

File No: BSNLCO-NOCM/32(17)/1/2022-NWO-CM-1

Dated: 12.12.2022

To,

The CGMs,  
All Telecom Circles/ Districts

**Subject : Regarding Outsourcing of BTS sites**

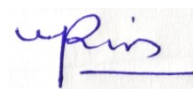
Ref. : No. MOB-19/BTS Sites Mtce Outsourcing/29 dated 30.01.2020

BSNL CO vide letter under reference has conveyed certain guidelines/ instructions for authorization for initiating the process of Outsourcing of maintenance of BTS sites after the VRS scheme opted by BSNL officers/ officials in the year 2020. In suppression of above guidelines following revised guidelines are hereby issued for adherence by BSNL Circles/ BAs.

- Considering the Outsourcing of external plant network of landline, rearrangement of CFA staff to be undertaken in each SSA/ BA for BTS maintenance activities by existing manpower based on available resources.
- Circle to take decision of BTS maintenance outsourcing based on the available manpower in each SSA/ BA in consultation with the IFA after drawing the SSA/ BA manpower plan.
- No Mobile Infrastructure maintenance outsourcing is permitted in Metro district/ BA HQ/ SSA HQ/ SDCA HQ city limit and area upto 2km in radius beyond city limits.
- To keep the costs low and enhance viability in Rural areas, if required, Rural exchanges can also be clubbed by the Circles based on manpower availability in each SSA/ BA. In this regard suitable activities/ penalties for these exchanges may be included from the CFA tender.
- The Core Mobile Network activities need to be continued by BSNL staff exclusively, as given in **Annexure-I**.
- The Standardized "Scope of Work" i.e. the desired BTS sites maintenance activities/ penalties in respect of Outsourcing of BTS sites maintenance tender is enclosed at **Annexure-II**. Other part of the tender shall be standardized at Circle level as per the current Procurement Manual/ existing rules.
- Rigger activities to be part of the maintenance activities for the Outsourced vendor, through specialized/ skilled and dedicated workforce. Based on Circle requirement, Circle may decided on Rigger activities for the Non-Outsourced sites to be covered in the tender, for this purpose rates in the financial bid of the tender may be taken separately.
- Preventive Maintenance and General Inspection activities to be performed by the Outsourced Vendor as per the schedule mentioned in the Scope of Work in the Tender.
- Rates to be finalized within the ceiling limit of Rs. 3000/- per BTS site per month for outsourcing of BTS sites maintenance. Separate rates in financial bid of the tender for Outsourcing of BSNL, NBSNL, IP sites and Rigger activities may be taken.

This issues with the approval of CMD, BSNL Board.

Encls: A/a



(Milan Jain)

**AGM (NWO-CM-I)**

Date: 12<sup>th</sup> December, 2022



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## Annexure-I

### Core activities which need to be managed/ maintained in-house by BSNL staff/ officers

- i. Management of NSS and IN/VAS core elements like HLR, GMSC, GMGW, MSC, MGW, GGSN, SGSN, USSD, BSC, RNC etc. however, to enhance to utilization efficiency of manpower the centralization of MSC configuration as per instructions issued by NWO CM Cell.
- ii. Monitoring of all KPIs of BTS/Node B/ e-Node B for OMCR terms. All configurations patch implementations, upgrades, Capacity rearrangements through software
- iii. 24 x 7 NOC to be established for centralized monitoring at circle level for alarm of Network Elements.
- iv. All planning and A/T activities, dealing with the roll out of various phase of GSM project. Installation activities can be outsourced.
- v. RF Drive Test, Optimization and coordinating with TRAI / TERM cell.
- vi. EMF related activities and updating in NEP portal and coordination with TERM cell. However, getting photographed and related activities may be outsourced.
- vii. Management of various MIS and TRAI reports.
- viii. Bill processing for IP sites both lease-in and leased-out.
- ix. Management of LEA activities and dealing with TERM cell / LEA authorities.
- x. Billing & Customer care and IT
- xi. Management of GSM CAF record room works and dealing with TERM CELL. However, DKYC has already been outsourced.
- xii. Executing of all AMC agreements of GSM equipment
- xiii. Management of GSM store.
- xiv. All Tendering works like RF optimization, installation and de installation of GSM equipment's, Infrastructure maintenance tender for maintenance of all non NSNL sites etc.

## Standardized activities for BTS Sites & Infrastructure Maintenance Outsourcing

### SECTION-1 (SCOPE OF WORK)

#### List of Activities Covered under BTS & Infrastructure Maintenance for Outsourcing

- A. BTS & Infrastructure Maintenance for BSNL sites (Excluding IP sites)
- B. BTS & Infrastructure Maintenance for Non-BSNL sites (Excluding IP sites)
- C. BTS Maintenance for Infrastructure Provider (IP) sites
- D. Rigger activities for BSNL-Non BSNL and IP sites
- E. Scope related to Diesel filling in DG Sets and DG operation (Excluding IP sites)

**BSNL sites:** BTS co-located with CFA Exchange site

**Non BSNL sites:** Hired BTS site without exchange site

**IP sites:** Hired through IP- Infra Providers

#### A. BTS & Infrastructure Maintenance for BSNL sites with collocated Telephone (Excluding IP sites) (2G and/or 3G and/or 4G)

- i. These are the sites housing Mobile site collocated with Telephone Exchange (2G and/or 3G and/or 4G or a combination of them AND Telephone Exchange).
- ii. Maintenance of Exchanges <sup>1</sup>
- iii. Cleaning, security (to the extent of alerting any abnormal observation at the site during visits, intimating police authorities promptly w.r.t. any incident, ensuring functioning of lock & key and upkeep of the site including all equipment, tower surroundings, shelter/OD cabinet, Media equipment, DG etc. This includes bush cutting in the BTS sites/ Exchanges in open areas. All tools & Cleaning material to be provided by the bidder.
- iv. Exchange/ BTS site cleaning including BTS & Exchange equipment's, Roof Area, Compound Area. Cleaning to be carried out by blower etc. (Equipments for cleaning to be provided by the Vendor)
- v. All leftover BTS related alarms, if any need to be made functional and to be extended upto OMCR within one month of operation. Equipment required for Alarm Extension to be provided by BSNL.
- vi. Prompt action on receipt of instructions (by call or by SMS) from concerned officer regarding manual assistance in rectification of alarms/ faults in BTS site/ Exchange, DSLAM, other equipment.
- vii. The Bidder should ensure that fault is attended even in case of water-logging due to rain etc., the maintenance staff should be provided necessary accessories/gum-boots etc
- viii. Replacement of the faulty modules with repaired modules as per instructions of Site Incharge

<sup>1</sup> The maintenance of Exchanges will include maintenance of Landline Exchanges, DSLAM, transmission equipments, USO Wife Hot Spots & other Exchanges equipments etc. for keeping the equipments in working condition. However, as subject matter pertain to CFA cell, therefore, circle may include suitable activities/ penalties for these exchanges from CFA tender of the circle

- ix. In case of BTS/Exchange outages due to card faults of BTSs / NODE-Bs/ e-Node Bs/ Exchange fault, replace the fault items with the spare module/ cards as per instructions of BSNL Site In charge.
- x. Faulty card/ units of BTS sites and other equipments need to be deposited at designated centre as per requirement and collection of repaired unit. It will be the responsibility of bidder to transport equipment with utmost care and during transportation no cards/units get damaged.
- xi. In case of BTS/ exchange outages due to card faults of rectifier modules fault of power plant etc, replace the faulty items with the spare module /cards available from normal spare availability location or from nearby sites as directed. The card/module extraction/insertion and transport shall be as per the recommended practice of the OEM/guidance of BSNL.
- xii. Any Mini Link/ OFC failure to be intimated to site in charge for prompt restoration of OFC fault, details of visual alarm noticed to be communicated to the maintenance In-charge.
- xiii. To check Earth Connectivity is available at BTS/ Node B/ e-Node Bs. All measuring instruments to be provided by the vendor.
- xiv. Vendor personnel should be provided with photo ID cards by Outsourcing Vendor.
- xv. The field staff being deployed should be provided with 2 SIMs one of BSNL & other from private TSPs for communication when BTS site is down. The list of same shall be provided at the time of Agreement. In case of any change in staff during the contract, the same shall be updated. BSNL employees too will share their 2 Mobile nos. of BSNL and other TSP
- xvi. Maintaining EMF related boards and help in providing data for Biennial/Triennial submission of EMF Radiation for Mobile sites. (Bidder shall assist in Biennial/Triennial related activities like getting photograph & uploading to SSA CMTS Team etc.).
- xvii. Assistance in handling of minor store items.
- xviii. Ensure working of Power plant alarms with OMC-R.
- xix. First line maintenance of power plants, battery and any problem reported (Any problem to be reported within 3hrs.)
- xx. Bidder to perform Preventive Maintenance activities as per the PM Annexure, will maintain the register for this activity and will submit the copy of the same duly verified by concerned unit-in-charge along with monthly bill.
- xxi. Periodically check-up power plant modules working, load sharing and ensuring sufficient Modules are available for Equipment in consultation with Site Incharge and Charging of Battery.
- xxii. Tightening of all nuts/ screws in interconnecting point of power cable from EB panel board to each equipment
- xxiii. To ensure the power plant/ control card is functioning properly so that battery do not go to deep discharge.
- xxiv. In case of any Power Plant outages due to fault in control card intimation to be given to Site In charge for attending the same on priority.

- xxv. The bidder has to supply and maintain a log book in every site/ Exchange. It is the responsibility of the bidder to update the logbook promptly. All the log books get signed by the concerned officer incharge in the first week of next month and submit with the invoice.
- xxvi. Conducting Battery Backup test with Existing Load at least quarterly & record the same in Log Book.
- xxvii. Bidder has to provide related testing equipments and necessary conveyance to discharge the functions listed in the tender.
- xxviii. Air filter cleaning in BTS/ Node B/ e-Node B, every month and entry in log book of site.
- xxix. Routine check of free cooling systems available at site and DG set and other Equipments i.e. BTS/ Media etc. and record the same in log book as per the periodicity defined for the visit (monthly). Reporting of any alarms/faults/untoward incident to the concerned officer
- xxx. Monitoring of Power Plant voltage and smooth change over in the absence of electricity.
- xxxi. To provide assistance under various exchange site activities includes minor civil and electrical works such as repair/replacement of MCB, & Switch, Aviation bulb, EB service cable, armoured AC cable replacement up to DG, repair/replacement of parts of LT panel/ lighting fixtures / smoke & fire alarm system / site earthing/ surge protection/ A/C unit etc.
- xxxii. Preventive checks and maintenance of Earthing & Lightning Protection systems including periodic checking/correction of these systems to ensure that all equipments are protected against surge/lightning related damages. This includes augmentation of the existing earthing/ lightning system where ever required, replacement of any rusted components, tightening of joints, replacement of lightning damaged components in infra equipments/electrical circuitry including ELCBs/surge protection devices/fuses/cables etc.
- xxxiii. Maintenance of Tower Aviation light. Bidder to ensure working of Aviation light.
- xxxiv. Due to heavy dust, temperature of BTS increases and efficiency degrades. Hence, cleaning of all types of BTS/ Exchange equipment & other infrastructure need to be carried out. This should be done using proper tools (to be arranged by the bidder) including vacuum cleaner and under supervision.
- xxxv. Assistance to transmission media team for extension of loop test, observation of alarm indicators, giving reset etc for troubleshooting shall be done. Testing of E1/FE/GE and other media activities from BTS site to BSC /RNC related equipment (looping/ measuring of Optical power) as and when required
- xxxvi. Periodicity of visit to be at least once in 3 days for BSNL sites
- xxxvii. Site visit/ inspection/ cleaning activity proof to be provided at least once in a month to Site in charge
- xxxviii. Report EB failure of sites to concerned EB unit and intimate the docket no: if any, to concerned BSNL official. Constant coordination with Electricity Board/Corporation for restoration of power in consultation with BSNL Site Incharge and after restoration of EB power, ensure proper working of PP/DG.
- xxxix. BSNL may allocate work of collection of EB bills and submission to the concerned site in charge, submission of EB cheques to EB office from BSNL office, note down the closing electricity meter reading every month in every site and will intimate the same to the field officer along with entry in log book. Abnormal meter reading cases is to be immediately brought to the notice of the

Concerned BSNL-in-charge. Electricity Bill collection/ correction (if wrong/ average) and intimation to concerned site in charge. Regarding Replacement of faulty electrical meter case to be immediately reported to the Concerned BSNL-in-charge.

- xl. Prevent misuse of electricity from the site. Penalty to be imposed if theft/misuse of electricity is detected as assessed by BSNL. This will be over and above the other penalties and will not be subject to capping if any
- xli. Sanction from EB/ police authorities to be arranged by the Vendor wherever necessary.
- xl.ii. The fire & smoke cum intruder detection systems installed in BTS sites are to be maintained by the bidder for its proper working. Periodic checking for the proper working of these systems and necessary repair/ replacement of faulty units are to be carried out by the bidder. The bidder shall maintain the fire extinguisher of CO2 in all BTS/exchange sites under maintenance.
- xl.iii. Routine check and Maintenance of Earth of power plant /BTS/ exchange and record the same in log book.
- xl.iv. Watering earth pit and ring earth of the tower.
- xl.v. Battery cell replacement shall be done by the Bidder as & when required. This may involve rearrangement of the cells from other sites. Periodical check-up of power plant modules working, load sharing and ensuring sufficient Modules are available for Equipment in consultation with Site In charge and Charging of Battery
- xl.vi. Bidder to deploy the skilled resources for cluster maintenance minimal per 10 sites for better maintenance and fault rectification. These numbers could be fixed by the respective BA/ Circle based on area specific condition.
- xl.vii. In case of any loss or theft of any material/equipment at BTS site, concern person of bidder at BTS site is liable to lodge the DDR (Daily diary register) / FIR within one hour for the same to Police Authority and get CSR from police authorities. Primary responsibility is of bidder, if required BSNL site incharge will extend the help.
- xl.viii. Bidder has to take "Take Over Certificate" of a BTS site along with all hardware /equipment details before commencement of contract from concern site in charge of BSNL
- xl.ix. For any tendered work not attended in time, BSNL will have the right to get it done from external resources and payment made to them will be recovered from bidder.

**B. BTS & Infrastructure Maintenance for Non-BSNL sites (Excluding IP sites)  
(2G and/or 3G and/or 4G)**

- i. These are the sites housing only Mobile sites either 2G and/ or 3G and/ or 4G or a combination of them.
- ii. Cleaning, security (to the extent of alerting any abnormal observation at the site during visits, intimating police authorities promptly w.r.t. any incident, ensuring functioning of lock & key.) and upkeep of the site including all equipment, tower surroundings, shelter/OD cabinet, Media equipment, DG etc. This includes bush cutting in the BTS sites in open areas. All tools & Cleaning material to be provided by the bidder
- iii. All leftover BTS related alarms, if any need to be made functional and to be extended upto OMCR within one month of operation. Equipment required for Alarm Extension to be provided by BSNL.



- iv. Prompt action on receipt of instructions (by call or by SMS) from concerned officer regarding manual assistance in rectification of alarms/ faults in site.
- v. The Bidder should ensure that fault is attended even in case of water-logging due to rain etc., the maintenance staff should be provided necessary accessories/gum-boots etc.
- vi. The bidder must ensure that the staff attending the BTS site will never engage into any argument with landlords for NBSNL sites. If site technician/security/caretaker refuses to allow access to site during both Normal and odd hours, the staff should immediately report to Site In charge and must not leave site until the Site in-charge gives permission to do so
- vii. Replacement of the faulty modules with repaired modules as per instructions of Site Incharge
- viii. In case of BTS outages due to control card faults of BTSs/ NODE-Bs/ e-Node Bs fault, replace the fault items with the spare module/ cards as per instructions of BSNL Site In charge.
- ix. Faulty card/ unit to be deposited at designated centre as per requirement & collection of repaired unit. (It will be the responsibility of bidder that during transportation no cards/units get damaged).
- x. In case of BTS outages due to card faults of rectifier modules fault of power plant etc, replace the faulty items with the spare module /cards available from normal spare availability location or from nearby sites as directed. The card/module extraction/insertion and transport shall be as per the recommended practice of the OEM/guidance of BSNL
- xi. Any Mini Link/ OFC failure to be intimated to site in charge for prompt restoration of OFC fault, details of visual alarm noticed to be communicated to the maintenance In-charge.
- xii. To check Earth Connectivity is available at BTS/ Node B/ e-Node Bs (All measuring instruments to be provided by the vendor).
- xiii. Vendor personnel should be provided with photo ID cards by Outsourcing Vendor
- xiv. The field staff being deployed should be provided with 2 SIMs one of BSNL & other from private TSPs for communication when BTS site is down. The list of same shall be provided at the time of Agreement. In case of any change in staff during the contract, the same shall be updated. BSNL employees too will share their 2 Mobile nos. of BSNL and other TSP
- xv. Maintaining EMF related boards and help in providing data for Biennial/Triennial submission of EMF Radiation for Mobile sites. (Bidder shall assist in Biennial/Triennial related activities like getting photograph & uploading to SSA CMTS Team etc.).
- xvi. Assistance in handling of minor store items.
- xvii. Ensure working of Power plant alarms with OMC-R.
- xviii. First line maintenance of power plants, battery and any problem reported (Any problem to be reported within 3 hrs)
- xix. Bidder to perform Preventive Maintenance activities as per the PM Annexure, will maintain the register for this activity and will submit the copy of the same duly verified by concerned unit-in-charge along with monthly bill.
- xx. Periodically check-up power plant modules working, load sharing and ensuring sufficient Modules are available for Equipment in consultation with Site Incharge and Charging of Battery.

- xxi. Tightening of all nuts/ screws in interconnecting point of power cable from EB panel board to each equipment.
- xxii. To ensure the control card is functioning properly so that battery do not go to deep discharge.
- xxiii. In case of any Power Plant outages due to fault in control card intimation to be given to Site In charge for attending the same on priority.
- xxiv. The bidder has to supply and maintain a log book in every site. It is the responsibility of the bidder to update the logbook promptly. All the log books get signed by the concerned officer in the first week of next month and submit with the invoice
- xxv. Conducting Battery Backup test with Existing Load at least in quarterly & record the same in Log Book.
- xxvi. Bidder has to provide related testing equipments & necessary conveyance to discharge the functions listed in the tender.
- xxvii. Air filter cleaning in BTS/ Node B/ e-Node B, every month and entry in log book of site.
- xxviii. Routine check of free cooling systems available at site and DG set and other Equipments i.e. BTS/ Media etc. and record the same in log book as per the periodicity defined for the visit (monthly). Reporting of any alarms/faults/untoward incident to the concerned officer.
- xxix. Monitoring of Power Plant voltage and smooth change over in the absence of electricity.
- xxx. To provide assistance under various BTS site activities includes minor civil and electrical works such as repair/replacement of MCB, & Switch, Aviation bulb, EB service cable, armoured AC cable replacement up to DG, repair/replacement of parts of LT panel/ lighting fixtures / smoke & fire alarm system / site earthing/ surge protection/ A/C unit etc.
- xxxi. Preventive checks and maintenance of Earthing & Lightning Protection systems including periodic checking/correction of these systems to ensure that all equipments are protected against surge/lightning related damages. This includes augmentation of the existing earthing/ lightning system where ever required, replacement of any rusted components, tightening of joints, replacement of lightning damaged components in infra equipments/electrical circuitry including ELCBs/surge protection devices/fuses/cables etc
- xxxii. Maintenance of Tower Aviation light. Bidder to ensure working of Aviation light.
- xxxiii. Due to heavy dust, temperature of BTS increases and efficiency degrades. Hence, cleaning of all types of BTS equipment & other infrastructure need to be carried out. This should be done using proper tools (to be arranged by the bidder) including vacuum cleaner and under supervision.
- xxxiv. Assistance to transmission media team for extension of loop test, observation of alarm indicators, giving reset etc for troubleshooting shall be done. Testing of E1/FE/GE and other media activities from BTS site to BSC/ RNC related equipment (looping/ measuring of Optical power) as and when required.
- xxxv. Periodicity of visit to be once in 5 days for NBSNL sites
- xxxvi. Site visit/ inspection/ cleaning activity proof to be provided at least once in a month to the Site Incharge



- xxxvii. Report EB failure of sites to concerned EB unit and intimate the docket no: if any, to concerned BSNL official. Constant Coordination with Electricity Board/ Corporation for restoration of power in consultation with BSNL Site Incharge and after restoration of EB power, ensure proper working of PP/DG.
- xxxviii. BSNL may allocate work of collection of EB bills and submission to the concerned site in charge, submission of EB cheques to EB office from BSNL office, note down the closing electricity meter reading every month in every site and will intimate the same to the field officer along with entry in log book. Abnormal meter reading cases is to be immediately brought to the notice of the Concerned BSNL-in-charge. Electricity Bill collection/ correction (if wrong/ average) and intimation to concerned site in charge. Regarding Replacement of faulty electrical meter case to be immediately reported to the Concerned BSNL-in-charge.
- xxxix. Prevent misuse of electricity from the site. Penalty to be imposed if theft/misuse of electricity is detected as assessed by BSNL. This will be over and above the other penalties and will not be subject to capping if any
- xl. Sanction from EB/ police authorities to be arranged by the Vendor wherever necessary
- xli. The fire & smoke cum intruder detection systems installed in BTS sites are to be maintained by the bidder for its proper working. Periodic checking for the proper working of these systems and necessary repair/replacement of faulty units are to be carried out by the bidder. The bidder shall maintain the fire extinguisher of CO2 in all BTS sites under maintenance.
- xlii. Routine check and Maintenance of Earth of power plant / BTS and record the same in log book.
- xliii. Battery cell replacement shall be done by the Bidder as & when required. This may involve rearrangement of the cells from other sites. Periodical check-up of power plant modules working, load sharing and ensuring sufficient Modules are available for Equipment in consultation with Site In charge and Charging of Battery
- xliv. Bidder to deploy the skilled resources for cluster maintenance minimal per 10 sites for better maintenance and fault rectification. These numbers could be fixed by the respective BA/ Circle based on area specific condition
- xlvi. In case of any loss or theft of any material/equipment at BTS site, concern person of bidder at BTS site is liable to lodge the DDR (Daily diary register) / FIR within one hour for the same to Police Authority and get CSR from police authorities. Primary responsibility is of bidder, if required BSNL site incharge will extend the help.
- xlvi. Bidder has to take "Take Over Certificate" of a BTS site along with all hardware /equipment details before commencement of contract from concern site in charge of BSNL
- xlvi. For any tendered work not attended in time, BSNL will have the right to get it done from external resources and payment made to them will be recovered from bidder.

**C) BTS Maintenance for Infrastructure Provider (IP) sites (2G and/or 3G and/or 4G)**

- i. These are the Infrastructure Providers (IP) sites housing only Mobile sites either 2G and/ or 3G and/ or 4G or a combination of them.

- ii. All leftover BTS related alarms at IP sites, if any need to be made functional and to be extended upto OMCR within one month of operation. Equipment required for Alarm Extension to be provided by BSNL.
- iii. Prompt action on receipt of instructions (by call or by SMS) from concerned officer regarding manual assistance in rectification of alarms/ faults in site.
- iv. The Bidder should ensure that fault is attended even in case of water-logging due to rain etc., the maintenance staff should be provided necessary accessories/gum-boots etc.
- v. The bidder must ensure that the staff attending the IP site BTS will never engage into any argument with IP site security/caretaker/technician. If site technician/security/caretaker refuses to allow access to site during both Normal and odd hours, the staff should immediately report to Site In charge and must not leave site until the Site in-charge gives permission to do so.
- vi. Replacement of the faulty modules with repaired modules as per instructions of Site Incharge
- vii. In case of BTS outages due to card faults of BTSs/ NODE-Bs/ e-Node Bs fault, replace the fault items with the spare module /cards as per instructions of BSNL Site In charge
- viii. Faulty card/units of BTS sites and other equipments need to be deposited at designated centre as per requirement & collection of repaired unit. It will be the responsibility of bidder that during transportation no cards/unit get damaged.
- ix. Any Mini Link/ OFC failure to be intimated to site in charge for prompt restoration of OFC fault, details of visual alarm noticed to be communicated to the maintenance In-charge.
- x. Air filter cleaning in BTS/ Node B/ e-Node B, every month and entry in log book of site.
- xi. For prolonged failure of Electricity as intimated by BSNL officer, Coordination for restoration of EB in consultation with IP In charge.
- xii. To check Earth Connectivity is available at BTS/ Node B/e-Node Bs (All measuring instruments to be provided by the vendor).
- xiii. Vendor personnel should be provided with photo ID cards by Outsourcing Vendor
- xiv. The field staff being deployed should be provided with 2 SIMs one of BSNL & other from private TSPs for communication when BTS site is down. The list of same shall be provided at the time of Agreement. In case of any change in staff during the contract, the same shall be updated. BSNL employees too will share their 2 Mobile nos. of BSNL and other TSP.
- xv. Maintaining EMF related boards and help in providing data for Biennial/Triennial submission of EMF Radiation for Mobile sites. (Bidder shall assist in Biennial/Triennial related activities like getting photograph & uploading to SSA CMTS Team etc.).
- xvi. Assistance in handling of minor store items.
- xlvi. Ensure working of Power plant alarms with OMC-R.
- xlix. First line maintenance of BTS/ media equipment and any problem reported.

- xvii. Bidder to perform Preventive Maintenance activities as per the PM Annexure, will maintain the register for this activity and will submit the copy of the same duly verified by concerned unit-in-charge along with monthly bill.
- xviii. In case of any Power Plant outages due to fault in control card intimation to be given to Site In charge/ IP incharge for attending the same on priority.
- xix. Bidder has to provide related testing equipments and necessary conveyance to discharge the functions listed in the tender.
- xx. Bidder should provide safety shoes, helmets to maintenance staffs as per safety regulations of IPs e.g. INDUS, ATC for attending faults in IP sites
- xxi. Routine check of Equipments i.e. BTS/ Media etc. and record the same in log book as per the periodicity defined for the visit ( monthly). Reporting of any alarms/faults/untoward incident to the concerned officer.
- xxii. Periodicity of visit to be atleast once in 2 weeks for IP sites.
- xxiii. Site visit/ inspection/ cleaning activity proof to be provided at least once in a month to Site Incharge.
- xxiv. Due to heavy dust, temperature of BTS site increases and efficiency degrades. Hence, cleaning of all types of BTS/media equipment need to be carried out. This should be done using proper tools (to be provided by the bidder) including vacuum cleaner and under supervision.
- xxv. Cleaning of the site including BTS OD cabinet & Media equipment etc. All tools & Cleaning material to be provided by the bidder
- xxvi. Assistance to transmission media team for extension of loop test, observation of alarm indicators, giving reset etc for troubleshooting shall be done. Testing of E1/FE/GE and other media activities from BTS site to BSC/RNC related equipment (looping/ measuring of Optical power) as and when required.
- xxvii. For any tendered work not attended in time, BSNL will have the right to get it done from external resources and payment made to them will be recovered from bidder.

**D. Rigger activities for BSNL, Non-BSNL and IP sites**

- i. Dismantling of Antenna
- ii. Installation of Antenna
- iii. Dismantling of Antenna Fixture (for phase/ Space diversity antenna)
- iv. Fixation of Antenna Fixture (for phase/ Space diversity antenna)
- v. Height lowering of Phase Diversity Antenna along with fixture
- vi. Hoisting of RF Cable including connectorisation
- vii. Removing of RF Cable
- viii. Installation of Microwave Dish Antenna (Mini Link)
- ix. Dismantling of Microwave Dish Antenna (Mini Link)
- x. Microwave Link LOS work including ODU replacement
- xi. ODU Replacement for Minilink.
- xii. Re-orientation/ Tilt adjustment of Antenna.
- xiii. Verification/ Replacement of weather proof tapes to prevent water entry.

- xiv. Verification/ replacement of connectors/ fittings and removal of VSWR including connectorisation and weather proofing.
- xv. Assistance in Verification/correction of MW LOS.
- xvi. Verification/ correction of Lightning Arrestor and its fittings.
- xvii. Sector addition.
- xviii. Antenna Changing.
- xix. Microwave Fault attending.
- xx. Microwave installation/replacement.
- xxi. CPRI cable fault attending/replacement.
- xxii. Feeder/ RF/ OF cable fault attending and replacement.
- xxiii. 2G/3G/4G booster installation.
- xxiv. 2G/3G/4G Repeater installations.
- xxv. Any other related works in Tower.
- xxvi. Antenna Orientation & Tilt as per requirement for optimization.
- xxvii. VSWR fault rectification per sector (includes reconnectorisation, jumper cable change & weather proofing) (Handheld VSWR meter to be provided by the Vendor as per requirement)
- xxviii. Checking & correction of RF cable/ Fiber swap, Antenna at RRH, removal of bird/honey bee/wasp nest.
- xxix. Hoisting of CIPRI cable to RRH (Base Unit to RX unit on tower), per meter
- xxx. Connectorization of CIPRI Cable at RRH, per Site
- xxxi. Hoisting of Power cable to RRH (Base Unit to RX unit on tower), per meter
- xxxii. Connectorization of Power Cable including boot sealing, at RRH, per Site
- xxxiii. Running of Earthing Cable with connectorization to RRH, per meter
- xxxiv. VSWR fault rectification per sector (includes reconnectorization, jumper cable change & weather proofing), at RRH and Antenna ends
- xxxv. Hoisting of IF cable with connectorization, per meter
- xxxvi. RF module dismantling with SFP, per module
- xxxvii. Fixing of wall mounting fixture, per fixture
- xxxviii. Installation of RF cable tray for wall mounting Antenna per meter
- xxxix. Installation of Micro/ Macro BTS Equipment per unit
  - xl. Laying of RF Cable per meter for Micro BTS (50M /site)
  - xli. Installation of Splitter including connectorization
  - xl.ii. Installation of Patch/Panel/ Omni antenna with connectorization
  - xl.iii. RF Repeater Installation including Yagi/ Panel Antenna & RF Cable of 25M
  - xliv. Completion of ordered RF optimization/ rigger activity.
  - xl. v. Restoration of Rigger related fault resulting in site fully/ partially down
  - xlvi. RRH replacement (dismantling and installation) in case of faulty one or new one
  - xl. vii. RRU link (Link between BBU-RRH link) restoration for RRH sites along with provision to provide the RRU link materials if found damaged).
- xl. viii. If the microwave IDU/ODU IF connector faulty, the bidder is to arrange these IF connectors and replace them
- xl. ix. EGB / IGB fixing.
  - I. Grounding of feeder cable.
  - li. Laying of RF jumper cable and Connectorization of jumper cable.
  - lii. Fixing of surge arrestors.
  - liii. Heat shrinks joint at Indoor jumper / power cables.
  - liv. Hoisting / de-hoisting of RRH.
  - lv. Hoisting / de-hoisting of Microwave IF cable from IDU to ODU on tower with connectorization.
  - lvi. Hoisting / de-hoisting of Radio modem ODU with antenna.

- lvii. De-hoisting CAT (1+1) cable from antenna(ODU) on tower to IDU.
- lviii. Alignment of Radio modem antenna at A and B end for link up of the system.
- lix. Rigger activities including Hoisting / Dehoisting of all type of RF work
- lx. Hoisting / Dehoisting of Heavy RF material require supporting workers and may be included in tender.
- lxi. RRH/RRU attending or replacing antennae required additional man power apart from rigger alone. In present tender we struggled each time arranging additional manpower during replacement of faulty RRU/RRH. Such arrangements should be there in new tender.
- lxii. Changing of OVP (Over Voltage protection)
- lxiii. All measuring/ safety materials and proper dedicated transport to be provided by the Vendor, BSNL will not be liable for any claim against any accident/ mishappening occurs while performing any task defined under this tender by the bidder personnel.
- lxiv. Any other activity with minor modification in RF as per guidance of BSNL
- lxv. For any tendered work not attended in time, BSNL will have the right to get it done from external resources and payment made to them will be recovered from bidder

**E. Scope related to Diesel filling and DG operation (Excluding IP sites):**

- i. BSNL has an MOU with oil companies for procurement of diesel from their specified outlets through petro/ fleet cards. Petro/ fleet card will be issued to the vendor or his authorized person & payment will be made directly to the oil companies by BSNL. The bidder(s) shall draw diesel by means of the fleet card/petro- cards under the control of SDE/ SDO. The bidder(s) shall use appropriate vehicles (to be arranged by the bidder) for transportation of diesel from the designated nearest petrol pump to the sites. Any loss/ misuse of the petro/ fleet cards issued to the vendor will be the responsibility of the Vendor. Any such losses will be recovered by BSNL from the vendor by adjusting against the payment due to the service provider or will be recovered from PBG.
- ii. In the case of any pilferage/ misuse causing loss to BSNL, a penalty of 200% of the loss or as decided by the competent authority of BSNL will be imposed on the bidder. Any reduction in the diesel cost/ loyalty benefits in view of the MOU will be availed by BSNL. It will be the responsibility of the bidder to reconcile the diesel consumption as per actual usage in field with that in petrol/ fleet card account.
- iii. The diesel filling in specified BTS sites shall be carried out on a periodic basis, including transportation from Petrol Pump. On an average, every site needs diesel filling as and when required. The service provider shall study the alarms extended from the BTS to learn about the power outage and swiftly act to fill the diesel. Hence, the requirement pattern shall be studied by the supplier and fuel filling be designed accordingly, so as to ensure the availability of fuel ensuring 4 hours of back-up.
- iv. Obtaining a special permit, if any required, from the Motor vehicle department or any other authority for transporting diesel in bulk through motor vehicle shall be the responsibility of the contractor.
- v. Checking the level of diesel in the DG tank at the time of filling (opening level & closing level) and making necessary entries in the prescribed log book for diesel filling. If there is any kind of dispute regarding the diesel consumption, in that case a joint team of bidder(s) and BSNL will carry out the diesel consumption check on the disputed site and the average checked will be used for both retrospective as well as prospective reimbursements for that sites.
- vi. BSNL will not be responsible for any delay in payment of invoices or expenses due to any error, incomplete statement or late receipt of the same.

- vii. The bidder(s) should have technical support to determine and judge the number of electricity units generated by using one litre of diesel fuel. Actual consumption of diesel at site will be verified with the help of CPH, DG HOUR METERS, DG KWH METERS.
- viii. Pilferage of diesel will lead to severe penalty and recovery from the vendor. Therefore, this is in the interest of both Vendors and BSNL that correct hour meter and KWH Meter readings to ascertain actual consumption shall be exhibited at the site, which will be verified by BSNL, from time to time. Records of these parameters shall invariably be maintained. DG servicing and tuning /maintenance should be done to have the maximum fuel efficiency. However, the frequency of DG shall be maintained to the standard level only.
- ix. The Average load of the site shall be reviewed based on actual measurement on quarterly basis. The mechanism of testing and determination of average load shall be decided by department.
- x. Entering DG & Battery voltage readings/status in the BTS site log book
- xi. Checking the meter reading in the DG run hour meter (opening and closing readings) and Controller logged hours (if available) and making entries of DG run hours in the Prescribed log book.
- xii. Running of DG sets as and when required at any time of the day or night. Assisting in Diesel filling.. Assistance in the handling of minor store items.
- xiii. During the availability of main electric supply, DGs are not to be run. The operator shall keep the track of drainage of exchange battery voltage and shall start only when the voltage drops to 49 V.
- xiv. In the event of EB supply failure, operator shall operate DG after verifying the sufficient drainage of Exchange battery voltage. If power is not resumed within two hour, he may stop the EA Set and again allow the exchange battery voltage to drain sufficiently. The same sequence should continue till resumption of power supply
- xv. Arranging test run in case, if any dispute arise between the Contractor and the BSNL official concerned.
- xvi. The fuel utilization reconciliation will be based on CPH based validation with run hr meter count plus DG run readings from OMCR/NOC.As per BTS load and capacity of DG, the average CPH may be taken as 2.2 Liter / Hour for DG Sets up to 15 KVA capacity and 2.7 Litre/ Hour for more than 15KVA capacity. However, this is indicative data and actual CPH may depend on individual make/capacity and will be informed by site incharge.
- xvii. DG hour meter and KWH meter and AMF panel incorporated in DG to be kept in working condition and any tampering / fault will entail penalty as well as action for recovery of losses to BSNL.
- xviii. DG battery should be maintained, safeguarded and kept in charged condition at the site so as to start the DG at the time of main supply outage. Life of DG battery is minimum two years. Therefore, if any damage happens to the battery within this period, the agency has to replace it free of cost. At the time of hand over, healthy battery will be provided (approximate used period / manufacturing date will also be indicated).
- xix. Other than the periodic refilling, whenever there is an emergency requirement based on OMCR low fuel alarm or message given by the concerned officer, refilling shall be arranged within three hours on getting such intimation
- xx. BSNL may order for Diesel filling for specific site as per requirement. Ordered diesel filling should be done by the Vendor within 24 hours of intimation.



- xxi. A monthly Site wise statement detailing the opening balance of diesel, diesel filled during the month, closing balance, DG run hours etc shall have to be submitted by the bidder(s) to BSNL.
- xxii. BSNL reserves the right to incorporate and ask for any other reconciliation / operation report during the currency of tender.
- xxiii. The service provider/contractor shall ensure that the DG should be run in case of power failure. The agency has to develop a methodology of getting information of power failure and action to start and stop EA Set accordingly. After power failure and as per the battery voltage conditions, the firm shall make arrangements for DG Start and stop in case auto mode operation of DG set is not functional
- xxiv. A-check of DGs including its test operation, monitoring of fuel/ oil/ coolant level, check leakage if any, test operation of changeover of MSEB/DG supply etc shall be done. All alarms of DG such as Low fuel level, DG on load shall be kept up-to-date for log verifying log book entries.
- xxv. Proper maintenance of earth l /c watering & checking for healthiness up to DG is to be done, to have a stable power supply EA Set.
- xxvi. The payment of diesel cost from BSNL will be limited to actual consumption based on log book after applying the ceiling limit based on the consumption computed with Run Hour meter reading and per hour consumption indicated in this tender document, on a which-ever-less basis.
- xxvii. The payment will be based on logbook entries, but will be limited to monthly consumption based on run hour meter reading and the average consumption in liters/hour for each DG shall be measured along with the BSNL team and jointly signed off soon after any site is added in work order for diesel filling. In general, as per BTS load and capacity of DG, the average CPH may be taken as 2.2 LITRE / HOUR for DG Sets up to 15 KVA capacity and 2.7 Liter/Hour for more than 15KVA capacity. It is to be noted that in no case, hour meter remain non operational for consecutive months
- xxviii. The bills will be verified, passed & forwarded by BSNL representative based on the consumption in liters / Hour indicated in the tender document. Any extra cost incurred will be the responsibility of the bidder. If the diesel cost through Petro/ fleet card is found to be less than the diesel consumption based on mileage, the bidder will not have any claim for the additional cost.
- xxix. The sites for which even one instance of diesel filling in the month is not recorded will not be considered for Diesel filling expenses for the said month.
- xxx. In the case of MOU with oil companies, BSNL will pay directly to the Oil companies. Any excess usage of Diesel after tallying with log book entries/Run hour meter will be adjusted from bills at the end of every quarter.
- xxxi. The bidder has to supply and maintain a log book in every site/ Exchange for Diesel filling. It is the responsibility of the bidder to update the logbook promptly on Diesel filling.
- xxxii. Concerned BSNL officers will periodically verify the logbook entries and put their initials. The bidder has to seal and lock the hour meter in the presence of BSNL representative. Every month the hour meter reading is to be noted by bidder along with the BSNL representative and a consolidated statement along with log book reports is to be submitted by the bidder. Under any circumstances if any of the units like run hour meter is faulty then the diesel filling should be done under the supervision of any of the BSNL officers/ persons authorized by BSNL.
- xxxiii. If the bidder provider feels that average consumption per hour in that site is to be reviewed due to aging of DG or other factors then a test run can be requested by the bidder to recalculate the Average consumption/hour for that particular site. The test run will be conducted by a joint team

consisting of representatives of bidder and BSNL. Once having jointly signed off on CPH, review will not be made for another six months.

- xxxiv. If any fraudulent activity by the personnel deployed in filling of diesel/ running of DG in Mobile sites is detected by BSNL authorized personnel/officer, then the bidder(s) is liable to pay penalty as assessed by BSNL i.e. the cost of consequential damages to installation(s)/DG set(s) would be deducted at actual, from the bidder's bill. This will be over and above the other penalties and will not be subject to capping if any.
- xxxv. For any tendered work not attended in time, BSNL will have the right to get it done from external resources and payment made to them will be recovered from bidder

### **DG Set Maintenance Activities**

Weekly/ monthly DG check schedule need to be followed and any problem need to be communicated to Mobile/Exchange site In-charge. Weekly/ monthly schedule alongwith the maintenance activities to be covered will be communicated by Mobile/ Exchange site Incharge. Suggestive activities are as below:

- i. Make sure there are no fluid leaks
- ii. Run the generator (typically no-load, automatic transfer switch exercise cycle).
- iii. Verify that the unit ran and has no alarms or warnings.
- iv. Ensure adequate fuel levels.
- v. Ensure that the generator is in "Auto" mode, for automatic startup.
- vi. Check engine coolant level.
- vii. Check engine oil level.
- viii. Check the battery charger.
- ix. Run the generator (with load, automatic transfer switch exercise cycle).
- x. Manual assistance in changeover of MSEB/DG supply and attending to minor faults like tripping of switches, manual changeover in AC units, swapping of power plant unit etc.
- xi. Routine check of DG, Power plant, Battery and Equipments and record the same in log book as per the instructions given in the log book. Reporting of any alarms/ faults/ untoward incident to the concerned officer.
- xii. Assisting in Diesel filling in the DG Set available at the site.
- xiii. Check the battery electrolyte level and specific gravity.
- xiv. Check battery cables and connections.
- xv. Inspect drive belts.
- xvi. Inspect the coolant heater.
- xvii. Check coolant lines and connections.
- xviii. Check for oil leaks and inspect lubrication system hoses and connectors.
- xix. Check for fuel leaks and inspect fuel system hoses and connectors.
- xx. Inspect the exhaust system, muffler and exhaust pipe.
- xxi. Check and clean air cleaner units.
- xxii. Inspect air induction piping and connections.
- xxiii. Inspect the DC electrical system, control panel and accessories.
- xxiv. Inspect the AC wiring and accessories.

## SECTION-II (PENALTY)

S.N.	Activity		Timelines for attending/rectification	Penalties (per site)	Severity level
A	Complete outage	<ul style="list-style-type: none"> <li>Satisfactory support in Site upkeep and prompt action for rectification of alarms/faults in site</li> <li>Replacement of faulty BTS/Mini-Link cards /Rigger activity/ PP modules / Cables in case of complete outage.</li> </ul>	< 2 hrs	No Penalty	Critical
			>2 to 4< hrs	Rs 30/hr	
			>4 to 8< hrs	Rs 50/hr	
			>8 to 12< hrs	Rs 100/hr	
			>12 hrs	Rs 200/hr	
B	Partial outage	<ul style="list-style-type: none"> <li>Satisfactory support in Site upkeep and prompt action for rectification of alarms/faults in site</li> <li>Replacement of faulty BTS /Mini-Link cards / Rigger activity/PP modules / Cables in case of partial outage. (sector down due to VSWR)</li> </ul>	<12 hrs	No Penalty	Major
			>12 to 24< hrs	Rs 20/hr	
			>24 hrs	Rs 30/hr	
C	QoS	Attending/rectification the fault related to (rigger activity,VSWR,Tilt,Orientation, Antenna height adjustment, swapping etc.)	<24 hrs	No penalty	Major
			>24 to 48< hrs	Rs 10/hr	
			>48 hrs	Rs 30/hr	
D	Alarm	BTS/PP/INFRA related ALARM EXTENSION upto OMCR, ensure working of alarms	one month of docket booking	No Penalty	Major
			more than one month	Rs 50/day	
		Attending/rectification the fault related to BTS/PP/INFRA related Alarm	<24 hrs	No Penalty	
			>24 to 48< hrs	Rs 10/hr	
			> 48 hrs	Rs 30/hr	
E	Misc	Faulty card/units to be deposited at designated centre and collect repaired unit	1 day	No Penalty	Major
			>1 day	Rs 50/day	
		Removal of bird/honey bee/wasp nest, Aviation lamp	7 days of docket booking	No Penalty	
			>7 day	Rs 50/day	
		cleaning/bush cutting at site within week per instances per site	7 days of docket booking	No Penalty	
			>7 day	Rs 50/day	
		Periodical check-up of PP & battery charging	7 days of docket booking	No Penalty	
			>7 day	Rs 50/day	
		Maintaining EMF related boards and help in providing data for Biennial/Triennial submission of EMF Radiation for Mobile sites.	7 days of docket booking	No Penalty	
			>7 day	Rs 50/day	
		Ordered Diesel filling	1 day of intimation	No Penalty	
			>1 day	Rs 100/day	



F	DG Operation	Starting of DG set as required/ power failure	<3 hrs	No penalty	Critical
			>3 hrs	Rs. 100/hr	
		filling of Diesel at the site/exchange resulting in site/exchange being fully / partially down	<3 hrs	No penalty	
			>3 to 6< hrs	Rs 50/hr	
			>6 to 12< hrs	Rs 100/hr	
			>12 hrs	Rs 200/hr	
G	PM	PM activity as listed in Annexure	Beyond the timeline defined in PM Annexure	Rs 100 /week	Minor
H		First line maintenance/ reporting	<3 hrs	No penalty	Minor
			>3 hrs	Rs. 20/Hr	
		Any other single instance of non-completion of ordered activity & single instance of performance deviation as per tender, unless defined in the above penalties	>1 day delay	Rs. 30/day	Minor
General: Performance deviation due to BSNL reasons will be exempted from Penalties					
1	Missing/damage/theft of the card/unit after taking custody of the same from BSNL till deployment in BTS / Equipment will be vendor's responsibility and the actual cost of the card will be recovered from the bill.				
2 (i)	Penalties attributable to the bidder will be capped to 20% of the total contracted value for the services of the relevant invoice period. However, if total penalties reaching the capping limit (i.e. 20%) consequently for 3 months in such cases the capping limit will be revised to 40% of the invoice and it will be restored back to original 20% when the penalties is below 20% for three consequent months.				
(ii)	If the total penalties reaching the capping limit consecutively for 3 Month, BSNL will have the right to terminate the contract of the concerned BA/ SSA without any further notice.				
3	If any fraudulent activity by the personnel deployed in filling of diesel in GSM sites or in site Maintenance activities, is detected by BSNL authorized personnel/officer, then the bidder is liable to pay penalty i.e. The cost of consequential damages to any BSNL equipment/installation(s)/DG set(s) would be deducted at actual, from the service provider's bill. This will be over and above the other penalties and will not be subject to capping if any.				

### SECTION-III (PREVENTIVE MAINTENANCE)

#### Appendix-I (PM checklist)

1	Power Plant Testing	Monthly	<b>To be done as per Appendix-II</b>
2	AMF/ACPDB Panel Checking	Monthly	
3	Battery Bank Testing	Quarterly	
4	Air Conditioner Testing	Monthly	
5	External Alarm Testing	Weekly	
6	General Inspection	Monthly	
7	Earthing Value test	Six monthly	
8	DG Set Checking	Weekly	
9	Cleaning	Monthly	
10	Grass Cutting and External Cleaning	Weekly	
11	Pre Monsoon Checkups	Quarterly	

**Appendix-II**

S.No.	Equipment Type	Work to be done
1	Power Plant Testing	Proper working of Power Plant with the existing Modules, Dust cleaning, Tightening of Input and output terminals, replacement of burnt lugs and connections, earthing, Alarms, etc.
2	AMF/ACDB Panel Checking	Tightening of Input and output terminals, replacement of burnt lugs, fuses and connections in ACDB, removal of excess sagging of service wire from pole to ACDB, dry joints at poles in co- ordination with EB officials, AMF panel with Alarms, etc.
3	Battery Bank Testing	Battery cells physical checking with voltage after disconnecting EB mains supply, cleaning of Batteries and battery terminals, tightening of all the Battery terminals, providing of jelly to the terminals, Test discharge of Battery. Log book entry to be made for battery voltage value.
4	Air Conditioner Testing	Checking of Proper working of AC unit through control panel, filter cleaning, working of Temperature sensor, checking of all the electrical connections, etc.,
5	External Alarm Testing	Extension of external alarms and Checking of proper working of external alarms. The current list is being attached. The list of alarms to be updated by BSNL CO from time to time.
6	General Inspection	Inspection of BTS site including all the equipments along with BSNL team , Checking of all the log books/records maintained in the site, condition of signage boards(EMF related), checking of proper working of all the doors/door hinges of BTS, DG and Shelter/Room.
7	Earthing Value test	Exchange/BTS/Tower earth check. Checking of earth resistance of AC and DC as per the standard value
8	DG Set Checking	Checking of proper working of DG set by test run, Tightening of Input and output terminals, replacement of burnt lugs and connections, dust cleaning, checking of oil leakages, checking of DG related Alarms, etc.,
9	Cleaning	Cleaning of Room/Shelter/Compound Area, Filter & dust cleaning of BTS/Exchange and other equipment.
10	Grass Cutting and External Cleaning	Regular maintaining of BTS site/Tower/Exchange by Cleaning and removing of vegetation/Grass/Bush/creepers.
11	Pre Monsoon Checkups	Checking of proper working of DG, preservation of fuel for DG with sufficient quantity, checking and cleaning of EB connections from electrical pole to ACDB in co-ordination with EB officials.



### Appendix-III (General Inspection)

Sl. No.	Check List	Specifications	Observations/ Remarks
1	Shelter properly cleaned	yes/no	
2	Any Extra material inside shelter	yes/no	
3	DG Set / canopy properly cleaned	yes/no	
4	VRLA Battery Bank	ok/not ok	
5	General site cleaning	done/not done	
6	Aviation Light & its functioning	ok/not ok	
7	Lightening Arrestors and its connection	ok/not ok	
8	DG silencer and Earthpit paint	ok/not ok	
9	Shelter outside cleaning	ok/not ok	
10	Grass cutting	ok/not ok	
11	Outside cleaning	ok/not ok	
12	Light system indoor & outdoor	ok/not ok	
13	Proper shading or Energy Meter	ok/not ok	
14	Cheating for overheating of Energy Meter	ok/not ok	
15	Earth pit condition	ok/not ok	
16	Any leakage inside/ outside the DG	ok/not ok	
17	Any Waste material at site like used lube oil used filters, old clothes.	yes/no	