

Tender Document

11 kV and LT Network

Title: Performance Based Annual Maintenance Contract (AMC) for operation and maintenance (O&M) of 11KV feeders, Distribution sub-station, LT Feeder, Techno-commercial activities at TP Central Odisha Distribution Limited (TPCODL) Odisha.

Scope of the Work

1. Inspection, monitoring, maintenance of 11 kV/LT Network and Distribution Substations (DSS)

Inspection, Monitoring, Maintenance of 11kV/LT network, DSS equipment shall be carried out as per the monthly schedule provided by Distribution Services (DS) & instruction of Engineer in Charge (EIC, The concerned TPCODL Division Manager).

The Business Associate (BA) shall deploy expert supervisors, technician (lineman) & helpers along with all required tools, tackles, instruments, machineries, vehicles, safety PPEs, Safety equipment for O&M and upkeep of all equipment. The BA must ensure that all O&M jobs are carried out as per stipulated time frame along with strict adherence to the TPCODL's O&M and safety Guidelines.

The workmen, supervisors deployed by the BA should be able to perform condition based, Emergency, preventive & breakdown maintenance, troubleshooting, repair, replacement of defective equipment/parts as per work requirement.

1.1 11 kV OH/ UG Feeders

a. Routine Inspection of feeders

Inspection of complete length of all feeders including T-off lines (branch lines) shall be carried out as per instruction of Engineer -In-Charge (EIC) & "Monthly Maintenance Schedule" provided by DS group.

BA shall inspect the feeder/s as per the given schedule and submit "Feeder Inspection Report-Annex-I" to the EIC & DS group indicating feeder wise defects, bill of material to attend the defect and required outage duration. BA shall adhere to the inspection schedule fully and no deviation shall be permitted.

Inspection shall be carried out to detect:

- I. Trees and tree branches close to the feeder.
- II. Hotspots, loose / worn out joints in the feeder.
- III. Abnormalities in Poles, cross arms, AB Switch, DD / HG fuse, cables, earthing systems, hardware, stay wires, pole foundation, guard wire, insulators, conductors (undersize, damage, multiple joints), Jumpers, Distribution Substations, CT/PT Units, switchgears such as ACB, MCCB, Auto-recloser, Sectionalizer, FPI, RMU, etc.
- IV. Missing and bypassed accessories such as cross arms, Insulators, Danger board, Anti climbing device, stay insulators, stay wires, earth connection, cradle guard, AB Switch, DD/ HG fuse cables, Earthing systems, lightning arresters, power connectors, hardware fittings, switchgear such as ACB, MCCB, Auto-recloser, Sectionalizer, FPI, RMU, etc.
- V. Unauthorized construction, excavation, digging, dumping work under/near the line.
- VI. Low clearance sites (including Over sagged wires, cables, guard wire).
- VII. Abnormalities in cable terminations, mounting frames, missing cleats, missing cable earth connections.
- VIII. Missing cable route / joint markers.

- IX. Damaged / Weak Cable Joints.
- X. Approach pathway to poles for maintenance work.
- XI. Patrolling of underground cable route for advance intimation of any planned excavation activity, exposure of cable, storage of fire hazardous materials on / near cables, etc.
- XII. Unsafe Locations / Situations.
- XIII. Any other abnormality that will affect safety to general public & TPCODL/ BA staff, equipment or smooth functioning of network.

b. Emergency Inspection of 11 kV Feeders

Emergency inspection of 11 kV feeder shall be carried out by the BA as per the directions of EIC & whenever 11 kV feeder trips to identify the exact reason of feeder tripping/breakdown documented as per Annex-II. BA may use binocular to identify exact nature of defect. All close inspections shall be done under the guidance and supervision of TPCODL staff.

c. 11 kV Feeder Maintenance Activities:

The maintenance activities need to be carried out based on the inspection report & survey and to be submitted as per Annex-III.

- I. Trimming of trees /tree branches under/near/above the feeders with tree pruners (to be provided by BA) as per "Monthly maintenance Schedule" issued by DS and in coordination with EIC. BA shall maintain most optimized RoW to reduce the tree trimming cycles. Creepers shall be removed before creeper reaches 2.5 m height to avoid feeder outage to clear the same.

BA shall also shift the cut pieces of tree branches to nearby designated dumping yard of Civic body without any additional cost implication to TPCODL.

The deployed BA workforce will perform tree trimming activities. However, BA Shall deploy specialised manpower for cutting big trees including coconut trees/palm/ bamboo etc without any additional cost implication to TPCODL.

Tree trimming activities shall be carried out as per the norms of NGT/ Forest Dept. / Local Civic bodies / Municipal authorities, as applicable & minimum clearance will be maintained as per CEA regulations.

All the tools & tackles required for Tree pruning must be available in working condition with BA as per the tender T&C.

In 10% monthly bill, EIC shall certify the Tree Trimming Job completion. If BA fails to comply the Tree Trimming Part, INR 100,000.00 shall be deducted from the 10% Monthly Bill.

(If the non-compliance of tree trimming is attributable to TPCODL, the same needs to be mentioned by EIC)

- II. Replacement of tilted/broken poles and accessories along with painting of GIS number, Transportation of pole (from any site to work location within same division) will be in scope of BA. All these replacement activities shall be done without any additional cost implication to TPCODL.

However, in case of Poles/Network damaged due to cyclone / Kalbaisakhi/ inclement weather/ vehicle hit, BA shall be paid only as per unit rate of RC after approval EIC. This charge shall be

applicable towards the transportation & material loading / unloading. Such charges shall be paid to BA after due approval & verification from EIC as per AMC RC rates.

- III. BA must ensure proper refilling, cleaning / disposal of debris during earth excavation. BA shall ensure to shift broken poles/ pole accessories to nearby designated dumping yard of Civic body without any additional Cost Implication to TPCODL.
- IV. Straightening of tilted poles/cross arms/insulators/Steel Structure & other accessories.
- V. Installation of New poles for network strengthening, rectification of long span and unsafe situations along with all accessories, fittings & GIS pole number painting for ensuring statutory clearances & network strengthening. For this activity, separate RO shall be placed as per the approved unit rate of RC after approval of EIC. These charges shall be towards Transportation, Material loading/ unloading within same division.
- VI. Replacement of corroded, cracked, flashed insulators (Disc/Pin/Shackle).
- VII. Replacement / Repairing of GO switch / AB switch / DD & HG Fuse / line isolators.
- VIII. Replacement/repair of Binding wire joints and installation of Clamps and Connectors.
- IX. Rectification of hotspots by tightening loose connections, repair/replacing clamps, connectors and /or replacement of jumpers & other actions.
- X. Replacement of undersized / burnt / damaged conductors, cables and jumpers. This includes replacement of conductor/cable spans with two or more joints in a span.
- XI. Repairing/replacement of broken or weak guard wire & guard laces.
- XII. Provision of guard wire / cradle guard wire beneath conductors.
- XIII. Digging & refilling of any nature required for proper maintenance of HT system.
- XIV. Repairs and re-tensioning / re-stringing of conductors for attending low vertical / lateral clearance.
- XV. Repairs / Replacement of Earth wire.
- XVI. Thermoscanning of Network. (Camera To be provided by TPCODL)
- XVII. Repair/replacement of stay set, stay wires with stay insulator.
- XVIII. Installation / Repair/ Replacement of bird guards.
- XIX. Transportation of all men, materials, T&P items etc. required to attend preventive maintenance and breakdowns of OH and UG system.
- XX. Replacement / Repair of barbed wire / anti-climbing devices.
- XXI. Painting as per instruction of EIC. Paint shall be supplied by TPCODL. (Both insulation paints & anti-corrosion paints are covered in this point).
- XXII. Removal of bird nest / cable / internet / telephone wires / hoardings from poles as per the instructions of EIC.
- XXIII. Installation / Repair/ Replacement of danger boards on poles.
- XXIV. Installation / Repair/ Replacement of cable route / joint markers.
- XXV. Numbering / Sign writing on pole and switchgear using stencils as per TPCODL standard.
- XXVI. Replacement of burnt / weak CTPT unit.
- XXVII. Replacement of missing / burnt lightning arresters.
- XXVIII. Installation of lightning protection devices.
- XXIX. Installation of Bushing Covers, insulating sleeves, Tapes on HT/LT network/DTR.
- XXX. Fixing/replacement of spacers in feeders.
- XXXI. All breakdowns shall be attended promptly within timelines as per the defined service level agreement. BA shall analyse all breakdowns and check the exact reason of breakdown and inform the same to TPCODL.
- XXXII. BA to ensure installation of new earthing & repair of existing earthing as per instruction of EIC (Earthing material shall be provided by TPCODL).
- XXXIII. Dismantling of pole/ network/DTR as instructed by EIC.

(Payments towards heavy machineries such as pole master, Hydra, tempo etc shall be paid as per unit rate of RC after approval EIC rates).

The above list of activities is purely indicative in nature. To achieve AMC goals, compliance to SLA and Safety requirements BA shall proactively take up all the necessary activities on regular basis

1.2 11 kV/415 V/ 230 V Distribution Sub-Station (DSS) (including Mobile DSS)

a. Inspection of 11 kV DSS:

BA shall always keep all DSS neat and clean. The DSS maintenance shall be done as per the monthly maintenance plan & as per instruction of EIC. The inspection shall be carried out as per "Inspection Check List for DSS" for Distribution substation as per Annex- IV a & IV b" including Distribution transformer, AB Switch, HG/DD Fuse, earthing connections, Lightning Arrestor, KIT KAT Fuse, LT Distribution Box (including MCCB/ACB), CT/PT Unit, DTR meter cubicle, LT Cables & DT Energy meter.

b. Maintenance of 11 kV DSS (including Mobile DSS): (report to be submitted as per Annex-V. a)

- I. BA shall conduct routine inspection of all DSS & ensure there are no hotspots / loose connections, Oil leakage, DSS cleanliness & general upkeep, locking of fencing / switchgear Doors.
- II. Carry out preventive maintenance as per "Monthly Maintenance Schedule" and attending to breakdown and restoration of all DSS equipment safely by taking required & appropriate action as per the directions of EIC.
- III. Replacement of failed equipment in DSS including modification of mounting structure/plinth as per instruction from EIC.
- IV. Painting of equipment/mounting structures. (Paint will be provided by TPCODL)
- V. All fabrication works involving drilling, welding and gas cutting etc. required for DSS.
- VI. Replacement of defective power and control cables as instructed by EIC (Cables will be supplied by TPCODL).
- VII. Removal of vegetation from DSS yard. Removal of vegetation from DSS shall be done under the supervision of TPCODL staff.
Removal and disposal of vegetation from DSS to nearby civic body approved dumping yard. For disposal such wastes no additional payment shall be done to the BA.
- VIII. Cleaning of all DSS by cleaning and de-weeding and by removing shrubs, cobwebs, dust, dry vegetation, plastic / paper waste, creeper etc.
- IX. Digging and backfilling work of any nature within DSS premises.
- X. Sign writing on all equipment of DSS as per TPCODL standards (Paints will be provided by TPCODL).
- XI. Pre-monsoon maintenance of DSS as per the "Pre-monsoon Check lists" (Refer Annexures attached) provided by TPCODL.
- XII. Upkeep and maintenance of Mobile DSS, Trolley, HT/LT Cable joints and HT/LT Switchgear.
- XIII. BA to ensure installation of new earthing & repair of existing earthing as per instruction of EIC (Earthing material shall be provided by TPCODL).
- XIV. Any other abnormality that will affect safety to general public & TPCODL/ BA staff, equipment or smooth functioning of network.

c. Major activities to be carried out is as follows:

Distribution Transformer:

- I. Connections of all LT and HT terminations of the transformers using Palm Connectors with Busbar/Shear Bolted connector with all connected equipment and accessories.
- II. Installation of DTR HT/LT Bushing covers
- III. Dressing of LT/HT cable.
- IV. Thermoscanning of DSS.
- V. Oil BDV test, IR Test of transformers and Soil Resistivity test of earth pits shall be carried out as instructed by EIC.
- VI. Load measurement of transformers during peak hours and LT load balancing.
- VII. Silica gel replacement and breather replacement.
- VIII. Checking of oil level & attending to minor leakages of the transformer.
- IX. Topping up of Oil level in transformer conservator up to 1/3rd level wherever required.
- X. Attending to all hot spots in terminations and connections.
- XI. Repair/Rectification of old Earthing and installation of new Earthing as instructed by EIC.
- XII. Welding of DTR top cover and drain valve to prevent theft as instructed by EIC.

Other equipment in DSS:

- I. AB Switch: Repair of AB switch. Replacement of parts or installation of new AB switch as instructed by EIC. (AB switch will be provided by TPCODL).
- II. HG/DD Fuse set: Repair of HG/DD Fuse set. Replacement of parts or installation of new HG/DD Fuse as instructed by EIC. (HG/DD Fuse set material will be provided by TPCODL).
- III. Lightning Arrestor (LA): Replacement or installation of new LA as instructed by EIC. (LA will be provided by TPCODL).
- IV. KIT KAT Fuse: Repair of KIT KAT Fuse. Replacement or installation of new KIT KAT Fuse as instructed by EIC. (KIT KAT Fuse will be provided by TPCODL).
- V. LT Distribution Box (MCCB/ACB): Repair of LTDB including panel cover and door through minor fabrication works. Replacement of LTDB as instructed by EIC. (LTDB will be provided by TPCODL).
- VI. Repair or replacement of burnt/faulty meter cubicle.
- VII. Repair or replacement of DTR Energy meter/CT/wiring. Replacement/Installation of DTR Energy meter/CT/wiring as instructed by EIC.

d. DTR Replacement/swapping:

i. Replacement of transformers with low IR/oil leakage/ damaged body:

Based on EIC's instruction & test reports, BA shall perform replacement of DT with Low IR /oil leakage/ damaged body. For this additional payment (towards transportation, material loading / unloading) shall be made as per unit rate of RC after approval EIC. This activity shall comprise of the following activities:

- a) Transportation of the new/repared transformer from the storage location to the work site (within the same division.)
- b) Installation, testing and commissioning of new/ repared transformer with all related works at site.
- c) Transportation of old transformer (Low IR DTR) from site to designated place within the same division.

ii. Replacement of faulty/burnt transformer

Based on EIC's instruction & test reports, BA shall perform replacement of burnt / faulty DTR. For this activity **No additional payment** shall be made to the BA. This activity shall comprise of the following activities:

- a) Transportation of the new/repared transformer from the storage location to the work site (within the same division.)
- b) Installation, testing and commissioning of new/ repaired transformer with all related works at site.
- c) Transportation of old transformer from site to the storage designated place within the same division.

However, in case of DT failure for reasons not attributable to BA or due to Kalbaisakhi / Cyclone the DTR replacement charges (towards transportation, material loading / unloading) shall be paid as per unit rate after due approval from EIC.

iii. Swapping of transformer:

Based on EIC's instruction & test / loading reports, BA shall perform swapping of DTR from one location to the other. For this additional payment (towards transportation, material loading / unloading) shall be made as per unit rate of RC after approval EIC. This activity shall comprise of the following activities:

- a) one overloaded / under loaded transformer is removed from its existing location. shifted and installed at intended new allocated location within the same division.
- b) While other transformer at other location within division is removed from its existing location, shifted and installed at intended new allocated location within the division.

Note: Transportation, Installation, Testing, Commissioning of two different transformers at their intended locations will be considered as one "swapping activity".

iv. To complete the activity for Augmentation of Transformer as per EIC instruction:

Based on EIC's instruction & test / loading reports, BA shall perform upgradation/ augmentation of DTR from lower capacity to higher capacity. For this additional payment shall be made (towards transportation, material loading / unloading) as per unit rate of RC after approval EIC. This activity shall comprise of the following activities:

- a) Transportation of the new/repared transformer from the storage location to the work site (within the same division.)
- b) Installation, testing and commissioning of new/ repaired transformer with all related works at site.
- c) Transportation of old transformer from site to designated place within the same division.

v. Dismantle/Removal of unused transformer as instructed by EIC:

Dismantling and transportation of unused transformer from its existing location to the location instructed as by EIC within the same division & or to store. For this activity additional payment towards Hydra, Tractor, Crane, Tempo etc to be done as per as per unit rate of RC after approval EIC.

vi. Installation, removal and transportation of Mobile transformer as instructed by EIC:

- a) To transport within division and install the mobile transformer to the site provided by EIC.

- b) To remove the mobile transformer after its purpose and to transport back the mobile transformer to its original location.

In this activity additional payment (towards transportation, material loading / unloading) shall be made to the BA as per unit rate of RC after approval of EIC except installation and removal of mobile transformer during DTR burnt/failed cases.

1.3 LT Feeder OH/ UG Network:

a. Routine Inspection of feeders

Inspection of complete length of all feeders including Tap-off feeders (branch lines) as instructed by Engineer-In-charge (EIC) shall be carried out as per "LT Inspection checklist- Annex VI" provided by EIC. EIC shall release list of feeders to be inspected every month which BA team to implement till end of the same month. BA shall inspect the feeder/s as per the list and submit "LT Feeder Inspection Report" by last day of same month to EIC indicating feeder wise defects, bill of material to attend the defect and required outage duration.

Inspection shall be carried out to detect:

- I. Trees and tree branches close to the feeder.
- II. Hotspots / poor joints in the feeder
- III. Abnormalities of Poles, cross arms, MS/GI structure, Insulator, Danger board, Anti climbing device, stay insulators, stay wires, earthing connection, guarding & cradle guard, Kit Kat Fuse, cables, Earthing systems, hardware fittings, pole foundation, multiple jointed conductors, damaged or undersized conductors, Jumpers ACB, MCCB, Feeder Pillar, Service Pillar, etc.
- IV. Missing and bypassed network accessories such as cross arms, MS/GI structure, hardware fittings, Insulators, Danger board, Anti climbing device, stay insulators, stay wires, earth connection, guarding & cradle guard, Kit Kat, Earthing systems, connector, hardware fittings, switchgears such as ACB, MCCB, Feeder Pillar, Service Pillar, etc.
- V. Unauthorized construction, excavation, digging, dumping work under/near the line.
- VI. Over sagged wires, cables, guard wire.
- VII. Abnormalities in cable terminations, mounting frames, missing cleats, missing cable earth connections.
- VIII. Missing cable route / joint markers.
- IX. Damaged / Weak Cable Joints.
- X. Approach pathway to poles for maintenance
- XI. Patrolling of underground cable route for advance intimation of any planned excavation activity, exposure of cable, storage of fire hazardous materials on cables, etc.
- XII. Peak load capturing of LT feeders as instructed by EIC.
- XIII. Any other abnormality that will affect safety to people, equipment or smooth functioning of LT feeders.

b. LT Feeder Maintenance Activities, Techno-commercial and Fuse Call Activities (Report to be submitted as per Annex-VII & VIII)

- i) Trimming of trees /tree branches under/near/above the feeders with tree pruners (to be provided by BA) as per "Monthly maintenance Schedule" issued by DS and in coordination with EIC. BA shall maintain most optimized RoW to reduce the tree trimming cycles. Creepers shall be removed before creeper reaches 2.5 m height to avoid feeder outage to clear the same.
BA shall also shift the cut pieces of tree branches to nearby designated dumping yard of Civic body without any additional cost implication to TPCODL.

The deployed BA workforce will perform tree trimming activities. However, BA Shall deploy specialised manpower for cutting big trees including coconut trees/palm/ bamboo etc without any additional cost implication to TPCODL.

Tree trimming activities shall be carried out as per the norms of NGT/ Forest Dept. / Local Civic bodies / Municipal authorities, as applicable & minimum clearance will be maintained as per CEA regulations.

All the tools & tackles required for Tree pruning must be available in working condition with BA as per the tender T&C.

In 10% monthly bill, EIC shall certify the Tree Trimming Job completion. If BA fails to comply the Tree Trimming Part, INR 100,000.00 shall be kept on hold from the 10% Monthly Bill. The amount will be released only after the compliance & getting certification from EIC.

- ii) Replacement of tilted/broken poles and accessories along with painting of GIS number, Transportation of pole (from any site to work location within same division) will be in scope of BA. All these replacement activities shall be done without any additional cost implication to TPCODL.

However, in case of Poles/Network damaged due to cyclone / Kalbaisakhi/ inclement weather/ vehicle hit, BA shall be paid only for Pole master/ Hydra/ Tempo as per unit rate of RC after approval EIC.

Pole installation charges shall be applicable towards the transportation & material loading / unloading. Such charges shall be paid to BA after due approval & verification from EIC as per AMC RC rates.

- iii) BA must ensure proper cleaning / disposal of debris during earth excavation, refilling. BA shall ensure to shift broken poles/ pole accessories to nearby designated dumping yard of Civic body.
- iv) Straightening of tilted poles/cross arms/insulators.
- v) Installation of New Mid Span poles for rectification of long span and unsafe situation (with all required accessories, fittings, stringing of LT AB Cable/ Bare conductor along with installation of Distribution Boxes, earthing, hardwares and accessories etc) for ensuring statutory clearances & network strengthening.

Transportation of pole (from any site to work location within same division) will be in scope of BA. The poles must be numbered as per GIS requirement. For this activity, separate RO shall be placed as per unit rate of RC after approval EIC.

- vi) Repairing / replacement of LT conductor/cable/ Line jumper/ Service line / service line jumper/ Cable jumpers.
- vii) Rectification of high sagging conductor/LT AB cable.
- viii) Fixing/Re-fixing of spacers in between the lines
- ix) Removal of bird nest / cable / internet / telephone wires / hoardings from poles as per the specific instructions/directions of EIC.
- x) Repair/Rectification of old Earthing and installation of new Earthing as instructed by EIC.
- xi) Making connector hooks and installation of two lines wherever required

- xii) Repair/replacement of faulty LT cable. This includes digging, jointing & refilling work for repairing the faulty UG cable.
- xiii) Installation of all hardware such as IP Connector/Multiport Connector/ Eye hook/ bracket/Dead end / Suspension clamps/ cross arm/ clamp / two line etc.
- xiv) Repair / Replacement/ installation of LT service DB (Distribution Boxes) on LT Poles using IP Connector/Multiport Connector with earth connection.
- xv) Dressing of cable / conductor / service wires.
- xvi) Participation in AT&C loss reduction initiatives such as Execution of Disconnection (DC)/ Re-connection (RC)/ illegal hooking removal/ Enforcement raids/ Meter Removal (MRO)/Service Cable removal/Temporary Disconnection (TD), sealing of DTR LT Bushing and LT Network with anti-theft tape/paint/accessories, Shifting of Meters or any other cases as instructed by EIC.
- xvii) Replacement of burnt/damaged/faulty fuses/ ACB/MCCBs/MCBs, LTDB.
- xviii) Replacement/ repair / installation of bus bar boxes as per requirement.
- xix) Replacement/Augmentation of Service cable.
- xx) Laying/stringing of LT 1.1 kV armoured cable of (all sizes) for LT connections as instructed by EIC. The cable will be provided by TPCODL.
- xxi) Dismantling of pole/ network as instructed by EIC.
- xxii) (Payments towards heavy machineries such as pole master, Hydra etc shall be paid as per unit rate of RC after approval EIC rates)
- xxiii) BA must ensure proper cleaning / disposal of debris during earth excavation, refilling. BA shall ensure to shift broken poles/ pole accessories to nearby designated dumping yard of Civic body. No additional payment shall be made for this activity.
- xxiv) Load balancing/swapping of LT Circuits.
- xxv) Assist TPCODL Staff for Daily registration & on time closure of complaints entered in FCC App.
- xxvi) Attending to Fuse Call Complaints / No Power Supply Complaints within stipulated time frame.
- xxvii) BA Shall ensure proper upkeep and cleanliness of Bidyut Seva Kendra- BSK (Fuse Call Camp)
- xxviii) Prompt Attending to emergency complains.
- xxix) BA to ensure installation of new earthing & repair of existing earthing as per instruction of EIC (Earthing material shall be provided by TPCODL).
- xxx) Any other abnormality that will affect safety to general public & TPCODL/ BA staff, equipment or smooth functioning of network.
- xxxi) Regular Proactive Leakage current checking drives & immediate rectification.
- xxxii) The above list of activities is purely indicative in nature. To achieve AMC goals, compliance to SLA and Safety requirements BA shall proactively take up all the necessary activities on regular basis.

1.4 Feeder Pillar and Service Pillar

- I. Replacement of MCB and fuse carrier, kit-Kat/Cartridge/HRC type fuses.
- II. Repairing and replacement of bus bar.
- III. Dressing of LT cables, Tighten all I/C & O/G joints.
- IV. Attending leakage current in feeder pillar or service pillar.
- V. Repairing of Doors including welding. (Material will be provided by TPCODL).
- VI. Painting of feeder pillars/service pillars. (Paint will be provided by TPCODL).
- VII. Painting of Numbers & stencilling on Feeder /Service Pillar.
- VIII. Replacement of damaged feeder pillar/ service pillar, as an emergency repair.
- IX. Recording of peak load & cable sizes on each feeder/service pillar.
- X. Grounding of neutral inside the feeder pillar & making of proper earthing connection for each feeder pillar.
- XI. Replacement/installation of earthing

1.5 Auto Recloser, Sectionalizer, RMUs, and MCCB/ACBs

Inspection of Auto Recloser, Sectionalizer, RMUs, LTDB and MCCB/ACBs shall be carried out as per "Monthly Inspection Schedule" provided by DS and Engineer-In-charge (EIC).

BA shall inspect the Auto Recloser, Sectionalizer, RMUs, and MCCB/ACBs as per the schedule and submit "Inspection Report" to EIC & OS indicating equipment-wise defects, bill of material to attend the defect and required outage duration by last day of same month. BA shall adhere to the inspection schedule fully and no deviation shall be permitted.

Maintenance activities:

- I. Cleaning
- II. Tightening of loose connections
- III. Rectification of hot spots
- IV. Minor Repair / welding of door/panel covers
- V. Repair / Installation of earthing
- VI. Installation of terminal connectors in Auxiliary PT, Auto Recloser, Sectionalizer

2. Minor Civil Repair & fabrication Work:

Based on EIC's instruction, the BA shall perform minor civil work & fabrication work without any additional cost implication to TPCODL.

- I. Welding of RS joist steel pole, locking arrangement of doors, damaged sheets/angle/ channel of doors & shutters of substations. Welding work of fencing for plinth/ pole mounted sub-stations.
[Quantity of the material used per month per sub-division shall not exceed - hinges up to 02 No's sliding door bolt - 01 No; IRC welding mesh - up to 5 m² or 25 kg, MS angle/Channel/Flat – 25 kg, MS Sheet (2mm thick X 5 m²) – 25 kg].
- II. Repair of 11 kV DT foundations/plinth (Minor repair implies Brick work up to 100 bricks per foundation/plinth, Cement plaster with neat cement up to 2.5 m², CC 1:1.5:3 up to 0.15 m³ per month per Sub-division).

However, TPCODL will pay BA for use of crane / hydra for lifting of 11 kV DTR & transportation for carrying out repairs to the foundation/plinth on actual as per as per unit rate of RC after approval EIC.

- III. Repair of Plinths of Feeder Pillar/ Service Pillar.
- IV. Pole cooping and concreting as per instruction of EIC/ OS.
- V. Soil digging and backfilling work of any nature
- VI. The cumulative amount of cement and bricks for all above mentioned works should not exceed 1000 kg, 3000 nos. and proportionate amount of sand and other material (without any additional payment to the BA) respectively per Division per year. The activities under this category shall mainly comprise of the following items or any other activity as per EIC:
 - DTR / Feeder Pillar Plinth Repair.
 - Pole Cooping & concreting
 - Repair of Fencing / DSS Boundary Wall.
 - Repair of Panel covers, Feeder pillar doors.
 - Height extension of DTR/Feeder pillar plinth

(The quantities mentioned are only for estimation of the work carried out under minor civil repair & fabrication works).

3. Minimum Resources deployment (Manpower and Vehicle)

To achieve the desired O&M Jobs, BA shall deploy minimum requirement of manpower as per the attached Annexure and Vehicle as per Annexure-I of Tender Document, ensuring compliance to the requirements of their minimum qualification, eligibility, job description and condition of vehicles

4. Performance Standard and Measurement:

The performance system shall comprise of measurement of BA's performance on the parameters listed below. The total marks for the performance will be 100 in a month. 10% of monthly invoice shall be released as per the marks scored (verified by EIC) in the following performance measurement criterions.

Indicator	Sr. No	Parameters of Measurement	Details	UoM	Max. Marks	Total Marks	Marks Scored	Bonus Marks
A	B	C	D	E	F	G	H	I
Statutory Compliances	1	Non-Compliance w.r.t. to PF, ESI related Statutory norms BA legal	a. Payment of salary to BA employees within 7 th of each month.	Nos	5	10		
			b. On time compliances to Statutory requirement of EPF, ESI.		5			
Vehicle Compliances	2	Non-Compliance w.r.t vehicle	Deduction for each non-compliance on the following attributes: i) Vehicle insurance – 1 mark ii) Fitness certificate- 1 mark iii) Pollution certificate- 1 mark iv) Unavailability of driver -1 mark v) Each Instance of Vehicle not reporting for duty > 2 hrs – 1 mark. vi) Unavailability of Commercial license vehicle – 5 marks	Nos	10	10		
Supply Restoration time	3	Line Breakdown	Urban Area (4 hrs)	Nos	5	20		
			Rural Area (8 hrs)	Nos				
	4	Major Breakdown	Urban Area (12 hrs)	Nos	5			
			Rural Area (24 hrs)	Nos				
	5	DT Failure	Urban Area (12 hrs)	Nos	5			
			Rural Area (24 hrs)	Nos				
6		Urban Area (3 hrs)	Nos	5				

No. of Interruptions (ESD+BD)		Fuse Call/ No Power Supply Complaint	Rural Area (12 hrs)	Nos		10		
	7	Overall Interruption Decrease > 10 % w.r.t. same month of LFY	Cumulative of all 11kV Feeders in a Division (BD+ESD). Data Comparison through Suraksha Kawatch Data / Division For > 50% reduction in interruptions BA shall score (15 marks i.e. 10+ 5 marks- Bonus)	Nos	5			
	8	Overall Interruption Decrease > 15 % w.r.t. same month of LFY		No. s	10			
	9	Overall Interruptions same as same month of LFY		Nos	0			
	10	Overall Interruption increase up to 3 % w.r.t. same month of LFY		Nos	-5			
	11	Overall Interruption increase > 3 % w.r.t. same month of LFY		Nos	-10			
	12	Overall Interruption Decrease > 50 % w.r.t. same month of LFY		No. s				5
Distribution Transformer failure	13	Reduction by >30% wrt same month of LFY.	For > 30% reduction in DTR failure + ZERO DTR failure in any month, BA shall score (15 marks i.e. 10+ 5 marks as Bonus)	Nos	10	10		
	14	Reduction by > 20% - wrt same month of LFY		Nos	5			
	15	ZERO DTR Failure in a month	For > 20% reduction in DTR failure + ZERO DTR failure in any month, BA shall score (10 marks i.e. 5 + 5 marks as Bonus)	No. s	-			5
	16	DTR Failure Rate Increase up to 2 % wrt same month of LFY or Any DT Failure > =250 KVA		Nos	-5			
	17	DTR Failure Rate Increase > 5 % wrt same month of LFY or Any DT Failure > =250 KVA	For Zero DTR failure BA shall score (5 marks as Bonus)	Nos	-10			
Non-availability of T&P	18	No T&P, PPE Violation Found	Availability of T&P, PPE qty as per the T&C of RC / RO Written communication of violations to be initiated by EIC to BA.	No. s	10	10		
	19	Up to 2 instances of T&P, PPE violation during the month		Nos	-5			
	20	More than 2 instances of T&P, PPE violation during the month		Nos	-10			
Asset Upkeep	21	Asset Upkeep- For Example Closing of Door of switchgears, locking of DSS. Pole cleaning, DSS Cleaning, etc.	Full adherence to the written Communications of EIC towards Asset Upkeep	Nos	5	5		
			Non-adherence to the written Communication / Month (reporting up to 3 cases)	Nos	-2			
			Non-adherence to the written Communication / Month > 3 Cases	Nos	-5			
AT&C Loss Reduction Initiatives	22	De-hooking Activities (* in case of hooking free divisions, EIC shall certify the same)	4 no. s or more dehooking / FCC / Day – on monthly cumulative basis	Nos	10	10		
			2 no. s or more dehooking / FCC / Day- on monthly cumulative basis	Nos	3			
			Less than 2 no. s dehooking / FCC / Day- on monthly cumulative basis	Nos	-5			
			Less than 1 no. s dehooking / FCC / Day- on monthly cumulative basis	Nos	-10			
Bidyut Seva Kendra / FCC	23	Closure of Fuse Call Complaints in FCC App within Stipulated Time Frame	Greater Than 95%	Nos	10	10		
			Between 90%- 95%	Nos	5			

App Operations			Less Than 90%	Nos	-5			
			Less Than 85%	No. s	-10			
MIS / Reports	23	On time submission of MIS / Reports	On time submission of MIS/ Reports	Nos	5	5		
Total						100		10

Note:

- I. TPCODL reserves the right to change/ add to the list of existing performance base measurements, at any point of time during the execution of the contract. This will be communicated in writing to the BA by TPCODL's Head (Distribution Services).
- II. Reduction of feeder tripping here will be considered exclusively due to maintenance activities carried out by BA. Credit will not be given to BA in the case where tripping reduction is due to special initiatives / Capex investments completed by the division.
- III. In-case of feeder tripping, if the tripping is attributable to the BA because of negligence/poor maintenance of feeder then penalty will be levied to BA as indicated above in case of non-compliance as described. EIC and Head (Distribution Services) will decide whether feeder failure is attributable to the BA and the decision will be final.
- IV. The bonus marks shall be decided on the performance of BA & reduction of Feeder interruptions due to maintenance activities exclusively cumulatively on total DTR failure of the division.
- V. In-case of DT Failure, if the transformer failure is attributable to the BA because of negligence/poor maintenance of DT then penalty will be levied to BA as indicated above in case of non-compliance as described.
- VI. Generally Low oil level, Pink Silica Gel, Missing breather, Loose Connection, Hot Spot, Non-Availability of lightning arrester, Damaged / missing earthing, Overloading, unbalancing, improper size of Fuses on HT/LT side will be considered as probable reasons of DT Failure attributable to BA.
- VII. The bonus marks shall be decided on the performance of BA & reduction of DTR failure due to maintenance activities exclusively cumulatively on total DTR failure of the division.
- VIII. BA can score maximum of 110 marks (including 10 marks as bonus).
- IX. This is under jurisdiction of EIC to give marks as per various scenarios (such as inclement weather conditions, involvement in activities other than O&M activities as per management decision) etc.
- X. Any violation towards safety guidelines, Safety SOP, usage & availability of required PPEs, Incident, Accident etc shall be penalised as per the CSM (Contractor Safety Management) & Safety Documents in addition to the above-mentioned performance measurement criteria.

5. Supply and Use of Testing equipment and Tools & Plant (T&P)- as per attached Annex. XI

The testing equipment and T& P must be available with BA for carrying out the jobs. At any given point of time. Regular checking & replenishment of the damaged items is the responsibility of BA.

Note:

- xxxiii) The list of testing equipment and T&P materials is purely indicative in nature. Apart from the mentioned list the BA should be able to provide all those instruments and T&P materials which may be needed to carry out any job mentioned in the scope of work.
- xxxiv) BA shall also manage buffer stock to replace any damaged/lost tool within 24 hours failing which marks/payment shall be deducted. BA shall ensure service worthiness of all tools and tackles by conducting monthly audit.
- xxxv) BA shall also maintain the instruments & T&P materials along with regular servicing & must maintain the required consumables.
- xxxvi) Calibration to be done on a yearly basis and two copies of the calibration report to be submitted to the respective EIC/ Distribution services. Functionality of testing equipment to be checked in house on quarterly basis.
- xxxvii) For PPEs, Safety Gadgets, Safety Tools the safety group annexure attached to be followed by BA. BA shall procure the safety PPEs, safety equipment /tools/gadgets only after sample approval from TPCODL safety Group.

6. Record Keeping/MIS

The following Reports/ MIS shall be submitted by BA to EIC/OS as detailed in the table below.

Sr. No.	MIS / Reports	Frequency
1	Compliance Reports-	
	a. Near miss / incident/ accident	Immediate
	b. Statutory Compliances Report (to BA legal Cell)	Monthly
	c. List of Required V/s Available PPE with BA Buffer Stock	Monthly
	d. List of Required V/s. Available PPE with BA Staff	Monthly
	e. List of Required V/s. Available Safety Equipment and Tools & Tackles- BA	Monthly
	f. List of Required V/s. Available Testing Equipment with BA	Monthly
	g. List of Resource Available- Manpower and Vehicles (along with necessary documents)	Monthly
2	Feeder Tripping Report (ESD/PSD)	Daily & Monthly
3	DT Failure report	Daily & Monthly
4	Maintenance Report	
	a. 11 kV Feeder Inspection Report	Monthly
	a. 11 kV Feeder Maintenance Report	Daily & Monthly
	b. 11 kV DSS Inspection Report	Monthly
	c. 11 kV DSS Maintenance Report	Daily & Monthly
	d. LT Feeder Inspection Report	Monthly
	e. LT Feeder Maintenance Report	Daily & Monthly
5	MIS on Faulty Feeder / Equipment	
	a. AB Switch/DD Fuse/HG Fuse/ Kit Kat Fuses	Monthly
	b. Auto- Recloser and Sectionalizer, FPI	Monthly
	c. LT Protection- ACB/MCCB/LTDB	Monthly

	d. LT Service Distribution Box. (Pole mounted Box)	Monthly
	e. Feeder Pillar and Service Pillar	Monthly
	f. List of Areas of Low Voltage	Monthly
	g. Lightning Arrestor	Monthly
	h. Earthing	Monthly
7	Load Monitoring	
	a. DT Peak Load & LT feeder peak load	Monthly
	b. Load Balancing	Monthly
8	Unsafe to Safe Work (along with before after Pics)	
	a. Re-Sagging HT and LT	Monthly
	b. Interposing Pole HT and LT	Monthly
	c. Damaged Pole Replacement Pole HT and LT	Monthly
	d. Straightening of tilted pole HT and LT	Monthly
	e. Stay support/Stay Set HT and LT	Monthly
	f. Replacement of Multiple joints of conductor- HT and LT	Monthly
	g. Installation and Repair of Guard Wire	Monthly
10	Fuse Call Complaint Report	Daily
11	DTR stolen Report	Weekly

7. TPCODL Asset

A. Circle, Division, Subdivision, Section & Fuse Call Centres

Please refer Annexure attached for present list of TPCODL offices, networks & equipment (Divisions, Sub divisions, Sections, 11 kV Feeder, Distribution Sub-Stations)

Further, as per OERC / Govt / Management approval, above TPCODL assets will keep on increasing on year on year basis. Such additional assets shall be considered as part of scope of this AMC and need to be maintained by BA whenever added to the respective & applicable network without any additional cost implication.

8. Schedule of Items (BoQ) – Refer Annexure-I Tender Document

9. General Terms & Conditions:

- a. The scope of work & minimum resource requirement are purely indicative in nature. The BA shall ensure that all the O&M Jobs & resource deployment will be made in such a way that the activities to enhance power supply reliability & prompt restoration of breakdowns/ fuse call complaints will be completed safely within the defined SLA timelines.

BA shall ensure availability of sufficient trained supervisors, linemen & helpers for all types of O&M jobs & must comply to the minimum manpower requirement always at any point of time.

BA shall deploy adequate manpower, vehicles, T&P items at no extra cost for adherence to the scope of work and to comply the Performance SLA of this tender document & exigencies based on the direction of EIC & Distribution Services Department. In case of any penalty imposed on TPCODL due to non adherence to regulatory SOP, the same shall be recovered from the BA.

- b. BA shall deploy the above manpower in discussion with TPCODL HR department & EIC as per the following qualifications & experience mentioned in the tender document & Cl. No 8 of CEA (Measures related to safety & electric Supply 2023)

Designation	Minimum Qualification
Section Engineer/ Supervisor	Degree/Diploma in electrical engineering with 2 yrs. of relevant experience in construction or O&M in Power Distribution Sector. The person must be Computer literate with proficiency in MS office/XL & well versed with usage of Mobile Applications.
Safety Engineer	BA shall ensure safety officers qualification- Diploma/Degree in Electrical Engineering with ADIS/PDIS from the institution recognized by state board of technical education. He/she should have minimum 3 yrs. experience post safety qualification. The person must be Computer literate with proficiency in MS office/XL & well versed with usage of Mobile Applications
Lineman	Qualification shall be as per CEA regulation clause no 8, along with valid HT workman license for (11 kV Jobs + LV jobs) from relevant Govt agencies - ELBO (Govt. of Odisha)
Helper	preferably 10 th pass & shall have suitable experience in O&M / construction in Power distribution Sector. The person must have basic knowledge of working in electrical power distribution, along with awareness on safety & ability to read, write & communicate.

- c. BA shall deploy, transfer, shift, reshuffle its manpower & resources as per the organisational requirement based upon advice of EIC & TPCODL HR department
- d. Also, in case of exigency or natural calamities, BA shall deploy of its resources across TPCODL or even outside TPCODL as per the instruction of TPCODL management.
- e. BA shall arrange for required resources for shift/rest/leave reliever as per applicable laws without any additional cost implication to TPCODL.
- f. The vehicles deployed for operation and maintenance shall be in good external & internal condition & the vehicles must not be older than 10 years (from the date of PO / renewed PO). Business Associates must deploy commercial vehicles & must comply to all statutory laws/motor vehicle ACT/RTO Rules (mainly RC, Insurance, fitness and pollution control). In case of accidents TPCODL has no liability towards Police/RTA authorities, Law Courts, injured parties, damage to the vehicle or property etc.

The vehicles should run on authorized fuel like CNG/Petrol/Diesel as endorsed on the vehicle registration certificate.

- g. Driver deployed should have valid driving license. Driver should be medically fit. The information of change in driver/Vehicle to be informed to TPCODL, before making such changes.
The BA must ensure deployment of separate drivers for day & night Shifts without any additional cost implication to TPCODL. Each vehicle deployed will have limit as mentioned in the RC line Items. of running average as below:

The total running kilometres for a cluster (combination of 2 divisions) shall be calculated based on the quarterly aggregation of the cumulative distance covered by all vehicles in that cluster.

For example, in a rural cluster –

- a. 12 hrs Vehicle – 5 no. s
- b. 24 hrs Vehicle - 5 no. s
- c. Total Vehicle - 10 no. s (a+b)
- d. Total Quarterly Cumulative running KM = $(5 \times 2500 + 5 \times 3500) \times 3 = 90,000$ KM.

In case total running km exceeds 90,000 km in the above example, BA shall be eligible to get additional payment per km charges as per applicable RC rates subject to approval from EIC.

- f) BA shall maintain Log Book for every vehicle separately. Daily running of Vehicle should be entered in this book on daily basis. The total kilometres run by the vehicle will be calculated from this Log Book. Vehicles driver will ensure that each entry should be signed by the user.
- g) BA to deploy Vehicle (Mahindra Bolero/ Camper / Pick up or equivalent and Tata Magic or equivalent as per instruction of EIC) as per RC rates. All vehicles shall have capacity to accommodate the crew members and minor loading of material including minimum 1 nos. FRP Ladders.

Vehicle should be equipped with one extra tyre as Stepney in the vehicle with all the tools to replace the damaged tyre. All the vehicles must have top carriage for holding ladder & material. Vehicle deputed in a division shall run to any location within the division boundary. However, during exigency, the vehicles may be made available to another division as instructed by EIC.

In case of any vehicle accidents, TPCODL has no responsibility whatsoever towards police/ RTA authorities, Law, Courts, injured parties, damages to the vehicle or property etc. All these shall be entirely contractor's sole responsibility. The contractor/agency will obtain comprehensive insurance policy for all the personnel deployed to cover any injury or death to any staff or other person in or around the work premises without extra cost to TPCODL. TPCODL will not pay and/or reimburse anything on this account over and above the contract considerations.

- h) BA must deploy a single person of contact (SPOC) in each of the allocated division(s) for day to day co-ordination with EIC/OS team and MIS.
- i) Provision of adequate vehicles (two-wheeler or four-wheeler) for the movement of BA staff to discharge their official duties as instructed by EIC shall be completely in the scope of BA without any additional Cost Implication to TPCODL.
- j) BA may have to establish Fuse call centre / Bidyut Sewa Kendra (BSK) by taking Premises on rent for running Fuse call Camp in the TPCODL area as per requirement & directions from Head (Distribution Services). The Premises shall be adequate for minimum sitting capacity of 6 persons along with proper & safe storage of T&P items, Ladder, Discharge Rod, Neon tester etc. The premises shall have a sign board of "TPCODL Fuse Call Centre" (to be provided by TPCODL).
The monthly rent of fuse call camp shall be limited up to Rs. 1500 for rural areas & Rs.2500 for urban areas. (The list of such Fuse Call Centre shall be provided by TPCODL). The same shall be paid to the BA as per approved Rate in RC.
- k) Business associate shall analyse all interruptions (ESD & BD) and identify the exact reason of breakdown and report same to TPCODL EIC & OS on monthly basis.

- l) BA workforce must be able to use FCC App and must be capable of receiving and sending complaints for closing through FCC App. The BA line staff / supervisor must ensure on-time registration/ closure of any complaints as soon as it arrives/attended.

BA shall also ensure up keep & safe custody of the BSK Mobile Set & Charger. The BA shall ensure the mobile sets well protected by fixing back cover & screen guard for safety. TPCODL has already provided mobile handsets & charger at all BSKs, in case of any damage, theft or misplacement of the already existing mobile set or charger, BA shall replace the same (with new mobile set & charger equivalent to the earlier existing model) without any additional cost implication to TPCODL.

- m) BA shall arrange for movement of its manpower from one Division/Sub Division/Section/Fuse Call Centre to other as per the instruction of EIC during exigencies/inclement weather or pooled/ mass maintenance without any additional cost implication to TPCODL.
- n) BA shall increase its resources during exigency or natural calamities on the direction of EIC/DS Team. BA shall in no case refuse to increase the manpower / vehicles / T&P items during exigencies.
The payment for additional resources shall be made as per approved RC rates subject to approval from EIC.
- o) BA shall also assist Billing efficiency & Collection efficiency improvement activities & must support TPCODL in achieving the AT&C loss targets. The BA shall participate in such activities as directed by EIC, without any additional cost implication.
- p) BA shall assist TPCODL in upkeep & general housekeeping of TPCODL offices, PSS including 5S implementation as per the direction of EIC.
- q) In case of deployment of Additional Manpower, BA to ensure separate safety PPE/ T&P materials for them.
- r) BA must maintain shift wise duty roster & daily attendance of its manpower & submit the monthly attendance report duly verified by EIC along with monthly AMC bill to OS.
- s) Transportation of men & materials/equipment to carry out preventive or breakdown maintenance for day to day works shall be the responsibility of BA, without any cost implication to TPCODL.
- t) The safety PPEs/ T&P materials shall be applicable as per safety group Annex.
- u) It is the responsibility of the BA to ensure that its total manpower deployed in the 33kV system & 11kV/LT system can be utilized to overcome any operational requirements at any voltage level i.e.- 33kV or 11kV/LT as & when required by the EIC without any additional cost implication to TPCODL.

If BA fails to adhere the above-mentioned arrangement then INR 50,000 shall be deducted in the 10% monthly bill.

- v) EIC shall form a common team for attending Breakdowns / Emergency complaints for 33kV, 11kV/LT system as per the requirement.
