

North Eastern Regional Power Committee

MINUTES OF THE 7th NER Telecommunication, SCADA & Telemetry

(NE-TeST) COORDINATION

SUB-COMMITTEE MEETING OF NERPC

Date : 17/08/2017 (Thursday)
Time : 10:00 hrs
Venue : "Hotel Nandan", Guwahati.

The List of Participants in the 7th NE-TeST Meeting is attached at **Annexure - I**

Shri P.K. Mishra, Member Secretary, NERPC welcomed all the participants to the 7th North Eastern Telecommunication, SCADA & Telemetry 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.

Shri T.S. Singh, Executive Director, NERLDC mentioned about the new CERC's Regulation on Availability of Communication and stated that NERPC Secretariat has to certify the availability of communication in line with transmission elements and felt that as a forum a tremendous assignments lie ahead to comply with and requested NERPC along with members of the forum to look into the matter by forming a sub-group to find out the methodology and to address the issue at the earliest.

Shri A. Patir, General Manager (AM), NERTS informed that 4 new Control Centers have been formed in NER to address the communication system. He also mentioned that during replacement of old system by new one some interruptions in the link might occur and requested constituents to bear with them. He also expressed satisfactions the participations of various agencies and hope that the trend should also continue in future.

Thereafter, Member Secretary requested Shri B. Lyngkhoi, Director/SE(C&O) to take up the agenda items for discussion. SE NERPC requested the forum to give feedback in a timely manner after circulation of the minutes. He suggested that all amendment requested should be communicated within 15 days of the circulation of the minutes, else the minutes will be taken as confirmed.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF THE 6th MEETING OF “NORTH EASTERN TELECOMMUNICATION, SCADA & TELEMETRY (NETeST)” SUB COMMITTEE OF NERPC.

SE(C&O) informed that minutes of the 6th NETeST Meeting held on 11th May, 2017 at Guwahati were circulated by NERPC vide letter No. NERPC/SE(O)/TeST/2017/ dated 30th May, 2017.

He mentioned that comments received from AEGCL and MeECL will be discussed and would be incorporated in the minutes of 7th NETeST meeting.

The Sub-committee confirmed the minutes of the 6th 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 7 th NETeST	Status as informed in 6 th NETeST	Target Completion
UPGRADATION OF SLDCs				
1	Assam		EMS Tuning left. Supply of DG set by left.	Completed. DG set-Target Nov17.
2	Tripura		EMS tuning completed. Some site requires 48V DC supply and some require civil work.	Completed. DG set-Target Nov17.
3	Meghalaya		EMS SAT Competed. DG set to be installed later.	Completed. DG set-Target Nov17.
4	NERLDC		Completed.	Completed. DG set-Target Nov17.

5	Manipur		EMS tuning completed. DG set to be installed later.	Completed. DG set-Target Nov17.
6	Nagaland		Installation to be completed by May. EMS SAT to be completed by July, 2017.	Completed. DG set-Target Nov17.
7	Mizoram		EMS tuning to be done through DTS simulation by June, 2017.	Completed. DG set-Target Nov17.
8	Ar. Pradesh		SAT to be completed by May, 2017. EMS tuning to be done through DTS simulation by June, 2017.	Completed. DG set-Target Nov17.
9	Backup NERLDC		Completed.	Completed. DG set-Target Nov17.

During 6th NETeST, It was again confirmed that all State SLDC authority will make DG foundation pad ready wherever left out.

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 August17. 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 added 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.

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.

Further as per additional request from states, POWERGRID has placed an order for GPRS related equipment(s) 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**)

It was discussed the project has already got delayed earlier due to some issues like non-readiness of sites earlier (Manipur, Mizoram, Nagaland, AP) and then issues of trenches/civil works/ foundations (Tripura) and also other law and order issues in Manipur, Nagaland, etc. GE is requested to complete the pending works at the earliest possible.

States who are yet to sign AMC may sign the same without further delay. The same was also emphasized by NERPC representatives

AEGCL though they had requisitioned for supply of RTUs under SLDC Up-gradation Project, they informed that they are no longer require the above RTUs. Further, they intimated they are exploring to buy SAS/RTUs under PSDF in different contract and requested forum if other states can take those RTUs and also requested GE 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. GE intimated that RTUs are almost ready and engineering works done and so even if they don't supply; cost will be imparted for the materials already incurred by GE. However GE suggested 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.

Forum opined that necessary insurance against SLDC assets may be taken care by respective/NERLDC/owner as applicable.

All state representatives asked GE 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.

GE at the beginning of AMC should submit an excel sheet with components & availability/outage calculation which will show all items of BOQ incorporating item wise formula of availability calculation.

Forum asked GE to open an office in Guwahati. Director NERPC requested Alstom to pass on the message to highest authority for benefit of region

Deliberation in the meeting

SN	Utility	Status as informed in 7 th NETeST	Status as informed in 6 th NETeST	Target Completion
UPGRADATION OF SLDCs				

1	Assam	Completed.	EMS Tuning left. Supply of DG set by left.	Completed. DG set-Target Nov17.
2	Tripura	Completed. Space for DG set is to be assured by TSECL. Further, AMC issue to be addressed by TSECL in line with agreement & other SLDCs	EMS tuning completed. Some site requires 48V DC supply and some require civil work.	Completed. DG set-Target Nov17.
3	Meghalaya	Completed.	EMS SAT Competed. DG set to be installed later.	Completed. DG set-Target Nov17.
4	NERLDC	Completed.	Completed.	Completed. DG set-Target Nov17.
5	Manipur	Completed.	EMS tuning completed. DG set to be installed later.	Completed. DG set-Target Nov17.
6	Nagaland	EMS SAT to be completed by 15 th September 2017. Modification in DG set foundation to be done by DOP, Nagaland soon.	Installation to be completed by May. EMS SAT to be completed by July, 2017.	Completed. DG set-Target Dec 17.
7	Mizoram	Completed. DG set placement area is not handed over by P&E, Mizoram. VC unit is to be installed by GE	EMS tuning to be done through DTS simulation by June, 2017.	Completed. DG set-Target Nov17. Subject to immediate hand over of DG site
8	Ar. Pradesh	EMS SAT to be completed by 15 th September 2017.	SAT to be completed by May, 2017. EMS tuning to be done through DTS simulation by June, 2017.	Completed. DG set-Target Nov17.
9	Backup NERLDC	Completed.	Completed.	Completed. DG set-Target Nov17.

Note: Dedicated Internet connectivity (lease line/static ip or as possible alternatively) at each SLDC is to be confirmed by SLDCs as per 5th/6th NETeST MOMs

Critical Issue/Non-functioning Assets:

S.N.	Description of Issue	State SLDC ref	Remarks
01	Repair of VC (Kodek/processor issue)	Meghalaya	Alstom/GE to take up immediately
02	VC Issue (switch/ connectivity issue from server)	Manipur	

Project Manager, GE gave a presentation on progress of work at different SLDCs. It was intimated that Load & fuel for DG test to be arranged as per provision of contract. He requested all SLDCs to make site (foundation along with earthing) ready in time to avoid delay in DG set commissioning. He also requested Nagaland to make required modification at the site for the installation of DG set.

GE requested AP to depute their representative at site for the EMS SAT testing of the SCADA immediately. He also requested AP to give TOC for the work part completed after SAVT completion. DoP AP agreed to extend all co-operations in this regard. EE, DoP AP requested GE to delay the EMS SAT testing by a few weeks (and hence to start wef 31.08.2017) so that he can arrange man power for observing the SAT.

Project Manager, GE brought to the notice of the forum that Tripura SLDC is not accepting dispatch of DG set spare. The dispatch is lying in the ware house of transporter and the transporter is charging additional cost on daily basis to GE. SE NERPC intervened and requested Director, Generation Dept/I/C-SLDC, Tripura SLDC over phone to accept the spares, he acquiesced. It was also assured from TSECL that AMC would be taken care.

Assam again requested for non supply of RTUs from GE which they earlier opted for. Manager NERTS informed the forum that matter was taken up with GE many times and GE has agreed for non-supply of RTUs to AEGCL without any cost implication. AEGCL thanked POWERGRID for the same.

Regarding supply of spares for RTUs along with accessories, all utilities agreed that MFT, CMRs & other loose items etc., may be packed in boxes with proper packing list. The RTU panel to be supplied along with (i) internal wiring & racks (ii) back connectors & requisite channels installed (iii) external cables separately as required for items which are included in supply cost as per contract.

MEPTCL requested NERTS-POWERGRID to provide the required earthing as early as possible. NERTS intimated executing the work through M/s Manav Energy's chemical earthing (as suggested by MePTCL) could not be done as the matter would be single tender and there is no documentary evidences/supporting of Standard(IEEE/IS) about effectiveness of the methodology to achieve any specific value (i.e. 1ohm or so as asked by MePTCL).

Manager, NERTS informed that measures like putting GI earth-wire for additional earthing will be done as per consensus of meeting with I/C SLDC MEPTCL (held on 04.08.2017) at POWERGRID office. The input side (neutral) of Input Isolation transformer of UPS will be separately connected to existing Grid earth mat via one earth pit. Further, output side of UPS will be connected to separate Earth pit. Target date is by 1st week September, 2017. Depending on the result, if values are not OK, MEPTCL was requested to take up the matter departmentally. MePTCL agreed to get back the information after the above measures are completed.

ED, NERLDC informed the forum about poor quality/efficiency of man power posted by GE at SLDC and RLDC and further informed that they are not able to troubleshoot basic problem and squarely blame it on non-functioning of RTUs as in the case of Rangia S/s of Assam. He also strongly objected to their using of Team Viewer or any other remote viewing software at RLDC without taking authorization from higher authorities of RLDC.

P&E, Mizoram was asked by NERLDC to take up for replacement of Kolasib (Bawktang) RTU. SE, SLDC, P&E agreed and requested NERTS to include the above RTU in SLDC up-gradation project. The same was agreed in forum. Further, P&E, Mizoram was requested to write a letter to GM-AM, NERTS in this regard.

The forum viewed strongly the lapses in providing adequate support at RLDC/ SLDCs by GE. The forum very strongly opinioned that GE should look into it very seriously and provide trained manpower. Representative of GE in the meeting may immediately take up the matter with highest authority of GE & concern HOD, AMC services of GE for needful. It was also requested by Forum to GE that concern Head-AMC division may attend a meeting with all SLDC I/c to sort out the issue. GE was also requested to comply for the request as was mentioned in 6th NETeST.

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: 5 RTUs not reporting out of 22 RTUs & data of 1 RTU is wrong.

- a. KOPEX SAS line flow is OK but BUS data suspect.
- b. All data of Balipara RTU is wrong.
- c. Roing and Tezu RTUs do not report constantly.
- d. Ziro out since 21.07.2017
- e. Kolasib out since 06.07.2017
- f. Haflong out since 30.06.2017
- g. Status of CS RTUs on single link & requirement of 2nd link back up/redundant channel. Lists as on 09/08/2017:
 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 (2 channels made but only 1 available)
 5. 220 kV Dimapur (two channels but only 1 available)
 6. 220 kV Salakati (Only one channel made)
 7. 132 kV Imphal (Only one channel made)
 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. Mariani (Only one channel made)
- h. CB status of the following RTUs are not reporting:
 1. Biswanath Chariali
 2. Bongaigaon
 3. Balipara
 4. Itanagar
 5. Kolasib

6. Dimapur
7. Haflong
8. Ziro

Deliberation in the meeting

Balipara RTU will be replaced with new RTU (RTAMC) with 15 days. Ziro will be restored within a week.

Regarding 2nd link for 800KV HVDC_BNC line is ready and will be operational within 1month. For 400KV MISA and 400KV Bongaigaon-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 to 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 Mokokchung, Ranganadi, Itanagar, Kathalguri, Palatana, Loktak, Khandong, Jiribam and Aizwal, will come up once NER-FO expansion project is completed. Status given in last 6th NETeST may also be referred.

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)

Most of the old RTU will be replaced with new one under RTAMC project and will be reporting correct CB status.

Forum asked all utilities to explore 104 data integration as far as possible & wherever link available.

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

Engineer NERLDC informed the forum that Khandong HEP is reporting since 11.08.2017. Ranganadi is reporting intermittingly. He requested NEEPCO to communicate upcoming project detail of Pare station.

NEEPCO representative was not present and status could not be updated.

The Sub-committee noted as above.

Action: NEEPCO.

C). AEGCL:

In the new system, only 25 RTUs are reporting partially 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. 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 8 RTUs data are not reporting as there is delay in commissioning of OPGW links by KEC. It will start reporting once the OPGW is commissioned. For others, AEGCL will take necessary action & action has been taken to make sure that all important substations and generating stations are reporting.

The Sub-committee noted as above.

Action: AEGCL.

D). MePTCL/MeECL: 18 RTUs are reporting out of 23 RTUs.

Generating Stations: New Umtru is not reporting. Dedicated voice communication is yet to be established for Leshka HEP.

Sub-Stations Not Reporting: Umium , EPIP-I , Lumshnong , Cherrapunji.

Deliberation in the meeting

Status informed by Meghalaya:

MEPTCL confirmed that they will look into the matter of RTUs at the earliest. Commissioning of New Umtru RTU is delayed due to GST. It will be commissioned soon.

The Sub-committee noted as above.

Action: MePTCL.

E). TSECL: 7 RTUs are reporting out of 25 RTUs.

Non-reporting RTUs are given below:-

Generating Stations: Gumti (since Jan, 2011), Rokhia (all CB status suspect)

Sub-Stations: Amarpur, Badharghat, Belonia, Bokafa, Boxanagar, Dharmanagar, Dhalabil, Gamaitila, Gournagar, Kamalpur, OMPI, Rabindranagar, Sabroom, Satchand, Agartala , Ambassa , Budhjungnagar.

Deliberation in the meeting

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

The Sub-committee noted as above.

Action: NERPC/NERLDC.

F). Manipur: SLDC of Manipur was declared commissioned vide Ref No NERLDC/SL/SCADA-Upgrade-Vol-II/8566-68 dated 15.03.2017. However only 6 nos of RTUs are found to be reporting out of 11 RTUs as on 08/08/2017 and No ULDC Communication system is established till date.

Sub-Stations Not Reporting: Chandel, Churachandpur, Hundung, Karong, Kongba.

Deliberation in the meeting

Manager, MSPCL informed the forum that for Karong RTU the PLCC team is checking the connectivity and will be reporting soon. On request by Manipur, POWERGRID will help in technical assistance.

The Sub-committee noted as above.

Action: NERTS/MSPCL.

G). Mizoram: SLDC is commissioned but VC, Voice Communication system yet to be established. SCADA/ EMS System commissioned on 10.04.2017. Status of RTUs included in the project needs to be updated.

Deliberation in the meeting

Asst. GM NERLDC requested Mizoram representative to take the matter with GE for the restoration of the communication system.

Project Manager, GE informed the forum that VC and communication system will be restored at the earliest.

The Sub-committee noted as above.

Action: NERPC/NERLDC.

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

Deliberation in the meeting

The forum informed that both the SLDCs are already commissioned.

EE, DoP Nagaland informed the forum that Kohima RTU will be reporting once the restoration of PLCC is complete within 2 month.

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.

During 6th NETeST meeting, Manager NERTS informed the forum that the project is under execution and will be completed within one year.

Deliberation in the meeting

AEGCL representative requested PGCIL to make the project ready for handover.

Manager, PGCIL informed the forum that the project will be completed as per schedule given in 6th NETeST meeting.

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 agreed 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 like 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.

As per the request of Assam, SDH 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.

Replacement of SDH nodes of ULDC Phase1 locations in NER" was approved in 15th NERPC-August, 2015. Replacement of SDH mux FOX515 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.

During 6th NETeST meeting, Manager NERTS informed that the project is under execution and will be completed before October, 2018.

Deliberation in the meeting

AEGCL requested PGCIL to intimate the cost involvement for this purpose. Manager, PGCIL informed the forum that copy of LOA will again be mailed to AEGCL representative as agreed in the meeting.

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 (966 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.

In line with guidelines of 17th RPC (No. A.12 –Reliable Communication Scheme - 966 [old ULDC link] +1158 [new] = 2124km-Central sector links, a 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

Deliberation in the meeting

The concerns regarding OPGW replacement & ownership thereof of those Optical Links (where Tower lines are owned by State utility, i.e. S.N.1, 2, 3, 5) were again raised by MePTCL & AEGCL.

NERLDC intimated that network or link which connect NERLDC-SLDC-B/up NERLDC--NLDC are mostly backbones. From point of view of system maintenance, smooth monitoring & fixing up responsibility, it is preferable that a central common utility installs & maintains including all equipment, OPGW & associated system.

AEGCL representative informed the forum that they have not deliberated for replacement of fibers on commercial basis for Kahilipara- Umiam-III line. A separate sub-committee has been formed to discuss this matter. One meeting though held by NERPC but sub-committee could not come to a unanimous decision against S.N.1, 2, 3, 5 (150.938 km [viz.59.132+17.455+10.257+64.094]) i.e. all links where Tower lines owned by state). As such a further seating of a sub-committee with higher authority is sought by AEGCL.

AGM, AEGCL further intimated that fiber to be changed is only on technical grounds and healthiness. AGM AEGCL again reiterated that if the agreement for 15yr is finished why not make a new agreement where the constituents also get the benefit. It was opined that if agreement etc., relates to commercial issue, then same to be raised in commercial forum. MS, NERPC opined that the work & replacement are to be done at par with all over India.

EE, MePTCL also highlighted following points to the forum.

- 1) It was referred that for sorting out the OPGW replacement of those Links (where Tower lines are owned by State utility), as already discussed in last meeting, a higher level meeting may be convened to sort out the issue. The same was also supported by POWERGRID.
- 2) Out of 966 kms, 150.938 kms (old ULDC link) traverses through the 132 KV transmissions network of MePTCL Viz Umiam III-Umiam I- NEHU SLDC- Khliehriat Ckt-I. The existing OPGW 12F has already been proposed to be replaced by 24F under the DPR submitted by MePTCL and approved by MeECL management. As these links under ULDC scheme will be handed over to the constituent after the expiry of the agreement (i.e. 2018); it is understood that the technical requirement will be based on MePTCL networking plan; and out of 24F, 6F will be provided for ULDC communication. This suggestion was also placed before the Sub group committee as well as on 6th NETeST meeting by MePTCL and AEGCL but the proposal and discussion was not recorded.

It was referred by POWERGRID that OPGW (installed in ULDC time) is already existed and falls under central sector back bone network as central sector asset and any replacement should be done as per approved guidelines only & technical requirement which is yet to be consented by forum (as discussed above-unresolved part). Further another Link is existing where back up connectivity between NEHU to NERLDC is achieved part vide 132kV NEHU-Khliehriat Circuit-1 (upto Tower25- recently installed) & then FO over 33KV link as per NERLDC requirement. MEPTCL if required; may request POWERGRID for required number of fiber sharing & use thereof. For Fiber share, MEPTCL may write to GM-AM NERTS. The same was also consented by NERLDC.

- 3) The representative of MePTCL /AEGCL has never put forward the view that the replacement of OPGW project is for the sole purpose of commercial requirement, but the constituent only mentioned and put forth the view that OPGW networks traversing through the state 132 KV Transmission network should be under the purview of the State sector and that with multiple nos. of optical fibers, it will create a flexibility of our communication system in the present setup as well as in the near future. The constituent consisting of MePTCL and AEGCL opined that the requirement for replacement of OPGW should be considered as a State subject and the decision pertaining to resolve this issue may be place with the higher management of MePTCL/AEGCL.

4) MePTCL has earlier stated and presented before the house that the DPR for Reliable communication has been approved by the management and CEA. So replacement of OPGW along the ULDC section (Link) will be taken up by MePTCL only. However in contrary, the minute at serial no A.5.e indicates that the OPGW along the ULDC section is under the prerogative of the Central sector irrespective of the fact that the network traverses through the Transmission line of MePTCL (State sector) and in addition, if MePTCL requires additional fibers from this network after new replacement, the cost has to be borne by the MePTCL.

It was referred by POWERGRID that if any link of MEPTCL (in any other project DPR) is colliding with any existing link, then the same may be specifically intimated to approving authority with copy to RPC for exclusion or as required. However, technical requirement for fiber share from existing link may be taken up with the owner of existing link/OPGW.

After detailed deliberation, for the part which **remained unresolved** in 6th & 7th NETeST (i.e. **decision about replacement of OPGW over State owned Lines**), it was suggested by most utilities that the same may be sorted out at another meeting like TCC level where higher authorities are present. The issue is proposed to be referred to TCC for solution for the part which remained unresolved. However for resolved/consented central sector part, consensus of MOM-6TH NETeST may be referred.

The Sub-Committee noted as above & submitted for review by TCC .

Action: NERPC.

A.6. Finalization of Network with STM16 & STM 4 ring-NER FO expansion & ULDC.

Forum discussed proposed diagram of central sector connectivity (in totality) & state sector (State-NER FO expansion part) was discussed. It was discussed all SLDCs & RLDCs may be connected on STM16 ring as possible.

Deliberation in the meeting

Connectivity of Pare, Ranganadi, Loktak, Pallatana was discussed. Forum requested CTU to take care of all protection/back up as possible while designing network and optical ring formation. The network diagram was displayed during meeting and attached as **Annexure-A.6.I** and forum agreed to the philosophy & connectivity in general as shown in network diagram on technical grounds. However minor changes are subjected to actual requirement during execution.

It was further requested by NERLDC to explore backup RLDC connectivity with main optical backbone grid. NERTS intimated that OPGW over Kahilipara—Sarusbajai (old or new) up to Backup RLDC area is a possibility. The forum requested POWERGRID, NERLDC & AEGCL to jointly visit the site for exact feasibility.

Final list of Links for NER FO Expansion is also attached as **Annexure-A.6-II** for needful. Forum agreed for revised list of list as attached and proposed for intimation to TCC/RPC.

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 6th NETeST 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

Deliberation in the meeting

The forum once again requested all SLDCs officials from Ar. Pradesh, Manipur, Mizoram & Nagaland 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 6th NETeST meeting, the forum once again requested all states to send a complete list of their PLCC networks to NERPC except Meghalaya (already sent).

Deliberation in the meeting

AEGCL has informed that PLCC is good alternative for data only in case there is less number of hops in the PLCC network but with increasing number of hops it is always difficult to maintain data and speech.

EE, DoP Nagaland enquired whether PLCC upgradation can be done through PSDF funding.

SE, NERPC informed the forum that PLCC can be included in R&M work through PSDF funding.

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 MW Vacation Project:

During 6th NETeST 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.

Deliberation in the meeting

Manager, PGCIL informed the forum that the project will be completed by 2017. OPGW will be completed by October, 2017 (including rectification, new work part Agia-BTPS) and equipment commissioning by December, 2017

AGM, AEGCL requested NERTS to inform them of delay if any in the committed schedule via email or letters.

The Sub-Committee noted & recommended as above.

Action: NERTS & KEC

B4. 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 6th NETeST 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).

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.5 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.

During 6th NETeST 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.

Deliberation in the meeting

Dy. Manager, NHPC informed the forum that the old RTU is working fine and they are considering in their budget to purchase new RTU for the replacement.

The Sub-Committee noted as above.

Action: NEEPCO & NHPC.

B.6 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

Manager NERTS informed the forum that the link to Ranganadi will be connected via new route of Nirjuli Pare and will be completed by June, 2018. For the same network diagram **Annexure-A.6** was referred.

The Sub-Committee noted as above.

Action: NERTS.

B.7 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.

During 6th NETeST meeting, 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.

Deliberation in the meeting

After detailed deliberation the forum decided that NERTS, NERLDC and AEGCL will jointly explore the possibility of providing communication channel for PMU display to SLDC by exploring the unused bandwidth within the existing network.

The Sub-Committee noted as above.

Action: NERLDC, NERTS & GE.

B.8 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.

During 6th NETeST meeting, 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 NERPC 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.

Deliberation in the meeting

Asst. GM NERLDC informed the forum that as per CERC regulation security audit of SLDC needs to be carried out by third Party. He requested all SLDC to take adequate security measures to safeguard the assets of SLDCs. He also suggested SLDCs to take appropriate insurance against fire and theft for their assets.

The Sub-Committee noted as above.

Action: NERPC, All Constituents.

B.9 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 Monarchak –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.

During 6th NETeST meeting, all constituent agreed to provide the requisite information of all new projects before commissioning.

Deliberation in the meeting

Asst. GM NERLDC informed the forum that they have not received requisite information from NEEPCO about the new projects to be commissioned.

The forum once again requested all constituent to provide the requisite information of all new projects before commissioning.

The Sub-Committee noted as above.

Action: All Constituents.

B.10 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**.

During 6th NETeST meeting, Manager NERTS, informed the forum that all links will be through once the NERFO expansion project is completed.

Deliberation in the meeting

Manager NERTS, informed the forum that all links will be through once the NER-FO expansion project is completed i.e. by November, 2018.

The Sub-Committee noted as above.

Action: NERTS & KEC.

B.11 Status of RTU replacement and procurement of new RTUs:

SCADA data from Kopili, Khandong, Kolasib, Ziro, Haflong 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	Ziro	07.08.16
2	Kopili	09.05.15
3	Khandong	16.09.16
4	Haflong	30.06.17
5	Kolasib	06.07.17

Out of 61 RTUs of Assam, only 25 RTUs are reporting partially.

Most of the data points from Balipara RTU are erroneous.

Khandong and Kopili RTU installation is under process and target date for completion is to be intimated.

Kolasib RTU is also not reporting.

Ranganadi RTU does not report continuously, RTU needs to be restarted every day to get data.

Tezu and Roing Data fluctuate frequently due to unstable GPRS connection. Dual redundancy is to be implemented.

Status as per discussions in 130th OCC

Sl. No.	Station Name	Status as informed in 130 th OCC	Status as informed in 6 th NeTEST
1	Ranganadi	Re-tendering stage. Work will be completed by Dec'2017.	by December, 2017

2	Ziro	ABB has done site visit. Report awaited.	by 25th May, 2017
3	Kopili	By 31.05.2017 will be commissioned.	By 30th June, 2017
4	Khandong	By 31.05.2017 will be commissioned.	Started reporting by 31st May 2017
5	Haflong	PLCC panel shifted. Link yet to be established. Will be complete by 31.01.17.	temporarily restored
6	Itanagar	NERLDC to update the latest status.	sending intermitting data

Doyang Data started reporting at NERLDC from 12.07.16. 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.

During 6th NETeST 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.

Deliberation in the meeting

Asst. GM NERLDC, informed that Khandong is reporting and Kopili will be reporting in a week. Ziro has already been restored but again suffered outage in last week July17. NERTS, informed that Ziro data will be restored within a week. Regarding Haflong (intermittent data outage after Umrangsu LILO), AEGCL will do needful for restoration. For Kolasib data, NERLDC requested P&E, Mizoram for needful. POWERGRID intimated that communication link Badarpur-Kolasib is OK. The forum requested NERTS and NEEPCO for early restoration of RTUs.

It was further requested by Forum that ULDC coordinators (of different utilities) as nominated during UCC period may ensure minimum checking of Central ULDC System equipment (under urgency) if Central sector ULDC equipment is installed at

the utility's end for early restoration (keeping in view recent case of.. late restoration of communication system at Khandong-NEEPCO)

The Sub-Committee noted as above.

Action: NERLDC, All Constituents.

B.12 Central Electricity Regulatory Commission (Communication System for inter-State transmission of electricity) Regulations, 2017:

These regulations are available in CERC website and the link for the same is <http://www.cercind.gov.in/2017/regulation/134.pdf>.

These regulations provide for planning, implementation, operation and maintenance and up-gradation of reliable communication system for all communication requirements including exchange of data for integrated operation of National Grid Role and responsibilities of various organisations and their linkages with respect to Communication System for Inter-State transmission of electricity is given in section 7 of these regulations.

As per section 9(i) of these regulations, all users that have provided the communication systems shall facilitate for periodic testing of the communication system in accordance with procedure for maintenance and testing to be prepared by CTU within 60 days of notification of Regulations and approved by Hon'ble CERC.

As per section 9(ii) of these regulations, testing process for communication network security should also be included even for third party system if exists in accordance with procedure for maintenance and testing to be prepared by CTU and approved by Hon'ble CERC.

As per section 10 of these regulations, the RPC Secretariat shall conduct performance audit of communication system annually as per the procedure finalized in the forum of the concerned RPC. RPC Secretariat shall issue necessary instructions to all stakeholders to comply with the audit requirements within the time stipulated by the RPC Secretariat. An Annual Report on the audit carried out by respective RPCs shall be submitted to the Commission within one month of closing of the financial year.

As per section 10 of these regulations, all users of CTU, NLDC, RLDCs, SLDCs, STUs shall maintain the communication channel availability at 99.9% annually:

Provided that with back up communication system, the availability of communication system should be 100%

As per section 7.3 (iv) of these regulations, the RPC Secretariat shall be responsible for outage planning for communication system in its region. RPC Secretariat shall process outage planning such that uninterrupted communication system is ensured.

Deliberation in the meeting

NERLDC gave a brief presentation on Communication System for inter- State transmission of electricity Regulation, 2017. They highlighted the important aspect of the regulation. He requested for formation of a sub- committee under RPC to study the various aspect of regulation and how to comply with it. ED NERLDC emphasized that role of NERPC has become very crucial keeping the guidelines laid down.

ED NERLDC & GM NERTS suggested that the purpose of the committee should be following:

- 1) To study the implication of the regulation.
- 2) How to comply with the regulation.
- 3) What are the communication systems crucial to the NER system.
- 4) To take necessary care which Links to be included
- 5) Modus Operandi regarding Communication Equipment Shutdown
- 6) Constraints if any, in implementation

EE, DoP AP highlighted the issue of shortage of man power in state SLDCs. He requested NERPC to write a letter for the same to state authorities. He also requested NERPC to issue a written letter to his state authority for his participation in the sub-committee. The same was also requested by other utilities to look into solution for dedicated manpower requirement of their department keeping in view expansion of optical network & new regulations of CERC. All representatives were also requested to take the same, in parallel, with highest/competent authority of their organization.

All constituent members expressed their views that the clause of communication channel availability of 99.99% is not feasible in NER at current stage keeping in view tough terrain resulting higher time to reach Site for restoration, law & order situations, strikes/road blocks, natural calamities, poor road conditions, non-availability of requisite expertise teams at hand/back & call, materials/T&P/ for in-time restoration. They requested NERPC to take up the matter with CERC at appropriate forum for the availability to be initially at 85% and then gradually increased to 99.99% in a timely manner. In addition, it was also requested that letter

may be sent by NERPC immediately on behalf of all utilities (NER) to competent authority CERC in this regard.

The list of members to the subcommittee is as follows:

	Utilities	Nominated members for sub group
1.	Assam	Mr. H Kakati, AGM Mr. Arup Sarmah, Dy. Manager Ms. Toushita Jigdung, DM
2.	Arunachal Pradesh	Mr. N. Perme, EE
3.	Manipur	Ms. Khoisnam Steela, Manager
4.	Meghalaya	Mr. B. Nikhla, E.E Mr. D. J. Lyngdoh, E.E Mr. C. W. Chen, AE Mr. B. Narry, AEE
5.	Mizoram	Mr. Benjamin L. Tlumtea, Sr. EE
6.	Nagaland	Mr. Tiameren Ao, EE
7.	Tripura	Ms Sampa Sen, Sr. Manager
8.	NERPC	Mr. B. Lyngkhoi, Director-Convener Mr. Srijit Mukherjee, AD-I Mr. Sadiq Imam, AD-I
9.	NERLDC	Mr. V. Kaikhochin, DGM Mr. B. S. Roy, Asst. GM Mr. T. Paul, Engineer
9.	NERTS	Mr M K Baruah, DGM-AM Mr Supriya Paul, Manager, AM
10.	NEEPCO	Mr Joypal Roy, Sr. Manager

After detailed deliberation is was decided to hold the meeting of subcommittee in September, 2017.

The Sub-Committee noted as above.

Action: NERLDC, All Constituents.

B.13 Status of Implementation of URTDSM Project in NER:

At present, there are only 8 Nos PMUs installed in NER at Bongaigaon, Balipara, Sarusajai, Misa, Badarpur, Agartala, NEHU and Imphal as part of Pilot Project. Under URTDSM Scheme around 90 numbers of PMUs are expected to be installed at various locations across NER which will provide better visibility into Grid events.

Due to delay in commissioning of PMUs under URTDSM monitoring and analysis of Grid events could not be done. It is necessary to expedite the commissioning of PMUs in NER under URTDSM scheme.

In 129th OCCM, NERLDC informed forum that analysis of some events could not be done due to delay of the URTDSM project. The matter was referred to next NeTEST meeting of NERPC.

Deliberation in the meeting

After detailed deliberation the forum decided to review the above agenda item after completion of NER-FO expansion project i. e. November, 2018.

The Sub-Committee noted as above.

Action: The agenda item may be dropped for time being.

B.14 Requirement of additional PMU at CS Power Station and SS Power Station of size more than 25 MW for monitoring of parameters of generators:

It is required to install additional PMUs at CS Power Station and SS Power Station Generators of size more than 25 MW for better visibility of system parameters on real time. This will also help in monitoring the oscillations in the system, identifying the machine which is causing oscillation and post disturbance analysis.

For this requirement, the following PMUs are to be installed.

1. AGBPP (9 nos.)
2. AGTCCPP (6 nos.)
3. Ranganadi (3 nos.)
4. Doyang (3 nos.)
5. Khandong (3 nos.)
6. Kopili (4 nos.)
7. Monarchak (2 no.)
8. Loktak (3 nos.)
9. Palatana (4 nos.)
10. BgTPP (3 nos.)
11. Baramura (2 nos.)
12. Rokhia (3 nos.)
13. Namrup (2 nos.)
14. Lakwa (8 nos.)
15. Langpi HEP (2 nos.)
16. Umiam Stage I (4 nos.)
17. Umiam Stage III (2 nos.)
18. Umiam Stage IV (2 nos.)
19. Myntdu Leshka (3 nos.)
20. New Umtru (2 nos.)

Deliberation in the meeting

After detailed deliberation the forum decided that NERLDC will write a letter to NERTS for making provision for installation of new PMUs. NERTS intimated that the copy of letter may also be forwarded to GM, CC, LD&C.

The Sub-Committee noted as above.

Action: NERLDC & NERTS.

B.15 Optical Fiber connectivity for AGC project expansion:

NTPC Dadri Stg-II was selected for the first project of Automatic Generation Control (AGC) in India. A mock test was conducted on 29th June 2017 from 1730 Hrs to 1910 Hrs and the mock test yielded desired/expected results.

Now, as a part of the AGC project expansion, a report needs to be filed with CERC, for which actual distance between the nearest communication node (equipment where the existing fiber optical cable terminates) and the unit control room (approximate distance from CR Panel) needs to be ascertained.

As per instruction from NLDC, NERLDC requested all ISGS to furnish the mentioned data. It is observed that optical fiber connectivity is there with few ISGS and details of those stations are as follows:

Sl. No.	Name of ISGS	Nearest Available Optical Node	Distance
1	AGBPP	Misa (PG)	383.4 km
2	AGTCCPP GTG Control Room	AGTPP (NEEPCO)	50 m
3	AGTCCPP STG Control Room	AGTPP (NEEPCO)	200 m
4	Ranganadi HEP	Balipara (PG)	191 km
5	Kopili HEP	Kopili (NEEPCO)	30 m
6	Kopili Stage 2 HEP	Khandong (NEEPCO)	15-20 m
7	Khandong HEP	Khandong (NEEPCO)	15-20 m
8	Palatana	Silchar (PG)	247 km
9	Loktak HEP	Imphal (PG)	35 km
10	Doyang HEP	Dimapur (PG)	92.5 km
11	BTPS (NTPC)	Salakati (PG)	3.5 km

Deliberation in the meeting

Asst. GM NERLDC informed the forum that NERLDC has recommended BTPS for AGC pilot project. He requested NERTS to speed up the connectivity of BTPS in the NER-FO expansion project as fiber connectivity is required for implementation of AGC.

The Sub-Committee noted as above.

Action: NERLDC, All Constituents.

B.16 Optical Fibre connectivity for installation of Line Differential Protection:

Optical Fibre connectivity of a line is essential for functioning of Line Differential Protection.

In 47th PCCM, it was decided that all utilities shall identify the short lines for installation of Line Differential Protection by 31st Jul'17.

Utilities shall furnish the list of short lines identified for installation of Line Differential Protection to NERPC/NERLDC along with availability of OPGW in the identified short lines (as per Annexure-I). Forum agreed that funding for installation of Line Differential Protection & OPGW can be awarded from PSDF for state utilities and PSUs may include these expenses in PoC Charges.

Deliberation in the meeting

After detailed deliberation all constituent agreed for identification and installation of line differential protection for short lines where optical connectivity is available/envisaged.

The Sub-Committee noted as above.

Action: NERLDC, All Constituents.

B.16 Recent outage of multiple RTUs:

There have been 3 incidents on 21.07.17, 22.07.17 and 06.08.17 where more than 10 RTUs stopped reporting.

Reasons for such major outage should be intimated and preventive measures should be taken to avoid such incidents in future.

Deliberation in the meeting

NERTS informed the forum that he will be sending a report to NERLDC within a week regarding the outages. POWERGRID NERTS will also discuss the matter with NEEPCO for proper co-operation and co-ordination.

The Sub-Committee noted as above.

Action: NERLDC, All Constituents.

B.17 Dedicated voice communication:

Dedicated voice communication and availability is one of the key requirements for efficient grid management. But it is observed that whenever we try to talk to SLDCs always it shows busy. We have intimated POWERGRID to resolve this problem but still it is not solved but still it is pending.

Most of the PG stations are connected through only one dedicated voice communication. Minimum two no of dedicated link needs to be done at the earliest. Forum may discuss and time bound target may be fixed to fulfil the above requirement. Also 400 KV stations, HVDC station, SLDCs need 4 no of dedicated voice communication.

Following S/S either does not have link or links are not working.

- a. PALATANA (Biggest Gen in NER)-No dedicated voice link.
- b. 400 kV SILCHAR PG Station -No dedicated voice link.
- c. SM Nagar (International link)-No dedicated voice communication with RLDC.
- d. MONARCHAK Gen: No dedicated voice link with RLDC.
- e. SALAKATI (Inter Regional PG station) No dedicated voice link.
- f. 400 kV BYRNIHAT/KILLING: No dedicated voice link with RLDC/SLDC.
- g. 400 kV Azara: No dedicated voice link with RLDC.

Following S/S VOIPs are not working.

1. Itanagar-23640151
2. Jiribam-23640130
3. Kathalguri-23640154
4. Ranganadi-23640119
5. Kolasib-23640111
6. Doyang – 23640120 (Low voice quality issue)

Deliberation in the meeting

Manager NERTS informed the forum that the VOIP which are not working is in old PLCC link. It will take some time to shift to OPGW links. He also informed the forum that the target for completing will be as per schedule given in 6th NETeST.

Asst. GM NERLDC informed the forum that whenever they rang Manipur SLDC the call goes to PG station. He requested NERTS to rectify the same.

The Sub-Committee noted as above.

Action: NERLDC, All Constituents.

B.17 Maximum ISTS/ISGS CB status out:

NERLDC grid management is facing very difficult situation as most of the CB status of ISTS/ISGS stations are out. So any tripping/synchronization of Lines/units are not viewable in real-time. SOE application is not usable as large no of CB status are out. Hence smooth grid operation is unthinkable. To identify and overcome the above problem forum may discuss the gravity of the problem and form a committee with a member from SO-1 to identify the breakers which are not reporting and put up to forum for discussion and corrective action by appropriate authorities to overcome the problem because long time it is not possible to avoid the problem.

Deliberation in the meeting

Engineer NERLDC requested NERTS to rectify the problem of CB status not reporting correctly.

The Sub-Committee noted as above.

Action: NERLDC, All Constituents.

B.18 Defective VC Equipment:

The VC equipment installed at SLDC, Manipur is non- functional since 5th April, 2017. SLDC, Manipur has made several complaints regarding the issue to GE Energy Connections through e-mails and also the matter was even discussed with the project manager in the 6th NETeST meeting. But till date no appropriate response has been received from GE Energy Connections. The forum may please look into the matter for rectification of the VC equipment as soon as possible.

Deliberation in the meeting

Project Manager, GE informed the forum that GE was facing issue with the vendor. The old vendor refused to do the work. The have contracted new vendor but work could not be started due to GST. He assured the forum that they will visit Nagaland SLDC and then Manipur SLDC VC next week and will be rectified without any further delay.

The Sub-Committee noted as above.

Action: NERLDC, All Constituents.

ADDITIONAL AGENDA ITEMS FROM DoP NAGALAND:

B.19 Connectivity to 132kV Sanis:

DOP, Nagaland requested for inclusion of OPGW (only) for 132kV Doyang to Sanis(via LILO of Doyang-Okha;10km) link as possible in NER FO Expansion. Forum agreed and asked NERTS to do needful to include in NER FO Expansion project.

The Sub-Committee noted as above.

Action: NERTS.

B.20 RTU requirement at 132kV Sanis S/Sn:

DOP, Nagaland requested for RTU deployment at 132kV Sanis S/Sn. NERTS informed that RTU requirement at Sanis will be taken care by specific instruction/letter to Alstom/POWERGRID for installation/diversion of one existing RTU from any existing location of Dimapur (under SLDC up-gradation/expansion project). DoP Nagaland agreed to the suggestion. As a solution, it was also suggested one RTU (from Tuli SS or so) may be used for installation to Sanis (if 48V DC is arranged). DoP, Nagaland may transport all materials after SLD is finalized by GE. GE agreed for installation of same at Sanis.

The Sub-Committee noted as above.

Action: It was also suggested one RTU (from Tuli SS or so) may be used for installation at Sanis S/S. DoP, Nagaland agreed to transport RTU before installation byGE.

Date & Venue of next NETeST meeting

It is proposed to hold the 8th NETeST meeting of NERPC on second week of November, 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 7th NETeST Meetings held on 17/08/2017

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. Manoranjan Kalita, DGM SLDC	Assam	07002949272
5.	Sh. A.K. Das, AGM, H/Q, AEGCL	Assam	09435045804
6.	Sh. Arup Sarmah, Dy. Mgr., Comm.	Assam	09707854367
7.	Sh. Hitesh kakati, AGM (Comm.)	Assam	09864110407
8.	Sh. Arup Kr. Kalita, AGM (Comm.)	Assam	09435158118
9.	Ms. Toushita Jigdung, D. M., SLDC	Assam	09707134351
10.	Ms Khoisnam Steela, Mngr. SLDC	Manipur	08730831103
11.	Ms Athokpam Sujata Devi, Astt. Mngr.,	Manipur	09615028232
12.	Sh. D. J. Lyngdoh, E.E (S.M), SLDC	Meghalaya	09774285158
13.	Sh. T. Gidon, EE, SLDC	Meghalaya	09774479956
14.	Sh. B. Narry, AEE, PLCC, MePTCL	Meghalaya	09089000911
15.	Sh. B. Nikhla, EE, SP, MePTCL	Meghalaya	09436314163
16.	Sh. C. W. Chen, AE, SLDC, MePTCL	Meghalaya	09863093311
17.	Sh. Lalbiaksanga, SE, SLDC	Mizoram	09436140932
18.	Sh. Akavi Z Choply, SDO (MIS)	Nagaland	09436260924
19.	Sh. B. Tiameren Ao, EE(MIS)	Nagaland	09436260852
	No Representative	Tripura	
20.	Sh. B. S. Roy, Asst. GM	NERLDC	09436302719
21.	Sh. T S Singh, ED	NERLDC	09436302713
22.	Sh. V. Kaikhochin, DGM	NERLDC	09436302712
23.	Sh. Tapobrata Paul, Engg.	NERLDC	08585066236
24.	Sh. Jerin Jacob, Engg.	NERLDC	09402120113
	No Representative	NEEPCO	
25.	Sh. A. Patir, GM	PGCIL	09436302529
26.	Sh. P. Kanungo, DGM(AM)	PGCIL	09436302823
27.	Sh. Supriya Paul, Manager, AM	PGCIL	09436302995
28.	Sh. C. L. Khayuingam, DM(E)	NHPC	09402880207

29.	Sh. Imtiyaz Hussain, Project Manager	GE	08800795693
30.	Sh. Mayank Porwal, Project Manager	KEC	09971020676
31.	Sh. P.K. Mishra, MS	NERPC	-
32.	Sh. B. Lyngkhoi, Director/S.E (C&O)	NERPC	09436163419
33.	Sh. Srijit Mukherjee, AD-I	NERPC	08794277306
34.	Sh. Sadiq Imam, AD-I/AEE	NERPC	07004133772

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, Backup NERLDC, SLDC
-  Link removed from FO expansion
-  Nodes under Expansion / STM-4-ECI
-  Node discarded/In Future
-  CS Nodes under Expansion-STM-16, STM 4
-  Newly proposed CS Nodes under Expansion STM-4, 16
-  CS Nodes under Expansion STM-4, 16-already approved
-  Newly proposed State Nodes under Expansion STM-4, 16
-  • Yellow Highlighted links are already approved STM-16 under NER Expansion
-  Sky Blue Highlighted links are **proposed** STM-16 under NER Expansion for STM16 Ring formation
-  •REMOVED LINES

NER FO EXPANSION Project-State Wise List of Links

List of Links are defined after revision of 15th RPC and change in names as requested by Tseel,Tripura; MSPCL, Manipur& DoP,Nagaland

SI No.	From	To	VOLTAGE LEVEL (in KV)	Owner of T/L	Revised Route Length (km)
NER Central Sector					
1	Badarpur(PG)	Jiribam(PG)	132	CS	67
2	Jiribam(PG)	Loktak(NHPC)	132	CS	82.461
3	Loktak(NHPC)	Imphal(PG)	132	CS	30.372
4	Agartala (PG)	R C Nagar(NEEPCO)	132	CS	7.656
5	Silchar(PG)	Melriat(PG)	400 charged at 132kV	CS	142.905
6	Surajmaninagar(TSECL)	Pallatana(OTPC)	400 charged at 132kV	CS	36.714
7	Bongaigaon(PG-400kV)	Salakati-BTPS AEGCL	via 220kV	CS	4.5
8	Mirza (Azara)	Byrnihat	400	CS	47.208
9	Silchar	Pallatana	400	CS	247.409
13	LILo Sil-palla at P.K.Bari S/S(Kanchanpur-PK Bari 132kV)		132	CS	12
14	Parey	Chimpu	132	CS	26
Central Sector Total(Supply by SSDGI & Erection by TCIL, Sabari)					705.000
MEGHALAYA					
1	Nehu (S/C)	Neigrihms	132	Meghalaya	9
2	Khliehriat(PG)	Khliehriat(State) (S/C)	132	Meghalaya	5.282
3	Khliehriat(State) (D/C)	Myntdu Leshka-HEP	132	Meghalaya	24.932
4	Khliehriat(state)	Lumshnong (S/C)	132	Meghalaya	25.19
Meghalaya Total-PKG- (Supply bySSDGI & erection by TCIL)					64.404
TRIPURA					
1	Agartala(TSECL)	Baramura GTP	132KV S/C	TSECL	30
2	Agartala(TSECL)	Surajmaninagar(TSECL)	132 D/C	TSECL	17.918
3	Surajmaninagar(TSECL)	Budhiungnagar	132-D/C	TSECL	17.863
4	Pallatana(OTPC)	Udaipur(TSECL)	132 s/c	TSECL	11.528
5	Udaipur(TSECL)	Rokhia GTP	132 S/C---***SM Ngr/monarchok	TSECL	45.219
6	Udaipur(TSECL)	Gumti HEP	66-	TSECL	37.678
7	Gumti HEP	Amarpur(TSECL)	66	TSECL	24.003
8	Satchand(TSECL)	Sabroom(TSECL)	66	TSECL	12.244
9	Surajmaninagar(TSECL)	Badharghat	132(future)[66KV available bad-ag]	TSECL	9
10	79Tilla(TSECL)	Dhalabil	132D/C	TSECL	43.037
11	Surajmaninagar(TSECL)	Monarchak (NEEPCO)	132D/C	TSECL	42.172
12	Surajmaninagar(TSECL)	Rokhia GBPP(TSECL)	132D/C	TSECL	21.354
Tripura Total-PKG-1A(Supply by SSDGI, Erection by TCIL & Sabari)					312.016
MANIPUR					
1	Loktak(NHPC)	Ningthoukhong(State)	132	Manipur	11
2	Imphal(State)	Karong	132	Manipur	60
3	Yurembam	Yaingangpokpi	132	Manipur	42
4	Yaingangpokpi	Kongba	132	Manipur	32
5	Kongba	Kakching	132	Manipur	45
6	Kongba Kakchin LILo at Thoubal	Thoubal	132	Manipur	10.626
7	Kakching	Churachandpur	132	Manipur	38
8	Yaingangpokpi	Hundung	132	Manipur	32
9	Kakching	Chandel	132	Manipur	25
10	Loktak(NHPC)	Rengpang	132	Manipur	47
11	Jiribam	Jiribam	132	Manipur	1
12	Ningthoukhong-	Churachandpur	132	Manipur	32
Manipur Total-PKG-1A(Supply by SSDGI & Stringing by TCIL)					376
NAGALANAD					
1	Kohima	Okha	132 S/C	Nagaland	58
2	Kohima(132KV)	Kohima(220KV)	132	Nagaland	25
3	Doyang--Sains (via lilo OF Doyang -Okha)	Sains	132	Nagaland	10
Nagaland Total-PKG-1A(Supply by SSDGI & Stringing by TCIL)					93
MIZORAM					
2	Aizwal(PG)	Zimabawk-I(Luangmual)	132	Mizoram	1
Mizoram TotalPKG-1A(Supply by SSDGI & Stringing by TCIL)					1
Total Mizoram					1
Supply & Erection" under Package-III-C (Supply by M/s Taihan, Stringing by Sabari)					
1	Khandong	Haflong	132	CS	62.398
2	Dimapur(PG)	Doyang(NEEPCO)	132	CS	91.567
3	Doyang(NEEPCO)	Mokokchung(State) instead of Mokokchung-POWERGRID	132	CS	26.913
4	Mokokchung(PG)	Maryani(PG)	220	CS	50.93
5	Maryani(POWERGRID) instead of Mariani-State	Kathalguri(NEEPCO)	400 charged at 220kV	CS	159.245
Central sector considered in Packga IIIC					391
Total Central Sector					1096
Total State Sector					846
Total (Central-State)					1942