

Tender Document- 33 kV System

Title: Performance Based “Annual Maintenance Contract” (AMC) for Operation and Maintenance of 33 KV feeders, PSS and Operational Assistance of PSSs for a period of 03 years in TPCODL Odisha.

Schedule of item (BoQ): Refer Annexure-I of Tender Document for 33 kV Schedule of item (BoQ)

Part 1 - Scope of the work (33/11kV Primary Substation Operator)

Monitoring, Operation, and watch & ward activities at 33/11 kV Primary PSS

Part-2 - Scope of the work (33/11 kV PSS with Associated 33kV Feeders) Inspection, monitoring, maintenance, and upkeep of 33/11 kV Primary Sub- stations (PSS) and associated 33 kV Feeders

Part-1

Scope of the work (Substation Operator)

Monitoring, Operation, and watch & ward activities at 33/11 kV Primary PSS

The Business Associate shall provide manpower for monitoring, operation, cleaning, and watch and ward works at 33/11 KV primary sub-stations (PSSs) on 24X7 basis by deploying required manpower to execute the contract. The Service Provider must ensure that specified numbers of personnel are deployed for smooth functioning of PSSs. In case of failure to provide required services or unsatisfactory performance, penalty will be imposed as specified in this document.

TPCODL intend to automate all PSS gradually for unmanned operations and manpower spared from automated PSS shall be redeployed at other PSS or shall be redeployed for maintenance activities (within same cluster/other cluster) at the discretion of TPCODL.

A. Monitoring, Operation and Recordkeeping by SSO

1. Remain alert and observe all safety precautions as envisaged in the CEA Regulations, 2011 (Measures relating to safety & electricity supply) regarding safety at site. Ensure safety of man and material and PSS equipment.
2. Maintain list of all working / spare equipment / loose materials available in the PSS and quarterly update the details in "Asset Register" kept at the PSS.
3. Take PSS round at the start of the shift and monitor the incoming feeder / PSS equipment / system closely and update data in PDI app / hard copy "Check List".
4. Monitor condition of all equipment such as power transformers, circuit breakers, lightning arresters, isolators, current and voltage transformers, battery banks, battery charger, station transformers, AC distribution board, control and relay panels.
5. Record hourly the load parameters, Voltage, Current, Energy Meter Readings, operations conducted and enter the same in "Log Book" and in "Suraksha Kavach".
6. Record oil levels, oil temperature and winding temperature, tap position, operation of cooling fans, and condition of silica gel in breathers.
7. Enter tripping / interruption details in "Suraksha Kavach" App and in tripping register.
8. Record defect noticed in PSS equipment and their auxiliary devices in the "Defect Register" and in "Suraksha Kavach" and communicate the same to EIC / EMR engineer.
9. Record hot spot at joints/ jumpers in switchyard in the evening shift and in case if a visible hot spot is detected, enter in general diary / defect register and communicate to PSCC and E&MR engineer.
10. Record status of building / switchyard lights and in case if the lights are not working, enter in general diary / defect register and communicate to SDO / E&MR engineer.
11. For recordkeeping, registers / stationary shall be provided by TPCODL. TPCODL reserves the right to replace the registers / format as per business requirement and BA staff shall use the latest registers / format to maintain data and information.
12. Carry out switching / isolation / grounding operations correctly and accurately as per SOPs (Standard Operating Procedure) and in coordination with PSCC / APSCC requirement and record the same in the "Log-book" and in the "Suraksha Kavach" application.

Carry out emergency operations to protect the equipment and PSS. Inform immediately such operations to PSCC /APSCC and to EIC.

13. Issue PTW to working party after carrying out switching operations / isolation / grounding as per the SOPs / directions from PSCC/APSCC /EIC. SSO shall issue "Permit to work" only to the persons approved by PSCC/ EIC.
14. Prepare "Monthly Report" in the TPCODL prescribed format and submit the same to EIC/ Maintenance Planning Group (MPG) in the first week of ensuing month.
15. Attend to all emergencies that may arise such as equipment failures, fire accidents, conductor snapping etc. in coordination with PSCC/APSCC/EIC.
16. Check physical condition of all earth pits. Ensure that all earth pits are covered with CC covers. Water each earth pits as per the advice/direction of E&MR engineer.
17. Ensure daily cleaning of entire PSS/control room and switchyard. Remove vegetation growth. Clean control Panels. Ensure that 5S system and Red tag areas are maintained in the PSS.
18. Assist TPCODL engineers in performing various maintenance activities inside the PSS
19. PSSO will functionally report to PSCC and administratively to SDO. During exigencies(Cyclone/Kalabaisakhi), SIC/SDO may also direct PSSO for discharge of their official duties in consultation with PSCC/APSCC.
20. BA shall be held responsible for any damages caused due to improper operation / handling of equipment. BA if found responsible for such losses will compensate TPCODL for such losses.
21. BA shall provide mobile phones at all PSS locations as per the prescribed specifications, including monthly recharge for data and talk time. However, BA may continue to use existing TPCODL-provided mobiles at PSS locations as long as they remain in working condition. The upkeep and maintenance of all mobiles shall be under the scope of BA. In addition BA has to provide Mobile cover and touch screen cover for all mobiles.

As of date, wherever mobile phones are not available, BA must arrange and deploy the same immediately. In case a mobile phone remains unavailable at any PSS for a continuous period of 7 days, TPCODL will procure the mobile as per the specifications mentioned in the tender document, and the cost will be back-charged to BA at 1.5 times the cost of the mobile.

B. Mobile Operation Crew (MOC):

Based on organization requirement, Mobile operation crew shall be formed for carrying out switching operation as well as responsible to check missing/theft of PSS equipment across a group of 2–4 automated PSSs situated within close geographical proximity. TPCODL reserves right to redeploy the manpower released from automated PSSs to any other PSS or in "Mobile Operation Crew" across TPCODL operational area. The MOC will work in three shifts and shall carry out the required switching operations, isolations, and grounding of equipment in coordination with PSCC/APSCC /SDO. The MOC shall also visit the PSSs during idle time and fill daily check list for onward submission to PSCC. MOC will functionally report to PSCC and administrative control will lie with SDO. During exigencies, SIC/SDO may also direct MOC for discharge of their official duties. In case of emergencies involving MOC/PSSO personnel, necessary replacement or reshuffling shall be managed from the existing pool of MOC/PSSO resources.

The BA shall provide one motor cycle (Bike) for each MOC on 24X7 basis along with fuel and vehicle maintenance.

- a. BA must ensure that the bikes provided at the start of the contract are not older than 8 years and have all valid statutory documents.
- b. These Bikes will have provision for monthly average running of 1700 km (Average of all running MOC Vehicles for the cluster). After 1700 km, vendor may claim per km charges.
- c. MOC shall maintain log of all travels with date and time which need to be verified by BA supervisor mentioning the name of PSCC engineer who directed the crew for movement.

- d. BA shall ensure that bikes are replaced within 1 hour in case of bike breakdown. During such event BA shall arrange alternate vehicle to ensure that the operation crew moves without wastage of time. In case of non-availability of vehicle, penalty as per SLA.
- e. TPCODL will not be responsible for any fines / penalty related to traffic rule violations by MOC.

C. Standard Operating Procedures:

Please refer attached Annexure for TPCODL PTW & SOP.

D. Manpower Requirement:

1. Cluster-wise Manpower Requirement for Monitoring, Operation, and watch & ward activities at 33/11KV Primary PSS:

Sl no.	Division	Unskilled	Skilled	Supervisor	Cluster manpower
1	BCDD-1	0	43	1	139
	BCDD-2	5	90		
2	BED	2	54	1	189
	NED	6	126		
3	PED	9	96	1	236
	KHD	21	109		
4	BaED	0	59	1	216
	NyED	21	135		
5	CDD-1	0	41	1	140
	CED	7	91		
6	CDD-2	7	58	1	135
	SED	6	63		
7	AED	8	92	1	248
	DED	12	135		
8	AnED	0	96	1	219
	TED	3	119		
9	KED-1	9	124	1	185
	KED-2	2	49		
10	JED	11	86	1	166
	PDP	12	56		
Total		141	1722	10	1873

2. Minimum **Qualification** required for SSO:

Designation	Minimum Qualification
Supervisor	Degree/Diploma in electrical engineering and a valid supervisory license. Computer literate with proficiency in MS office- Minimum 2 year of experience in the field.
Lineman	Qualification shall be as per CEA regulation clause 8, along with valid HT workman license for (33 kV Jobs) from relevant Govt agencies such as ELBO (Govt. of Odisha) . All Business Associates must ensure that, in-case any lineman does not have a valid ELBO license then he can only be considered if he has already applied successfully for the same.
Helper	Preferably 10th 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.

Note:

1. BA shall deploy the above manpower in discussion with TPCODL HR department. Any changes in the manpower deployment shall be made only after written approval of TPCODL HR department.
2. BA shall provide Laptop to each Supervisor for maintaining day to day work related activities.
3. BA must arrange bike for each supervisor and must give fuel charges considering 2500 km on monthly basis.

E. **TPCODL PSS Asset Details:**

Please refer Annexure attached for TPCODL PSS Asset Details.

Note: The asset details may change due to addition or deletion of PSS. All new/future PSS commissioned shall be manned with available manpower as per the guidance / instructions of TPCODL HR department. There should be no claim from BA side for any addition or deletion of assets.

F. **Performance Standards for Monitoring, Operation, and watch & ward activities at 33/11KV Primary PSS:**

The performance system shall comprise measurement of BA's performance on the parameters listed below. The total marks for the BA performance will be 100 in a month.

a. **Safety aspects, Statutory Compliances and Asset Upkeep**

1. BA shall provide specified PPEs, Safety Equipment and Tools to all SSO as per the specifications mentioned in this contract.
2. BA shall comply with all statutory compliances as mentioned in attached GCC, CSMS, and applicable laws.
3. MOC shall ensure locking and cleanliness of unmanned automated PSSs.
4. All jobs shall be carried out as per the SOP / PTW guidelines issued by PSSCC. SOP / PTW guidelines are attached as Annexure
5. BA supervisor shall notify EMR/SDO on PSS deficiencies / missing materials / missing covers / damaged doors of PSS and work with TPCODL staff to rectify the same at the earliest.

b. Supply and Usage of PPEs/Safety Equipment/T&P

BA shall supply / upkeep PPEs/Safety Equipment/T&P as per contract and approved specifications. BA staff shall keep the PPE/Safety Equipment and tools in neat and clean / ready to use at all times.

c. Correct Operation of PSS Equipment

SSO need to acknowledge PSCC/APSCC/SDO/EMR calls for operation of PSS equipment/Feeders and timely operate the equipment as per PSCC/APSCC/EIC requirement. In case of Unmanned MOC should reach in scheduled time and operate the equipment as per instruction of PSCC/APSCC/EIC.

d. Upkeep of PSS equipment

BA shall Ensure cleaning of control room, switchyard and peripheral areas.

BA shall Ensure cleaning of power and control cable trenches.

BA shall Ensure cleaning of external surface of secondary equipment through airblower

BA shall Ensure that front / back door of al equipment are kept closed/locked

BA shall Ensure that space heaters are kept ON in the CRP / Indoor breaker panels at all times

BA shall Ensure that no unwanted material is kept inside control room / on panels / inside panels

BA shall Ensure that there is no rodent entry in any of the indoor panels

BA shall Ensure that 5S is maintained at all times

Note: BA shall ensure regular and proper cleaning of the control room floor, washroom, switchyard, and peripheral areas at all PSS locations. All required consumables, such as toilet cleaner, soap, phenyl, brooms, herbicide, battery/ petrol/ diesel operated portable grass cutter etc. shall be provided by BA.

In case of inadequate or unsatisfactory cleaning, TPCODL reserves the right to engage additional manpower to carry out the required cleaning activities. The expenditure incurred for such engagement shall be back-charged to BA at 1.5 times the actual cost.

e. Maintenance of equipment

PSSO will assist EMR engineers for maintenance of primary and secondary equipment installed within the PSS boundary. However, the Work on primary equipment will be done only under the physical presence of EMR engineer and under valid PTW.

f. Statutory Compliances:

BA must comply with all statutory requirements such as ELBO issued certificate, Vehicle compliance and IR compliances.

g. Attendance of SSO at PSS

BA shall maintain attendance register at each PSS / MOC base location. PSSO/MOC shall mark his attendance on daily basis. The attendance register will be available for inspection to SDO or any other TPCODL officer on demand.

h. Discipline

BA staff while on duty shall be properly dressed and shall maintain decorum. PSSO / MOC are required to be alert while on duty and avoid any kind of intoxication. If found intoxicated, TPCODL shall take disciplinary action against BA as per prevailing rules.

i. Invoice processing and Monthly MIS:

Monthly MIS to be submitted by BA with Monthly Invoice:

- i. Compliance report that safety equipment / PPEs/T&P have been received by BA employees
- ii. Compliance report that data entry has been made to all the relevant registers at PSS.

Compliance to PPE requirements to SSO at PSS in following format:

S. No.	Name of Employee	Name of Safety Equipment/PPE Received	Signature of Employee

iii. Compliance to T&P requirements at PSS

S. No.	Name of PSS	Name of T&P Received	Signature of PSS Supervisor

iv. Attendance Record of SSO in following format

S. No.	Name of PSS	Name of staff	No of days in the month	No of days present

i. MOC Vehicle utilization Report

Daily vehicle movement details for MOC verified by PSCC shall be submitted for billing

- V.** Submission of Consolidated Equipment defect report & Unsafe conditions in PSS
BA shall submit daily consolidated summary report of Defective Equipment & Unsafe conditions in PSS in the prescribed format by TPCODL to PSCC/SDO/EMR/MPG.
- VI.** Submission of PSS Cleaning status
BA shall submit monthly Summary for PSS where cleaning not conducted in the prescribed format by TPCODL to PSCC/EMR/SDOMPG.
- VII.** Interruption Report
BA shall submit the daily / monthly report of interruptions to designated officers in the prescribed format along with reason of Interruption.

j. Performance Measurement system:

Penalty for non-compliances:

Any Safety violation will be governed as per Contractor Safety Management (CSM) of TPCODL. Refer Annexure for CSM.

In addition to deduction made for CSM violation, the following marks will be deducted for non-compliances:

a. Upkeep of TPCODL supplied safety equipment (Weightage: 10 Marks)

S. No.	Parameter	Sub-Measure	Marks Deduction
1	Reporting availability of ladder and discharge rods (supplied by TPCODL) & reporting of damaged / missing discharge rods immediately	Non-Reporting (to SDO / DM / MPG / E&MR) and not keeping ladder / discharge rod (supplied by TPCODL) in systematic condition at 10% of total PSS	5
		Non-Reporting (to SDO / DM / MPG / E&MR) and not keeping ladder / discharge rod (supplied by TPCODL) in systematic condition at >10% of total PSS	10

Note:

1. Max mark deduction will be 10 under this category
2. In case if the BA has informed EIC about non-availability of discharge rod/ Ladders for the given PSS before inspection/observation is made, BA shall not be held responsible for non-compliance.

b. Supply of T&Ps (Weightage 10 marks)

S. No.	Parameter	Sub-Measure	Marks Deduction
1	Supply of T&P	Unavailability of T&Ps in good condition in more than 10% of PSS	5
		Unavailability of T&Ps in good condition in more than 10% of PSS	10

Note: Max mark deduction under this category will be 10 Marks

c. Correct Operation of PSS Equipment per Cluster (Weightage 15)

S. No.	Measure	Marks Deducted
1	1 incorrect operation during the month	10
2	>1 incorrect operation during the month	15

Note: Max mark deduction under this category will be 15 Marks

d. Adherence to Operating Process (15 marks):

S. No.	Measure	Marks Deduction
1	Allowing maintenance work without presence of "Permit to work" holder or issue "Permit to work" without proper isolation / grounding >1 instance during the month	15

Note: Max mark deduction under this category will be 15 Marks

e. Statutory Compliances: (Weightage: 20 Marks):

Sr. No.	Parameter	Max. Marks	Violation Frequency	Marks to be deducted
1	Non-Compliance w.r.t. to PF, ESI related Statutory norms	10	Monthly	10
2	Non-Compliance for vehicle	10	One-mark deduction for each non-compliance on any of the following attribute: i) Vehicle insurance. ii) Fitness certificate. iii) Pollution certificate. In absence of commercial vehicle	10

Note: Max mark deduction under this category will be 20 Marks

f. MOC Non-Compliance: (Weightage: 10 Marks):

S. No.	Measure	Marks Deduction
1	Up to 2 no. of instance of delayed reporting of MOC at concerned PSS upon the instruction of PSCC/SDO.	5
2	More than 2 no. of instance of delayed reporting of MOC at concerned PSS upon the instruction of PSCC/SDO.	5

Note: Max mark deduction under this category will be 10 Marks

g. Maintaining records & condition monitoring: (Weightage: 10 Marks):

S. No.	Measure	Marks Deduction
1	2 no. of instance of non-adherence to Daily condition monitoring of equipment and PDI in system	5
2	2 no of instances of not Maintaining Registers and log sheet as per IMS Process	5

Note: Max mark deduction under this category will be 10 Marks

h. Discipline (Weightage: 10 marks)

S. No.	Measure	Marks Deduction
1	More than two instances of PSSO / MOC found intoxicated	5
2	More than two instances of PSSO / MOC spitting inside PSS premises.	5

Note: Max mark deduction under this category will be 10 Marks

Incentive for good performance

i. Upkeep of PSS equipment: (Bonus Marks – 5 Marks)

S. No.	Measure	Bonus Marks
1	Ensuring cleanliness and implementation of 5S gradually covering all PSS in the cluster.	5

Note: Measurement shall be done in the last month of the contract

Note:

- TPCODL reserves the right to change to the list of existing performance base measurements, at any point of time for performance improvement on mutually agreed terms.
- EIC at his discretion will deduct marks for each instance as mentioned above.

Part-2

Scope of the work (33 kV AMC)

Inspection, monitoring, maintenance of 33/11 kV Primary Sub-stations (PSS) and associated 33 kV Feeders

A. 33 kV feeders

a. Routine Inspection of feeders

Inspection of all industrial/dedicated/Urban/Rural feeders shall be carried out to identify defects. SDO/Operation Services team shall release feeder inspection plan every month. BA patroller shall inspect the feeder/s as per plan and in the prescribed format. BA shall submit the "Inspection Report" to SDO indicating feeder wise defects, bill of material to attend the defect and outage requirement by last day of same month. BA shall adhere to the inspection plan fully and no deviation shall be permitted. Inspection shall be carried out to identify:

1. Trees and tree branches close to the feeder / above the feeder
2. Poor joints in the feeder / multiple joints in a single span
3. Abnormalities in Structures, Towers, Poles, Gantry, cross arms, insulators, conductors, over sagged wires / Guard wire, earthing system, hardware, Shield wire, stay wire and guard wire, power cable terminations, mounting frames, missing cleats, etc.
4. Missing accessories such as tower / pole members, bracings, Insulators, Name plate, Number plate, Danger board, Phase plate, Anti climbing device, stay wires, foundation, lightning arresters, connectors, earth connection, cradle guard, etc.
5. Ground and lateral clearances issues
6. Unauthorized construction under/ near the line.
7. Missing / damaged guywire support to structure.
8. Approach pathway to poles for maintenance
9. Health of the spare cables in Feeders
10. Missing cable route & joint markers, patrolling of underground cable route for advance intimation of any planned excavation activity, exposure of cable, storage of fire hazardous materials on cables, etc.
11. Any other abnormality that will affect safety of general public, staff, and performance of 33 kV feeders.
12. In case of 33kV Cable failure, BA Manpower will be responsible for excavation required for exposing cable fault
13. In certain critical areas, inspections may be carried out using drones provided by TPCODL, as directed by the SDO/OS Services team. Necessary training for drone operation will be provided by TPCODL. The BA shall be responsible for any physical damage to the drones arising due to mishandling or carelessness.
14. One google sheet will be shared with BA and BA has to survey all feeders and enter details mentioned in Google sheet/ form.

b. Emergency Inspection of 33 kV Feeders

Emergency inspection of 33 kV feeder shall be carried out by the patroller whenever feeder trips as per the directions of SDO/Operation Services team to identify the exact

reason of tripping / breakdown. BA should use binocular to identify exact reason of fault. All close inspections shall be done under the guidance and supervision of TPCODL staff only. It is necessary to identify the reason of each tripping even if the feeder is test charged successfully.

c. Feeder Maintenance Activities

1. Trimming of trees / tree branches under / near / above the feeders with mechanized tree pruners (Diesel/ Electrical driven prunner to be provided by BA) as per monthly maintenance plan issued by MPG and in coordination with SDO/Operation Services team. BA shall maintain minimum 3M ROW so as to reduce the tree trimming cycles.
BA shall be responsible for cutting and trimming of branches of all types of trees, irrespective of tree height, falling within the work scope. If engagement of any professional tree cutter or specialized agency is required for execution of the work, the same shall be arranged by BA at their own cost without any additional financial implication to TPCODL.
2. Creeper removal shall be done before creeper reaches 2.5-meter height so as to avoid feeder outage to clear the same. BA shall also shift the tree wastes to nearby BMC designated garbage disposal area.
3. Replacement of weak/damaged tower/poles and accessories. For replacement of complete tower/s, separate order will be placed. Faulty feeder in case/s of damage of tower/s will be restored by installing rail/joist poles as per the instructions of Engineer-in-charge free of cost
4. Straightening of tilted poles/cross arms/insulators is covered in scope of BA. However, for installation of new / mid- span poles separate order will be placed.
5. Replacement of corroded, cracked, flashed insulators (Disc/Pin/Shackle).
6. Replacement / Repairing of GO switch / AB switch / line isolators
7. Replacement of damaged / weak cross arm.
8. Replacement of Binding wire joints by bolted / compression type / wedge connectors. Rectification of hotspots by tightening loose connections, replacing clamps / connectors or replacement of jumpers / other actions.
9. Replacement of undersized / burnt / damaged conductors and jumpers. This includes replacement of conductor spans with two or more joints.
10. Repairing/replacement of broken or weak guard wire. Provision of guard wire / cradle guard wire beneath conductors at identified locations.
11. Repairs and re-tensioning of conductors for attending low vertical / lateral clearance.
12. Repairs and re-tensioning of Shield / Earth wire. Providing of guard laces & stay wires with stay insulator.
13. Minor repairs to tower footings/stub.
14. Installation of bird guards / Insulation Sleeves for reducing transient faults.
15. Fabrication and fixing of missing tower member including tack welding up-to bottom cross arm.
16. Tack welding of H pole plates and members in theft prone areas on the basis of feeder inspections or as per instructions of SDO/Operation services.
17. Transportation of all materials required to attend preventive maintenance and

breakdowns of OH and UG system.

18. Replacement of barbed wire / anti-climbing devices of structures/ towers.
19. Painting of poles / towers as per the condition of the structures. Paint shall be supplied by TPCODL.
20. Removal of bird nest / cable / internet / telephone wires / hoardings from 33 kV poles as per the specific instructions/directions of EIC.
21. Installation of danger boards on poles, tower, and gantry structures
22. Installation of cable route / joint markers (Markers will be supplied by TPCODL)
23. Numbering / Sign writing on pole/towers using stencils as per TPCODL standard.
24. Replacement of burnt / weak CTPT unit.
25. Replacement of missing / burnt / weak lightning arresters.
26. Fixing/replacement of spacers / phase separators.
27. Attending breakdowns promptly within specified timelines as per the defined service level agreement.
28. BA shall analyze all breakdowns and check the exact reason of breakdown and inform the same to TPCODL. BA shall close all defects observed on 33 kV feeders within the same month by prompting the SDO/SI/E&MR/OS engineers.
29. Mass maintenance of feeders by pooling manpower within the cluster as per organizational requirement. 33 and 11KV manpower can be grouped at a time to complete specific task assigned by EIC.
30. BA will have to divert its resources to other clusters for attending emergencies / short term requirement as per direction of EIC.
31. The deployed manpower shall be mandatorily responsible for carrying out preventive maintenance and attending breakdowns of 33kV feeders/PSS, and these responsibilities shall not be compromised under any circumstances. However, in case of exigency, manpower deployed in the 11kV team may be diverted strictly as per the instructions of SDO/DM/CH/OS and Vice-Versa
32. BA has to support provide manpower for any change in PSS /feeders qty during course of contract period without any additional charges.
33. **During breakdown situations, particularly in evening/night hours**, the manpower available under the 11kV maintenance contract may be utilized along with the deployed 33kV manpower for restoration activities as per requirement and direction of PSCC/EIC/concerned SDOs. During emergencies or extreme weather conditions, priority shall be given to restoration of the 33kV system first.

The scope, deployment pattern, and operational modalities of the Common Breakdown Team shall be governed as per the provisions stipulated in the respective 11kV tender/contract document. The contractor shall extend necessary coordination and support for restoration activities as directed by the EIC/concerned authorities.

d. Recordkeeping and Reporting

1. BA shall keep record of Inspection Report, Monthly Maintenance Plan versus actual, Defect register and attendance register for his employees.
2. BA shall submit "Occurrence report" for 33 kV feeder tripped due to operation of protection relay (even if the feeder is test charged successfully). The report will be

submitted within 48 hours for urban feeders and 72 hours for rural feeders to EIC.

B. Maintenance and Upkeep of 33/11 kV Primary Sub-Station (PSS)

a. PSS upkeep and cleaning

PSS operator shall keep the 33/11 kV PSS neat and clean on daily basis. The work of cleaning would include:

1. Cleaning of control room including mopping of floor, and cleaning of washroom,
2. Cleaning of switchyard (under direct supervision of TPCODL staff)
3. Cleaning of peripheral areas of control room building and switchyard
4. Cleaning of control and power cable trenches (once in a year)
5. BA shall ensure regular and proper cleaning of the control room floor, washroom, switchyard, and peripheral areas at all PSS locations. All required consumables, such as toilet cleaner, soap, phenyl, brooms, herbicide, battery/ petrol/ diesel operated portable grass cutter etc. shall be provided by BA.

In case of inadequate or unsatisfactory cleaning, TPCODL reserves the right to engage additional manpower to carry out the required cleaning activities. The expenditure incurred for such engagement shall be back-charged to BA at 1.5 times the actual cost.

b. Vegetation Management

BA shall keep the PSS switchyard and its periphery free of vegetation. The work of removal of vegetation shall be done under direct supervision of TPCODL staff.

BA shall engage extra manpower if required to clean switchyard and peripheral areas before, after and in between monsoon season and no extra charges shall be paid for the same. All material/tools required for PSS cleaning / vegetation removal shall be provided by BA. All dry vegetation shall be transported to the nearest BMC / civic agency bin.

Any additional PSSs commissioned during the contract period shall also be cleaned by BA without any additional charges.

c. Inspection and Maintenance of 33/11 kV PSS:

BA shall deploy expert lineman/technician for maintenance and upkeep of all equipment installed in the PSS including power transformers and circuit breakers. The lineman/technician deployed for maintenance of PSS should be able to perform preventive & breakdown maintenance, control wiring, dressing of control wiring, troubleshooting of equipment and control wiring, and replacement of defective equipment/parts as per work requirement.

The work of inspection & maintenance shall include:

- 1) Preventive / breakdown maintenance as per "Monthly Maintenance Schedule" and maintenance check lists.
- 2) Replacement of failed equipment (except Power Transformer) including modification of mounting structure/plinth as per instruction from EMR/SDO
- 3) Transportation of materials/equipment including loading /unloading -for preventive or breakdown maintenance of PSS equipment except PTRs are in BA Scope.
- 4) Painting of equipment/mounting structures manually or with the help of air compressor. Paint will be provided by TPCODL.
- 5) All fabrication works involving drilling, welding and gas cutting etc. required for

upkeep of PSS.

- 6) Maintenance and restoration of switchyard, control room and other building indoor/outdoor lights.
- 7) Pre-monsoon inspection & repair of guard wire and shield wire in PSS switchyard. Cleaning of roof of all PSS to avoid accumulation of rain water.
- 8) Replacement of defective power and control cables as envisaged by EMR/SDO. Cables and Joint KITs will be supplied by TPCODL.
- 9) Inspection and cleaning of solar panels installed at respective PSS once in week or as per instruction of SDO/EMR
- 10) Sign writing on equipment at all PSS for implementation of 5S as per TPCODL standards (Paints shall be provided by TPCODL).
- 11) Making arrangements for dewatering of cable trenches in case of water logging / excess rainfall using suitable sized pump & hose.
- 12) BA will have to divert its resources within the cluster or from one cluster to other cluster for attending emergencies as per instruction of DM/CH/OS.
- 13) **During breakdown situations, particularly in evening/night hours**, the manpower available under the 11kV maintenance contract may be utilized along with the deployed 33kV manpower for restoration activities as per requirement and direction of PSCC/EIC/concerned SDOs. During emergencies or extreme weather conditions, priority shall be given to restoration of the 33kV system first.

The scope, deployment pattern, and operational modalities of the Common Breakdown Team shall be governed as per the provisions stipulated in the respective 11kV tender/contract document. The contractor shall extend necessary coordination and support for restoration activities as directed by the EIC/concerned authorities.

d. Minor Civil Repair Work

- 1) Minor repair (welding of damaged sheets/ angle/ channel) of doors & shutters of PSS.
- 2) Minor repair to foundations/plinth, construct of small eqpt foundation, Cement plaster, plugging/ Sealing of cable openings at sub-stations.
- 3) Minor repair (Filling of holes) of existing trench covers with CC 1:1.5: 3. Realigning the disturbed trench covers. Minor repair of trench involving brick and plastering of the same

Note: For Minor civil related job, vendor has to arrange material and support services, extra amount will be paid as per actuals as mentioned in Schedule of items.

C. Proposed structure of minimum Manpower and Vehicle:

- i) To achieve the desired maintenance and breakdown tasks, BA shall consider following structure of manpower and vehicles:

Cluster	Division	Safety officer	Supervisor	Lineman	Helper
BCDD-1&2	BCDD-1	1	1	6	6
	BCDD-2	1	1	12	12
BED & NED	BED	1	1	8	7
	NED	1	1	8	7
CDD-1 & CED	CDD-1	1	1	8	6
	CED	1	2	9	8
CDD-2 & SED	CDD-2	1	1	5	6
	SED	1	1	6	7
AED	AED	1	1	8	10
DKNL	DED	1	2	14	14
ANED & TED	AnED	1	1	10	10
	TED	1	1	11	10
KHD & PED	KHD	1	1	12	12
	PED	1	1	9	8
BAED & NYGH	NYGH	1	2	10	12
	BAED	1	1	5	6
KED-1 & KED-2	KED-1	1	1	11	12
	KED-2	1	1	5	6
JED & PDP	PDP	1	1	5	6
	JED	1	1	11	12
TOTAL		20	23	173	177

- ii) Vehicle

Cluster	Division	4- wheeler	2-Wheeler
BCDD-1&2	BCDD-1	2	1
	BCDD-2	4	
BED & NED	BED	3	1
	NED	3	
CDD-1 & CED	CDD-1	2	1
	CED	3	
CDD-2 & SED	CDD-2	2	1
	SED	2	
AED	AED	3	
DKNL	DED	5	1
ANED & TED	AnED	4	1
	TED	4	
KHD & PED	KHD	5	
	PED	3	1
BAED & NYGH	NYGH	4	1
	BAED	2	
KED-1 & KED-2	KED-1	4	1
	KED-2	2	
JED & PDP	PDP	2	
	JED	4	1
TOTAL		63	10

Note:

- i. Details of Manpower and Vehicle distribution will be shared before site mobilization. However, for reference purpose, tentative resources breakup is enclosed in attached Annexure
 - ii. BA shall arrange for required resources in shift/rest/leave reliever as per applicable laws without any additional cost implication to TPCODL.
 - iii. The asset details may change due to addition or deletion of Feeders/PSS. All new/future Feeder/ PSS commissioned shall be maintained with available resources as per the instructions of TPCODL EIC. There should be no claim from BA side for any addition or deletion of assets.
- 1) BA shall ensure availability of minimum 1 certified welder, 1 fitter and 1 painter in each cluster.
 - 2) BA shall ensure availability of skilled & trained lineman capable of working on all type of 33 kV steel towers and poles.
 - 3) BA shall ensure availability of sufficient trained linemen for preventive maintenance / trouble shooting of equipment and associated control circuits such as power transformer, circuit breaker, CT/VT, control panels, battery and battery charger etc. The manpower must be able to understand control drawings and carry out control wiring and proper dressing.
 - 4) BA must use one two-wheeler in each cluster for patrolling of line, CBM activities on monthly basis, cost must be built up in main package. TPCODL will not be responsible for any fines / penalty related to traffic rule violations by MOC.
 - 5) Operation services will advise on the allocation of BA manpower / vehicles to respective divisions/Sub-Divisions/Sections/E&MR in discussion with respective Circle Heads and Chief - Operation Services.
 - 6) One lineman has been considered under MPG and P&T activities and shall be billed under a designated division for billing convenience. However, based on operational requirements, the said manpower may be deployed across other divisions/clusters under the instructions and supervision of the Engineer-in-Charge (EIC).
 - 7) BA shall provide mobile phones at all Supervisors as per the prescribed specifications, including monthly recharge for data and talk time.

Minimum required qualification of Manpower:

Designation	Minimum Qualification
Safety officer	Diploma or Degree graduate, Professional certified safety officer
Supervisor	Degree or Diploma in electrical engineering with 2-year experience and a valid supervisory license.
Lineman	Qualification shall be as per CEA regulation clause 8, along with valid HT workman license for (33 kV Jobs) from relevant Govt agencies such as ELBO (Govt. of Odisha) . All Business Associates must ensure that, in-case any lineman does not have a valid ELBO license then he can only be considered if he has already applied successfully for the same.
Helper	Preferably 10th 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.

Vehicle requirement:

1. The vehicles deployed for operation and maintenance shall not be more than Ten years old (from date of LOI/PO/renewed PO) with good condition of interior and exterior. All statutory laws/motor vehicle ACT/RTO Rules (mainly RC, Insurance, fitness and pollution control) should be complied. The vehicles should be run on authorized fuel like

CNG/Petrol/Diesel as endorsed on the vehicle registration certificate. The copies of Registration, Insurance and other statutory documents should be submitted to TPCODL before deployment of the vehicles on duty.

2. Vehicle must be registered as commercial type and Yellow number plate must be affixed as per RTO guidelines.
3. Driver deployed should have valid license. Driver should be medically fit. The information of change in driver/Vehicle to be informed to TPCODL, before making such changes. Two drivers must be considered for 24 hr vehicle.
4. Each vehicle deployed will have limit of running average as below:

Vehicle	Running km/month
12 Hours	3500 km

Further, cumulative average of running 3500 km per month of all running four-wheeler vehicles utilized per cluster per FY Quarter shall be considered as normal running and normal payment. For excess mileage beyond cumulative average of 3500 km, BA will get additional payment per km charges as per schedule of rates subject to approval from EIC.

5. Log Book shall be maintained for every vehicle separately in the prescribed format by TPCODL. Daily running of Vehicle should be entered in this diary on daily basis. The total kilometers run by the vehicle will be calculated from this Log Book. Vehicles driver will ensure that each entry should be signed by the user.
6. BA must utilize AMC vehicle for transportation of materials within same cluster. Hiring of separate vehicle for transportation of materials within the cluster is not permitted. For bulky materials / equipment, separate order will be given if the same cannot be accommodated in same AMC vehicle as per decision of EIC
7. BA to deploy vehicle (Mahindra Bolero/ Camper/pick up or Tata magic or equivalent) deployed shall have capacity to accommodate crew members and minor loading of material and minimum 1no. FRP Ladders in the backside and top carriage respectively. This is basic requirement in the nature of job handled by TPCODL.
8. TPCODL may ask to engage tata magic in urban / semi-urban areas or in some portion of the rural networks.
9. Vehicle should be equipped with one extra tyre as Stepney in the vehicle with all the tools to replace the damaged tyre.
10. Vehicle deputed in a cluster must/can be run to any location within the cluster boundary. However, during exigency, the vehicles may be made available to other cluster as instructed by EIC. Vehicles are running on authorized fuel like Petrol/Diesel and the same are endorsed on the vehicles RC (Registration Certificate). If any vehicles found without endorsement of authorized fuel in RC payment for the particular month will not be made by TPCODL.
11. Vehicles deployed within a cluster shall be compatible with GPS installation. GPS devices will be provided by TPCODL and shall be installed in the respective deployed vehicles. The upkeep of the GPS system shall be under the vendor's scope. In case of any replacement or change of vehicle, the vendor shall ensure reinstallation of the existing GPS device from the old vehicle to the new vehicle, and the same shall be duly intimated to TPCODL.
12. Competency assessment of Supervisor/Lineman and Helper will be carried out by TPCODL officials within two months of deployment and the Lineman in bronze badge category will not be allowed to work on the network until they upgrade their skill and qualifies for Gold or Silver badge category. Those in bronze category however will be allowed to work as helpers.
13. In case of 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. BA shall replace driver if found intoxicated during duty hours. Vehicles are running on authorized fuel like Petrol/Diesel and the same are endorsed on the vehicles RC (Registration Certificate). If any vehicles found without endorsement of authorized fuel in RC payment for the particular month will not be made by TPCODL.

14. Vehicle deputed in a cluster shall have GPS facility as per specifications provided by TPCODL.
15. Competency assessment of Supervisor/Lineman and Helper will be carried out by TPCODL officials within two months of deployment and the Lineman in bronze badge category will not be allowed to work on the network until they upgrade their skill and qualifies for Gold or Silver badge category. Those in bronze category however will be allowed to work as helpers.
16. In case of 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. BA shall replace driver if found intoxicated during duty hours.

D. Performance Standards for Monitoring, Maintenance activities of 33 kV feeders and at 33/11KV Primary PSS:

a. Service Level Agreement

- I. In the event of any performance-based measurement criteria not reported/ reported partially in the appropriate format in monthly MIS, would lead to deduction of 100% marks specific to the criteria and no incentive (of any kind) would be paid.
- II. TPCODL reserves the right to change existing performance-based measures, at any point of time during the execution of the contract on mutually agreed terms.
- iii. The performance system shall comprise measurement of BA's performance on the parameters listed below. The total marks for the performance will be 100 in a month.

b. Safety aspects, Statutory Compliances and Asset Upkeep

1. BA shall ensure that all workman at site should possess and display I-Card issued by TPCODL.
2. All jobs shall be carried out as per the SOP / PTW guidelines issued by PSSC/APSCC. SOP / PTW guidelines are attached as Annexure.
3. BA shall provide PPEs, Safety Equipment and Tools to his workforce as per the specifications mentioned in this contract as safety guidelines/instructions.
4. BA shall comply with all statutory compliances as mentioned in attached GCC, CSMS, and applicable laws.
5. BA shall ensure upkeep of feeder towers / poles free from posters, loose hanging wires, foreign material.

c. Usage of T&P

Please refer **Annexure – D** for T &P details.

The T&P mentioned in the Annexure attached must be available with BA in the allocated Cluster for carrying out the jobs. At any given point of time regular

replenishment is the responsibility of BA.

The list of testing equipment's and tools is not exhaustive in nature. BA should be able to provide all those instruments and tools which may be needed to carry out any job in the scope of work. BA shall also manage buffer stock of T&P so as to replace any damaged/lost tool within 24 hours failing which marks/payment would be deducted. BA shall ensure service worthiness of all tools and tackles by conducting monthly audit.

d. Adherence to Service Level Agreement

The SLA for each of the cause of power supply failure is as mentioned below:
Under normal weather condition

S. No.	Type of Service	Turnaround Time - Urban	Turnaround Time- Rural
1	Restoration of power supply following breakdown of feeder or PSS equipment	4 hours	08 hours

e. Industrial / Urban Feeders Tripping

BA shall submit an action plan for ensuring reduction in feeder tripping (15% reduction YoY basis cumulatively). Special attention shall be given to critical feeders wherein actions planned by TPCODL engineers shall be deployed to make the feeder fault free.

f. Invoice processing and MIS

1. Monthly MIS to be submitted by BA with Monthly Invoice:

i. PPEs issued to staff

S. No.	Name of Employee	Name of Safety Equipment/PPE Received	Signature of Employee

In addition to it BA shall maintain safety records of all past incidents of own and learnings of other BA's incident and must inform to all his staff and take signature. Same will be maintained by Safety officer.

ii. T&Ps issued to staff

S. No.	Name of PSS	Name of T&P Received	Signature of PSS Supervisor

iii. Attendance of staff

S. No.	Name of division	Name of staff	No of days in the month	No of days present

Note: BA shall maintain attendance register at each division and BA staff will mark attendance on daily basis for all three shifts. The attendance register will be available for inspection to EIC / E&MR engineer on demand. BA shall submit the monthly attendance report to TPCODL along with monthly invoice. BA staff while on duty shall be properly dressed.

iv. Feeder inspection reports

BA shall submit the feeder inspection report in approved format against the monthly maintenance plan provided by TPCODL, to EIC / MPG (Maintenance Planning Group). BA shall deploy experienced patroller for this important activity, BA shall inspect the feeders before availing maintenance outage.

v. Maintenance reports

BA shall submit the report on maintenance activities performed during the month to EIC / MPG (Maintenance Planning Group)

vi. Interruption Report

BA shall submit the analysis of feeder interruption occurred during the month to EIC in the prescribed format and suggest action plan to reduce the breakdowns.

2. Performance Measurement

a. Safety Aspects

Any Safety violation will be governed as per Contractor Safety Management (CSM) of TPCODL. Refer Annexure ---for CSM.

b. Cleaning & Vegetation Management in PSS (20Marks)

SL. No.	Parameter	Marks Deducted
1	Failure to keep the PSS control room / premises clean (up to 2 PSS / month)	5
2	Failure to keep the PSS control room / premises clean (up to 5 PSS / month)	10
3	Failure to keep the PSS control room / premises clean (>5 PSS / month)	20

Note: Max mark deduction under this category will be 20 Marks

c. Statutory compliance (10 Marks)

Sr. No.	Parameter	Max. Marks	Violation Frequency	Marks to be deducted
1	Non-Compliance w.r.t. to I-Card, PF, ESI related Statutory norms	10	Monthly	10
2	Non-Compliance for vehicle	5	One-mark deduction for each non-compliance on any of the following attribute: i) Vehicle insurance. ii) Fitness certificate. iii) Pollution certificate. iv) Vehicle life as per contract. v) Vehicle not reporting for duty > 4hrs	5

Note: Max mark deduction under this category will be 10 Marks

- d. **Non-availability of T&P (as mentioned above) during maintenance leading to delay in execution of job: (Total Weightage: 10 Marks):** EIC at his discretion will deduct marks for each instance as mentioned below:

S.No.	Violation Frequency	Marks to be deducted
1	2 instances of T&Ps Violation during the month	5
2	>2 instances of T&Ps Violation during the month	10

Note: Max mark deduction under this category will be 10 Marks

- e. **Feeder Tripping: (Total Weightage: 20 Marks):** EIC at his discretion will deduct marks for each instance as mentioned below: (Urban/town/Industrial feeders)

Normal weather condition

S. No.	Violation Frequency	Marks Deducted
1	Conductor snapping – Each instance / month	10
2	Overall Tripping increase up to 10% wrt same month of LFY	5
3	Overall Tripping increase > 10% wrt same month of LFY	10

Note:

1. Max mark deduction under this category will be 20 Marks

- f. **Restoration time: (Total Weightage: 15 Marks):** The marks shall be deducted on the basis of the following:

S. No.	Violation Frequency	Marks Deducted
1	Failure in Restoration of Interruption / breakdown of a. Urban, Industrial & Town Feeder & PSS within 4 hrs b. Rural feeder & PSS within 8 hrs [Up to 2 instances (a+b) per month]	5 marks
2	Failure in Restoration of Interruption / breakdown of a. Urban, Industrial & Town Feeder & PSS within 4 hrs b. Rural feeder & PSS within 8 hrs [>2 instances (a+b) per month]	10 marks

Note: Max mark deduction under this category will be 15 Marks

- g. **Quality of Inspection (Total Weightage: 20 Marks):**

EIC and OS coordinator will deduct marks based on “Feeder Inspection Report” as mentioned below:

SL NO	Violation Frequency	Marks deducted
1	Creeper reached up to 1 meter below conductor and tree branch within 2M of conductor: each instance (5 marks – maximum 20 marks / month)	20

Note: Max mark deduction under this category will be 20 Marks

- h. **Submission of MIS (Total Weightage: 5 Marks):**

Deduction of 5 marks for non-submission of monthly MIS and Performance Report by 7th date of ensuing month.

- i. **Adherence to 5S schedule for PSS (Bonus Marks: 5 Marks):**

BA shall get 5 bonus marks if 5S is implemented / sustained at >75% of PSS during the month.

Note:

1. TPCODL reserves the right to change to the list of existing performance base measurements, at any point of time for performance improvement on mutually agreed terms.
2. EIC at his discretion will deduct marks for each instance as mentioned above.
