be on Service Provider's account and the O & M rates shall be quoted accordingly.

ANNEXURE - I

AVERAGE GAS COMPOSITION (PRODUCED AT DND-GPC)

| Srl. No. | Components | MOL % |
|----------|----------------|-------|
| ----- | ----- | ----- |
| 1. | METHANE | 45.09 |
| 2. | ETHANE | 1.38 |
| 3. | PROPANE | 0.23 |
| 4. | I-BUTANE | 0.05 |
| 5. | N-BUTANE | 0.07 |
| 6. | I-PENTANE | 0.01 |
| 7. | N-PENTANE | 0.00 |
| 8. | HEXANE + | 0.11 |
| 9. | CARBON DIOXIDE | 15.32 |
| 10. | NITROGEN | 37.74 |

NOTE : Above is the average composition of the produced gas at OIL's installation for indicative purpose only. However, this may vary on any other given day.

Annexure - A
(Section – IV)

ELECTRICAL EQUIPMENT INSTALLED AT DND-GPC

| S. N. | EQUIPMENT | RATING/SPECIFICATION | SUPPLIER | MAKE | REMARKS |
|-------|-----------------------|----------------------|-------------|---|---------------------------------|
| 1 | D G Set No. 1 | 75 KVA, 415 V | M/s BPPL | Engine-Ashok Leyland, Alternator - Crompton Greaves | AC Volt=415 AC Amp=104 |
| 2 | D G Set No. 2 | 75 KVA, 415 V | M/s BPPL | Engine-Ashok Leyland, Alternator - Crompton Greaves | DC Volt =60 DC Amp = 2 |
| 3 | MCC Panel | 415 V, 3 ph | M/s C&S | | |
| 4 | LDB | 415 V, 3 ph | M/s C&S | M D S | |
| 5 | ACDB | 415 V, 3 ph | M/s C&S | M D S | |
| 6 | Lighting Transformer | 25 KVA | M/s INDCOIL | | |
| 7 | Battery Bank | 144 V, 400 AH | M/s SBL | Standard Battery | |
| 8 | UPS | 2 x 7.5 KVA | M/s GHCL | G H C L | |
| 9 | Fire Alarm System | 8 Zone, 230 V, 1 ph | M/s SIL | Minimax | |
| 10 | Fire Water Pump Panel | 230 V, 1 ph | M/s KBL | Achyut | |
| 11 | Annunciation Panel | 12 Window | M/s BPPL | Digicont | |
| 12 | DG Auto Control Panel | 24 V, DC Control | M/s BPPL | -- | |
| 13 | Street Light | 125 W, 250 W-HPMV | M/s FCG | F C G | FLP-19 Nos. Non FLP- 29 Nos. |
| 14 | UPS | 1.5 KW | | | Supply to gas flare system |

| S. N. | PUMP/MOTOR | RATING/SPECN | SUPPLIER | MAKE |
|-------|----------------------------|------------------|------------------------|--------------------|
| 1 | Condensate Loading Pump | 0.75 KW, 3 Phase | M/s Crompton Greaves | Crompton Greaves |
| 2 | Drain Sump Pump | 0.75 KW, 3 Phase | M/s Kirlosker Electric | Kirlosker Electric |
| 3 | Water Sump Pump | 0.75 KW, 3 Phase | M/s Kirlosker Electric | Kirlosker Electric |
| 4 | Glycol Pump No. 1 | 5.5 KW, 3 Phase | M/s Westing House | Westing House |
| 5 | Glycol Pump No. 2 | 5.5 KW, 3 Phase | M/s Westing House | Westing House |
| 6 | Service Water Pump | 0.75 KW, 3 Phase | M/s Kirlosker Electric | Kirlosker Electric |
| 7 | Diesel Pump | 1.1 KW, 3 Phase | M/s Kirlosker Electric | Kirlosker Electric |
| 8 | Drinking Water Pump | 0.37 KW, 3 Phase | M/s Beacon | Beacon |
| 9 | Submersible water Pump set | 15 KW, 3 Phase | - | KSB |

Annexure – A

(Section – IV)

ELECTRICAL EQUIPMENT INSTALLED AT TANOT-GGS

| S.N. | EQUIPMENT | RATING/SPECIFICATION | SUPPLIER | MAKE | REMARKS |
|------|---------------------------------|----------------------|----------------|--|-----------------------------|
| 1 | D G Set No. 1 | 30 KVA, 415V | M/s Super Nova | Engine-KOEL, Alternator - Crompton Greaves | AC Amp=41.7 DC Volt=215 |
| 2 | MCC Panel | 415 V, 3 ph | M/s C&S | -- | DC Amp-4.2 |
| 3 | LDB | 415 V, 3 ph | M/s C&S | -- | |
| 4 | Lighting Transformer | 5 KVA | M/s MDS | Elegant | |
| 5 | Battery Bank for Solar Lighting | 36 V, 4500 AH | M/s CEL | Exide | 54 No, 2V each |
| 6 | Battery Bank for Solar | 24 V, 500 AH | M/s CEL | Exide | 24 Nos., 2V, 2 sets |
| 7 | Battery Bank for Solar | 24 V, 180 AH | M/s CEL | Exide | 12 Nos., 6 V, 3 sets |
| 8 | Solar Power Controller | 24 V, 45 A | M/s CEL | Uni-insta | Nominal Battery, 30-40 V |
| 9 | Battery Charger for Solar | 50 V, 225 A | M/s CEL | Uni-insta | Max charge current 185A |
| 10 | Fire Alarm System | 8 Zone, 230 V, 1 ph | M/s SIL | Minimax | |
| 11 | Street Light | 125 W, 250 W-HPMV | M/s FCG | FCG | FLP-3 Nos., Non-FLP-18 Nos. |
| 12 | Water Pump | 0.75 KW | M/s KEL | KEL | - |

Annexure - A
(Section –
IV)

ELECTRICAL EQUIPMENT INSTALLED AT TANOT VILLAGE COMPLEX

| S. N. | EQUIPMENT | RATING/SPECN. | SUPPLIER | MAKE | REMARKS |
|-------|----------------------------|--|------------------------|---------------------------------------|---|
| 1 | D G Set No. 1 | 275 KVA, 415 V | M/s Super Nova | Engine-Volvo, Alternator - Stamford | AVR5X440, Amp 383, PF=0.8, d volt -38, RPM-1500, DC, Tap 20 |
| 2 | D G Set No. 2 | 275 KVA, 415 V | M/s Super Nova | Engine - Volvo, Alternator - Stamford | ----- do ----- |
| 3 | D G Set No. 3 | 160 KVA, 415 V | M/s Super Nova | Engine – KOEL Alternator- Crompton | AC Amp=223, RPM-1500, DC Volt -85, DC Amp 310 |
| 4 | MCC Panel | 415 V, 3 ph | M/s C & S | C & S | |
| 5 | Aux. Panel | 415 V, 3 ph | M/s C & S | C & S | |
| 6 | LDB - 1 | 415 V, 3 ph | | MDS | |
| 7 | LDB - 2 | 415 V, 3 ph | | MDS | |
| 8 | LDB - 3 | 415 V, 3 ph | | MDS | |
| 9 | LDB - a | 415 V, 3 ph | | MDS | |
| 10 | LDB - b | 415 V, 3 ph | | MDS | |
| 11 | LDB - c | 415 V, 3 ph | | MDS | |
| 12 | LDB - d | 415 V, 3 ph | | MDS | |
| 13 | FCU - 1 | 415 V, 3 ph | | MDS | |
| 14 | FCU - 2 | 415 V, 3 ph | | MDS | |
| 15 | Aux. DB | 415 V, 3 ph | | MDS | |
| 16 | ACDB | 415 V, 3 ph | | MDS | |
| 17 | Battery Bank | 120 V, 150 AH | M/s SBL | Standard | |
| 18 | UPS | 2 x 2.5 KVA | M/s GHCL | GHCL | |
| 19 | Fire Alarm | 8 Zone, 230 V, 1 ph | M/s SIL | Minimax | |
| 20 | Telephone Exchange | Eltex-56, 32 line | M/s L&T | L&T | |
| 21 | Street Light | 70 W, HPSV | M/s Crompton | Crompton | 40 Nos. |
| 22 | Central A/C system | 75 TR Capacity with compressors chilling units pumps (for chilled water circulation, AHU (4200/3300/3600) all 3 SETS, FCU-46 | M/s Blue Star | Blue Star | |
| 23 | Diesel Pump No.1 | 1.1 KW | M/s Kirlosker Electric | Kirlosker Electric | |
| 24 | Diesel Pump No.2 | 1.1 KW | M/s Kirlosker Electric | Kirlosker Electric | |
| 25 | Water Softening Pump No. 1 | 3.7 KW | M/s Kirlosker Electric | Kirlosker Electric | |
| 26 | Water Softening Pump No. 2 | 3.7 KW | M/s Kirlosker Electric | Kirlosker Electric | |
| 27 | Drinking Water Pump | 1.5 KW | M/s Kirlosker Electric | Kirlosker Electric | |

Annexure - B
(Section-IV)

**DETAIL SPECIFICATIONS OF MAJOR MECHANICAL EQUIPMENT
AT TVC/DND-GGS/ TANOT-GGS**

| LOCATION | EQUIPMENT | SPECIFICATIONS | APPLICATIONS | REMARKS |
|------------|---|---|---|--|
| TVC | D G Set – (2 Nos.) | Capacity : 275 KVA Engines - Diesel driven engines 6 cylinder, water cooled, turbo charge engine Make-Volvo Penta, Sweden Model TD1210G Rated Net Power KW/HP- 267/363, RPM-1500, Made in Sweden, Fuel Pump Make - BOSH, Germany Turbo Charge - Holset, H20-9351AK/S28 WLL Alternator – Stamford. | Power Generation for central air conditioner plant and for general purpose also | These are imported engines and should be operated by competent and experienced operators only. Therefore, the Service Provider must have operating and maintenance experience for these engines. It may be mentioned that this is a critical equipment for our plant. Engines are fitted with various safety devices. |
| | DG Set- (1 No.) | Capacity - 160 KVA, Engines - Diesel driven, 6 cylinders, water cooled, turbo charge engines. Make - Kirlosker Oil Engine Ltd., PuneModel - 6 SL-9088 TA Rated KW/HP - 140/190 RPM – 1500 Fuel Pump Make- I Orange, Germany, Alternator - Crompton | ----- DO----- | The operator must have operation and maintenance experience for this type of generator sets. |
| | Pumps – (2 Nos.) | Motor Driven Centrifugal Pump, Model–KPDS32/13 Make - Kirlosker Head-17.10 M Flow - 1.39 L/S Size-40 mm RPM – 2800 Pump Input - 0.61 KW | Transport diesel from under ground tank to DG Sets | |
| | Pumps – (2 Nos.) | Motor Driven Centrifugal Pump, Make-Kirlosker Model/Type - KPD 32/20 Head - 40 M Flow - 3.19 L/S Size- 50 x 32 mm RPM-2850 Pump Input - 3.25 KW | Service water pump at TVC | |
| | Pumps for Water Treatment Plant - 1No. | Back wash pump Motor Driven, Model - A 0122 OKType - B EMake - BE Pumps P.Ltd., Calcutta Head - 15 M Flow - 2.5 M ³ /hr | For back washing to water treatment plant unit | |

| | | | | |
|--|--------------|---|---|--|
| | Pump - 1 No. | Feed Water Pump Motor Driven Make – Promivac Model - PCS 200 RPM – 2800 Prime move - H + P | Feed water pump water treatment plant | |
|--|--------------|---|---|--|

| Location | EQUIPMENT | SPECIFICATIONS | APPLICATIONS | REMARKS |
|----------|-----------------------|---|--|---|
| | Pump - 1 No. | Motor Driven, suitable for acid handling Make - Sandur Prominent, Model - ECC 30407, Cap - 6 L HP Rating continuous | Chemical dosing pump for water treatment plant | |
| | Water Pump - 1 No. | Motor Driven Centrifugal Pump Type - KPD2S/16QFOL Flow rate - 1.11 L/S Head - 30 M, RPM- 2800 Size - 40 x 25 mm P/mover rating-1.50 KW Pump Input - 1.17 KW | Water Pump | |
| | Water Treatment Plant | Capacity - 500 LPH Make - Nuchem Weir Ltd., Faridabad Max Feed TDS - 2135, Max Product TDS - 350 PPM Recovery - 50% | Water treatment for drinking water | The water treatment plant consists of various pumps like backwash feed water dosing pump etc. iron removal filter assy. This plant also consist of various safety devices, inter-lock arrangements like safety of meant system high voltage low water pressure pump trip, desiring of pump failure etc The operator should have sufficient experience for operating the same. |
| | Pumps – (3 Nos.) | Motor Driven Centrifugal Pump Make - Greaves Pearless Type - 2 AD8 Size - 75 x 50 mm Flow rate - 41 m3/hr Head - 30 M RPM – 2900 P/mover rating - 15 HP Pump Input - 1.17 KW | Chiller pump for AC plant | |

| LOCATION | EQUIPMENT | SPECIFICATIONS | APPLICATIONS | REMARKS |
|----------------|--------------------|---|---|---|
| DND-GPC | D G Set – (2 Nos.) | Capacity 75 KVA ,Engines - Diesel driven engines, 6 cylinder, water cooled engines, Make - Ashok Leyland, Model - ALGP 402/1, BHP 82, RPM - 1500, Fuel Pump - Mico, Alternator – Crompton | Power generation for DND-GPC requirement. | Operator should have sufficient experience for operation and maintenance of the Gen set of this model engine. The engine has been provided for low lub oil cut off switch & high water temp. switch, over speed trip etc. for safety. |
| | Pump - 1 No. | Motor Driven Centrifugal Pump Make - Kirlosker Brothers Ltd. Type - KPDS 32/13 Head - 16.20 M Flow - 1.39 L/S Size - 40 mm, RPM-2800 | Diesel transfer pump, for fire pump set | |
| | Pump - 1 No. | Motor Driven Centrifugal Pump, Make - Kirlosker Brothers Ltd. Type - KPDS 32/20 Head - 11.90 M Flow - 1.39 L / S Size-40 mm, RPM-1380 | Service Water Pump | |
| | Pump - 1 No. | Motor Driven Centrifugal Pump Make - Kirlosker Brothers Ltd. Model/Type-KPDS 32/20 Head - 12 M Flow - 1.39 L/S Size - 32 x 50 mm RPM - 1380 | Condensate loading pump | |
| | Pump - 1 No. | Motor Driven Centrifugal Pump, Make - Kirlosker Brothers Ltd.Model/Type - KPDS 32/16 Head - 2.46 M Flow - 1.39 L/S Size - 40 MM RPM - 1380 | Condensate water lifting pump | |
| | Pump - 1 No. | Motor Driven Centrifugal Pump, Make - Kirlosker Brothers Ltd. Model/Type- KPDS32/20 Head - 14 M Flow - 1.39 L/S Size - 40 MM RPM - 1380 | Condensate tank filling pump | |

| | | | | |
|--|--------------------|---|----------------------------|--|
| | Pump – (2 Nos.) | Motor Driven Receprocatng Pump Make - Union Pump (Canada) Ltd. Size-1 1/2" x 2 1/4" DX-5 Discharge Pressure - 640 lbs at 175 Degree F. Suction Pressure – Atn. at 175, RPM - 228 Capacity - 7.45 USGPM Motor 5.5 HP | Glycol circulating pump | These pumps are imported and operator should have experience for operation & maintenance of this type of pump. These pumps are very critical for our plant. |
|--|--------------------|---|----------------------------|--|

| LOCATION | EQUIPMENT | SPECIFICATIONS | APPLICATIONS | REMARKS |
|----------|--------------------------------|---|-----------------------|--|
| | Pump – (2 Nos.) | Diesel Engine Driven Centrifugal Pump Make-Kirlosker Bros. Ltd. Type - DSM 100/36 Head - 70 m Size - 125 x 100 mm Flow - 38.06 L/S RPM - 1500 | Fire fighting pumps | The operators should have sufficient experience for operation and maintenance of fire fighting equipment /arrangement. |
| | Engine – (2 Nos.) | Diesel driven engines 6 cylinder, water cooled engine, Make - Kirlosker Oil Engine, Model - RB 66, Rated HP/KW - 76/56, coupling - ESBI (India) | Fire pump set engine | Engine has been fitted with safety devices like audio visual alarm, low L/oil switch, high water temperature switch etc. |
| | Submersible Water Pump (1 No.) | 15 KW. 3 phase | For fire water supply | |

| LOCATION | EQUIPMENT | SPECIFICATIONS | APPLICATIONS | REMARKS |
|--------------------|-------------------|---|--|---------|
| Tanot-G G S | D G Set – (1 No.) | Capacity 30 KVA, Engines - Diesel driven engine, 3 cylinder, water cooled engines, Make - Kirlosker Oil Engine, Model - RB 33 Rated HP/KW - 38/28 RPM - 1500 Fuel Pump - Mico Alternator - Crompton Greaves | Power generation for water pump motor and also for general purpose | |
| | Pump – (1No.) | Motor Driven Centrifugal Pump, Make - Kirlosker Brothers Ltd. Type - KPDS 32/30 Head - 12.30 M Size - 40 mm Flow - 1.39 L/S RPM - 1380 Input - 0.49 KW | Water pump | |

KEY PERSONNEL - TECHNICAL SERVICE SECTION

| S.N. | DESIGNATION | QTY | JOB/RESPONSIBILITIES | DEPLOYMENT |
|--|--|------------|---|---|
| <i>MECHANICAL ENGINEERING:</i> | | | | |
| 1 | Mechanical Engineer, BE/B Tech with 5 Yrs. relevant experience or Diploma holder with 10 yrs experience. | 1 | Engineer will be overall in-charge of the mechanical jobs and should have sufficient relevant experience in operation and maintenance of DG sets (capacity not less than 160 KVA) engines of Cummins and Volvo Penta make, Centrifugal/reciprocating pumps pipe fittings, compressor/ Water treatment Plant/ AC Plant of 75 ton capacity/ procurement of spares for PM/ Running maintenance oil/gas base industries experience will be preferred. | General Shift and should be available 24 hrs. |
| 2 | Mechanic, ITI with 5 years experience or Matriculate with 10 yrs Experience. | 1 | Mechanics will be responsible for the Maintenance of various engines, pumps and compressors and should have experience for overhauling of above make engines, compressor/pumps etc./water treatment plant and their operations. He should be conversant with plumbing job also. | General Shift and should be available 24 hours. |
| 3 | DG Set Operator cum Electrician, ITI with wireman license and similar nature of min. 5 yrs. and to be conversant with motor control and trouble shooting including operation of DG set | 2+2 | To look after operation of DG sets (capacity not less than 160 KVA) and various equipments (electrical) in the shift to maintain un-interrupted power availability to AC plant/ equipment/ and water treatment plant and domestic/industrial lighting/ equipment. | 12 hrs shift duty at DND, GPC & TVC. |
| <i>ELECTRICAL ENGINEERING :</i> | | | | |
| 1 | Electrical Engineer Degree/Diploma with 5 yrs experience in case of Degree holder and 10 years in case of Diploma holder. Both must have Electrical supervisor license. | 1 | Electrical Engineer Will be overall in-charge of all electrical jobs & should have relevant experience in operation and maintenance of DG sets (not less than 160 KVA) (alternators), Electrical distribution system, related control panels MCC panels and other back up facility UPS, various motors, Central Air Conditioning System of 75 ton capacity with accessories/ equipment and other cooling appliances, solar lighting system, | General shift to be available 24 hours |

| | | | | |
|------------------------------|--|-----|---|---|
| | | | Procurement and planning of spares. | |
| 2 | Supervisor, Diploma holder having 3 years experience with supervisory license | 1 | To assist Electrical Engineer in supervision of day to day, periodic /schedule maintenance and trouble shooting jobs of all electrical equipments. To keep the relevant records and compliances of all safety norms as per OMR-1984. | General shift to be available 24 hours |
| 3 | AC Plant Mechanic Relevant experience of minimum 5 yrs with ITI trade certificate in air conditioning and refrigeration. | 1+1 | To look after operation and maintenance, trouble shooting of central AC System of 75 ton capacity and window/split model air conditioners and other cooling appliances | 12 hours shift duty |
| <i>FIRE SERVICE :</i> | | | | |
| 1 | Fire Officer : Sub-Officer course with four (4) years experience or Station Office course with one (1) year experience or fifteen (15) years experience in Fire Service discipline including four (4) yrs. in Supervisory grade. | 1 | Overall in-charge of fire fighting and operation and maintenance of Fire Tender, all fire fighting extinguishers and equipments and its record maintenance as per statutory regulations. Monitoring of fire detection cum alarm system. | General shift and should be available for 24 hours. |
| 2 | Fire Supervisor, Metric with heavy vehicle driving licence and 4 years experience in the fire service or two years experience with certificate course from State Fire service /Civil/Defence/any recognized Institution. | 1 | Overall responsible for fire fighting, operation and maintenance of Fire Tender, all fire fighting extinguishers and equipments. Fire pump, fire drill and reporting. | General shift and should be available for 24 hours. |
| 3 | Fire Operator, metric with HD vehicle driving licence with 4 years experience in fire service | 1 | Responsible for Fire Fighting Operation, operation and maintenance of Fire tender and all other fire fighting equipments | General shift and should be available for 24 hours. |
| 4 | Fireman, Metric with Certificate course from State Fire Service/Civil/Defence/ any recognized institute | 6 | Responsible for Fire Fighting Operation, and operation and maintenance of all fire fighting equipments | 1. 12 Hrs shift duty (2+2 GPC) 2. General shift and should be available for 24 hours (2 at TVC). |

NOTE : 1. As per job requirements the Service Provider will have to provide adequate manpower with necessary tools and equipment for smooth operation and

maintenance of plant and equipment. For jobs of housing/industrial maintenance, Service Provider may engage temporary staff as and when required.

2. It will be the responsibility of the Service Provider to provide safety gears, proper tools and equipment to the working staff.

ANNEXURE-D

LIST OF SINGLE PHASE MOTORS

| | | |
|------|------------------------------|---|
| 1.0 | Ceiling fan at TOT-GGS | : 1 No. |
| 2.0 | Ceiling fan at DND-GPC | : 1 No. |
| 3.0 | Ceiling fan at TVC | : 1 No. |
| 4.0 | Exhaust Fan (60W) at TOT-GGS | : 3 Nos. |
| 5.0 | Exhaust Fan (60W) at DND-GPC | : 10 Nos. |
| 6.0 | Exhaust Fan (60W) at TVC | : 10 Nos. |
| 7.0 | FCU Motor at TVC | :46 Nos. |
| 8.0 | Fan Motor to 1.5T window AC | : 9 Nos. (3 Nos. at TVC & 6 Nos. at DND-GPC) |
| 9.0 | Fan Motor at 2T split AC | : 4 No at DND-GPC. |
| 10.0 | Wall fan at TVC | : 28 No. |

(END OF SECTION)

BID REJECTION CRITERIA (BRC) / BID EVALUATION CRITERIA (BEC)

I. BID REJECTION CRITERIA (BRC):

The bid shall conform generally to the specifications and terms and conditions given in the bidding documents. Bids will be rejected in case services offered do not conform to the required parameters stipulated in the technical specifications. Notwithstanding the general conformity of the bid to the stipulated specifications, the following requirements will have to be particularly met by the bidders without which the same will be considered as non-responsive and rejected.

1.0 TECHNICAL

- 1.1 During last seven years ending March'2008, the Bidder/Principal Bidder (in case of Joint Venture Firms/Consortium) must have minimum of 18 (Eighteen) month's field experience of operating and maintaining oil/gas field and processing facilities having glycol dehydration unit with relevant nature of jobs as mentioned below in the organization like OIL/ONGCL or other upstream oil industries any where in the world.
- 1.2 The documentary evidence of relevant experience must be submitted along with the technical bid pertaining to the following operation and maintenance activities. In absence of any of the following documentary evidence the bid shall be liable for rejection:
 - i) Experience in onshore/offshore Gas field operation and maintenance including handling of gas wells.
 - ii) Operation & Maintenance (O&M) of Gas/oil processing plant with in built glycol dehydration plant of minimum handling capacity 0.5 MMSCUMD.
 - iii) Knowledge and experience in O&M of SCADA/DCS based instrumentation and control system in the Gas Processing Plants/Oil Collecting Stations/Group Gathering Stations etc.
 - iv) Operation and Maintenance of Diesel Gen. Sets with control panel, MCR Panel and various other control gears and complete electrical distribution system including distribution panel and Transformers for various utilities.
 - v) Operation and Maintenance of Fire Fighting Equipment and Services as applicable in oil field/gas field.
- 1.3 In regard to all other services/jobs mentioned in the tender document like operating and maintaining Solar Lighting System, Water Treatment Plant operating with E.D or R.O. system, Central air conditioning plant, Civil and other maintenance jobs of the various complexes, Catering, Sanitation, Medical facilities etc., the bidder must provide documentary evidence regarding their capability with list of experienced manpower or arrangements for carrying out the above services/jobs to the satisfaction of the Company. Without these documents or the details furnished not meeting to the satisfaction of the Company, the offer is liable for rejection.
- 1.4 The key manpower to be engaged by the successful bidder should be as per qualifications, experience and number indicated in the tender document under the heading "Key Personnel". Bio-data of the intended key persons are to be provided along with the technical bid. Further, the bidders must furnish a declaration in their Technical Bid that for all intended services mentioned in the tender document shall be provided as required without effecting the continuity and quality of operations by deploying adequate suitable resources. Without these documents the bids will be liable for rejection.

- 1.5 Bids which do not include all the jobs/services mentioned in the tender document will be considered as incomplete and rejected.
- 1.6 Bidders must confirm mobilization of manpower and equipment for performance of the services within 30 days from the date of issue of Letter of Intent intimating award of contract against the tender, failing which their offer will be rejected.
- 1.7 Conditional offers will not be considered and will be rejected.
- 1.8 Any bid containing false statement will be rejected.
- 1.9 In absence of direct experience of the bidder/principal bidder in areas explained in Para 1.0 above, a legally valid MOU with a party having adequate experience as mentioned therein and defined by the following parameters will also be considered:
 - i) There must be a clear commitment accountability clause of the partners in the MOU.
 - ii) Clear indication of MOU validity period covering the entire period of the proposed contract.
 - iii) Extent of financial stake/equity participation of the MOU partners.
 - iv) Documentary evidence of MOU partner as indicated in Para 1.4 and 1.5 of above.
 - v) A clear undertaking from the MOU partner not to resile from their obligations during the currency of the contract specifically indicated their role in execution of the contract.

2.0 COMMERCIAL

- 2.1 Tender is being processed according to **single stage two bid system**, i.e. Technical bid (un-priced) and Commercial bid (priced) both to be submitted together in separate sealed envelopes on or before the scheduled bid closing date and time. Bids shall be rejected outright if the technical bids contain the prices/rates.
- 2.2 Bidders must offer firm prices in Indian Rupees in their commercial bids only. Prices quoted by the successful bidder must remain firm during the execution of the contract and not subject to variation on any account whatsoever. A bid submitted with an adjustable price quotation will be treated as non-responsive and rejected.
- 2.3 Bid security shall be furnished as a part of the Technical bid. The amount of bid security should be as specified in the 'Forwarding Letter. However, Public Sector Undertakings (Central or State) are exempted from submission of bid security against this tender. Bid not accompanied by a proper bid security as above will be rejected.
- 2.4 The bid documents are not transferable. Offers made by Bidders who have not purchased the Bid Documents from Company will be rejected.
- 2.5 Bids must be kept valid for minimum 120 days from the scheduled bid closing for acceptance by Company. Bids with inadequate validity shall be rejected as non-responsive
- 2.6 Bid shall be typed or written in indelible ink and original bid shall be signed by the Bidder or their duly authorised representative on all pages failing which the bid may be rejected.

- 2.7 Bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by Bidder, in which case such corrections shall be initialed by the person(s) signing the bid. However, white fluid should not be used for making corrections. Any bid not meeting this requirement shall be rejected.
- 2.8 Any bid received in the form of Telex/Cable/Fax/E-mail will not be accepted.
- 2.9 Any Bid received after the deadline for submission of bids prescribed by the Company will be rejected.
- 2.10 The following Clauses with all its sub-clauses should be agreed in toto, failing which the bid will be rejected.
- Performance Security Clause
 - Tax liabilities Clause
 - Insurance Clause
 - Force Majeure Clause
 - Termination Clause
 - Arbitration Clause
 - Withholding Clause
 - Applicable Law Clause
 - Liquidated damages and Penalty clauses
- 2.11 The principal bidder must have a minimum turnover of ₹ 1.00 Crore/year during last two financial year ending March'2008. In order to assess the financial stability of the bidder by Company, the bidder must provide financial statements like balance sheet and audited profit and loss account for last three completed financial years along with Bankers certificate, copies of contracts for similar operation and maintenance services indicating the value therein along-with its technical bid. In case of joint venture firms, the financial statement of all the constituent members will have to be submitted. In absence of these documents the bid is liable for rejection.
- 2.12 Bidders must quote clearly and strictly in accordance with the price schedule outlined in enclosed Proforma – II, otherwise the bid will be summarily rejected.

3.0. GENERAL

- 3.1 The compliance statement (Proforma – I) should be fully filled up and should form a part of technical bid. In case bidder takes exception to any clause of tender document not covered under BEC/BRC, then the Company has the discretion to load or reject the offer on account of such exceptions/deviations if the bidder does not withdraw/modify the same when/as advised by the Company. The loading so done by the Company will be final and binding on the bidders.
- 3.2 To ascertain the substantial responsiveness of the bid the Company also reserves the right to ask the bidder for clarifications in respect of clauses covered under BEC/BRC also and such clarifications fulfilling the BEC/BRC clauses in toto must be received on or before the deadline given by the Company, failing which the offer will be summarily rejected.
- 3.3 **If any of the clauses in the BRC contradict with other clauses of Bid Document elsewhere, then the clauses in the BRC shall prevail.**

- 3.4 The Company also reserves the right to cancel/withdraw the Tender or annul the bidding process at any time prior to award of contract, without thereby incurring any liability to the bidders or any obligation to inform the bidders of the grounds for Company's action. The bidder must confirm their acceptance to this clause in their respective bids.

II. BID EVALUATION CRITERIA (BEC):

- 1.0 The bids conforming to services required, technical specifications, terms and conditions stipulated in the tender and considered to be responsive after subjecting to Bid Rejection Criteria will be considered for further evaluation as per Bid Evaluation Criteria.
- 2.0 The Bids shall be technically evaluated based on the requirements given in Section – IV (Terms of Reference/Scope of works/Technical Specifications). The various requirements including personnel to be deployed by the bidder should meet the tender terms given in the bid document.
- 3.0 Priced Bids will be evaluated on the basis of total cost for a period of two (2) years Operation and Maintenance services and the contract will be signed with successful bidder accordingly.
- 4.0 Commercial Evaluation will be done on the basis of rates quoted by successful bidder and will not be paid more than the limit indicated against each of the following rates :
- a) Payment towards Mobilisation and Demobilization Charges together will not exceed one percent (1%) of the total evaluated contract value for two years duration.
 - b) Payment towards standby day rate shall not exceed 98% of the respective operating and maintenance day rate on pro-rata basis.
 - c) Payment towards Force Majeure day rate shall not exceed 90% of the respective operating and maintenance day rate on pro-rata basis.

Bidders are to take note of above limits and quote accordingly, failing which the offer will be liable for rejection.

- 5.0 **Evaluation of the Priced Bids will be as per enclosed Proforma-II for arriving at the Total Estimated Cost of the Contract.**

NOTE:-

- i) The items referred in the enclosed Proforma – II are to be read in conjunction with **Section-V**.
- ii) It is, however, to be clearly understood that the assumptions made in respect of the number of days/months/parameters for various operations are only for the purpose of evaluation of the bids. The Contractor will be paid on the basis of the actual number of days/ parameters, as the case may be.
- iii) All taxes, levies and duties including Service Tax etc. will be borne by the Contractor. However, bidders are requested to confirm the percentage/quantum of Service Tax included in their each individual rate.
- iv) The Bids in which the rates for any part the work are not quoted shall be rejected. However, if no charge is involved for any of the work, 'NIL' should be mentioned against such part of work.

- v) Bidders must quote rates in Indian Rupees only and accordingly all payments against the contract arising out of this tender will be made only in Indian Rupees.
- vi) OIL reserves the right to allow Purchase Preference facilities to Central Public Sector Enterprises as admissible under existing Government guidelines.

PROFORMA - I
(Section-IX)

STATEMENT OF COMPLIANCE

(Only exceptions/deviations to be rendered)

| SECTION NO. (PAGE NO.) | CLAUSE NO. SUB-CLAUSE NO. | COMPLIANCE/ NON COMPLIANCE | REMARKS |
|-----------------------------------|--------------------------------------|---------------------------------------|----------------|
| | | | |

(Authorised Signatory)
Name of the bidder_____

NOTE : OIL INDIA LIMITED expects the bidders to fully accept the terms and conditions of the bid document. However, should the bidders still envisage some exceptions/deviations to the terms and conditions of the bid document, the same should be indicated here and put in the un-priced bid. If the proforma is left blank, then it would be presumed that the bidder has not taken any exception/deviation to the terms and conditions of the bid document.

PRICE SCHEDULE FORMAT

OPERATION & MAINTENANCE OF DND-GPC, TOT-GGS & TVC
(FOR THE PURPOSE OF COMMERCIAL EVALUATION OF BIDS)

| Sl. No. | Description of item | Quantity | Unit | Unit Rate | Total amount |
|---------|---------------------|----------|------|-----------|--------------|
| | | | | (Rs.) | (Rs.) |

1.0 MOB-DEMOB CHARGES : (One Time lump sum)

- i) Mobilisation charge (M) Lump-sum One
- ii) Demobilisation charge (D) Lump-sum One

I) Total Mob & De-mob Charges : (i) + (ii) under Srl. No. 1.0 above

2.0 OPERATING AND MAINTENANCE CHARGES :

| Srl No (1) | Description of Services (2) | Unit (3) | Qty. (4) | Combined O & M Unit Rates (5)=(6.1+6.2) | Break-up of O & M Unit Rates (6) | | Extended Value (7)= (4X5) |
|--|--|-------------|-------------|--|---|---------------------------------|---------------------------------|
| | | | | | Operational Charges (6.1) | Maintenance Charges (6.2) | |
| A. Normal Operating and Maintenance Rates : | | | | | | | |
| 1. | Monthly lump sum O&M charges for DND-GPC and Tanot-GGS | Month | 21 | | | | |
| 2. | Monthly lump sum O&M charges for TVC | Month | 23 | | | | |
| 3. | Total monthly Fire Service Charges | Month | 24 | | | | |
| B. Force Majeure Day Rates : | | | | | | | |
| 1. | O&M Charges for DND-GPC and Tanot-GGS during Force Majeure | Days | 30 | | | | |
| 2. | O&M Charges for TVC during Force Majeure | Days | 30 | | | | |
| C. Standby Day Rate: | | | | | | | |
| 1. | O&M Charges for DND-GPC and Tanot-GGS during Standby | Days | 30 | | | | |
| D. Maintenance Day Rate: (During scheduled shutdown only) | | | | | | | |
| 1. | O&M Charges for for DND-GPC and Tanot-GGS during scheduled | Days | 30 | | | | |

| | | | | | | | |
|----------|---|-------------------|------|--|-----|-----|--|
| | shutdown. | | | | | | |
| E | Welding, Grinding and Cutting sets with Generator, one welder and one helper: | | | | | | |
| 1 | Standby day rate for Welding, grinding and cutting set including mobile diesel generator, welder and helper | Per month | 24 | | N/A | N/A | |
| 2 | Operating day rate for Welding, cutting and grinding set and diesel generator including consumables. | Per day of 8 hrs. | 100 | | N/A | N/A | |
| 3 | Digging of trenches, Excavation and back filling. | Per CUM | 1000 | | N/A | N/A | |
| 4 | Handling of Pipes and pipe fittings (2"-8" dia) | Per Ton. | 300 | | N/A | N/A | |
| F | O & M of Gas wells, Flow Lines and other field activities | | | | | | |
| | | Per month | 24 | | | | |
| G | Catering Service (in excess of 12 personnel a day from OIL's side) | | | | | | |
| 1 | Bed Tea/Coffee with biscuit | No | 1200 | | N/A | N/A | |
| 2 | Breakfast | No | 1200 | | N/A | N/A | |
| 3 | Lunch | No | 1200 | | N/A | N/A | |
| 4 | Evening Tea/Coffee with snacks | No | 1200 | | N/A | N/A | |
| 5 | Dinner | No | 1200 | | N/A | N/A | |

II. Total O & M Charges : Sum Total of Column (7) above.

Total Estimated Value of the Contract for evaluation purpose = Sum total of (I+II)

- NOTE :**
1. Break-up of charges towards operations and maintenance to be shown separately as called for.
 2. Assumptions made in respect of the number of days/parameters above for various operations are only for the purpose of evaluation of the bids. The Service Provider/Contractor will be paid on the basis of the actual number of days/parameters, as the case may be.
 3. Rates quoted above must be inclusive of all taxes, duties and levies including Service Tax etc. However, the quantum of Service Tax included in each quoted rate must be confirmed separately.
 4. Quoted rates must be in compliance to following stipulations.
 - a) Mobilisation and demobilisation charges together should not exceed 1% of the total evaluated contract value for 2 years O & M.

- b) Standby day rate shall not exceed 98% of the respective operating & maintenance day rate on pro-rata basis.
- c) Force Majeure day rate shall not exceed 90% of the respective operating and maintenance day rate on pro-rata basis.

(END OF SECTION)