



**BID BULLETIN NO. 2**  
**For ITB No. 2016-3-254**

**PROJECT** : **One (1) Year Preventive Maintenance Services for the Electrical System of LANDBANK Plaza Headquarters, Malate, Manila**

**IMPLEMENTOR** : **Procurement Department**

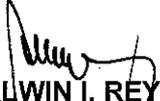
**DATE** : **May 4, 2017**

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This Bid Bulletin is issued to modify, amend or clarify items in the Bid Documents. This shall form an integral part of the Bid Documents.

The modifications, amendments or clarifications are as follows:

- 1) Per GPPB Circular No. 03-2016, bidders are required to submit PhilGEPS Certificate of Registration of Membership under Platinum category during bid submission starting May 1, 2017, in lieu of their Class "A" Documents.
- 2) ITB Clause 12.1 and 20.3 of the Bid Data Sheet (BDS), Section VII (Specifications) and Checklist of the Bidding Documents have been revised. Please see attached revised sections of the Bidding Documents.
- 3) The deadline of submission and the schedule of opening of eligibility/technical and financial documents/proposals for the above project is re-scheduled to **May 11, 2017, 11:00 A.M.** at the Procurement Department, 25th Floor, LANDBANK Plaza Building, 1598 M. H. Del Pilar corner Dr. Quintos Streets, Malate, Manila.

  
**ALWIN I. REYES**  
Assistant Vice President  
Procurement Department and  
HOBAC Secretariat

## Bid Data Sheet

ITB Clause	
1.1	The Procuring Entity is LAND BANK OF THE PHILIPPINES (LANDBANK).
1.2	The lot and reference is:  One (1) Year Preventive Maintenance Services for the Electrical System of LANDBANK Plaza Headquarters, Malate, Manila.  ITB No. 2016-3-254
2	The Funding Source is:  The Government of the Philippines (GOP) through the LANDBANK Corporate Budget for the contract approved by the Board of Directors for 2016 in the amount of Two Million Pesos Only (Php2,000,000.00).  The name of the Project is One (1) Year Preventive Maintenance Services for the Electrical System of LANDBANK Plaza Headquarters, Malate, Manila.
3.1	No further instructions.
5.1	No further instructions.
5.2	Foreign bidders, falling under ITB Clause 5.2 (b) and/or doing business in the Philippines may participate in this Project.
5.4	The Bidder must have completed, within the period specified in the Invitation to Bid and ITB Clause 12.1(a)(iv ), a single contract that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC.  For this purpose, similar contracts shall refer to contracts involving preventive maintenance services for electrical system.  Bidders must submit proof of their respective Single Largest Completed Contract. Proofs shall be: <ul style="list-style-type: none"><li>• Copy of the contract or purchase order; or</li><li>• Copy of official receipt/collection receipt or certificate of satisfactory performance from bidder's client.</li></ul>
7	No further instructions.
8.1	As a general rule, subcontracting is not allowed.
8.2	Not applicable.

9.1	The Procuring Entity will hold a pre-bid conference for this Project on at Bidding Room, 25 <sup>th</sup> Floor, LANDBANK Plaza Building, 1598 M.H. Del Pilar corner Dr. J. Quintos Streets, Malate, Manila.
10.1	<p>The Procuring Entity's address is:</p> <p>Land Bank of the Philippines 25<sup>th</sup> Floor, LANDBANK Plaza Building 1598 M.H. Del Pilar corner Dr. J. Quintos Streets 1004 Malate, Manila www.landbank.com</p> <p>Contact person :</p> <p>Mr. Alwin I. Reyes Assistant Vice President Procurement Department 1598 M.H. Del Pilar cor. Dr. J. Quintos Sts. 1004 Malate, Manila Tel. (+632) 522-0000 or 551-2200 local 7370 Fax (+632) 528-8587 Email lbphobac@mail.landbank.com</p>
12.1	<b>No further instructions.</b>
12.1(a)(ii)	The statement of all ongoing government and private contracts (use Form No.3) and single largest completed contract (use Form No. 4) similar to the contract to be bid shall include all such contracts within five (5) years prior to the deadline for the submission and receipt of bids.
13.1	Bidders are required to use the Bid Form provided in Section VIII. Bid Form (Form Nos.1 and 2).
13.1(b)	No further instructions.
13.1(c)	Not applicable.
13.2(a)	<p>The Approved Budget for the Contract (ABC) is Two Million Pesos Only (Php2,000,000.00).</p> <p>Any bid with a financial component exceeding this amount shall not be accepted.</p>
13.2(b)	Not applicable.
15.4(a)(iii)	Please refer to Clause 6.2 of the Special Conditions of the Contract for the incidental services required.
15.4(b)(i)	The price of the Goods shall be quoted DDP specified delivery site/s.

15.4(b)ii)	Please refer to Clause 6.2 of the Special Conditions of the Contract for the incidental services required.									
16.1(b)	The Bid prices for Goods supplied from outside of the Philippines shall be quoted in Philippine Pesos.									
16.3	No further instructions.									
17.1	Bids will be valid until 120 calendar days from date of opening of bids.									
18.1	<p>The bid security shall be limited to Bid Securing Declaration or any other form in accordance with the following amount:</p> <table border="1" data-bbox="480 602 1378 1344"> <thead> <tr> <th data-bbox="480 602 1102 698">Form of Bid Security</th> <th data-bbox="1102 602 1378 698">Amount of Bid Security</th> </tr> </thead> <tbody> <tr> <td data-bbox="480 698 1102 808">(a) Cash or cashier's/ manager's check issued by a Universal or Commercial Bank</td> <td data-bbox="1102 698 1378 1010" rowspan="2">P40,000.00</td> </tr> <tr> <td data-bbox="480 808 1102 1010">(b) Bank draft/guarantee or irrevocable letter of credit issued by a Universal or Commercial Bank; Provided, however, that it shall be confirmed or authenticated by a Universal or Commercial Bank, if issued by a foreign bank.</td> </tr> <tr> <td data-bbox="480 1010 1102 1173">(c) Surety bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security; and/or</td> <td data-bbox="1102 1010 1378 1173">P100,000.00</td> </tr> <tr> <td data-bbox="480 1173 1102 1344">(d) Any combination of the foregoing.</td> <td data-bbox="1102 1173 1378 1344">Proportionate to share of form with respect to total amount of security.</td> </tr> </tbody> </table> <ol style="list-style-type: none"> <li data-bbox="480 1375 1390 1778">1. If bid security is in the form of cash, a bidder is required to secure a Payment Acceptance Order (PAO) from LANDBANK Procurement Department. The PAO shall then be presented to any of the Tellers at the Cash Department (Ground Floor, LANDBANK Plaza Building) together with the corresponding cash. The Cash Department Teller shall issue a machine validated Official Receipt (OR) evidencing payment of the bid security. The original and/or certified true copy of the OR shall be enclosed in Bid Envelope No. 1 (Eligibility and Technical Proposal/Documents). The original official receipt shall be returned by the BAC Secretariat to the bidder immediately after the opening of bids.</li> <li data-bbox="480 1787 1390 1861">2. If bid security is in the form of cashier's/manager's check, the check should be payable to LAND BANK OF THE PHILIPPINES.</li> <li data-bbox="480 1870 1390 1964">3. If in the form of bank draft/guarantee, the bidder may use the standard format of the issuing Bank, provided the ITB No. and Name of the Project are indicated.</li> </ol>	Form of Bid Security	Amount of Bid Security	(a) Cash or cashier's/ manager's check issued by a Universal or Commercial Bank	P40,000.00	(b) Bank draft/guarantee or irrevocable letter of credit issued by a Universal or Commercial Bank; Provided, however, that it shall be confirmed or authenticated by a Universal or Commercial Bank, if issued by a foreign bank.	(c) Surety bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security; and/or	P100,000.00	(d) Any combination of the foregoing.	Proportionate to share of form with respect to total amount of security.
Form of Bid Security	Amount of Bid Security									
(a) Cash or cashier's/ manager's check issued by a Universal or Commercial Bank	P40,000.00									
(b) Bank draft/guarantee or irrevocable letter of credit issued by a Universal or Commercial Bank; Provided, however, that it shall be confirmed or authenticated by a Universal or Commercial Bank, if issued by a foreign bank.										
(c) Surety bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security; and/or	P100,000.00									
(d) Any combination of the foregoing.	Proportionate to share of form with respect to total amount of security.									

	<p>4. If in the form of surety bond, it should be issued by a surety or insurance company duly accredited by the Insurance Commission (IC) and has not been issued a cease and desist order by the IC or is currently not included in the list of blacklisted firms.</p> <p>The surety bond may be secured through LANDBANK Insurance Brokerage, Inc. (LIBI) with the following contract details:</p> <p>a) LIBI-Forex 14<sup>th</sup> Floor, LANDBANK Plaza Building Telephone 710-7114 (Every Tuesday and Thursday)</p> <p>b) 12<sup>th</sup> Floor, SSHG Law Center Bldg., 105 Paseo de Roxas, Legaspi Village Makati City Telephones 812-4911 and 867-1064</p> <p>Surety bonds with the following or similar conditions/phrases shall not be accepted:</p> <p>a) "In case of default by the Principal, this bond shall only answer for the difference in the bid price of the winning bidder and that of the next lowest complying bidder or that of the new winning bidder in case of re-bidding plus necessary expenses incurred by the Obligee in the re-bidding which liability shall in no case exceed the amount of the bond"; or</p> <p>b) "That the amount of liability of the Surety under this bond is limited to the actual loss or damage sustained and duly proven by the Obligee."</p> <p>5. If in the form of Bid Securing Declaration, the attached form (Form No. 8) must be used.</p>
18.2	The bid security shall be valid until 120 calendar days from date of opening bids.
20.3	<b>Each Bidder shall submit one (1) original copy and one (1) photocopy of the Technical Component (First Envelope) and Financial Component (Second Envelope) of its bid.</b>
21	<p>The address for submission of bids is:</p> <p>Procurement Department Land Bank of the Philippines 25th Floor, LANDBANK Plaza Building 1598 M.H. Del Pilar corner Dr. J. Quintos Streets 1004 Malate, Manila</p> <p>The deadline for submission of bids is 11:00 A.M., _____.</p>
24.1	The place of bid opening is:

	<p>25<sup>th</sup> Floor Bidding Room Procurement Department Land Bank of the Philippines LANDBANK Plaza Building 1598 M.H. Del Pilar corner Dr. J. Quintos Streets 1004 Malate, Manila</p> <p>The date and time of bid opening is 11:00 A.M., _____.</p>
24.2	No further instructions.
27.1	No further instructions.
28.3	The goods are grouped in a single lot and the lot shall not be divided further into sub-lots for the purpose of bidding, evaluation and contract award.
28.3(b)	Bid modification is not allowed.
28.4	No further instructions.
29.2(a)	Certified true copy of Value Added Tax (VAT) or Percentage Tax (PT) Returns for the 1 <sup>st</sup> and 2 <sup>nd</sup> Quarters of 2016 filed through the BIR Electronic Filing and Payments System (EFPS). Only tax returns filed and taxes paid through the BIR EFPS shall be accepted.
29.2(c)	No further instructions.
32.4(f)	No further instructions.

# Specifications

<b>Specification</b>	<b>Statement of Compliance</b>
<p>One (1) Year Preventive Maintenance Services for the Electrical System of LANDBANK Plaza Headquarters, Malate, Manila</p> <p><b>Scope of the project and other requirements per attached Terms of Reference – Annexes A-1 to A-9 and Bill of Quantity – Annexes B-1 to B-9.</b></p> <p>The following documents must be submitted inside the eligibility/technical envelope:</p>	<p><b>Bidders must state below either “Comply” or “Not Comply” against each of the individual parameters of each specification.</b></p> <p>Statements of “Comply” or “Not Comply” must be supported by evidence in a Bidders Bid. Evidence shall be in the form of manufacturer’s un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidders statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the provisions of ITB Clause 3.1(a)(ii) and/or GCC Clause 2.1(a)(ii)</p> <p><b>Please state here either “Comply” or “Not Comply”</b></p>

<ul style="list-style-type: none"><li>a) Certificate of inspection (CI) issued by the Head, Facilities Management Department.</li><li>b) Copy of purchase order, contract, official receipt or other equivalent document as proof that bidder has at least ten (10) years experience in the business/industry of electrical design, installation, construction and preventive maintenance service.</li><li>c) Valid copy of PCAB Registration Certificate/Contractor's License for Electrical Works Category Class "Small B" (minimum).</li><li>d) Valid ID of Registered Electrical Engineer.</li><li>e) Detailed schedule of the project (using Gantt chart) and work methodology with corresponding cost.</li></ul>	
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**Conforme:**

\_\_\_\_\_  
Name of Bidder

\_\_\_\_\_  
Signature over Printed Name of  
Authorized Representative

\_\_\_\_\_  
Position

## **Checklist of Bidding Documents for Procurement of Goods and Services**

**Documents should be arranged as per this Checklist. Kindly provide folders or guides, dividers and ear tags with appropriate labels.**

**The Technical Component (First Envelope) shall contain the following:**

1. Duly notarized Secretary's Certificate attesting that the signatory is the duly authorized representative of the prospective bidder, and granted full power and authority to do, execute and perform any and all acts necessary and/or to represent the prospective bidder in the bidding, if the prospective bidder is a corporation, partnership, cooperative, or joint venture (sample form - Form No.7).
2. Duly notarized Omnibus sworn statement (sample form - Form No.6).
3. Eligibility requirements

- **Legal Documents**

- **3.a PhilGEPS Certificate of Registration – Platinum Membership**

- **Technical / Financial Documents**

- 3.b Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid, within the relevant period as provided in the Bidding Documents. The statement shall include all information required in the PBDs prescribed by the GPPB. (sample form - Form No. 3). This form may no longer be submitted if bidder has no on-going contracts.
- 3.c Statement of the prospective bidder identifying its single largest completed contract similar to the contract to be bid, equivalent to at least fifty percent (50%) of the ABC supported with contract/purchase order, end-user's acceptance or official receipt(s) issued for the contract, within the relevant period as provided in the Bidding Documents. The statement shall include all information required in the PBDs prescribed by the GPPB. (sample form - Form No. 4).
- 3.d The prospective bidder's audited financial statements, showing, among others, the prospective bidder's total and current assets and liabilities, stamped "received" by the BIR or its duly accredited and authorized institutions, for the preceding calendar year which should not be earlier than two (2) years from the date of bid submission.
- 3.e The prospective bidder's computation for its Net Financial Contracting Capacity (sample form - Form No. 5).

- 3.f Certificate of inspection (CI) issued by the Head, Facilities Management Department.
  - 3.g Copy of purchase order, contract, official receipt or other equivalent document as proof that bidder has at least ten (10) years experience in the business/industry of electrical design, installation, construction and preventive maintenance service.
  - 3.h Valid copy of PCAB Registration Certificate/Contractor's License for Electrical Works category Class "Small B" (minimum).
  - 3.i Valid ID of Registered Electrical Engineer.
  - 3.j Detailed schedule of the project (using Gantt chart) and work methodology with corresponding cost.
  - 3.k Valid joint venture agreement (JVA), in case the joint venture is already in existence. In the absence of a JVA, duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful shall be included in the bid. Failure to enter into a joint venture in the event of a contract award shall be ground for the forfeiture of the bid security. Each partner of the joint venture shall submit the legal eligibility documents. The submission of technical and financial eligibility documents by any of the joint venture partners constitutes compliance.
4. Bid security in the prescribed form, amount and validity period (ITB Clause 18.1 of the Bid Data Sheet);
  5. Schedule VI - Schedule of Requirements with signature of bidder's authorized representative.
  - 6. Revised Section VII - Specifications with response on compliance and signature of bidder's authorized representative.**
  7. Post-Qualification Documents – (Non-submission of the following documents during the bidding date shall not be a ground for the disqualification of the bidder):
    - 7.a Business Tax Returns per Revenue Regulations 3-2005 (BIR No. 2550 Q) VAT or Percentage Tax Returns for 1<sup>st</sup> and 2nd Quarters of 2016;
    - 7.b Valid and current PhilGEPS Registration Certificate; and
    - 7.c Income Tax Return for 2015.

**The Financial Component (Second Envelope) shall contain the following:**

1. Duly filled out Bid Form signed by the bidder's authorized representative (sample form - Form No.1)
2. Duly filled out Schedule of Prices signed by the bidder's authorized representative (sample form - Form No.2)
3. **Duly filled out Bill of Quantity signed by the bidder's authorized representative (sample form – Annexes B-1 to B-9)**

# CLASS D

## BILL OF QUANTITY

<b>A. Preventive Maintenance Service</b>		QTY.	Unit	Unit Cost	Total
Supply of technical expertise/supervision, labor, tools, equipment and testing other consumables for conducting preventive maintenance service for electrical system under the full supervision of an Electrical Engineer.					
Frequency	BUS WAY/ DUCT and BUS PLUG				
<b>A. Services</b>					
Semi-Annually	1. Conduct thermal scanning/imaging for all joint stack at during peak load 2. Check for any hot spot and conduct for necessary precautionary measure or preventive maintenance.			n/a	
Annually	3. Re-alignment of dis-align bus duct if found any 4. Clean and re-tightening of bus duct joint stack to its required torque 5. Open joint stack and check its contact and insulation integrity 6. Cleaning and wipe out of surface of the busway housing 7. Check and re-tightening of bus plug and terminal 8. Testing and commissioning			n/a	
<b>B. Manpower</b>					
	1. Registered Electrical Engineer	1	lot		
	2. Electrician Foreman	1	lot		
	3. Electrician	1	lot		
	4. Manpower Labor Cost	1	lot		
<b>SUB TOTAL</b>					
<b>C. Consumables</b>					
	1. Rags	20	kg		
	2. WD 40	5	pcs		
	3. Contact Cleaner	2	pcs		
	4. Soft Broom	3	pcs		
	5. Hard Broom	2	pcs		
<b>SUB TOTAL</b>					
<b>DRY TYPE TRANSFORMER</b>					
<b>A. Services</b>					
Semi-Annually	1. Conduct thermal scanning/imaging 2. Conduct Ultrasonic Detection Test (UDT) for all high noise level of transformer 3. Records name plate data and other information			n/a	
Annually	1. Records and conduct ampere-load reading/ evaluation during			n/a	

## CLASS D

	peak load 2. Isolation of terminal connections and grounding system 3. General inspection, check-up and cleaning of terminal, bushings casings/housing and other accessories 4. Re-tightening of terminal connections and grounding system 5. Perform the following standard test a. Transformer Turn Ratio (TTR) Test b. Winding Insulation Resistance Test c. Polarization Index (PI) Test d. Winding Resistance Measurement 6. Clearing and cleaning	n/a		
<b>B. Manpower</b>				
1. Professional Electrical Engineer	1	lot		
2. Registered Electrical Engineer	1	lot		
3. General Foreman Electrician	1	lot		
4. Testing Equipment Technician	1	lot		
5. Assistant Testing Equipment Technician	1	lot		
6. Electrician (wiring)	1	lot		
7. Electrician (termination)	1	lot		
8. Manpower Labor Cost	1	lot		
<b>SUB TOTAL</b>				
<b>C. Consumables</b>				
1. Rags	30	kg		
2. WD 40	5	pcs		
3. Soft broom	3	pcs		
4. Hard broom	2	pcs		
<b>SUB TOTAL</b>				
<b>PANELBOARDS AND CIRCUIT BREAKERS</b>				
<b>A. Services</b>				
Semi-Annually	1. Conduct thermal scanning/imaging 2. Check/ clean all Panelboards/ Circuit Breakers, Terminals and connections for any sign of corrosion 3. Check, repair and re-tighten possible hot spot terminals 4. Wipe out and suction dust and foreign matters 5. Record and conduct ampere-load reading/ evaluation during peak load 6. Perform necessary corrective measures as needed in	n/a		

## CLASS D

	coordination with FMD 7. Submit service and evaluation reports including recommendation/s.				
Annually	1. Clean and re-tighten terminals and connections 2. Conduct contact resistance test 3. Conduct exercise of mechanism 4. Provide/Update Panelboard and Circuit directory. 5. Submit service and evaluation reports including recommendation/s.				n/a
<b>B. Manpower</b>					
	1. Professional Electrical Engineer	1	lot		
	2. Registered Electrical Engineer	1	lot		
	3. General Electrician Foreman	1	lot		
	4. Electrician	1	lot		
	5. Testing Equipment Technician	1	lot		
	6. Clerical Worker	1	lot		
	5. Manpower Labor Cost	1	lot		
<b>SUB TOTAL</b>					
<b>CLEANING OF ELECTRICAL ROOM AND MACHINE ROOM</b>					
<b>A. Services</b>					
Semi-Annually	1. Clean and wipe out dust on the bus duct Casing 2. Clean, wipe out and suction dust on the dry type transformers 3. Check, repair and re-tighten terminals, connectors, etc. 4. Clean all air duct/ louver and exhaust fan 5. Perform necessary corrective measures as needed				n/a
<b>B. Manpower</b>					
	1. Registered Electrical Engineer	1	lot		
	2. General Electrician Foreman	1	lot		
	3. Electrician	1	lot		
	4. Manpower Labor Cost	1	lot		
<b>SUB TOTAL</b>					
<b>C. Consumables</b>					
	1. Rags	20	kg		
	2. WD 40	5	pcs		
	3. Soft Broom	3	pcs		
	4. Hard Broom	2	pcs		
<b>SUB TOTAL</b>					
<b>KILOWATT-HOUR METERS/ ELECTRIC METERS</b>					
<b>A. Services</b>					
Annually	1. Clean and check terminal lugs and				n/a

## CLASS D

	connections 2. Re-tighten terminals and connections and check possible over heating 3. Calibration and sealing by third party with accreditation by Energy Regulatory Commission (ERC) 4. Perform necessary corrective measures as needed.				
<b>B. Manpower</b>					
1.	Registered Electrical Engineer	1	lot		
2.	General Electrician Foreman	1	lot		
3.	Third Party Accredited by ERC	1	lot		
4.	Electrician	1	lot		
<b>SUB TOTAL</b>					
<b>C. Consumables</b>					
1.	Rags	20	kg		
2.	WD 40	5	pcs		
<b>SUB TOTAL</b>					
One Time Only	<b>CABLE RISER GROUNDING AND EQUIPMENT SYSTEM</b>				
<b>A. Services</b>					
	1. Check and correct the grounding and bonding from ground floor to 35 <sup>th</sup> floor 2. Installation of equipment grounding and system grounding for all of the following: a. Panelboards b. Splicing/ Pull boxes c. Dry Type Transformer 3. Conduct grounding resistance test			n/a	
<b>B. Manpower</b>					
1.	Registered Electrical Engineer	1	lot		
2.	General Electrician Foreman	1	lot		
4.	Electrician	1	lot		
5.	Testing equipment Technician	1	lot		
5.	Manpower Labor Cost	1	lot		
<b>SUB TOTAL</b>					
<b>C. Electrical Materials</b>					
1.	60 mm square THHN Electrical wire	1	roll		
2.	15 mm square THHN Electrical wire	1	roll		
3.	5.5 mm square THHN Electrical wire	1	roll		
4.	Bus bar	1	lot		
5.	Screw	1	lot		
6.	Electrical pipe	50	pcs		
7.	Electrical fittings	40	pcs		
8.	Square box	36	pcs		
<b>SUB TOTAL</b>					
<b>POWER SUB-STATION</b>					

## CLASS D

<b>A. Services</b>		
Semi-Annually	1. Perform Thermo Graphic Scanning/Imaging and inspection of substation equipment and components during peak load 2. Perform and conduct Power Quality Monitoring	n/a
Semi-Annually	3. General Cleaning (Without Power Shutdown) <ul style="list-style-type: none"> <li>a. Dismantle enclosing encasement panel in order to provide access of areas/portion to be properly serviced/cleaned</li> <li>b. Air blow/ vacuum cleaning of switchgear enclosure</li> <li>c. Clean and wipe to remove clinging dirt using approved cleaning solvent</li> <li>d. Exhaust Fans and louver blades</li> <li>e. Doors, wire trays and cables</li> <li>f. Sub-station wall, ceiling and flooring</li> <li>g. Air blow cable tray, check hangers and support</li> <li>h. Final checking/ inspection</li> <li>i. Clearing and Cleaning</li> </ul>	n/a
Annually	1. Perform Thermo Graphic Scanning/Imaging and inspection of substation equipment and components during peak load (before and after general servicing) 2. Perform Preventive Maintenance on the following equipment: <ul style="list-style-type: none"> <li>a. Metal Enclosed double ended integrated switchgear, ATS, MTS &amp; Tie Breaker                             <ul style="list-style-type: none"> <li>➤ Dismantle enclosing encasement panel in order to provide access of areas/portion to be properly serviced/cleaned.</li> <li>➤ Perform visual and mechanical inspection</li> <li>➤ Air blow/ vacuum cleaning of switchgear enclosure</li> <li>➤ Conduct standard testing: (Insulation and Contact Resistance Test &amp; Operational/Functional Test)</li> <li>➤ Exercise mechanism (open</li> </ul> </li> </ul>	n/a

**CLASS D**

	<p>and close action)</p> <ul style="list-style-type: none"> <li>➤ Operational/ functional test of Protective Relay (Auxiliary Relay Intelligence Circuit), Instrument Transformer (CT/PT) and Digital Metering</li> <li>➤ Inspection/cleaning of all circuit breaker and its devices for proper operation</li> <li>➤ Check and clean switchgear bus for physical defects, damages, discoloration, cleanliness and proper connection accordingly</li> <li>➤ Check for tightness of bolted joints and make sure all buses are free of dust, carbon and other stain on its surface</li> <li>➤ Check/retighten all electrical terminal bolts</li> <li>➤ Check/retighten all grounding terminal bolts</li> <li>➤ Re-setting/Re-Programming the ATS</li> </ul> <p>b. Metal enclosed vacuum fault interrupter switchgear, main 600A, branches 3-200A, 34.5 kV</p> <ul style="list-style-type: none"> <li>➤ Discharge all three phase to ground</li> <li>➤ Conduct High Potential, Insulation and Contact Resistance Test</li> <li>➤ Functional/ operational simulation test</li> <li>➤ Clean and wipe to remove clinging dirt using approved cleaning solvent</li> <li>➤ Inspect all related parts</li> <li>➤ Retighten all electrical bolts using torque wrench</li> <li>➤ Exercise on/off mechanism</li> <li>➤ Final checking/ inspection</li> <li>➤ Clearing and Cleaning</li> </ul> <p>c. 3150 kVA Metal enclosed Cast Resin Type Transformer</p> <ul style="list-style-type: none"> <li>➤ Dismantle enclosing encasement panel in order to provide access of areas/portion to be properly serviced/cleaned</li> <li>➤ Disconnect primary and secondary terminal of</li> </ul>	<p>n/a</p>
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**CLASS D**

	<p>transformer</p> <ul style="list-style-type: none"> <li>➤ Conduct standard testing:             <ul style="list-style-type: none"> <li>- Insulation Resistance Test</li> <li>- Polarization Index Test</li> <li>- Transformer Turn Ratio Test</li> <li>- Winding Resistance Test</li> <li>- Insulation Power Factor Test</li> </ul> </li> <li>➤ Cleaning of primary and secondary terminal</li> <li>➤ Air blow/ vacuum transformer to eliminate dust and carbon residue</li> <li>➤ Reconnect primary and secondary terminal of transformer</li> <li>➤ Retighten all electrical terminal bolts using torque wrench</li> <li>➤ Final checking/ inspection</li> <li>➤ Clearing and cleaning</li> </ul> <p>d. 3750 kVA, Pad Mounted, Oil immersed, substation transformer</p> <ul style="list-style-type: none"> <li>➤ Disconnect primary and secondary terminal of transformer</li> <li>➤ Conduct standard diagnostic testing:             <ul style="list-style-type: none"> <li>- Insulation Resistance</li> <li>- Polarization Index</li> <li>- Transformer Turn Ratio</li> <li>- Winding Resistance</li> <li>- Insulation Power Factor (IEC 60247)</li> <li>- Dielectric Breakdown Voltage (IEC 60156)</li> <li>- Dissolved Gas Analysis (ASTM D3612)</li> <li>- Moisture Content (ASTM D1533B)</li> <li>- Interfacial Tension (ASTM D971)</li> <li>- Acid Number (ASTM D974)</li> <li>- Color Number &amp; Visual Exam (ASTM D1524)</li> <li>- Resistivity ( IEC 60247)</li> <li>- Oxidation Inhibitor (ASTM D2668)</li> <li>- Furanic Analysis (ASTM D5837)</li> </ul> </li> <li>➤ Cleaning of primary and secondary bushing</li> <li>➤ Check transformer accessories, such as gauge, etc.</li> </ul>	<p>n/a</p>
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**CLASS D**

	<ul style="list-style-type: none"> <li>➤ Check oil level, if necessary, filling of oil to required level</li> <li>➤ Check for oil leaks and retighten flanges</li> <li>➤ Clean/check operational condition of fan motors</li> <li>➤ Reconnect primary and secondary terminal of transformer</li> <li>➤ Retighten all terminal connection using torque wrench</li> <li>➤ Final checking/ inspection</li> <li>➤ Clearing and cleaning</li> <li>e. Metal Enclosed Bus Ducts, Lighting/UPS Bus Ducts (Substation Area only)</li> <li>➤ Air blow/vacuum cleaning of bus duct to eliminate dust and carbon residue</li> <li>➤ Inspect accessible insulators for evidence for physical damage</li> <li>➤ Check/clean bus for physical damages, discoloration, cleanliness and proper connection accordingly</li> <li>➤ Check for tightness of bolted joints and make sure all buses are free of dust, carbon and other stain on its surface</li> <li>➤ Clean and wipe to remove clinging dirt using approved cleaning solvent</li> <li>➤ Perform insulation Resistance Test</li> <li>➤ Final checking/ inspection</li> <li>➤ Clearing and cleaning</li> <li>f. Cleaning of the following:</li> <li>➤ Exhaust Fans and louver blades</li> <li>➤ Doors, wire trays and cables</li> <li>➤ Sub-station wall, ceiling and flooring</li> <li>g. Others</li> <li>➤ Check ground lead on each equipment for individual attachment to ground bus</li> <li>➤ Inspect/check tightness of grounding bolted connections/ and or cable by torque wrench</li> <li>➤ Perform grounding</li> </ul>	<p>n/a</p>
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**CLASS D**

	continuity test and earth resistance measurement > Clean/inspect power cables, retighten all connections/termination > Air blow cable tray, check hangers and support > Check/clean exhaust fans, perform insulation test 3. Re-energization and re-commissioning. 4. Cleaning-up works and demobilization 5. Perform Electrical system analysis and submit summary of findings and recommendations to FMD	n/a		
<b>B. Manpower</b>				
1. Professional Electrical Engineer	1	lot		
2. Registered Electrical Engineer	1	lot		
3. General Electrical Foreman	1	lot		
4. Electrician	1	lot		
5. Testing Equipment Technician	1	lot		
6. Assistant Equipment Technician	1	lot		
7. Manpower Labor Cost	1	lot		
<b>SUB TOTAL</b>				
<b>C. Consumables</b>				
1. Rags	40	kg		
2. WD 40	5	pcs		
3. Soft Broom	3	pcs		
4. Hard Broom	2	pcs		
<b>5. SUB TOTAL</b>				
<b>TOTAL</b>				