North Eastern Regional Power Committee

MINUTES OF THE 132nd OPERATION COORDINATION SUB-COMMITTEE MEETING OF NERPC

Date : 12/05/2017 (Friday)

Time : 10:00 hrs

Venue : "Hotel Nandan", Guwahati.

The List of Participants in the 132nd OCC Meeting is attached at **Annexure – I**

Shri P.K. Mishra, Member Secretary, NERPC welcomed all the participants to the 132nd OCC meeting. He noted the presence of participants from all the utilities except Nagaland. However, he expressed satisfaction about the maximum participants from all the utilities and requested to continue the same in future so that matters can be resolved during the meeting. He informed the house regarding finalization of foreign study tour and stated that this will greatly help the NER officers in getting exposure as well as to learn the latest technology how to operate and manage the renewal energy (viz. solar, wind etc.) into the grid. He also strongly mentioned about the delay in implementation of R&M Schemes under PSDF and stated that NERPC Secretariat was trying their level best to get the various schemes funded for the benefit of NER but unless the utilities in NER also have the same proactive attitude the problems in NER Grid will still continue. He also noted that many agenda are repeated in nature and stressed that constituents should take the matter seriously when they attend the meetings and also the follow up after the meetings. He strongly opined that officers who attend and represent the organization should get the information updated from their counterparts and inform the forum the latest status. He stated that from next meeting all the constituents should come prepare and firm up the time frame for every issue committed in the forum.

Thereafter, Member Secretary requested Shri B. Lyngkhoi, Director/SE(C&O) to take up the agenda items for discussion. Shri Lyngkhoi informed the house the new members from SLDC, Mizoram, Shri Lalbiaksanga, SE & Shri Benjamin Tlumtea, EE Shri Bibek Roy, DGM (O), OTPC and requested them to attend the meetings regularly for the benefit of the organization and the region. Further, he also mentioned about the Merit Order Operation Portal and requested all SLDCs to furnish the data to CEA as per format at the earliest.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 131st MEETING OF OPERATION SUB-COMMITTEE OF NERPC.

The minutes of 130th meeting of Operation Sub-committee held on 12th April, 2017 at Guwahati were circulated vide letter No. NERPC/SE (O)/OCC/2016/4556-4591 dated 25th April, 2017.

AGM, NERLDC requested modification in corrigendum proposed by Manipur against item **D.27** and also **D.11**

For D.27 he requested to replace last line of proposed corrigendum of Manipur i.e. *"Further, dropping of the agenda item was proposed by NERLDC"* by "Further, dropping of the agenda item was mutually agreed by all concerned".

And for D.11

Recorded:

DGM(AM),NERTS informed that delay in restoration was primarily due to mis-coordination between RLDC/SLDC. After detailed deliberation forum decided that committee of concerned personnel (RLDC/SLDC-Imphal /Imphal (PG) involved in operation on that particular day would file a report for future corrective measures.

To be Recorded:

NERLDC informed that restoration of all ISTS upto 132kV Imphal (PG) was done within stipulated time. They also informed that serious communication problem was experienced with Imphal (PG) during restoration. Manipur informed that they also experienced similar problem. This problem affected operational co-ordination and in turn resulted in secondary collapse. These entire issues alongwith fault in Manipur system led to the delay in restoration. However SLDC Manipur could charge upto 132kV Imphal (MA) only after fault rectification. The forum noted and decided that since this incidence had occurred only once, the item is hereby dropped and also opined that such incident should not be repeated in future. Forum agreed.

The Sub-committee confirmed the minutes of 131st OCCM of NERPC with the above modifications as no further comments/observations were received from the constituents.

ITEMS FOR DISCUSSION

B.1. ACTION TAKEN:

1. IMPLEMENTATION OF PROJECTS FUNDED FROM PSDF:

The status as informed in 131st OCC:

State	Protection System	ADMS	CAPACITOR INSTALLATION
Arunachal Pradesh	Approved by A.P. Government	DPR already submitted to CEA & NLDC	Study is in progress and the same will be submitted to NERPC for approval
Nagaland	LOAs already completed and works is likely to be completed by 30.09.2017.	DPR already submitted to CEA & NLDC	DPR already submitted to CEA & NLDC
Mizoram	By June'17 all LOAs would be issued.	DPR already submitted to CEA & NLDC	DPR already submitted to CEA & NLDC
Manipur	By June'17 all LOAs would be issued.	DPR already submitted to CEA & NLDC	DPR preparation stage
Tripura	By June'17 all LOAs would be issued.	DPR will be submitted by July'17 to CEA & NLDC	-
Assam	By June'17 all LOAs would be issued.	DPR will be submitted soon to CEA & NLDC	-
Meghalaya	MePTCL – All LOAs will be completed by June, 2017. MePGCl – by June, 2017 all LOAs	DPR preparation stage.	DPR to be prepared.

Deliberation of the sub-Committee:

S.E.(C&O),NERPC informed that those schemes whose DPR has been submitted, would be taken up in the Appraisal Committee meeting to be held very soon. He further requested DoP Ar. Pradesh to accelerate the process as fund may remain unutilised/lapse. AGM(SO-I), NERLDC informed the forum that recently Tripura has been found to have high MVAR consumption, presumably due to higher drawal by Bangladesh. He requested TSECL to identify the cause and if required TSECL may prepare DPR for Capacitor Bank installation after conducting required studies.

The Sub-Committee noted as above.

Action: All state utilities/NERPC.

2. Long Outage of Important Grid Elements:

Name of the Element	Name of Utility	Status
63MVAR Reactor at Byrnihat	MePTCL	EE, MePTCL informed that budgetary offer is yet to be received. Once received DPR would be prepared in one week and sent to NLDC/NPC. SE(C&O) mentioned that the rates can be taken from POWERGRID and DPR should be sent immediately. MePTCL agreed.
400KV 80MVAR Bus Reactor At Palatana	OTPC	04 Nos bushing to be replaced. Work would be completed by OTPC itself. Tentative completion 31.10.2017.

The Sub-Committee noted as above.

Action: MePTCL, OTPC.

B.2. OPERATIONAL PERFORMANCE AND GRID DISCIPLINE DURING APRIL, 2017

As per the data made available by NERLDC, the grid performance parameters for April, 2017 are given below:

NER PERFORMANCE DURING APRIL, 2017

	Energy Met (MU)		w.r.t. Mar,17 % inc (+) /dec (-)	Energy Reqr. (MU)		w.r.t. Mar,17 % inc (+) /dec (-)	% inc (+) /dec (-) of energy reqr vs met. In Apr,17
States	**Apr-17**	**Mar-17**		**Apr-17**	**Mar-17**		
Ar. Pradesh	58.636	61.79	-5.10	59.486	62.66	-5.07	-1.43
Assam	619.101	654.02	-5.34	659.554	681.44	-3.21	-6.13
Manipur	67.792	65.84	2.96	69.185	66.85	3.49	-2.01
Meghalaya	120.821	207.24	-41.70	120.821	207.24	-41.70	0.00
Mizoram	41.775	44.46	-6.04	42.510	45.37	-6.30	-1.73
Nagaland	53.431	56.33	-5.15	54.334	57.29	-5.16	-1.66
Tripura	96.587	87.91	9.87	101.994	90.12	13.18	-5.30
Region	**1058.143**	**1177.60**	**-10.14**	**1107.884**	**1210.97**	**-8.51**	**-4.49**

States	Demand Met (MW)		w.r.t. Mar,17 % inc (+) /dec (-)	Demand in (MW)		w.r.t. Mar,17 % inc (+) /dec (-)	% inc (+) /dec (-) of Demand vs met. In Apr,17
	Apr-17	**Mar-17**		**Apr-17**	**Mar-17**		
Ar. Pradesh	129	138	-6.52	133	139	-4.32	-3.01
Assam	1399	1391	0.58	1414	1392	1.58	-1.06
Manipur	154	158	-2.53	155	160	-3.13	-0.65
Meghalaya	292	298	-2.01	293	298	-1.68	-0.34
Mizoram	85	94	-9.57	86	96	-10.42	-1.16
Nagaland	120	122	-1.64	121	123	-1.63	-0.83
Tripura	252	228	10.53	252	228	10.53	0.00
Region	**2209**	**2200**	**0.41**	**2258**	**2236**	0.98	-2.17

REGIONAL GENERATION & INTER-REGIONAL EXCHANGE IN MU

Month---->	**Apr-17**	**Mar-17**
Total Generation in NER (Gross)	1048.652	1215.95
Total Central Sector Generation (Gross)	754.168	943.25
Total State Sector Generation (Gross)	294.484	272.70
Inter-Regional Energy Exchange		
(a) NER-ER	**124.49**	**159.36**
(b) ER-NER	**120.44**	**35.73**
(c)NER-NR	**114.88**	**0.00**
(d)NR-NER	195.72	174.78
© Net Import	76.79	51.15

AVERAGE FREQUENCY (Hz)

Month---->	**Apr-17**	**Mar-17**
	% of Time	% of Time
Below 49.9 Hz	9.02	8.95
Between 49.9 to 50.05 Hz	74.20	73.55
Above 50.05 Hz	16.78	17.50
Average	49.99	49.99
Maximum	50.26	50.34
Minimum	49.66	49.66

Sr. Engineer, NERLDC while presenting the Grid Performance in April'2017 reported the repeated non-compliance of TSECL to deviation limit violation message/zero crossing messages. Sr. Manager, NEEPCO informed that overdrawal by Tripura has resulted in loss of generation from AGTCCPP. DGM(MO),NERLDC suggested that a detailed report highlighting the following be presented by NERLDC in the next meeting:

- 15 min graph of Schedule vs. Actual w.r.t. Tripura for specific days with high O/D.
- Actions which had to be taken by TSECL (eg. load curtailment etc.) but not done as well as the message given by RLDC on that particular occasion.

The forum after detailed deliberation requested TSECL to strictly adhere to schedule irrespective of grid frequency.

The Sub-committee noted as above.
Action: TSECL.

ITEMS FOR DISCUSSION

C.1 Status of Generating Units, Transmission Lines in NER:

During 132nd OCC meeting, the status as informed by NTPC, NEEPCO, POWERGRID, DoP Ar. Pradesh and DOP, Nagaland is as follows:

SN	Items	Status as given in 132nd OCC Meeting	Status as given in 131st OCC Meeting
a. New Projects			
1	Trial operation and CoD of Unit -II of Bongaigoan TPS of NTPC	Exact COD of Unit-II to be informed in next OCC meeting.	CoD by 30.04.2017.
2	400/220kV, 315 MVA ICT- 1 of NTPC at BgTPP	ICT-1 - Manufacturing stage	2nd 315 MVA ICT - DoCO 24.03.2017. 1st 315 MVA ICT - Manufacturing stage
3	Kameng HEP of NEEPCO two units (2 x 150 MW) Next two units (2x150 MW)	Delay in dam construction. First unit by early 2018.	Delay in dam construction. First unit by early 2018.
4	Pare HEP of NEEPCO (2 x 55 MW)	Delay in dam construction. First unit by early 2018.	Delay in dam construction. First unit by early 2018.
5	400 kV D/C Silchar - Melriat line of PGCIL	June, 2017.	June, 2017.
6	220kV Rangia - Salakati of AEGCL	December 2017 (30 km line idle charge from Salakati end)	December 2017 (30 km line idle charge from Salakati end)
7	132kV Monarchak – Surjamaninagar D/C of TSECL	September, 2017	September, 2017
8	132kV Pasighat – Aalong of Ar. Pradesh	Charging for testing purpose may be taken up with C.E., DoP Ar. Pradesh.	Charged on 08.04.17. CoD yet to be done. POWERGRID may charge for testing purpose.
9	132kV Doyang– Wokha	Charged on 03.05.17. To be dropped	April, 2017
10	220 kV, 20 MVAR Line Reactor & bay at AGBPP on 220 kV New Mariani – AGBPP line	Charged on 21.03.2017. To be dropped.	Charged on 21.03.2017

11	132kV Surjamaninagar Bay at OTPC	S.E.(C&O),NERPC work to be completed by OTPC. Clarification sought from CEA.	34 months from date of NIT
12	400kV D/C Balipara – Kameng	July 2017.	July 2017.
13	RHEP 80 MVAR Bus Reactor	T.S. completed except for GIS bay.	T.S. completed except for GIS bay.
14	SLDCs (Ar. Pradesh, Manipur, Mizoram, Nagaland)	Manipur – Completed ToC remaining, Mizoram-Completed, Nagaland-Building ready and handed over, AP- SAT going on.	Manipur – Completed, handover by Apr'17, Mizoram-Apr'17, Nagaland-Building ready and handed over, AP- SAT going on.
15	400/220 kV 315 MVA ICT-II at Bongaigaon	Manufacturing stage	Manufacturing stage
16	220/132 kV, 2x160 MVA ICTs at Balipara	ICT -I - June'17 ICT-II By 31st August 2017(LOA date).	ICT -I - May'17 ICT-II By 31st August 2017(LOA date).
17	220/132 kV, 1x160 MVA ICT with GIS Bay at Kopili	By 31st August 2017(LOA date).	By 31st August 2017(LOA date).
18	400/132 kV, 1x315 MVA ICT-III at Silchar	December, 2017(LOA date).	December, 2017(LOA date).
19	Replacement of 2x315 MVA ICTs with 2x500 MVA ICTs at Misa (PG)	December, 2017(LOA date).	December, 2017(LOA date).
20	400 kV Silchar – Misa D/C	M/s Sterlite Grid 4 Limited	M/s Sterlite Grid 4 Limited
21	1x125 MVAR Bus Reactor at 400 kV at Balipara	December, 2017(LOA date).	December, 2017(LOA date).
22	1x125 MVAR Bus Reactor at 400 kV Bongaigoan	December, 2017(LOA date).	December, 2017(LOA date).
23	Bays at Hailakandi & 132V Silchar-Hailakandi	June, 2017.	June, 2017.
24	Tuirial HEP of NEEPCO	Unit #I - Oct'2017 Unit #II - Dec'2017	Unit #I - Oct'2017 Unit #II - Dec'2017
25	New Umtru HEP of MePGCL (2x20MW)	Unit #I- synchronized on 24.04.17. CoD by last week of May'17 U#II - July'17	Unit #I-synchronization April'2017
b. Elements under breakdown/ upgradation			

26	63MVAR Reactor at Byrnihat of Me.PTCL	As recorded in item **B.1.(2)**	As recorded in item **B.1.(2)**
27	Up-gradation of 132 kV Lumshnong-Panchgram line	DPR submitted for board approval.	DPR preparation stage
28	Switchable line Reactors at 400kV Balipara & Bongaigoan	Bongaigaon-Sept'17	Procurement works underway. Both to be completed by 31.03.17
29	PLCC Panels at Loktak end of Loktak – Ningthoukhong 132 kV feeder and Loktak - Rengpang 132 kV feeder	May'2018	Work(s) have been included in tender for additional line of 132kV Loktak-Ningthoukong
30	LILO of 132kV Ranganadi – Nirjuli at Pare of NEEPCO by PGCIL	Work given to KEC. Completion by May'2018	Jan'17
31	LILO of 132kV Ranganadi – Itanagar (Chimpu) at Pare of Ar. Pradesh	Bay 1 at RHEP for Pare: July'17 Bay 2 at RHEP for Itanagar: Mar'18	Bay at Pare under construction Bay 1: completed Bay 2: March 2017
32	400KV 80MVAR Bus Reactor at OTPC Palatana	As recorded in item **B.1.(2)**	As recorded in item **B.1.(2)**

Deliberation of the sub-Committee:

S.E.(C&O),NERPC stated that recently lot of transmission projects have been awarded under TBCB, and monitoring their progress is essential. He proposed that NERPC would write to the heads of the respective companies, so that latest status is sent by mail before OCC meeting. Members unanimously approved.

NERLDC informed that M/s Sterlite Grid 4 Limited has been awarded to construct 400/132 kV 2x315 MVA substation at Surajmaninagar, 400/132 kV, 2x315 MVA ICTs, 400 kV 2 no. ICT bays, 400 kV 4 nos Line Bays, 132 kV 2 no. ICT Bays, 132 kV 2 no. Line bays. POWERGRID will construct additional towers of 400 kV D/C line at Palatana & Surjamaninagar for termination of 400 kV Palatana- Surajmaninagar D/C lines at 400 kV Palatana & Surjamaninagar. TSECL will construct 132 kV Surajmaninagar (TSECL)- 132 kV Surajmaninagar (Sterilite) with HTLS (equivalent to single moose). NERLDC also informed that these elements should be under high priority list and needs to be monitored regulary.

The Sub-committee noted as above.

Action: NERPC.

C.2 Furnishing of UFR Report and status of Implementation:

As per recommendation of enquiry Committee, the status of installation of UFR in NER was already circulated earlier. It is gathered that, 18.5 MW quantum is yet to be implemented in Arunachal Pradesh & Manipur.

The 123rd OCC forum decided that monthly report is not being furnished. As per clauses of relevant regulations, and Order of Hon'ble CERC in matter of Petition no. 113/MP/2014, NERLDC and NERPC are mandated to submit status of UFR operation and non-operation to CERC. SLDCs were thus requested to submit UFR operation details (feeder-wise quantum of load relief to be indicated) on monthly basis, and even if no UFR operated in particular month, it should be indicated as NIL.

The 127th OCC forum requested all the SLDCs/state utilities to certify healthiness of the relays while submitting the UFR operation report monthly.

The latest status as informed by NERLDC in 132nd OCC:

Arunachal Pradesh	Furnished for April'17
Assam	Furnished for April'17
Manipur	Furnished for March'17
Meghalaya	Furnished for April'17
Mizoram	Furnished for April'17
Nagaland	Furnished for April'17
Tripura	Furnished for Feb'17

Deliberation of the sub-Committee:

NERLDC informed that during GD-IV on 28.04.17, UFR based load shedding operated in Tripura and Mizoram only. UFR in SLDC, MSPCL and SLDC, MePTCL did not operate and South Assam area does not have any identified feeder for UFR operation. The forum requested AEGCL to identify load at South Assam area for UFR based load shedding and SLDCs of Manipur & Meghalaya to find out the reasons for non-operation of UFRs. Also since lot of modifications have taken place in SPS scheme, it was requested that a meeting be convened by NERPC to review SPS, Islanding and UFR scheme at the earliest.

The Sub-committee noted as above.

Action: NERPC.

D. NEW ITEMS

D.1 Generation Planning (ongoing and planned outages)

NEEPCO/NHPC may kindly intimate the availability for hydro stations:

Generating Station	Units running	MW	MU	Reservoir
Khandong	2		21.93	717.40
Kopili-II	1			
Kopili	4		185.92	609.53
Ranganadi	3		Subject to inflow	
Doyang	3		2.65	307.95
Loktak	3		45	767.30
AGBPP	-	-	-	-
AGTPP	-	-	-	-

Hydro planning

The outage of other generating stations may be approved considering the present level water level in reservoirs.

Deliberation of the sub-Committee:

The Committee discussed and approved the proposed shutdown by Generating Stations and the same has already been uploaded in the website of NERPC.

D.2 Outage Planning Transmission elements

It was agreed in the 99th OCC meeting that shutdown will be availed only after approval is given by the OCC forum. It was also agreed that deferment/revision of outages elements other than already approved in OCC will be henceforth put/displayed in the website of NERPC (under Operational Activities/OCC Approved shutdown) as per CERC regulations/ CEA guidelines etc for ensuring smooth & secure grid operation.

Furnishing request of shut down of the element, which was approved by NERPC, by Indenting Agency (ISTS licensees/STUs/Generating Companies) to NERLDC: Planned shutdown approved by NERPC shall be considered for implementation by NERLDC on D-3 basis. If an outage is to be availed on say 10th of the month, the shutdown availing agency would reconfirm to NERLDC on 7th of the month by 10:00 Hr. This practice is necessary to ensure optimal capacity utilization and the time required for associated system study/coordination by/amongst RLDC/NLDC.

In 124th OCCM, SE(C&O) strongly opined that constituents should inform to NERPC/NERLDC in case shutdown is not avail as approved in the OCC meeting and should mention clearly the reason for not availing the shutdown. The full list of shutdown would be placed in the next OCC by NERLDC so that proper record can be made in future for generating units as well as transmission lines. All constituents endorsed the view of SE(C&O).

In 130th OCCM, Member Secretary opined strongly about non commitments of earlier decision by the constituents and stated that all proposed plan shutdowns and agenda for the next OCC meeting should be sent to NERPC Secretariat latest by 5th day of next month. He directed SE(C&O) that the decision should be strictly adhere to and no shutdowns or agenda will be entertained after that stipulated date.

S.E.(C&O) requested all the utilities to submit shutdown proposals within 5th of the month, and NERLDC to circulate the final compiled shutdown list for comments in advance of the OCCM.

The sub-Committee discussed and approved the proposals received from the constituents regarding transmission elements and generating units for May, 2017 - June, 2017 and the same has already been uploaded in website of NERPC.

D.3 Estimated Transmission Availability Certificate (TAC) for the month of January & February, 2017:

NETC and POWERGRID have submitted the outage data for the month of January & February, 2017. So the attributability of outage of the said elements may please be finalized.

The forum once again advised NETC & POWERGRID to submit data in a time bound manner as decided previously.

The Sub-Committee noted as above.

D.4 Ratification of Technical and Commercial data for computation of PoC Charges and Losses for Q2 of 2017-18 (July 2017 – September 2017):

In the 3rd Validation Committee meeting for PoC application period Oct'15-Dec'15, held on 30th September 2015, at NLDC conference Hall, CERC had proposed a methodology for ratification of projected data at RPC form.

In line with the decision in the Validation Committee meeting, Demand and Generation projections w.r.t North Eastern Region constituents as given by

Implementing Agency[as per **Annexure D.4** to be distributed during meeting] for ratification in 132nd OCC Meeting of NERPC.

During last validation committee meeting for Q1 of 2017-18 (April-June'17) held on 21st Febuary'17, Hon'ble CERC has pointed out that there is a huge difference between projected and actual demand data.

In 130th OCCM, NERLDC requested all the states to give reason for the huge difference between projected and actual demand data for Q3 of 2016-17 (Oct-Dec'16) as pointed out by Hon'ble CERC.

Deliberation in the meeting

NERLDC informed that DoP, Arunachal Pradesh are yet to submit the node-wise injection/drawal projections and TSECL has not submitted the YTC data for Q2 of 2017-18. The forum requested DoP, Arunachal Pradesh and TSECL to submit the figures before Validation Committee meeting. AEGCL informed that revised node-wise injection/drawal projections will be submitted before validation committee Meeting. NERLDC requested all the utilities to attend the next Validation Committee Meeting. Members approved the rest of the generation/demand figures submitted by DICs. NERPC proposed that common long term/medium term/short term demand projection formulae be evolved for use in Load forecast for grid operation, PoC mechanism, LGBR, EPS etc. The forum appreciated the proposal and noted the operation and commercial ramifications of demand projections in the present scenario. Members referred the matter to next NPC meeting.

The Sub-Committee noted as above.

Action: NERPC, All utilities.

D.5 Assessment of Total Transfer Capability (TTC), Transmission Reliability Margin (TRM) and Available Transfer Capability (ATC) by SLDC on respective Inter-State Transmission Corridor

Updated PSS/E Base Cases have been **mailed to all the SLDCs on 03.05.17**. All SLDCs are requested to assess the Total Transfer Capability (TTC), Transmission Reliability Margin (TRM) and Available Transfer Capability (ATC) for the month of May'17 using these cases, and submit the study cases and results to NERLDC by **19.05.17**.

NERLDC has assessed the state control area wise, state subsystem wise and group of control-area wise TTCs for NER Grid, on behalf of SLDCs of NER. The study results conducted by NERLDC **mailed to all SLDCs on 04.05.17**. SLDCs are requested to

check the TTC of their control areas as computed by NERLDC and **give comments, if any, by 19.05.17.** The TTC figures for May'17 are as follows:

Name of States	Off Peak TTC in MW		Peak TTC in MW	
	N-0	N-1	N-0	N-1
Arunachal Pradesh	206	179	215	188
Assam	1527	1370	1680	1452
Manipur	280	261	317	203
Meghalaya	323	213	282	184
Mizoram	126	115	126	115
Nagaland	177	78	174	70
Tripura	337	140	300	177

If no comments received from any SLDCs of NER, TTC, ATC & TRM figures of State control area and group of control areas as assessed by NERLDC will be considered as final and may be uploaded on website.

As per discussions in 122nd OCC meeting of NERPC, all SLDCs of NER may host the assessed TTC / ATC / TRM figures on their website for information dissemination.

Deliberation in the meeting

NERLDC informed the forum that NERLDC has calculated that State-wise TTC/ATC figures as mentioned above for the month of May'17 on behalf of all States of NER. The study results were already mailed to the utilities on 04.05.17. NERLDC once again requested all SLDCs to kindly calculate ATC/TTC and host the figures in their website.

AGM, AEGCL stated that for planning purpose PSSE laptops are required.

S.E.(C&O),NERPC informed that all the laptops have been redistributed to concerned SLDC personnel for ATC/TTC calculation etc. He requested AEGCL to write to NERPC in this regard. EE, SLDC, Mizoram also requested that 3 laptops+dongles in custody of NERPC be returned to SLDC Mizoram with PSSE installed. NERPC obliged.

The Sub-Committee noted as above.
Action: All SLDCs/NERPC.

D.6 Reporting of commissioned transmission elements for TARANG App.

TARANG (Transmission App for Real Time Monitoring and Growth) Mobile App & Web Portal has been developed by REC Transmission Projects Company Ltd (RECPTL) for progress monitoring of transmission systems on Pan-India basis, which was launched by Hon'ble Minister of State for Power on 17th August 2016. The app can be downloaded on smartphones or be accessed through its website (www.tarang.website). As part of the responsibility charter, POSOCO has been assigned the responsibility to update the systems under operation in the 'Completed Transmission Systems' section of the app.

In order to provide this information to the Ministry of Power, it is requested to provide the details of commissioning of transmission elements in respective state for each month by the 3rd day of the next month to NERLDC.

In 126th OCCM, Sr. Engineer, NERLDC emphasized the need for furnishing this data for TARANG app devised by Ministry of Power, Govt. of India for information to the public. It was also mentioned that during recent visit to Guwahati on 11.11.2016, the same was emphasized by Joint Secretary (Power). NERLDC requested all utilities to submit the data to: **nerldcso2@posoco.in** by 3rd of every month for the previous month.

In 130th OCCM, NERLDC informed that only MSPCL is mailing the report on commissioned elements. AEGCL requested that the details be perused from Progress Report, which is being mailed regularly. NERLDC informed that the progress report is being submitted by 20th of every month but the information about newly commissioned elements are to be passed on to NLDC by 5th of every month. MePTCL informed that the latest status of commissioned elements would be mailed within one week. Forum requested all SLDCs to submit the information of newly commissioned elements in the previous month by 3rd of every month to NLDC & copy to NERPC & NERLDC.

Deliberation in the meeting

NERLDC informed that all the SLDCs except SLDC, Manipur are not complying with the reporting modus operandi as decided previously. After detailed deliberation the Sub-Committee decided to include the item under Action Taken head (**B.1).**

The Sub-committee noted as above.
Action: All SLDCs/NERPC.

D.7. Installation of DAS to monitor FRC for generators:

In continuation to discussions in 125th OCC meeting on this matter, and letter from ED-NLDC dtd. 10th October'16, it is requested that all generators may take urgent action to ensure Primary response as per stipulation [As per Sec.1(4) of Part-II of CEA's Grid Connectivity standards, 0-10% droop for hydro generator governors ; 3-6% droop for Thermal generator governors].

Also, as per Section 11.2.(i) of CEA's Technical Standards for Construction, all generating stations must store important analog data in 1 seconds interval.

NEEPCO has informed that AGTPP and Ranganadi HEP have properly working DAS, that are capable of storing Machine side data like Voltage, frequency, Active power generation, Reactive power generation, Line currents, etc. Also, it was confirmed in last OCC that DAS at AGBPP is installed but not time-synchronized.

All generating stations may confirm that their governors are properly tuned for giving primary response as per regulations.

Also, NEEPCO may intimate the status of installation of DAS for their remaining generating stations.

In 126th OCCM, Sr. Manager, NEEPCO informed that all their plants have DAS installed. AGM(SO-I),NERLDC clarified that in case of oscillations/ disturbance response of generators(in ms) cannot be captured by SCADA due to low resolution of data.

NERLDC requested NEEPCO to ensure that all their installed DAS are time synchronized and data during events is not lost. Also, the resolution of data of DAS to be checked by NEEPCO and ensured that at least 1 sec resolution data is available.

In 127th OCCM, Sr. Engineer, NERLDC once again reiterated that DAS is required for analyzing response of governors and their absence severely impairs calculation of FRC. Sr. Manager, NEEPCO informed that installation of DAS in case of old generating units of Kopili, Khandong and Doyang involves huge financial involvement. He assured that management would be apprised of the requirement and any decision taken in this regard would be informed to the forum.

In 129th OCCM, NERLDC informed that data from BgTPP, Loktak HEP, Khandong, Kopili, AGBPP, AGTPP and Doyang has not yet been received after repeated request. Manager, NHPC, Loktak informed that DAS is not installed at Loktak, so providing the data is difficult. He requested NERLDC to intimate the minimum time resolution

required, upon which exercise would be done to furnish the data. NERLDC informed that format for submission for data already mailed to all the generating stations and requested all generators to furnish data at least in 1 sec interval.

AGM, NERLDC informed that following two incidences occurred in National grid for which FRC calculations are to be done. Without proper data it is very difficult to calculate/ascertain exact contributions of Generators and States towards frequency correction. He requested all for submission of data as requested.

1. On 21.02.17, at 1559 hrs,900 MW generation loss due to tripping of Klaisindh Units - 1,2
2. On 05-Feb-17, at 12:24hrs 765kV Mainpuri-Bara ckt tripped along with both running units at Bara TPS (UP). Generation loss of 1100MW occurred.

In 131st OCCM, NERLDC informed that no data has been received for the above mentioned events. The forum noted the status of installation of DAS in generating station as under:

Name of Generating Station	Whether DAS installed
Palatana GBPP	Yes
BgTPP	Yes
AGTCCPP Extension	Yes
Ranganadi HEP	Yes
AGTCCPP	No
AGBPP	No
Khandong HEP	No
Kopili HEP	No
Doyang HEP	No
Loktak HEP	No

NERLDC also informed that on 03.04.2017, there was generation loss of 1300 MW in SR with frequency dip of 0.6 Hz. NERLDC requested ISGS to submit the data of the event at the earliest.

Deliberation in the meeting

NERLDC informed that for analysis of GD-IV on 28.04.15 concerned generators were requested to submit DAS data. NERLDC informed the following status:

Name of Generating Station	**Whether event data submitted**
Palatana GBPP	Yes
AGTCCPPExtension	No
Monarchak	No

The forum took strong note of the non-submission of data and requested NEEPCO to take immediate action. Further the Sub-Committee felt to include the item under Action Taken head (**B.1**) and review submission as under (format):

Date & Time of event	Brief description	Name of ISGS	Whether data submitted

Program for installation of DAS

Name of Generating Station	Whether DAS installed	Target for installation
Palatana GBPP	Yes	
BgTPP	Yes	
AGTCCPP Extension	Yes	
Ranganadi HEP	Yes	
AGTCCPP	No	Not yet submitted
AGBPP	No	
Khandong HEP	No	
Kopili HEP	No	
Doyang HEP	No	
Loktak HEP	No	
Monarchak	Yes	

The Sub-committee noted as above.

Action: NEEPCO.

D.8. Status of reactors under outage in NER Grid

400 kV Nodes in NER Grid are experiencing high voltage during Off-Peak hours. As per information available with NERLDC, the following reactors are under outage:

63 Mvar Line Reactor of 400 kV Balipara - Bongaigaon III line at Bongaigaon is under out since 12.11.16.

400 kV, 50 Mvar Bus Reactor at Misa is under outage since 03.12.16.
400 kV, 63 Mvar Bus Reactor at Byrnihat is under outage since 09.12.14
400 kV, 80 Mvar Bus Reactor at Palatana is under outage since 15.03.16
200 kV, 2x12.5 Mvar Bus Reactor at Samaguri is under long outage.
132 kV, 2x2 Mvar Bus Reactor at Dharmanagar is under long outage.

It is requested to inform the status of restoration of the above reactors at the earliest. Apart from the above reactors, it is also requested to provide commissioning status of the following reactors:

20 Mvar Line Reactor of 220 kV AGBPP - New Mariani (PG) line at AGBPP
Conversion of line Reactors of 400 kV Balipara - Bongaigoan I & II lines at Balipara and Bongaigaon to Bus reactors (4 Nos.)

400 kV, 1x125 Mvar Bus Reactor at Balipara
400 kV, 1x125 Mvar Bus Reactor at Bongaigaon.
400 kV, 1x80 Mvar Bus Reactor at Ranganadi.
220 kV, 1x31.5 Mvar Bus Reactor at Mokokchung (PG).

In view the Critical voltage profile of NER Grid in Off-Peak hours, it is suggested no shutdown of Reactors in NER Grid shall be availed unless in case of Emergency.

Deliberation in the meeting

The status of different reactors under outage as informed in 132nd OCC is as follows:

Sl. No.	Name of element	Status on 132nd OCC Meeting
1.	63 Mvar Line Reactor of 400 kV Balipara - Bongaigaon III line at Bongaigaon	Within 30.06.17
2.	63MVAR bus reactor at Byrnihat	**Pls refer to Item B.1.(2)**
3.	80 Mvar Bus Reactor at Palatana	Within 31.10.2017 would be charged.
4.	2x12.5 Mvar Bus Reactor at Samaguri	Replacement of bushing required**.
5.	2x2 Mvar Bus Reactor at Dharmanagar	De-commissioned

6.	20 Mvar Line Reactor of 220 kV AGBPP	Charged on 21.03.2017. To be removed.
7.	400 kV, 1x125 Mvar Bus Reactor at Balipara	Pls refer to Item C.1.(21)
8.	400 kV, 1x125 Mvar Bus Reactor at Bongaigaon	Pls refer to Item C.1.(22)
9.	400 kV, 1x80 Mvar Bus Reactor at Ranganadi.	Pls refer to Item C.1.(13)
10.	220 kV, 1x31.5 Mvar Bus Reactor at Mokokchung (PG).	December'17
11.	Conversion of line Reactors of 400 kV Balipara - Bongaigoan I & II lines at Bongaigaon to Bus reactors	Pls refer to Item C.1.(28)
12.	400 kV, 2x63 MVAR Bus Reactor at Biswanath Chariali	-

****** AEGCL further informed that there is no need of reactor at Samaguri as load has increased. DGM(AM),NERTS opined that reactors may be shifted to other location based on grid necessity.

NERLDC proposed that reactors under long outage be reviewed under item **B.1.(2)**.

The Sub-committee noted as above.

Action: AEGCL/TSECL/NERTS/MeECL/OTPC.

D.9. <u>Delay in restoration of Manipur system after partial collapse:</u>

On 03/02/2017 at 10.05 hrs Manipur system collapsed partially affecting around 50 MW of load in surrounding areas of Imphal (MA). Ningthoukhong, Jiribam (MA) loads were not affected. As reported by SLDC, Imphal, the reason for the disturbance was bursting of one 33kV Cable & Bus PT at Imphal S/S of Manipur. This fault resulted in tripping of following lines-

1) 132 kV Dimapur – Imphal(PG) from Dimapur end
2) 132 kV Loktak – Imphal(PG)from Loktak end
3) 132 kV Silchar – Imphal(PG) I & II from Silchar end
4) 132 kV Dimapur – Imphal from Dimapur end

Despite of best efforts the system restoration took considerable time and only at 1144 Hrs power could be extended to Imphal (MA) from Imphal (PG).

Concerned authorities are requested to please elaborate the reasons for delay as well as unwarranted trippings of above lines due to internal faults in Manipur system.

In 129th OCCM, MSPCL representative informed that on 03.02.2017 faulty cable feeder was charged multiple times from Imphal (PG) end without communicating with SLDC, Manipur.

DGM (AM), NERTS informed that a detailed investigation would be carried and forum would be apprised. MSPCL informed that due to non-availability of persons at Imphal (PG) restoration was delayed. The forum expressed concerned about the incident and requested NERTS to avoid the same in future.

In 131st OCCM, DGM(AM),NERTS informed that delay in restoration was primarily due to mis-coordination between RLDC/SLDC. After detailed deliberation forum decided that committee of concerned personnel (RLDC/SLDC-Imphal /Imphal (PG) involved in operation on that particular day would file a report for future corrective measures.

Deliberation in the meeting

Pls refer to discussion in item **A.** The Sub-Committee decided to drop the agenda item.

The Sub-committee noted as above.

D.10. FOLD Working Group on Hydro:

NERLDC informed that during 18th FOLD (Forum of Load Despatcher) held on 21st November'17 at New Delhi formation of Working Group on Hydro for studying various aspects of Hydro Stations was discussed. Letter from CEO, POSOCO (Letter No. POSOCO/NLDC/AASO/2017/1325 dated 16th Feb'17) regarding circulation of a Questionnaire was presented and discussed. Questionnaire was circulated among the constituents.

In 129th OCCM, NERLDC requested NEEPCO, NHPC, AEGCL, MePTCL, Mizoram, Nagaland and TSECL to submit the Questionnaire by 28th Feb'17.

NERLDC informed the following status in 131st OCC meeting:

AEGCL	Submitted
NEEPCO Stations	Submitted
NHPC	**Submitted**
MePTCL	Submitted

Mizoram	**Pending**
Nagaland	**Pending**
Tripura	Submitted

NERLDC informed that details of stations with capacity less than 10 MW are also to be indicated in the questionnaire. NERLDC informed the forum that Working Group on Hydro for studying various aspects of Hydro Stations was formed and a meeting is going to be held on 18th Apr'17 regarding finalization of Hydro Report. Letter from FOLD Secretary (Letter No. POSOCO/NLDC/FOLD/20177 dated 11th April'17) regarding the same was circulated during the meeting. NERLDC requested SLDCs of NER, NEEPCO and NHPC to attend the meeting on 18th April'17.

Deliberation in the meeting

NERLDC informed that P&ED, Mizoram & DoP Nagaland are yet to submit the questionnaire. NERLDC also requested that additional detail regarding details of black start/ mock test for hydro in last five years be submitted by all the generating utilities.

Action: Mizoram & Nagaland

D.11. Windy Weather Preparedness:

All states of North Eastern Region usually experience heavy windy weather from mid of March and this prevails till last of April. As a result of this weather condition, chances of load crashes in the state system as well as tripping of critical grid elements that can lead to Grid Disturbances are high. Last year, in March there were 24 Grid Disturbances and 3 load crashes reported while in April, number of Grid disturbances increased to 45 and load crashes to 15 Nos.

As a part of this preparedness, NERLDC has given an activity list that is to be followed to all states of NER.

During windy season, most of the tripping of lines are due to lack of proper vegetation clearance especially due to bamboos coming to the vicinity of line as observed in previous years. So it is very much necessary to clear all vegetation to avoid unwanted tripping at the earliest.

As per CERC Order in Petition number 9/SM/2014 dated 14.06.16, in the matter of Investigation of tower collapse and load crash in Northern Region on 30.5.2014, Hon'ble CERC has directed PGCIL to install Anemometer in its all sub-stations to record wind speed.

It is requested POWERGRID to furnish status of installation of Anemometers.

Member Secretary, NERPC explained the importance of installation of anemometer in POWERGRID substations and requested POWERGRID to furnish status of installation of anemometers in the next OCC meeting.

In 131st OCCM, DGM(AM),NERTS agreed to revert back in the next OCC meeting on the matter.

NERLDC informed the forum that Ministry of Power had reviewed Power supply Position and preparedness for Summer, 2017 on 31st Mar'17. Press release of the meeting is available at http://pib.nic.in/newsite/PrintRelease.aspx?relid=160307 NERLDC also informed that IMD had forecasted for less rain this year.

Deliberation in the meeting

DGM(AM),NERTS informed that installation of anemometers is being carried out in SR-1. After satisfactory performance will be installed in other regions. After detailed deliberation forum decided to drop the agenda item and review later on.

The Sub-committee noted as above

D.12. Calculation of Voltage Deviation Index at State Level:

NERLDC is calculating Voltage Deviation Index, Frequency Deviation Index and System Reliability Index on a daily, weekly and monthly basis at ISTS level and these are reported to all constituents for taking proper actions at their end. These VDI, FDI & SRI figures are submitted to CERC on yearly basis.

There is a need of calculation of VDI in state level by all SLDCs to limit the voltage parameter within IEGC band. Over voltage issue is predominant in 400 kV levels but low voltage issue also to be taken care in state level.

It is requested to all states to identify the critical stations where VDI to be calculated and SLDCs may instruct generators to respond as per voltage scenarios.

In 130th OCCM, NERLDC informed the forum that practice of calculation of VDI figures will help states to identify the nodes where capacitor banks/reactors are to be put in place. Members appreciated the NERLDC proposal and requested all SLDCs to adopt the suggestions. Forum requested NERLDC to circulate an example calculation of VDI among all SLDCs.

In 131st OCCM, forum requested AEGCL to calculate VDI of important 132kV nodes in addition to 400/220kV nodes. NERLDC requested all the SLDCs to present a report on calculated VDI in next OCC meeting. NERLDC also informed the forum that Daily,

Weekly and Monthly Frequency Deviation Report, Voltage Deviation Report and System Reliability report is being mailed to all utilities for taking corrective actions. The same is also uploaded in NERLDC website.

Deliberation in the meeting

NERLDC gave a presentation on Voltage Deviation Report, Frequency Deviation Report and System Reliability Report for April'17. Further it was informed that members may access these reports from NERLDC website under the tab CERC KPI Reports. NERLDC informed that SLDC, Assam and SLDC, Meghalaya have submitted VDI calculation which was forwarded to them after incorporating necessary comments. The presentation is attached in **Annexure D.12.**

After detailed deliberation the Sub-Committee once again requested all the SLDCs to calculate VDI/FDI so that proactive planning may be done.

The Sub-committee noted as above

Action: All SLDCs.

D.13. Reliability of Auxiliary Supply to substations:

Reliable auxiliary power supply is of absolute necessity for smooth operation of control and protection system. Recent CERC order against Petition No. 133/MP/2014 stresses on reliability as well as commercial aspects of auxiliary supply to substations. Healthiness of DG sets is critical during restoration after a partial/total black out. As per clause no 5.8(b) of IEGC, Diesel Generator set for black start operation would be tested on weekly basis and test results are to be sent to RLDC on quarterly basis.

It is requested to all constituents to furnish DG set test results to NERLDC on quarterly basis and list of source of supply to auxiliary requirement to sub-stations.

The 130th OCC forum requested all generating utilities to kindly submit DG test results to NERLDC on periodical basis. NERLDC requested all members to furnish details about auxiliary supplies available in all substations connected to Grid along with relevant SLDs. Forum requested NERLDC to circulate format for data submission to all constituents. AEGCL also requested that SLDs (particularly auxiliary supply) of HVDC and other stations of POWERGRID in NER be provided to SLDCs. NERTS concurred.

Deliberation in the meeting

NERLDC informed the following status in 132nd OCC meeting:

Name of utility	DG healthiness report	Auxiliary supply details
NEEPCO	No	Yes
NERTS	No	No
NTPC	No	No
NHPC	Yes	Yes
OTPC	No	No
Arunachal Pradesh	No	No
AEGCL	No	No
MSPCL	No	No
MePTCL	No	Yes
Mizoram	No	No
Nagaland	No	No
TSECL	No	No

DGM(AM),NERTS opined that reliability of supply should be studied as later on present commercial arrangements may be disbanded and allocation might be done from CS stations. Members agreed and requested NERLDC to circulate formats afresh considering ambiguities reg. DG supply for black start/auxiliary back up, SLD of auxiliary supply or entire station, whether separate SLD for tertiary supply and DISCOMs supply required.

The Sub-committee noted as above

Action: All Utilities/NERLDC.

D.14 <u>Installation of 80MVAR, 1x400KV GIS Bus Reactor/ Bay Addition at RHEP</u>

As discussed in several OCC meetings there is requirement of bus reactor to be installed at RHEP switchyard to control over voltage in the NER system. Against agenda no. C.10. of 109th OCC meeting after detail deliberations, Member Secretary suggested NEEPCO to work out the tentative estimate for above cost and intimate in next PCC meeting so that the matter can be taken up for funding from PSDF since the matter is for the benefit of the region.

Accordingly, vide letter no. NO: NEEPCO/ED(O&M)/RHEP-09/2015-16/2646 dtd. 13/01/2016 NERPC was intimated a cost estimate of Rs. 3698.965 Lakh for procurement & installation of Bus Reactor at 400KV Ranganadi Switchyard.

In the MOM of 17th TCC meeting held on 04/10/2016 circulated on 26/10/2016 through e-mail it was observed that under item no. B.12 the proposal for installation

80MVAR Bus Reactor at RHEP SY has been approved in the 6th SCM and recommended in the TCC and RPC forum.

For open tendering process for procurement and installation of the Bus Reactor, the modalities of funding from PSDF as intimated in the 109th OCC meeting may please be discussed.

In 131st OCCM, Director, NPC informed that reactor installation for improvement of voltage profile of the grid may be funded from PSDF. However in this case approval has been obtained differently. DGM (AM), NERTS opined that since SCM approval has been accorded, no separate CERC approval is required and NEEPCO may directly file tariff petition. The forum requested NERPC to clarify from CEA/NLDC about funding from PSDF or execution by CTU.

Deliberation in the meeting

S.E.(C&O),NERPC informed that the matter would be taken up with CEA at the earliest.

The Sub-committee noted as above

Action: NERPC.

D.15 Maintenance of 220 KV Kathalguri- Deomali radial feeder and healthiness of Protection System

220 KV Kathalguri- Deomali radial feeder belongs to DOP, A.P. and feeding power from 220 KV Switchyard of AGBP through its 220 KV bay maintained by DOP, A.P.

Most of the time, 220 KV line Circuit breaker is found to be non-operational for remote closing, spring charging mechanism and trip and closing circuit. Breaker needs to be maintained properly for its smooth operation / function.

Periodic testing and calibration of the protective relays need to be carried out.

In 131st OCCM, after detailed deliberation it was decided that a team comprising of officials from NERTS/NEEPCO/DoP Ar. Pradesh would visit Kathalguri at the earliest to check the healthiness of the relays/protection system.

Deliberation in the meeting

DGM (AM),NERTS informed that a team comprising NERTS, NEEPCO and DoP Ar. Pradesh had visited the site and tested the relay by providing correct setting and line was restored successfully on 11.04.2017.

The forum appreciated the initiative efforts taken by POWERGRID in helping to resolve the long pending issue. The item is now dropped.

The Sub-committee noted as above

D.16 Implementation of Automatic Meter Data Reading (AMR) system at various locations of NER

In the 15th TCC & 15th NERPC Meeting held at Guwahati on 20th & 21st August 2015, approval was given for installation of Automated Meter Data Reading (AMR) system at various locations in North Eastern Region.

The estimated cost of the project was Rs 1, 71, 24,319/= to which all the constituents agreed in the 6th Metering Sub Committee Meeting held at Guwahati on 17.06.15.

The above estimation was carried out based on a similar work order placed on M/S TCS by Eastern Region —II in the year 2012. Also the estimation was for 260 SEMs installed in 92 locations.

Now CTU/POWERGRID has to execute the project for 350 SEMs installed in approx. 92 locations and the lowest budgetary offer received for the same is Rs 43821500.00.

The revised estimated cost of Rs 4, 38, 21,500/= (Rupees four crore thirty eight lakhs twenty one thousand five hundred only) is therefore put up in the 131st OCC Meeting for fresh consideration, of the constituents and develop a recovery mechanism for the same.

In 131st OCCM, NERTS stated that any cost revision has to be approved by TCC/RPC.

Regarding the point raised by NERTS on recovery mechanism, DGM (MO), NERLDC requested NERTS to furnish recovery mechanism of the cost of SEMs being followed by them. NERTS representative stated that same would be furnished in the next meeting. DGM(MO) stated that accordingly consent of forum for reviewed cost estimate as well as recovery mechanism could be decided in the next OCC/Metering meeting. He further stated that the project has already been delayed inordinately and there has to be a conclusive decision whether to go ahead with the project.

Forum agreed to take a decision in the next meeting.

Deliberation in the meeting

Considering the fact that AMR project would be necessary for NER and should be implemented at the earliest, the forum agreed to the revised cost estimate of Rs 4, 38,

21,500/= (Rupees four crore thirty eight lakhs twenty one thousand five hundred only) in-principle. POWERGRID, NERTS was advised to proceed with tendering activity to avoid further delay. It was agreed that the matter would also be put up to next TCC/RPC meeting scheduled shortly for formal approval.

Regarding cost recovery mechanism, it was agreed that cost would be shared by the NER beneficiaries in proportion to weighted average entitlement as per monthly REA of March, 2017 issued by NERPC secretariat. It was agreed that this would also be formally approved by TCC/NERPC in next meeting.

To avoid delay, POWERGRID, NERTS was advised to proceed with the activities without waiting for approval from TCC/NERPC.

The Sub-committee noted as above

Action: NERTS/NERPC

D.17 Shifting of bays for 132kV Shimui-Melriat(PG) D/C at Shimui:

It is informed by P&E dept., Mizoram that at Shimui (Substation of P&E dept., Mizoram) due to congestion of many incoming ckts, final termination of 132 KV Shimui – Melriat (PG) D/C T/L in to the Pre assigned bays are not possible. P&E dept., requested POWERGRID to terminate the ckts into a temporary bays (2 nos.) of state. Further, the same would again be shifted to new location of bays as newly allotted for POWERGRID as per **Annexure D.17**.

Deliberation in the meeting

SE, SLDC, Mizoram informed that the matter has been sorted out with an amicable solution upon discussion with POWERGRID officials on 09.05.2017. He requested that agenda item be dropped. Members agreed.

The Sub-committee noted as above

D.18 Work done by Utilities during scheduled shut down of lines and Generators:

It is seen that any scheduled shut down of either Generating Stations or Transmission lines are deliberated and approved in OCC meetings of NERPC. But details of work memo/works done actually are not appraised in subsequent OCC meetings. APDCL requests the Forum to include the agency wise work done details, particularly of central agencies in the following OCC meeting for appraisal of the Beneficiaries.

In 32nd CCM, Director/SE(C&)(, NERPC stated that the matter may be raised in the OCC meeting and as suggested by Assam, Utilities availing shutdown may be asked to furnish the details of work done during the period of shutdown.

The subcommittee decided to refer the matter to OCC forum for implementation.

Deliberation in the meeting

S.E.(C&O),NERPC informed that the matter has already been discussed in earlier CC meeting and the members have agreed to drop the agenda for the time being.

The Sub-committee noted as above

Action: NERLDC.

D.19 Pending issues with NTPC regarding vacation of land etc and failure of NTPC to honour the commitment:

NTPC has not yet vacated the 32M extended portion (32 x 248) of the plot of land which has prevented AEGCL from constructing the 132kv APM (Jogighopa) Bay. This vacation was agreed upon by NTPC — but has not materialized till date.

Boundary wall for AEGCL was supposed to be constructed by NTPC which has not yet been constructed by them even after more than three years of their commitment.

AEGCL has not been allowed to operate the entrance gate (constructed by AEGCL) as the CISF personnel of NTPC continue to .keep the lock and key of the same thereby causing acute difficulties for entry and exit of AEGCL personnel — so much so that AEGCL personnel are sometimes even prevented from entering the switch yard for attending to emergency operational problem in switch yard/control room. Separate entry gate for AEGCL should immediately be allowed to be operated.

Even after their commitment, the Guest House for AEGCL as agreed upon has not yet been constructed by NTPC.

In all these issues the NTPC authorities have been unexpectedly insensitive and no cooperative.

Deliberation in the meeting

S.E.(C&O),NERPC informed that the matter should be resolved bilaterally. He however, mentioned that the issue will be raised to the competent authority of NTPC & Assam so that the matter can be resolved amicably.

The Sub-committee noted as above

Action: NERLDC.

D.20 Weather Website for North Eastern Region

Weather Website of North Eastern Region has been made operational from 29th April 2017[informed earlier by mail] at http://amssdelhi.gov.in/NERLDC/MAIN.html. The same is also available in WEATHER tab in NERLDC website.

The Website covers weather related information of all the Seven States of North Eastern Region. Summarized contents of the Website are follows:

1. Regional Summary: Regional Forecast, Weather Bulletin, Daily and Weekly Weather
2. Now-cast for Guwahati, Dibrugarh, Jorhat, Dhubri, Silchar & North Lakhimpur
3. Warning: District Level, State Level & Cyclone
4. Mateogram @ 3 hourly, 10 days forecast for 33 locations in the Region: Assam-19, Arunachal Pradesh -4, Meghalaya-3, Nagaland-3, Tripura-2, Manipur and Mizoram 1 each.
5. Radar Products for two Locations updated @10 Minutes: Agartala & Mohanbari
6. Satellite Image updated @ 30 minutes from INSAT 3 D.

Deliberation in the meeting

NERLDC gave presentation on Weather Website for North Eastern Regional. NERLDC informed about the reports available in the website and requested all the utilities to give their feedback before next OCC Meeting so that the same can be incorporated. The presentation is attached in **Annexure D.20.**

The Sub-committee noted as above

D.21 Transformer Tap optimization

System study was conducted by NERLDC considering load, generation and network pattern of May, 2017 during Peak & Off Peak periods. Suggested taps position of important transformers in NER for maintaining bus voltages within permissible limit as well as to minimize system losses are attached at **Annexure D.21.**

Deliberation in the meeting

NERLDC informed that system study was conducted based on May, 2017 Off Peak & Peak Base Cases and suggested Tap position were given in the report. NERLDC requested all the utilities to go through the report and take necessary actions.

DGM(AM),NERTS informed that changing tap positions in peak and off-peak period is a tedious job and should be avoided as far as possible.

The Sub-committee noted as above

Action: All Utilities.

D.22 Updated List of Important Grid Elements of NER, May 2017 (Draft):

As per Clause No 5.2.c of IEGC, List of Important Grid Elements of NER May 2017 (Draft) prepared. Updated List of Important Grid Elements of NER May 2017 (Draft) was e-mailed to regional entities of NER and also available in NERLDC website.

It is requested to furnish data required for finalization of List of Important Grid Elements by 20th May'17 as this document will be finalized by 25th May'17. The document is password protected. Password may be collected from SOII department of NERLDC.

Deliberation in the meeting

NERLDC informed the forum that Draft List of Important Elements has been uploaded in NERLDC Website under the Tab Download/Imp Elements and requested to give comments, if any, by 25th May'17. The document will be finalized by 31st May'17.

The Sub-committee noted as above

D.23 Transients observed in +/- 800 kV HVDC Biswanath Charali-Agra pole-I

After commissioning of +/- 800 kV HVDC Biswanath Charali - Agra Bipole link in October,2015, few incidents of transients in HVDC have been observed which have been persisted for quite some time and have been eliminated by reducing the HVDC power flow set point/blocking of pole.

Sl No	Date	Time (Start)	Time (End)	Duration (mm:ss)	Power Flow Fluctiation (MW)	Voltage Fluctiation (kV)	Action Taken by operator
1	04.12.2015	10:38:50	10:39:05	00:15	50	5	Power order reduced to 450 MW to 700 MW
2	05.01.17	11:40:00	11:42:00	02:00	50	1 to 2	Pole-I blocked out of Bipole
3	20.04.17	14:00:00	14:10:00	10:00	60	7	Pole-I carrying 500 MW blocked
4	22.04.17	17:24:00	17:37:00	13:30	50	6	Pole-I carrying 500 MW blocked

HVDC may please furnish detailed report along with proposed corrective actions to NLDC with a copy to NERLDC.

Deliberation in the meeting

After detailed deliberation the forum referred the matter to the next PCC sub group meeting.

The Sub-committee noted as above

D.24 Grid Disturbance at 19:10 Hrs on 28th April,2017

At 19:10 Hrs on 28th April'17, 400 kV Silchar - Byrnihat line & 220 kV Misa-Byrnihat D/C lines tripped (400 kV Silchar - Azara line tripped at 18:42 Hrs on 28.04.17. 400 kV Bongaigaon-Byrnihat line tripped at 18:58 Hrs on 28.04.17).

This led to overloading of 132 kV Haflong - Jiribam line, 132 kV Badarpur - Khleihriat line & 132 kV Dimapur - Imphal line and subsequently tripped on over current.

Due to tripping of these lines, Southern Part of NER comprising of Tripura, Mizoram, Manipur, South Assam, Meghalaya, Palatana, AGTPP, Loktak & Bangladesh (South Comilla load) systems was separated from rest of NER grid and subsequently collapsed due to load generation mismatch.

Due to operation of LBB at 220 kV Misa substation, all 220 kV lines from Misa except 220 kV Misa-Mariani (AS) & 220 kV Misa-Kopili 3 lines tripped.

Antecedent NER Demand Met: 1751 MW
Antecedent NER Generation: 1763 MW
Total Load Loss: 689 MW (Tripura-211, Bangladesh-154, Manipur-136, Mizoram-45, South Assam-81, Meghalaya-216)
Generation Loss: 845 MW (Palatana-515, AGTPP-78, Loktak-105, Monarchak-72, Rokhia-55, Baramura-20, LHEP-126, Umiam Stg II-7, Umiam Stg I-12)
CEA Category: GD-IV

Deliberation in the meeting

NERLDC informed the forum that Major Grid Disturbance of Category GD-IV occurred in NER Grid on 28.04.17. The disturbance was discussed in PCC Sub-Group Committee Held on 05.05.17 at Shillong. Following are the important points to be noted:

1) 400 kV Silchar - Azara: DR of Azara is showing SOTF (Switch on to Fault)/TOR (Trip on Reclose) and Silchar received DT from Azara. Zone-3 initiated at both ends and this needs to be analyzed by both POWERGRID & AEGCL
2) 400 kV Silchar- Byrnihat: Bynihat showed Z1 fault and DT received at Silchar end after 289 milliseconds. The Forum suggested that settings of relays at

Byrnihat needs to be checked and receipt of DT at Silchar end needs to be analyzed by POWERGRID & MePTCL

3) It was informed by Manager, NERTS that REL670 relay at Misa did not reset the LBB timer after fault clearing in 400 kV Misa - Byrnihat Line I and resulted in opening of all the feeders connected to the Bus II due to LBB operation. Reason for LBB operation at Misa substation was not clear and forum requested POWERGRID to analyze the event and detailed report is to be submitted to NERPC & NERLDC.
4) UFR operated in Tripura and Mizoram only. South Assam no UFR Feeder identified
5) Island consisting of AGTPP & Tripura system did not survived
6) The forum also stressed the need for periodical testing of SPS so that it operates as per design during emergency condition.
7) UFR, Islanding and SPS schemes to be reviewed again at the earliest.

The Sub-committee noted as above

D.25 Disturbance in Palatana & Tripura System(including Bangladesh South Comilla load) on 25th & 26th April,2017

At 13:05 hrs on 25.04.17, 400 kV Silchar-Palatana II line tripped(Silchar :DP, Y-B,Z1, 187.5 km; and Palatana-DP, B-E, Z1, 57.55 km). 400 kV Silchar-Palatana line I was under Shutdown as per 131st OCC Meeting.

Units of Palatana,AGTPP, Rokhia and Monarchak tripped subsequently along with following lines:

1. 132 kV AGTPP-Agartala I & II
2. 132kV AGTPP-Kumarghat
3. 132 kV Palatana-Udaipur
4. 132 kV Palatana-SM Nagar:
5. 132 kV Kamalpur-Dhalabil
6. 132 kV Ambassa-Teliamura(Gamaitilla)

Due to operationof SPS-I at Palatana,132 kV Silchar-Srikona D/C.132 kV Silchar-Panchgram lines and 132 kV Badarpur-Panchgram line got tripped. Due to blackout at 132 kV Surajmaninagar Substation, 132 kV Comilla-SM Nagar Line I & II was hand tripped.

Due to the tripping of above lines, total load loss was 283 MW (Tripura- 103 MW, South Assam-61 MW and Bangladesh 119 MW)

Generation Loss was 680 MW (Palatana-556 MW, AGTPP- 62 MW, Monarchak-60 MW & Rokhia -26MW) respectively.

P.K Bari, Gournagar(Kailashar), Kamalpur and Ambassa Substations survived during the grid disturbance.

At 12:51 hrs on 26.04.17, 400 kV Silchar-Palatana II line tripped (Silchar: DT Received, and Palatana-details awaited)

400 kV Silchar-Palatana line I was under Shutdown as per 131st OCC Meeting Units of AGTPP, Rokhia and Monarchak tripped subsequently along with following lines:

1. 132 kV AGTPP-Agartala I & II
2. 132kV AGTPP-Kumarghat
3. 132 kV Palatana-Udaipur
4. 132 kV Palatana-SM Nagar
5. 132 kV Dhalabil-Agartala

132 kV Baramura-Jirania was under S/D.

Due to blackout at Surajmaninagar, 132 kV Comilla-SM Nagar I & II was hand tripped.

Due to the tripping of above lines, total load loss was 151 MW (Tripura- 45 MW and Bangladesh-106 MW)

Generation Loss was 172 MW (AGTPP- 48 MW, Monarchak-69 MW & Rokhia -55MW) respectively.

P.K Bari, Gournagar (Kailashar), Kamalpur, Dhalabil, Ambass, Teliamura and Baramura Substations survived during the grid disturbance.

Deliberation in the meeting

NERLDC informed the forum that Major Grid Disturbance occurred in Tripura system on 25.04.17 & 26.04.17. The disturbance was discussed in PCC Sub-Group Committee Held on 05.05.17 at Shillong. Following are the important points to be noted:

1. The tripping of 400 kV Silchar – Palatana Line II on 25.04.17 is attributed to falling of a tree at location 172 and 173 (i.e. Teliamura forest area).
2. The tripping of 400 kV Silchar – Palatana Line II on 26.04.17 is appearing to be due to a high impedance fault. The exact nature of fault could not be determined from the DR.
3. Forum requested all constituents take prior permission from NERLDC for doing live line works as this involves auto-recloser function of DPR in non-auto mode.
4. SPS-2 failed to operate. NERTS & OTPC to implement the modified SPS-2 by 15.05.17.

5. The forum also stressed the need for periodical testing of SPS so that it operates as per design during emergency condition.
6. UFR, Islanding and SPS schemes to be reviewed again at the earliest.
7. Relay Settings of Palatana, Silchar, AGTCCPP, Agartala and Downsteam of Agartala to be reviewed.

OCC expressed serious concern over such repeated occurrences resulting in tripping of Palatana units. It was felt that time bound action plan would have to be chalked out immediately to prevent further damage. Any such action plan would have to be implemented by the concerned party without fail. After detailed deliberation the forum referred the matter to the next PCC meeting for analysis of events.

The Sub-committee noted as above

D.26 IEGC 5th Amendment

CERC has issued 5th Amendment of IEGC on 12.04.17 which has become effective from 01.05.2017. The major changes have been made in Scheduling procedure, URS allocations/sale, Primary response, FGMO, Spinning reserves. NERLDC sent communications to all the concerned utilities before the implementation of various provisions.

Deliberation in the meeting

DGM(MO),NERLDC through a presentation highlighted the major amendments viz.

- All hydro generating stations with capacity greater than 25MW and all open/combined cycle gas generating stations with capacity greater than 50MW will have to be under FGMO/RGMO w.e.f. 1.10.2017.
- For the purpose of scheduling of power of ISGS, RLDC would not consider DC greater than Installed Capacity (or MCR) less Normative Auxiliary Consumption. However DC whenever given by generator would be used for Availability calculation.
- CERC has issued order dated 05/05/2017 regarding approval of the detailed procedure for taking unit(s) under Reserve Shut Down and Mechanism for Compensation for Degradation of Heat Rate, Aux Compensation and Secondary Fuel Consumption, due to Part Load Operation and Multiple Start/Stop of Units. .The Technical Minimum and Compensation Mechanism would be in vogue w.e.f.14.05.17.
- ISGS will give DC for next day by 6A.M. every day or 06:00 hrs.

- Entitlements for all beneficiaries shall be calculated and intimated to them by RLDC by 8AM or 8:00 hrs.
- The original beneficiary shall communicate it's consent to the ISGS by 9.45 AM each day about the quantum and duration of power for next day for sale in the market with a copy to NERLDC.
- The original beneficiary may also provide a standing consent to the ISGS for sale of power in the market for specified duration and specified quantum.
- The ISGS shall not sell the power of any beneficiary in the market without it's express consent.
- The beneficiary shall not be allowed to schedule the power for which consent has been given by the beneficiary to the ISGS except in cases where power is still available with the ISGS after sale through bilateral and collect ion transactions.
- The ISGS shall intimate the details of the share of power of individual beneficiaries sold in the market for next day to the respective RLDC by 2200 Hrs. For this NERLDC has circulated necessary format. In case of forced outage of a unit of a generating station (having generating capacity of 100 MW or more) and selling power under Short Term bilateral transaction (excluding collective transactions through power exchange), Generating station may revise its restoration time ONCE in a day and the revision schedule shall become effective w.e.f. 4th time block.

Members appreciated the presentation. DGM(O&M),OTPC informed that it will be difficult for gas plants like Palatana to adhere to 55% technical minimum. Member Secretary, NERPC opined that this mechanism would run on a trial basis for six months after which affected utilities may approach CERC for regulatory relief.

The Sub-committee noted as above

D.27 <u>Over drawal by constituents</u>

It has been observed that despite repeated requests for maintaining drawal within schedules, especially when BgTPP & Palatana generations are not available, some of the constituents namely Tripura persistently overdraws from the grid resulting in violation of inter-regional ATC on many occasions. Constituents, especially Tripura, are requested to please adhere to the real time advice of NERLDC for maintaining grid security & reliability. In this regard constituents are also requested to please make advance planning for meeting their demands considering contingency situations of generations outages.

Deliberation in the meeting

Pls refer to discussion in item No.**B.2.**

The Sub-committee noted as above

D.28 Deviation Charges Outstanding of APDCL – Curtailment of Open Access

Outstanding deviation charges of APDCL is Rs. 50.84 Cr and deviation interest payable is Rs. 0.13 Cr as on 05.05.2017 (Till week -3 of FY 2017-18) out of which Rs. 26.30 Cr is outstanding for a period of more than last 13 weeks.
NERLDC may highlight the issue in details.

APDCL is required to liquidate the outstanding dues at the earliest to avoid curtailment of OA as per Regulations

Deliberation in the meeting

DGM(MO),NERLDC requested Assam to liquidate Outstanding dues at the earliest to avoid OA curtailment. He also informed that at the moment APDCL has to pay more than Rs. 55 Crores. AGM, APDCL responded that the matter is being taken up with their finance counterpart and hoped that dues would be liquidated very soon. DGM (MO), NERLDC requested APDCL to submit a time bound action plan to clear outstanding dues and pay current bills and it would enable non-imposition of any regulation on APDCL. APDCL representative agreed to submit an action plan after internal approval.

The Sub-committee noted as above

Action: APDCL.

D.29 Tripping of OTPC Both Block Due to Grid Black Out

OTPC Both Block Tripped on 25/04/2017 at 13:05 hrs, Startup delayed on 26/04/2017 due to grid disturbance OTPC Both Block Tripped on 28/04/2017 at 19:10 hrs

Deliberation in the meeting

DGM(O&M),OTPC stated that 400kV Palatana-Silchar D/C is lifeline for Palatana GBPP and its non-availability seriously affects evacuation of power from Palatana with subsequent unit tripping on over-frequency. He requested the forum to ensure the availability of 400 kV Palatana-Silchar D/C, 400kV Silchar -Byrnihat and 400kV Silchar -Azara at all times for reliable supply of power to NER beneficiaries and reduced damage to plant machineries. Members unanimously accepted the gravity of

the situation and requested NERPC to convene a special meeting to discuss maintenance of aforesaid lines, SPS concerning evacuation etc. at the earliest.

The Sub-committee noted as above

Action: NERPC.

ADDITIONAL AGENDA ITEM:

D.30. Providing of Bank Protection of Dikrong River at Ranga De Reserve Village, Bihpuria Circle, Dist: Lakhimpur, Assam due to erosion of land on account of discharge of Ranganadi HEP:

The Ranga De Reserve Village is situated under Bihpuria Circle of Lakhimpur District in Assam at the left bank of Dikrong River where continuous erosion river bank is going on due discharge of Ranganadi Hydro Generation. At present, the fate of the villagers is in uncertainty. Earlier NEEPCO had provided river bank protection of Dikrong River from Bihari Basti to a part of Ranga De Reserve Village leaving around 2 kM bank unprotected which is suffering erosion endangering the life and property of the villagers.

In fact due to indiscriminate erosion of Dikrong River Bank, POWERGRID is shifting all the Towers of 400kV D/C Balipara-Ranganadi Line to pile foundation as per the approval of NERPC. Presently, the construction of those Pile foundations is in progress.

Now, the villagers of Ranga De Reserve Village are not allowing POWERGRID to carry out pile foundation in Location No. 48 & 49 which falls in said stretch of 2kM unprotected bank and pressing hard for providing River Bank Protection.

NEEPCO may extend the Bank Protection in unprotected 2 kM stretch in line with earlier execution of River Bank Protection as the river bank erosion is mainly on account of downstream discharge of Ranganadi HEP.

In 129th OCC DGM (AM), NERTS informed that matter was referred to GM, Pare HEP of NEEPCO but, GM, Pare stated that the matter does not come under the purview of Pare HEP. Subsequently, matter was referred to GM, Ranganadi HEP and Circle Officer of Bihpuria Circle of Lakhimpur District in Assam. S.E. (C&O), NERPC stated that NEEPCO should involve into the matter to resolve ROW in co-ordination with POWERGRID and Local administration so that POWERGRID can complete the pile foundation. Accordingly, the forum advised NEEPCO and NERTS to jointly conduct the site survey and revert back to the forum.

Deliberation in the meeting

Sr. Manager, NEEPCO informed that the matter was consulted with ED (O&M), NEEPCO who opined that it does not concern NEEPCO and NERTS/POWERGRID should take necessary action. DGM (AM), NERTS informed that condition at site is grave and POWERGRID officials are being restricted to work, he requested NERPC to intervene. S.E(C&O), NERPC concluded that NERPC would write to concerned heads of NEEPCO and NERTS to resolve the matter.

The Sub-committee noted as above

Action: NERPC.

D.31. Commercial Operation of BgTPP Unit-2

NERLDC has been informed vide Letter No. Ref. No. 01: CD: 446 dated 24.04.17 from GM Commercial, NTPC regarding scheduled declaration of Commercial Operation of Unit-2 (250 MW) of Bongaigaon Thermal Power Plant w.e.f 30.04.17.

On 2nd May'17 mail has been received by NERLDC from Shift-Incharge BgTPP stating that due to technical issues and works under progress, COD of Unit-2 got delayed. And the mail also states that COD of Unit-2 will be informed well in advance. Alongside NERLDC is receiving Nil DC of Unit-2 of BgTPP.

BgTPP, NTPC is requested to inform about the exact information regarding declaration of Commercial Operation of Unit-2 of Bongaigaon Thermal Power Plant.

Deliberation in the meeting

NERLDC informed the forum about the Letter No. Ref. No. 01: CD: 446 dated 24.04.17 from GM Commercial, NTPC regarding scheduled declaration of Commercial Operation of Unit-2 (250 MW) of Bongaigaon Thermal Power Plant w.e.f 30.04.17 and also about the mail from Shift-Incharge BgTPP cancelling the CoD of BgTPP Unit-2. NERLDC raised the issue that since GM, Commercial has issued the letter for COD of Unit- 2, how the same can be cancelled by Shift-Incharge, BgTPP.

NTPC, BgTPP apologized for the miscommunication and ensured the forum that letter from higher official will be issued shortly and such instances will not occur in future.

The Sub-committee noted as above

Action: NTPC.

D.32. <u>SPS for transfer of 160 MW to Bangladesh through Tripura-Bangladesh link:</u>

POWERGRID vide. C/CTU-Plg/NE/02/Bangladesh dated. 07.02.2017 has informed that in the 12th India-Bangladesh JWG &JSC meeting decision was taken to enhance power transfer through 400kV S.M. Nagar-South Comilla link (charged at 132 kV). In this regard a SPS needs to be in place to increase reliability in power supply. Following SPS action has been suggested by POWERGRID:

Sl. No.	Contingency	SPS Action
1	Outage of one ICT out of 400/132kV 2x125MVA ICTs at Palatana	Limit transfer to 100MW on Cross-Border link, followed by shifting of 60MW load from Indian grid to Bangladesh grid.
2	Outage of 132 kV Palatana- S.M. Nagar line	Tripping of Cross border link followed by shifting of entire 160MW load from India to Bangladesh grid.
3	Outage of one circuit of SMNagar-South Comilla line	Limit transfer to 130MW on Cross-Border link, followed by shifting of 30MW load from Indian grid to Bangladesh grid.

In 129th OCCM, AGM (SO-I),NERLDC informed that as per the suggested scheme of SPS, it's implementation involves load reduction in Bangladesh system. In order for effective resolution, he suggested that a meeting be convened with Bangladesh Power Department officials, NERPC, NERLDC, CTU and TSECL. The forum requested NERPC to write to CTU for taking up the matter with MoP.

In 130th OCCM, S.E.(C&O),NERPC informed that the matter is being followed up with CTU/MoP and latest status would be informed in next OCCM.

Deliberation in the meeting

NERLDC informed the forum that during three major disturbances in NER on 25.04.17, 26.04.17 & 28.04.17, Bangladesh load was also affected. NERLDC again requested the forum to organize the meeting as soon as possible since CTU is asking about the implementation of Bangladesh SPS.

S.E.(C&O),NERPC informed that the meeting would be convened within next week.

The Sub-committee noted as above

Action: NERPC.

Date & Venue of next OCC meeting

It is proposed to hold the 133rd OCC meeting of NERPC on second week of June, 2017. However, the exact date and venue will be intimated in due course.

The meeting ended with thanks to the Chair.

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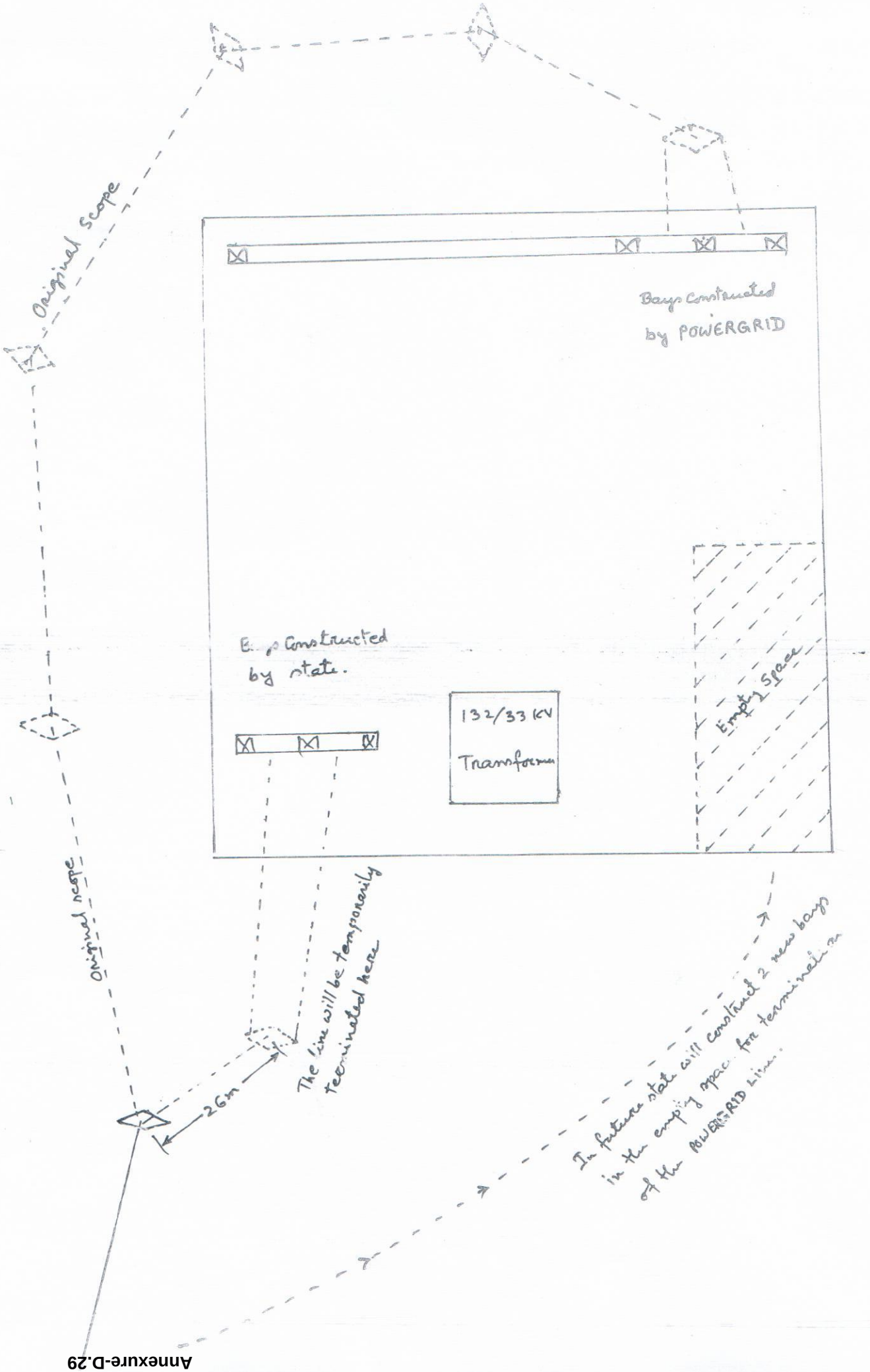
Annexure-I

List of Participants in the 132nd OCC Meetings held on 12.05.2017

SN	Name & Designation	Organization	Contact No.
1.	Sh. N. Perme, EE, SLDC	Ar. Pradesh	09436288643
2.	Sh. Pranab Saha, DM, SLDC	Assam	09435561717
3.	Sh. Jyotirmay Das, AGM	Assam	09435011753
4.	Sh. G.K. Bhuyan, AGM	Assam	09854015601
5.	Sh. A.N. Dev Choudhary, AGM(TRC)	Assam	09854120791
6.	Ms. Jharna Devi, AM,AEGCL	Assam	08822798944
7.	Ms. Laishram Ritu, Manager, MSPCL	Manipur	09612882984
8.	Ms. Jayela Wahengbam, AM, SLDC,	Manipur	09856875084
9.	Sh. S.R. Kharmawphlang, AE, SLDC	Meghalaya	09436160700
10.	Sh. W. Khyriem, EE,GSPD	Meghalaya	09856007107
11.	Sh. H.F. Shangpliang, SE(Gen)	Meghalaya	9863315562
12.	Sh. T. Gidon, EE, SLDC	Meghalaya	08974027950
13.	Sh. B. Nikhla, EE, SD MePTCL	Meghalaya	09436314163
14.	Sh. Lalbiaksanga, SE, SLDC Circle	Mizoram	09436140932
15.	Sh. Benjamin L. Tlumtea, Sr. EE, SLDC	Mizoram	09436151424
16.	Sh. Debabrata Pal, Sr. Manager (Comml.)	Tripura	09436500244
17.	Sh. Joypal Roy, Sr. Manager (E/M)	NEEPCO	09435577726
18.	Sh. N.R. Paul, AGM	NERLDC	09436302723
19.	Ms. Momai Dey, Sr. Engineer	NERLDC	09436302716
20.	Sh. R. Sutradhar , DGM (MO)	NERLDC	09436302714
21.	Sh. Ankit Jain, Sr. Engineer (SO-I)	NERLDC	09436335381
22.	Sh. P. Kanungo, DGM (AM)	PGCIL	09436302823
23.	Sh. Bibek Roy, DGM(O&M)	OTPC	07085058902
24.	Sh. N.K. Gupta, Manager	OTPC	09774233426
25.	Sh. C.L.KHAYUINGAM,DM(E)	NHPC	09402880207
26.	Sh. J. Bhattacharya, AGM(EMD)	NTPC	09435720036
27.	Sh. P.K. Mishra, MS	NERPC	-
28.	Sh. B. Lyngkhoi, Director/S.E (C&O)	NERPC	09436163419
29.	Sh. S. Mukherjee, AEE	NERPC	08794277306
30.	Sh. S. Imam, AEE	NERPC	08986666366


Original Scope
Bays Constructed by POWERGRID
Bays Constructed by state.
132/33 KV Transformer
Empty Space
Original Scope
The line will be temporarily terminated here
26m
In future state will construct 2 new bays in the empty space for termination of the POWERGRID line.

Transformer Tap Optimisation Study

Senario : May 2017

03-May-17

Sl. No.	Substation	Voltage Ratio (kV)	Transformer No.	Capacity in MVA	Controlled Bus	Tap Step (%)	Total Tap Positions	Nominal Tap	Present Tap	Voltage Profile				Optimised Tap Changer Position
										Off-Peak			Peak	
										Nominal Taps	Present Tap setting	After Optimisaton	After Optimisaton	
1	**Balipara**	400/220	1	315	400kV	1.25	17	9	9	427	424	415	402	NO (9)
		400/220	2	315	400kV	1.25	17	9	9					NO (9)
		220/132	1	50	132kV	1.25	17	9	9	142	142	135	129	NO (9)
		220/132	2	50	132kV	1.25	17	9	9					NO (9)
2	**Bongaigaon**	400/220	1	315	400kV	1.25	17	9	12	425	423	416	406	NO-7 (2)
3	**Salakati**	220/132	1	50	132 kV	1.25	17	9	13	141	131	134	130	NO+7 (16)
		220/132	2	50	132 kV	1.25	17	9	16					NO+7 (16)
4	**Misa**	400/220	1	315	400kV	1.25	17	9	5	428	422	416	406	NO+7 (11)
		400/220	2	315	400kV	1.25	17	9	5					NO+7 (11)
5	**Ranganadi HEP**	400/132	1	360	400 kV	2.5	17	9	9	424	420	412	400	NO-2 (7)
		400/132	2	360	400 kV	2.5	17	9	9					NO-2 (7)
6	**Azara**	400/220	1	315	400kV	1.25	17	9	8	425	423	414	404	NO+1 (10)
		400/220	2	315	400kV	1.25	17	9	8					NO+1 (10)
7	**Biswanath Chariali (PG)**	400/132	1	200	400 kV	1.25	17	9	8	428	425	418	400	NO (9)
		400/132	2	200	400 kV	1.25	17	9	8					NO (9)
8	**Silchar**	400/132	1	200	400 kV	1.25	17	9	9	421	422	408	402	NO (9)
		400/132	2	200	400 kV	1.25	17	9	9					NO (9)
9	**Byrnihat**	400/220	1	315	400 kV	1.25	17	9	9	430	431	416	406	NO-4 (5)
		400/220	2	315	400 kV	1.25	17	9	9					NO-4 (5)
		220/132	5083/1	160	132 kV	1.25	17	9	9	147	148	140	135	NO + 4 (13)
		220/133	5083/1	160	132 kV	1.25	17	9	9					NO + 4 (13)
10	**Palatana**	400/132	1	125	400 kV	1.25	17	9	9	420	421	408	408	NO (9)
		400/132	2	125	400 kV	1.25	17	9	9					NO (9)
11	**BgTPP**	400/220	2	125	220 kV	1.25	17	9	9	425	423	416	406	NO-7 (2)

Note : a) NO indicates Nominal Tap position, b) NO-1 when HV bus is controlled bus, indicates transferring MVAR from HV bus to LV bus to reduce voltage of the HV bus and increase voltage of LV bus