North Eastern Regional Power Committee

Agenda

For

18th NETeST Sub-Committee Meeting

Time of meeting : 10:30 Hrs.

Date of meeting : 29th September, 2020 (Tuesday)

Venue : "NERPC ", Shillong.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 17th NETeST Meeting held on 26.06.2020.

The minutes of 17th NETeST Meeting held on 26th June, 2020 at Shillong were circulated by NERPC vide letter No. NERPC/SE(O)/TeST/2020/2025-2662 dated 15th July, 2020.

The Sub-committee may confirm the minutes of 17th NETeST meeting of NERPC as no comments/observations were received from the constituents.

ITEMS FOR DISCUSSION

A.1 Status of FO works under different projects:

Latest status as per 17th NETeST:

Project	States	Current Status	Comments/ Issues
MW Vacation & OPGW Project		Completed except 1 links. (Zimabawk2 end of) Zemabawk2-Aizawl- Front not ready)	**Zemabawk-II:** Substation is getting dismantled and shifted to a new place. RTU shifting & reinstallation Work is already started by P&E with co-ordination/help from NERTS.
NER FO Expansion	**Tripura**	All links completed.	Restoration of link by railway completed. Link needs to be tested jointly. Completion by 30.10.2020
		SM Nagar~Rokhia & SM Nagar~Monarchak	Front to be made available by TSECL. Execution also by TSECL. 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.	MePTCL requested for status with documents of the project & MePTCL requested PG to submit SAT report for the 3 links.
	Manipur	132kV Loktak (NHPC)-Rengpang.	ROW issue recently solved. Delay due to Covid19 situation.
	Nagaland	Wokha –Kohima LILO at New Kohima pending.	DoP Nagaland to complete the LILO part.
		132kV Doyang- Sanis	Newly added to the contract.

In addition to the above links NERLDC requested NERTS to further update the status of the links given below:

	Link Name	**Utilities**	**Remarks**
1	400kV Bongaigaon (PG) - 220kV Salakati - 220kV BTPS	NERTS	Status may be updated
2	400kV Mirza (Azara) – Byrnihat		
3	400kV Silchar – Palatana		
4	132kV Jiribam (PG) (Manipur) - Loktak (NHPC)		
5	P.K. Bari (TSECL) - LILO of NETCL Belonia		
6	132kV Pare – Chimpu		
Manipur State Sector			
1	132kV Imphal (State) – Karong	MSPCL and NERTS	Status may be updated
2	132kV Yaingangpokpi – Hundung		
3	132kV Loktak (NHPC) – Rengpang		
4	132kV Jiribam - Jiribam (State)	NERTS	

Members may please discuss.

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.

Director, NERPC stated that he will ensure that States coordinator of NERSIP and POWERGRID coordinator would be invited in the next NETeST meeting for briefing project status of respective states.

Members may please discuss.

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.

Members may please discuss.

B.3 <u>Status of URTDSM</u>

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 NERLDC 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.

NERTS, NERLDC and AEGCL may please intimate the latest status

B.4 Replacement of GPRS mode of communication for data transfer in NER:

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.

Member may please discuss.

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

Utility	Station	Latest Status/ Issues
NEEPCO	Ranganadi-2nd channel	FO link through but equipment installation

		pending at BNC. Delay due to Covid19.
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.

All constituents may please intimate the status.

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

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

The forum may discuss on further action plans on deployment of VSAT Communication in NER.

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.

NERTS may please intimate the status.

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.

NERLDC & NERTS may please intimate the status.

B.9 Data validation status of all Substations:

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

Concerned Utilities / NERLDC may please intimate the status.

B.10 Dual channel availability for reliable and redundant communication system in NER:

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

NERTS and NERLDC may please discuss.

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.

DoP, AP may please intimate the status.

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**.

Members may please discuss.

B.13 Status of RGMO to the Load Dispatch Centers:

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.

Members may please discuss.

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.

NERTS may please intimate the status.

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.

NERLDC may please intimate the status.

B.16 <u>Improvement of data availability of NER:</u>

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	Percentage 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. Delayed due to COVID-19.
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 –

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

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.

NERTS may please intimate the status.

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.

DoP AP, NERTS may please intimate the status.

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

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.

NERTS may please intimate the status.

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)

Any other item:

Date and Venue of next NETeST:

It is proposed to hold the 19th NETeST meeting of NERPC on second week of December 2020. The date & exact venue will be intimated in due course.

****

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/JI-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

.....पीछे पृष्ठ पर

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,

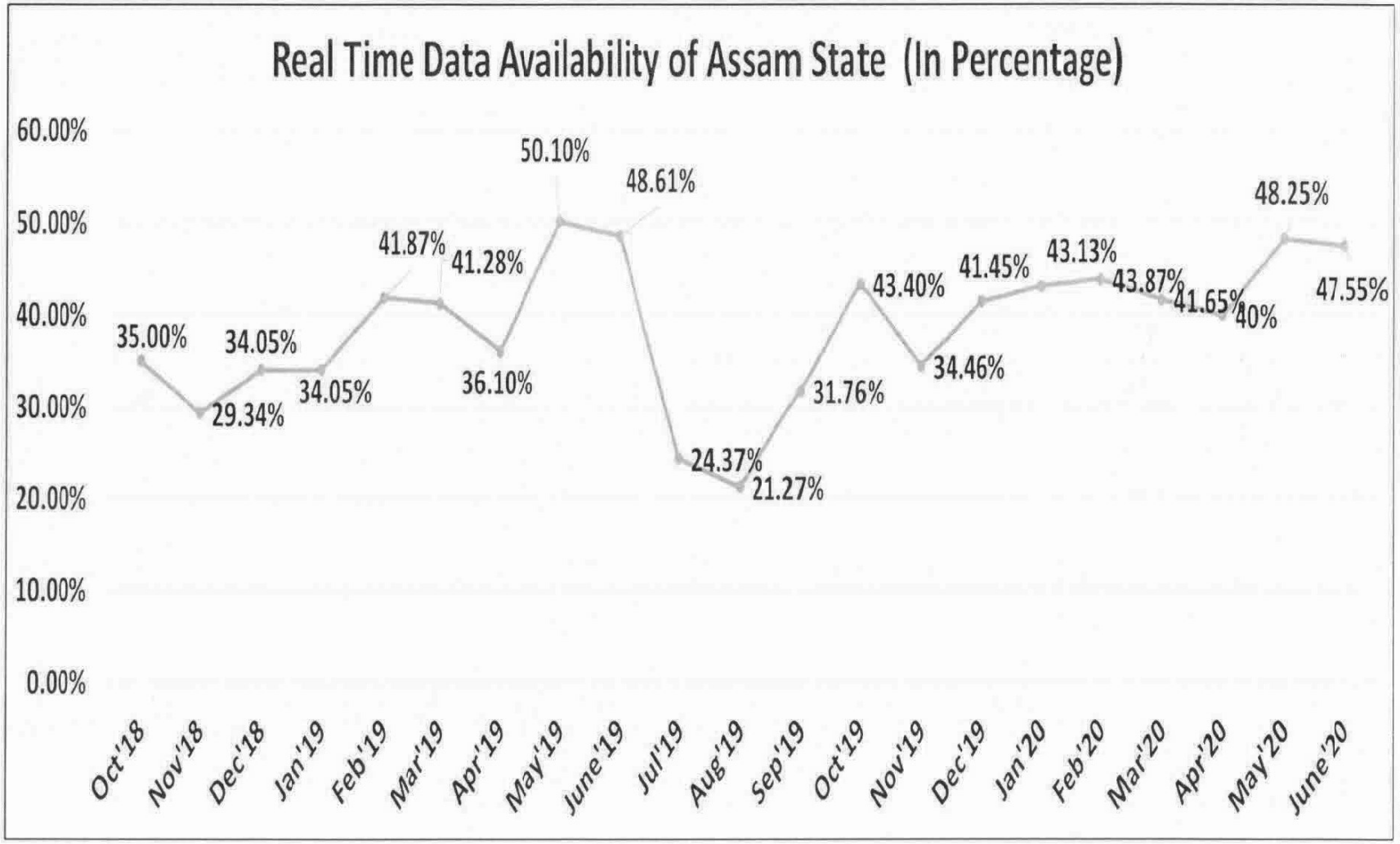
04/08/2020

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.के./ 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
Nov'19
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 इंस्टिट्युशनल 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,

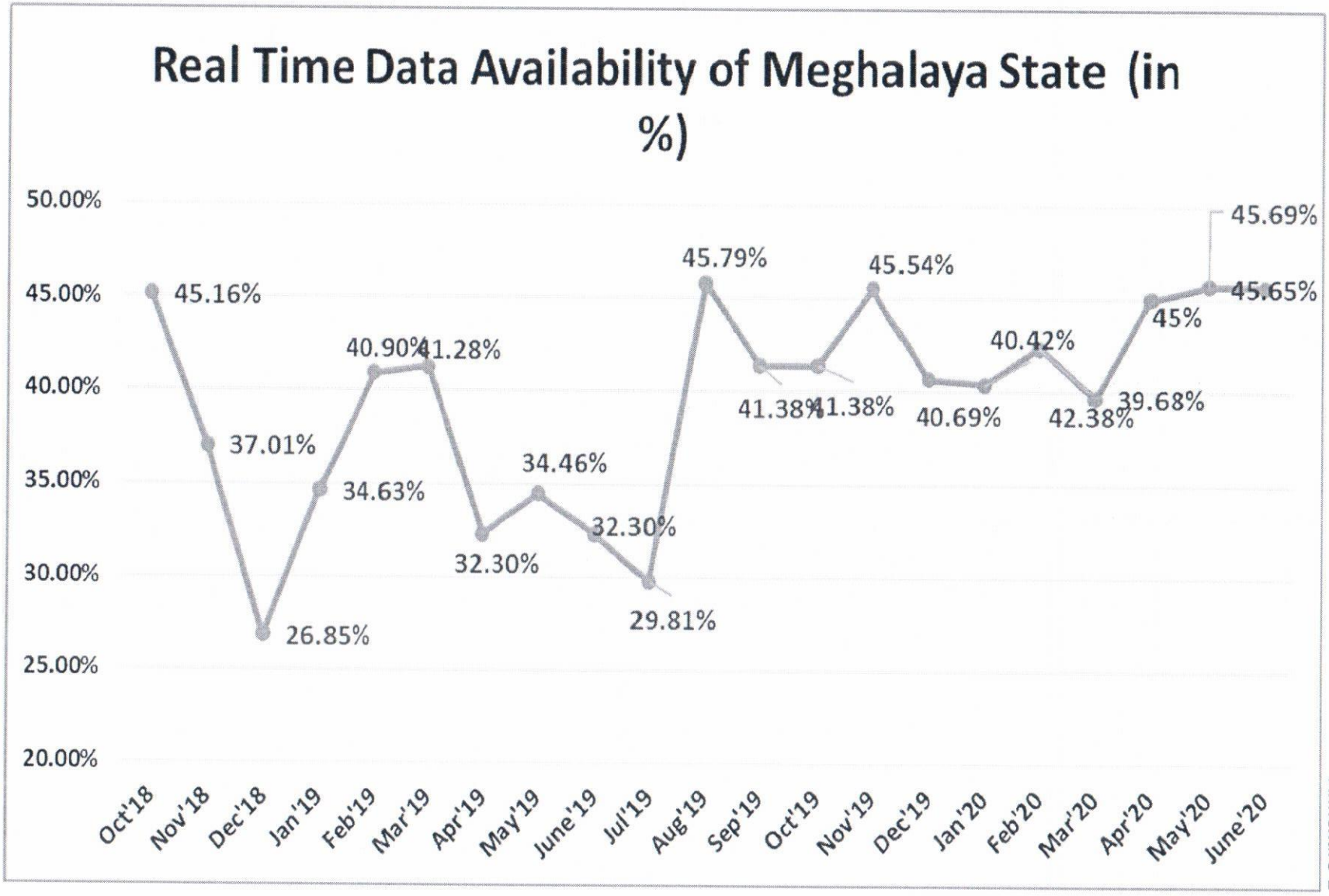
04/8/2020

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%
45.69%
45.65%
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
Dec'19
Jan'20
Feb'20
Mar'20
Apr'20
May'20
June'20

Annexure-1