भारत सरकार Government of India
विद्युत मंत्रालय Ministry of Power
उत्तर पूर्वी क्षेत्रीय विद्युत समिति
North Eastern Regional Power Committee
एन ई आर पी सी कॉम्प्लेक्स, डोंग पारमाओ, लापालाङ, शिल्लोंग-७९३००६, मेघालय
NERPC Complex, Dong Parmaw, Lapalang, Shillong - 793006, Meghalaya

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No. NERPC/SE (O)/NETeST/2020/1509-1545 Dated: November 4, 2020

To,

1. Managing Director, AEGCL, Bijuli Bhawan, Guwahati – 781 001
2. Managing Director, APDCL, Bijuli Bhawan, Guwahati – 781 001
3. Managing Director, APGCL, Bijuli Bhawan, Guwahati – 781 001
4. Director (Generation), Me. PGCL, Lumjingshai, Short Round Road, Shillong – 793 001
5. Director (Distribution), Me. ECL, Lumjingshai, Short Round Road, Shillong – 793 001
6. Director (Transmission), Me. PTCL, Lumjingshai, Short Round Road, Shillong – 793 001
7. Managing Director, MSPDCL, Secure Office Bldg. Complex, South Block, Imphal – 795 001
8. Managing Director, MSPCL, Electricity Complex, Keishampat, Imphal – 795 001
9. Director (Tech.), TSECL, Banamalipur, Agartala -799 001.
10. Director (Generation), TPGCL, Banamalipur, Agartala -799 001.
11. Chief Engineer (WE Zone),Department of Power ,Govt. of Arunachal Pradesh, Itanagar- 791111
12. Chief Engineer (EE Zone),Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791111
13. Chief Engineer (TP&MZ),Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791111
14. Engineer-in-Chief (P&E), Department of Power, Govt. of Mizoram, Aizawl – 796 001
15. Engineer-in-Chief (P), Department of Power, Govt. of Nagaland, Kohima – 797 001
16. CGM, (LDC), SLDC Complex, AEGCL, Kahilipara, Guwahati-781 019
17. Group General Manager, NTPC, Bongaigoan Thermal Power Project, P.O. Salakati, Kokrajhar- 783369
18. ED, NERTS, PGCIL, Dongtieh-Lower Nongrah, Lapalang, Shillong -793 006
19. ED (O&M), NEEPCO Ltd., Brookland Compound, Lower New Colony, Shillong-793003
20. ED (Commercial), NEEPCO Ltd., Brookland Compound, Lower New Colony, Shillong-793003
21. ED (O&M), NHPC, NHPC Office Complex, Sector-33, Faridabad, Haryana-121003
22. Vice President (Plant), OTPC, Badarghat Complex, Agartala, Tripura - 799014
23. ED, NERLDC, Dongtieh, Lower Nongrah, Lapalang, Shillong -793 006
24. Chief Engineer, GM Division, Central Electricity Authority, New Delhi – 110066
25. Chief Engineer (NPC), GM Division, Central Electricity Authority, New Delhi – 110066

Sub: Minutes of 18 NETeST Meeting.

Sir/Madam,

Please find enclosed herewith the minutes of 18th NETeST Meeting held at NERPC's Conference Hall, Shillong on the **29th September, 2020** for your kind information and necessary action. The minute is also available on the website of NERPC, **www.nerpc.nic.in**.

Any comments/observations may kindly be communicated to NERPC Secretariat at the earliest.

Encl: As above

भवदीय / Yours faithfully,

बी. लिंगखोइ

बि. लिंगखोइ / B. Lyngkhoi
निदेशक / **Director (O & P)**

Copy to:

1. CGM, AEGCL, Bijuli Bhawan, Guwahati – 781001
2. CGM, APGCL, Bijuli Bhawan, Guwahati – 781001
3. CGM, DISCOM, Bijuli Bhawan, Guwahati – 781001
4. Head of SLDC, MeECL, Lumjingshai, SR Road, Umjarain, Shillong – 793022
5. Head of SLDC, Dept. of Power, Govt. of Arunachal Pradesh, Itanagar – 791111
6. Head of SLDC, Dept. of Power, Govt. of Nagaland, Dimapur – 797103
7. Head of SLDC, MSPCL, Imphal – 795001
8. Head of SLDC, P&E Deptt. Govt. of Mizoram, Aizawl – 796 001
9. Head of SLDC, TSECL, Agartala – 799001
10. Chief Engineer(Elect), Loktak HEP,Vidyut Vihar, Kom Keirap, Manipur- 795124
11. DGM (O&M), OTPC, Badarghat Complex, Agartala, Tripura – 799014
12. Director, NETC, 1st Floor, Corporation Tower, AMBIS Mall Complex, NH-8, Gurgoan – 122001.

वी. लिंगारेड्डि

निदेशक / **Director (O & P)**

North Eastern Regional Power Committee

MINUTES OF THE 18th NER Telecommunication, SCADA & Telemetry (NE-TeST) COORDINATION SUB-COMMITTEE MEETING OF NERPC

Date : 29/09/2020 (Tuesday)

Time : 10:30 hrs

Venue : "NERPC", Shillong.

The List of Participants in the 18th NETeST Meeting is attached at ***Annexure–I.***

Shri B. Lyngkhoi, Member Secretary(I/C), NERPC welcomed all the participants to the 17th North Eastern Telecommunication, SCADA & Telemetry meeting. He mentioned that any rectification which involves agencies from outside the region will not be reviewed due to ongoing pandemic. He requested all the members to actively participate during the meeting for fruitful deliberations.

He then requested Sh. Srijit Mukherjee, Dy. Director, NERPC to take up the agenda items for discussion.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF THE 17th MEETING OF "NORTH EASTERN TELECOMMUNICATION, SCADA & TELEMETRY (NETeST)" SUB COMMITTEE OF NERPC.

Deputy Director, NERPC informed that minutes of the 17th NETeST Meeting held on 26th June, 2020 at Shillong were circulated by NERPC vide letter No. NERPC/SE(O)/TeST/2020/2025-2062 dated 15th July, 2020.

The following comments were received from NERLDC against various items of the 17th NETeST meeting:

B.2 Improvement of Data Availability of NER

The following was recorded in the minutes of the 17th NETeST meeting:

The states utilities raised the issue of data point being considered by RLDC for considering Communication Availability. The issue was deliberated amongst the utilities and NERLDC. However, due to absence of senior officers of NERLDC in the

meeting, the discussion could not be resolved and the utilities were not satisfied with the clarifications by NERLDC. Hence, Members requested NERPC to review the same.

In view of above, Member Secretary, NERPC decided to constitute a committee to study various issues w.r.t data availability in the light of CERC' Regulations.

Remarks from NERLDC for Amendment:

The aforesaid deliberation may please also include the remarks made by Member Secretary, NERPC that the forum will strictly follow the existing regulation/ standards by CERC and CEA as NERPC is not empowered to override its provisions.

Clarification of the 18th NETeST forum:

The forum was of the view that it was already mention that the committee will study the various issues w.r.t data availability in the light of CERC' Regulations. The forum is part of the regulatory framework and there is no question of overriding the provision of CERC.

Remarks from NERLDC for Amendment:

Quote "However, due to absence of senior officers of NERLDC in the meeting, the discussion could not be resolved and the utilities were not satisfied with the clarifications by NERLDC."

The aforesaid deliberation may please be deleted as Sr.GM (System Logistics) was present in the meeting and his attendance is also recorded in the MOM of meeting. Moreover, NERLDC has already explained the methodology of calculation in earlier NETeST meeting several time and again in 17th NETeST meeting, which can be referred in slide presented by NERLDC and attached along with MoM of 17th meeting. NERLDC was prepared and started explaining the detail calculations but opportunity was not provided by forum. Subsequently, DD(NERPC) suggested that a committee may be constituted to resolve the matter which was accepted by Member Secretary, NERPC.

Clarification of the 18th NETeST forum:

At the time of the meeting, Sr. GM NERLDC was present via Webex and the participants could not hear him as his voice was not audible in VC. This had led to the erroneous observation which is rectified in the minutes.

Regarding the methodology of calculation for communication availability, there was endless discussion going on between TSECL, AEGCL, NEEPCO, MeECL and NERLDC. They were not in agreement with the methodology adopted by NERLDC and after

discussing for a long time the forum could not conclude. So, Member Secretary, NERPC decided to constitute a committee to study various issues w.r.t data availability in the light of CERC' Regulations.

B.4 GPRS connectivity for Substations and Leased line for SLDC:

The aspect of data encryption and data security is dealt in **Chapter IV** Cellular communication of the technical standard for Communication System.

Remarks from NERLDC for Amendment:

*The aspect of data encryption and data security is dealt in **Chapter VI** Cellular communication of the technical standard for Communication System.*

Clarification of the 18th NETeST forum:

The Typo error of **Chapter IV** instead of **Chapter VI** is amended.

B10. Dual channel availability for reliable and redundant communication system in NER:

NERTS stated that proposal for new RTUs (with TS & requisite ports as per approved technical architecture) has been initiated at corporate center level. Each RTU will report to Main & Back up RLDC. Requirements/TS as followed in all other region will be full filled.

It was also mentioned by NERTS (from field experience) that too many ports in a single rack/RTU (reporting to multiple master SCADA in parallel) puts the RTUs in "hang/unstable" condition.

Remarks from NERLDC for Amendment:

A letter ref. POSOCO/NERLDC/SL/NETeST/July 20/339 dated 21st July 2020 was submitted by NERLDC to NERPC on the above reference matter. It is reported that the aforesaid deliberation was not discussed by NERTS in the forum.

Clarification of the 18th NETeST forum:

The observations regarding ports were provided by NERTS from field experience. The forum does not either approve or disapprove the above comments. Pls refer to discussion in item No. **B.10**.

The Sub-committee confirmed the minutes of the 17th NETeST Meeting as no comments/observations were received from the constituents.

A.1 Status of FO works under different projects:

The current status as updated during the 18th NETeST are as follows:

Deliberation in the meeting

Project	States	Current Status	Comments/ Issues
MW Vacation & OPGW Project		Completed except 1 links. (Zemabawk 2 end of) Zemabawk2 -Aizawl- Front not ready)	**Zemabawk-II:** Substation is getting dismantled and shifted to a new place. RTU shifting & reinstallation Work has already been started by P&E with co-ordination/help from NERTS. At present fiber shifting work is under progress jointly- Target Nov2020. Associated equipment /upgradation of ULDC nodes were also completed. In Kopili- re-installation is required.
NER FO Expansion	**Tripura**	All links completed.	Restoration of 132kV Palatana – Udaipur link by railway completed. Link needs to be tested jointly. Completion by 30.10.2020 Presently Palatana connected to Wideband via 132kV Palatana – Surjamaninagar(TSECL). After upgradation of 132kV Palatana – Surjamaninagar to 400kV and connection to 400/132kV Surjamaninagar(TBCB), M/s STERLITE to ensure sustained Wideband connectivity of Palatana. This is to be done by establishing Palatana – Surjamaninagar(TBCB) – Surjamaningar(TSECL) link via 400kV Palatana-Surjamaninagar(TBCB) and 132kV Surjamaningar(TBCB)-Surjamaninagar(TSECL).

		Links for Under Construction lines 132kV Surjamaninagar - Rokhia & 132kV Surjamaninagar - Monarchak	Front was to be made available by TSECL as well as execution. Material handed over. TSECL informed that line is under construction and delayed due to COVID-19 situation.
	Meghalaya	3 out of 4 links completed. NEHU-NEIGRIMS pending.	For pending NEHU – NEIGRIHMS link POWERGRID to take up with the concerned agency for early completion. Joint visit made to sites by MePTCL, NERPC & POWERGRID. Further issues as pending/repair will be taken care of by POWERGRID.
	Manipur	132kV Loktak (NHPC)-Rengpang.	RoW issue recently solved. Work is under progress. Target: Nov'2020 (subject to ROW/Clearance issues resolved by MSPCL). For Kakching – Kongba link earthing not provided for RTU/FODP at Kakching, MSPCL requested for necessary intervention**. The forum requested MSPCL is requested to take over links where all works completed and data is being reported and service is rendered.
	Nagaland	Wokha – Kohima link LILO at New Kohima pending.	DoP Nagaland to complete the LILO part. Covered under NERPSIP scheme & same is under construction. Hence, NERTS requested that New Kohima -Kohima may be removed from scope of NER FO expansion as S/S front readiness is not clear.

		132kV Doyang-Sanis	Newly added to the contract/LOA amendment but same will take some time. Target: Feb/March 2021. However, data for Sanis is to be planned by DoP Nagaland through PLCC as per earlier discussion.

In addition to the above links the updated status of the links are given below:

	Link Name	**Utilities**	**Remarks**
1	400kV Bongaigaon (PG) - 220kV Salakati - 220kV BTPS	NERTS	Target completion is February - March 2021. However, purpose of necessary data reporting from respective end stations of link will be full-filled.
2	400kV Mirza (Azara) – Byrnihat		
3	400kV Silchar – Palatana		
4	132kV Jiribam (PG) - Loktak (NHPC)		
5	132kV P.K. Bari (TSECL) – Ambassa with LILO at Manu		
6	132kV Pare – Chimpu		
Manipur State Sector			
1	132kV Imphal (State) – Karong	MSPCL and NERTS	Completion by November – December 2020. Delayed due to COVID19. SLDC Imphal intimated 132kV Yaingangpokpi – Hundung is reporting and target for taking over of remaining links is Oct-Nov'2020.
2	132kV Yaingangpokpi – Hundung		
3	132kV Loktak (NHPC) – Rengpang		
4	132kV Jiribam - Jiribam (State)	NERTS	

Detailed status is attached in **Annexure A.1**. (In line with progress report sent to NERPC)

EE(System Protection), MePTCL requested NERTS to provide clarification regarding paperwork and procedure for handing over/ taking over of sites under NERFO expansion project. ED, NERLDC also requested NERTS to give standard procedure for the convenience of all SLDCs for handing over of project so that a uniform procedure is adopted.

DGM NERTS intimated that handing over of documents will be shared as per methodology already adopted for some state utility for state sector links.

Sr. Manager, TSECL requested NERTS to take up joint verification of fiber for completed sites by Railway i.e. Palatana-Udaipur. NERTS & TSECL will complete the same at the earliest. NERTS informed the forum that due to quarantine issue they are not able to move people to the sites. As per request of TSECL, it was suggested that the forum while incorporating new telemetry scheme by Sterlite (for new SM Nagar & new PK Bari), necessary care to be taken by Sterlite (by considering necessary SFP/amplifier/optical directional cards in Sterlite station equipment) so that existing data links of TSECL owned stations /Palatana GBPP are re-routed (via Palatana---Surjamaninagar(TBCB) –Surjamaninagar (TSECL) - SLDC and not disturbed. In this regard, necessary communication would be sent to CTU department, CC POWERGRID to take care of concerns raised by TSECL.

Further, recently date of commissioning/DOCO of 11 nos. links of MW Vacation OPGW & 9 nos. links NER FO Expansion Links are issued from NERLDC. Details attached. NERLDC intimated that during issuance of certificate of commissioning/DOCO, clearance was sought from state utility for central sector ISTS stations. It was clarified by forum that for central sector links & equipment are owned by POWERGRID/CTU, additional clearance from connected state utility or other utility is not required while issuing commissioning certificate. Data/voice/link verification from NMS to LDC may be done. However, for State sector links (under NER-FO project or under any other regional project executed by POWERGRID), respective state will give clearance then DOCO/clearance of commissioning will be given. Utilities were requested to take over links whatever completed as per technical specification after service of same (data & voice) is rendered.

** EE, MePTCL suggested that separate earthing to be provided for the communication panel to avoid the problem. POWERGRID suggested for separate earthing as per IEEE80 and further improvement with bentonite chemical treatment etc. for better results. It was also discussed that all utilities may take special care for improvement

for tower footing resistance/impedance as same, if not attended, may lead to EW/OPGW failure in case of lightning.

Sr.GM(SL), NERLDC stated that with completion of 132kV Aizawl-Zemabawk OPGW link, the ICCP for all NER states and NERLDC may be shifted to ULDC from existing leased links. After detailed deliberation the forum requested NERTS to do the needful by Oct'20.

The Sub-committee noted as above.

Action: State Utilities, NERTS, NERPC.

B. N E W I T E M S

B.1 Strengthening of PLCC System by NER States:

In 17th NETeST meeting Director, NERPC requested states to update the progress on strengthening of PLCC systems. The summary of discussion is mentioned below:

S N	States	Current Status
1.	Meghalaya	Digital PLCC project under PSDF completed. Almost all stations are having PLCC backup. Installation of Data-Concentrator at Mawlai Station delayed due to COVID-19.
2.	Tripura	Proposal for PLCC links for all important stations through PSDF funding. NERPC requested TSECL to put the proposal in next TCC/NERPC meeting.
3.	Manipur	PLCC strengthening proposal approved by higher management. Further progress delayed due to COVID-19.
4.	Nagaland	PLCC installation work completed. Commissioning delayed due to COVID-19.

MePTCL requested NERPC that the projects status of NERPSIP related to communication systems corresponding to Meghalaya state is not being updated to it.

In 17th NETeST meeting Director(O&P), NERPC stated that he will ensure that States coordinator of NERPSIP and POWERGRID coordinator would be invited in the next NETeST meeting for briefing project status of respective states.

Deliberation in the meeting

Member Secretary(I/C), NERPC requested states to update the progress on strengthening of PLCC systems. The summary of discussion is mentioned below:

S N	States	Current Status

1.	Meghalaya	Digital PLCC project under PSDF completed. Almost all stations are having PLCC backup. Installation of Data-Concentrator at Mawlai Station delayed due to COVID-19.
2.	Tripura	Proposal for PLCC links for all important stations through PSDF funding. EE, NERPC requested TSECL to give the PLCC Scheme to the committee for concurrence. Based on that they can place the DPR to NLDC for PSDF funding.
3.	Manipur	Approval for PLCC strengthening proposal is pending.
4.	Nagaland	PLCC installation work completed. Commissioning delayed due to COVID-19.

All new Utilities as are being connecting in NER grid like KMTL, STERLITE etc., are also requested to keep a redundant path of data through PLCC wherever feasible.

The Sub-Committee noted as above.

Action: All State Utilities & NERPC.

B.2 Communication availability of NER

In the 17th NETeST meeting, Member Secretary, NERPC decided to constitute a committee to study various issues w.r.t data availability in the light of CERC' Regulations.

The committee had it meeting on 18.08.2020 at Shillong. After detailed deliberation and considering views of all the members, the various issues faced by them and the difficulties faced in NER, the committee came to the following conclusion:

a) The data points like MW, MVAR, frequency, Voltage and CB status are important parameters that need to be monitored and considered for data availability. The data point OLTC and isolators may be excluded for time being from calculation of data availability. Requirement of OLTC data, isolator status for state estimation is to be explored by NERPC with M/s GE. If required whether the same may be entered manually. Since presently OLTC operation is rare and that too with intervention of SLDC/RLDC only, a separate record of tap position for each ICT to be maintained by all SLDCs/RLDC henceforth.

b) In order to have synergy between Grid Operation and Monitoring of data availability it was decided that List of Important Grid Elements (as decided in OCC

forum) would be only considered for calculation of data availability by NERLDC. For intra-state elements it was decided that each SLDC would prepare. List of Important Grid Elements and data availability for the same would be calculated by the concerned SLDC. Preparation of List of Important Grid Elements by the SLDCs would be monitored in the OCC forum.

c) In view of bay ownership/maintenance by separate utility, the forum decided that RTU availability would be calculated separately and Data Availability to be calculated separately for each utility. For eg. in Kopili station RTU ownership is with NEEPCO while some bays are being maintained by NERTS. The data points for NERTS bays shall be taken out of account of NEEPCO and booked to NERTS, while RTU availability to be considered against NEEPCO. However, both Kopili & KOPEX is out of operation due to natural calamity & may not be calculated for any telemetry availability till station is restored to operation.

d) The present calculation methodology for data availability would continue with the data points as decided above.

e) The lists of stations having no communication links will be monitored separately.

f) Communication network with OPGW link is essential for data availability & reliable communication. It was agreed to request Honorable CERC for direction in this regard to the concerned authorities for additional funding considering poor financial conditions of NER States.

Deliberation in the meeting

DD, NERPC requested NERLDC and all SLDCs to calculate the data availability according to the recommendation of the Special Committee held on 18th August,2020.

ED, NERLDC opined that NERLDC is not agreeing to the change of calculation in data availability and the recommendations of Special Committee.

DGM, NEEPCO informed the forum that NEEPCO is having offload tap changer in ICT and most of the station is not having OLTC panel causing difficulty in reporting OLTC data to RLDC online. He also highlighted the fact that OLTC tap changing operation rarely happen and it is monitored in OCC forum. So, providing real time for OLTC considering the constraints is not required as it is being provided offline.

Further there has not been any instruction from NERLDC in last few decades to operate OLTC online to compensate MVAR or voltage control. However, whenever required, it was operated offline. Accordingly, whenever operated, the tap position will be intimated to RLDC.

AGM(Communications), AEGCL informed the forum that in 9th NETeST meeting deliberations under Agenda item B.6 it was already discussed that under CERC regulation only ISTS links will be monitored for Communication Availability at Regional level. He also concurred with the decisions of the Special Meeting held on 18th August,2020.

MePTCL and TSECL representative informed the forum that even if isolators are closed manually the state estimator can be run which has been confirmed by M/s GE. The forum noted that data points like OLTC have not been neglected for System Operation as per new methodology. It has been included albeit indirectly, due to extremely rare instances of operation.

Member Secretary(I/C), NERPC informed the forum that the committee formed by Member Secretary had looked into all aspect in details and had given its recommendation within the ambit of regulation and keeping in view the difficulty faced by the constituents. It was highly inappropriate on part of NERLDC to refuse to participate in the Sub –committee as CERC/Court has not directed for any non-participation by RLDC for resolving issues before hand. He informed the forum that the recommendation must be implemented and NERLDC, SLDCs to calculate data availability accordingly. Hence, all previous Communication availability data may be taken as reference purpose only.

The Sub-Committee noted as above.

Action: All state utilities, NERLDC.

B.3 Status of URTDSM

The status on various issues related to URTDSM and other PMU related matters needs to be updated to the forum as listed below:

AEGCL:

- PMU in Agia station is not reporting to Assam-SLDC due to SAS upgradation activities.

- Shut-down of URTDSM system of Assam-SLDC due to failure of air-conditioning system since 18th June 2020

NERTS: Installation of pending analytical application: 1 analytical application for Control schemes for improving system security is still pending. NERTS mentioned that it will take up the matter with NR-1 RHQ team of POWERGRID.

NERLDC:

- Regarding 6th analytic software, it was also discussed earlier that NERLDC will take up the matter with NLDC & lead region for needful in uniform manner on PAN India basis.

- Reporting of NER PDC/PDS system from NERLDC to Back UP NLDC (Back up), Kolkata is a part of URTDSM project approved architecture. It may be noted that space was not available at Back UP NERLDC for system installation. Requisite permanent room as required for PDC-PDS & associated system at Back up NLDC was assured to be given but delayed.

As a result, temporary reporting of NER PDC-Back up PDC data was configured to a PDS system on interim/temporary basis at Back up NLDC Kolkata. This was done as main system at Backup NLDC was not ready due to lack of space there. Further a room for battery system & UPS was given on temporary basis in August20 but cable laying etc is being hindered.

NERLDC/NLDC may take up for readiness of Back up NLDC as reporting data to back up NLDC from NERLDC is part of approved architecture and same needs to be completed soon on permanent measure. Because of same, project /package awarded to M/s GE is delayed to be closed. Latest status & target may be provided by NERLDC by taking up the matter with NLDC & Back up NLDC.

Deliberation in the meeting

Update regarding various issues related to URTDSM is listed below:

AEGCL: NERTS informed the forum that reminder has given to SLDC-Assam via email dtd 20.07.2020,28.07.2020 & 01.09.2020 regarding the rectification/repairing of Air Conditioner.

NERTS: NERLDC informed that one (01) package of analytical applications developed by IIT-Bombay is yet to be deployed. After taking the matter with concerned group and IIT Mumbai, the approximate target date is December, 2020- March, 2021.

NERLDC: It was intimated that informed that this agenda is only for information purpose so that early Contract closing (GE) in totality as the said package is a multi-regional connected package and onward release of BG after defect liability period is very important as emphasized by Government for vendors in this difficult situation of pandemic. NERLDC will intimate Back up NLDC/ERLDC for needful at the earliest.
The forum requested NERLDC to present the present utility of the PMU Analytics package. Sr.GM(SL), NERLDC informed that PMU Analytics is being used by System Operation Division and suggested that the same may be taken up in OCC.

The Sub-Committee noted as above.
Action: NERLDC, NERTS. & AEGCL.

B.4 <u>GPRS connectivity for Substations and Leased line for SLDC:</u>

Many stations which are still working on GPRS for real-time data transfer are: –
Tripura: PK Bari, Dharmanagar, Gamitilla, Ambassa, Rabindranagar, Satchand, Belonia, Bogafa and Amarpur (Note: These configured stations are not reporting consistently at NERLDC)

Manipur: Tipaimukh and Jiribam (Note: These configured stations are not reporting consistently at NERLDC)

Nagaland: Nagarjan, Mokokchung, Kohima and Powerhouse (Note: These configured stations are not reporting consistently at NERLDC)

Mizoram: Luangmual (Note: These configured stations are not reporting consistently at NERLDC)

All stations using GPRS must follow the Technical Standards for Communication System released in 2020 by CEA.

<u>Deliberation in the meeting</u>

Tripura: Sr. Manager, TSECL informed the forum that maximum stations are being configured to report through 104 interface and having better data consistency. 132kV Gamaitilla, Ambassa, Rabindranagar are already reporting over 104. 132kV P.K.Bari, Dharmanagar will also be converted to 104 interface and will be reporting through OPGW. Remaining 4 stations Satchand, Belonia, Bogafa and Amarpur will be reporting through GPRS. As per report from SLDC, the stations reporting through GPRS & availability is quite good now.

Manipur: Manager, MSPCL informed the forum that they have acquired NSK5 Modem to connect Jiribam station through PLCC and had written letter to Jiribam PG for help in installation. Manipur informed that other stations are reporting well.

Mizoram: EE Mizoram informed the forum that RTUs reporting through GPRS had some issue but now working properly. He informed the forum that they will be shifting to OPGW by December, 2020 wherever feasible.

Sr. GM, NERLDC informed the forum that wherever GPRS is used the state utilities must take care of Cyber security at their station end as per Communication Standard.

The Sub-Committee noted as above.

Action: P&ED Mizoram, DoP Nagaland, DoP AP, TSECL and NERTS.

B.5 <u>Selected cases of sub-stations for rectification of corresponding data/communication related issues:</u>

Utility	Station	Latest Status/ Issues
NEEPCO	Ranganadi-2nd channel	FO link through but equipment installation pending at BNCDelay due to COVID-19
NTPC	BgTPP	No VOIP at unit control room (3 no.) NTPC to extend telephone inside their premise and discuss with NERTS (for any port) and get it done
OTPC	Palatana	OTPC to ensure 2nd channel up to next wide band node (Silchar) through PLCC as discussed in earlier NETeST. For configuration of 2nd port of RTU, OTPC will take up with BHEL.
NHPC	Loktak	RTU procurement underway. PO placed. Delayed due to COVID-19.
Mizoram	Kolasib	RTU delivered on 30.03.2020. Installation delayed due to COVID-19.
	Saitual, Khawzawl,Champhai, Serchhip, Lunglei	EMS/ SCADA modeling pending at SLDC. In 17th NETeST meeting, P&ED-Mizoram assured the forum that it will be done but it

		is still pending.

Deliberation in the meeting

Utility	Station	Latest Status/ Issues
NEEPCO	Ranganadi-2nd channel	FO link through & equipment installation at BNC is completed. (Delay due to Covid19). PLCC data channel at RHEP for Biswanath Chariali line not in working condition. NEEPCO to prepare specific TS considering the switchyard to Control Room distance and necessary modem cards. NERTS will provide the detail through mail.
NTPC	BgTPP	NERTS intimated that Channel has already configured. The IP phone no. along with IP address already shared to NTPC on 10.09.2020 via email for necessary further action. NTPC representative informed the forum that only wiring is left and will be completed by next month.
OTPC	Palatana	OTPC to ensure 2nd channel up to next wide band node (Silchar) through PLCC as discussed in earlier NETeST. For configuration of 2nd port of RTU, OTPC will take up with BHEL.
NHPC	Loktak	RTU procurement underway. PO placed. Delayed due to COVID-19.
Mizoram	Kolasib	RTU delivered on 30.03.2020. Installation delayed due to COVID-19. Completion by November, 2020.
	Saitual, Khawzawl,Champhai, Serchhip, Lunglei	EMS/ SCADA modeling pending at SLDC. P&ED-Mizoram assured the forum that it will be done and requested NERLDC to provide necessary help in modeling the stations.

The Sub-Committee noted as above.

Action: All utilities.

B.6 Action plan on VSAT Technology for NER states:

In 17th NETeST meeting, the forum decided to explore the possibility of PSDF funding.

Deliberation in the meeting

DD, NERPC stated that it has been intimated by DoP Ar. Pradesh that under VSAT for Ar. Pradesh; M/s Infotech Solution has been awarded the project. For the said scheme materials have been delivered with hub being installed at Chimpu, Lekhi. The forum requested NERLDC to prepare DPR for VSAT on behalf of the constituent. Sr.GM(SL), NERLDC informed the forum that they had already done the demo and submitted the report to the forum. The forum decided to defer discussion on preparation of the DPR of VSAT for NE region to the next meeting.

The Sub-Committee noted as above.

Action: All utilities.

B.7 VSAT For Roing Tezu Namsai:

NERTS mentioned that all approvals have been taken from higher management and tendering for establishment of VSAT systems at Roing, Tezu and Namsai will be done within 1st week of July 2020.

Deliberation in the meeting

NERTS mentioned that after repeated extension of bid and persuasion, with help & intervention of NERPC (matter taken up with highest authority of bidder), the party has ultimately quoted in bid floated. Earlier, the party mentioned various reasons due to COVID19, difficulty faced in NER and bids were extended multiple times. The same will be evaluated soon for NOA placement. Target for award is Nov'20. Completion by 4 months w.r.t LOA (as per party).

The Sub-Committee noted as above.

Action: NERTS.

B.8: Readiness for supply of CFEs in Badarpur (2nd TS Node)

In 17th NETeST meeting, NERLDC conveyed that the terminal servers have been delivered at NERLDC, Shillong premises and same will be transported to Badarpur site as and when feasible.

NERLDC also requested NERTS to re-route the communication channels of RTUs on IEC-101 protocol in sync with the installation and commissioning of Terminal Servers at Badarpur (PG) station. It was also insisted that a communication link shall be established between Badarpur (PG) and Backup NERLDC, Guwahati. NERTS agreed to do the necessary changes in consultation with NERLDC.

Repair of Terminal Server: One no. Terminal Server owned by NERLDC at Misa is defective for a quite some time. Repair status/ Replacement status may kindly be intimated by NERLDC.

Deliberation in the meeting

Sr.GM(SL), NERLDC informed the forum that they will be sending their team for installation and requested NERTS for help during integration of the same at Badarpur.

He informed the forum that the spare term server was diverted to Killing to facilitate the demo of VSAT. It will be shifted from Killing to Misa in the month of October 2020. It was requested that sufficient spare may be kept with NERLDC.

The Sub-Committee noted as above.
Action: NERLDC.

B.9 Data validation status of substations:

SN	Utility	Completed	Pending	Latest Status/ Issues
1	**Assam**			MoM signed with NERLDC for Action plan. Deadlines needs to be adhered. AEGCL may clarify the present status.
2	**Meghalaya**			MoM signed with NERLDC for Action plan. Deadlines needs to be adhered.
3	**Nagaland**			MoM signed with NERLDC for Action plan. Deadlines needs to be adhered.

Deliberation in the meeting

SN	Utility	Completed	Pending	Latest Status/ Issues
1	**Assam**	Completed		Due to SAS upgradation name change takes place and the same needs to be integrated with NERLDC.
2	**Meghalaya**	Completed		
3	**Nagaland**			MoM signed with NERLDC for Action plan. Deadlines needs to be adhered.

The Sub-Committee noted as above.

Action: AEGCL .

B10. <u>Dual channel availability for reliable and redundant communication system in NER:</u>

In 17th NETeST meeting NERLDC mentioned that dedicated and redundant ports in RTUs shall be made available at all stations of North-Eastern region. To ensure the physical redundancy, a total of 4 ports in Central-Sector stations are required to report to Main and Backup Control Centers of NERLDC.

NERTS stated that proposal for new RTUs (with TS & requisite ports as per approved technical architecture) has been initiated at corporate center level. Each RTU will report to Main & Back up RLDC. Requirements/TS as followed in all other region will be full filled.

It was also mentioned by NERTS (from field experience) that too many ports in a single rack/RTU (reporting to multiple master SCADA in parallel) puts the RTUs in "hang/unstable" condition.

<u>Deliberation in the meeting</u>

Sr.GM(SL), NERLDC informed the forum that they have consulted the manufacturer GE and utilities in the southern region and confirmed that multiple ports can be supported without any problem.

Multiple ports are already available in some RTUs. But DGM, NERTS (from field experience) informed that too many ports in a single rack/RTU (reporting to multiple

master SCADA in parallel simultaneously) puts the RTUs in "hang/unstable" condition for older RTUs. However, POWERGRID had already taken care of the matter in the technical specification of package of next RTU replacement (after discussing with different vendors) and will be provided as best suitable for system architecture.

The Sub-Committee noted as above.

Action: NERTS, NERLDC

B.11. Integration of Dikshi HEP real time data and pending Voice communication:

M/s Devi Energies Private Limited informed that purchase-order was placed for PLCC equipment to be placed in Dikshi, Tenga and Balipara (PG) stations but it delayed due to COVID-19 pandemic situations.

NERLDC apprised the forum that M/s Devi Energies Private Limited informed NERLDC via letter as attached Annexure-B.12 (of 17th NETeST meeting MoM) that they would install Session Initiated Phones (SIP) for establishing voice-communication between Dikshi/Tenga and Arunachal Pradesh-SLDC until the PLCC equipment is commissioned.

Deliberation in the meeting

Sr.GM(SL), NERLDC informed that initial clearance for energization of Dikshi HEP was given with undertaking for installation of data/voice communication. The forum requested NERPC to take up with M/s Devi Energies/DoP Ar. Pradesh for establishment of VSAT for data communication at the earliest. The installation of SIP phone is delayed due to COVID19.

The Sub-Committee noted as above.

Action: DoP, AP/NERLDC/NERPC.

B.12 Automatic Generation Control (AGC) in Indian Grid:

NERLDC informed the forum that as per the CERC order on AGC, all the ISTS stations need to get connected with NLDC for receiving AGC signals. The status is as follows:

Sl. No.	Station Name	Present Status
1.	BgTPP	AGC operational for Unit 1 & 3.
2.	AGBPP	Siemens requested for some data from DVR of each unit. Units are of Mitsubishi and BHEL/GE-

		make and require OEM visit. Have received offer from BHEL. Delayed due to COVID-19.
3.	Kopili, Doyang, Khandong	All stations under renovation/ restoration. Letter already written to NLDC by NEEPCO.
4.	Loktak	Purchase-order has been placed to Andritz Hydro. Target Date: **By Oct. 2020.**

Deliberation in the meeting

NERLDC informed the forum that as per the CERC order on AGC, all the ISTS stations need to get connected with NLDC for receiving AGC signals. The status is as follows:

Sl. No.	Station Name	Present Status
1.	BgTPP	AGC operational for Unit 1 & 3. For Unit #2 C&I works alongwith wiring to be done. By Nov'20
2.	AGBPP	Siemens requested for some data from DVR of each unit. Units are of Mitsubishi and BHEL/GE-make and require OEM visit. Have received offer from BHEL. Delayed due to COVID-19.
3.	Kopili, Doyang, Khandong	All stations under renovation/ restoration. Letter already written to NLDC by NEEPCO. NERLDC requested NEEPCO to give a copy of the letter to NERLDC.
4.	Loktak	Purchase-order has been placed to Andritz Hydro. Target Date: **By Oct. 2020.**

The Sub-Committee noted as above.

Action: All concerned utilities.

B.13. Status of RGMO to the Load Despatch Centres:

NERLDC requested that all generating stations of NER needs to provide the RGMO related "ON/OFF" status to the SLDCs/NERLDC which is required for real-time grid operation as well as post-dispatch analysis.

NERPC suggested that thermal unit below 200MW, Gas based unit below 50MW and Hydro units below 25MW do not require RGMO as per IEGC. NEEPCO and NHPC

representative informed the forum that they would explore necessary arrangements to be made for integration of RGMO-related data into the existing RTU/Gateway work.

Deliberation in the meeting

NTPC representative informed the forum that RGMO status of Unit 1 & 3 is going to NLDC through AGC line. NERLDC requested NTPC to extend the RGMO status of Unit 2 to NERLDC.

DGM, NEEPCO informed the forum that they require visit from OEM, BHEL and Mitsubishi. BHEL has not responded till now and visit by Mitsubishi Japan will take time due to COVID19.

The Sub-Committee noted as above.

Action: NTPC, NEEPCO.

B.14. Status of FSC in stations of NER:

NERTS requested NERLDC to provide a list of signals required from the site corresponding to FSC set-up and the same data will be configured and provided after checking the requirement at the site (as per practice followed in the other region). The list of required points was provided by NERLDC to NERTS.

Deliberation in the meeting

DGM, NERTS informed the forum that fire incidence occurred in one of the FSC. The OEM Siemens has informed that it will give clearance for extending the status only after repair of the FSC. It will give quote for wiring of both the FSC after the repair of the FSC. Onward, the wiring & integration will be done for the basic points required to monitor as adopted in NR1.

The Sub-Committee noted as above.

Action: NERTS.

B.15. Inter country connectivity between Tripura and Comilla, Bangladesh:

In 17th NETeST meeting, NERTS requested NERDLC to take up with NLDC to implement ICCP in between NLDC(India) to NLDC(Bangladesh) so that any data going out of country may be achieved through single point complying all cyber security norms at both ends. Link/channel can be provided by POWERGRID from NLDC India up to border area/station and same will be forwarded by concerned counterpart in Bangladesh up to NLDC Bangladesh.

Similarly, for voice also, separate link can be established in between NLDC(India) to NLDC(Bangladesh) with separate EPABX/VOIP exchange (at NLDC India/Bangladesh end) which is separated from India's internal ULDC/LD&C network. It may be noted that similar voice link has already been established & running successfully in between NLDC India and NLDC Bhutan (separate voice exchange at NLDC Bhutan).

Tripura & other utilities supported for the proposal keeping in view country's security in concern & better monitoring through NLDC. It was mentioned that compliance of cyber security is better at NLDC level and not updated at station/SLDC level. Hence data exchange in between NLDCs is preferred. Forum noted and it was informed that same has already discussed in 10th NETeST (Point.B.19) & recommended for same. NERLDC informed that it would be taken up with NLDC for further needful.

NERLDC informed the forum that they will have an internal discussion and then would be taken up with NLDC for further needful.

Deliberation in the meeting

ED, NERLDC informed the forum that he had already discussed with ED, NLDC. NLDC has taken up the matter with NLDC Bangladesh.

The Sub-Committee noted as above.

Action: NERLDC

B.16 Improvement of Data Availability of NER

As per IEGC clause 4.6.2, all users shall ensure telemeter power system parameters to RLDC. The present level of average data availability for the month of August-2020 of NER grid is tabulated in the **Annexure-B.16.1**, which is around 52% in the region; however, the corresponding instantaneous maximum has been achieved as 58%, which is highest till date since the inception of SCADA project. Several provisions have been made under regulations/standards/reports by CERC and CEA related to parameters required by Load Despatch Centres for reliable grid operation purposes which have been referred in the letter ref. POSOCO/NERLDC/SL/NETeST/Aug'20/H-341 dated 10th August 2020 (attached as **Annexure-B.16.2**) submitted by NERLDC to NERPC.

SN	Utility	Availability	Stations Not Reporting	Latest Status/ Issues

1	**Assam**	39%		Impacted due to SAS upgradation work. NERPC to form Team for monitoring and expedite the work. AEGCL to present the scheduled target-dates and present status of the work-progress in SAS upgradation of its stations. The issue has been reported by NERLDC to MD-AEGCL vide letter (Annexure-B.16.3
2	**Tripura**	28%	Dhalabil, Badarghat, Baramura, SM Nagar, BJ Nagar	Links completed. Voice and data configuration pending.
			Gumti, Amarpur, Rokhia	Nodes are not reporting due to disconnected OPGW between Udaipur and Palatana.
			Sabroom, Satchand	Island FO link. Needs PLCC to bring data to WB location Udaipur.
			Monarchak	FO Under construction. TSECL to submit action plan for remaining 13 stations.
3	**Meghalaya**	50%		Proposal moved by MRT team for procurement of DI card.
5	**Manipur**	55%	Jiribam	To be shifted from GPRS to OPGW.
			Churachandpur, Kakching	Issues at communication panel to be rectified with help from NERTS.
			Tipamukh	NSK-5 Modem to be installed at Tipamukh for Tipaimukh-

				Jiribam PLCC link.
6	**Nagaland**	30% (4 out of 17 reporting)	Nagarjan, Kohima and Mokokchung	FO link completed. Needs to shift from GPRS/ BB to FO link.
			Wokha	RTU is not working.
			Sanis	RTU delivered but installation not done.
			Melrui	Proposal for RTU pending with higher management.
7	**Mizoram**	30.02%	Luangmual,	Reporting partially over GPRS.
			Zuangtui	BSNL ISP will be installed at Mizoram-SLDC by 03rd July 2020.
			Kolasib	RTU delivery and installation pending by NERTS.
8	**Ar. Pradesh**	5.78%		Materials for VSAT received for 8 stations. Installation delayed due to COVID-19.

MePTCL requested NERLDC vide e-mail dated 30th June 2020 to pursue the matter of PSDF funding for Digital-Input cards with NLDC and subsequently a letter ref. NERLDC/SL/SCADA/Meghalaya/Aug'20/384 dated 04th August 2020 (refer Annexure-B.16.4) was sent by NERLDC to Director (transmission) of MePTCL with clarification that as per PSDF procedure NLDC only performs the associated secretariat functions. Hence, it was suggested that the matter may please be taken up with NERPC, if required.

NERLDC opinioned that as recorded in the MoM of the 15th NETeST meeting and 16th NETeST meeting, some of the monitoring actions to be taken by NERPC are listed below –

a. Team to be formed by NERPC for close monitoring of progress in SAS related works.
b. Letter from NERPC to MD-AEGCL to expedite the completion of SAS works.
c. Pursue the matter with higher authorities of AEGCL that the target-dates should be strictly followed by AEGCL.

Deliberation in the meeting

Discussed with Agenda item **B.2.**

The forum noted that improvement in data availability is a continuous process and there have been quite an improvement in NER by various utilities for communication/data etc., under the monitoring of different works/projects by NERPC and all utilities will give their best efforts for further improvement.

The Sub-Committee noted as above.

Action: all utilities.

B.17 Status of connecting Backup NERLDC (Guwahati) on ULDC network:

At present, the Backup NERLDC premises at Guwahati is connected over POWERTEL network; whereas in 16th NETeST meeting held on 20th February 2020, it was informed by POWERGRID-NERTS that Backup NERLDC will be connected to Kahilipara node over ULDC network within six (06) months. The status may be updated.

Deliberation in the meeting

Sr. Manager, TSECL enquired about the status of reporting of all RTUs to Back-Up NERLDC. Sr.GM(SL), NERLDC clarified that with the connection of B/U NERLDC over ULDC network the reporting of all RTUs to backup would be established. DGM, NERTS informed the forum that tender documents etc., are sent to C&M and same is under tendering and tentative target is 3months.

The Sub-Committee noted as above.

Action: NERLDC/NERTS.

B.18. Feasibility to connect Lekhi substation over Fiber-Optic network:

Under NER Fiber-Optic expansion, fiber connectivity was done which passes through 132 kV Lekhi S/s. However, there has been no dropping of OPGW (with SDH/PDH) made in the station. Thus, it is proposed that feasibility to install SDH/PDH may be discussed, so that real-time data and voice transfer can be done to Arunachal Pradesh-SLDC and subsequently to NERLDC.

Deliberation in the meeting

DGM, NERTS informed the forum that Equipment for Lekhi (new node) has been considered for amendment in NER FO Expansion Project (Equipment package) and amendment has already been issued to FIBCOM. The supply of equipment is also delayed due to COVID19 with target date as March, 2021

The Sub-Committee noted as above.

Action: NERLDC/NERTS.

B.19. <u>Status and details of Fiber Optic projects approved in 17th TCC/RPC meeting:</u>

Two number of projects were approved in 17th TCC/RPC meeting held on 04th October 2016 at Imphal. The projects which were approved are listed below:

a. Agenda no. A.11 of 17th RPC/TCC meeting, Additional Communication Scheme (755km)
b. Agenda No. A.12 of 17th RPC/TCC meeting, Reliable Communication Scheme (2124 km - Central sector)

NERTS is requested to disseminate the details of the above approved project such as Name of links, original date of completion of the projects/links, approved cost and coverage of stations/nodes in NER in these projects. Further, link-wise status may be submitted to the forum.

<u>Deliberation in the meeting</u>

a. Additional Communication Scheme: NERTS informed the forum that the supply of material is from two source: Supply: Offshore-541Km, Onshore346km-/Make in India: Material for 541km is under transit. Material from Vendor's own Make in India is yet to be finalized. Vendor is trying to buy from other Indian factories/production house but it has reported that manufacturing has slowed down/shut down due to COVID19. The status of Additional Communication Scheme is already given to project monitoring authority (as per 1st NETeST MOM) i.e. NERPC. Approximate target completion/Closing date is Dec2021 as projected keeping in view various insurmountable constraints.

b. Reliable Communication Scheme: The project/package is yet to be awarded. Under tendering/Award stage. Delayed due to COVID19.

Details of approved cost & coverage are already mentioned in respective TCC-NERPC approval MOM and attachments thereof.

The Sub-Committee noted as above.

Action: NERLDC/NERTS.

B.20. Readiness of Permanent Building & Permanent set up Back up NERLDC building at Guwahati:

Detailed Status may kindly be intimated by NERLDC same is delayed for quite a long time.

NERLDC may please intimate the status. (for supply & installation w.r.t. civil system & SCADA set up specifically)

Deliberation in the meeting

ED, NERLDC informed the forum that the completing of building, control center and SCADA is expected to be completed by December, 2021.

The Sub-Committee noted as above.

Action: NERLDC/NERTS.

Date & Venue of next NETeST meeting

It is proposed to hold the 19th NETeST meeting of NERPC in second week of December, 2020. 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 18th NETeST Meeting held on 29.09.2020

SN	Name & Designation	Organization	Contact No.
	No Representatives	**Ar. Pradesh**	
1.	Sh. Pranab Saha, AGM(C)	Assam (VC)	09435361717
2.	Sh. Arup Sarmah, DM	Assam (VC)	09707854367
3.	Sh. J. M. Baruah, DGM	Assam (VC)	-
4.	Sh. Lohit Krishna Borah, AGM	Assam (VC)	-
5.	Sh. Rupjyoti Das, DM	Assam (VC)	-
6.	Smti. Steffi Okram, Manager, MSPCL	Manipur (VC)	-
7.	Smti. Khoisnam Steela, DGM (SLDC),	Manipur (VC)	08730831103
8.	Smti. H. Rangnamei, Manager, MSPCL	Manipur (VC)	-
9.	Sh. H. M. Chanu, Manager, MSPCL	Manipur (VC)	-
10.	Sh. T. Sushanta Singh, Mgr., MSPCL	Manipur (VC)	-
11.	Sh. C. Warish Khan, DM, MSPCL	Manipur (VC)	
12.	Sh. Sh. D.J. Lyngdoh, EE	Meghalaya (MST)	09863063375
13.	Sh. C. W. Chen, AEE, MePTCL	Meghalaya	09863093311
14.	Sh. S. W. Khyrium, AEE, MePGCL	Meghalaya	-
15.	Sh. B. Nikhla, EE, MePTCL	Meghalaya	09436314163
16.	Sh. Y. Kharpuri, AEE, MePTCL	Meghalaya	-
17.	Sh. Benjamin L. Tlumtea, Sr. EE	Mizoram (VC)	09466151424
18.	Smt. Kristine VL Sailo, AE	Mizoram (VC)	-
19.	Sh. P. L. Liandika, AE	Mizoram (VC)	-
20.	Sh. Jacob Lalrinfela, AE	Mizoram (VC)	-
21.	Sh. V. Lalhmingliana, JE	Mizoram (VC)	-
22.	Sh. Lalremruata Sailo, JE	Mizoram (VC)	-
23.	Sh. Akavi Z. Chophi, SDO (MIS)	Nagaland (VC)	09436260924
24.	Smt. E. Manori, JE	Nagaland (VC)	-
25.	Sh. E. Imsu, JE	Nagaland (VC)	-
26.	Sh. Anil Debbarma, DGM (SLDC)	Tripura (VC)	09612589250
27.	Smti. Sampa Sen, Sr. Manager	Tripura (VC)	-
28.	Sh. Joypal Roy, DGM(E/M)	NEEPCO(MST)	08837200069
29.	Sh. V. Suresh, ED	NERLDC(MST)	09449599156
30.	Sh. M.K. Ramesh, GM	NERLDC (VC)	09449599174
31.	Sh. Sakal Deep, Engineer	NERLDC(VC)	09774528218
32.	Sh. Akhil Singhal, Chief Manager	NERLDC(VC)	09650598187
33.	Sh. M. K. Baruah, Sr. GM	PGCIL(MST)	09401454830

34.	Sh. S. Paul, DGM	PGCIL(MST)	09433379985
35.	Sh. Rohitesh Kumar, Asst. Manager	PGCIL(MST)	09402184618
	No Representatives	**NHPC**	
36.	Sh. Prem Kishan Singh, Sr. Manager	NTPC (MST)	-
	No Representatives	**OTPC**	
37.	Sh. B. Lyngkhoi, MS(I/C)	NERPC	09436163419
38.	Sh. S. Mukherjee, Dy. Director	NERPC	08794277306
39.	Sh. Sadiq Imam, AD-I	NERPC	07004133772
40.	Sh. Rajib Das, AD-II	NERPC	09954947474

Annexure 1: Telemetry Statistics of NER Constituents for the month of August-2020

Constituent	Average Analog Availability achieved in the month	Average Digital Availability achieved in the month	Average Total Availability achieved in the month	Instantaneous Mmximum Total Availability achieved in the month
PGCIL	90.85	92.94	92.64	96.16
NEEPCO	90.80	92.00	91.06	94.13
NTPC	95.22	91.67	92.91	93.83
NHPC	98.83	98.25	98.53	100.00
OTPC	97.37	99.12	97.54	100.00
Arunachal Pradesh	7.50	6.39	5.78	19.00
Assam	41.53	35.73	38.46	50.00
Manipur	55.41	59.35	55.42	73.01
Meghalaya	63.44	38.20	49.74	65.08
Mizoram	24.26	39.17	30.02	40.94
Nagaland	20.22	37.58	29.46	40.08
Tripura	30.01	24.77	27.34	39.35
NER	52.01	52.23	52.09	58.26

पावर सिस्टम ऑपरेशन कॉर्पोरेशन लिमिटेड
(भारत सरकार का उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Government of India Enterprise)

उत्तर पुर्वी क्षेत्रीय भार प्रेषण केंन्द्र : लोअर नँगरा, लापालांग, शिलांग-793006, (मेघालय)
North Eastern Regional Load Despatch Centre: Lower Nongrah, Lapalang, Shillong - 793006, (Meghalaya)
Ph : 0364-2537470, 2537427, Fax - 2537486 Website : www.nerldc.org, Email - nerldc@posoco.in, CIN : U40105DL2009GOI188682

सदर्भ संख्या/Ref No.: POSOCO/NERLDC/SL/NETeST/Aug'20/ H-341 दिनांक/Date: 10-अगस्त-2020

सेवा में/To,

Director (O&P)
North Eastern Regional Power Committee
NERPC Complex, Dong Parmaw
Lapalang, Shillong – 793006, Meghalaya

संदर्भ/Ref: a) Minutes-of-Meeting corresponding to 17th NETeST meeting issued by NERPC vide letter ref. NERPC/SE(O)/NETeST/2020/2025-2862 dated 15th July 2020.

विषय/Subject: डेटा-उपलब्धता प्रतिशत की गणना के लिए कार्यप्रणाली और अंकों की सूची संबंधित/ Methodology and list of points for calculation of data-availability percentage by NERLDC – reg.

महोदय/Sir,

This is in reference to the Minutes of Meeting corresponding to 17th NETeST held on 26th June 2020 in which under deliberations against Agenda Item B.2, certain queries related to list of data points to be considered for generation and transmission utilities in NER, methodology for calculation of data-availability, etc. have been raised.

1.0 The data-acquisition philosophy being adopted in NERLDC to acquire data from substations/generating stations is a standard practice of Unified Load Despatch and Communication (ULDC) scheme. However, to re-ensure the above practice, the regulations of CERC are also referred and as per *IEGC 2010, Clause 4.6.2* (relevant extract attached as ***Annexure-1***) it has been mentioned that –

Quote

"All Users, STUs and CTU shall provide Systems to telemeter power system parameter such as flow, voltage and status of switches/ transformers taps, etc. in line with interface requirements and other guideline made available by RLDC."

Unquote

In line with the IEGC regulations, the CTU, STU and user *[a person such as a Generating Company including Captive Generating Plant of Transmission Licensee (other than CTU and STU) or Distribution Licensee or Bulk consumer, whose electrical plant is connected to the ISTS at a voltage level 33kV and above]* has to provide the MW, MVAR, Voltage, Frequency, Status of Switching Devices such as Circuit Breakers and Isolators, Tap-status of Transformers, etc. are required by Load Despatch Centres for real-time grid operation purposes. Such data is represented in tabular form as shown below.

Sl. No.	Description	Analog data	Digital Data
1	Bus	▪ Voltage ▪ Frequency	▪ Circuit Breakers ▪ Isolators
2	Bus Coupler	--	▪ Circuit Breaker ▪ Isolators
3	Line	▪ Active Power	▪ Circuit Breakers

10/8/2020

पंजीकृत कार्यालय: बी - 9, कुतब इंस्टिटयुशनल एरिया, कटवारिया सराय, नई दिल्ली - 110016, दूरभाष: 011-26560121, फैक्स: 26560039
Registered Office : B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi - 110016, Tel :26560121, Fax :011-26560039

Sl. No.	Description	Analog data	Digital Data
		Reactive Power	▪ Isolators
4	Reactor/Capacitor/FSC	▪ Reactive Power	▪ Circuit Breakers ▪ Isolators
5	Unit	▪ Active Power Reactive Power	▪ Circuit Breakers ▪ Isolators
6	Generator Transformer (grid-side)	▪ Active Power ▪ Reactive Power	--
7	Connecting Bays	--	▪ Circuit Breakers ▪ Isolators
8	Transformer HV side	▪ Active Power Reactive Power OLTC	▪ Circuit Breakers ▪ Isolators
9	Transformer LV side	▪ Active Power Reactive Power	▪ Circuit Breakers ▪ Isolators

2.0 The data-availability percentage is calculated in a simple arithmetic manner as mentioned below.

Description	Calculation
Availability of Analog Data (in %)	No. of analog points reporting with "good" quality x 100 --- Total no. of Analog points
Availability of Digital Status Data (in %)	No. of Digital status points reporting with "good" quality x 100 --- Total no. of Digital status points
Total Availability (in %)	No. of (Analog+Digital) points reporting with "good" quality x 100 --- Total no. of (Analog+Digital) points
Total RTU Availability (in %)	No. of RTUs reporting x 100 --- Total no. of RTUs

The methodology and calculation of data-availability was explained in-person meeting by undersigned to MS-NERPC on 06th August 2020 and yourself with your team on 07th August 2020 during which all relevant documents were submitted by-hand.

3.0 As per the CERC order dated 29-01-2016 against petition number 7/SM/2014 (copy attached as ***Annexure-2***), it was directed to RLDCs that –

Quote

"NLDC and respective RLDC are directed to up-date the status of telemetry every month at their web-site and persistent non-availability of data from the generating stations/sub-stations to be taken up in RPC meetings for appropriate direction and action."

Unquote

The NERLDC has posted the data-availability on monthly-basis on its web-site and the persistent non-availability of data has been reported in RPC forums as well such as NETeST, OCC, etc. since 2018.

4.0 The grid-connected stations mainly at 132kV and above voltage level *(along with some important grid elements at 66kV voltage level)* in NER are being considered for calculation purposes in accordance with the definition of Grid Disturbance and Grid Incident specified in

10/8/2020

the CEA (Grid Standards), Regulations, 2010 (relevant extracts attached as ***Annexure-3***) as quoted below –

Quote

(i) "grid disturbance" means tripping of one or more power system elements of the grid like a generator, transmission line, transformer, shunt reactor, series capacitor and Static VAR Compensator, resulting in total failure of supply at a sub-station or loss of integrity of the grid, at the level of transmission system at 220 kV and above (132 kV and above in the case of North-Eastern Region);

(j) "grid incident" means tripping of one or more power system elements of the grid like a generator, transmission line, transformer, shunt reactor, series capacitor and Static VAR Compensator, which requires re-scheduling of generation or load, without total loss of supply at a sub-station or loss of integrity of the grid at 220 kV and above (132 kV and above in the case of North-Eastern Region);

Unquote

5.0 The real-time data availability from grid-connected stations is of utmost importance in terms of grid security and the same facts have been specified in the Inquiry committee report (https://powermin.nic.in/sites/default/files/uploads/GRID_ENQ_REP_16_8_12.pdf, relevant extracts attached as ***Annexure-4***) by a designated Committee headed by CEA (Sh. A.S. Bakshi, Ex-Chairperson-CEA and Ex-Member-CERC) in 2012. The relevant extracts from the recommendations in the aforesaid report are quoted below.

Quote

"9.10 Deployments of WAMS

9.10.1 The synchrophasor based WAMS employing PMUs offer a wide applications for real time monitoring and control of the system, specially under the dynamic conditions. Adequate number of PMUs should be installed to improve the visibility and real time monitoring of the system. Further the applications related to the synchrophasor based wide area monitoring, protection and control should be embedded in the system.

Action: CTU, Time Frame: 1 year"

Unquote

Quote

"9.11 Need of Dynamic Security Assessment and review of State Estimation

In order to assess the system security in real time and assess the vulnerability condition of the system, dynamic security assessment need to be periodically carried out at the control centers. A proper review and upgradation of the state estimation procedure is required to improve the visibility and situational awareness of the system.

Action: POSOCO, Time Frame: 6 months"

Unquote

Quote

"9.15 Network visualization

9.15.1 Appropriate amendments should be carried out in Grid Connectivity Standards to restrain connectivity of a generating station or a transmission element without required communication and telemetry facilities.

Action: CEA, Time Frame: 6 months"

Unquote

Quote

"9.15.2 The Communication network should be strengthened by putting fibre optic communication system. Further, the Communication network should be maintained properly to ensure reliability of data at Load Despatch Centres.

Action: CTU and STUs, Time Frame: One years"

10/8/2020

Unquote

6.0 As per the above recommendations from the Inquiry committee headed by representative from CEA, the real-time data availability is required for situational awareness, Dynamic Security Assessment, State Estimation, Network visualization, etc. which can only be done in case the minimum requisite power system parameters are available to the grid operators which includes MW, MVAR, kV, Hz, OLTC, Circuit Breaker Status and Isolators Status; in absence of which an accurate and reliable State Estimation and Dynamic Security Assessment is not possible for RLDCs/NLDC as well as SLDCs.

7.0 The current status of the telemetry was explained during the in-person meeting with Director(O&P)-NERPC referred above and the undersigned also verbally expressed inability of any representation from NERLDC to be a part of the committee formed by NERPC in such issues since the matter regarding the same is sub-judice before Hon'ble Commission.

यह आपकी जानकारी हेतु प्रस्तुत है/ This is for kind information.

सादर धन्यवाद/Thanking you.

भवदीय/Yours faithfully,

10/8/2020

एम.के. रमेश/ M.K. Ramesh
महाप्रबंधक (सिस्टम लॉजिस्टिक्स)/ GM (System Logistics)
उ.पू.क्षे.भा.प्रे.कें. पोसोको/ NERLDC, POSOCO
शिलांग/ Shillong

संलग्नक/Encl.: उपरोक्त/ As above.

प्रति(ई-मेल द्वारा)/ Copy to (via e-mail):

1. कार्यपालक निदेशक, उ.पू.क्षे.भा.प्रे.कें., शिलांग/ Executive Director, NERLDC, Shillong.
2. सदस्य सचिव, उ.पू.क्षे.वि.स., शिलांग/ Member Secretary, NERPC, Shillong.

ANNEXURE-1
IEGC REGULATIONS, 2010

Central Electricity Regulatory Commission (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) Regulations, 2009.

4.6 Important Technical Requirements for Connectivity to the Grid

4.6.1 Reactive Power Compensation

a) Reactive Power compensation and/or other facilities shall be provided by STUs, and Users connected to ISTS as far as possible in the low voltage systems close to the load points thereby avoiding the need for exchange of Reactive Power to/ from ISTS and to maintain ISTS voltage within the specified range.

b) The person already connected to the grid shall also provide additional reactive compensation as per the quantum and time frame decided by respective RPC in consultation with RLDC. The Users and STUs shall provide information to RPC and RLDC regarding the installation and healthiness of the reactive compensation equipment on regular basis. RPC shall regularly monitor the status in this regard.

4.6.2 Data and Communication Facilities

Reliable and efficient speech and data communication systems shall be provided to facilitate necessary communication and data exchange, and supervision/control of the grid by the RLDC, under normal and abnormal conditions. All Users, STUs and CTU shall provide Systems to telemeter power system parameter such as flow, voltage and status of switches/ transformer taps etc. in line with interface requirements and other guideline made available by RLDC. The associated communication system to facilitate data flow up to appropriate data collection point on CTU's system, shall also be established by the concerned User or STU as specified by CTU in the Connection Agreement. All Users/STUs in coordination with CTU shall provide the required facilities at their respective ends as specified in the Connection Agreement.

4.6.3 System Recording Instruments

Recording instruments such as Data Acquisition System/Disturbance Recorder/Event

ANNEXURE-2

CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 007/SM/2014

Coram:
Shri Gireesh B. Pradhan, Chairperson
Shri A.K. Singhal, Member

Date of Hearing: 22.5.2014
Date of Order : 29.1.2016

In the matter of
Non-compliance of Commission`s direction dated 26.9.2012 in Petition No. 168/MP/2011.

And
In the matter of

Northern Region

1. SLDC, Delhi Transco Ltd.
SLDC Building, 2nd Floor,
33 Kv sub-station, Minto Road
New Delhi -110002

2. Aravali Power Company Ltd.
NTPC Bhawan, Scope Complex,
7 Institutional Area, Lodhi Road,
New Delhi110 003

3. SLDC, Power Development Deptt.
SLDC Building, Narwalbala,
Gladini, Jammu – 180016.

4. THDC India Limited
Ganga Bhawan, Pragatipuram,
Bypass Road, Rishikesh- 249201.

5. AD Hydro Electric Power Limited
V.P.O. Prini Manali
Dist. Kullu H.P. 175143

6. Lanco Budhil Hydro Electric Project
Plot no. 397, Phase-III Udyog Vihar ,
Gurgaon- 122016

7. Malana Hydro Electric Power Ltd.
Bhilwara Tower, A-12
Sector-1, Noida- 201301

Western Region

8. Electricity Department, Government of Goa,
Vidyut Bhawan,
Pananji Goa- 403001

9. Electricity Department, Dadar Nagar Haveli,
U.T. Silvassa -396230

10. Electricity Department, Daman and Diu,
Power House Building 2nd floor,
Daman -396210.

Eastern Region

11. Energy and Power Deptt.
Govt. of Sikkim, Kazi Road,
Gangtok -737101

12. Jharkhand State Electricity Board
ULDC, Kusai Colony,
Ranchi- 834002

13. Maithon Power Limited
MA-5, Gogna Colony,
PO- Maithon Dam, District- Dhanbad,
Jharkhand- 828207.

Southern Region

14. Karnataka Power Transmission Corporation Ltd.
Bangalore -560009

Northern Eastern Region

15. Tripura State Electricity Corporation Ltd.
Bidhut Bhavan, Banamalipur,
Agartala, Tripura

16. Department of Power,
Govt. of Arunachal Pradesh,
Itanagar 791111

17. Department of Power and Electricity
Govt. of Mizoram,
Aizwal -796001

18. Department of Power
Govt. of Nagaland,
Kohima -797001

19. Department of Power
Govt. of Manipur,
Imphal -795001

Following were present:

Shri S.K. Soonee, POSOCO
Shri V.K. Aggarwal, NLDC
Shri P.K. Aggarwal, NLDC
Shri S.S. Barpanda, NLDC
Ms. Jayantika Singh, SRLDC
Shri Rajiv Porwal, NRLDC
Shri Debasis De, NRLDC
Ms. Supriya Singh, NRLDC
Ms. Jyoti Prasad, POSOCO
Ms. Shri Harish Kumar Rathwal, NLDC
Shri A. Mani, NRLDC
Shri S.P. Barnwal, ERLDC
Shri V.Kaikhochin, NERLDC
Shri Harish Patel, WRLDC
Ms. Anushree Bardhan, Advocate THDCIL
Shri J.K.Hatwal, THDCIL
Shri Anil Raghuwanshi, THDCIL
Shri D.S. Chauhan, THDCIL
Shri L.P. Joshi, THDCIL
Smt. Swapna Sheshadri, Advocate KPTCL
Shri K.N. Madhusoodan, Advocate, Mizoram
Ms. Kavita K.T., Advocate, Mizoram
Shri Sreenivasan G, KSEB.
Shri Darshan Singh, SLDC, Delhi
Shri N.N Sadasivan, NTPC

ORDER

The Commission vie order dated 19.12.2013 in Petition No. 56/SM/2013 had directed as under:

"17. We are at pains to observe that despite the Commission's sustained initiative for the implementation of the statutory mandate, the progress achieved is far from satisfactory. We

are constrained to place on record that the overall scenario is very precarious. Accordingly, we issue the following directions:

(a) POWERGRID shall complete the telemetry on all its sub-stations within six months of the issue of order failing which action under Section 142 of the Act may be initiated. After six months, NLDC/ RLDC shall submit status report in this regard.

(b) Notice under section 142 of the Electricity Act, 2003 be issued against utilities which have not responded to NLDC as contained in the **Annexure** to this order."

2. Based on the direction of the Commission by its order dated 19.12.2013 in Petition No. 56/SM/2013, vide order dated 25.4.2014 the respondents were issued show cause notice under Section 142 of the Act for non-compliance of directions of NLDC and the Commission's order dated 26.9.2012 in Petition No. 168/MP/2011.

3. Reply to show cause notice has been filed by THDC India Limited, Karnataka Power Transmission Corporation Limited, Kerala State Electricity Board Ltd., Malana Power Co. Ltd., Power and Electricity Department, Govt. of Mizoram, Aravali Power Company Pvt. Ltd., Electricity Department , Govt of Manipur, AD Hydro Power Limited and Delhi Transco Limited and Tripura State Electricity Corporation Ltd. However, SLDC, Power Development Department, Govt. of Jammu and Kashmir, LANCO Budhil Electric Project, Electricity Deptt. Govt. of Goa, Electricity Deptt. Dadar Nagar Haveli, Electricity Department, Daman and Diu, Energy and Power Department, Govt. of Sikkim, Jharkhand State Electricity Board, Maithon Power Ltd., Department of Power, Govt. of Arunachal Pradesh and Department of Power, Govt. of Nagaland have not filed their replies to the show cause notice. Respondents in their replies have requested to discharge them from notices issued under Section 142. Reply filed by the respondents is discussed briefly as under:

(a) THDC India Limited (THDC), vide its affidavit dated 13.5.2014, has submitted that it has already submitted the status of implementation of telemetry

system to the Commission under affidavit dated 17.7.2013 and to NLDC. THDC has further submitted that the telemetry system has been operational at its generating stations, namely Tehri HPP (1000 MW) and Koteshwar HEP (400 MW) since 2006-07 and 5.3.2013 respectively.

(b) Karnataka Power Transmission Corporation Limited (KPTCL), vide its affidavit dated10.6.2014, has submitted that SCADA is being installed by Udupi Power Company Limited (UPCL). However, UPCL has not installed the SCADA on the pending points. KPTCL has requested issue appropriate direction to UPCL in this regard. KPTCL has submitted that SLDC Karnataka shall ensure that telemetry is provided in all generating stations/ sub-stations and the same would be maintained in good condition.

(c) Kerala State Electricity Board Ltd. (KSEBL), vide its reply dated 22.5.2014, has submitted that the existing SCADA is not sufficient to meet all the requirements of the Grid Code. The new SCADA system is being implemented by M/s Alsthom through PGCIL and is expected to be implemented by October, 2014. KSEBL has further submitted that the integration of the data from all the generating stations and configuration of these generating stations in the SCADA of SLDC would require some more time and is expected to be completed by December, 2014.

(d) Malana Power Company Ltd. (MPCL), vide its reply dated16.5.2014, has submitted that it is operating a 86 MW Malana HEP at district Kullu in Himachal Pradesh which is connected with the grid of Himachal Pradesh. MPCL has

further submitted that entire data is being transferred through SLDC, Himachal Pradesh.

(e) Power and Electricity Deptt. Govt. of Mizoram, vide its affidavit dated 15.5.2014, has submitted that in the 13th NERPC/TCC meeting held on 10.7.2012, it was resolved that up-gradation/expansion of SCADA/EMS system for SLDC would be implemented by PGCIL. Telemetry is one of the main integral components of SCADA system. Power and Electricity Deptt. Govt. of Mizoram has further submitted that apart from action taken by PGCIL, it has simultaneously undertaken that PGCIL would lie Optical Power Ground Wire (OPGW) between vital sub-stations within the State. The physical progress of erection on live line of OPGW for data and voice communication link over the existing 132 kV line between Aizawl (Zuangtui) 132 kV sub-station to Lunglei (Khawiva) 132 kV sub-station via Serchhip (Bukpui) 132 kV sub-station is virtually completed. Implementation of telemetry is ongoing project and is purely as per the schedule of implementing agency i.e. PGCIL. Power and Electricity Deptt. Govt. of Mizoram has submitted that all possible steps are being taken to comply with the directions of the Commission.

(f) Aravali Power Company Pvt. Ltd.(APCPL), vide its affidavit dated 13.1.2014, has submitted that it has already submitted a complete report on 9.4.2013 to the Commission to establish telemetry system at its generating station IGSTPP (3x500 MW) Jhajjar. The process of issuance of Monthly Energy Accounting (for REAs) by RLDC/RPC is working smoothly and no issue with regard to data transfer by the telemetry system has been raised. APCPL has

further submitted that intermittent/occasional disruptions reported by RLDC are found to be pertaining to the backup/alternate channel only and that too at DTL end only. The system at Jhajjar has been found working satisfactorily.

(g) Manipur State Power Company Ltd.(MSPCL) on behalf of the Department of Power, Government of Manipur, vide its affidavit dated 14.5.2014, has submitted that Manipur has implemented UFR based load shedding in four stages of 5 MW each at 49.2 Hz, 49.00 Hz, 48.8 Hz and 48.6 Hz respectively which are in operation. MSPCL has further submitted that being a small State with lesser transmission network, no islanding scheme was recommended for Manipur. MSPCL has submitted that with the establishment of ambitious scheme of SLDC facility to provide reliable/ efficient speech, data communication and data exchange, supervision/ control of State transmission system in line with interface requirement with RLDC shall be available shortly.

(h) A.D. Hydro Power Limited (ADHPL), vide its affidavit dated16.5.2014, has submitted that it has installed the telemetry system through SLDC, Himachal Pradesh at the time of commissioning of generation station till such time the connectivity by PGCIL is finally provided at CTU Nalagarh. ADHPL has further submitted that it has taken all possible steps for functioning of telemetry system for transfer of data from generating station through PGCIL, Nalagarh.

(i) Delhi Transco Limited (DTL), vide its affidavit dated 7.5.2014, has submitted that all four generating stations and thirty three 400 kV / 220 kV sub-

stations are integrated. DTL has further submitted that telemetry system in upcoming sub-station is expected to be established shortly.

(j) Tripura State Electricity Corporation Limited, vide its affidavit dated 19.5.2014, has submitted that the status report with regard to RTU Tele-metering under Tripura State Control as under:

RTU Stations	Status	Remarks
Rokhia GTP	Functioning	
Baramura GTP	Functioning	
Gumti HEP	Non-functioning	From 1.1.2012 till date, efforts are being taken to restore.
132 kV GSS, 79 Tilla	Functioning	
66 kV Badharghat sub-station	Non-functioning	From May 2009 till date, efforts are being taken to restore.
132 kV Banduar sub-station	Functioning	
132 kV PK Badi sub-station	Functioning	
132 kV Dharmanagar sub-station	Functioning	

4. The matter was heard on 22.5.2014. During the hearing on 22.5.2014, learned counsel of KPTCL and the representative of THDC submitted that KPTCL and THDC have complied with the directions of the Commission and NLDC with regard to implementation of telemetry system, which was confirmed by National Load Despatch Centre (NLDC). National Load Despatch was directed to submit the status with regard to implementation of telemetry system by various utilities and publish the same on its website. NLDC, vide its affidavit dated 28.5.2014, has placed on record the status of region-wise summary of telemetry status.

Analysis and Decision:

5. We have considered the submissions of the respondents. Regulation 4.6.2 of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations,

2010 (hereinafter "the Grid Code") which mandates the provision of telemetry system provides as under:

> *"4.6.2. Reliable and efficient speech and data communication systems shall be provided to facilitate necessary communication and data exchange, and supervision/ control of the grid by the RLDC, under normal and abnormal conditions. All Users, STUs and CTU shall provide Systems to telemeter power system parameter such as flow, voltage and status of switches / transformer taps etc. in line with interface requirements and other guideline made available by RLDC. The associated communication system to facilitate data flow up to appropriate data collection point on CTU's system shall also be established by the concerned User or STU as specified by CTU in the Connection Agreement. All Users/STUs in coordination with CTU shall provide the required facilities at their respective ends as specified in the Connection Agreement."*

As per the above provisions, the real-time visibility of the generating stations and the sub-stations to the Load Despatch Centre is necessary for the reliable grid operation and security of the electrical power system.

6. Regulation 6 (3) of the Central Electricity Authority (Technical Standard for Connectivity to the Grid) Regulations, 2007 provides as under:

> "6(3). The requestor and user shall provide necessary facilities for voice and data communication and transfer of operational data, such as voltage, frequency, line flows, and status of breaker and isolator position and other parameters as prescribed by Appropriate Load Despatch Centre."

7. NLDC has submitted the status of telemetry (as on 30.6.2014) by various utilities and the region-wise summary of telemetry as under:

Region-wise summary of telemetry status as on 30.6.2014:

S.No.	Region	Total Nos of stations		Telemetry not provided		Telemetry intermittent		Total non-availability of data in % (telemetry not provided plus telemetry intermittency)	
		GS	SS	GS	SS	GS	SS	GS	SS
1	Northern Region	123	633	12	183	25	77	30%	41%
2	Western Region	112	465	2	43	13	95	13%	30%
3	Southern Region	136	348	4	1	3	7	5%	2.3%
4	Eastern Region	80	217	4	27	6	31	13%	27%
5	North Eastern Region	23	113	3	18	3	43	26%	54%
	Total	**474**	**1776**	**25**	**272**	**50**	**253**	**16%**	**30%**

*GS – generating station, SS – sub-station

8. NLDC has submitted a comparison of telemetry status as on 30.6.2014 with respect to the status on 25.9.2013 as under:

(a) Comparison of region-wise telemetry status as on 30.6.2014 with respect to the status as on 25.9.2013:

S. No.	Region	Total Nos of stations		Status submitted on 25.9.2013				Status as on 30.6.2014 of same stations			
				Telemetry not provided		Telemetry Intermittent		Telemetry not provided		Telemetry Intermittent	
		GS	SS	GS	SS	GS	SS	GS	SS	GS	SS
1	Northern Region	114	579	14	175	25	91	11	163	14	51
2	Western Region	106	428	2	49	3	21	2	37	1	10
3	Southern Region	136	347	13	4	0	0	4	1	0	0
4	Eastern Region	75	213	5	31	6	41	4	27	6	21
5	North Eastern Region	23	93	3	7	4	22	3	5	3	17
	Total	**454**	**1660**	**37**	**266**	**38**	**175**	**24**	**233**	**24**	**99**

(b) Region-wise status of percentage improvement as on 30.6.2014 with respect to the status on 25.9.2013:

Percentage improvement as on 30.6.2014 with respect to status on 25.9.2013				
Region	Telemetry not provided		Telemetry Intermittent	
	GS	SS	GS	SS
Northern Region	21%	7%	44%	44%
Western Region	0%	24%	67%	52%
Southern Region	69%	75%	-	-
Eastern Region	20%	13%	0%	49%
North Eastern Region	0%	29%	25%	23%
TOTAL	**35%**	**12%**	**37%**	**43%**

Perusal of the above status reveals that there is improvement of 35% in the provision of telemetry in respect of generating stations and 12% in respect of sub-stations. Similarly, there is also an improvement by 37% in generating stations and 43% in sub-stations in the intermittency of the telemetry as on 30.6.2014 w.r.t. status on 25.9.2013.

9. NLDC, vide its letter dated 9.12.2015, has submitted the latest region-wise status of telemetry as on 30.11.2015 with respect to the status on 25.9.2013 as under:

(a) Comparison of region wise telemetry status as on 30.11.2015 with respect to the status as on 25.9.2013:

S. No.	Region	Total Nos of stations		Status submitted on 25.9.2013				Status as on 30.11.2015 of same stations			
				Telemetry not provided		Telemetry Intermittent		Telemetry not provided		Telemetry Intermittent	
		GS	SS	GS	SS	GS	SS	GS	SS	GS	SS
1	Northern Region	114	579	14	175	25	91	4	109	1	28
2	Western Region	106	428	2	49	3	21	0	6	1	9
3	Southern Region	136	347	13	4	0	0	1	0	0	0
4	Eastern Region	75	213	5	31	6	41	3	18	4	18
5	North Eastern Region	23	93	3	7	4	22	3	5	3	14
	Total	**454**	**1660**	**37**	**266**	**38**	**175**	**11**	**138**	**9**	**69**

(b) Region wise status of percentage improvement as on 30.11.2015 with respect to the status on 25.9.2013:

Percentage improvement as on 30.11.2015 with respect to status on 25.9.2013				
Region	Telemetry not provided		Telemetry Intermittent	
	GS	**SS**	**GS**	**SS**
Northern Region	71%	38%	96%	69%
Western Region	100%	88%	67%	57%
Southern Region	92%	100%	-	-
Eastern Region	40%	42%	33%	56%
North Eastern Region	0%	29%	25%	36%
TOTAL	**70%**	**48%**	**76%**	**61%**

10. Perusal of the above status reveals that there is improvement of 70% in the provision of telemetry on generating stations and 48% on sub-stations. Similarly, there is an improvement by 76% in generating stations and 61% in sub-stations in the intermittency of the telemetry as on 30.11.2015 w.r.t. status on 25.9.2013. However, there is need for further improvement in availability of the telemetry.

11. According to NLDC, the following users in different regions have not provided the 100% telemetry in their generating stations and sub-stations as on 30.11.2015:

Status of Telemetry not provided in Northern Region as on 30.11.2015				
User Name	Total No. of Stations		Telemetry not provided	
	GS	SS	GS	SS
Punjab	17	172	1	100
Haryana	5	65	-	18
Rajasthan	17	129	0	16
UP	20	114	0	8
Uttarakhand	10	36	1	20
HP	9	19	1	0
JK	4	9	1	1
IPP/JV/Others	6	4	-	3

Status of telemetry not provided in Western Region as on 30.11.2015				
User Name	Total No. of Stations		Telemetry not provided	
	GS	SS	GS	SS
Maharashtra	32	195	0	12
Chattisgarh	8	95	0	8
Gujarat	25	121	-	1
Goa	-	7	-	2
DNH	-	4	-	4

Status of telemetry not provided in Southern Region as on30.11.2015				
User Name	Total No. of Stations		Telemetry not provided	
	GS	SS	GS	SS
NTPC	3	-	1	-

Status of telemetry not provided in Eastern Region as on 30.11.2015				
User Name	Total No. of Stations		Telemetry not provided	
	GS	SS	GS	SS
OPTCL	36	53	1	2
BSEB	2	37	-	11
WBSETCL	15	50	2	2
JSGB	3	16	-	4
IPP	7	-	1	-

Status of telemetry not provided in North-Eastern Region as on 30.11.2015				
User Name	Total No. of Stations		Telemetry not provided	
	GS	GS	GS	SS
Nagaland	1	3	1	-
Mizoram	2	7	2	6
Manipur	-	9	-	5
Ar. Pradesh	-	7	-	7

Perusal of the above data submitted by NLDC reveals that in Southern Region only NTPC, Talchar generating station has not provided telemetry. However, in other four regions, there are number of utilities/generating stations which have not provided telemetry till 30.11.2015.

12. NLDC, vide its letter dated 9.12.2015, has submitted the status of PGCIL`s telemetry as under:

Region	Total no. of SS	Telemetry not provided as on 30.11.2015 in SS	Telemetry Intermittent as on 30.11.2015 in SS	Telemetry Intermittent as on 30.6.2014 in SS	Telemetry Intermittent as on 25.9.2013 in SS
Northern Region	65	--	11	21	18
Western Region	44	--	2	5	2
Southern Region	46	--	5	7	0
Eastern Region	37	--	7	11	5
North Eastern Region	19	--	3	1	0
Total	211	--	28	45	25

13. Perusal of the above data reveals that PGCIL has provided telemetry facilities in their all sub-stations. However, there is no satisfactory improvement in the intermittency of telemetry in the sub-stations of PGCIL. In fact, in Eastern Region and North Eastern Region, the intermittency in telemetry has increased. We are not satisfied with the improvement in the intermittency in telemetred of PGCIL`s system. Despite our repeated instructions, PGCIL has not made sincere efforts to improve the problem of intermittency in its telemetry. We direct PGCIL to undertake effective monitoring of telemeter data and to minimize the intermittency in telemetry in all regions within six

months from the issue of the order. NLDC is directed to submit status of PGCIL`s telemetry within one month thereafter.

14. Under the Grid Code, it is the responsibility of all users, STUs and CTU to provide systems to telemeter power system parameters in line with interface requirements and other guideline made available by RLDC and associated communication system to facilitate data flow up to appropriate data collection point on CTUs system. Telemetry of on-line operational data is not only essential for effective monitoring of grid but also forms key input for effective running of State estimation and other EMS tools at RLDC and SLDCs, which are essential for reliable and secure operation of the grid. In view of the critical importance of telemetry and associated communication system for ensuring reliability in operation of the grid and optimum utilization of the transmission system, there is an imperative need for all users to establish the telemetry and associated communication system in time bound manner so that the power system operation may be most reliable and optimum. Moreover, in view of the requirement of communication system for a generating station and sub-station, the planning should be done in advance by the generating company and transmission licensee to ensure that necessary system are in place before commissioning of generating station or sub-station to take care of the communication requirements even at the time of injection of power infirm by a generating station and sub-station during testing.

15. THDC India Limited, Karnataka Power Transmission Corporation Limited, Kerala State Electricity Board Ltd., Malana Power Co. Ltd., Power and Electricity Department, Govt. of Mizoram, Aravali Power Company Pvt. Ltd., Electricity Department, Govt of

Manipur, AD Hydro Power Limited and Delhi Transco Limited and Tripura State Electricity Corporation Ltd. have submitted that they are complying with the provisions of the Grid Code and directions of the Commission. According to Electricity Departments, Govt. of Mizoram and Manipur, PGCIL is implementing the telemetry system in their State. Taking note of submissions of said respondents that substantial works have been carried out, we are of view that non-compliance of the direction is not made out at this stage for imposition of penalty under Section 142 of the Act.

16. Power Development Department, Govt. of Jammu and Kashmir, LANCO Budhil Electric Project, Electricity Deptt. Govt. of Goa, Electricity Deptt. Dadar and Nagar Haveli, Electricity Department, Daman and Diu, Energy and Power Department, Govt. of Sikkim, Jharkhand State Electricity Board, Maithon Power Ltd., Department of Power, Govt. of Arunachal Pradesh and Department of Power, Govt. of Nagaland (hereinafter collectively as the respondents) have not filed their replies to the show cause notice. We express our displeasure at the conduct of the respondents to ignore the directions of the Commission and NLDC, and non-compliance of the provisions of the Grid Code, especially in such a matter where grid security is involved. We once again direct the above mentioned utilities to up-date status of telemetry in their system within one month of this order with an advance copy to NLDC, respective RLDC and RPC. Based on the replies, respective RLDC will monitor the implementation of telemetry and in case of any difficulty, the matter may be discussed and sorted out in the RPC meetings. If any of these entities does not submit the information, the concern RLDC may file application before the Commission against the said entities under Section 142 of the Act.

17. We further direct all the utilities/generating companies which have to still establish telemeter power system parameters as per details given in para11 above to provide data to RLDCs/SLDCs as per the provisions of the Grid Code and CEA Grid Standards Regulations by 31.7.2016. If the utilities/generating companies do not comply with our directions, it will be construed as non-compliance of the order of the Commission and appropriate proceedings under Section 142 of the Electricity Act, 2003 shall be initiated against such utilities/generating companies. NLDC is directed to submit user- wise latest status of telemetry, by 31.8.2016.

18. NLDC and respective RLDC are directed to up-date the status of telemetry every month at their web-site and persistent non-availability of data from the generating stations/sub-stations be taken up in RPC meetings for appropriate direction and action.

19. The petition is disposed of with the above directions.

Sd/-
(A. K. Singhal)
Member

sd/-
(Gireesh B. Pradhan)
Chairperson

(e) "condition based maintenance" means a set of maintenance actions based on continuous or frequent assessment of equipment condition, which is obtained from either of or a combination of embedded sensors, external tests and measurements;

(f) "disaster management" means the mitigation of the impact of a major breakdown on the system and bringing about restoration in the shortest possible time;

(g) "Emergency Restoration System" means a system comprising of transmission towers or structures of modular construction, complete with associated components such as insulators, hardware fittings, accessories, foundation plates, guys, anchors or installation tools and they like to facilitate quick restoration of damaged or failed transmission line towers or sections;

(h) "Entity" means a Generating Company including captive generating plant or a transmission licensee including Central Transmission Utility and State Transmission Utility or a distribution licensee or a Bulk Consumer whose electrical plant is connected to the Grid at voltage level 33 kV and above;

(i) "grid disturbance" means tripping of one or more power system elements of the grid like a generator, transmission line, transformer, shunt reactor, series capacitor and Static VAR Compensator, resulting in total failure of supply at a sub-station or loss of integrity of the grid, at the level of transmission system at 220 kV and above (132 kV and above in the case of North-Eastern Region);

(j) "grid incident" means tripping of one or more power system elements of the grid like a generator, transmission line, transformer, shunt reactor, series capacitor and Static VAR Compensator, which requires re-scheduling of generation or load, without total loss of supply at a sub-station or loss of integrity of the grid at 220 kV and above (132 kV and above in the case of North-Eastern Region);

(k) 'Schedule' means schedule appended to these regulations;

(l) "time based maintenance" means inspection, cleaning and replacement of parts of the equipment based on a predetermined time schedule.

(m) "transient stability" means the ability of the power system to maintain synchronism when subjected to a severe disturbance such as a short circuit on a transmission line;

ANNEXURE-4

REPORT OF THE ENQUIRY COMMITTEE

ON

GRID DISTURBANCE

IN NORTHERN REGION

ON 30th July 2012

AND

IN NORTHERN, EASTERN & NORTH-EASTERN REGION

ON 31st JULY 2012

16th AUGUST 2012
NEW DELHI

9.9 Optimum utilization of available assets

9.9.1 The regulatory provisions regarding absorption of reactive power by generating units needs to be implemented.

Action: POSOCO
Time Frame: Immediate

9.9.2 An audit of devices such as HVDC, TCSC, SVC and PSS should be done immediately to ensure that their stability features are enabled. Further, exercise of PSS tuning should be planned and implemented. Settings of these dynamic stabilizing devices should be reviewed at appropriate intervals.

Action: CTU, STUs, Generators
Time Frame: 6 months

9.9.3 Functioning of existing PMUs and availability of their output to RLDCs and accuracy of time synchronization should be monitored on daily basis and, if required, corrective actions should be taken on priority basis.

Action: CTU, POSOCO
Time Frame: Immediate

9.10 Deployments of WAMS

9.10.1 The synchrophasor based WAMS employing PMUs offer a wide applications for real time monitoring and control of the system, specially under the dynamic conditions. Adequate number of PMUs should be installed to improve the visibility and real time monitoring of the system. Further the applications related to the synchrophasor based wide area monitoring, protection and control should be embedded in the system.

Action: CTU
Time Frame: 1 year

9.10.2 Possibility of voltage collapse prediction, sensing global power system conditions derived from local measurements may be explored.

Action: RPCs
Time Frame: 1 year

9.11 Need of Dynamic Security Assessment and review of State Estimation

In order to assess the system security in real time and assess the vulnerability condition of the system, dynamic security assessment need to be periodically carried out at the control centers. A proper review and upgradation of the state estimation procedure is required to improve the visibility and situational awareness of the system.

Action: POSOCO
Time Frame: 6 months

9.12 Implementation of islanding schemes

Efforts should be made to design islanding scheme based on frequency sensing relays so that in case of imminent grid failure, electrical islands can be formed. These electrical islands can not only help in maintaining supply to essential services but would also help in faster restoration of grid.

Action: CEA, RPCs, POWERGRID, STUs, SLDCs and Generators
Time Frame: 6 months

9.13 Autonomy to Load Despatch Centres

9.13.1 As National Grid is on the horizon, homogenization of system operation philosophy is need of the hour. The present organizational set up of Load Despatch Centres need to be reviewed. System operation needs to be entrusted to Independent System Operator (ISO). In addition, SLDCs should be reinforced and ring fenced for ensuring functional autonomy.

Action: Govt. of India, State Govts.
Time Frame: 1 year

9.13.2 Training and certification of system operators need to be given focused attention. Sufficient financial incentives need to be given to certified system operators so that system operation gets recognized as specialized activity.

Action: Govt. of India, State Govts.
Time Frame: 3 months

9.14 Development of Intra-State transmission system

Intra-State transmission system needs to be planned and strengthened in a better way to avoid problems of frequent congestion.

Action: STUs
Time Frame: 2 years

9.15 Network visualization

9.15.1 Appropriate amendments should be carried out in Grid Connectivity Standards to restrain connectivity of a generating station or a transmission element without required communication and telemetry facilities.

Action: CEA,
Time Frame: 6 months

9.15.2 The Communication network should be strengthened by putting fibre optic communication system. Further, the Communication network should be maintained properly to ensure reliability of data at Load Despatch Cenres.

Action: CTU and STUs
Time Frame: One years

9.15.3 RTUs and communication equipments should have uninterrupted power supply with proper battery backup so that in case of total power failure, supervisory control and data acquisition channels do not fail.

Action: CTU and STUs
Time Frame: 3 months

9.15.4 In case of existing generating stations or transmission elements without telemetry facility, the same should be put in place at the earliest. If prolonged operation without telemetry continues, POSOCO should approach Central Commission.

Action: RPCs, POSOCO
Time Frame: 6 months

9.16 Reduction in Start-up time for Generators:

Large variations are observed in time taken for initiation of unit start up (Boiler light up) by the stations after availability of start-up power and also for start ups/light up of subsequent units. While subsequent start-ups were very fast (10-20 minutes) in some of the units, in other cases they took considerably longer time – several hours. Reasons for the delays in attempting first start-up and subsequent start-ups may be examined by the utilities in consultation with CEA. A standard procedure for preparatory activities and sequence of start up may be put in place by the stations to restore units as early as possible particularly in contingencies.

Action: CEA, Generating Utilities and RLDCs
Time Frame:one year

पावर सिस्टम ऑपरेशन कॉर्पोरेशन लिमिटेड
(भारत सरकार का उद्यम)

POWER SYSTEM OPERATION CORPORATION LIMITED
(A Government of India Enterprise)

उत्तर पुर्वी क्षेत्रीय भार प्रेषण केंन्द्र : लोअर नँगरा, लापालांग, शिलांग-793006, (मेघालय)

North Eastern Regional Load Despatch Centre: Lower Nongrah, Lapalang, Shillong - 793006, (Meghalaya)

Ph : 0364-2537470, 2537427, Fax - 2537486 Website : www.nerldc.org, Email - nerldc@posoco.in, CIN : U40105DL2009GOI188682

संदर्भ/Ref: NERLDC/SL/SCADA/Assam/Aug'20/ 385 दिनांक/Date: 04th August 2020

सेवा में/To,

The Managing Director
Bijulee Bhawan (First Floor)
Paltan Bazar, Guwahati – 781001
Assam, INDIA

विषय/Subject: Telemetry status (real-time data) of stations under jurisdiction of AEGCL in North Eastern region – reg.

महोदय/Sir,

This is in reference to real-time telemetry issues of stations under control area of Assam SLDC that is continuously being raised in various forums such as NETeST meetings, Operations Coordination Committee (OCC) meetings, Technical Coordination Committee (TCC) meetings, etc. by NERLDC. The approximate real-time data availability percentage of AEGCL owned stations is around **48%**.

The SCADA/EMS system of Assam-SLDC had been upgraded in year **2016**; even after a period of around **3 years**, it is being operated with a data-telemetry percentage of **48%** only. The AEGCL stations are grid-connected and any tripping operation, fault, disturbance in Assam area can lead to a cascading effect on the NER grid. Hence, the real-time SCADA data availability of the stations under Assam-SLDC control area is of utmost importance to SLDC as well as NERLDC for optimized and secure power system operation.

Some of the specific issues which needs to be highlighted are mentioned below.

- **Real-time data of AEGCL stations under SAS upgradation works**

It has been conveyed in 17th NETeST meeting that real-time data of several stations is not available due to pending SAS upgradation works in many stations of AEGCL, but no progress list has been shared in NERPC forum yet. Moreover, the status of availability of real-time data from stations in which SAS upgradation works is completed has also not been shared yet.

- **Incorrect practices of database modelling in SCADA/EMS system by Assam-SLDC**

Some incorrect practices of database modeling in SCADA/EMS system has also been observed in which many substations are modelled in staggered manner with partial data getting reported through Gateway and partial data through old RTU in the substations; which is leading to modeling of multiple stations instead of single substation. It may please be noted that the Load Despatch Centres System in India is an integrated system in which real-time data of state-level is being shared with other LDCs at regional as well as national level. Hence, any non-standard practice creates problems for other Load Despatch Centres in configuration of such changes in respective databases.

- **Substantial improvement not being observed as per the telemetry statistics**

For continuous follow-up and persuasion, NERLDC has been sending **Weekly Telemetry Report to team of Assam-SLDC on e-mail since April-2018** on regular basis. Further, NERLDC is sending **Monthly Telemetry Statistics to team of Assam-SLDC on e-mail as well as by-post since July-2018**. In spite of continuous follow-up and persuasion, no improvement in real-time telemetry data has been observed at SLDC as well as NERLDC. A web-login (**https://www.nerldc.in/realtime-data/**) for real-time monitoring of

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station-wise telemetry has also been created by NERLDC and shared with MePTCL in NETeST forum. The aforesaid telemetry statistics being shared by NERLDC may please be monitored and reviewed by senior management of MePTCL also on regular basis. A trend representing the data-availability percentage of past few months is attached as ***Annexure-1*** for kind reference.

- **Non-redundancy in communication system**

It has been noticed at various times *(refer the dip in % data-availability corresponding to Jul'19 and Aug'19 shown in* ***Annexure-1*** *due to card failure at Kahilipara communication node)* that outage of a single communication link disrupts the availability of real-time data from a series of substations simultaneously creating a situation of bigger areas of blind spots (non-monitorable) for the grid operators; subsequently decreasing the data-availability percentage of AEGCL. Hence, redundancy in physical communication links from substations of AEGCL till the Assam-SLDC shall be ensured.

The NERLDC has raised the concerns related to no substantial improvement in data availability of stations of Assam in recent OCC and NETeST meetings conducted by NERPC. Your personal intervention is requested in the above matter of real-time data availability of all grid-connected stations under control area of AEGCL which should be taken on high priority in order to ensure secure and reliable grid operation.

यह आपकी जानकारी एवं अग्रिम कार्यवाही हेतु प्रस्तुत है/ This is for kind information and necessary action at your end.

सादर धन्यवाद/ Thanking you.

भवदीय/ Yours faithfully,

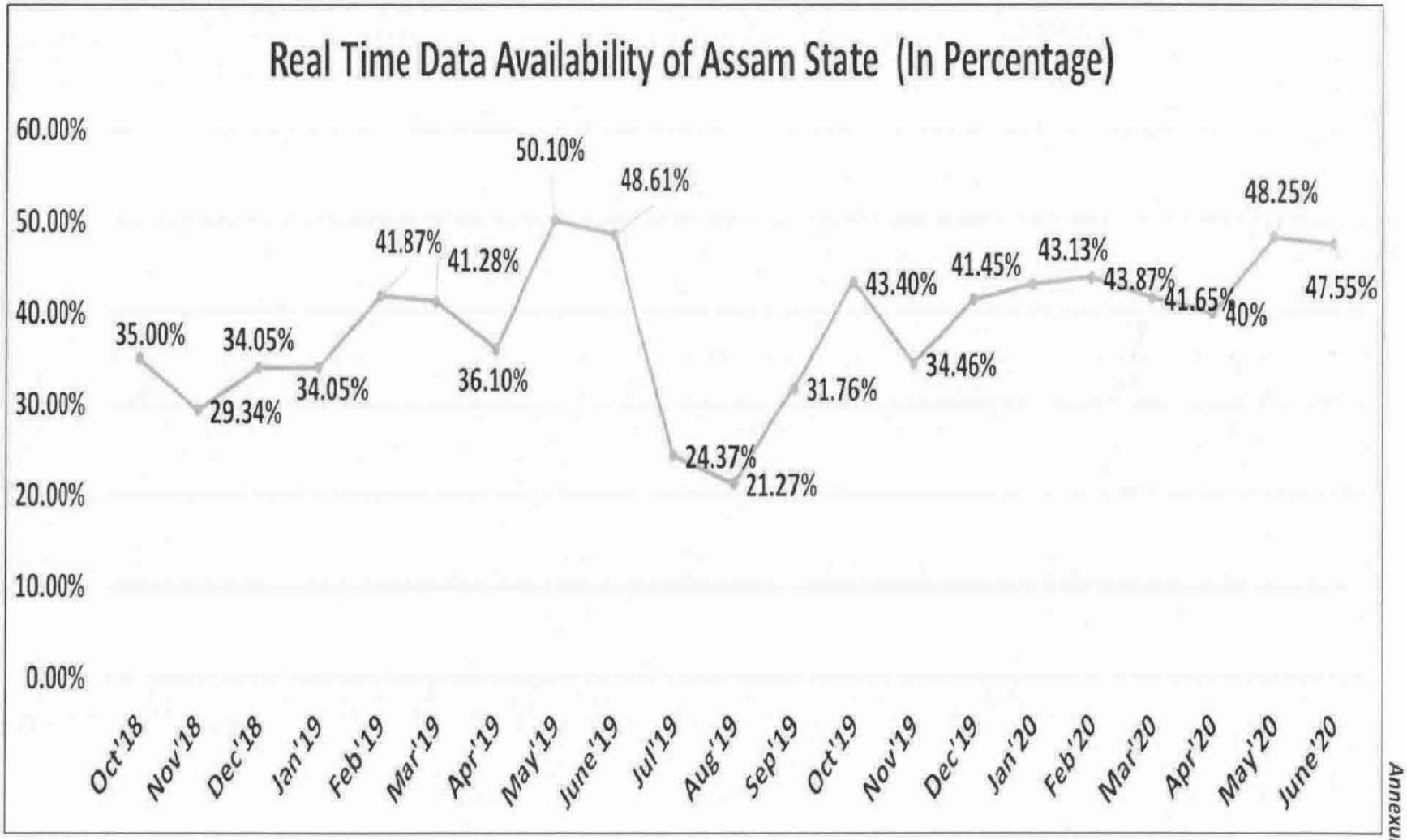
04/08/2020

वी.सुरेश / V. Suresh
कार्यपालक निदेशक/ Executive Director
उ.पू.क्षे.भा.प्रे.के, पोसोको/ NERLDC, POSOCO
शिलांग/ Shillong

संलग्नक/Encl.: उपरोक्त/As above

प्रति/Copy (ई-मेल द्वारा/ by e-mail):

- सदस्य सचिव, उत्तर पूर्वी क्षेत्रीय विद्युत समिति/ Member Secretary, NERPC
- निदेशक (सिस्टम ऑपरेशन), पोसोको/ Director (System Operation), POSOCO
- कार्यकारी निदेशक, रा.भा.प्रे.कें./ Executive Director, NLDC
- मुख्य महाप्रबंधक, एस.एल.डी.सी. असम, गुवाहाटी/ Chief General Manager, Assam-SLDC, Guwahati


Real Time Data Availability of Assam State (In Percentage)
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
35.00%
29.34%
34.05%
34.05%
41.87%
41.28%
36.10%
50.10%
48.61%
24.37%
21.27%
31.76%
43.40%
34.46%
41.45%
43.13%
43.87%
41.65%
40%
48.25%
47.55%
Oct'18
Nov'18
Dec'18
Jan'19
Feb'19
Mar'19
Apr'19
May'19
June'19
Jul'19
Aug'19
Sep'19
Oct'19
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Dec'19
Jan'20
Feb'20
Mar'20
Apr'20
May'20
June'20

Annexure-1

पावर सिस्टम ऑपरेशन कॉर्पोरेशन लिमिटेड
(भारत सरकार का उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Government of India Enterprise)

उत्तर पुर्वी क्षेत्रीय भार प्रेषण केंन्द्र : लोअर नँगरा, लापालांग, शिलांग-793006, (मेघालय)
North Eastern Regional Load Despatch Centre: Lower Nongrah, Lapalang, Shillong - 793006, (Meghalaya)
Ph : 0364-2537470, 2537427, Fax - 2537486 Website : www.nerldc.org, Email - nerldc@posoco.in, CIN : U40105DL2009GOI188682

संदर्भ/Ref: NERLDC/SL/SCADA/Meghalaya/Aug'20/384 दिनांक/Date: 04th August 2020

सेवा में/To,

Director (Transmission)
MePTCL, Short Round Road,
Lum Jingshai, Shillong-793001
Meghalaya, INDIA

विषय/Subject: Telemetry status (real-time data) of stations under jurisdiction of MePTCL in North Eastern region – reg.

महोदय/Sir,

This is in reference to real-time telemetry issues of stations under control area of Meghalaya SLDC that is continuously being raised in various forums such as NETeST meetings, Operations Coordination Committee (OCC) meetings, Technical Coordination Committee (TCC) meetings, etc. by NERLDC. The approximate real-time data availability percentage of MePTCL owned stations is around **60%**.

The SCADA-EMS system of Meghalaya-SLDC had been upgraded in year **2016**; even after a period of around **3 years**, it is being operated with a data-telemetry percentage of **60%** only. The MePTCL stations are grid-connected and any tripping operation, fault, disturbance in Meghalaya area can lead to a cascading effect on the NER grid. Hence, the real-time SCADA data availability of the stations under Meghalaya-SLDC control area is of utmost importance to SLDC as well as NERLDC for optimized and secure power system operation.

Some of the specific issues which needs to be highlighted are mentioned below.

- **Real-time data of entire stations not provided**

It has been conveyed in 17th NETeST meeting that real-time data of several stations *(such as Ampati, Amrit, cherrapunji, Nongston, Umiam Stage 4)* is not available but no action-plan has been submitted for it from MePTCL side in NETeST forum. A detailed action-plan may please be prepared at the earliest to facilitate the availability of real-time data in such cases.

- **Real-time data related to status of switching devices not provided**

It has been noticed that the real-time "OPEN/CLOSE" status of switching devices (such as Isolators and Circuit Breakers) in majority of the substations has not been made available in SCADA system of Meghalaya-SLDC as well as NERLDC. MePTCL has moved a proposal for procurement of Digital-Input cards for funding through PSDF and requested NERLDC vide e-mail dated 30-06-2020 to pursue the matter with NLDC. As per PSDF procedure, NLDC performs only the secretariat functions. As referred from www.psdfindia.in, the matter has been submitted to the Techno-economic Sub-Group and the same may please be taken up with NERPC.

- **Telemetry Statistics of MePTCL owned stations**

For continuous follow-up and persuasion, NERLDC has been sending **Weekly Telemetry Report to team of Meghalaya-SLDC on e-mail since April-2018** on regular basis. Further, NERLDC is sending **Monthly Telemetry Statistics to team of Meghalaya-SLDC on e-mail as well as by-post since July-2018**. A web-login

.....पीछे पलटें

पंजीकृत कार्यालय: बी - 9, कुतब इंस्टिटयुशनल एरिया, कटवारिया सराय, नई दिल्ली - 110016, दूरभाष: 011-26560121, फैक्स: 26560039
Registered Office : B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi - 110016, Tel :26560121, Fax :011-26560039

(https://www.nerldc.in/realtime-data/) for real-time monitoring of station-wise telemetry has also been created by NERLDC and shared with MePTCL in NETeST forum. The aforesaid telemetry statistics being shared by NERLDC may please be monitored and reviewed by senior management of MePTCL also on regular basis. A trend representing the data-availability percentage of past few months is attached as ***Annexure-1*** for kind reference.

- **Non-redundancy in communication system**

It has been noticed at various times *(refer the dip in % data-availability corresponding to Dec'18 and Jul'19 shown in **Annexure-1**)* that outage of a single communication link disrupts the availability of real-time data from a series of substations simultaneously creating a situation of bigger areas of blind spots (non-monitorable) for the grid operators; subsequently decreasing the data-availability percentage of MSPCL. Hence, redundancy in physical communication links from substations of MSPCL till the Manipur-SLDC shall be ensured.

The NERLDC has raised the concerns related to no substantial improvement in data availability of stations of Meghalaya in recent OCC and NETeST meetings conducted by NERPC. Your personal intervention is requested in the above matter of real-time data availability of all grid-connected stations under control area of MePTCL which should be taken on high priority in order to ensure secure and reliable grid operation.

यह आपकी जानकारी एवं अग्रिम कार्यवाही हेतु प्रस्तुत है/ This is for kind information and necessary action at your end.

सादर धन्यवाद/ Thanking you.

भवदीय/ Yours faithfully,

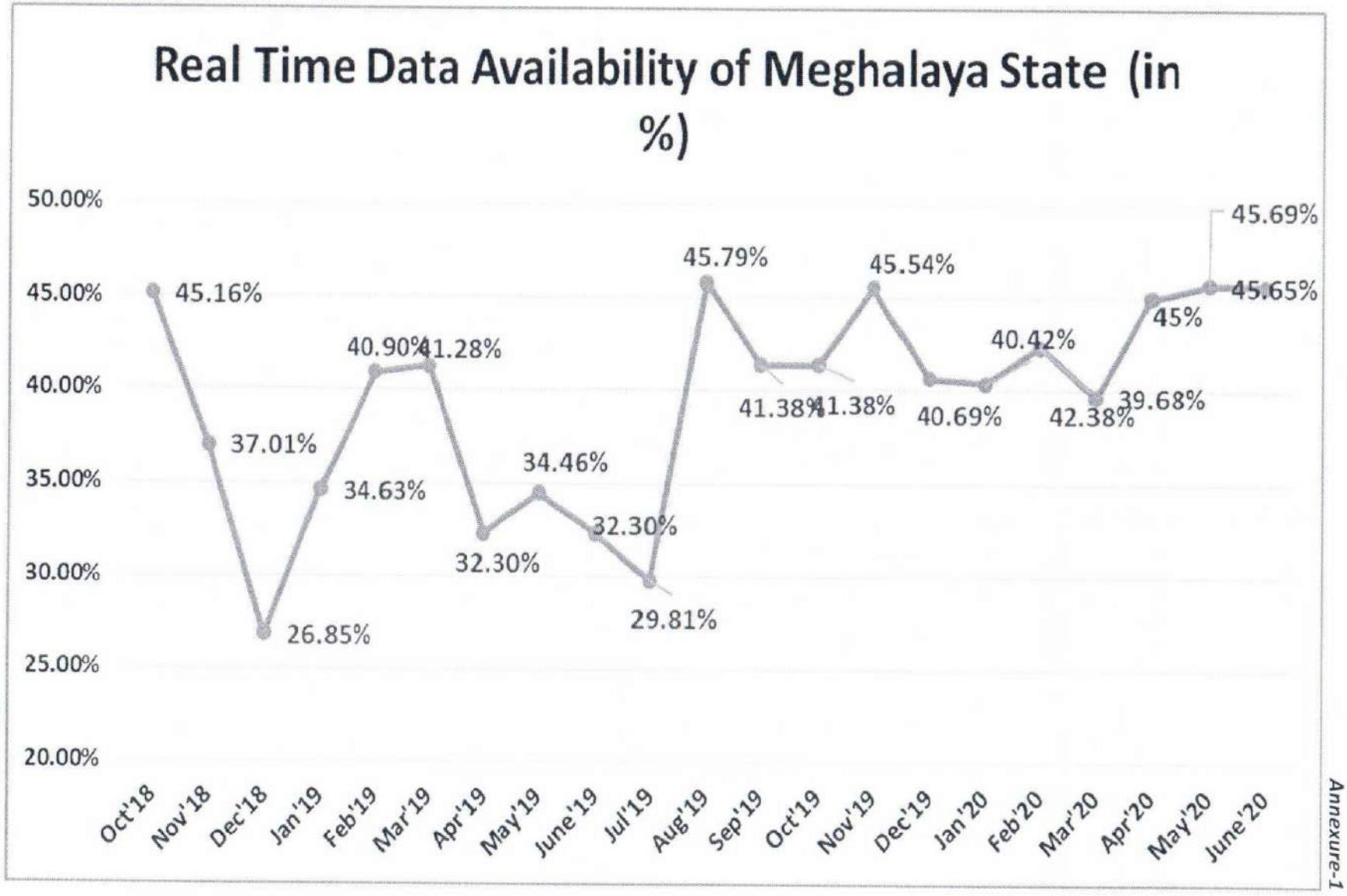
04/8/2020

एम.के.रमेश / M.K. Ramesh
महाप्रबंधक (सिस्टम लॉजिस्टिक्स)/ GM (System Logistics)
उ.पू.क्षे.भा.प्रे.के, पोसोको/ NERLDC, POSOCO
शिलांग/ Shillong

संलग्नक/**Encl.:** उपरोक्त/As above

प्रति/Copy (ई-मेल द्वारा/ by e-mail):

- सदस्य सचिव, उत्तर पूर्वी क्षेत्रीय विद्युत समिति/ Member Secretary, NERPC
- निदेशक (सिस्टम ऑपरेशन), पोसोको/ Director (System Operation), POSOCO
- कार्यकारी निदेशक, उ.पू.क्षे.भा.प्रे.कें./ Executive Director, NERLDC
- कार्यकारी निदेशक, रा.भा.प्रे.कें./ Executive Director, NLDC
- सुपरिटेंडिंग इंजीनियर, एस.एल.डी.सी. मेघालय, नेहु/ Superintending Engineer, Meghalaya-SLDC, NEHU


Real Time Data Availability of Meghalaya State (in %)
50.00%
45.00%
40.00%
35.00%
30.00%
25.00%
20.00%
45.16%
37.01%
26.85%
34.63%
40.90%
41.28%
32.30%
34.46%
32.30%
29.81%
45.79%
41.38%
41.38%
45.54%
40.69%
40.42%
42.38%
39.68%
45%
45.65%
45.69%
Oct'18
Nov'18
Dec'18
Jan'19
Feb'19
Mar'19
Apr'19
May'19
June'19
Jul'19
Aug'19
Sep'19
Oct'19
Nov'19
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Jan'20
Feb'20
Mar'20
Apr'20
May'20
June'20

Annexure-1

STATUS: PROGRESS REPORT- ANNEX-A

PART 1: NER FO EXPANSION "Establishment of Fiber Optic Communication system under wide band communication expansion plan in NER"

Sl No	Link Name	OPGW Stringing status	End Equipment Status	Overall reporting of end stations to NERLDC/ SLDC
A	**Central Sector**			
1	132kV Melriat (PG) ~ Silchar (PG)	Complete	Complete	Completed. DOCO/Comm certificateissued
2	132kV Khandong~Halflong (PG)	-do-	Do	Completed. DOCO/Comm certificate issued
3	132kV Dimapur (PG)~ Doyang (NEEPCO)	-do-	Do	Completed. DOCO/Comm certificate issued
4	132kV Doyang (NEEPCO)~ Mokokchung (State)	-do-	Do	Completed. DOCO/Comm certificate issued
5	220kV Mokokchung (PG)~ Mariani (PG)	-do-	Do	Completed. DOCO/Comm certificate issued
6	400kV Mariani (PG)~ Kathalguri (NEEPCO)	-do-	Do	Completed. DOCO/Comm certificate issued
7	400kV Surajmaninagar (TSECL) ~ Pallatana (OTPC)	-do-	Do	Completed. DOCO/Comm certificate issued
8	132kV Agartala(TSECL) ~RC Nagar (NEEPCO)	-do-	Do	Completed. DOCO/Comm certificate issued
9	132kV Loktak (NHPC) ~ Imphal (PG)	-do-	Do	Completed. DOCO/Comm certificate issued
10	132kV Badarpur(PG) ~ Jiribam(PG)	Both end made reported via FO taken from other link& purpose of data & voice is full-filled. OPGW part work pending	Do	Both end Statin made reported via FO taken from other link& purpose of data & voice is full-filled. Target of left over work of this link:March-2021.

11	Bongaigaon (PG-400 kV) ~ 220kV Salakati- 220 kV BTPS	0/4.5 Km	Partial	Bongaigaon&Salakati made reported via fibcom/tejas, Salakati-BTPS is already made reported. This is redundant path is pending. Target: March-2021.
12	400kV Mirza (Azara) ~ Byrnihat	9.7/47.208 Km	No	Pending. Team could not be redeployed due to Covid19 Issue Target: March-2021.
13	400kV Silchar ~ Pallatana	Stringing Complete: 61.146/24 7.409 Km/ Work delayed for different reasons includingrepeated cancellation of PTW by OTPC for work start. Later issue was resolved	Complete	Team/Gangs left site earlier for non-issue of PTW by OTPC. Later due to COVID19 matter delayed. Also Vendor intimated due to some legal issue , new team will be deployed soon replacing earlier team. In the meantime, Both end Statin made reported via FO taken from other link& purpose of data & voice is full-filled. Target of left over work of this link :March-2021. Target: March-2021.
14	132kV Jiribam (PG) (Manipur) ~ Loktak (NHPC)	Stringing Complete. Splicing in progress	Completed	Equipment of Both end are reporting. OPGWSplicing in progress. Target: March2021 Earlier gang faced ROW issue and fled site near/on route to Lokatak. However Work restarted. Team in that area Jiribam-Loktak is facing multiple hindrances from miscreants and matter is being solved by taking up with Local district administration and so progress is slow .Photographic evidences were shared during 16th NETEST meeting (e.g. damaging vehicle)
15	PK Bari (TSECL)--LILO of (NETCL) Belonia	0/10.441Km	Work to be started. To be done along with Silchar-Pallatana(PTW issue) gang mobilization	TSECL fiber as was given found with high loss. TSECL has been asked to spare the other pair via which PK Bari will be connected Target: March-2021.
16	132kV Pare ~ Chimpu	0/31Km	Yet to start. GST registration issue Intimated by contractor	Delay due to COVID19 Target: March-2021.
B	**Manipur State Sector**			

1	132kV Yurembam ~ Yaingangpokpi	Complete-42/42	completed	completed / Joint verification completed
2	132kV Yaingangpokpi ~ Kongba	Complete-33.6/33.6	completed	completed / Joint verification completed
3	132kV Kongba ~ Kakching with LILO at Thoubal	Complete#57/57	completed	completed / Joint verification completed
4	132kV Imphal(State) ~ Karong	Complete#45.4/60. OPGW Stringing in progress/ ROW Faced	Installed not commissioned	Earlier Link was earlier disturbed due to ROW& then due to diversion.MSPCL has intimated to stop work as the work as same Tran Line is being diverted. Matter is regularly followed up with
5	132kV Kakching ~ Churachandpur	Complete#38/38	Completed.	completed / Joint verification completed For equipment at Churachandpur&Ningthoukong, Kakching& some other stations , rodent /rat issue is affecting equipment & data . Same to be sorted out by MSPCL Manipur.
6	132kV Loktak(NHPC) ~ Ningthoukhong	Complete# 11.2/11.2	completed	completed / Joint verification completed
7	132kV Yaingangpokpi ~ Hundung	Complete 30/30Km	completed	completed / Joint verification pending
8	132kV Kakching ~ Chandel	25/25 completed	Completed Rectification attended	completed / Joint verification completed
9	132kV Loktak(NHPC) ~ Rengpang	47/47Km Splicing in progress	. ROW/miscreant problem faced. Assistance of supervisor sought from MSPCL& solved	OPGW stringing completed but Jointing in progress. Equipment installed and locally commissioned , Delay due to COVID19
10	132kV Jiribam ~ Jiribam state	1/1Km- Complete	Equipment installed .	completed / Joint verification completed
11	132kV Ningthoukhong ~ Churachandpur	32/32K m	OPGW Stringing in progress	completed / Joint verification completed
C.Tripura State Sector				
1	132kV Agartala(TSECL) ~ Barumura(GTP)	Complete	Complete	Completed & Link reported/ Joint verification completed

2	66kV 79 Tilla Grid (TSECL) ~ Badharghat	-do-	-do-	Completed & Link reported/ Joint verification completed
3	132kV Surajmaninagar(TSECL) ~ Budhungnagar	-do-	-do-	Completed & Link reported/ Joint verification completed
4	132kV Agartala(TSECL) ~ SM Nagar (TSECL)	-do-	-do-	Completed & Link reported/ Joint verification completed
5	132kV Pallatana(OTPC) ~ Udaipur(TSECL)	-do-	-do-	Work was earlier Completed in 18.02.2020. Later was disturbed by diversion work. NF railway Rly has rectified and reported link is healthy now.Completed/Joint Verification with State will be done soon for handing over Target re-commissioning30.10.20-15.11.2020
6	132kV Udaipur(TSECL) ~ Rokhia GTP	-do-	-do-	Work was earlier Completed in 18.02.2020& dependent on S.N.5 Palla-Udaipur. Recommissioning Target commissioing30.10.20-15.11.2020
7	66kV Udaipur(TSECL) ~ Gumti HEP	-do-	-do-	Work was earlier Completed in 18.02.2020 & dependent on S.N.5 Palla-Udaipur. Recommissioning Target commissioing30.10.20-15.11.2020
8	66kV Gumti HEP ~ Amarpur(TSECL)	-do-	-do-	Work was earlier Completed in 18.02.2020 & dependent on S.N.5 Palla-Udaipur. Recommissioning Target commissioing30.10.20-15.11.2020
9	66kV Satchand(TSECL) ~ Sabroom(TSECL)	-do-	-do-	Completed. Local verification with SLDC completed. Islanded TSECL to bring data up to nearest WB station. Matter intimated to TSECL
10	132kV 79 Tilla Grid (TSECL) ~ Dhalabil(TSECL)	-do-	-do-	Completed & Link reported/ Joint verification completed . Multiple Card failure at Dhalabil due to poor Earth condition & savvy condition surrounding of PDH panel. Matter intimated to TSECL for rectification. Further Dahalabil Station of TSECL, when inspected ,fiber cut was found . TSECL is requested to rectify
11	132kV Rokhiya (GBPP) ~ Surajmaninagar(TSECL)	Supply Complete. Front Not ready (**TL under construction**)	Front Not Ready	Link to be deleted. Supply material ishanded over to TSECLas State Transmission line not ready
12	132kV Surajmaninagar(TSECL) ~ Monarchak (NEEPCO)	-do-	Front Not Ready	
TSECL may ensure proper earthing at Locations. Due to earthing , card-failures are delaying link data reporting as well. Within substation, any rodent etc is to be taken care in advance by anti rodent spray/blocking cable trench etc.				
D	**Meghalaya State Sector**			

1	132kV Nehu ~ Neigrihms	0/7.7Km	OPGW stringing work yet to start.	Delay due to COVID19& plan to divert communication data traffic is required along with SD. Target: March-2021
2	132kV Khliehriat(PG) ~ Khlehriat (State)	7/7	Completed	Completed & Link reported/ Joint verification with MeECL completed on 22-23.09.2020. Minor works as left will be taken up with vendor. There was a Fiber/OPGW snap/cut in Lumshnong-Khliehriat link which will be restored once gang is allowed to Meghalaya. State authority is being requested to allow work (with gang isolated & avoiding additional quarantine time)
3	132kV Khliehriat(State) ~ MyntduLeshka-HEP	24.932/24.932	Completed	
4	132kV Khliehriat(PG) ~ Lumshnong (S/C)	25.19/25.19Km	Completed	
MEPTCL may kindly take advance action for proper earthing/earth pit , any rodent issue, if any by anti-rodent spray/blocking cable trench etc.				
E	**Nagaland State Sector**			
1	132kV Kohima (132KV) ~ Kohima (220KV)	0/25Km	OPGW stringing work yet to start.	Link is not completed as Transmission Line is under Construction. DOP to ensure completion of Links of LILO of Wokha Kohima at New Kohima/Jadhima. Front is not available. Link to be excluded as same is reported to be included in other project of DOP Nagalnd
2	132kv Kohima ~ Wokha	58/58Km	Equipment delivered	This link was earlier at halt due to LILO connection portion was not ascertained. Matter communicated to DOP,Nagaland for clearance of Link except LILO part which (i.e. LILO at New Kohima connecting SN1). Now this link will be completed without waiting for LILO. Target-March2021 or before
3	132kV Doyang (NEEPCO) ~ Sanis	0/10Km	Equipment is under transit	This Link was not originally in DPR and not in LOA to executing agency. Small part in geo terrain, same was not agreed initially by Executing agency(TCIL, PSU-GoI enterprise). Later on high pursusaion, amendment given but delay due to COVID19. Target: March-2021 Accordingly as already discussed in NETEST for data of Sanis, DOP Nagaland had taken action for PLCC connection to bring data by PLCC up to Doyang. Matter of Service engineer visit is delayed due to COVID19 as reported from EE, Communication division-DoP
F	**Mizoram State Sector**			
01	Aizawl--Zemabawk I	0/1Km	OPGW stringing work yet to start.	Target: March-2021, Delay due to COVID19. As there is delay, with discussion with P&E dept, Data of Zimabawk-1 End station is made reported to SLDC via other scheme.
P&E Department, Mizoram to connect SLDC Mizoram with wide band and make arrangement of shifting all materials(RTU/OPGW/Eqpt) available & installed at Zuntui(Zimabawk-2) which was earlier installed by POWERGRID.				

Note: 1.States& POWERGRID will do joint testing for links which are completed & certify in form of SAT & as required at the earliest possible.

2. Delay due to COVID19 is faced in all sectors.

PART--2.A:

Microwave Vacation OPGW PROJECT–NER- PART – 2. Following Table corr to Left over portion, OPGW stringing by M/s TEN DOT **(Equipment are clubbed with NER FO Expansion) Status of OPGW Links (aspending for DOCO)**

SN	Link Name	OPGW Stringing status	Overall reporting of end stations to NERLDC/ SLDC	Remarks
1	132KV Silchar-Srikona	Complete	Data reporting	DOCO/Commissioning certificate obtained
2	132KV Mariani-Mariani	Complete	Data reporting	DOCO/Commissioning certificate obtained
3.a	132KV Nirjuli-Ranganadi with Parey	Complete	Nirjuli, Rangandi, Parey data reported). SLDC connected	DOCO/Commissioning certificate obtained
3.b	132KV LILO of Nirjuli-Ranganadi at Lekhi- This is extended part of Sl.No.3			
3.c	132KV Lekhi-Itanagar -- Chimpu SLDC Extension (Itanagar-PG-Nirjuli-Leikhi-SLDC-3.b)	Complete		DOCO/Commissioning certificate obtained
4	132kV Imphal(PG)-Imphal (State)	Complete	Complete	DOCO/Commissioning certificate obtained

5	LILO of 132kV Aizawl- Zemabawk-II at Melriat SS	Complete	Completed	DOCO/Commissioning certificate obtained
6	132KV Melriat-Sihmuii	Complete	Complete	DOCO/Commissioning certificate obtained
7	132KV Mokokchung(PG)-Mokokchung (state)	Complete	Completed	DOCO/Commissioning certificate obtained
8.a	Ranganadi-Gohpur (Part-I)- via Nirjuli-Gohpur	Complete	Data and voice reported	DOCO/Commissioning certificate obtained
8.b	Ranganadi-Gohpur (Part-II)-via Ranga-Balipara	Complete		
9	Aizawl-Zemabawk-II (Extended part of S.N5)	Complete	Original scope completed but link connectivity pending for issue at P&E end	Station -Shifting is under progress by P&E dept. Teams at Zimabawk-2 MRT suffered from COVID19 infection and delay is encountered. **Target-Nov-Dec202**
10	Dimapur-Dimapur	Complete	Completed & reporting	DOCO/Commissioning certificate obtained
11	132kV Ranganadi-Ziro	Complete	Completed & reporting	DOCO/Commissioning certificate obtained
12	BNC LILO-25km	Delayed due to Flood	Completed.	DOCO/Commissioning certificate obtained

Part 2. B. Elements wrt "Fibre Optic Communication System in lieu of existing Unified Load Despatch & Communication (ULDC) Microwave Links in North Eastern Region" :Up gradation of ULDC SDH-PDH equipment(17 locations) .--

These equipments are used to pass the data path of links up t NERLDC/SLDC as mentioned in SN Part2.A & so treated as associated equipment. The same were clubbed to be installed in the MW Vacation Project

S.N	Name of Nodes	SDH Eqpt (ECI Make)	PDH Equipment (ECI Make)	PDH Equipment (Valiant Make)	Status
1	Umium-III	1	0	2	Completed
2	Umium-I	1	0	2	Completed
3	Nehu	1	0	0	Completed
4	Shillong RSCC	1	2	0	Completed
5	Khliehriat	1	0	2	Completed
6	Khandong	1	0	2	Completed
7	Kopili	1	0	2	Completed
8	Dimapur	1	0	2	Completed
9	Imphal	1	0	0	Completed
10	Kohima	1	0	0	Completed
11	Badarpur	1	0	2	Completed
12	Kumarghat	1	0	2	Completed
13	79Tilla, Agartala Gas-RC Nagar NEEPCO	1	0	2	Completed
14	Agartala-79Tilla	1	0	3	Completed
15	Bongaigaon	0	2	0	Completed
16	Umtru	1	2	0	Completed
17	Misa	0	0	2	Completed
Total Up gradation/ Replacement		16	6	23	Completed

Note: KOPILI due to flood is not in service now but was commissioned. Also PDH (Tejas/ECI) upgraded in 12locations location s Khliehriat, Badarpur, Kumarghat, Agartala Gas ,Agartala SLDC, Khandong, Kopili,Misa, Dimapur Imphal, Umiam-I Umiam-III & work is completed. The same is verified wrtNMS .

PART3: ADDITIONAL COMMUNICATION -PACKAGE IA- NER (awarded to M/s SDGI)

SN	DESCRIPTION OF LINK	KM	Status
1	400kV BALIPARA-KAMENG	75	Material Under Transit from China/ There was delay due to COVID19 .
2	400 kV BYRNIHAT-BONGAIGAON	200	
3	132 kV SILCHAR-BYRNIHAT	217	
4	132 kV PART OF SILCHAR-HAILAKANDI	30	
5	132 Kv TEZU-NAMSAI	96	Material is yet to be ordered by vendor/From Make in India Set Up-Most factories in India re shut/Delay Due to Covid19. Alternate option is being explored
6	132kV PASSIGHAT-ROING	104	
7	132kV ROING TEZU	73	
8	132kV KOLASIB-TURIAL	44	

TARGET COMPLETION: DEC'2021

PART4: RELIABLE COMMUNICATION: Package is yet to be awarded, Tendering Done.