

NIQ NO.03/ED-I/2017-18.

No.23(21)/EEE/ED-I/CH/17-18/

dt :20/12/2017

**NOTICE INVITING QUOTATION**

**Name of work : Operation and Maintenance of Transformer Sub station, EA sets and precision package AC plant in Kodambakkam TE Building, Chennai (From 1/01/2018 To 31/03/2018 )**

The Executive Engineer(E), BSNL, Electrical Divn-I, Kellys TE Building , Chennai-10 , on behalf of Bharat Sanchar Nigam Ltd., invites sealed item rated Quotations from **BSNL enlisted contractors in Electrical category of respective class as per their tendering limits possessing valid HT licence issued by licensing authority, Govt. of Tamilnadu.**

The Quotations shall be submitted before 15-00 hours on 28/12/2017 and will be opened at 15-30 hrs on the same day.

Sl.no	Description of items	Qty	Rate excluding GST	Unit	Amount excluding GST
1	Providing round the clock operation of the following installations in TE Kodambakkam by deploying required manpower as per specifications & carrying out scheduled/routine, maintenance/ activities for smooth operation of installation on all working days, including all holidays and by arranging required tools and plants etc to keep all services operational i/c maintaining records , required up to standards complete as per specification etc as reqd.				
	a) 2x 400 KVA ,11 KV/433 Volts Transformer Substation- 1 set				
	b) 320 KVA EA set- 2 Nos.				
	c) 7 TR Precision Package AC Unit - 6 Nos				
	/All the above consists of/	3months		month	
				Sub Total-I	
				Add GST @ 18%	
				Grand Total	

Executive Engineer (E)  
BSNL ELECTRICAL DIVN-I  
CHENNAI-10.

## TECHNICAL SPECIFICATIONS

### **Part I: Scope of Operation & Maintenance of in TE Compound:**

- i. Deploying required personnel at site of work
- ii. Attending day-to-day routine complaints in a prompt and satisfactory manner.
- iii. Ensuring that no breakdown in power supply takes place and in case it happens to take all required steps including contacting supply co. for earliest restoration.
- iv. Ensuring that there is no wastage of electrical energy. Details of steps to be taken in this regard to worked out in consultation with the maintenance In-charge.
- v. Carrying out various maintenance routines and tests as stated .
- vi. Submission of periodical reports.
- vii. Maintaining Registers/documents for complaints and test results.

### **Part II Tasks To be Performed within first 15 days.**

Following items should be carried out within first 15 days.

- i. Establish complaint recording system with the approval of Engineer-in-Charge so that complaints can be received and attended properly.

### **Part III DETAILED ACTIVITIES**

- 1) At the start of work, firm shall prepare an inventory of service under maintenance jointly with J.T.O (E)/SDE (E), concerned.
- 2) Before start of the work complete equipments/services under scope of comprehensive maintenance shall be thoroughly examined by the agency jointly with SDE(E)/JTO(E) concerned. All Defects/discrepancies should be brought to the notice of the SDE(E)/JTO(E) in writing within first 15 days of award of work. Defects/discrepancies agreed upon by BSNL shall be got attended by the outgoing agency before handing over the site to the new agency. Where the contract of the outgoing agency, for some items or all items is of comprehensive nature, if the outgoing agency fails to correct the defects/discrepancies within 15 days, the same shall be got done by BSNL at the risk and cost of the outgoing agency.

### 3) OPERATING & MAINTENANCE PERSONNEL

- i. The personnel employed for carrying out the work and their skill requirement is as follows:

Services	Type	Skill requirements	No. of personnel	To be based at
Operation/repair/maintenance/service	Skilled	Minimum 10th pass with Electrician/wireman certificate familiar in similar jobs.	One person per shift for three shifts per day.	Site of operation
	Un Skilled	Familiar with operation/maintenance of electro mechanical services.	One person per shift for two shifts per day.	Site of operation

- ii. The operating staff has to be available at the specified shift/shift(s) as decided by SDE(E). Since the firm will be doing the maintenance of critical service requirement such as operating staff

shall be able to take initial steps under emergency situation such as failure of Supply etc. In case of faults beyond the capacity of the staff provided as above, contractor shall immediately provide extra-specialized work force so as to attend to the fault in minimum reasonable time without any extra cost.

- iii. In the sites where operation is carried out, the firm shall maintain attendance register which can be inspected at any time by the SDE/JTO. The workman shall not leave the duty point until his reliever has reported for duty. In addition to the attendance register, the firm shall abide by the attendance recording methods in vogue in the site of operation such as finger print scanning etc. The operator deputed to site shall be provided with a mobile phone by the firm, to contact and monitor the work by JTO(E)/SDE(E).
- iv. Agency shall issue identity cards to the workers and a list of personnel employed together with the copies of such identity cards should be submitted to SDE (E) / JTO (E) concerned. Before being posted at site, police should be informed about the personnel and a copy of the intimation shall be submitted to SDE (E).
- v. The workers engaged by firm should maintain proper discipline and good behavior with occupants. The firm shall remove such workers from the site whose behavior is found improper or found to be negligent in doing works, fail to adhere the work instructions of JTO(E)/SDE(E). Engineer – in – Charge’s decision shall be final and binding. Failure to remove errant workers from the site within a reasonable time shall amount to treating the presence of such workers as absent and will result in levy of penalty. Presence of unauthorized personnel in the maintenance office is strictly prohibited.
- vi. The sitting arrangement for the staff engaged by the agency, space, water *and electricity shall be made available by BSNL free of cost.*
- vii. The firm has to supply details of all the workers likely to be engaged by it before start of the work.

**4) COMPLAINT RECORDING AND DISPOSAL MECHANISM**

- i. A complaint Register shall be kept up-to-date at site by the firm and the same shall be available for checking & verification. Whenever any complaint is received, it shall be recorded and complaint no. shall be given to the complaine. Disposal of complaint shall be recorded and monthly report shall be submitted to the SDE (E) concerned.
- ii. Firm shall maintain logbooks as required.

## IMPORTANT NOTE TO CONTRACTORS

1) The minimum staff required for operation and maintenance for all working days and holidays shall be as given below. However, it is the firm's responsibility to carry out the proper work as per agreement and if more persons are required, it is to be arranged by firm without extra cost.

**One Electrician / Shift for three shifts per day**

**One Helper for 1<sup>st</sup> & 2<sup>nd</sup> shifts.**

**INVENTORY DETAILS for Only operation:**

Sl no	Description of Item	Qty
1	400 KVA ,11 KV/433 Volts Transformer Substation (Indoor)	2 nos
2	320 KVA EA set in Acoustic Enclosure.	2 nos.
3	3Phase, 433V, MV panel with ACBs & Switches in Sub station and Power room with all accessories	9 nos.
4	11KV, 400A HT panel with 2nos OCBs & 1no. oil switch	1no.
5	Power Factor Capacitor bank panel	1 no.
6	7 TR Precision Package AC Unit	6 nos

## GENERAL CONDITIONS

### SCOPE OF MAINTENANCE GENERAL

Comprehensive Maintenance Technical building means that all items required for and forming part of the Installation included in the schedule of work are kept in healthy and clean condition and carrying out operation of the plant. Specific details of maintenance activities required are detailed under sections-II.

### METHODOLOGY

It is presumed that contractor will provide at least minimum qualified staff at the site, which will be adequate to perform routine maintenance and operational functions. Also maintenance staff has to be available round the clock round the year even on holidays. Scheme for staff employed shall be got approved by the Engineer-in-charge.

In case of faults beyond the capacity of the staff provided as above, contractor shall immediately provide extra specialized work-force so as to attend to the faults in minimum reasonable time. The operation and Maintenance work shall be carried out in such a way that the essential services are not affected at any time by attending the faults reported within the time period as specified by Engineer-in-Charge.

### QUALIFICATIONS

#### Electrician

Electrical wireman permit / workman's competency certificate / Electrical workman's license (certificate of competency class-II) or any other equivalent certificate with at least two years experience in the line

**The following Tools & Plants and safety equipment shall be kept at site.**

1. Line tester
2. Multimeter
3. Nose plier
4. Insulated combination plier
5. Insulated screw drivers -- 6" , 8" , 12"
6. Spanner - Fixed , Ring & Box types -- 6 mm to 32 mm
7. 11 / 22 KV Rubber hand gloves
8. Hammer with handle
9. Allen key set of different sizes
10. Adjustable spanner -- 6" ,8" , 12"
11. Torch
12. Mirror with insulated handle
13. Earth resistance tester

**Safety equipments/ gadgets**

- a) Safety hand gloves – 2 Nos
- b) Fuse pullers –1 No
- c) Industrial boots – 1 pair each for all maintenance personal engaged by the firm

**COMMERCIAL**

- The workers engaged by firm should maintain proper discipline and good behaviour with occupants.
- The firm shall remove such workers from the site whose behaviour improper, Executive Engineer's decision shall be final.
- Any damage to the Installation(s) / Building during the maintenance period due to the carelessness on the part of maintenance staff shall be the responsibility of firm & be replaced /rectified without any extra cost.
- The agency will provide the workers necessary T & P, Testing & safety equipments.
- Any accident of damage during maintenance / operation will be the responsibility of the agency & the Department will not entertain any claim. Compensation, Penalty etc. on this account of non observances of any other requirement of law relevant to his work.
- Agency has to observe all the labour rules & regulations in force.
- The agency has to supply details as per annexure I of all the workers likely to be engaged by him before start of the work and get it approved by Executive Engineer.
- Firm should also supply three passport size photographs for issuing identity cards to the workers.
- Dismantled materials shall be returned to the BSNL except those items for which the replacement is supplied by the agency.
- The BSNL reserves the right to carry out any work at the risk and cost of the agency, if the agency fails to perform any duty as per the contract.
- The Tenderer must obtain himself at his own expenses all the information necessary for the purpose of tendering.
- Inspect the site & acquaint himself with all local conditions, means of access to work & nature of work etc. no claims shall be entertained on these accounts.
- The rates quoted must be full & final, [Inclusive of all charges like fixing / laying of department materials, making good the damages etc.]
- Nothing extra is payable other than the quoted rates unless specified.
- The contractor shall not sublet the work or part thereof. However, services of specialized agencies for specific work can be obtained.
- The firm shall maintain the Installation(s) in such a way as to provide uninterrupted working of substation of the exchange / Bldg. In case of failure of more than 1 hour in a day, the firm can be penalized if this is on account of carelessness on the part the Contractor. The decision of EE (E) shall be final.
- The firm at his own cost should arrange the sitting arrangement for the staff engaged by them. The space, water, Telephone & electricity shall be made available by the Department at free of cost.

- The BSNL reserves the right to terminate the contract by giving show cause notice of one month duration at any time during the currency of the contract.
- The BSNL reserves the right to extend the contract for a maximum period of **six** months at the same rate & conditions.
- Since the firm will be doing the maintenance and operation of Substation, responsible & trained person(s) should be placed round the clock at site who could take initial steps under emergency situation.
- Firm should have round the clock telephone number. In case of Emergency, contractor and authorized engineer supervisor shall be available at site on short notice from engineer-in-charge and make efforts to make the situation normal at the earliest.
- A complaint book shall be kept up to date at site by the firm and the same shall be available for checking & verification.
- The staff engaged by the firm shall bear I-Card issued by the firm, while on duty.
- After the contract period is over the Installation has to be duly handed over to the BSNL. The contractor shall be responsible for any discrepancies vis-à-vis, the status of installation at the start of work plus any modification carried out during the currency of the contract.
- Any defects, and shortcomings brought to the notice of the department at the time of the taking over of the site by the contractor from the earlier agency or from the BSNL shall be the responsibility of the Dept.

**PENALTY CLAUSE**

1. Any damage to the installation(s)/building due to the carelessness on part of firm's staff shall be the responsibility of firm and shall be replaced/rectified without any extra cost
2. Any accident or damage will be the responsibility of agency and the BSNL will not entertain any, claim, compensation, penalty etc on this account or on account of non observance of any other requirement of law relevant to his work.
3. If the agency fails to rectify any fault within reasonable time, the department reserves the right to carry out the work at the risk and cost of the agency. In case the fault is of emergency nature which may affect the normal functioning of the services and the firm fails to take immediate necessary action, the work shall be carried out the risk and cost of the firm without giving any notice. The decision of the EE(E) shall be final
4. In case of a major accident/loss on account of negligence on the part of the contractor apart from the action taken as per SI.No-1 above the contract shall be terminated and 10% of the estimated cost shall be recovered. Decision of Superintending Engineer (E) /EE shall be final and binding on the contractor.
5. In case of unsatisfactory performance during this period one Percent (1%) penalty of the bill amount shall be imposed.
6. For repeated unsatisfactory performance during the contract period penalty up to 5% of bill amount shall be imposed. Decision of Executive Engineer (E) shall be final on this account.
7. The firm should remit the service tax and shall be reimbursed on furnishing the original receipt and the copy of return filed.

**Note:-**

1. In case contractor fails to comply with preventive/ periodical maintenance schedules for substation/ services, payment for such services for that particular period will not be made. In addition penalty of 25% of one month's bill amount for such units/services shall be imposed.
2. In case of a major accident/loss on account of negligence on the part of the contractor, the contract shall be terminated and 10% of the estimated cost shall be recovered. Decision of Executive Engineer (E) shall be final and binding on the contractor.

**A. Details to be supplied before starting the work**

1.	Name of the Agency (with Office address)		
2.	Name of the Proprietor		
3.	Telephone No.(s) of the firm		

4.	Name & Address of the Supervisor		
5.	24 Hours contract No.		
6.	Particulars of the License/		

**B. Details of the Staff to be posted at site**

	Name & Address	Qualification	Responsibility
1			
2			

**SECTION-II**

**SUBSTATION**

**Part-I Scope of Maintenance:**

- Ensuring that HT Panel, Transformer, LT Panels Capacitor panels & outdoor structure as well as connecting cables/duets, constituting the Substation are maintained in healthy & clean condition.
- Monitoring on continuous basis, power factor & peak load and ensuring that these are maintained within limits to avoid penalty.
- To perform maintenance tasks as per schedule given below.
- To disconnect total electric supply and or individual loads in case of emergent situation to avoid/limit damage.
- To ensure continuous power supply and in case of breakdowns take steps to ensure restoration at the earliest.

**Part II Tasks to be performed Within First 15 Days**

1. Identify a person (s) with necessary competence to be responsible for Sub-station maintenance.
  - The person(s) deputed for sub-Station job should
    - a) Know how to treat the persons suffering from electric shock / burn etc.
    - b) Be able to operate fire extinguisher.
    - c) Make himself familiar with the distribution scheme the switches controlling various loads and also importance.
    - d) Clearly understand what is to be done in case of an emergency. This should be done in consultation with Engineer – in – charge.
  - Carry out general inspection with a view to identify shortcoming if any in the Sub-stations installations.
  - Check all the switches & meters for proper operations.
  - Check availability and working of fire extinguishers at earmarked locations.
  - Check operation of all the safety device like relays and fuses
  - Check the earthing system for the proper earth values & continuity of earthing system.
  - Check Insulation value of oil in all the equipments.
  - Carry out Megger test.
  - Check oil level in all the equipments to ensure proper levels.
  - Check power factor meter, maximum demand meter for proper functioning.
  - Check the tripping of the HT Panel i.e. batteries etc. for proper functioning.
  - Check all the Electrical connections for proper tightness.

All results of above inspection are to be recorded and brought to the notice of Engineer-in-charge .

**Part III Maintenance schedule to be followed**

**Daily Checks:**

*Check all the equipments installed in the Sub-Station for ;*

- (i) any abnormal heating.

- (ii) any abnormal noise
- (iii) Any breakage/oil leakage in the equipment installed.
- (iv) Any inflammable material like oil, broken furniture, packing etc., fire Hazardous material stored in the Sub-station has to be removed immediately. If required contact Engineer-in-charge for suitable action
- (v) The colour of the silica gel in breather attached to the transformer. Colour should be white.
- (vi) Proper working of the instruments.
- (vii) In case of outdoor installation inspect for any abnormality.

\*Read the servicing schedule (to be finalized in consultation with the Engineer-in-charge and kept in sub-station room) of HT Panel, Transformer, and LT Panels with a view to alert the authorities concerned in advance of the due dates of maintenance activity.

\*Check power factor and maximum demand meters to ensure that the values are within permissible limit.

\*Maintain the Sub-station log book as per directions of the Engineer in charge. (The Engineer in Charge should decide about the items to be recorded in the log book as well as their frequency. This should be decided so that the data is useful and maintenance of log book is not reduced to routine meaningless activity. Daily consumption of units also shall to be recorded.)

\*Ensure that the HT tripping circuit is in working condition.

#### **Operation of EA set**

All operations (labour only) such as On/off EA sets, maintaining records of all parameters, diesel filling, radiator coolant filling, and battery checking etc pertaining to EA set is also the responsibility of the firm.

Run engine for at least 15 minutes every day to ensure proper working of engine and inform to SDE for any abnormalities.

1. The following check to be done before starting of the Engine:-

- a) Check and correct coolant level in radiator
- b) Check & correct belt tension
- c) Check & correct lub oil level
- d) Check and ensure sufficient Quantity of fuel in the tank
- e) Check battery terminal and connections for proper tightness-top up of distilled water if reqd.

2. After starting the Engine:-

- a) Check lub oil pressure
- b) Check all meters, engine noise etc and inform to SDE for any abnormalities.

#### **MAINTENANCE SCHEDULE – PACKAGE UNITS**

##### **DAILY TASKS**

- 1. Ensure all units are in working order
- 2. Keep the Installation clean
- 3. Record measurement of following parameters.
- 4. Voltage
- 5. Current of each unit

**Note:** Time or break down if any and also rectification and type of fault to be noted.

##### **CHECK FOR**

- 1. Abnormal noise
- 2. Abnormal heating of any component
- 3. Vibrations
- 4. Any Breakage/leakage

Log Book Shall be maintained for PAC AC Plant.





