

North Eastern Regional Power Committee

MINUTES OF THE 6th NER Telecommunication, SCADA & Telemetry

(NE-TeST) COORDINATION

SUB-COMMITTEE MEETING OF NERPC

Date : 11/05/2017 (Thursday)

Time : 10:00 hrs

Venue : "Hotel Nandan", Guwahati.

The List of Participants in the 6th NE-TeST Meeting is attached at **Annexure - I**

Shri P.K. Mishra, Member Secretary, NERPC welcomed all the participants to the 6th North Eastern Telecommunication, SCADA & Telemetry meeting. He stated that NETeST was held after 5 months due to busy schedules of NERPC officers and also since SLDCs works were in full swing to commission the project it was felt that executing agencies should be given freedom so that they can put on their full efforts before reviewing in next TeST meeting. He expressed with great satisfaction that a good number of participants from constituents along with teams from GE, KEC etc., have attended the meeting and expected that the same trend should be continued in future for fruitful deliberation and resolving the important issues. He emphasized that communication will play a vital role in power sector in future and hence the discussion should be focused more on technology and innovation.

He then requested Shri B. Lyngkhoi, Director/SE(C&O) to take up the agenda items for discussion.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF THE 5th MEETING OF "NORTH EASTERN TELECOMMUNICATION, SCADA & TELEMETRY (NETeST)" SUB COMMITTEE OF NERPC.

SE(C&O) informed that minutes of the 5th NETeST Meeting held on 16th November, 2016 at Guwahati were circulated by NERPC vide letter No. NERPC/SE(O)/TeST/2016/ dated 27th December, 2016.

During confirmation, following comments were received from Meghalaya.

A.7. Finalization of Consolidated OPGW Network & Installation Project:

Amendment to be recorded:

A. The nominee for the committee from Meghalaya are:

- 1) Shri B.Nikhla, EE(SP), MePTCL
- 2) D. J. Lyngdoh, EE(SM), MePTCL
- 3) B. Narry, AEE(CC), MePTCL

Also nominee from NERLDC was added

- 1) Shri B. S. Roy, Asstt. GM, NERLDC

B. Some dates were to be corrected (**Under A.1 & B.5-** wherever **Target Feb16** was mentioned---should be corrected as **Feb17/** as NETeST meeting was conducted in Nov16

The Sub-committee confirmed the minutes of the 5th NETeST Meeting as no further comments/observations were received from the constituents.

A.1 Status of SLDCs in NER:

The status of setting-up of SLDC as informed by POWERGRID during 6th NETeST meeting is given below:

SN	Utility	Status as informed in 6 th NETeST	Status as informed in 5 th NETeST	Target Completion
UPGRADATION OF SLDCs				
1	Assam	EMS Tuning left. Supply of DG set by left.	Completed: Main SCADA/EMS system in April 2016 EMS Tuning left. Supply of DG set left.	
2	Tripura	EMS tuning completed. Some site requires 48V DC supply and some require civil work.	Completed: Main SCADA/EMS system in April 2016. Balance: EMS data tuning (as per PRM). New Spare/RTU	
3	Meghalaya	EMS SAT Competed. DG set to be installed later.	Completed: Main SCADA & EMS system in April 2016 Balance: EMS data tuning (as per PRM) & DG set ,New Spares	

4	NERLDC	Completed.	WIP: SCADA, EMS (90% completed)	
5	Manipur	EMS tuning completed. DG set to be installed later.	Completed: Main SCADA/EMS system in September 2016. Balance: DG Set, New Spare	
6	Nagaland	Installation to be completed by May. EMS SAT to be completed by July, 2017	Another 6-8 week required for completion of site work (including AC, LT panel and Earthing). By December 2016.	
7	Mizoram	EMS tuning to be done through DTS simulation by June, 2017.	Installation in progress. To be completed by January 17.	
8	Ar. Pradesh	SAT to be completed by May, 2017. EMS tuning to be done through DTS simulation by June, 2017.	WIP: Space earmarked for SLDC still not vacated. NERPC to communicate with Power Minister and Power Secretary so that the project is not delayed	
9	Backup NERLDC	Completed.	80% completed. Balance: DG Set & others.	

During 5th NETeST, GE/Alstom informed that all SLDCs must get the DG set Foundation Pad & earthing ready before time by the civil department as per design already forwarded to each utility. When DG set is delivered by end of January, 2017, it will be directly unloaded into the DG set Pad. He also requested AEGCL to give concurrence about sizing of additional requirement of RTU so that amendment can be done by NERTS in time. Other states were also asked to provide concurrence of spare RTU sizes which is proposed to be equal to that highest/biggest sized RTU of that state under this. He also requested all SLDC to make available 2 Mbps internet lease line with Public static IP for Firewall and patch update/web server management.

SE(C&O) NERPC requested Alstom to write a letter in this regard to all SLDCs. Concern of delay of project due to non-readiness of trench/RTU from TSECL, non-readiness of site in time for Dimapur, Mizoram, AP utilities were also discussed.

Concerns were raised by AEGCL about plan of EMS tuning to be done by Alstom without actual data since many RTU are not reporting. Alstom representative clarified that the same has already been consented in last PRM-06 and that GE cannot

postpone the EMS SAT indefinitely (beyond March17) and requested SLDC Assam to opt for actual data, if 70%-80% RTU are reporting or may opt for simulated data. AEGCL requested Alstom to show EMS test with actual data when available even during warranty/AMC period after completion/TOC of project without any extra cost and as such demonstration through simulated data need not be done. Further, MSPCL representatives informed that since main SCADA EMS has been commissioned on 08.11.2016 the same has to be made operational for Manipur SLDC. It has been declared that DOCO of Manipur SLDC may be considered to be started from 09.11.16. Further regarding GPRS, all utilities again requested POWERGRID to expedite GPRS scheme implementation as per approval of 17th TCC/RPC and revised cost after award approval, may be intimated to forum.

Deliberation in the meeting

SN	Utility	Status as informed in 6 th NETeST	Status as informed in 5 th NETeST	Target Completion
UPGRADATION OF SLDCs				
1	Assam	EMS Tuning left. Supply of DG set by left.	Completed: Main SCADA/EMS system in April 2016 EMS Tuning left. Supply of DG set left.	Completed. DG set-Target July17.
2	Tripura	EMS tuning completed. Some site requires 48V DC supply and some require civil work.	Completed: Main SCADA/EMS system in April 2016. Balance: EMS data tuning (as per PRM). New Spare/RTU	Completed. DG set-Target July17.
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7	Mizoram	EMS tuning to be done through DTS simulation by June, 2017.	Installation in progress. To be completed by January 17.	Both EMS tuning and DG set- by July 17.
8	Ar. Pradesh	SAT to be completed by May, 2017. EMS tuning to be done through DTS simulation by June, 2017.	WIP: Space earmarked for SLDC still not vacated. NERPC to communicate with Power Minister and Power Secretary so that the project is not delayed	Both EMS tuning and DG set- by July 17.
9	Backup NERLDC	Completed.	80% completed. Balance: DG Set & others.	Completed. DG set-Target July17.

Deliberation

- 1.0** In line with discussions of earlier NETeST, It was again confirmed that all State SLDC authority will make DG foundation pad ready wherever left out.
- 2.0** Regarding EMS tuning, EMS tuning for Manipur, Meghalaya have been completed. For others it will be done by simulated data (or during AMC) If real-time sufficient RTU data is not available by 1st week August 17. However Alstom/GE confirmed that the same, if permitted from owner, can be done during AMC also. DGM, AEGCL proposed for closing the supply/erection contract with declaration from GE that EMS tuning would be done during the AMC period (without any add cost) when maximum RTUs are reporting. Both NERTS and GE agreed with the proposal of doing EMS tuning during AMC period without any additional cost.
- 3.0** Project Manager, GE also informed that for the generator load testing respective states needs to arrange for Fuel and Load. Also the DG set is not allowed to run below 10% load as the manufacturer does not provide warranty for this. States must arrange adequate load for running the DG set.
- 4.0** Further as per additional request from states, POWERGRID has placed an order to M/s PMAS (already communicated to all states). Concern State authority is yet to confirm for arranging GPRS data activated SIMs (2nos. different operators for one location) and broadband connection at SLDC Locations. All state confirmed to arrange the SIM by one month. List of locations already sent to States (also Attached as **Annex-GPRS locations**)

- 5.0** It was discussed the project has already got delayed earlier due to some issues like non-readiness sites earlier (Manipur, Mizoram, Nagaland, AP) and then issues of trenches/civil works/ foundations(Tripura) and also other issues like strike in Manipur, Nagaland, ILP issues in some states. However, fronts of AP & Nagaland already ready. GE is requested to complete the pending works at the earliest possible.
- 6.0** States who are yet to sign AMC may sign the same without further delay. The same was also emphasized by NERPC representatives
- 7.0** Assam intimated that though they have requested for RTUs and also consented during prior to engineering stage of RTU supply (input taken for RTU size) under SLDC upgradation project. AEGCL intimated under PSDF, is exploring to buy SAS RTUs in different contract and requested forum if other states can take those RTUs and also requested Alstom if they can consider non-supply. No state expressed their interest for additional RTU at this stage. POWERGRID intimated that as per contract short-closing is only possible before engineering stage/approval. Alstom/GE intimated RTUs are almost ready, engineering done and so even if they don't supply cost will be transferred for the cost already incurred by GE. However GE told as solution that AEGCL may take those RTUs and use the same in their upcoming stations. GE will do necessary co-operation during integration. Forum requested AEGCL to go ahead accordingly.
- 8.0** Forum opined that necessary insurance against SLDC assets may be taken care by respective/NERLDC/.owner as applicable
- 9.0** All state representative asked GE.
- A)** That AMC rate on prorata calculation (i.e. AMC of item as executed wrt items as was in original scope) may be submitted against AMC to each state separately.
- B)** Further Alstom during AMC start , should submit a excel sheet with components & availability/outage calculation which will show all items of BOQ incorporating item wise formula of availability calculation.
- C)** Forum asked Alstom/GE to open an office in Guwahati. Director NERPC requested Alstom to pass on the message to highest authority for benefit of region

The Sub-committee noted as above.

Action: NERTS, State Utility, GE, NERLDC

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

A). POWERGRID: 3 RTUs not reporting out of 20 RTUs & 1 Partial.

- a. KOPEX SAS line flow is OK but BUS data suspect.
- b. Mokokchung out from 28.04.2017
- c. Nirjuli out since 07.10.2016
- d. Ziro out since 07.08.2016
- e. Status of CS RTUs on single link & requirement of 2nd link back up/redundant channel. Lists as on 04/05/2017.

- 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 (two channels but only 1 available)
- 6) 220 KV Salakati (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 (2 channels but (only one available)
- 10) 132 KV ITANAGAR (Only one channel made)
- 11) KATHALGURI, ISGS (only one channel available)
- 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 (only 1 available)
- 18) BADARPUR (2 channels made but only 1 available)
- 19) 220 KV MARIANI (Only one channel made)

Deliberation in the meeting

Nirjuli and Zero RTU will be by 30th and 25th May, 2017 respectively. For Mokokchung RTU requires some time as root cause is still not identified. For KOPEX SAS also the data is intermitting and needs to be checked for root cause.

Regarding 2nd link for 800KV HVDC_BNC line is ready and will be operational within 1month. For 400KV MISA and 400KV Bngaigaon 2nd channel already made but old system cannot be configured. It will be completed within 3 months.

Regarding 2nd link of 400KV Silchar is made through ICCP upto RTAMC. It will be extended till NERLDC within 3 months.

Regarding 2nd link of 220KV Dimapur, Salakati and 132KV Imphal will be done once the old Mux are replaced. It will be completed within 6 months.

2nd link of Mokukchung, Ranganadi, Itanagar, Katahalguri, Palatana, Loktak, Khandong, Jirbam and Aizwal, will come up once NERFO expansion project is completed.

Regarding Badarpur and Mariani 2nd channel is already made which can be switched manually as and when required.

However in totality, all 2nd link as per responsibility of CTU (connection to POWERGRID, nearest WB locations wrt ISGS stations) will be made available after FO Expansion project is completed(1-1.5 year)

The Sub-committee noted as above.

Action: NERTS.

B). NEEPCO

- a. Doyang HEP out since 24.01.2015
- b. Kopili HEP not-reporting from 09.05.2015.
- c. Ranganadi HEP not-reporting from 21.05.2016.
- d. Khandong HEP not reporting from 16.09.2016

In the last meeting NEEPCO confirmed to solve the issues along with links in line with grid codes at the earliest. As per intimation vide Ref No NEEPCO/ED(O&M)/OPR-01/16-17/638-40 dated 9.1.2017 Doyang, Kopili and Khandong RTUs are under process of installation. The matter needs urgent action.

Deliberation in the meeting

NEEPCO intimated that Doyang and Kopili RTU would be commissioned by 30th July and 30th June, 2017 respectively. For Khandong RTU, new RTU already supplied and will start reporting by 31st May 2017. Regarding Ranganadi RTU, the same is under process and will be commissioned by December, 2017.

The Sub-committee noted as above.

Action: NEEPCO.

C). AEGCL:

In the new system, only 20-RTUs are reporting against 61 RTUs.

This creates loss of observability of NER Grid specifically during grid problems. Restoration of all the non-reporting RTUs needs urgent action. Details shown in **Annexure-A.2**. The same also highlighted in the weekly telemetry status reports but tangible solution is yet to be achieved.

Deliberation in the meeting

AEGCL intimated that most of the RTUs data are under restoration and with the commissioning of OPGW links most of the RTUs will be restored. However action has been taken to restore some PLCC links in which more nos. of RTUs will be reporting and also to make sure that all important substations and generating stations are reporting. All RTUs will be reporting within one year.

The Sub-committee noted as above.

Action: AEGCL.

D). MePTCL/MeECL: 13 RTUs are reporting out of 22 RTUs.

Generating Stations; Umiam-4 & LESHKA not reporting. Dedicated voice communication is yet to be established for Leshka HEP.

Sub-Stations: 1. 400 KV Byrnihat / 220 KV Killing S/S
2. 132 KV Khliehriat S/S 3. EPIP-I 4. EPIP-II 5. Lumshnong
6.Cherrapunji 7.Rongkhon

Deliberation in the meeting

Status informed by Meghalaya:

MEPTCL also confirmed that they will look into the matter of RTUs at the earliest. 400KV Byrnihat substation will be restored by June 2017. RTUs of 132KV Khliehriat S/S, EPIP-I, EPIP-II, and Lumshnong will start reporting by June, 2017. Rongkhon RTU will be restored by May, 2017. Cherrapunji RTU will start reporting once erection work is completed.

The Sub-committee noted as above.

Action: MePTCL.

E). TSECL: 8 RTUs are reporting out of 25 RTUs. Non-reporting RTUs are given below:-

Generating Stations: Gumti (since Jan, 2011), Rokhia (U-3 NA, all CB status suspect)

Sub-Stations:

Amarpur, Badharghat, Belonia, Bokafa, Boxanagar, Dharmanagar, Dhalabil, Gamaitila, Gournagar, Kamalpur, OMPI, Rabindranagar, Sabroom, Satchand, Udaipur

Deliberation in the meeting

TSECL representative was not present and the forum requested NERLDC to find out the current status.

The forum expressed concerned about non participant of concerned officials from Tripura and requested NERPC to take up the matter with Competent Authority of TSECL for regular participant so that issues can be deliberated fruitfully.

The Sub-committee noted as above.

Action: NERPC/NERLDC.

F). Manipur SLDC of Manipur was declared commission vide Ref No NERLDC/SL/SCADA-Upgrade-Vol-II/8566-68 dated 15.03.2017. However only 2 nos of RTUs namely-Yaingangpokpi & Ningthoukhong are found to be reporting out of 11 RTUs as on 4/5/17 and No ULDC Communication system is established till date.

G). Mizoram SLDC is likely to be commissioned but VC, Voice Communication system yet to be established. Status of RTUs to be included needs to be intimated.

H). AP and Nagaland may kindly intimate the current status SLDC establishment & RTU Status.

Deliberation in the meeting

The forum decided that once the SLDCs are in full-fledged completed, the issue of RTUs will be reviewed for the above four States. It may be noted that States like Manipur & Nagaland authority have already taken action for PLCC link establishment from RTU to SLDC and then only NERLDC may get the data from SLDC. Other States will soon take necessary action for revival/establishment of PLCC/GPRS/ NERPSIP scheme as possible for establishment of RTU to SLDC connectivity.

Actions: Respective States

The Sub-committee noted as above.

A.3 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 5th NETeST meeting, it was informed that LOA has already been placed to ECI for installation in ULDC nodes by M/s ECI. The materials were supplied by KEC under MW vacation project. All utilities have been asked to ensure healthiness of air conditioning and DC/Aux supply as required. Further, during survey of ECI, it was requested that all necessary help may be extended by utilities States & Central Sectors. It has been deliberated that necessary shut down as required during replacement of SDHG equipment (Siemens make by ECI make) will be provided by NERPC/NERLDC from time to time basis. Further it was discussed that new SDH may be kept parallel for some days before fully dismantling of old. However same will be done subject to space constraint.

Deliberation in the meeting

The project is under execution and will be completed within one year.

The Sub-Committee noted as above.

Action: NERTS, All State utilities.

A.4 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 5th NETeST meeting, Manager NERTS informed that he had already mailed the details of nodes to all states and requested all the states to reply/give comments at the earliest. He requested all State utilities to give feedback after the meeting.

With request of Assam, PDH multiplexers are to be included for Assam in Pkg-4C are namely—a) Gohpur, b)Kahilipara, c)Mariani Grid S/S, d)Lakwa Thermal Power Station & e)Namrup Thermal Power. The above were requested during MW Vacation project itself but due contractual obligation and as non-inclusion of scope in original project, the same was not included in MW vacation.

Further in line with 15th TCC/RPC (Replacement of PDH nodes of ULDC Phase1 locations in NER" was approved in 15th NERPC-Aug'2015. MOM -Item.A.18 /page33), replacement of PDH mux FOX615 may be taken care in the package-4C awarded to M/s Tejas. Further for inclusion of PDHs/SDHs as required for SLDCs, Manager, NERTS stated to refer the RPC MOM.

Deliberation in the meeting

The project is under execution and will be completed before October, 2018.

The Sub-Committee noted as above.

Action: NERTS, All State utilities.

A.5. Finalization of Consolidated OPGW Network & Installation Project:

During 4th 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. For ring format formation/redundancy as per network shown necessary fibers along with protection pair will be provided as & where required

OPGW network (962 Kms) implemented under ULDC project by POWERGRID has completed more than 13 years after commissioning. This will achieve its useful life of 15 years in 2018. There is a need to take up replacement of the same so that the replacement is in place by the time 15 years period is complete and data communication is not hampered. Also, around 1158 Kms OPGW is also required to be established on various lines of Central Sector to provide redundancy in the system. It is proposed to constitute a Committee comprising members from various constituents to study the requirement in detail and come out with their recommendations for implementation of the OPGW requirement.

LIST OF OLD CS LINKS: SC&C--ULDC Project Central sector OPGW (running with 12F only) which are to complete 15years in 2018			
	FROM	TO	KM RL
1	Kahelipara	Umiam III (ASEB/MESEB)	59.132
2	Umiam III	Umiam I(MESEB)	17.455
3	Umiam I	NEHU(MESEB)	10.257
4	NEHU	Shillong***UNDER GROUND FO	6.23
5	NEHU (MESEB)	Khliehriat (MESEB)-ckt-1	64.094
6	Khliehriat (MESEB)	Khliehriat (PGCIL)**	7.791

7	Khliehriat	Khandong(PGCIL)	40.99
8	Khandong(PGCIL)	Koplili (PGCIL)	11.191
9	Misa(PGCIL)	Koplili (PGCIL)	73.186
10	Misa(PGCIL)	Balipara(PGCIL)	94.046
11	Misa(PGCIL)	Dimapur(PGCIL)	119.192
12	Badarpur(PGCIL)	Khelihiriat(PGCIL)	73.183
13	Badarpur(PGCIL)	Kumarghat(PGCIL)****	117.519
14	Agartala Gas(PGCIL)	Kumarghat(PGCIL)****	99.817
15	Agartala (PGCIL)	Agartala Gas(PGCIL)****	7.416
16	Dimapur (PGCIL)	Kohima(PGCIL)	59.8
17	Kohima(PGCIL)	Imphal(PGCIL)	105.64
Sub Total SC&C			966.94

During the 17th TCC meeting, the matter of replacement of ULDC OPGW link and NER- FO expansion was referred to NETeST for discussion. A committee may be constituted for finalization of schemes regarding replacement of ULDC OPGW replacement, NER-FO expansion. Forum may also co-opt members for installation of terminal equipments etc.

During 5th NETeST a committee was formed with members from each constituent to finalize the recommendation of CS links which are required to be added.

Further it was decided that all the members will take up with competent authority for respective utility for their internal approval internal (with departmental). Further all members are requested to collect all data relevant to different projects from their respective department/division/head quarter as undergone/consented by state authority/central authority. This will be required for overall visualization of optical network in NER for present & future.

Further, as enquired by Meghalaya, it was clarified in forum that there were two items approved in TCC.

- No. A.11, Additional Communication Scheme (538+217=755km)--approval was already accorded.
- No. A.12 –Reliable Communication Scheme - (966+1158=2124-Central sector) --- Approval accorded for committee formation to finalize the list of CS links

EE, SLDC, AP requested that connectivity as possible for AP may be done i.e. wide band location of CS may be extended further so that Arunachal Substations nearer may be connected over PLCC or so up to that point. It may be noted that the link of

Tezu-Namsai (96km) has to be considered in this respect for completion of link up to Namsai and may be included.

It was further intimated by POWERGRID that links-202km as requested by Manipur MSPCL(TCC A.34) could not be considered in the existing project due to contractual limitation under on-going project & delay that occur (due to late inclusion of links) for final petition filing to CERC. Hence, it is proposed that the requirement of Manipur/MSPCL may be taken care in the discussion as to be held by committee under A.12.

Deliberation in the meeting

In line with guidelines of 17th RPC (No. A.12 –Reliable Communication Scheme - 966 [old ULDC link] +1158 [new] = 2124km-Central sector links, the committee was formed in 5th NETeST to finalize **CS** links and discussions was held amongst members of committee during 6th NETeST is as follows:

- a) Regarding 1158km, as the transmission lines do not belong to state authority, hence the same is recommended to be approved.
- b) However out of 966km (old ULDC link replacement), Committee agreed that original links seems very robust, still there is very less loss. On technical grounds only, replacement of existing fibers to be done. It was concurred that all old ULDC links may be tested for confirmation of fiber healthiness to assess technical requirement.
- c) NERLDC representative intimated that links 1-5----17 (of old ULDC link) are used mainly connect the NERLDC & Back-Up NERLDC & SLDC Assam along with further connection to other region & regional optical grid, hence these were treated **Backbone connection** under Central Sector . GM NERTS & Director NERPC also opined the same on technical grounds.
- d) However representative of Assam/Meghalaya opined that the links (1, 2, 3 & 5) where the transmission lines belong to States has to be replaced based on commercial requirement. Forum opined that the requirement for replacement was to be concurred based on technical grounds only.
- e) Assam & Meghalaya representative intimated that additional fibers in those links if permitted after new replacement, if approved, the cost will be borne by respective states. Regarding exact requirement of additional fibers, state representative will take up the matter with their higher authority and revert back within 15days.

- f) After detailed deliberation, the forum requested NERPC to convene one more meeting with higher authorities of each state/utility/member of NETeST to conclude the issue(S.N.1-5)

Final Deliberation Forum recommended for replacement of OPGW installation for links of old ULDC (S.N.4, 6-16) subject to technical requirement & 1158km (new OPGW). For OPGW links S.N.1-5, a meeting will be held separately based on technical requirement.

The Sub-Committee noted as above.

Action: NERPC, Assam, Meghalaya.

B. 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 5th NETeST meeting, EE, DoP Nagaland informed that they will be sending their members for training after installation of new system. All other SLDCs were requested to send their representative to SLDC Assam & NERLDC for training as per their requirement & with mutual discussion.

Deliberation in the meeting

The forum once again requested all SLDCs officials from Ar. Pradesh, Manipur, Mizoram & Nagaland were requested to send their representative to SLDC Assam & NERLDC for training as per their requirement & with mutual discussion.

Action: All SLDCs/NERLDC.

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 5th NETeST meeting, Assam representative informed that they are trying to revive the PLCC network and some of the stations (Namrup, Lakhwa) have started reporting on the revived PLCC network.

Manager (AM), NERTS informed that NERTS has extended the annual rate contract for PLCC network to ABB & soon LOA will be placed. However, for future, it was also emphasized that respective utility as per relevant IEGC may connect up to the wide band location through PLCC or as possible.

EE, DoP Nagaland informed that they have issued LOA for revival of PLCC network in four stations. They are facing issues with contractor and it may take 3-4 months. POWERGRID has provided detailed requirement of PLCC-link revival to representative of Nagaland so that the requisite RTUs as covered under SLDC project may report to SLDC Nagaland, Nagarjun. Nagaland assured to take up the same (LOA placement for modem, data card & service engineer soon) with higher authority.

EE, MePTCL informed that they are using PLCC for voice communication. Arunachal Pradesh was requested the same.

Deliberation in the meeting

All states must send a complete list of their PLCC network to NERPC except Meghalaya (already sent).

After detailed deliberation, the Sub-Committee recommended that PLCC should be used as back up communication path wherever possible as the same is robust and does not depend on any remote NMS etc. Point to Point voice communication of PLCC is of much importance keeping in view if under emergency (e.g. in case of outage of central NMS or server of OPGW network).

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.

As per deliberation of 5th NETeST meeting,

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

Deliberation in the meeting

Point 1: This point may be closed as interim arrangement is provided by NERTS. Later on when the Fiber Optic networks come it will be shifted to the original scheme.

The Sub-Committee noted as above.

B.4 MW Vacation Project:

During 5th NETeST meeting, Forum expressed that project should be completed without further delay. KEC expressed different issues like ROW, re-work and frequent bandhs as reasons of delay. The forum insisted that higher authority of KEC may attend the meeting onward. Assam informed that during that rectification work, link E1 Samaguri to Tinsukia was disturbed which KEC should immediately restore. KEC confirmed to do so. KEC further informed that relaying of 24F approach cable in upper Assam has been completed & further requested AEGCL to give receipts of Earth wire reconciliations as submitted. Site Manager-KEC provided the following time line for linking the following with KEC equipment:

- a. Agia BTPS to Agia Sarusajai- SAT by December 2016 (5 nodes).
- b. Balipara to Gohpur - By December 2016.
- c. Samaguri-Mariani-Lakwa-Namrup-Tinsukia – Completion By January 2016.(Samaguri to Sarusajai/Kahilipara link on optical or E1as required to be arranged through AEGCL optical network—for NMS manage & data plus voice)
- d. Badarpur-Panchgram to Jaribam- By Feb 2016.
- e. The forum requested KEC to provide complete time line for all the nodes and mail the same. KEC confirmed that all works would be completed by 1st week of April2017. Gohpur to Kahilipara & Badarpur to Kahilipara link to be arranged under CS link for initial 2years by POWERGRID or till networks are connected.

DGM, AEGCL requested the forum for early completion of work so that more numbers of RTU can be reported. He also states that KEC must show end to end connectivity between station for each pair of fiber before completion & submit OTDR test report to

AEGCL. He also informed that there was lapse on part of KEC in providing AMC contract. The forum requested to KEC to provide continuity in AMC contract. No interruption should be there.

KEC assured the same. Further it was again told by KEC that there is delay in OPGW over EHV connectivity to Namsai Central Sector POWERGRID/AP (as per original provision of contract) till date. It was noted that OPGW over 66kVTinsukia-Rupai-Namsai was to be discarded at present (as 66kV Rupai -Namsai is already abandoned & there is no EHV line further up to Namsai for OPGW). Forum agreed & suggested the said OPGW may be utilized as spare or/& for new CS links like Pare Generation/NEEPCO connectivity, Different State SLDC connectivity & as suitable. Forum agreed to look in to Namsai Central sector connectivity later in new project after committee discussion in line A.7 above. Further connectivity to SLDC-AP, Chimpur (via Nirjuli-Leikhi-Chimpur) is to be expedited by POWERGRID. Instead of Nirjuli (PG) to Leikhi, AP may provide clearance of laying OPGW over any other 33KV link to connect to Leikhi as existing Nirjuli-Leikhi line will be abandoned. KEC, POWERGRID & AEGCL had assured to do start SAT (joint verification & signing would be done in for links one by one) at the earliest possible.

Deliberation in the meeting

Project Manager KEC confirmed the following:

- a) All OPGW stringing-by June'17
- b) All splicing, testing of OPGW, OTDR trace submission-By July'17 (Compliance of request from AEGCL, Upper Assam is requested against submission OTDR & final testing for old links by KEC as per commitment of 5th NETeST—KEC confirmed to complete all)
- c) All rectification of OPGW by August-17
- d) All Equipment Installation & commissioning –By July, 2017 all equipment installation will be completed and project will be handed over onward.

It was also discussed that there has been delays due to unavoidable circumstances in Manipur, Nagaland as well as in Bodoland, supply of Materials & erection could not take place. Further, there were some lightning issues to be taken care for which rectification was required in some sections of OPGW of AEGCL. Forum opined that project is already delayed and all action to be taken by KEC & POWERGRID to hand over the project as per original scope of project.

The Sub-Committee noted & recommended as above.

Action: NERTS & KEC

B5. Additional MUX, STM for completion of connectivity:

- 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.

During 5th NETeST meeting, it was decided that the agenda will be jointly discussed in the committee formed.

Deliberation in the meeting

Manager NERTS, informed the forum that all additional MUX is being taken care in NER-FO expansion project in Package- IV(A) and Package IV(C).

The Sub-Committee noted as above.

Action: All Constituents.

B.6 Maintenance of RTUs installed under ULDC Projects for Central Sector Generating stations:

As part of the ULDC projects, RTU which are commissioned at various Central Sector Generating stations are presently maintained by Powergrid. As per CERC Regulation for ULDC projects, the recovery period of the capital cost towards investment by Powergrid through tariff is 15 years and accordingly Powergrid will maintain there RTU till the completion of 15 years since DOCO for the respective region.

All the concerned Generating Companies/ utilities are requested to take necessary action for maintenance / replacement of the aforesaid existing RTU installed in their respective Power plant after completion of useful life of 15yr from DOCO to ensure continuous reporting of data to respective RLDCs.

Deliberation in the meeting

DGM, NERTS informed the forum that NEEPCO has already started the process of replacing the obsolete RTUs with new one. He requested NHPC to take up the same.

The Sub-Committee noted as above.

Action: NEEPCO & NHPC.

B.7 OPGW link between RHEP Power house and Biswanath Chariali/ Nirjuli sub-station Required.

The RTU of Ranganadi Power House is working properly at Ranganadi. The Link with SCADA at RLDC is disrupting many times due to weak link with Ranganadi. OPGW link may be established between Ranganadi and Biswanath Chariali/ Nirjuli.

Deliberation in the meeting

After detailed deliberation it was decided that NEEPCO and NERTS personnel will make a joint visit and resolve the issue by May, 2017.

The Sub-Committee noted as above.

Action: NERTS & NEEPCO.

B.8 PMU Display availability at SLDC:

Due to non-availability of separate communication links, PMU Displays are not available at all the SLDCs. A workaround may be that of using one of the SCADA (ICCP) links for both ICCP as well as PMU display. In this case the Internal Firewall of RLDC & SLDC need to include one additional policy for making through the PMU display traffic. As such, no security violation is envisaged as only HTTP port of PMU Historian need to be forwarded.

Deliberation in the meeting

After detailed deliberation it was decided that NERLDC will write a letter to Powergrid Engineering department to explore the proposal so that state SLDCs can get PMU data.

The Sub-Committee noted as above.

Action: NERLDC, NERTS & GE.

B.9 Security Arrangement for SCADA System:

Presently, the SCADA/EMS Upgrade Project is running through its final phase & all state SLDCs except Arunachal & Nagaland are integrated with NERLDC. This network is also connected to rest of the RLDCs via NLDC. In this scenario, any security incident/ intrusion in one system will affect other connected systems also. Therefore hardening of the security of SCADA/EMS system is a necessity. The requirement may be defined in Two Parts: Cyber Security & Physical Security.

Cyber Security may be implemented by proper configuration of the security features available in the SCADA/EMS system viz. a uniform and effective Cyber Security Policy across the SLDCs & NERLDC, Firewall policies allowing only necessary traffic & discarding others, disallowing Remote Access of the system unless authorized by the system owner, regular check of the system for Updates/ Patches, proper maintenance of Patch Management server etc.

Physical Security is necessary to prevent mishandling/ misconfiguration - intentional or accidental, unauthorized removal of asset from the system, connecting/ disconnecting external devices like laptop, pen drive, dongle and the likes unless unavoidable etc.. One effective way of implementation of physical security is Installation of CCTV Camera/ Surveillance System at strategic locations like Control Room Entry & Server Room Entry, Inside Control Room & Server Room, UPS/ Battery Room, DG Set etc.

Deliberation in the meeting

After detailed deliberation, the forum requested NERLDC to circulate a common policy followed by NLDC and NERLDC for safety and security of LDCs. The same may be discussed on the next NETeST meeting and adopted as common policy for all SLDCs.

To avoid unauthorized access to the SLDC, all members requested GE to configure security measure to the system as per contractual obligation.

Project Manager, GE informed the forum that the SLDCs need to come up with their security policy and GE will be implementing it.

Manager NERTS, suggested all SLDCs to take insurance for their assets.

EE Nagaland, requested the forum to write a letter to their respective state authority to declare all SLDCs as restricted and prohibited area considering the importance of SLDCs in grid management.

The Sub-Committee noted as above.

Action: NERPC, All Constituents.

B.11 Furnishing of detail parameters for the On-going Projects likely to be commissioned within 6 months by Constituents:

NEEPCO Projects:

1. Kameng HEP (4X150 MW)
2. PARE HEP (2X55 MW)
3. Tuirial HEP (2X30 MW)

POWERGRID :

1. 400KV D/C Balipara-Kameng
2. 400 KV Imphal s/s & associated lines Thoubal S/S (Manipur)
3. 400 KV D/C Silchar-Melriat line
4. 132 KV Silchar-Hailakandi & Bays at Hailakandi.
5. 400/132KV, 1X315MVA ICT-III at Silchar, 220/132 KV, 2X160 MVA ICTs at Balipara, 220/132 KV, 1X160 MVA at Kopili,

AEGCL : 220 KV Rangia-Salakati

Tripura : 132 KV D/C Manarchak –Surjamaninagar

This is for kind information that before commissioning any new projects, the connectivity conditions pertaining to Telemetry Data/Voice communication systems in terms of **clause 4.6.2 of IEGC 2010 read with Clause 6(3) of CEA (Technical Standards for connectivity to the Grid) Regulations, 2007** are to be fully met and the real time data of the station parameters be made available at the control centres alongwith voice communication systems at the time of commissioning. Moreover, it may also kindly be noted that as per recommendations of the Committee on Grid disturbance" Report on the Enquiry Committee on Grid Disturbance in Northern Region on 30th July 2012 and Northern, Eastern & North Eastern Region on 31st July 2012" dated 16.08.2012, clause (xiv) which is reproduced as follows - **"Proper telemetry and communication should be ensured to Load Despatch Centres from various transmission elements and generating stations. No new transmission element/generation should be commissioned without the requisite telemetry facilities"**.

In view of the above, the following informations/ parameters are required to be furnished to NERLDC in advance for making the platform for Database:-

- Single Line Diagram of the Power Station/Switchyards.
- Data List of the Station (to check the signals of both Analog & Digital).
- Wiring diagram of the Station (to check the wiring done at RTU end).
- Generator Parameter details- Generator Transformer parameters.
- ICT details. Any additional requirement to be intimated.

Constituents to submit detail parameters projects under their jurisdictions & fulfill the condition of IEGC.

Deliberation in the meeting

All constituent agreed to provide the requisite information of all new projects before commissioning.

The Sub-Committee noted as above.

Action: All Constituents.

B.12 Status of Optic fiber works in NER:

Optic fiber works in NER are going very slow, for example optic fiber works at Balipara-Ranganadi links, Ranganadi- Lekhi links, Ranganadi-Ziro link, Silchar Palatana link etc. This delay results in inter alia, non-availability real time data from Ranganadi, Nirjuli, Ziro and Palatana at NERLDC.

Availability of real time data at control centres is critical in real time grid operation as well as post disturbance analysis. Many grid disturbances are not being able to analyze properly as a result of non-reporting of RTUs due to delay in completion of optical fiber works.

List of on-going optical fiber is attached as **Annexure B-12**.

Deliberation in the meeting

Manager NERTS, informed the forum that all links will be through once the NERFO expansion project is completed.

The Sub-Committee noted as above.

Action: NERTS & KEC.

B.13 Status of RTU replacement and procurement of new RTUs:

SCADA data from KATHALGURI, DOYANG, KOPILI, KHANDONG, RANGANADI, ITANAGAR, ZIRO etc., are out since long due to which Grid management activity is severely affected.

RTU Outage details are given below:

Sl. No.	Station Name	Date of Outage
1	Ranganadi	21.05.16
2	Ziro	07.08.16
3	Kopili	09.05.15
4	Doyang	24.01.15
5	Khandong	16.09.16
6	Khatalguri	25.07.16
7	Haflong	14.09.16
8	Itanagar	01.08.16

Status as per discussions in 130th OCC

Sl. No.	Station Name	Status as informed in 130 th OCC
1	Ranganadi	Re-tendering stage. Work will be completed by Dec'2017.
2	Ziro	ABB has done site visit. Report awaited.
3	Kopili	By 31.05.2017 will be commissioned.
4	Doyang	By 30.06.2017 will be commissioned.
5	Khandong	By 31.05.2017 will be commissioned.
6	Kathalguri	Restored. Data received at NERLDC.
7	Haflong	PLCC panel shifted. Link yet to be established. Will be complete by 31.01.17.

The Sub-Committee took serious note of non-reporting of new RTUs due to link non-restoration/failure. Since the issue involves common link jurisdiction between CSGS and CTU, **the matter was referred to next NETeST meeting for resolution.**

List of RTU under SCADA upgradation project in NER is attached as **Annexure –B.13.**

Deliberation in the meeting

NEEPCO intimated that Doyang and Kopili RTU would be commissioned by 30th July and 30th June, 2017 respectively. For Khandong RTU, new RTU already supplied and will start reporting by 31st May 2017. Regarding Ranganadi RTU, the same is under process and will be commissioned by December, 2017.

Manager NERTS, informed that Ziro will be restored by 25th May, 2017. Regarding Haflong it is temporarily restored. Itanagar RTUs is sending intermitting data. NERLDC may please confirm the status of Haflong and Itanagar RTUs.

The Sub-Committee noted as above.

Action: NERLDC, All Constituents.

ADDITIONAL AGENDA ITEMS:

1. In 17th RPC, VC & ICCP Links, Tripura's comment was not clear. The same may be clarified in NETeST.

Deliberation in the meeting

NERPC informed that TSECL has already given consent for cost implication against POWERTEL links.

2. Connectivity of Chimpu SLDC (under central sector) from Parey to Chimpu by using OPGW of Leikhi-Nirjuli. AP may confirm length of same.

Deliberation in the meeting

As the Link of Nirjuli-Ranganadi LILO at Leikhi will be discarded in near future; it is recommended that Chimpu (Present SLDC location AP) may be connected via Pare-Chimpu and as the same is back bone connection for connecting SLDC with other SLDC & NERLDC and the link should be considered as Central sector link. POWERGRID may immediately explore connecting same under some ongoing project.

EE, SLDC AP consented and confirmed to give tower schedule of Pare-Chimpu T/L so that OPGW length & Hardware may be assessed.

The Sub-Committee noted as above.

Action: NERTS.

3. Using SCADA System to design the SPS using DO signals & MW. Instruction to all utility to provide DO addresses .NERLDC may circulate

Deliberation in the meeting

NERLDC may confirm the requirement of DO (digital output signals for CB control) from all ISGS/CS stations. Same may also be discussed in the study group meeting. Study group will also assess using PMU/PDC data for SPS etc.

NERLDC while integrating ICCP signals from RTAMC/NTAMC of POWERGRID may also take necessary action and instruct GE/Alstom accordingly.

NERTS requested NERPDC to take up the same in NPC after recommendation of study group.

The Sub-Committee noted as above.

Action: NERLDC.

Forum also requested NERPC to explore if "Power Customer Consumer Forum" can be formed for betterment of quality of services by vendors and also in time response from utilities/customers. NERPC may kindly explore if same can be taken up in NPC

The Sub-Committee noted as above.

Action: NERPC.

4. List of change in Nodes of FO Expansion.

- a) Mariani (State) –Kathalguri (NEEPCO): OPGW is laid over Katahalguri-Mariani (PG) which in turn is connected via Mariani (PG) to Mariani (State)
- b) Mokokchung (PG)-Doyang: -OPGW being strung under NER FO expansion under IIIC pkg (Executing agency: M/s Taihan/ M/s Sabari) over Doyang-Mokokchung (State) which in turn is being connected to Mokokchung (PG) via Mokokchung (State)-Mokokchung (PG)

Deliberation in the meeting

As the network link remains the same approximately, the link is being considered for inclusion.

The Sub-Committee noted as above.

Action: NERTS.

5. Modalities for OPGW to be laid by new parties under future projects/TBCB etc—All may discuss.

Deliberation in the meeting

The Sub-Committee requested all the concerned utility(ies) to furnish the relevant inputs to NERTS.

6. AC requirement in all ULDC locations.

Deliberation in the meeting

All State(s), ISGS & POWERGRID have been requested to take care of air conditioning requirement pertaining to ULDC node/equipment locations falling inside respective jurisdictions/stations.

The Sub-Committee noted as above.

Action: All Utilities.

7. Finalization of Locations of PMU to be placed under Phase2 URTDSM project through sub-committee & study group.

Deliberation in the meeting

The matter was referred to next Study group meeting. Before commencement of study group meeting, states/utilities may forward their comments to the respective study group members.

The Sub-Committee noted as above.

Action: All Utilities.

8. Tezu Namsai - 96km Link has been added in in Additional Communication part . So revised cost is 22crore with 851km (This project is already approved in 17th RPC and this is addition of left over link as per network diagram). This is proposed to be added to No. A.11, Additional Communication Scheme (755km + 96KM)-- approval was already accorded

Deliberation in the meeting

The forum agreed in principle and requested NERPC to put up the item for approval in next RPC meeting.

The Sub-Committee noted as above.

Action: NERPC.

9. Connectivity to Namsai Node to be explored . NERPSSIP network to be discussed. However if any new link /line requirement is there same may be discussed in respective forum.

Deliberation in the meeting

Forum opined that there is requirement of one ISTS transmission line 132kV Tinsukia to Namsai(PG) keeping in view optical grid connectivity and back up connectivity of power requirement of Arunachal Pradesh. Forum opined the technical study may be done by NERLDC and same may be put up as an agenda in next OCC

The Sub-Committee noted as above.

Action: NERLDC/NERPC.

10. MW Vacation dismantling & disposal status by AEGCL.

Deliberation in the meeting

AGM, Communication, AEGCL confirmed that for Towers, they have already taken up for auctioning. For equipment also, State will soon do the same in totality as per guidelines of DoT. NERPC requested AEGCL to expedite the same.

The Sub-Committee noted as above.

Action: AEGCL.

- 10.0 VOIP exchange project in NERLDC & SLDC(awarded to M/s Orange):

Deliberation in the meeting

NERTS informed that Installation is completed in all states. However Links are to be made ready for Dimapur & AP. POWERGRID intimated the same would be done

along with SLDC completion. In line with investment approval, POWERGRID is supposed to book the VOIP exchange project to MW Vacation project. However, forum opined that as VOIP Exchange pertains to all SLDCs specifically separately, hence, POWERGRID may explore cost booking in line with philosophy adopted for SLDC project.

NERLDC intimated there are some redundant VOIP phones (Central sector) which are not working. POWERGRID intimated that as (Ethernet/IP) links will be made ready under FO Expansion project. However in line with last RPC approval, already links configured for CS -POWERGRID stations and would be linked/commissioned by 2months.

The Sub-Committee noted as above.

Action: NERTS.

Date & Venue of next NETeST meeting

It is proposed to hold the 7th NETeST meeting of NERPC on second week of August, 2017. However, the exact date and venue will be intimated in due course.

The meeting ended with thanks to the Chair.

Annexure-I**List of Participants in the 6th NETeST Meetings held on 11/12/2017**

SN	Name & Designation	Organization	Contact No.
1.	Sh. Nangkong Perme, EE, SLDC	Ar. Pradesh	09436288643
2.	Sh. Chandan Sharma, DGM	Assam	09864150106
3.	Sh. Dipesh Ch. Das, AGM(LD-Com)	Assam	09954110254
4.	Sh. Kamal Das, Dy. Manager	Assam	09435746499
5.	Sh. A.K. Das, AGM, H/Q, AEGCL	Assam	09435045804
6.	Sh. Arup Sarmah, Dy. Manager , Comm.	Assam	09707854367
7.	Ms Jayela Wahengbam, Asstt. Mngr., SLDC	Manipur	09856875084
8.	Ms Laishram Ritu, Mngr. SLDC	Manipur	09612882984
9.	Sh. D. J. Lyngdoh, E.E (S.M), SLDC	Meghalaya	09774285758
10.	Sh. B. Wankhar, EE(MO)	Meghalaya	09436105914
11.	Sh. B. Narry, AEE, PLCC, MePTCL	Meghalaya	09089000911
12.	Sh. B. Nikhla, EE, SP, MePTCL	Meghalaya	09436314163
13.	Sh. C. W. Chen, AE, SLDC, MePTCL	Meghalaya	-
14.	Sh. Lalbiaksanga, SE, SLDC	Mizoram	09436140932
15.	Sh. Benjamin L. Tlumtea, Sr. EE, SLDC	Mizoram	09436151424
16.	Sh. B. Tiameren Ao, EE(MIS)	Nagaland	09436260852
	No Representative	Tripura	
17.	Sh. B. S. Roy, Asstt. GM	NERLDC	09436302719
18.	Sh. N. R. Paul, AGM (SO-I)	NERLDC	09436302723
19.	Sh. Joypal Roy, Sr. Manager	NEEPCO	09435577726
20.	Sh. A. Patir, GM	PGCIL	-
21.	Sh. P. Kanungo, DGM(AM)	PGCIL	09436302823
22.	Sh. Supriya Paul, Manager, AM	PGCIL	09436302995
23.	Sh. Navendra Gupta, Sr. Manager(Op)	OTPC	09774233426
24.	Sh. Bibek Roy, DGM(O&M)	OTPC	07085058902
25.	Sh. C. L. Khayuingam, DM(E)	NHPC	09402880207
26.	Sh. S. N. Pait	NTPC	09435720152
27.	Sh. Abhishek Varshney, Proj. Manager	GE	08800394840
28.	Sh. Imtiyaz Hussain, Project Manager	GE	08800795693
29.	Sh. Rajesh Koduri, Project Manager	KEC	08876524026
30.	Sh. Anil Sharma, Sr. Manager	KEC	09371893539
31.	Sh. P.K. Mishra, MS	NERPC	-
32.	Sh. B. Lyngkhohi, Director/S.E (C&O)	NERPC	09436163419
33.	Sh. Sadiq Imam, AD-I/AEE	NERPC	07004133772

ASSAM

Name of Utilities	Name of Substations	Name of Substations as per SCADA System	STATUS (as on 02/05/2017)	REMARKS
1	Agia	AGIA__AS	Not Reporting	
2	APM	APM__AS	Not Reporting	
3	Azara	AZARA_AS	Not Reporting	
4	Badarpur(Panchgram)	BADAR_AS	Not Reporting	
5	Behiating	BIHIA_AS	Not Reporting	
6	BiswanathChariyali	BNC__AS	Not Reporting	
7	Bokajan	BOKAJ_AS	Reporting	
8	Bokakhat	BOKAK_AS	Reporting	
9	Boko	BOKO__AS	Not Reporting	
10	Bongaigaon (BTPS)	BONGA_AS	Partially Reporting	Digital and ICT 1 data not coming
11	Bordubi	BORUD_AS	Not Reporting	
12	Bornagar	BORNA_AS	Not Reporting	
13	Chandrapur	CHAND_AS	Reporting	
14	Depota	DEPOT_AS	Not Reporting	
15	Dhaligaon	DHALI_AS	Reporting	
16	Dhemaji	DHEMA_AS	Not Reporting	
17	Dibrugarh	DIBRU_AS	Not Reporting	
18	Diphu	DIPHU_AS	Partially Reporting	Digital and ICT 1 data not coming
19	Dispur	DISPU_AS	Not Reporting	
20	Doomdooma (Rupai)	DOOMD_AS	Not Reporting	
21	Dullavcherra	DULLA_AS	Not Reporting	
22	Gauripur	GAURI_AS	Not Reporting	
23	Gohpur	GOHPU_AS	Not Reporting	
24	Golaghat New	GOLAN_AS	Not Reporting	
25	Gossaigaon	GOSAI_AS	Not Reporting	
26	Haflong	HAFLO_AS	Not Reporting	
27	Hailakandi	HAILA_AS	Not Reporting	
28	Jagiroad (Baghjap)	JAGIR_AS	Not Reporting	
29	Jawaharnagar	JAWHR_AS	Not Reporting	
30	Jorhat (Garmur)	JORHA_AS	Partially Reporting	Only Bus data, Bokajan Line flow and ICT 2 & 3 flow reporting
31	Jorhat West	JRTWT_AS	Reporting	
32	Kahelipara	KAHEL_AS	Reporting	CB Status not coming
33	North Lakhimpur	LAKHI_AS	Not Reporting	

34	KarbiLangpi	LANGP_AS	Reporting	Wrong Data of Bus voltage and frequency
35	Lakwa (LTPS)	LAKWA_AS	Not Reporting	
36	Lanka	LANKA_AS	Reporting	Only CB status coming
37	Majuli	MAJUL_AS	Not Reporting	
38	Margherita	MARGH_AS	Not Reporting	
39	Mariani	MARIA_AS	Reporting	
40	Moran	MORAN_AS	Reporting	
41	Nagaon	NAGAO_AS	Not Reporting	
42	Nalbari	NALBA_AS	Reporting	
43	Namrup	NAMRU_AS	Not Reporting	
44	Narangi	NARAN_AS	Reporting	
45	Nazira	NAZIR_AS	Not Reporting	
46	Pailapool	PAILA_AS	Not Reporting	
47	Panchgram Old	PANCH_AS	Not Reporting	
48	Rangia	RANGI_AS	Reporting	
49	Rowta	ROWTA_AS	Reporting	
50	Rupia	RUPIA_AS	Not Reporting	
51	Samaguri	SAMAG_AS	Reporting	
52	Sarusajai	SARUS_AS	Reporting	
53	Sibsagar	SIBSA_AS	Not Reporting	
54	Silchar (Srikona)	SRIKO_AS	Not Reporting	
55	Sipajhar	SIPAJ_AS	Not Reporting	
56	Sishugram	SISHU_AS	Reporting	
57	Tinsukia	TINS1_AS	Not Reporting	
58	Sonabil	SONAB_AS	Reporting	
59	Sonari	SONAR_AS	Not Reporting	
60	Sam TezGoh	STF_F_AS	Not Reporting	
61	Umrangsho	UMRAN_AS	Not Reporting	

Name of Project: MW REPLACEMENT PROJECT NERTS**A. Central Sector Links**

S.N.	Name of Line	SUPPLY Revised Route length-KM	ERECTION Revised Route length-KM	Revised Sector	Latest Status	REMARKS
1	Badarpur Silchar ()	19.221	19.221	CS		Change in length after prepared
2	Gohpur (AEGCL) Itanagar (PG)	0		CS		Deleted but replaced S.N.A.8,9,5
3	Mariani (State) Mariani (PG)	1.52	1.52	CS		Length revised after Construction
4	Namsai (PG) Tinsukia (State)----	0	0	CS		Link is achieved through OPGW/** ADSS over 33kV Namsai (PG)-Namsai (AP State)-Rupai (AEGCL)-60KM to
	The above 4 replaced by following 4.a & 4.b & 10 **			CS		
4.a	Ranganadi Ziro	44.292	44.292	CS		Link is must keeping in no connectivity with Ziro part, Telemetry data of Ziro & Nearby stations are reqd to be monitored
4.b	Balipara Rangana di LIL Over	25.89	25.89	CS		This is required for continuation NKN Link Balipara-Nirjuli (part over Balipara Ranaganadi)
5	Itanagar (PG) Itanagar (SLDC) replaced by 5.a & 5.b	0	0	CS		Direct link NA so deleted. UGFO laid by Telecom, Telecom requested that redundancy to be maintained through OPGW.
5.a	LILON Nirjuli Ranaganadi &	5.554	5.554	CS		Ranganadi end to be redundantly connected from Nirjuli
5.b	Nirjuli--Lekhi-Chimpu	13.63	13.63	CS		Chimpu is SLDC location & so connectivity required
6	Badarpur (PG) Kolasib	106.759	106.759	CS		Change in length after
7	Kolasib Aizawl (PG)	65.73276	65.73276	CS		Change in length after prepared
8	Gohpur-Ranganadi (NEEPCO)-- achieved through & 8.2			CS		Back Link and for Main link of Connectivity of Ranganadi. ISGS
8.1	132KV Gohpur (AEGCL)-Nirjuli (PG)-(Part)	12.033	12.033	CS		
8.2	400kV Balipara (PG)-	61.239	61.239	CS		

S.N.	Name of Line	SUPPLY Revised Route length- KM	ERECTION Revised Route length- KM	Revised Sector	Latest Status	REMARKS
9	132kV Nirjuli(PG)-Ranganadi(NEEPCO)	21.692	21.692	CS		(Nirjuli-Ranga-21.5km, Parey LILO-5km, Future Diversion-2
10	66kV Tinsukia(AEGCL)-Rupai(AEGCL)-[under Namsai-Tinsukia]	24.824	24.824	AEGCL		Part of Tinsukia-Namsai(PG) Link, approx length after survey
11	132kV S/CImpal(PG)-Impal(STATE)	0.769	0.769	CS		uldc&Diff Protection
12	132kV D/CSilchar(PG)-Srikona(AEGCL)	1.199	1.199	CS		uldc&Diff Protection
13	132kV D/C	1.611	1.611	CS		uldc&Diff Protection
14	132kV D/C Melriat(PG)-Sihmui(State)	6.441	6.441	CS		uldc&Diff Protection
15	132kV Aizwal(P)	4.959	4.959	CS		uldc&Diff Protection, Remote Operation
16	400KV BONG-NTPC	0		CS		Connectivity of NTPC-GSat BTPS/Salakati
17	132KV U-Khliehriat(Upto Tower No.25)-For redundant	7.532	7.532	CS		Redundant connectivity between NERLDC&SLDC
	subTotal	424.89776	424.89776			
		Under Priority Erection of Following Links (Central Sector) considered where materials are				
19	220KV MISA-SAMAGURI	34.374	34.374			Erection qty amended under priority link in last amendment
20	400KV BT PS-Bongaigaon(NTPC) & Up Salakati-	4	4	CS		OPGW(3.5KM) laid on 400kV BNG-BTPS(NTPC)-220kV BTPS(AEGCL) instead of original plan of 400kV BNG-220kV SKT-BTPS(AEGCL). Connectivity of Bongaigaon with Salakati over ICT Extension bay(500m) will be included/ taken from spare
21	220KV BT PS-Salakati(PG)	0	0	CS		
22	Dimapur-Dimapur(SLDC)	0.647	0.647	CS		NERLDC requested in UCC meeting vide Letter Ref. NERLDC/UCC/NEULDC_O&M /353-79 Dtd. 15.7.13. Point No.5. Eof MOM
22	Aizwal-Aizwal/Zimabawk(SLDC)	6.719	6.719	CS		
Sub-Total 1		470.63776	470.63776			S.N. 19,20,21 diverted from NR project

B.AEGCLSector

S.N.	Name of Line	SUPPLY Revised Route length-KM	ERECTION Revised Route length-KM	Revised Sector	Latest Status	REMARKS
1	BTPS Agia220	65.5736	65.5736	AEGCL		Changein lengthafter DS prepared
2	AgiaSarusujai220	130.481	130.481	AEGCL		NoChange
3	Inclusionof220kVBoko&400kVMirjaS/S(LILOin Ag-SSJ)	0.5	0.5	AEGCL		NoChange
4	NamrupTinsukia132	43.571	43.571	AEGCL		Changein lengthafter DS prepared
5	BaliparaGohpur132	101.124	101.124	AEGCL		Changein lengthafter DS prepared
6	Badarpur(PG)Badar pur (AEGCL)	1.023	1.023	CS		Changein lengthafter DS prepared
7	Jiribam Pailapool132	12.753	12.753	AEGCL		Changein lengthafter DS prepared
8	PailapoolSrikona132	33.692	33.692	AEGCL		Changein lengthafter DS prepared
9	Badarpur(AEGCL) -Srikona	19.586	19.586	AEGCL		Changein lengthafter DS prepared
	SubTotal	408.3036	408.3036			
UnderPriorityErection ofFollowingLinksconsidered(underAEGCL)wherematerialsare OSM(Diverted/exchangebetweenNR-NER)						
10	132kVMariani-Lakwa	79.298	79.298			Erection qtyamended under prioritylink in last amendment
11	220kVDCS Samaguri-Mariani	169.717	169.717			Replenishmentof 5.743km to Jeypore & Erectionqty amended underprioritylinkinlast amendment-1
12	132kV Namrup-Lakwa()	58.394	58.394			Erectionqty amended underprioritylinkinlast amendment-1
	Sub-	715.7126	715.7126			km
			715.7126			km
	MAIN OPGW	1186.35036	1186.35036			
	ADDITIONOF SPAREAS PER BOQITEM	44	0			(Inamendment-2,Spare wasseparatelymentioned inLOAqtyonly/notin listof line'Annx
	SPARECSNERinclchangein RL while erection	30				
	SPAREAEGL	8				
	SPARECSNR	6				
	GrandTotalsofOPGWlength inclSpare(Apx)	1230.35	1186.35			

NorthEasternRegionExpansionProject-Proposed lines--Approved15THTCC,RPCGuwahati-Anx-B-29.I								
Sl No .	From	To	KVLE VEL	Owner oftrline	OldLength(km)	Revised Length(km)	Remarks	Current Status
1	Khandong	Haflong	132	CS	63	63	Live Line	
2	Badarpur(PG)	Jiribam(PG)	132	CS	67	67	LiveLine	
3	Jiribam(PG)	Loktak(NHPC)	132	CS	82	82	LiveLine	
4	Loktak(NHPC	Imphal(PG)	132	CS	35	35	LiveLine	
5	Agartala(PG)	RCNagar(NEEPCO)	132	CS	8	8	LiveLine	
6	Dimapur(PG)	Doyang(NEEPCO)	132	CS	93	93	LiveLine	
7	Doyang(NEEPCO)	Mokokchung (PG/State)	132	CS	30	30	LiveLine	
8	Mokokchung(PG)	Mokakchung(State)	132	CS	3	3	LiveLine	
9	Mokokchung(PG)	Maryani(PG)	220	CS	56	56	LiveLine	
10	Silchar(PG)	Malriat(PG)	400 chargedat132kV	CS	160	160	LiveLine	
11	Silchar(PG)	Bongaigaon(PG)	400	CS	247	0	LinkRemove	
12	Surajmaninagar(TSECL)	Pallatana(OTPC)	400 chargedat132kV	CS	35	35	LiveLine	
13	Mariani(State)	Kathalguri(NEEPCO)	400 chargedat220kV	CS	163	163	LiveLine	
14	Silchar(PG)	Srikona(AEGCL)	132	CS	3	3	LiveLine	
15	Bongaigaon(PG-400kV)	Salakati	220	CS	1	1	LiveLine	
16	Kohima(132KV)	Kohima(220KV)	132	Nagaland	25	25	LiveLine	
17	UmiatIII(D/C)	Umtru	132	Meghalaya	42	0	LinkRemoved	
18	NEHU(S/C)	NEIGHRIMS	132	Meghalaya	9	9	LiveLine	
19	Khliehriat(PG)	Khliehriat(State)(S/C)	132	Meghalaya	6	6	LiveLine	
20	Khliehriat(State)(D/C)	MyntduLeshka-HEP	132	Meghalaya	25	25	LiveLine	
21	Khliehriat(PG)	Lumshnong(S/C)	132	Meghalaya	25	25	LiveLine	
22	Silchar(PG)	PK'bari(TSECL)	400 chargedat132kV	TSECL	122	0	LinkRemoved	
23	P.K.Bari(TSECL)	Surajmaninagar(TSECL)	400KV chargedat132kV-Future	TSECL	130	0	LinkRemoved	
24	Agartala(TSECL)	BaramuraGTP	132	TSECL	30	30	LiveLine	
25	Agartala(TSECL)	Surajmaninagar(TSECL)	132	TSECL	20	20	LiveLine	
26	Surajmaninagar(TSECL)	Badharghat	132 (future)	TSECL	9	9	OffLine/Shut down	
27	Surajmaninagar(TSECL)	Gokulnagar	132 (future)	TSECL	15	15	OffLine/Shut down	

28	Surajmaninagar(TSECL)	Budhjungnagar	132	TSECL	20	20	LiveLine	
29	Pallatana(OTPC)	Udaipur(TSECL)	132	TSECL	12	12	LiveLine	
30	Udaipur(TSECL)	RokhiaGTP	132	TSECL	40	40	LiveLine	
31	RokhiaGTP	Rabindranagar-66kv	66(future132)	TSECL	23	23	OffLine/Shut down	
32	Udaipur(TSECL)	GumtiHEP	66	TSECL	45	45	LiveLine	
33	GumtiHEP	Amarpur(TSECL)	66	TSECL	30	30	LiveLine	
34	Udaipur(TSECL)	Bagafa(TSECL)	66(future132)	TSECL	25	25	LiveLine	
35	Bagafa(TSECL)	Belonia(TSECL)	66(future132)	TSECL	15	15	OffLine/Shut down	
36	Bagafa(TSECL)	Satchand(TSECL)	66(future132)	TSECL	22	22	OffLine/Shut down	
37	Satchand(TSECL)	Sabroom(TSECL)	66	TSECL	15	15	LiveLine	
38	Imphal(PG)	ImhalState	132	Manipur	1	0	LinkRemoved	
39	Loktak(NHPC	Ningthoukhong (State)	132	Manipur	11	11	LiveLine	
40	Ningthoukhong(State)	Imphal(State)	132	Manipur	28	0	LinkRemoved	
41	Imphal(State)	Karong	132	Manipur	60	60	LiveLine	
42	Karong	Kohima	132	Manipur	50	0	LinkRemoved	
43	Mizoram1	Mizoram2	132	Mizoram	59	0	LinkRemoved	
44	Yurembam	Yaingangpokpi	132	Manipur	0	42	Link Added/LiveLine /offline	
45	Yaingangpokpi	Kongba	132	Manipur	0	32	Link Added/LiveLine /offline	
46	Kongba	Kakching	132	Manipur	0	45	Link Added/LiveLine /offline	
47	Kakching	Churachandpur	132	Manipur	0	38	Link Added/LiveLine /offline	
48	Yaingangpokpi	Hundung	132	Manipur	0	32	Link Added/LiveLine /offline	
49	Kakching	Chandel	132	Manipur	0	25	Link Added/LiveLine /offline	
50	Loktak(NHPC)	Rengpang	132	Manipur	0	47	Link Added/LiveLine /offline	
51	Jiribam	Jiribam	132	Manipur	0	1	Link Added/LiveLine /offline	
52	Ningthoukhong-	Churachandpur	132	Manipur	0	32	Link Added/LiveLine /offline	
53	Mirza(Azara)	Byrnihat	400	CS	0	45	Link Added/LiveLine /offline	
54	Kohima	Wokha	132	Nagaland	0	58	LinkAdded/Live Line/offline	

55	Aizwal(PG)	Zimabawk-II(Zuangtui)	132	Mizoram	0	6.5	Link Added/Live Line/offline	
56	Aizwal(PG)	Zimabawk-I(Luangmual \	132	Mizoram	0	1	LinkAdded/Live Line/offline	
57	Silchar	Pallatana	400	CS	0	248	Link Added/LiveLine /offline	
		Total			1960	1934	(=1933.5≈1934.00)km	

RTU under SCADA Up-gradation Project in NER ANNEXURE- B.13

SI No	SLDC	RTU Location as per LOA	Location where RTU Supplied By Alstom	Status
1	Manipur	132KV Hundung S/S	132KV Hundung S/S	Delivered
2		132kV Rengpang S/S	132kV Rengpang S/S	Delivered
3		132/33 kV Jiribam S/S	132/33 kV Jiribam S/S	Delivered
4		132kV Churachandpur S/S	132kV Churachandpur S/S	Delivered
5		132/33kV Karong S/S	132/33kV Karong S/S	Delivered
6		132/33 kV Yaingangpokpi S/S	132/33 kV Yaingangpokpi S/S	Delivered
7		132/33kV Kakching S/S	132/33kV Kakching S/S	Delivered
8		132/33 kV Chandel S/S	132/33 kV Chandel S/S	Delivered
9		132/33kV Ningthoukhong S/S	132/33kV Ningthoukhong S/S	Delivered
10		132/33kV Yurembam S/S	132/33kV Yurembam S/S	Delivered
11		132/33kV Kongba S/S	132/33kV Kongba S/S	Delivered
1	Tripura	132 kV GSS,79, Tilla	132KV Surjamani Nagar S/S	Delivered
2		132 kV Banduar S/S, Udaipur	Gumti Hydel Power	Delivered
3		132 kV Badharghat S/S	132/66kV Gamaibari S/S	Delivered
4		132 kV Dharmanagar S/S	132kV PK Bari S/S	Delivered
5		132 kV Purba Kanchanbadi S/S	132kV Rabindra Nagar S/S	Delivered
6		Barmura Gas Thermal Project	132kV Mission Tilla S/S	Delivered
7		Rokhia Gas Thermal Project	132kV Budhjanganagar S/S	Delivered
8		Gumti Hydro Electric Project	132/66kV Banduar S/S	Delivered
9		400/132 kV Surjamaninagar S/S	132kV Ambasa S/S	Delivered
10		132 kV Rabindranagar S/S	132kV Dhalabil Grid S/S	Delivered
11		66 kV Belonia S/S	Baramura Gas Thermal Power Station	Delivered
12		66 kV Satchand S/S	132kV Jirania S/S	Delivered
13		66 kV Sabroom S/S	132kV Garotila Grid S/S	Delivered
14		66 kV Bogafa S/S	66kV Ompi S/S	Delivered
15		66 kV Amarpur S/S	66kV Amarpur S/S	Delivered
16		66 kV Ompi S/S	132kV Gournagar S/S	Delivered
17		66 kV Boxanagar S/S	132kV Badharghat S/S	Delivered
18		132 kV Bodhjunganagar S/S	66kV Satchand S/S	Delivered
19		132 kV Jirania S/S	66kV Sabroom S/S	Delivered
20		132 kV Gamaitilla S/S	66kV Boxanagar S/S	Delivered
21		132 kV Ambassa S/S	66kV Belonia S/S	Delivered
22		132 kV Kamalpur S/S	66kV Bagafa S/S	Delivered
23		132 kV Kailasahar S/S		
24		132 kV Dhallabil S/S		
25		132 kV Ganda Sherra		
1	Meghalaya	Cherrapunjee (S/S)	132KV Nongpyndeng	Delivered
2		Nongstoin (S/S)	132KV Nangalbibra S/S	Delivered
3		Nangalbibra (S/S)	132kV Upper Rongkhon S/S	Delivered
4		Rongkhon (S/S)	132kV Suchen S/S	Delivered
5		Sonapani HEP (GS) changed to Iekhsa	132kV Cherra S/S	Delivered
1	Mizoram	Melriat State (#2) 132/33kV	132KV Luangmual S/S	Delivered
2		W. Phaileng 132/33kV	132kV Shimmui S/S	Delivered
3		E. Lungdar 132/33kV	Aizawl Indoor S/S	Delivered
4		Marpara 132/33kV	Zemabawk S/S	Delivered
5		Lungsen 132/33kV		
6		Lawngtlai 132/33kV		

1	Nagaland	Nito Farm(66kV)	132KV Nagarjan S/S	Delivered
2		Purana Bazar (66kV)	132/33kV Ganesh Nagar S/S	Delivered
3		Power House (66kV)	132/33 kV Wokha S/S	Delivered
4		Dimapur (Nagarjan) 132/66kV	66/33 kV Ampoto S/S	Delivered
5		Sovima 66kV	66/33 kV Saksi S/S	Delivered
6		Chumukedima(CMD) 66kV	66/33 kV Longwa S/S	Delivered
7		Ganesh Nagar 66kV	66/33 kV Altenden S/S	Delivered
8		Jalukie 66kV	66 kV Power House	Delivered
9		Peren 66kV	132/33kV Kohima S/S	Delivered
10		Kohima 132kV	132/33kV Kiphire S/S	Delivered
11		Meluri 132kV	132kV Generating S/S	Delivered
12		Kiphire 132kV		
13		LHEP 132kV		
14		Tuensang 66kV		
15		Longleng 132kV		
16		Mokuukchung 132kV		
17		Zuheneboto 66kV		
18		Doyang 66kV		
19		Wokha 132kV		
1	Arunachal Pradesh	DEOMALI	DEOMALI	FAT PENDING
2		KHONSA	JAIRAMPUR	
3		CHANGLANG	PASIGHAT	
4		JAIRAMPUR	ALONG	
5		MIAO	DAPORIJO	
6		NAMSAI	ITANAGAR(S/S)	
7		TEZU	KHUPPI	
8		ROING	BHALUKONG	
9		PASIGHAT	SMS(Naharlagun)(LEKHI)	
10		ALONG		
11		DAPORIJO		
12		ZIRO		
13		ITANAGAR(S/S)		
14		KHUPPI		
15		BHALUKONG		
16		BOMDILA		
17		TAWANG		
18		SEPPA		
19		SAGALI		
20		SMS(Naharlagun)(LEKHI)		
21		NIGLOK		

SI No	SLDC/RLDC	Name of SubStationlocations for which States have to arrange 2nos. data SIM (post/pre paid- 3G/4G/GSM/Edge/2G-----with min 3GB per month) per locations	RTU End Dual SIM ModemQty
State Sector			
1	Manipur	Chandel	1
2		Churachandrapur	1
3		Jiribam	1
4		Rengpang	1
5		Hundung	1
6		Spare for Manipur	1
Sub Total Manipur			6
1	Nagaland	66kV Power House	1
2		66kV Paren	1
3		132kV Kohima	1
4		LHEP	1
5		66kV Tuensung	1
6		132kV Mokochung	1
7		132kV Zunhenboto	1
8		132kV Wokha	1
9		132kV Kiphire	1
10		66kV Tuli	1
11		66kV Mon	1
12		Spare for Nagaland	1
Sub Total Nagaland			12
1	Mizoram	132kV Sihhmui	1
2		132kV Zemabark-II (Zuangtui)	1
3		132kV Luangmual(State)/ Zemabawk-I	1
4		Spare for Mizoram	1
Sub Total Mizoram			4
1	Arunachal Pradesh	Deomali	1
2		Pasighat	1
3		Along	1
4		Daporijo	1
5		Naharlagun	1
6		Bhalukpong	1
7		Jairampur	1
8		Khupi	1
9		Spare for Arunachal Pradesh	1
Sub Total Arunachal Pradesh			9
1	Tripura	Rabindranagar 66KV Sub-Station	1
2		Belonia 66KV Sub-Station	1
3		Satchand 66KV Sub-Station	1
4		Sabroom 66KV Sub-Station	1
5		Bogafa 66KV Sub-Station	1
6		Amarpur 66KV Sub-Station	1
7		Gumti HEP	1
8		Rokhia GTP	1
9		Baramura GTP	1
10		P K Badi 132KV Sub-Station	1
11		Dharmanagar 132KV Sub-Station	1
12		Spare for Tripura	1
Sub Total Tripua			12
Total State Sector			43

Note:

1.0 For SLDC locations , internet connectivity (broad band- 6GB per month) is to be arranged by State authority

2.0 For SubStation-RTU locations ----State have to arrange 2nos. data SIM (post/pre paid- 3G/4G/GSM/Edge/2G-----with min 3GB per month) per locations.