

North Eastern Regional Power Committee

Agenda

For

4th NETeST Sub-Committee Meeting

Time of meeting : 10:00 Hrs.

Date of meeting : 9th August, 2016 (Tuesday)

Venue : "Pala Resort", Cherrapunjee.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 3rd NETeSTS Meeting held on 10.06.2016.

The minutes of 3rd NETeST Meeting held on 10th June, 2016 at Guwahati were circulated by NERPC vide letter No. NERPC/SE(O)/TeST/2016/ dated 1st July, 2016.

The Sub-committee may confirm the minutes of 3rd NETeST meeting of NERPC as no comments/observations were received from the constituents.

ITEMS FOR DISCUSSION

A.1 Status of SLDCs in NER:

During 3rd NETeST meeting the Sub-committee discussed the status of setting up of SLDC as informed by POWERGRID. The status is given below:

Name of SLDC/ RLDC	STATUS GIVEN IN 4 th TEST	STATUS AS GIVEN IN 3 rd TEST
Assam		Sat of VC system completed. SCADA EMS commissioned. Tuning of EMS to be done as per last PRM.
Tripura		Sat of VC system completed. SCADA EMS commissioned. Tuning of EMS to be done as per last PRM.
Meghalaya		Rectification of ACDB Done. UPS SAT completed. Earthing system needs to be improved. SCADA EMS commissioned. Tuning of EMS to be done as per last PRM.

Agenda for 4th NETeST Meeting to be held on 9th August, 2016

NERLDC		Main system commissioned. Further NLDC-NERLDC integration on new SCADA system completed.
NERLDC backup		UPS Installation and SAT completed. VPS installation in progress. FAT of Cc hardware and Software completed and material dispatched. To be completed before 31.08.2016.
Manipur		Integrated FAT Completed and material delivered at site. Work likely to be completed by 31.08.16. PLCC to be used for connectivity of left over RTU.
Mizoram		Building vacation & partitioning work and minor work left, to be completed in one week (AC installation. Integrated FAT Completed and material dispatched. To be installed by 30.09.2016 (subject to readiness-especially duct & AC-final finishing) of Building from state.
Nagaland		Integrated FAT completed. Building would be ready by October, 2016. To be installed by 31.12.2016 (subject to readiness and handover the building by State by October, 2016).
Arunachal Pradesh		Building is now ready except air conditioning. Forum requested that SLDC area as marked for SLDC in Chimpu substation may be in sole jurisdiction of SLDC authority for smooth coordination and requested AP representative to take up the matter with higher authority of DoP, AP.

During 3rd NETeST meeting regarding AMC all constituents were again requested for signing. Meghalaya intimated that the same is already approved and soon be signed. Members opined that two UPS should be in place in all SLDCs for redundancy of the system. Moreover, the house strongly mentioned that the dates of completion of SLDCs in the region should not be delayed further since AMCs in three existing SLDCs were expired and the house requested PGCIL to arrange the review meeting with Alstom frequently till the SLDCs are commissioned.

The house also expressed concerned about non-cooperation and delay in response by Alstom and this had hampered many works in the region. The house requested NERPC to write to Executive Director, LD&C, POWERGRID with a copy to highest authority of Alstom India in the SLDC project purpose.

Under quantity variation, AEGCL requested for purchase of RTU-10nos. under SLDC upgradation project from M/s Alstom & also requested that DG set to be included for AEGCL in the project which may be agreed upon by Forum.

Further, Manager (AM), NERTS informed that only Assam, Nagaland & POSOCO have signed the AMC Agreement, he requested other constituents to sign the same at the earliest. All constituents agreed. There have been some reports of theft from SLDC Manipur location also for which work also delayed. It is requested to Manipur representatives to take up the matter with higher authority to prevent such issues in future.

Further, Manager (AM), NERTS informed that for second ICCP(SLDC-NERLDC-SLDC data) & VC (to optimize use of VC for SLDC-NERPC meetings) link Cost of Rs.1.66 per year for initial 2years (to be booked to project cost) is estimated for reliable back up with protection and VLAN management through POWERTEL as existing equipment does not suffice VLAN requirement. Forum agreed in principle. However, all representatives confirmed that they would take up the matter for the respective state's internal approval soon.

This scheme is required because some SLDC like AP, Manipur, Nagaland and Mizoram are out of optical connectivity of ULDC network. And further, SLDC like Assam, Tripura, Meghalaya, though in optical network but star type network topology with VLAN connectivity at Ethernet level are not available with the existing equipment (as available in SLDCs) connecting inter-SLDC-NERLDC and expected to be in place by 2 years' time (approx.). Further as there is no common Central sector head in SLDC project head (as executed by POWERGRID for SLDC project) matter may kindly be looked into by POWERGRID during cost booking. The detailed cost break up is given below:

SI No	Location	Bandwidth	VLAN-1 for ICCP	VLAN-2 for ICCP	VLAN-3 VC	Total
			Annual Charges	Annual Charges	Annual Charges	
1	Main NERLDC	10Mbps	693621	693621	693621	2080863
2	B/U NERLDC	10Mbps	693621	693621	693621	2080863
3	Assam SLDC	10Mbps	693621	693621	693621	2080863
4	Tripura SLDC	10Mbps	693621	693621	693621	2080863
5	Meghalaya SLDC	10Mbps	693621	693621	693621	2080863
6	Arunachal SLDC	10Mbps	693621	693621	693621	2080863
7	Mizoram SLDC	10Mbps	693621	693621	693621	2080863
8	Nagaland SLDC	10Mbps	693621	693621	693621	2080863
Total Annual Charges						16646904

Forum also requested POWERGRID to take up the inclusion of necessary SDH/PDH along with VLAN facility to be included in the equipment meant for SLDC, NERLDC & Backup. Further it was intimated that Package for PDH Mux & SDH for FO expansion package has been awarded.

Assam intimated that PDH Mux for ULDC original locations was also approved in 15th NERPC. After deliberate discussion, to avoid delay, POWERGRID is asked by forum to include quantity of PDH Mux as required all original nodes of ULDC & SLDC/NERLDC new locations incorporating all requirement mentioned above. Cost may be booked to FO-Expansion project.

SLDC Project Amendment as proposed in PRM MOM -1 has been agreed upon in principle for additional spare RTUs(including inverter/ LDMs & excluding furniture), additional VPS as required by respective states etc.

Further 5pairs of Modems were requested to be included as spare supply for all utility except AP. Assam rep intimated they would soon confirm the same through email.

Members may like to discuss.

A.2 Non-reporting of RTUs of Constituents on Existing SCADA:

Real time Grid operators have been facing various problems because of poor visibility due to low availability of Telemetered data from RTUs. Status as on 3rd August, 2016 is given below:-

- a) **POWERGRID:** 2 out of 18 i). Mokokchung PG. ii). KOPEX NO
- b) **NEEPCO:** 4 out of 6 i) Doyang (24.1.150) ii).Kathalguri (16.10.15),
iii).Ranganadi (unstable) iv). Kopili (9.5.15)

c) AEGCL: 37 out of 55

i).Agia ii).APM(Jogighopa) iii).Panchgram iv). Boko v).Bokajan vi).Bokakhat vii).Behiating viii).B.Chariali ix).Bornagar x).Depota xi).Dhaligaon xii).Dhemaji xiii).Doomdooma xiv).Dullavchera xv).Gauripur xvi).Gohpur xvii).Golaghat viii) Gossaigaon xix).Haflong xx),Jagiroad xxi).Jawahnagar xxi) Kahilipara xxii).North Lakhimpur xxiii).Majuli xxiv). Margherita xv).Mariani xxvi).Nagaon xxvii).Nazira xviii).Pailapool xxix).Rangia xxx).Panchgram old xxxi).Rowta xxxii).Rupai xxxiii).Sibsagarh xxxiv).Sipajhar xxxv). Sonari xxxvi). Silchar xxxvii). Samtezhoh.

d) MePTCL: 11 out of 21

i).Cherapunji ii).EPIP-I iii).EPIP-2 iv).Khliehriat v).Killing/Byrnihat vi).Leshka vii).Lumshnong viii).Nongstoin ix). Nangalbibra x).Umiam xi) Rongkhon

e) TSECL: 19 out of 26

i).Amarpur ii).Badarghat iii). Baramura iv).Belonia v).Bokafa vi).Boxanagar vii).Budhnagar viii).Dhalabil ix).Dharmanagar x).Gamaitila xi).Gokulnagar xii) Gumti xiii).Jirania xiv).Kamalpur xv).Ompi xvi).Rabindranagar xvii).Sabroom xviii).Satchand xix) Udaipur.

f). RTUs status under New SCADA project for AP, Manipur, Mizoram & Nagaland are also not reporting

The non-availability of telemetered data is also on account of Communication bottleneck, single channel reporting, lack of physical/equipment diversity etc also. NERTS [as CTU] may brief the forum the modus operandi to address the issue in an comprehensive manner.

4). Status for the **2nd link** as redundant part for CS RTUs may be apprised:

- 1) 800 KV HVDC_BNC (Only one channel made)
- 2) 400 KV MISA (2 channels made but only 1 available) –
- 3) 400 KV Bongaigaon (Only one channel made)
- 4) 400 KV Silchar (Only channel made)
- 5) 220 KV Dimapur (One channel working)
- 6) 220 KV Salakati (Only one channel made) - (Only one channel made)
- 7) 132 KV Imphal (2 channels made but only 1 available)
- 8) 220 KV MOKOKCHUNG (Only one channel made)
- 9) Ranganadi ISGS (Only one channel made)
- 0)132 KV ITANAGAR (Only one channel made)
- 11) KATHALGURI, ISGS (Both channel channels out)
- 12) PALATANA, ISGS (Only one channel made)
- 13) 132 KV Kumarghat (2 channels made but only 1 available)

- 14) LOKTAK ISGS (2 channels made but only 1 available)
- 15) KHANDONG, ISGS (2 channels made but only 1 available)
- 16) JIRIBAM (2 channels made but only 1 available)
- 17) AIZAWL (2 channels made but only 1 available)
- 18) BADARPUR (2 channels made but only 1 available)
- 19) 220 KV MARIANI (Only one channel made)

NERTS may kindly intimate the current status

A.3 Dedicated Voice Communication:

During 113rd OCC meeting, NERLDC informed that under existing VOIP communication system (executed by ORAGNGE Ltd) NERLDC requested to provide two nos. of voice links in all 132kV station and four no of voice communication channel at important station like BNC HVDC, all 400kV stations such as Bongaigaon, Balipara, Misa, Silchar (currently no voice communication), BYRNIHAR, AZARA, Palatana and all CGS (NTPC-BTPS, Ranga, Kopili, Khandong, Kathalguri, Doyang, RC Nagar) stations.

POWER GRID accepted the proposal and assured to do the same at the earliest.

During 2nd NETeST meeting it was informed that the said work is under process and links provided as per availability. However, further voip links will be provided once new SDH/PDH equipment are installed under expansion node terminal equipment pkg(award by Feb 2016 and implementation by another 18months). All station owners (as covered under Expansion project link nodes) are requested to keep Air conditioning units & Power supply healthy in the room where new SDH/PDH equipment will be supplied/installed as per node locations.

During 3rd NETeST it was proposed that Forum will discuss through study group & as required the overall feasibility & requirement further once all networks (optical & PLCC) from all states and submitted to NERPC. Respective utility may take up for dedicated voice connectivity by them.

Regarding additional cost for bandwidth proposed by POWERGRID, the constituents have expressed reservations and since matter involves financial; members requested to take up the matter in next TCC/NERPC meeting

The Sub-Committee may like to discuss.

A.4 Rates of new CARDS, service support, assurance of lifespan by M/s ALSTOM:

As per the resolution of 20th UCC meeting held at Agartala on 28th August 2014, the forum has requested M/S ALSTOM to keep rates of new Cards justifiable & service support/defect liability period, assurance over life span of newly supplied equipment/quality in India should be at par with international level.

AEGCL would like to have any reference in this regard mentioned above so that we can initiate afresh the procurement process of C264 RTU spare cards as they have quoted a very high price in their previous proposal.

The 21st UCC forum opined that AEGCL may write/take up the matter with highest authority of M/s Alstom with a copy to GM, NERLDC & GM, NERTS.

It was also felt by forum that price justification issue & quality control of services/supply may be faced by other utilities also in future. It was opined that matter may be intimated by this forum to NERPC as the same, indirectly would affect/may delay implementation of diff telemetry regulation & so may affect grid security & proper monitoring.

During 3rd NETeST meeting it was opined that as utilities are facing on different issues with Alstom, same may be communicated through a letter to NERPC specifically (list wise) so that NERPC may write to M/s Alstom on behalf of forum.

As intimated by Alstom over telecom, Alstom requests AEGCL to take up the requirement with the Sales & Tendering team of Alstom.

The forum also requested that NERPC may explore various measures, control measure if possible in regulations in future for utility consumers where different utilities are facing problem related to quality of work, price etc. It was decided that the issue needs detailed deliberation.

AEGCL may kindly intimate the status.

A.5 Status of SDH installation by POWERGRID:

As per deliberation of 21st UCC meeting due to some unavoidable contractual issue/constraints beyond POWERGRID's control, though awarded but implementation has been delayed. Now the matter has been sorted out with M/s KEC, supply has been confirmed for SDH units for ULDC nodes and target completion date is May 2015.

During 3rd NETeST meeting Manager (AM), NERTS informed that SDH units have been delivered, then LOA will be given by 15.07.2016 and Commissioning to be done by 15.10.2016. All ULDC node sites are requested to co-operate (Extension of 48 V from existing substation system etc.) during installation.

NERTS may kindly intimate the status.

A.6 Status of phase –I of URTDSM project:

As per deliberation of 21st UCC meeting survey completed for NER part. FAT call raised by M/s Alstom. It was informed that NER sites are not under 1st phase as planned by CC-POWERGRID. NER utilities/forum requested POWERGRID to expedite the same and works may be completed by March 2015 as & where connectivity available.

During 2nd NETeST meeting DGM (LD&C), CC informed the forum that target date of completion is December, 2016.

During 3rd NETeST meeting Manager (AM), NERTS informed that PMU installation completed in Misa, Work started in Balipara and Silchar. Temporary set up installed at SLDC-Assam, Meghalaya and NERLDC. Soon work will be started in Mariani (AEGCL), Tinsukia (Assam), Agia (Sarusajai). It was deliberated requisite high level of bandwidth connectivity for PMU-PDC & PDC-PDC is not available with existing system equipment.

For connectivity, it is proposed that may hire the requisite bandwidth (on VLAN & or as required PMU—PDC, PDC-PDC, PDC-super PDC) from POWERTEL wherever available. Once in principle approval is achieved, necessary action for connectivity will be taken up.

DGM (LD&C), AEGCL informed the forum that the issue of URTDSM Project was not agreed by constituents and the matter was deliberated in Special TCC of NERPC and hence, the matter should be referred to next TCC/NERPC for further deliberation and approval.

POWERGRID may intimate the status.

A.7 Replacement of Multiplexers:

As per deliberation of 21st UCC meeting POWERGRID informed the forum that ABB has replied for repair of cards. As discussed with AEGCL, MePTCL has been again requested to take up checking of healthiness of FOX515-Mux & then repairing of existing Mux through ABB alike NERTS. Contact details will be provided to MePTCL.

During 3rd NETeST meeting AEGCL intimated that old multiplexers are not OK. However, AEGCL requested that POWERGRID may include all mux of ULDC locations in the PDH Mux procurement process as discussed to be included in NE-FO project. POWERGRID agreed to go ahead in line with request of AEGCL and intimated that LOA for NE FO Expansion has been awarded to M/s Tejas (M/s Valiant-for PDH) & M/s Fibcom (SDH).

MePTCL/POWERGRID may kindly intimate the current status.

A.10 Finalization of Consolidated OPGW Network & Installation Project:

As per GOI direction, MW links are being replaced by OPGW links and as discussed in the last 19th & 20th UCC meetings, the project is to be completed by July 2014. Latest status may be appraised by POWERGRID and also redundant channels for single channel RTUs planned may be appraised.

- a) POWERGRID has already submitted the OPGW network for region like MW vacation, Expansion, ULDC network etc.
- b) It is requested that all constituents may submit the communication plan which have been taken up by them in region.
- c) Further it is requested that min 2 pair of fibers of any communication system laid in region may be left ready for ULDC purpose of State & NERLDC telemetry/metering scheme.

During 1st NETeST meeting POWERGRID already shared the network diagram and all other utilities confirmed to submit the same to NERPC by 15 days.

Regarding Fiber sharing, the Sub-committee decided that out of 24 fibers, 6 FO will be utilized for ULDC Scheme, the remaining FO should be under the custody of the owner. However, additional fibers as required for SCADA/PMU/Expansion scheme are to be provided by the owners in case of any technical exigencies/requirement.

During 3rd NETeST meeting Manager (AM), NERTS informed that as per earlier decisions, it was again requested to all constituent again that all may submit the state-wise total network to NERPC and a meeting through study group & representatives from states may be called for consolidated discussion on channel planning etc.

NERPC, NERLDC, POWERGRID may kindly intimate the status.

D. NEW ITEMS

B.1 On Job Training for SCADA for identified employees of new SLDC:

It is proposed that NERLDC & SLDC-Assam, Tripura, and Meghalaya may facilitate on the job training for to be deployed employees of new SLDCs of Manipur, Mizoram, AP, and Nagaland.

During 3rd NETeST meeting, SE(O), NERPC informed that SLDCs in Manipur and Ar. Pradesh are almost completed, he suggested that on job training for officers from these States should be carried out at the earliest. He enquired from Assam, SLDC if they can extend help in this regard.

AGM, LD&C, Assam informed they are agreed to the proposal and mentioned that atleast five days is required for new SLDC officers to make them familiarized with the system. He suggested that these States can nominate their officers before the next OCC/PCC/NETeST meetings so that they can attend both the training and meeting.

After discussion, the Sub-Committee requested Ar. Pradesh, Manipur, Mizoram & Nagaland to start sending their officers in batches so that on job training can be carried at the earliest either at SLDC, Assam/ Meghalaya/Tripura.

AEGCL/NERLDC may kindly intimate current status.

B.2 Strengthening of PLCC System by NER States:

PLCC system works as a back-up path for telemetry of RTUs. It is proposed that each constituent may kindly revive/ install PLCC as per relevant norms for 132Kv & above T/Ls for data path connecting to respective SLDC.

Each state may discuss about their present status of connectivity & future plan PLCC connectivity.

During 1st NETeST meeting, SE(O), NERPC informed that only Meghalaya has submitted the present PLCC network and requested Assam to send the same at the earliest.

After detailed deliberation, the Sub-Committee recommended that whenever OPGW is not available, PLCC should be made available compulsorily.

NERPC may kindly intimate the status.

B.3 New SCADA – Upgradation Project/PMU Related Issues:

Point-1: In order to have a complete SCADA network & to complete the Installation, a minimum of 02 (Two) communication links from each SLDC to NERLDC is required as also noted in Item 1-A (vii). As of date, only 01 link each to Assam & Tripura has been provided & it is understood that there is some last minute hurdle in terminating the NEHU link. POWERGRID may provide 02 (Two) links each from existing SLDC to RLDC. The links to new SLDCs (Mizoram, Manipur, Nagaland and Arunachal) are to be provided subsequently. This is apart from the dedicated VC network.

Point- 2: As RLDC & SLDC are dependent on each other for SCADA Data, delay in execution one affects the other. POWERGRID may update the current status of Assam, Meghalaya & Tripura portion of the project & also provide the schedule of completion. Unless SLDC systems are integrated with NERLDC, the Parallel Operation (90 days) & System Availability Test (SAVT) cannot be initiated.

Point- 3: As envisaged, the Backup RLDC should receive data even in case of complete failure of Main RLDC & hence suitable splitting to be used for redundancy & the location of splitters to be decided during detailed engineering. As regards the location of Terminal Servers, ideally they should be placed at strategic locations other than Main RLDC/ Backup RLDC so that data is not interrupted at Backup Control Centre in case of total outage of Main Control Centre & vice versa. POWERGRID may provide the detail plan for implementation of the scheme.

Point-4: PMUs of Bongaigaon, Badarpur & MISA are connected to the CVTs of Lines. Any shut-down of the lines to which the PMUs are connected leads to non availability of data from that PMU. Specially the Bongaigaon PMU is a very critical as there are inter-regional links from Bongaigaon and any shutdown of the Bongaigaon - Balipara II leads to outage of data from Bongaigaon PMU which is a major hurdle to system analysis. POWERGRID is requested to arrange to connect the Bongaigaon PMU to the bus PT very urgently and shift MISA and Badarpur PMU to Bust PT from CVT subsequently.

As per deliberation of 1st NETeST meeting,

Point 1: Target date of providing 2nd link for SCADA/ EMS up-grade project: ***February, 2016.***

Point 2: By ***February, 2016.***

Point 3: Detailed Plan to be provided by POWERGRID at the earliest:

Members requested NERTS to arrange the workshop on WAMS & comprising of NER constituents, NERPC, NERLDC & NLDC.

Agenda for 4th NETeST Meeting to be held on 9th August, 2016

Manager (AM), NERTS & DGM,LD&C-CC, POWERGRID informed that the above workshop on request of form is likely to be arranged in February/March, 2016 and the training modules will be sent to constituents to give their comments on the topic.

Point 4: Already completed.

DGM(LD&C), AEGCL mentioned that Rs. 1.73 Cr (approx.) has already been paid by them to POWERGRID for MW evacuation but they have not completed the project till date and this has been viewed seriously by the Management. He requested POWERGRID to look into the matter and intimate the status at the earliest

NERTS, POWERGRID may kindly intimate the status.

B.4 Status of VOIP Exchange Project Status & Implementation:

As per deliberation of 21st UCC meeting POWERGRID informed the forum that materials of NERLDC has already under transit and will be delivered by a week's time For SLDCs, FAT completed and party has asked for road permit.

All SLDCs/Communication division representatives are requested by NERTS to process for road permit once request received by the party so as to expedite the supply. Target Completion date is May 2015.

During 2nd NETeST meeting, Manager (AM), NERTS informed that as committed by the above firms, the works will be completed by 31.03.2016 (for established SLDCs/NERLDCs). Demo of VOIP phone has been given by M/s Orange representative in AEGCL substation. Additional switches have been provided to SLDC Kahilipara under project to AEGCL for incorporating their request for Ethernet link establishment. VOIP exchange project for Mizoram, Nagaland, AP are delayed beyond March 2016 in respective location as space/building room could not be handed over in time. There have been some reports of theft from SLDC Manipur location also for which work delayed. It is requested to Manipur representatives to take up the matter with higher authority to prevent such issues.

Karbi (Langpi) Hydel station is located at remote site, where mobile connectivity is very poor. Absence of voice communication link between Sarusajai & Karbi-Langpi is hampering the system operation. AEGCL request PGCIL to commission the RSU unit under VOIP project at Langpi & Sarusajai at the earliest. AEGCL will extend all possible help required.

During 3rd NETeST meeting Manager (AM), NERTS informed that VOIP exchange project is mostly completed where SLDCs are in place i.e. mainly exchange installation at SLDCs and NERLDCs which has been completed except Nagaland, Mizoram, AP due to constraints by state(Space, power supply –AP, Mizoram, Nagaland). Further from SLDC to Substation connectivity to be provided by respective state utility if the link is non-CTU jurisdiction. Integration (demo only by the party) of RSU (4w to 2 w converters) has been the only left over issue which will be completed by June'2016. Once same is demonstrated by Orange, respective state utility representative should take care of connecting analog phone over RSU & PLCC wherever PLCC network is available.

NERTS, POWERGRID may kindly intimate the current status.

B.5 State Estimator/RTCA Operation:

RTCA and SE in NER is not giving graceful solution due to poor availability of analog/digital data and non-reporting of so many RTUs mainly of NEEPCO/ POWERGRID/ AEGCL/ Meghalaya/ Tripura. RTCA is not converging for on-line study of real time power system. Constituents are requested to restore the system RTUs on top priorities.

SLDCs, POWERGRID and ISGS may kindly intimate the status.

B.6 Data of SM Nagar end (against SM Nagar to Comilla (B'Desh) D/C T/L):

During 2nd NETeST meeting, Manager (AM), NERTS informed that:

- a) Data of S.M.Nagar has been made available to SLDC & NERLDC along with speech (to SM Nagar) has been made available up to SLDC, NERLDC & NLDC.
- b) The 132kV D/C S. M. Nagar to Comilla has been kept charged up to Indian border.
- c) PGCB, Bangladesh is yet to configure at their end for exchange to exchange connectivity for 4W E&M(SLDC Tripura end already connected).

Forum requested NLDC NERLDC integration to be taken up by NERLDC through Alstom (as data already available at NERLDC) and requested NERTS,LD&C to help in this regard so that M/s Alstom sort out the issue at the earliest.

During the 3rd NETeST meeting Tripura Representatives were absent, so the status could not be updated.

TSECL, POWERGRID may kindly intimate current status.

B.7 MW Vacation Project:

During 1st NETeST meeting, AEGCL raised the issue for early completion of left over works. NERTS stated that Terminal equipment teams will be deployed by two weeks and left of SDH/PDH work would be completed by 2months where already fiber & panel installed. Further there are some re-works involved (like 24F approach cable in place where already 12 F cable laid) and the same will be completed after March16.

Further additional works or re-work (like shifting to new PLCC room/Telecom room in a FO node station where already once equipment installed as per originally surveyed location) would be taken up on payment basis through KEC. However other works of original scope LOA awarded to KEC will be March 2016. All SDH & PDH equipment which has been installed (with DC supply taken from station) will be re-installed with new DCPS.

During 3rd NETeST meeting, it was intimated by POWERGRID & AEGCL that links as mentioned have been provided i.e. E1s Tinsukia- Samaguri (jointly verified with AEGCL).

It was requested that one number fiber may be immediately be provided for connecting Sarusajai-Kahilipara to which AEGCL agreed in principle.

Further 3nos. E1s on Ethernet from Samaguri-Kahilipra through AEGCL optical link to be provided for interfacing with MW vacation nodes to Kahilipara . The technical requirement has been agreed upon in principle. However, AEGCL intimated that they would confirm soon to POWERGRID.

Data reporting on IEC 60870-5-104 from Sisugram to Kahilipara have already been started. Once link is provided by AEGCL, Alstom would complete the job by June, 2016.

Regarding the MW vacation project, after deliberation discussion, it was emphasized that POWERGRID would take up the matter with M/s KEC for completion of left over works of terminal Equipment and channel connectivity as & where OPGW already installed by Sept2016. If required the same to be strictly taken up with the highest authority of M/s KEC India through NERPC, CEA for multiple gang mobilization in both OPGW & Terminal equipment sector works for the jobs undertaken. POWERGRID confirmed that they will take up the issue immediately.

The Forum also decided that M/s KEC may be communicated to attend in next NETeST meeting to assure full-fledged completion of assigned job. POWERGRID confirmed accordingly.

Tejas equipment (used for PMU-pilot project/SEL linking at Sarusajai & Kahilipara) are not under ownership of ULDC dept of NERTS, POWERGRID. However, ULDC dept. would take up the matter with POWERTEL on request basis.

AEGCL, POWERGRID may kindly intimate the status.

B.8 Data Concentrator RTU for MePTCL:

During 1st NETeST meeting, MePTCL informed further data concentrator configuration issue will be addressed by Alstom directly with MePTCL once scope of original Alstom-SLDC project is over(after SAT on AMC).

During 2nd NETeST meeting, Manager (AM), NERTS informed that for old RTUs, MePTCL has to carry out the job on cost basis but for new RTUs supplied under SLDC project, the matter would be done under AMC through Alstom. The work will be completed by 31.03.2016.

During 3rd NETeST meeting; Manager (AM), NERTS informed that Alstom has already confirmed to do the same in direct coordination with MEPTCL.

MePTCL, NERTS may kindly intimate the status.

B.9 SCADA problem at Tripura SLDC:

SCADA is not function properly. Due to unreliable system, TSECL is unable to see drawal, injection, central sector generation as well as state generation, overdrawal/underdrawal etc for which day to day activities of SLDC is hampering. During 2nd NETeST meeting, Manager (AM), NERTS informed there were some issues of ICCP which has been attended from time to time. The work will be completed by 31.03.2016.

During the 3rd NETeST meeting Tripura Representative were absent, so the status could not be updated.

TSECL may please deliberate.

B.10 CERC telemetry order dated 29.01.2016:

1. Persistent non-availability of data from the generating stations/sub-stations is to be taken up in RPC meetings for appropriate direction and action.
2. NLDC is directed to submit user- wise latest status of telemetry, by 31.8.2016
3. POWERGRID to undertake effective monitoring of telemeter data and to minimize the intermittency in telemetry in all regions within six months from the issue of the order. NLDC is directed to submit status of PGCIL's telemetry within one month thereafter.
4. All the utilities/generating companies which have to still establish telemeter power system parameters as per details given in para11 of the Order to provide data to RLDCs/SLDCs as per the provisions of the Grid Code and CEA Grid Standards Regulations by 31.7.2016.

During the 3rd NETeST meeting Tripura Representative was absent, so the status could not be updated.

Tripura may kindly intimate the current status

B.11 PMU placement in NER under URTDSM scheme:

NERTS, POWERGRID has given details of PMU placement in NER under URTDSM in Phase-1 and Phase-2 to NERLDC.

From the proposed schemes, the following were observed:

- 1) At some locations, PMUs are already available under Pilot Project taken up by POSOCO. Hence, PMU placement under URTDSM would result in duplicate.
- 2) Commissioning of some of identified lines is delayed.
- 3) At some locations, the feeders originally proposed are not of critical importance in respect of NER Grid operation.

Considering above, it is proposed to change the PMU locations in Phase-1 of URTSDM project in NER to cover the maximum no. of critical feeders & substations.

The existing PMU locations and proposed changes are given in detail in **Annexure – B.11.**

During the 3rd NETest meeting NERLDC had communicated a list of additional PMU requirements (11 PMUs at 6 locations) to NERTS, POWERGRID, in order to cover the important nodes and lines of NER grid under URTDSM phase-1.

POWERGRID intimated that quantity & locations have been earlier discussed with concerned utility/authority & NLDC as well. Further, that additional quantity (for 132KV, 220kv stations beyond original approval of 400Kv stations only, are required keeping in view NER specific power system scenario) as proposed by NERLDC. It may be agreed upon and cost to be borne proportionately as per original FR/DPR.

Members opined that for additional PMU/locations, it may be covered under existing URTDSM project.

NERLDC may please deliberate.

B.12 Alternate Telemetry Channel for OTPC Platana Plant:

At present, there is one communication channel via PLCC from Platana to Silchar. To have reliable telemetry channel another telemetry channel may be incorporated so that data communication is via two channels.

NERLDC is of the view that the crucial importance of Platana plant in NER Grid operation it is requested to take up suitable action so that data communication with PALATANA plant and NERLDC is via two channels. Take up suitable action with POWERGRID.

During the 3rd NETeST meeting the forum requested OTPC to do the needful as per IEGC guidelines. It was informed that nearest wideband location is 79Tilla/SLDC. OTPC may take up the same for connecting up to 79 Tilla-SLDC (via SM Nagar) in consultation with TSECL.

OTPC, TSECL may please deliberate.

B.13 Absence of battery backup at Meghalaya SLDC:

In the event of grid disturbances the current UPS system at NEHU cannot provide backup to the system due to lower capacity of battery banks. It was understood that replacement was not possible due to administrative issues of vendor. So it is requested that replacement may be considered under current Upgradation project.

During the 3rd NETeST meeting Manager (AM), NERTS informed that the battery backup problem is with existing system. New backup system in up-gradation project will not have such problem.

MePTCL may please deliberate.

B.14 Shifting of the Old SCADA system, to New SCADA System:

Due to frequent breakdown and non-availability of spares the old SCADA system will be decommissioned soon. In this connection a letter has already been issued to the concerned parties, viz, Assam, Meghalaya and Tripura vide NERLDC/SCADA-UPGRADE (Post Award Vol-i)/4523-29 dated 2nd August16.

For information of Members.

B.15 Inclusion of any new project in the Telemetry/ SCADA Database:

Any Projects (Generation/ Substation/ Lines) of Constituents under construction, likely to be commissioned within six(6) months need to be intimated to NERLDC in advance along with details parameters/SLDs etc for records & inclusion in the Telemetry/SCADA database.

For kind information and necessary action of members.

B.16 OUTSTANDING AGAINST AMC of SCADA/EMS under ULDC-Scheme-I.:

	AEGCL	MePTCL	TSECL
A. Main SCADA AMC	NIL	NIL	Rs.1247/-
B. Overhead Charges	Rs.1309886/-	NIL	NIL
C. FERV	Rs.117007/-	Rs.91783/-	Rs 106926/-
Total	Rs.1426893/-	Rs.91783/-	Rs.108173/-

As discussed in the 3rd NETeST minutes, Constituents above constituents are requested to pay the outstanding dues at the earliest.

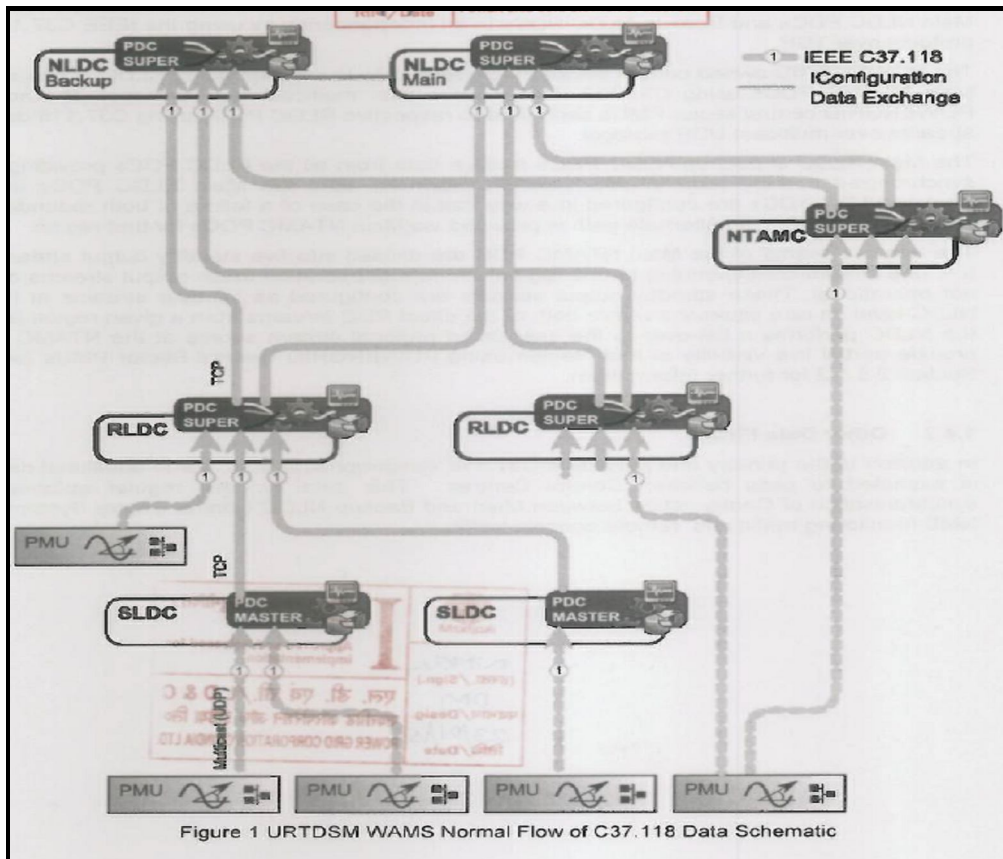
AEGCL/MePTCL/TSECL may please deliberate.

B.17. Agenda Items for 4th NETeST Meeting from POWERGRID:

1. **New VOIP Exchange for Backup NERLDC/Guwahati.** Requisition received from NERLDC. The same is proposed to be procured under quantity variation of ongoing VOIP exchange (M/s Orange) project. Forum may agree.
2. **Approval of SDH-STM 16 & STM-4 ring formation.** Equipment Level protection at critical nodes/ links are also proposed as detailed in NER-FO diagram as attached. Requirement of requisite fiber for STM-16 equipment/ring and fiber for ULDC purpose as & where applicable may kindly be approved by Forum. Network is proposed keeping in view data congestion & redundancy considering PMU, SCADA, VOICE network/projects.
3. **Additional PMUs/132Kv under URTDSM:** Under URTDSM project, some additional PMUs are to be connected at 132Kv/400kV Level as per 3rd NETeST MOM – As already consented in last NETeST , it is now requested that NERPC may kindly take up with CEA for inclusion of 132kV Stations under PSDF . Further the schedule completion time/period is proposed to be extended and revised for the new stations (late addition) as proposed by NERLDC.
4. **For SLDC-NERLDC communication network,** VLAN was approved vide 3rd NETeST for all SLDCs-NERLDC except Manipur. **Inclusion of Manipur SLDC** at same terms & condition is proposed to be included.

5. Regarding Connectivity PLAN for URTDSM project:

VLAN or Point to Multipoint telecommunication set up required for connectivity of URTDSM project. The technical concurrence has already been consented in 3rd NETeST. In line with discussion during 3rd NETeST meeting, cost for PMU-PDC (Site to SLDC/NERLDC--2MB); PDC (SLDC)-Sup PDC(SLDC/NERLDC), Super PDC-Super PDC(NERLDC—NLDC Main & B/u) --- (10MB ring/ proposed on lower side) is apx. Rs.1.5 cr year initially for 2-3years till new SDH are installed in NER (in required locations under NER FO expansion). The same will be put up in RPC also.



Without connectivity, project getting delayed and hence Go Ahead is requested through Forum.

6. Proposal for Connectivity over OPGW to Back up NERLDC. AEGCL may kindly identify a dedicated where OPGW/ADSS will be laid and minimum 12 fibers will be used only for SCADA-Telemetry purpose.

7. Approval of laying OPGW under NER FO Expansion:

1.0 Following OPGW link is required for optical ring completion in NER as per attached FO network

a) **400kV Silchar-Bongaigaon D/C and 400kV Byrnihat-Silchar D/C** under Central Sector---**417km (=200km+217km).**

2.0 Further it is also proposed that for Strengthening of ULDC FO grid, OPGW may be laid over the following T/L in any **ensuing project.**

Agenda for 4th NETeST Meeting to be held on 9th August, 2016
Technical clearance by forum is requested, same will be put up in RPC once project is finalized

a) 400kv Quad Balipara-Bongaigaon D/C T/L.

- 8. Nominations of Coordinators/NE FO expansion project:** Nomination is requested from all states for OPGW installation & installation of terminal equipment- NER FO Expansion project. Details of project along with list of link and equipment already communicated to all state utility for needful.

Note:

Further Revised List of links and sector/owner in line with 14/15th NERPC approval is attached again. Regarding equipment

- 1) PDH multiplexers -additional 4nos. are also considered from AEGCL.
- 2) PDH mux considered for new SLDC locations, Old ULDC nodes-CS part & Kahilipara SLDC.
- 3) SDH-STM 16 considered for ring formation & SLDCs as per diagram. STM-4 considered for branches of FO network which are not required in loop.

Network is proposed keeping in view data congestion & redundancy considering PMU, SCADA, VOICE network/projects. List is attached

- 9. SDH equipment for ULDC CS nodes procured & installed under MW vacation:**

Regarding additional nodes/SDH or Optical Links as taken up/being installed (added from time to time vide UCC/NETeST forum) under MW Vacation project which were not originally in scope, it is proposed that time period of completion for items which were added late may be considered revised /extended proportionate/pro-rata wrt original time frame.

- 10. Maintenances of Equipment installed at State SLDCs(except Assam SLDC)-** Forum may discuss future plan and ownership & maintenance philosophy for new SLDCs.

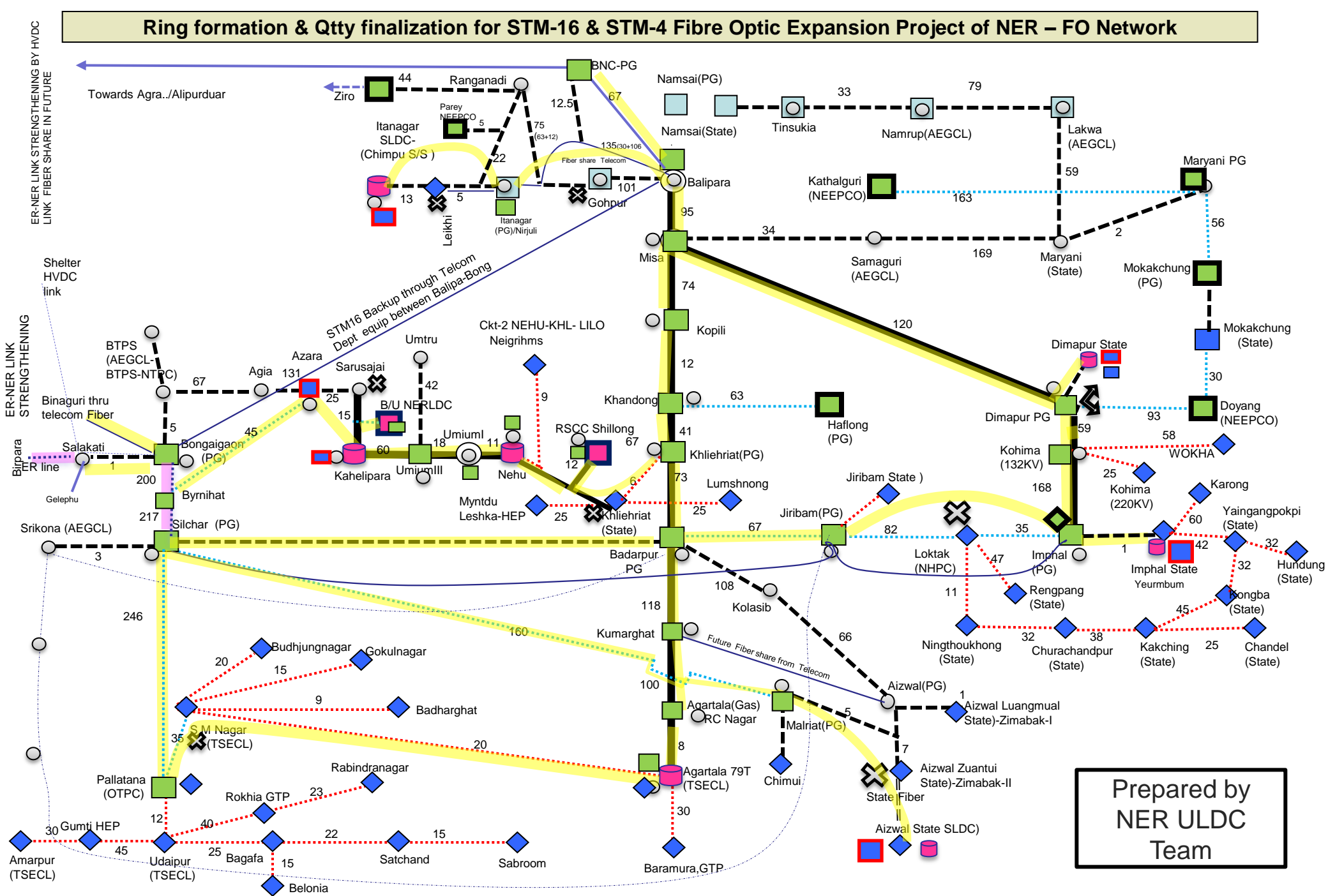
PGCIL may please deliberate.

Any other item:



















Date and Venue of next NETeST

It is proposed to hold the 5th NETeST meeting of NERPC on second week of October, 2016. The date & exact venue will be intimated in due course.

Ring formation & Qty finalization for STM-16 & STM-4 Fibre Optic Expansion Project of NER – FO Network



LEGEND

-  NER MW replacement FO
-  Proposed FO links under NER Expansion CS Lines/State Lines
-  Existing ULDC FO
-  Telecom Fiber
-  Fiber in NEA-W/ Other project
-  State owned Fiber
-  NERLDC
-  SLDCs
-   Microwave Replacement Nodes under Expansion / STM-4-ECI
-  CS Nodes under Expansion-STM-4
-  CS Nodes under Expansion STM-16
-  State Nodes under Expansion stm4
-  State Nodes under Expansion STM-16
-  Back to back fiber patch for STM 16 ring continuation wrt nodes of both ends
-  Back to back fiber patch for STM 4 ring continuation wrt nodes of both ends
-  • Yellow Highlighted links are STM-16 under NER Expansion
-  •Pink links are required for STM16 ring (to be proposed additionally under NER FO Expansion)

Revised Qty of SDH & PDH for NER

SI No	Node Name	Qty-set Location			Remarks
		SDH-(directions to be confirmed wrt survey)		PDH	
		STM-4	STM-16		
1	Badarpur(PG)		1	1	Priority
2	Jiribam(PG)		1	1	Priority
3	Byrnihat		1	1	
4	Mirza (Azara)		1	1	
5	Silchar (PG)		1	1	Priority
6	Pallatana (OTPC)	1	1	1	Priority
7	Khliehriat(PG)		1	1	Priority
8	Aizwal(PG)			1	Priority
9	Malriat (PG)		1	1	Priority
10	Imphal (PG)	1	1	1	Priority
11	Haflong (PG)	1		1	Priority
12	Mokochung (PG)	1		1	Priority
13	Mariani (PG)	1		1	Priority
14	Kathalguri	1		1	Priority
15	Dimapur (PG)	1	1	1	Priority
16	Doyang	1		1	Priority
17	Khandong		1	1	Priority
18	Loktak (NHPC)	1		1	Priority
19	RC Nagar (NEEPCO)		1	1	
20	NERLDC		1	3	Priority
21	Back Up NERLDC	1	1	1	Priority
22	Balpara		1	1	Priority
23	Bongalpaon		1	1	Priority
24	Satakati		1	1	Priority
25	Kopili		1	1	Priority
26	Rumanghat		1	1	Priority
27	Silpa		1	1	Priority
28	Umiam-III		1	1	Priority
29	Umiam-I		1	1	Priority
30	Nirubi (Tanagar-PG)		1	1	Priority
31	Ziro	1		1	Priority
32	Ranganadi			1	Priority
33	Biswanath (Charali S/S)		1	1	Priority
34	Parey (NEEPCO)	1			
Sub-Total Central Sector		12	24	35	
	Khliehriat(State)	1		1	
1	Myntdu Leshka-HEP			1	
2	Lumshnong (S/C)	1		1	
3	Nehu/SLDC	0	1	1	
4	Neigrhms	1		1	
Sub-Total Meghalaya		4	1	5	
1	Agartala (TSECL/SLDC at 79Tilla S/S)	0	1	1	
2	Baramura (GTP)	1	0	1	
3	Surjamaninagar (TSECL)		0	1	
4	Badharghat	1	0	1	
5	Budhiungnagar	1	0	1	
6	Udaipur(TSECL)	1	0	1	
7	Rokhia GTP	1	0	1	
8	Rabindranagar	1	0	1	
9	Gumti HEP	1	0	1	
10	Amarpur (TSECL)	1	0	1	
11	Bagafa (TSECL)	1	0	1	
12	Belonia (TSECL)	1	0	1	
13	Satchand (TSECL)	1	0	1	
14	Sabroom (TSECL)	1	0	1	
15	Gokulnagar	1	0	1	
Sub-Total Tripura		14	1	15	
1	Imphal(State)/Yurembam S/S & SLDC	1	1	1	Priority
3	Karong	1		1	
4	Yaingangpokpi	1		1	
5	Kongba	1		1	
6	Kakching	1		1	
7	Churachandpur	1		1	
8	Hundung	1		1	
9	Chandel	1		1	
10	Rengpang	1		1	
11	Jiribam (State)	1		1	
12	Ningthoukhong (State)	1		1	
Sub-Total Manipur		11	1	11	

At Imphal ECI equipment, direction towards Loktak & Imphal State not available

As one direction is missing in ECI equipment at PG-Dimapaur so STM-14 at Doyang will have direct drop at STM4 of SLDC Dimapur and then rerouted back to Dimapur-PG. with one pair back to back connected at Dimapur PG . Otherwise one no. STM-4 at Dimapur PG

1	Kohima (220KV)	1	1	1	
2	Kohima (132KV)	1	1	1	
3	Wokha	1		1	
4	SLDC-Nagaland	1	1	1	Priority
Sub-Total Nagaland		4	3	4	
1	Zimabawk-II (Zuangtui)	1		1	Priority
2	Zimabawk-I (Luangmual)	1		1	Priority
3	SLDC-Mizoram (Aizawl/ Power House Complex)	1	1	1	Priority
4	Shimmui	1		1	
Sub-Total Mizoram		4	1	4	
1	SLDC-Assam		1	1	
2	Mariani (AEGCL)	0	0	1	Priority
3	Sarusajai	0	0	1	Priority
4	Lakwa	0	0	1	Priority
5	Namrup	0	0	1	Priority
Sub-Total Assam		0	1	5	
1	SLDC-Itanagar/ Chimpu SS	0	1	1	
2	Lekhi	1			
Sub-Total Arunachal Pradesh		1	1	1	
Sub Total State Sector		38	9	45	
Grand Total Centra+State Sector		50	33	80	

(Repeater at Kohima is required for STM16 transmission, however if loger span card covers whole distance , then same may not be requited

Revised Qty of SDH & PDH for NER

Package- 4A & 4C

Sl No.	From		To		Address	VOLTAGE	Owner of	Old	T/L	Old Length	Line	Stringing	Remarks	PGCIL Site Incharge (Where State or		
	Node Name	Qty SDH	Qty PDH	Node Name											Qty SDH	Qty PDH
1	Badarpur(PG) (Assam)	1	1	Jiribam(PG) (Manipur)	1	1	Power Grid Corporation of India Ltd 132kV Jiribam S/S, Kadamtala, Jiribam, Imphal West, Manipur-795116	132	CS	67	Plain	80	67	Live Line	Revised in 15th RPC	
2	Bongsaigon (PG)	1	1	Salakati	1	1	Power Grid Corporation of India Ltd 220kV Salakati S/S, Village-Fukagon, PO-Salakati, District-Kokrajhar(BTAD), Assam-783369	220	CS		Hilly+Plain	1	1	Live Line	No Change	I/c 400kV Bongsaigon S/S, Village-Fukagon, PO-Salakati, District-Kokrajhar(BTAD), Assam-783369
3	Mirza (Azara)	1	1	Bymihat	1	1	Bymihat S/S, Village Bara Killing, PO Killing Centre-793101, Meghalaya	400	CS		Hilly+Plain	0	45	Live Line	Revised in 15th RPC	POWERGRID, I/c Mirza T/L Office,
4	Silchar	1	1	Pallatana	1	1	OTPC,Pallatana Dudhpushkarini, Tripura 799105	400	CS		Hilly+Plain	0	248	Live Line	Revised in 15th RPC	POWERGRID, I/c Srikona S/S, TV Tower Road Village-Lalmati, PO-Srikona, Distt-Cachar, Assam-788026
5	Nehu	1	1	Neigrhms	1	1	MePTCL, 132kV NEIGRHM S/S, Mawdangdiang Shillong-793018 Meghalaya	132	Meghalaya		Hilly	9	9	Live Line	No Change	I/c Shillong T/L Office, POWERGRID, Donglieh, Lower Nongrah, Lapalang, Shillong -793006
6	Khliehriat(State)			Khliehriat(PG)	1	1	MePTCL, Khliehriat S/S Laldymbai, Distt-Jantia Hills, Meghalaya- 793160	132	Meghalaya	6	Hilly	6	6	Live Line	No Change	
7	Khliehriat(State)	1	1	Myntdu Leshka-HEP	1	1	MePTCL, O/o Electrical Subdivision-II, MLHEP, Power House Suchen, PO- Anlanem, Dist: West Jantia Hills, Meghalaya-793150	132	Meghalaya	25	Hilly	25	25	Live Line	No Change	I/c Khliehriat S/S POWERGRID, Dienchyngrum, Distt-Jantia Hills, Meghalaya
8	Khliehriat(State)			Lumshong (S/C)	1	1	Star Cement, Lumshong, P.O. Khaiehriat, Distt. Jantia Hills, Meghalaya	132	Meghalaya	25	Hilly	25	25	Live Line	No Change	
9	Baramura (GTP)			Agartala (TSECL)			Office of the Sr. Manager (TSECL), Gas Thermal Electrical Sub Division, Baramura, Khowai District,PO Hawaii Bari, Pin-799205, Tripura	132	TSECL		Plain	30	30	Live Line	No Change	
10	Surjamaninagar (TSECL)			Agartala (TSECL)			Office of the Sr. Manager (TSECL), 400/132kV Surjamaninagar Grid S/S, West District Tripura, PO Ranikhanar, Pin-799003	132	TSECL		Plain	20	20	Live Line	No Change	
11	Surjamaninagar (TSECL)	1	1	Badarghat			Office of the Sr. Manager (TSECL), 132kV Badarghat S/S, West District of Tripura, PO-Badarghat, Pin-799003	132(future)(66kV available bad-ag)	TSECL	9	Plain	9	9	Off Line/Shut Down	No Change	
12	Surjamaninagar (TSECL)			Gokulnagar			O/o Sr. Manager (TSECL),66kV Gokulnagar S/S, GokulNagar west Tripura, PO- East Gokulnagar, Tripura-799102	132(future)	TSECL	15	Plain	15	15	Off Line/Shut Down	No Change	
13	Surjamaninagar (TSECL)			Budhiungnagar			Office of the Sr. Manager (TSECL), 132kV Budhiungnagar S/S, Distt-West Tripura, PO- Baniya Chowman, Kash Naagan, Pin-799008, Tripura	132	TSECL	20	Plain	20	20	Live Line	No Change	
14	Udaipur(TSECL)			Pallatana (OTPC)	0	0	O/o Sr. Manager (TSECL), 132/66kV Bandur S/S, Udaipur, District-Gumati, PO- Phulkumar-II, Tripura-799116	132	TSECL	12	Plain	12	12	Live Line	No Change	
15	Udaipur (TSECL)			Rokhia GTP	1	1	O/o Sr. Manager (TSECL), Rokhia GTP, Maniyya Nagar, PO-Rokhia, District- Sipahajata, Pin-799102, Tripura	132 S/C---**SM Ngr/monarcho k	TSECL	40	Plain	40	40	Live Line	No Change	
16	Rokhia GTP	0	0	Rabindranagar	1	1	Office of the Sr. Manager (TSECL), 132kV Rabindranagar S/S, Rabindranagar, Sipahajata, PO-Sonamura, Pin-799131, Tripura	66(future 132)	TSECL	23	Plain	23	23	Off Line/Shut Down	No Change	DGM I/c 132 KV Kumarghat S/s, Ratisbari, Kumarghat, District-Unakoti, Tripura-799264. Some materials may be initially despatched to locations as declared by DGM-Kumarghat -For South Tripura-destination -SM Ngr, TSECL substation & For north Tripura-Kumarghat Substation(Materials may be first despatched to POWERGRID station and then be taken to respective site within a same state))
17	Udaipur(TSECL)	0	0	Gumti HEP	1	1	Office of the Sr. Manager (TSECL), gumti Hydel Power Project, Trihamukh, Gomati District,PO-Trihamukh, Pin-799102	66	TSECL	45	Plain+hill	45	45	Live Line	No Change	
18	Gumti HEP	0	0	Amarpur (TSECL)	1	1	Office of the Sr. Manager (TSECL), 66kV Amarpur, Distt-Gumati, PO-Amarpur, Pin-799101, Tripura	66	TSECL	30	Plain+hill	30	30	Live Line	No Change	
19	Udaipur(TSECL)	0	0	Bagafa (TSECL)	1	1	Office of the Sr. Manager (TSECL), 66kV Bagafa S/S, South district of Tripura, PO- Shanir Bazar, Pin-799144	66(future 132)	TSECL	25	Plain	25	25	Off Line/Shut Down	No Change	
20	Bagafa (TSECL)			Belonia (TSECL)	1	1	Office of the Sr. Manager (TSECL), 66kV Belonia S/S South district of Tripura, PO-Sarasima, Pin-799155	66(future 132)	TSECL	15	Plain	15	15	Off Line/Shut Down	No Change	
21	Bagafa (TSECL)			Satchand (TSECL)	1	1	Office of the Sr. Manager (TSECL), 66kV Satchand S/S, South district of Tripura, PO-Satchand, Pin-799143	66(future 132)	TSECL	22	Plain	22	22	Off Line/Shut Down	No Change	
22	Satchand (TSECL)	0	0	Sabroom (TSECL)	1	1	Office of the Sr. Manager (TSECL), 66kV Sabroom S/S, South district of Tripura, PO-Sabroom, Pin-799145	66	TSECL	15	Plain	15	15	Live Line	No Change	
23	Surjamaninagar (TSECL)	0	0	Pallatana (OTPC)	0	0	OTPC,Pallatana Dudhpushkarini, Tripura 799105	400kV Line charged at 132kV	OTPC		Plain	35	35	Live Line	No Change	
24	Agartala (PG)	0	0	RC Nagar (NEEPCO)	1	1	Agartala Gas Turbine Power Plant, RC Nagar, Agartala, Tripura-799008	132	CS		Plain	8	8	Live Line	No Change	
25	Jiribam (PG) (Manipur)	0	0	Loktak (NHPC) (Nagaland)	1	1		132	CS		Hilly	82	82	Live Line	No Change	
26	Loktak (NHPC) (Nagaland)	0	0	Imphal (Manipur)	1	1	132kV Imphal S/S, P.O.- Langing Achouba, Distc-Imphal West, Manipur-795113	132	CS		Hilly	35	35	Live Line	No Change	

Sl	From		To		VOLTAGE	Owner of	Old	T/L	Old Length	Line	Stringing	Remarks	PGCIL Site Incharge(Where State or				
27	Imphal(State)	1	1	Karong	1	1	132/33KV Karong S/S, PO-Karong, District-Senapati, Pin-795007, Manipur	132	Manipur	60	Hilly	60	60	Live Line	No Change	I/c 132KV Imphal S/s, P.O.-Langing Aohuba, Distic- Imphal West, Manipur-795113-(Materials may be first depatched top POWERGRID station and then be taken to respective site within a same state)	
28	Yurembam	1	1	Yaingangpokpi	1	1	132KV Yaingangpokpi S/S, PO-Yaingangpokpi, District-West Imphal, Pin-795010, Manipur	132	Manipur	0	Hilly	0	42	Live Line	Revised in 15th RPC		
29	Yaingangpokpi	0	0	Kongba	1	1	132/33KV Kongba S/S, PO-Kongba, Imphal East District, Pin 795008, Manipur	132	Manipur	0	Mostly plain	0	32	Live Line	Revised in 15th RPC		
30	Kongba	0	0	Kakching	1	1	132KV Kakching S/S, PO-Kakching, District-Thoubal, Pin-795103, Manipur	132	Manipur	0	Mostly plain	0	45	Live Line	Revised in 15th RPC		
31	Kakching	0	0	Churachandpur	1	1	132/33KV Churachandpur S/S, District- Churachandpur, PO-Churachandpur,Pin-795128, Manipur	132	Manipur	0	Hilly	0	38	Live Line	Revised in 15th RPC		
32	Yaingangpokpi	0	0	Hundung	1	1	132/33KV Hundung S/S, PO-Hundung, Ukhrul District, Pin-795142, Manipur	132	Manipur	0	Hilly	0	32	Live Line	Revised in 15th RPC		
33	Kakching	0	0	Chandel	1	1	132/33KV Chandel S/S, PO-Chandel, District-Chandel, Pin-795102, Manipur	132	Manipur	0	Hilly	0	25	Live Line	Revised in 15th RPC		
34	Loktak(NHPC)	1	1	Rengang	1	1	132/33KV Regang S/S, PO-Rengang, Tamenglong District, Pin-795147, Manipur	132	Manipur	0	Hilly	0	47	Live Line	Revised in 15th RPC		
35	Jiribam (PG)	0	0	Jiribam (State)	1	1	Power Grid Corporation of India Ltd 132KV Jiribam S/S, Kadamtala, Jiribam, Imphal West, Manipur-795116	132	Manipur	0	Plain	0	1	Live Line	Revised in 15th RPC		IC POWERGRID , Jiribam
36	Loktak(NHPC)	0	0	Ningthoukhong (State)	1	1	132/33KV Ningthoukhong S/S, PO-Ningthoukhong, District- Bisenpur, Pin-795126, Manipur	132	Manipur	11	Hilly	11	11				I/c 132KV Imphal S/s, P.O.-Langing Aohuba, Distic- Imphal West, Manipur-795113
37	Ningthoukhong-	0	0	Churachandpur	1	1	132/33KV Churachandpur S/S, District- Churachandpur, PO-Churachandpur,Pin-795128, Manipur	132	Manipur	0	Mostly plain	0	32	Live Line	Revised in 15th RPC		
38	Kohima			Wokha			132/33KV Wokha S/S, Er. Lengminal Singson, C/o Executive Engineer Transmission Division, Wokha-797111, Nagaland	132 S/C	Nagaland	0	Hilly	0	58			I/c 220KV Dimapur S/s, Full Nagarjan, P.B. No.-164, P. O. & Distic- Dimapur, Nagaland-797112.	
39	Kohima (132KV)			Kohima (220KV)				132	Nagaland		Hilly	25	25				
40	Mairiat (PG) (Mizoram)			Silchar (PG) (Assam)			Power Grid Corporation of India Ltd, I/c Srikona S/S, TV Tower Road Village-Lalmati, PO-Srikona, Dist- Cachar, Assam-788026	132	CS		Plain+hill	160	160	Live Line/offline	No Change	I/c 132KV Aizawl S/s, Near Ramrikawan, Tuivamit, PO-Tanhrli, Aizawl, Mizoram-796009.	
41	Aizawl(PG)			Zimabawk-II(Zuangthai)			SDO, Zuangthai Sub Division, P&E Dept, Zuangthai, Zamatawk, Aizawl, Mizoram-796107	132	Mizoram	0	Hilly	0	7	Live Line	Revised in 15th RPC		
42	Aizawl(PG)			Zimabawk-II(Luangmual)			SDO, Luangmual Sub Station, P&E Dept, Tuivamit, Aizawl, Mizoram-796009	132	Mizoram	0	Hilly	0	1	Live Line	Revised in 15th RPC		
43	400KV D/C Maryani			400KV D/C Kathalguri			NEEPCO Ltd, Assam Gas Based Power Plant, Bokuloni, Kathalguri, Dist- Dibrugarh, Assam-786191 Ph-0374 2825216	State, NEEPCO								Both Kathalguri & Mariani---I/C Mariani -POWERGRID station Khandong side-POWERGRID Misa, Halong-POWERGRID Halong	
44	132kV D/C Khandong			132kV D/C Halong			Power Grid Corporation of India Ltd, 132KV Halong S/S, Vill-Lungkhok, PO-Lower Halong, Dist: DimaHasab, Assam-788819										
45	132kV D/C Dimapur			132kV D/C Doyang			NEEPCO Ltd, Doyang Hydro Electric Power Station, Doyang, Nagaland-797100	PGCIL, NEEPCO								Dimapur Side-POWERGRID Dimapur, Doyang Side- Mokokchung Doyang Side-& -Mokokchung-POWERGRID Mokokchung	
46	132kV D/C Doyang			132kV D/C Mokokchung			Power Grid Corporation of India Ltd, 220KV Mokokchung S/S, PB No. 190 D-105, Diling Ward, Mokokchung, Nagaland-789601	NEEPCO, PGCIL									
47	220kV D/C Mokokchung			220kV D/C Maryani			Power Grid Corporation of India Ltd 220KV Mariani S/S, New Sonowal, PO NAGAJANKA, PS- Mariani, Dist: Jorhat, Assam-785634	PGCIL, PGCIL									

NOTE: Additionally following will be added

- a) SLDC nodes , Back up NERLDC location -Both PDH & SDH qty will be added
- b) Left over Nodes of Assam under Microwave Vacation will be added viz. Sarusajai, Mariani, Lakwa, Namrup will be added. AEGCL may confirm
- c) All Central Sector locations where ABB mux is existingly there- Bongaigaon Kahelipara, Umium-III, Umium-I, Nehu, Shillong RSCC-, Khleirhat, Khandong, Kopili, Dimapur, Imphal, Kohima, Badarpur PG, Kumarghat, Agartala Gas, Agartala, Umtru

Name of Nodes & Delivery Address in NER

Sl No.	From			To			Line	Stringing	Remarks	PGCIL Site Incharge(Where State or
	Node Name	Qty SDH PDH	Address	Node Name	Qty SDH PDH	Address				
1	Badarpur(PG) (Assam)	1 1	Power Grid Corporation of India Ltd 132kV Badarpur S/S, NH-44, District-Halakandi, Assam-788803	Jiribam(PG) (Manipur)	1 1	Power Grid Corporation of India Ltd 132kV Jiribam S/S, Kadamata, Jiribam, Imphal West, Manipur-795116	67	Live Line	Revised in 15th RPC	
2	Bongaigaon (PG)	1 1	Power Grid Corporation of India Ltd 400kV Bongaigaon S/S, Village-Fukagaon, PO-Salakati, District-Kokrajhar(BTAD), Assam-783369	Salakati		Power Grid Corporation of India Ltd 220kV Salakati S/S, Village-Fukagaon, PO-Salakati, District-Kokrajhar(BTAD), Assam-783369	1	Live Line	No Change	I/c 400kV Bongaigaon S/S, Village-Fukagaon, PO-Salakati, District-Kokrajhar(BTAD), Assam-783369
3	Mirza (Azara)		MEGCL, 400KV Kukurmara (Mirza) GSS, Gosahat, Dist: Kamrup Rural, Assam-781125	Byrnihat		Byrnihat S/S, Village Bara Killing, PO Killing Centre-793101, Meghalaya	45	Live Line	Revised in 15th RPC	POWERGRID, I/c Mirza T/L Office,
4	Silchar		Power Grid Corporation of India Ltd Srikona S/S, TV Tower Road Village-Lalmati, PO-Srikona, Dist: Cachar, Assam-788026	Pallatana		OTPC,Pallatana Dudhpushkarini, Tripura 799105	248	Live Line	Revised in 15th RPC	POWERGRID, I/c Srikona S/S, TV Tower Road Village-Lalmati, PO-Srikona, Dist-Cachar, Assam-788026
5	Nehu		Superintending Engineer (SLDC), MePTCL, 132kV Nehu S/S, Umjarain, Shillong, Meghalaya-793002	Neigrhims		MePTCL, 132kV NEIGRIMS S/S, Mawdiangdiang Shillong-793018 Meghalaya	9	Live Line	No Change	I/c Shillong T/L Office, POWERGRID, Donglieh, Lower Nongrah, Lapalang, Shillong -793006
6	Khliehriat(PG)		Power Grid Corporation of India Ltd Khliehriat S/S Dienchyngrum, Distt-Jantia Hills, Meghalaya-793200	Khliehriat(State)		MePTCL, Khliehriat S/S Ladrymbai, Distt-Jantia Hills, Meghalaya-793160	6	Live Line	No Change	
7	Khliehriat(State)		MePTCL, Khliehriat S/S Ladrymbai, Distt-Jantia Hills, Meghalaya-793160	Myntdu Leshka-HEP		MePTCL, O/o Electrical Subdivision-II, MLHEP, Power House Suchen, PO- Amlarem, Dist: West Jantia Hills, Meghalaya-793150	25	Live Line	No Change	I/c Khliehriat S/S POWERGRID, Dienchyngrum, Distt-Jantia Hills, Meghalaya
8	Khliehriat(State)		MePTCL, Khliehriat S/S Ladrymbai, Distt-Jantia Hills, Meghalaya-793160	Lumshnong (S/C)		Star Cement, Lumshnong, P.O. Khallehriat, Distt. Jantia Hills, Meghalaya	25	Live Line	No Change	
9	Agartala (TSECL)		DGM, System Operation Division SLDC, TSECL, 79 tilla, Agartala West Tripura, Pin-799006	Baramura (GTP)		Office of the Sr. Manager (TSECL), Gas Thermal Electrical Sub-Division, Baramura, Khowai District, PO Hawai Bari, Pin-799205, Tripura	30	Live Line	No Change	DGM I/c 132 KV Kumarghat S/s, Ratiabari, Kumarghat, District-Unakoti, Tripura-799204. Some materials may be initially despatched to locations as declared by DGM Kumarghat -For South Tripura-destination -SM Nagr. TSECL substation & For north Tripura-Kumarghat Substation(Materials may be first depatched top POWERGRID station and then be taken to respective site within a same state))
10	Agartala (TSECL)			Surjamaninagar (TSECL)		Office of the Sr. Manager (TSECL), 400/132kV Surjamaninagar Grid S/S, West District Tripura, PO Ranirkhamar, Pin-799003	20	Live Line	No Change	
11	Surjamaninagar (TSECL)			Badharghat		Office of the Sr. Manager (TSECL), 132kV Badharghat S/S, West District of Tripura, PO-Badharghat, Pin-799003	9	Off Line/Shut Down	No Change	
12	Surjamaninagar (TSECL)		Gokulnagar		O/o Sr. Manager (TSECL)66kV Gokulnagar S/S, GokulNagar west Tripura, PO- East Gokulnagar, Tripura-799102	15	Off Line/Shut Down	No Change		
13	Surjamaninagar (TSECL)		Budlungnagar		Office of the Sr. Manager (TSECL), 132kV Budlungnagar S/S, Distt-West Tripura, PO- Bankiya Chowman, Kash Noagaon, Pin-799008, Tripura	20	Live Line	No Change		
14	Pallatana (OTPC)		OTPC,Pallatana Dudhpushkarini, Tripura 799105	Udaipur(TSECL)		O/o Sr. Manager (TSECL), 132/66kV Banduar S/S, Udaipur, District-Gumati, PO- Phulkumari-II, Tripura-799116	12	Live Line	No Change	
15	Udaipur (TSECL)		O/o Sr. Manager (TSECL), 132/66kV Banduar S/S, Udaipur, District-Gumati, PO- Phulkumari-II, Tripura-799116	Rokhia GTP		O/o Sr. Manager (TSECL), Rokia GTP, Manikya Nagar, PO-Rokhia, Distt- Sipahajala, Pin-799102, Tripura	40	Live Line	No Change	
16	Rokhia GTP		O/o Sr. Manager (TSECL), Rokia GTP, Manikya Nagar, PO-Rokhia, Distt- Sipahajala, Pin-799102, Tripura	Rabindranagar		Office of the Sr. Manager (TSECL), 132kV Rabindranagar S/S Rabindranagar, Sipahajala, PO- Sonamura, Pin-799131, Tripura	23	Off Line/Shut Down	No Change	
17	Udaipur(TSECL)		O/o Sr. Manager (TSECL), 132/66kV Banduar S/S, Udaipur, District-Gumati, PO- Phulkumari-II, Tripura-799116	Gumti HEP		Office of the Sr. Manager (TSECL), gumti Hydel Power Project, Tritamukh, Gomati District,PO-Tritamukh, Pin-799102	45	Live Line	No Change	
18	Gumti HEP		Office of the Sr. Manager (TSECL), gumti Hydel Power Project, Tritamukh, Gomati District,PO-Tritamukh, Pin-799102	Amarpur (TSECL)		Office of the Sr. Manager (TSECL), 66kV Amarpur, Distt-Gumati, PO-Amarpur, Pin-799101, Tripura	30	Live Line	No Change	
19	Udaipur(TSECL)		O/o Sr. Manager (TSECL), 132/66kV Banduar S/S, Udaipur, District-Gumati, PO- Phulkumari-II, Tripura-799116	Bagafa (TSECL)		Office of the Sr. Manager (TSECL), 66kV Bagafa S/S, South district of Tripura, PO- Shantir Bazar, Pin-799144	25	Off Line/Shut Down	No Change	
20	Bagafa (TSECL)		Office of the Sr. Manager (TSECL), 66kV Bagafa S/S, South district of Tripura, PO-Shantir Bazar, Pin-799144	Belonia (TSECL)		Office of the Sr. Manager (TSECL), 66kV Belonia S/S South district of Tripura, PO-Sarasima, Pin-799155	15	Off Line/Shut Down	No Change	
21	Bagafa (TSECL)		Office of the Sr. Manager (TSECL), 66kV Bagafa S/S, South district of Tripura, PO-Shantir Bazar, Pin-799144	Satchand (TSECL)		Office of the Sr. Manager (TSECL), 66kV Satchand S/S, South district of Tripura, PO-Satchand, Pin-799143	22	Off Line/Shut Down	No Change	
22	Satchand (TSECL)		Office of the Sr. Manager (TSECL), 66kV Satchand S/S, South district of Tripura, PO-Satchand, Pin-799143	Sabroom (TSECL)		Office of the Sr. Manager (TSECL), 66kV Sabroom S/S, South district of Tripura, PO-Sabroom, Pin-799145	15	Live Line	No Change	
23	Surajmaninagar (TSECL)		Office of the Sr. Manager (TSECL), 400/132kV Surajmaninagar Grid S/S, West District Tripura, PO Ranirkhamar, Pin-799003	Pallatana (OTPC)		OTPC,Pallatana Dudhpushkarini, Tripura 799105	35	Live Line	No Change	
24	Agartala (PG)		DGM, System Operation Division SLDC, TSECL, 79 tilla, Agartala West Tripura, Pin-799006	RC Nagar (NEEPCO)		Agartala Gas Turbine Power Plant, RC Nagar, Agartala, Tripura-799008	8	Live Line	No Change	

Sl	From	To	Line	Stringing	Remarks	PGCIL Site Incharge(Where State or		
25	Jiribam (PG) (Manipur)	Power Grid Corporation of India Ltd 132kV Jiribam S/S, Kadamlala, Jiribam, Imphal West, Manipur-795116	Loktak (NHPC) (Nagaland)	82	Live Line	No Change	I/c 132kV Imphal S/s, P.O.- Langling Achouba, Distic- Imphal West, Manipur-795113-(Materials may be first depatched top POWERGRID station and then be taken to respective site within a same state)	
26	Loktak (NHPC) (Nagaland)	Address-NHPC , Loktak	Imphal (Manipur)	132kV Imphal S/S, P.O.- Langling Achouba, Distic- Imphal West, Manipur-795113	35	Live Line		No Change
27	Imphal(State)	MSPCL, 132/33kV Yurembam S/S, PO-Yurembam, PO-Langling Achouba, Imphal West District, Pin-795113, Manipur	Karong	132/33kV Karong S/S, PO-Karong, District-Senapati, Pin-795007, Manipur	60	Live Line		No Change
28	Yurembam		Yaingangpokpi	132kV Yaingangpokpi S/S, PO-Yaingangpokpi, District-West Imphal, Pin-795010, Manipur	42	Live Line		Revised in 15th RPC
29	Yaingangpokpi	132kV Yaingangpokpi S/S, PO-Yaingangpokpi, District-West Imphal, Pin-795010, Manipur	Kongba	132/33kV Kongba S/S, PO-Kongba, Imphal East District, Pin 795008, Manipur	32	Live Line		Revised in 15th RPC
30	Kongba	132/33kV Kongba S/S, PO-Kongba, Imphal East District, Pin 795008, Manipur	Kakching	132kV Kakching S/S, PO-Kakching, District-Thoubal, Pin-795103, Manipur	45	Live Line		Revised in 15th RPC
31	Kakching	132kV Kakching S/S, PO-Kakching, District-Thoubal, Pin-795103, Manipur	Churachandpur	132/33kV Churachandpur S/S, District- Churachandpur, PO-Churachandpur,Pin-795128, Manipur	38	Live Line		Revised in 15th RPC
32	Yaingangpokpi	132kV Yaingangpokpi S/S, PO-Yaingangpokpi, District-West Imphal, Pin-795010, Manipur	Hundung	132/33kV Hundung S/S, PO-Hundung, Ukhrul District, Pin-795142, Manipur	32	Live Line		Revised in 15th RPC
33	Kakching	132kV Kakching S/S, PO-Kakching, District-Thoubal, Pin-795103, Manipur	Chandel	132/33kV Chandel S/S, PO-Chandel, District-Chandel, Pin-795102, Manipur	25	Live Line		Revised in 15th RPC
34	Loktak(NHPC)	Loktak Power Station, NHPC Ltd, Manipur-795124	Rengpang	132/33kV Rengpang S/S, PO-Rengpang, Tamellong District, Pin-795147, Manipur	47	Live Line		Revised in 15th RPC
35	Jiribam	Power Grid Corporation of India Ltd 132kV Jiribam S/S, Kadamlala, Jiribam, Imphal West, Manipur-795116	Jiribam	Power Grid Corporation of India Ltd 132kV Jiribam S/S, Kadamlala, Jiribam, Imphal West, Manipur-795116	1	Live Line	Revised in 15th RPC	I/C POWERGRID , Jiribam
36	Loktak(NHPC)	Loktak Power Station, NHPC Ltd, Manipur-795124	Ningthoukhong (State)	132/33kV Ningthoukhong S/S, PO-Ningthoukhong, District- Bisenpur, Pin-795126, Manipur	11			I/c 132kV Imphal S/s, P.O.- Langling Achouba, Distic- Imphal West, Manipur-795113
37	Ningthoukhong-	132/33kV Ningthoukhong S/S, PO-Ningthoukhong, District-Bisenpur, Pin-795126, Manipur	Churachandpur	132/33kV Churachandpur S/S, District- Churachandpur, PO-Churachandpur,Pin-795128, Manipur	32	Live Line	Revised in 15th RPC	
38	Kohima	132/33kV Kohima S/S, Er. Lengminal Singson, C/o Executive Engineer Transmission Division, Near Zoo, Kohima-797001, Nagaland	Wokha	132/33kV Wokha S/S, Er. Lengminal Singson, C/o Executive Engineer Transmission Division, Wokha-797111, Nagaland	58			I/c 220kV Dimapur S/s, Full Nagajan, P.B. No.-164, P. O. & Distic- Dimapur, Nagaland-797112.
39	Kohima (132KV)		Kohima (220KV)		25			
40	Malriat (PG) (Mizoram)	Power Grid Corporation of India Ltd 132kV Aizawl S/S, Near Ramrikawan, Tuivamit, PO-Tanhil, Aizawl, Mizoram-796009.	Slichar (PG) (Assam)	Power Grid Corporation of India Ltd, I/c Srikona S/S, TV Tower Road Village-Lalmati, PO-Srikona, Distt-Cachar, Assam-788026	160	Live Line/offline	No Change	I/c 132kV Aizawl S/s, Near Ramrikawan, Tuivamit, PO-Tanhil, Aizawl, Mizoram-796009.
41	Aizwal(PG)		Zimabawk-II(Zuangtui)	SDO, Zuangtui Sub Division, P&E Dept, Zuangtui, Zembabawk, Aizawl, Mizoram-796107	7	Live Line	Revised in 15th RPC	
42	Aizwal(PG)		Zimabawk-I(Luangmual)	SDO, Luangmual Sub Station, P&E Dept, Tuivamit, Aizawl, Mizoram-796009	1	Live Line	Revised in 15th RPC	
43	400kV D/C Maryani	Power Grid Corporation of India Ltd 220kV Moriani S/S, New Sonowal, PO NAGAJANKA, PS- Mariani, Dist: Jorhat, Assam-785634	400kV D/C Kathalguri	NEEPCO Ltd, Assam Gas Based Power Plant, Bokuloni, Kathalguri, Dist: Dibrugarh, Assam-786191 Ph-0374 2825216	Both Kathalguri & Mariani---I/C Mariani -POWERGRID station			
44	132kV D/C Khandong	NEEPCO Ltd, Khandong Power House, Umramngso, Dist: Dimahaso, Assam-788931	132kV D/C Halflong	Power Grid Corporation of India Ltd, 132kV Halflong S/S, Vill-Lungkhok, PO-Lower Halflong, Dist: Dimahaso, Assam-788819	Khandong side-POWERGRID Misa, Halflong-POWERGRID Halflong			
45	132kV D/C Dimapur	Power Grid Corporation of India Ltd 220kV Dimapur S/S, Full Nagajan, P.B. No.-164, P. O. & Distic- Dimapur, Nagaland-797112	132kV D/C Doyang	NEEPCO Ltd, Doyang Hydro Electric Power Station, Doyang, Nagaland-797100	Dimapur Side-POWERGRID Dimapur, Doyang Side- Mokokchung			
46	132kV D/C Doyang	NEEPCO Ltd, Doyang Hydro Electric Power Station, Doyang, Nagaland-797100	132kV D/C Mokokchung	Power Grid Corporation of India Ltd, 220kV Mokokchung S/S, PB No. 190 D-105, Diling Ward, Mokokchung, Nagaland-798601	Doyang Side-& -Mokokchung-POWERGRID Mokokchung			
47	220kV D/C Mokokchung	Power Grid Corporation of India Ltd, 220kV Mokokchung S/S, PB No. 190 D-105, Diling Ward, Mokokchung, Nagaland-798601	220kV D/C Maryani	Power Grid Corporation of India Ltd 220kV Moriani S/S, New Sonowal, PO NAGAJANKA, PS- Mariani, Dist: Jorhat, Assam-785634	Mokokchung-POWERGRID-Mokokchung, Mariani-POWERGRID Mariani			

NOTE: Additionally following will be added

- SLDC nodes , Back up NERLDC location -Both PDH & SDH qty will be added
- Left over Nodes of Assam under Microwave Vacation will be added viz. Sarusajai, Mariani, Lakwa, Namrup will be added. AEGCL may confirm
- All Central Sector locations where ABB mux is existingly there- Bongaigaon Kahelipara, Umium-III, Umium-I, Nehu, Shillong RSCC-, Khleihiat, Khandong, Kopili, Dimapur, Imphal, Kohima, Badarpur PG, Kumarghat, Agartala Gas, Agartala, Umtru