North Eastern Regional Power Committee

MINUTES OF THE 141st OPERATION COORDINATION SUB-COMMITTEE MEETING OF NERPC

Date : 14/02/2018 (Wednesday)

Time : 10:00 hrs

Venue : "Hotel RajMahal", Guwahati.

The List of Participants in the 141st OCC Meeting is attached at **Annexure – I**

Shri P.K. Mishra, Member Secretary, NERPC welcomed all the participants to the 141st OCC meeting. He noted the presence of participants from all the utilities except Arunachal Pradesh. 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 stated that when regulation regarding PoC was introduced views of all beneficiaries were not taken into account. This has resulted in the present dilemma of higher transmission charges for some states. Therefore he urged upon the members to be present for the sub-committee meeting for General Network Access on 21.02.2018 to be held at Guwahati under the aegis of NERPC. He mentioned that thread bare discussion is required during the above sub-committee meeting and the views of NER Constituents will be forwarded to CERC. Further he informed the members that Package-A of the Task Force Recommendations have already been complete. And Package-B Task-II training(ATC/TTC/TRM) is scheduled to be held for all SLDCs and STUs from 22.02.18 to 24.02.18. He requested all the respective utilities to participate in the workshop on ATC/TTC/TRM in large numbers in order to reap maximum benefit.

Thereafter, Member Secretary requested Shri B. Lyngkhoi, Director/SE(C&O) to take up the agenda for discussion.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 140th MEETING OF OPERATION SUB-COMMITTEE OF NERPC.

The minutes of 140th meeting of Operation Sub-committee held on 19th January, 2018 at Guwahati were circulated vide letter No. NERPC/SE (O)/OCC/2016/4556-4591 dated 30th January, 2018.

The Sub-committee confirmed the minutes of 140th OCCM of NERPC with above modifications as no comments/observations were received from the constituents.

I T E M S F O R D I S C U S S I O N

B.1. ACTION TAKEN:

1. IMPLEMENTATION OF PROJECTS FUNDED FROM PSDF:

The status as informed in 140th OCC:

State	Protection System	ADMS	Capacitor Installation	SAMAST**
Arunachal Pradesh	Requisition of funds by May-June 2018.	Clarification submitted to Techno-Economic Sub-group.	-	SLDC to apprise SERC of the project.
Nagaland	Pack-A: Completed Pack-B: Aug'18 Pack-C: May'18 Pack-D: Work in progress, to be Completed by Apr'18.	Clarification submitted to Techno-Economic Sub-group.	To re-submit proposal to NERPC for Study.	Documents and relevant papers have been furnished to Nagaland SERC as desired by Chairperson, SERC. SERC has requested for a presentation at Kohima/Nagaland by the SAMAST group
Mizoram	All LOAs to be completed by Feb'18.	Clarification submitted to Techno-Economic Sub-group.	Appraisal Committee is yet to approve	DPR complete by Feb'18.
Manipur	Higher Tendering Committee meeting on 15.02.2018. Diagnostic Tools LOAs by Feb'18.	Clarification submitted to Techno-Economic Sub-group.	Submitted to NERPC for Study before sending to NPC/NLDC.	DPR complete by 21.02.18.
Tripura	After ToC 3rd installment to be claimed. Material 90% received at site.	Clarification submitted to Techno-Economic Sub-group.	To submit proposal to NERPC for Study.	DPR complete by 21.02.18.

	Erection works to be completed by Oct/Nov'18.			
Assam	PLCC equipments LOA by Feb'18. By Aug'18 remaining LOAs.	Clarification submitted to Techno-Economic Sub-group.	-	DPR finalized.
Meghalaya	MePTCL-PLCC equipment LOA by Feb'18. DGA LOA by Mar'18. MePGCL –By April'18 erection is likely to be completed.	Clarification submitted to Techno-Economic Sub-group.	-	DPR finalized.

Deliberation of the sub-Committee:

Regarding SAMAST DGM(MO), NERLDC informed the forum that as agreed in OCC and CCM of NERPC, a combined DPR for NER would be submitted to NPC/NLDC as decided earlier. He also informed that in case of Assam, Meghalaya DPR has been finalised, while Tripura and Manipur DPR would be complete within first week of March, 2018. Mizoram representative stated that they were working on DPR and same would be ready by 1st week of March, 2018. In case of two remaining States of Nagaland and Ar. Pradesh, it was stated that SAMAST group would visit these States by 15th March, 2018 to enable finalisation of DPR. After detailed deliberation it was decided that since timely fund utilisation from PSDF is an issue, common tendering would be done by NERPC secretariat in case of SAMAST. MS-NERPC stated that approval of TCC/NERPC would be obtained for common tendering. DGM(MO),NERLDC opined that detailed Technical Specification of different parts of common tender be prepared by nominated members of different utilities. It was also agreed that Assam SLDC would prepare draft technical specs of 5-minute metering based on interaction in SAMAST meetings and inputs from Meter manufacturers. This draft would be used by SAMAST group to finalise the meter specs. Members concurred.

The Sub-Committee noted as above.

Action: All state utilities/NERPC.

2. Outage of Important Grid Elements:

Name of the Element	Name of Utility	Status as informed in 141st OCC
63MVAR Reactor at Byrnihat to replace with 80MVAR Reactor	MePTCL	NERPC to pursue with NPC regarding exact status.
400KV 80MVAR Bus Reactor at Palatana	OTPC	Unavailability of critical spare. By 15.03.2018 - CoD.
132 kV Mariani (AEGCL) – Mokokchung (DoP, Nagaland) S/C	AEGCL	** EE(Trans),DoP Nagaland clarified that disc insulator replacement is to be done in the Mariani-Longtho portion of Assam. Nagaland side is completed. He requested that the line should be restored for redundancy in case of exigencies.
132 kV P K Bari – Silchar I & II	NERTS	Ckt#I – charged Ckt#II – EI clearance required. By Mar'18.
132 kV Dimapur - Dimapur I	DoP Nagaland	**Bus up-gradation at Dimapur completed. To be dropped.**
132 kV Hailakandi – Dullavcherra	AEGCL	By Mar'18.
132 kV RHEP Bus B	NEEPCO	**Completed. To be dropped**.
DHEP Unit 2	NEEPCO	GT failure. By Mar'18
400/220 kV, 315 MVA ICT-II at BgTPP	NTPC	*** By Mar'18
AGTCCPP Unit 4	NEEPCO	**Completed. To be dropped**.

Deliberation of the sub-Committee:

**AEGCL and DoP Nagaland mutually agreed that 132kV Mariani-Mokokchung insulator replacement issue is to resolved bilaterally as funding is the main constraint. It was decided to drop the agenda item and review later on.

SE(C&O),NERPC appreciated the good job done by NEEPCO which has restored all the elements under outage and hoped that the performance would continue in future.

***Forum requested BgTPP, NTPC to submit a report at the earliest to NERPC/NERLDC mentioning the exact problem with ICT-II along with activities done during the shutdown period.

The Sub-Committee noted as above.

Action: All concerned utilities.

3. Furnishing of various data for reliable grid operation:

<table>
<tr><td>Data regarding</td><td>Status as of 141st OCC</td></tr>
<tr><td>DAS output for FRC calculation</td><td>Event date: 09.12.17- BgTPP, OTPC, Khandong, Kopili Stg II data provided
Event date: 10.01.18- Ranganadi, Khandong data provided.</td></tr>
<tr><td>Report on VDI</td><td>Submitted by SLDC of Assam (Daily and Monthly Basis), Meghalaya (Monthly Basis) and DoP, Nagaland. SLDC Arunachal Pradesh, SLDC Manipur, SLDC Mizoram and SLDC Tripura requested to submit the data on monthly basis. Agenda to be dropped and will be reviewed on Quarterly Basis.</td></tr>
<tr><td>DG healthiness report</td><td>OTPC, NTPC, Kopili, Khandong, Kopili Stg II, Nagaland, Mizoram submitted the data. To be reviewed after Third Party Protection Audit – Item to be dropped</td></tr>
<tr><td>Auxiliary Supply details</td><td>To be reviewed after Third Party Protection Audit – Item to be dropped</td></tr>
<tr><td>Technical & Commercial data for PoC (Q1 2018-19)</td><td>NEEPCO, OTPC, NHPC, DoP Arunachal Pradesh, MSPCL, AEGCL, MePTCL, P & ED Mizoram, DoP, Nagaland, TSECL submitted the data.
TSECL to submit YTC data. Agenda to be dropped</td></tr>
<tr><td>Operating Procedures.</td><td>
<table>
<tr><th>Items</th><th>Data submitted by</th></tr>
<tr><td>OP of States</td><td>Submitted only by AEGCL and MePTCL</td></tr>
<tr><td>OP of HVDC</td><td>Not Submitted</td></tr>
<tr><td>OP of Transmission System</td><td>Not submitted by any constituents</td></tr>
<tr><td>OP of Generating Stations</td><td>Not submitted by any generators</td></tr>
<tr><td>OP of GIS</td><td>Not submitted by any constituents</td></tr>
</table>
</td></tr>
<tr><td>Data related to Power Map.</td><td>
<table>
<tr><th>Items</th><th>Data submitted by</th></tr>
<tr><td>Communication (PLCC/OPGW/ GPRSVSAT/ Satellite</td><td>List of lines mailed by NERLDC on 9th January’18</td></tr>
</table>
</td></tr>
<tr><td>Data related to Single Line Diagram.</td><td>
<table>
<tr><td>State SEM Location</td><td>Only Meghalaya submitted</td></tr>
</table>
</td></tr>
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The Sub-committee noted as above.

Action: All utilities as above.

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

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

NER PERFORMANCE DURING DECEMBER, 2017

	Energy Met (MU)		w.r.t. Nov,17 % inc (+) /dec (-)	Energy Reqr. (MU)		w.r.t. Nov,17 % inc (+) /dec (-)	% inc (+) /dec (-) of energy reqr vs met. In Dec,17
States	**December-17**	**November-17**		**December-17**	**November-17**		
Ar. Pradesh	66.94	69.09	-3.11	67.97	70.14	-3.09	-1.52
Assam	702.79	696.69	0.88	716.42	712.58	0.54	-1.90
Manipur	79.23	68.84	15.09	80.44	69.89	15.10	-1.50
Meghalaya	149.54	135.42	10.43	149.54	135.42	10.43	0.00
Mizoram	55.56	39.53	40.55	56.61	40.43	40.02	-1.85
Nagaland	64.75	58.70	10.31	73.09	59.73	22.37	-11.41
Tripura	107.32	104.60	2.60	108.21	105.56	2.51	-0.82
Region	**1226.13**	**1172.86**	**4.54**	**1252.28**	**1193.75**	**4.90**	**-2.09**

	Demand Met (MW)		w.r.t. Nov,17 % inc (+) /dec (-)	Demand in (MW)		w.r.t. Nov,17 % inc (+) /dec (-)	% inc (+) /dec (-) of Demand vs met. In Dec,17
States	**Dec-17**	**Nov-17**		**Dec-17**	**Nov-17**		
Ar. Pradesh	136	136	0.00	138	144	-4.17	-1.45
Assam	1453	1478	-1.69	1479	1515	-2.38	-1.76
Manipur	187	178	5.06	194	180	7.78	-3.61
Meghalaya	368	339	8.55	369	339	8.85	-0.27
Mizoram	95	90	5.56	104	95	9.47	-8.65
Nagaland	127	132	-3.79	155	132	17.42	-18.06
Tripura	223	240	-7.08	223	240	-7.08	0.00
Region	**2314**	**2380**	**-2.77**	**2333**	**2443**	**-4.50**	**-0.81**

REGIONAL GENERATION & INTER-REGIONAL EXCHANGE IN MU

Month---->	**Dec-17**	**Nov-17**
Total Generation in NER (Gross)	1365.874	1362.689
Total Central Sector Generation (Gross)	1063.102	1043.830

AVERAGE FREQUENCY (Hz)

Month---->	**Dec-17**	**Nov-17**
	% of Time	% of Time
Below 49.9 Hz	12.86	16.91

Total State Sector Generation (Gross)	302.771	318.859	Between 49.9 to 50.05 Hz	73.86	73.53
Inter-Regional Energy Exchange			Above 50.05 Hz	13.93	9.56
(a) NER-ER	**4.54**	**0.00**	Average	49.98	49.97
(b) ER-NER	**483.02**	**335.56**	Maximum	50.25	50.27
(c)NER-NR	**441.40**	**441.40**			
(d)NR-NER	0.00	0.00			
© Net Import	37.08	-105.84	Minimum	49.70	49.62

Deliberation of the sub-Committee:

NERLDC gave a presentation on the grid performance for the month of January'18. NERLDC also highlighted that Daily, Weekly and Monthly Voltage Deviation Report, Frequency Deviation Report and System Reliability Report for January'18 are already mailed to all the constituents for necessary actions. Further it was informed that members may access these reports from NERLDC website under the tab CERC KPI Reports. NERLDC informed the forum about the number of lines kept open on high voltage. Forum express concern about the same and requested the generators to absorb MVAR. NERLDC again requested for early restoration and commissioning of reactors as mentioned in Sl. No. 2 and 3. The plots of 400 kV lines opened during January'18 is attached in **Annexure B.2.**

The Sub-Committee noted as above.

I T E M S F O R D I S C U S S I O N

C. OLD I T E M S

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

During 140th OCC meeting, the status as informed by different beneficiaries is as follows:

SN	Items	Status as given in 139th OCC Meeting	Status as given in 140th OCC Meeting
a. New Elements			
1	400/220kV, 315 MVA ICT-1 of NTPC at Bongaigaon	ICT-1 - Mar'18	ICT-1 - Mar'18
2	Kameng HEP of NEEPCO two units (2 x 150 MW)	Delay in dam construction. First unit by early 2018.	Unit #I - Mar'18

	Next two units (2x150 MW)		
3	Pare HEP of NEEPCO (2 x 55 MW)	Delay in dam construction. First unit by early 2018.	Unit #I - Mar'18
4	400 kV D/C Silchar - Melriat line of PGCIL	March, 2018.	March, 2018.
5	220kV Rangia - Salakati of AEGCL	March, 2018.	May, 2018.
6	132kV Monarchak – Surjamaninagar D/C of TSECL	TSECL informed that letter for extension would be sent to NERPC soon.	56 tower erection completed.
7	400kV D/C Balipara – Kameng	To be matched with Kameng HEP. To be reviewed in next OCCM	NERTS to complete by 05.03.2018.
8	RHEP 80 MVAR Bus Reactor	NERLDC, NERPC to conduct joint study.	**
9	SLDCs (Ar. Pradesh, Manipur, Mizoram, Nagaland)	Ar. Pradesh - Mar'18 Manipur, Mizoram, Nagaland - CoD	Ar. Pradesh - Mar'18 Manipur, Nagaland – CoD Mizoram-ToC date to be confirmed.
10	400/220 kV 315 MVA ICT-II at Bongaigaon	March, 2018.	March, 2018.
11	220/132 kV, 160MVA ICT-II at Balipara	ICT#II - delayed	ICT#II - delayed, Mar'18
12	220/132 kV, 1x160 MVA ICT with GIS Bay at Kopili	March, 2018.	March, 2018.
13	400/132 kV, 1x315 MVA ICT-III at Silchar	March, 2018.	March, 2018.
14	Replacement of 2x315 MVA ICTs with 2x500 MVA ICTs at Misa (PG)	March, 2018.	March, 2018.
15	400 kV Silchar – Misa D/C	2019	2019
16	1x125 MVAR Bus Reactor at 400 kV at Balipara	March, 2018(LOA date).	March, 2018(LOA date).
17	1x125 MVAR Bus Reactor at 400 kV Bongaigoan	March, 2018(LOA date).	March, 2018(LOA date).
18	Tuirial HEP of NEEPCO	Unit #I -CoD by Dec'17 Unit #II - Jan'18	Unit #I -CoD pending Communication and Connection Agreement. Unit #II - Feb'18

19	33kV bay at 220kV Mariani(AS) S/Sn	Metering issues to be taken up with APDCL by NERTS	Metering issues to be taken up with APDCL by NERTS
20	33kV Tezu-Tezu(AP)	-	-
21	33kV bay for 132kV Badarpur(PG) S/Sn	APDCL to revert back with status.	APDCL to submit estimate to NERTS.
22	Dedicated 33kV feeder at Khliehriat Substation from Lumshnong.	MeECL to revert back.	To be taken up by NERTS with MePDCL.
23	Completion of MW vacation OPGW project 1. Srikona – Pailapul – Jiribam 2. BTPS – Agia – (Boko – Mirza) – Sarasujai Aizwal – kolasib – badarpur	Target completion : Feb 2018	**Completed to be dropped.**
b. Elements under breakdown/upgradation			
24	Up-gradation of 132 kV Lumshnong-Panchgram line	DPR already submitted to NERPC/NLDC.	To be approved by Techno-Economic sub-group for funding from PSDF.
25	Switchable line Reactors at 400kV Balipara & Bongaigoan	Jan'18	**Completed to be dropped.**
26	PLCC Panels at Loktak end of Loktak – Ningthoukhong 132 kV feeder and Loktak - Rengpang 132 kV feeder	May'2018	May'2018
27	LILO of 132kV Ranganadi – Nirjuli at Pare of NEEPCO by PGCIL	LILO completed. Two towers to be diverted. Complete by Dec'17.	Mar'18
28	LILO of 132kV Ranganadi – Itanagar (Chimpu) at Pare of Ar. Pradesh	Bay 1 at RHEP for Pare: Jan'18 Bay 2 at RHEP for Itanagar: Mar'18	Bay 1 at RHEP for Pare: Jan'18 Bay 2 at RHEP for Itanagar: Mar'18
29	LILO portion of 132kV Ranganadi – Nirjuli(diversion work) at Lekhi by DoP Ar. Pradesh	Jan'18	-

30	Re-conductoring of 132kV Umiam Stg#I - Umiam Stg-III	DPR prepared. Submitted for approval.	DPR prepared and submitted for approval
31	Upgradation of ULDC FO node	Target completion : June 2018	Target completion : June 2018
32	HTLS re-conductoring of 132kV Agartala – RC Nagar – I & II	Ckt – I : Dec' 2017 Ckt – II : Jan ' 2017	Ckt #I upgradation complete. NEEPCO to replace Bus & Line isolators with higher rated ones.

Deliberation of the sub-Committee:

** SE(C&O),NERPC informed that as per fresh studies conducted by NERPC and NERLDC the 80MVAR Bus reactor or 75MVAR (3x25MVAR) tertiary reactor is required at Ranganadi as well as 2x63MVAR bus reactor at BNC. However as per NEEPCO there is no space at Ranganadi switchyard to accommodate tertiary reactors. Sr. Manager, NEEPCO also informed that the commissioning of the 80MVAR bus reactors would require at least 3 to 4years. DGM,SLDC,AEGCL opined that Assam is facing high voltage issues at 132kV Gohpur, so this reactor is required. All the rest of the members assented to the requirement of the reactor. SE(C&O),NERPC stated that the installation of the 80MVAR bus reactor at RHEP would involve considerable expenditure as well as excavation works which may damage the fragile terrain beyond salvaging. GM,SLDC, MSPCL opined that since space is the main constraint, a compact mobile GIS reactor bay may be envisioned to solve the crisis. Member Secretary, NERPC concluded that the matter would be referred to the next SCM of NERPC with the views of the forum.

The Sub-Committee noted as above.

Action: All state utilities/central utilities/NERPC.

D. N E W I T E M S

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		11.72	704.26
Kopili-II	1			

Kopili	4		80.28	597.24
Ranganadi	2		Subject to inflow	
Doyang	2		17.44	317.25
Loktak	3		90.00	767.85
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.

The OCC forum approved the complete plant shutdown of AGBPP from 01.04.2018 to 10.04.2018 due to stoppage in gas supply by AGCL. NERLDC and all SLDCs were requested to plan accordingly during the ensuing period.

The Sub-Committee noted as above.

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.

In 134th OCCM, it was decided that all communication related shutdown be approved in OCC forum only.

Deliberation in the Meeting:

SE(C&O), NERPC once again reiterated that shutdowns which are not being availed will not be entertained in the following month and would only be accorded in the next to next month.

NERLDC also requested all the utilities to confirm the OCC approved shutdown on D-3 regarding availing of the shutdowns. Any shutdown not confirmed on D-3 will not be allowed.

The sub-Committee discussed and approved the proposals received from the constituents regarding transmission elements and generating units for February, 2018 – March,2018 and the same has already been uploaded in website of NERPC.

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

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

Deliberation in the Meeting:

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

The Sub-Committee noted as above.

Action: NERPC

D.4 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 01.02.18. All SLDCs are requested to assess the Total Transfer Capability (TTC), Transmission Reliability Margin (TRM) and Available Transfer Capability (ATC) for the month of Mar'18 using these cases, and submit the study cases and results to NERLDC by 20.02.18.

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 will be presented in the meeting. SLDCs are requested to check the TTC of their control areas as computed by NERLDC and give comments, if any, by 20.02.18. 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 as requested by DoP, Arunachal Pradesh, NERLDC will arrange a training program for executives of Arunachal Pradesh on 19th and 20th February, 2018 at Shillong.

EE,P&ED Mizoram expressed difficulties in PSSE laptop operation. NERLDC clarified that upon formatting of laptops and re-installing PSSE the issues would be resolved.

NERLDC has assessed TTC of each state control area of NER, each state subsystem on behalf of SLDCs of NER and group of control-area wise TTCs for NER Grid for the month of March'18:

States	Off-peak		Peak	
	N-0	N-1	N-0	N-1
Arunachal	214	184	212	182
Assam	1661	1531	1706	1565
Manipur	338	259	338	263
Meghalaya	358	200	278	138
Mizoram	129	118	129	118

Nagaland	175	88	171	74
Tripura (including Bangladesh)	316	112	324	78

The Sub-Committee noted as above.

Action: All SLDCs.

D.5. Implementation of SPS for transfer of 160 MW power to Bangladesh through Tripura-Bangladesh link and modifications suggested for other SPSs in NER:

In Special Meeting on SPS, UFR etc. held on 23.06.17, Chief Manager, NERTS, POWERGRID presented the draft scheme to implement the suggested SPS for transfer of 160 MW power to Bangladesh through Tripura-Bangladesh link. The Sub-Committee discussed the suggested schemes in detail and agreed in principle to implement the schemes.

The forum requested NERPC to take up the matter with CEA/CTU/NLDC for implementation at the earliest after vetting in OCC forum.

In 140th OCCM, S.E. (C&O), NERPC informed due to prior engagements of Member Secretary, NERPC the visit to Bangladesh could not be scheduled. Further, he mentioned that methodology of funding of the above tour has to be concurred by MoP. He mentioned that NERPC will discuss with MoP/CTU/NLDC for above visit and intimate in next OCC meeting.

Deliberation in the meeting

The forum felt that all issues related to clearances and funding need to be cleared before the visit. Members requested NERPC to write to GM, NLDC for initiation of the process at central level.

The Sub-Committee noted as above.

Action: NERPC.

D.6. Modus-Operandi for SPS mock testing:

The 138th OCC forum requested NERTS to prepare a draft sequence of operation for each SPS and present in next OCC for ratification. The date for SPS 2 and SPS 3 mock testing will also be finalized in next OCC Meeting.

The 140th OCC forum opined that NERPC/NERLDC may find some experts from the region to solve this long pending issue and if not, the same may be called from other region. The forum requested OTPC to intimate the details of their action plan for

addressing the issues at their end pertaining to the successful operation of SPS-2 & 3 at the earliest.

NERPC vide letter dated. NERPC/SE(O)/OCC/2018 dated 08.02.2018 has requested OTPC to implement the changes as early as possible.

Deliberation in the meeting

Manager, OTPC informed that the modifications would be implemented by 25.02.2018. He further requested that necessary actions be carried out by NERPC/NERLDC subsequently, so that shutdowns related to Palatana ATS may be availed without generation reduction. In case of emergency cases, OTPC has agreed to reduce their generation as per grid requirement.

The Sub-Committee noted as above.

Action: OTPC//NERPC/NERLDC.

D.7. Submission of the Annual Load Generation Balance Report (LGBR) for Peak as well as Off-peak scenarios and the Annual outage plan for 2018-19 by 31.10.17 as per IEGC

a) As per IEGC, each SLDC shall submit LGBR for its control area, for peak as well as off-peak scenario, **by 31st October** for **the next financial year**, to respective RPC Secretariat. The annual plans for managing deficits/surpluses in respective control areas shall clearly be indicated in the LGBR submitted by SLDCs.

b) As per IEGC, all SEBs/STUs, Transmission Licensees, CTU, ISGS, IPPs, MPPs and other generating stations shall provide to the respective RPC Secretariat their proposed outage plan in writing for **the next financial year** by **31st October of each year**. These shall contain identification of each generating unit/transmission line/ICT etc., the preferred date for each outage and its duration and where there is flexibility, the earliest start date and latest finishing date.

In 138th OCCM, SE(C&O), NERPC requested all the utilities to submit data by 30.11.2017 so that LGBR may be prepared and finalized by Dec'17. The forum requested NERPC to consider only generation capacity that will be able to generate in FY17-18 rather than the entire Installed Capacity for accurate projections.

AEGCL informed the forum that Adamtilla and Baskhandi generating station have been decommissioned. TSECL informed that some units of Rokhia and Baramura

have also been decommissioned. SE(C&O), NERPC directed AEGCL and TSECL to write letter to CEA regarding the same.

In 140th OCCM, SE(C&O), NERPC informed that almost all utilities had submitted the relevant data and the final LGBR would be presented in the next OCC meeting. He mentioned that with co-operation from all the utilities the LGBR would be sent to CEA as per scheduled i.e. 31.01.2018.

Deliberation in the meeting

SE(C&O),NERPC thanked all the members for their co-operation and informed that LGBR for 2018-19 has been prepared very much on schedule.

The Sub-Committee noted as above.

Action: All utilities

D.8. Voltage Deviation Index of PALATANA and BgTPP:

As per VDI reports issued by NERLDC and uploaded in website, the voltage at 400 kV BgTPP and 400 kV Palatana buses are found to be going out of IEGC band (above 420 kV) for considerable time on regular basis as shown below.

Date	Time in Hrs	
	BGTPP	PALATANA
11-11-2017	3.58	3.43
12-11-2017	3.8	4.05
13-11-2017	6.4	5.1
14-11-2017	2.9	1.39
15-11-2017	6.13	5.1

Being generator buses, the voltages are supposed to be controlled by varying the MVAR injection / drawal and maintaining the same inside IEGC band at all times.

The 138th OCC forum requested BgTPP and Palatana GBPP to conduct Internal study and revert back to the forum.

In 140th OCCM, OTPC and NTPC representatives made presentations highlighting reactive power generation/absorption by the machines during different conditions.

In case of Palatana units, it was seen that the machines were always operating in lagging power factor thereby generating reactive power even in case of voltage being much higher than 400 KV. OTPC was advised to further look into the matter and ensure absorption of reactive power within the limit of capability curve.

In case of NTPC, it was seen that the units were absorbing reactive power in high voltage condition which was found to be in order. It was agreed that NERLDC would cross check and verify the data given by NTPC.

Deliberation in the meeting

NERLDC informed that OTPC has submitted 5min interval data and it has been found that the absorption is not adequate. The forum requested NERLDC to circulate the correspondence with OTPC. OTPC was advised to look into the matter of reactive absorption during high voltage condition and improve upon the same.

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

D.9. Update on Real Time Energy Assessment for Effective Grid Management:

In 139th OCCM, CDAC representative stated that they would require the proprietary protocol from the meter manufacturer(s) to proceed further with the Project. DGM(MO), NERLDC explained that as per practice followed in other Regions like NR, ER etc., AMR provider, Meter manufacturer and Powergrid sign a tripartite agreement to enable passing of the protocol to AMR provider. A sample of draft agreement in ER (TCS is AMR provider) was provided to CDAC and it was advised that CDAC should initiate process and circulate a draft agreement for the present case. CDAC agreed to do the needful and stated that they would develop protocol converter accordingly.

CDAC was asked not to delay any further and complete the project in quickest possible time.

CDAC has furnished the draft tripartite agreement which is to be signed between CDAC, POWERGRID-NERTS and meter manufacturer(s).

In 140th OCCM, NERPC intimated that the process of signing tripartite agreement between CDAC, Powergrid and L&T was in progress. He requested NERTS to expedite the matter.

Deliberation in the meeting

All the SLDCs confirmed the receipt of server at their premises. DGM,SLDC,AEGCL informed that static IP and SIMs have been procured by them.

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

D.10. Recording of operational instructions over VOIP in RLDC:

As per 139th OCC discussion establishment of recording system for all real time instructions and conversations thro' VOIP network was supposed to be established within Feb'18. It is very important to establish the recording system at the earliest as all verbal communication/ conversations among RLDCs, SLDCs and stations are getting lost. Recording status at SLDC also may be discussed.

POWERGRID intimated that due to GST issue the issue was delayed but the same now has been resolved and the award will be completed by January, 2018.

In 140th OCCM, POWERGRID intimated that due to GST issue the issue was delayed but the same now has been resolved and the award will be completed by January, 2018.

Deliberation in the meeting

NERTS informed that order has been placed and delivery would be done within 6-8 weeks.

The Sub-Committee noted as above.

Action: NERTS

D.11. Telemetry & Voice Communication Problem:

Telemetry problem:.

Deliberation in the meeting

Voice Communication problem:

Dedicated voice communication links and its availability is one of the key requirements for efficient grid management. But it is observed that non availability of adequate communication links with many stations affecting grid operation seriously.

VOIP system not installed.

1. NTPC, BgTPP (Even no BSNL or Mobile –not reliable) – **by Feb'18**
2. OTPC, PALATANA - **by Nov'18**
3. 400 kV BYRNIHAT/KILLING – **by Mar'18.**
4. 400 kV AZARA – **Completed (NERLDC will confirm**).
5. 400 kV SILCHAR – **by Nov'18**.
6. Zero, Roing, Tezu and Pasighat – **by Nov'18 (PG) & AP (under R&M)**

VOIP phones are not working

1. Mariani(POWERGRID) – **OK (NERLDC will confirm)**

2. Mokokchung - **OK**
3. Kumarghat - **OK**
4. Khandong - **OK**
5. Doyang – **OK (NERLDC said low quality & PGCIL to resolve)**
6. Nirjuli - **OK**
7. Kohima - **OK (NERLDC said not OK & PGCIL to resolve)**
8. Kathalguri – **by Mar'18**
9. Jiribam - **OK**
10. Kolasib – **shifted for Tuirial project.**

Following SLDCs do not have ULDC phones:

1. SLDC Imphal – **already provided and OK**
2. SLDC Aziwal – **do-**
3. SLDC Itanagar – **phones provided but link/signal problem local end**

b. Most of the POWERGRID stations are connected through only one dedicated voice link.

PGCIL informed that 2 nos. of dedicated channel will be made available after Nov'18

The Sub-Committee noted as above.

Action: NERTS

D.12. Utilization of Weather Data by State Utilities

Shri Piyush Goyal, then Union Minister of State (IC) for Power, Coal, New & Renewable Energy and Mines launched the Weather Portal for Power Sector in association with POSOCO and IMD at the meeting of the Forum of Regulators held at New Delhi on 23rd June'17. During a meeting held on 1st November, 2017, IMD has requested all the utilities to give their feedback on the usage of the Weather Portal. The matter was also discussed during 138th OCC Meeting.

Feedback from SLDC, Mizoram mentioning usefulness has been received but the areas where these are used are not mentioned. The portal is available at http://amssdelhi.gov.in/NERLDC/MAIN.html

It is requested to all power utilities to kindly share your feedback on the usage of the Weather Portal. Feedback shall also include the areas where the data of weather portal is used.

In 140th OCCM, NERLDC requested all the utilities to give feedback on the usage of weather portal including requirement of any other further data at the earliest.

Deliberation in the meeting

After detailed deliberation it was decided that after all the SLDCs have been visited by the team formed under FOLD, a feedback would be prepared on the Weather data usage. The agenda is to dropped in the meantime.

The Sub-Committee noted as above.

Action: All utilities

D.13. Connectivity of 132 kV Balipara and 132 kV Sonabil:

As informed by AEGCL earlier, configuration of 132 kV Sonabil Sub-Station was changed due to loading of 220/132 kV, 50 MVA ICT-I at Balipara as 220/132 kV, 50 MVA ICT-II was under outage. Currently, there is no connectivity between 132 kV Balipara and 132 kV Sonabil substations.

Recently, 220/132 kV, 160 MVA ICT-II at Balipara has been commissioned. This newly commissioned 220/132 kV, 160 MVA ICT at Balipara will take care of the over loading of 220/132 kV, 50 MVA ICT at Balipara.

It is requested to AEGCL to restore the earlier configuration of Sonabil and charge 132 kV Balipara – Sonabil line.

In 140th OCCM, AEGCL agreed to restore the earlier configuration of Sonabil and charge 132 kV Balipara – Sonabil line. However, they requested NERPC to write to MD, AEGCL so that the work can be expedited at the earliest.

NERPC vide letter No. NERPC/SE(O)/OCC/2018 dated 08.02.2018 has intimated MD,AEGCL the urgency of the work and requested to expedite the same.

Deliberation in the meeting

DGM,SLDC,AEGCL informed that work has been completed partially on 07.02.2018 and fully on 10.02.18 after charging of 132 kV Balipara- Sonabil. **It was decided to drop the agenda item.**

The Sub-Committee noted as above.

D.14. Element outage / shutdown procedure:

To regularise the OCC approved S/D following procedure is laid down by NLDC for implementation in all the regions.

1. The Request of outages which are approved in OCC, need to be sent by the indenting agency (ISTS/ISGS/SLDCs) of the transmission asset at least 3 days

in advance to respective RLDC by 10:00 Hrs. (For example, if an outage is to be availed on say 10th of the month, the indenting agency would forward such requests to the concerned RLDC on 7th of the month by 10:00 Hrs) This practice is necessary to realize the readiness of the agency. In case the request for transmission element outage is not received within the timeline prescribed above, it will be assumed that the indenting agency is not availing the shutdown.

2. The proposed outages shall be reviewed on day ahead basis depending upon the system conditions and the outages shall be approved/refused latest by 12:00 hours of D-1 day
3. RLDC shall be responsible to approve / reject planned outages as per the timeline given in this protocol.

Deliberation in the meeting

NERTS representative stated that the timeline for review of availed shutdown on D-1 basis is insufficient. As shutdown involves mobilisation of manpower, it was requested to increase it to atleast two days. NERLDC stated that the outages will be reviewed on day ahead basis depending upon the system conditions and the outages shall be approved/refused latest by 12:00 hours of D-1 day.

The Sub-Committee noted as above.

D.15. Outage of DIMAPUR_PG Substation:

There was incident of fire at Dimapur POWERGRID S/S on 15.01.18 at 1252 hrs and there after all the S/S elements were kept out except 132kV Imphal-Dimapur and 132 kV Dimapur-Dimapur-1. In view of outage of the S/S connectivity, reliability and stability is severely affected. Telemetry and dedicated voice communication of DIMAPUR_PG, SLDC, Nagaland, DOYANG are also out and operations of grid management hampered.

Early restoration of elements & communication system is requested.

Deliberation in the meeting

EE(Trans), DoP Nagaland informed the forum that currently there is restriction on Nagaland drawal in peak hours. He requested that 132kV Dimapur-Kohima be restored at the earliest. NERTS informed that 132kV Dimapur-Kohima would be restored by 20.02.2018. Members urged upon NERTS to complete restoration works at the earliest including communication system.

The Sub-Committee noted as above.

Action: NERTS.

D.16. Restoration procedure of NER 2017:

RESTORATION PROCEDURE of NER for 2017 prepared and uploaded in the NERLDC website on 30.01.2018. The document can be obtained from the following links**:**

http:/www.nerldc.org/Docs/webupload/Black%20Start%20and%20Restoration%20Procedures%202017.pdf

Deliberation in the meeting

NERLDC informed that Restoration Procedure has been uploaded in NERLDC website and all utilities are requested to provide their valuable comments.

The Sub-Committee noted as above.

Action: All utilities.

D.17. Real-time Scheduling issues:

In 139th OCC meeting scheduling issues were discussed at length. It was requested by forum that all real time schedules are needed to be checked. Apart from uploading all the schedules in NERLDC website, NERLDC is also sending the R1 (published at 2300hrs on D-1) schedule to all SLDCs mail so that all realtime grid managers can go through it and send views if any for error free schedule for next day.

Deliberation in the meeting

NERLDC informed that R-1 is being generated on 23:00hrs of D-1. And it is requested to all SLDCs/CSGS to go through R1 spontaneously and report to RLDC in case of discrepancies. Upon enquiry of OTPC regarding WBES commissioning, NERLDC informed that WBES will be rolled out very soon and it is already operating in Western and Eastern Regions.

The Sub-Committee noted as above.

Action: All SLDCs/CSGS.

D.18. Low voltage issue in Tripura, Mizoram & Nagaland Power Systems

In 136th OCCM, Sr. Manager, TSECL opined that AGTCCPP and Monarchak GBPP are not providing reactive power support as per capability curve. Sr. Manager,

NEEPCO countered that this is not the case and generators are supplying reactive power according to grid conditions. DGM (MO), NERLDC stated that as a practice, generators are not supposed to provide reactive power support to beneficiaries; rather Tripura should have its own Capacitor banks in place to support the grid. He further opined that generators are rated to operate under normal circumstances at around 0.8/0.9 pf lag and inject accordingly. The forum requested TSECL to regulate Bangladesh MVAR drawal and conduct meeting at appropriate level in this regard. Member Secretary, NERPC concluded that Tripura should conduct studies and submit DPR of scheme for installation of Capacitor banks at the earliest.

Also, due to outage of elements associated with Dimapur (PG), low voltage is observed in Mizoram & Nagaland Power Systems during evening peak. System voltage during peak hours at Aizawl (POWERGRID) and Melriat (POWERGRID) drops to 125 kV every day. NERLDC is taking all available corrective action by opening Bus Reactors at Aizawl, Kumarghat, Imphal but still voltage remains low. Generators available in this area such as THEP, KHEP and LOKTAK are requested to maximise MVAR generation as per capability curve to maintain voltage as per CERC guidelines. Also capacitive compensation at local level may be considered.

Deliberation in the meeting

After detailed deliberation it was decided that NERLDC/NERPC would conduct studies regarding Low voltage problem in Tripura, Mizoram in consonance with studies carried out by TSECL and P&ED Mizoram. Regarding funding for capacitor banks installation NERPC would take up the issue with IA/NLDC.

The Sub-Committee noted as above.

Action: TSECL, P&ED Mizoram.

D.19. Windy Weather Preparedness:

All states of North Eastern Region usually experience heavy windy weather for the period w.e.f March 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. In March'17, there were 29 Grid Disturbances and 29 load crashes reported while in April'17, number of Grid disturbances increased to 36 and load crashes to 48 Nos.

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

a. Appropriate action for load – generation balance.
b. Keep frequency, line loading and voltage within prescribed limit.
c. During High Frequency, generation back down of machines within state power system.
d. During High Voltage, keep all 'Capacitors' out of service and all 'Bus Reactors' in service. Use 'Line Reactors' as 'Bus Reactors' after discharging the line.
e. During High Voltage, absorption of 'Reactive Power' by generating unit should be according to 'capability curves'.
f. Operation of Synchronous Condenser Mode in Hydro machine, if possible.
g. Maintain alertness on all substations, generating stations and control centers of state power systems

During windy season, most of the line tripping is 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 by transmission utilities 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.

In 131st OCCM, 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 132nd OCCM, DGM (AM), NERTS informed that installation of anemometers is being carried out in SR-1. After satisfactory performance, anemometers will be installed in other regions.

Deliberation in the meeting

NERLDC highlighted the issue regarding windy weather preparedness. NERLDC as a result of windy 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. In March'17, there were 29 Grid Disturbances and 29 load crashes reported while in April'17, number of Grid disturbances increased to 36 and load crashes to 48 Nos.
As a part of this preparedness, NERLDC has given an activity list that is to be followed by all states of NER. Those activities are follows:

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4. During High Voltage, keep all 'Capacitors' out of service and all 'Bus Reactors' in service. Use 'Line Reactors' as 'Bus Reactors' after discharging the line.
5. During High Voltage, absorption of 'Reactive Power' by generating unit should be according to 'capability curves'.
6. Operation of Synchronous Condenser Mode in Hydro machine, if possible.
7. Maintain alertness on all substations, generating stations and control centers of state power systems

After detailed deliberation it was decided that NERPC would write to all transmission utilities for providing patrolling reports to RPC/RLDC. NERTS was requested to present Action Taken Report for installation of anemometers.

The Sub-Committee noted as above.

Action: NERTS/NERPC.

D.20. <u>Automatic Generation Control(AGC)</u>

Primary, Secondary and Tertiary generation reserves are required for frequency control and ensuring reliable operation of the grid, particularly under high Renewable Energy (RE) penetration.

Primary control has been existing in the Indian Electricity Grid Code (IEGC) but its enforcement has been an issue that has been brought several times before the CERC. Secondary control had been absent in the system so far while tertiary frequency control was introduced only in April 2016 through the Reserves Regulation Ancillary Services or RRAS Regulations of CERC.

CERC has mandated to carry a total of 3623 MW secondary reserves combined in all Regions and 363 MW in NER region. It was observed that Northern Region (NR) and Western Region (WR) have considerable Un Requisitioned Surplus (URS) on bar for 90% of the time. But, Southern Region (SR), Eastern Region (ER) and North Eastern Region (NER) have very less URS for most of the time and may not be able to provide the CERC designated Reserves from URS alone.

The following issues become important when one looks the entire spectrum of frequency control.

1. Ensuring accurate load forecasting and Renewable Energy (RE) forecasting

2. Proper scheduling by each state including indication of reserves
3. Harnessing Reserves within the States
4. Gate Closure
5. Evaluation Area Control Error (ACE) of each control area.
6. Monitoring of primary response from the generating units within the state by SLDCs
7. Periodic monitoring of the data quality needs to be done at the RPC forums
8. Fiber optic communication from Regional Entity power plant to nearest CTU node and there on to RLDCs/NLDC
9. Progressive shifting of AGC services from NLDC to RLDCs'
10. How to ensure adequate reserves for secondary control?
11. Renewable Energy (RE) resources under AGC
12. Encouraging Market Procurement to balance the system in advance

NERLDC suggested that BgTPP, NTPC may be considered for implementation of AGC in NER region.

Deliberation in the meeting

DGM(MO),NERLDC briefly highlighted the philosophy behind AGC as below:

- Primary Control through governor operation should respond within few seconds as mandated in IEGC.
- Secondary Control i.e. **AGC** should kick in after 30 seconds and respond within 15 min.
- Tertiary Control should respond after 15min within 60 minutes.

Currently both primary control and tertiary control (in the form of RRAS) are in service. However, at present Secondary Control is absent in Indian Power System.

North Eastern Region is complying with the IEGC stipulation of restricting the schedules to DC minus normative auxiliary consumption to enable having reserve for primary control.

It was stated that since AGC is primarily required to reduce ACE of inter-regional tie lines a quantum equivalent to largest unit of the region is to be considered. In case of NER, unit of Palatana GBPP is the highest i.e. 363.3MW, which is the quantum of reserve required for AGC. It was informed that CERC has mandated to carry a total of 3623 MW of secondary reserve combined in all Regions out of which 363 MW would be in NER. The Regions like NR and WR can maintain the secondary reserve from URS but in case of NER there is little URS which cannot contribute to 363 MW of

secondary reserve. Now it is to be decided how to provide margin for secondary reserve. It was also informed that like Dadri in NR, BgTPP-NTPC in NER would be the pilot project for AGC in NER. Everybody were requested to go through the Annexure containing NLDC letter dated 29th. January, 2018 to get better insight into the whole issue. Members took note of the developments and requested that the matter be discussed after further developments.

The Sub-Committee noted as above.

Action: All Constituents.

D.21. List of substations in NER up to 33 kV voltage level under operation and list of all elements connected to NER Grid

NERLDC has compiled the list of substations in NER up to 33 kV levels and list of all elements connected to NER Grid as per data available with NERLDC and also from the data collected from the power utilities of NER.

List of NER substations and list of all elements connected to NER Grid are attached as ***Annexure D.21(I)*** *and* ***Annexure D.21(II)*** *respectively*. List of NER substations was circulated among the Power Utilities of NER via email dated 5th Feb'17. List of substations in NER up to 33 kV voltage level is submitted to NERPC for works related PDMS. These documents need to be validated as these may be referred by different utilities for various activities.

Members may please give their comments and finalize *the* list of substations in under operation NER as well as list of all elements connected to NER Grid.

Deliberation in the meeting

NERLDC informed that it has compiled the list of substations in NER up to 33 kV levels and list of all elements connected to NER Grid as per data available with NERLDC and also from the data collected from the power utilities of NER.

The forum appreciated the efforts of NERLDC in compiling the list and requested all the utilities to verify the same at the earliest..

The Sub-Committee noted as above.

D.22. Verification of Transmission Availability Certificate

As per Terms and Conditions of Tariff Regulations of 2014 of CERC, Transmission system availability factor for a calendar month (TAFM) shall be calculated by the

respective transmission licensee, got verified by the concerned RLDC and certified by the Member-Secretary, Regional Power Committee of the region concerned, separately for each AC and HVDC transmission system and grouped according to sharing of transmission charges.

For verification of outage report, following details/documents are necessary:

1. Relevant clause no. of Terms and Conditions of Tariff Regulations of 2014 of CERC against each outage which has been claimed as non -attributable.
2. Relay Indications at each end
3. Disturbance Recorder (DR) output, Event Logger (EL) output & FIR (First Information Report)
4. Reason for outage
5. Other relevant documentary evidences (photograph, patrolling report, LA/PLCC counter reading of pre and post event, etc) wherever required.

It is observed in the past few months that some of these details/documents were not submitted along with outage report which makes it difficult to verify same. It is also observed that few outages were missing in the outage report submitted by Transmission Licensees in the last few months. These issues were intimated to respective transmission licensees and NERPC.

In order to streamline the process, it is suggested that verification outage for a particular month may be done only after submitting

a. All element outages and
b. All the relevant documentary evidences along with relevant clause no. against each outage which has been claimed as non -attributable.

Deliberation in the meeting

DGM(MO),NERLDC stated that outages would be made attributed to respective transmission licensees due to absence of documentary evidence during verification stage. NERPC secretariat would take due care accordingly. After detailed deliberation it was decided that NERTS/NETC would provided the relevant documents during verification process itself and no plea would be honoured after that.

The Sub-Committee noted as above.

Action: NETC/NERTS.

D.23. Procedures of 1st time charging of new non-ISTS elements to nodes of regional entities

As per clause no. 4.1 & 4.2 of CEA (Technical Standards for Connectivity to the Grid) regulations, 2007; a new connection shall not cause any adverse effect on safe operation, integrity and reliability of the grid.

In order to ensure the safe operation, integrity and reliability of the regional grid while charging new non-ISTS elements to nodes of regional entities; it is proposed to follow a procedure by the requester. Draft Procedures suggested by NERLDC for charging of new non-ISTS elements to nodes of regional entities will be presented in the meeting. These procedures were prepared based on the existing procedure for interconnection of a new transmission element in to Grid belonging to any transmission licensee.

Deliberation in the meeting

NERLDC presented a report on the procedure for interconnection of new non-ISTS elements to node of regional entities(attached at **Annexure-D.23**). It was clarified that this is in the event of difficulties faced regarding integration of Tezu ICT. Sr. Manager, NEEPCO informed that for charging of 132kV Pare HEP switchyard, NERLDC is insisting for charging instruction from CTU. He stated that for the 1.4km LILO portion of 132kV RHEP-Lekhi clearance from RIO has already been obtained. Therefore he requested the forum that back-charging of Pare switchyard be allowed for testing purposes, subject that injection into the grid would only be done after charging instruction from CTU is obtained. NERLDC clarified that as per Cl.(1) of "*Procedure for Integration of new transmission element into the grid*" formulated by NLDC charging instruction from CTU is mandatory. NEEPCO agreed to obtain CTU charging instructions at the earliest.

The Sub-Committee noted as above.

Action: NEEPCO.

D.24. Nomination for Training by POWERTECH

Training regarding Task I & Task II by POWERTECH Labs, Canada is scheduled w.e.f 22nd Feb'18 to 24th Feb'18 at Guwahati.

Deliberation in the meeting

SE(C&O),NERPC informed the forum that tentative nominations from all SLDCs have been obtained. He requested all STUs to participate in the forthcoming workshop for fruitful outcome.

The Sub-Committee noted as above.
Action: All concerned utilities.

D.25. Nomination for SLDC survey

During the 20th FOLD (Forum of Load Despatchers) held on 25th January, 2018 at NRLDC, New Delhi, the agenda on "Updating of the Report on the Survey of LDCs in India' which was a part of 'Pradhan Committee Report'" was discussed in detail. It was deliberated that a team will be formed consisting of members from RLDC and SLDCs which will do survey of each LDC in the region.

Accordingly, it is kindly requested to nominate 2 (two) officials from SLDC who will coordinate with RLDC for the survey and also could be a part of the team who will do the survey of other SLDCs. It is requested to inform Name, Designation, Contact Number and Email ID of the nominated executives.

SLDCs please nominate 2 (two) officials and inform their details at the earliest.

Deliberation in the meeting

NERLDC informed that SLDC Meghalaya survey has already been completed on 05.02.18. The prospective schedule for all other SLDCs(as below) was informed:

- SLDC Manipur - 28.02.2018 to 04.03.2018
- SLDC Mizoram - 07.03.2018 to 10.03.2018
- SLDC Nagaland - 14.03.2018 to 17.03.2018
- SLDC Tripura - 21.03.2018 to 24.03.2018
- SLDC Ar. Pradesh - 27.03.2018 to 31.03.2018

The forum thanked NERLDC for proactively carrying out the exercise and requested all SLDCs to submit their nominations at the earliest so that survey may be carried out as per schedule.

The Sub-Committee noted as above.

Action: All SLDCs.

D.26. Procurement of additional 70 Laptops:

Revised Target as intimated by NERTS in 140th. OCC:

i. e-RA : Feb'18

ii. LOA : March'18

iii. Material Dispatch : April'18

OCC expressed serious concern over the delay and stated that there should not be any further delay.

Deliberation in the meeting

NERTS representative intimated that the scheme would be further delayed by 2-3 months as fresh offer would have to be obtained.

OCC viewed the issue very seriously and advised NERTS to stick to the timeline as agreed in 140th. OCC and report status in next OCC meeting.

The Sub-Committee noted as above.

Action: NERTS

D.27. Installation of new L&T SEMs in NER:

Regarding installation of SEMs at Pare and Kameng HEP, NERTS agreed to take necessary action at the earliest.

NERTS also agreed to expedite installation of check meters in ISGS and report the status.

Deliberation in the meeting

NERTS representative stated that installation would be carried out at the earliest and status would be furnished in next OCC.

The Sub-Committee noted as above.

Action: NERTS

D.28. AMR in NER:

NERTS stated the target as below in 140th. OCC meeting:

i. Tendering : Jan'18

ii. Bid opening : Feb'18

iii. LOA : Mar'18

Deliberation in the meeting

NERTS representative stated that Tendering would be by end of Feb'18.

The Sub-Committee noted as above.

Action: NERTS

D.29. Testing of SEMs at accredited laboratory:

NERTS stated that Tendering would be done in Jan'18.

Deliberation in the meeting

NERTS representative stated that tendering would be in Feb'18.

The Sub-Committee noted as above.

Action: NERTS

D.30. Procurement of DCD:

As agreed in 139th. OCC, NERTS was once again advised to initiate necessary action for procurement of DCD.

NERTS agreed to do the needful.

Deliberation in the meeting

NERTS representative intimated that action has been initiated for DCD procurement. In view of requirement of additional DCDs for Pare and Kameng, it was decided that 3 DCDs out of those to be supplied to TSECL would be retained by NERTS on loan basis. These would be replenished after procurement of new DCDs.

The Sub-Committee noted as above.

Action: NERTS

D.31. Erratic reading of SEM:

Regarding rectification of meter error at Dullavcherra end of 132 KV Dullavcherra-Dharmanagar feeder, NERTS representative intimated that rectification would be done at the earliest.

Deliberation in the meeting

NERTS representative intimated that action would be taken at the earliest.

The Sub-Committee noted as above.

Action: NERTS

D.32. Commissioning of RS-485 scheme in all ISGS of NER:

NERTS was advised to initiate action regarding implementation of RS-485 scheme in all ISGS at the earliest in line with point 4 of MOM of SEM meeting. It was agreed that if necessary, L&T personnel should be called for this.

Regarding detailed extensive training by L&T, it was decided that same would be carried out after implementation experience of RS-485 in some Stations and training may also be in one such Stations.

Deliberation in the meeting

NERTS representative intimated that status would be furnished in next OCC meeting.

The Sub-Committee noted as above.

Action: NERTS

D.33. Integration of new RTUs at RHEP:

GE supplied RTU at RHEP will be provided for accommodating the two new 132 kV extension bays being constructed by us at RHEP in the first-second week of March 2018. Integration of new RTU with existing RTU at RHEP and NERLDC control centre shall be required. Hence special permission may be required through appropriate forum in this regard.

Deliberation in the meeting

Sr. Manager, NEEPCO informed that RTUs are under tendering process. In absence of DoP Ar. Pradesh the forum decided to take up the item in next OCC for clarification and resolution.

The Sub-Committee noted as above.

D.34. SEM for two 132kV extension bays at RHEP:

SEM meters for commercial accounting will have to be put in place at the two C&R panels of the 132 kV extension bays, for which requisition to concerned authorities will have to be placed through appropriate forum.

Deliberation in the meeting

DGM(MO),NERLDC informed that NERTS would be instructed to despatch and install the two SEMs at the earliest.

The Sub-Committee noted as above.

Action: NERTS.

D.35. Opening of OTPC GTG-1 Breaker Due to Spurious SPS-3 Signal from Silchar SS:

At 16:34:23 hrs on dated 08/02/2018, Spurious SPS-3 Signal Received from Silchar end and as per SPS-3 Logic GTG-1 Breaker get Open, along with GTG-1 Tie and GTG-2 tie breaker., and Our GT-1 Came into House Load.

On telephonic conversation with Silchar SS, it came under notice that they are performing Battery Bank Switching at Silchar substation at the same Time, which might be resulting of sending SPS-3 Signal.

Deliberation in the meeting

NERTS representative informed that upon replacement of battery bank at Silchar S/S, BCU restarted. This may have resulted in spurious SPS-3 signal being sent to

Palatana. He informed that ALSTOM would visit Silchar S/S very soon and the joint investigation report would be submitted to the forum. SE(C&O),NERPC strongly expressed displeasure for the irresponsible activities by NERTS. He again reiterated that for S/S concerned with SPS has to inform concerned utilities upon undertaking any maintenance related activities that may result in untoward SPS operation.

NERLDC highlighted about the same kind of event was observed at 18:05 Hrs on 21st Sep'17. Palatana GTG- I & II tripped at 18:05 Hrs on 21st Sep'17 due to suspected mal-operation of SPS-3. This issue was taken up in various meetings of NERPC. NERLDC informed that in the special meeting of NERPC held on 11th Oct'17 at Shillong, it was decided that spurious operation of SPS-3 on 21st Sep'17 will be investigated by POWERGRID and come out with report within 1 week. NERLDC informed that this matter was discussed in subgroup meetings & 48th PCC meeting also. However, report has not been submitted by POWERGRID till date. The forum requested POWERGRID to submit the report at the earliest.

The Sub-Committee noted as above.

Action: NERTS.

ADDITIONAL AGENDA ITEM:

D.36. Workshop on Coal Flexing to support Variable Renewable Energy Integration and Grid Balancing:

The Ministry of Power, GoI in association with United States Agency for International Development (USAID) is implementing "Greening the Grid (GtG)" Project to study the impact of large scale integration of renewable energy into the grid. The GtG Project, inter-alia, includes a component of 'Capacity Building' of System Operators. These workshops/ boot camps are being implemented by USAID through United States Energy Agency in collaboration with NLDC, POSOCO under the aegis of FOLD. Two boot camps on wind and solar forecasting and one on Ancillary Markets, have already been held earlier.

A boot camp on "Coal Flexing to Support Variable Renewable Energy Integration and Grid Balancing" is scheduled to be held at NRLDC during March 06-07, 2018, under GtG Project, on non-residential basis. Since, the boot camp is on coal flexing, the role of thermal generators is important.

It is requested to **nominate one officer each from LDC and a representative of thermal generating plant of respective control area**, to be ***physically present for***

the boot camp, at NRLDC. Here it may be mentioned that the representative of USAID has stated that an exclusive workshop for NTPC & Gujarat State Electricity Corporation Limited is being held on **March 08, 2018, jointly by USAID and NTPC**.

In order to have wider participation and minimise issues related to logistics, **SLDCs/RLDCs will connect with NRLDC through Video Conferencing (VC).** Apart from nominated participants, officials of the LDCs / thermal generating plants may attend the meeting through VC.

The venue for the workshop shall be Conference Hall at Northern Regional Load Despatch Centre, 18-A, SJSS Marg, Katwaria Sarai, New Delhi-110016.

Deliberation in the meeting

NERLDC informed the forum that a boot camp on "Coal Flexing to Support Variable Renewable Energy Integration and Grid Balancing" is scheduled to be held at NRLDC during 06-07 March 2018, under GtG Project, on non-residential basis. It is requested to nominate one officer each from LDC and a representative of thermal generating plant of respective control area, to be physically present for the boot camp, at NRLDC. It was also informed that an exclusive workshop for NTPC & Gujarat State Electricity Corporation Limited is being held on March 08, 2018, jointly by USAID and NTPC.

The Sub-Committee noted as above.
Action: All Constituents.

D.37. Nomination for 21st FOLD Meeting:

21st FOLD meeting is scheduled to be held on **26th February, 2018 (Monday)** at NRLDC, 18-A, SJSS Marg, Katwaria Sarai, New Delhi.

The meeting may kindly be attended personally either at NRLDC, New Delhi or via Video Conferencing. Proposed agenda of the meeting is enclosed as per attached letter from Secretary, FOLD. Any additional agenda may please be sent to FOLD secretariat latest by **20th February, 2018**.

Deliberation in the meeting

NERLDC informed the forum that 21st FOLD meeting is scheduled to be held on 26th February, 2018 (Monday) at NRLDC, 18-A, SJSS Marg, Katwaria Sarai, New Delhi. NERLDC requested all the SLDCs to attend the meeting personally either at NRLDC, New Delhi or via Video Conferencing.

D.38. Workshop on Power Plant Familiarization

NERLDC is organizing a **one day workshop on "Power Station Familiarization"** at **NERLDC, Shillong** for better understanding of operation of Power Plants in NER. **Exact date of programme will be intimated later.**

The following topics are planned to cover in this workshop:

a. Basics of Power Station Operation
b. Power Station Protection and Control Systems
c. Operational Issues/Constraints

The workshop assumes importance in view of changing power scenario in the country in general and in NER particular and **will help the Load Despatchers** in refreshing their knowledge and also sharpening their skills.

Deliberation in the meeting

NERLDC informed the forum that NERLDC is organizing a **one day workshop on "Power Station Familiarization"** at **NERLDC, Shillong** for better understanding of operation of Power Plants in NER. NERLDC requested all the utilities to attend the program at Shillong. NERLDC also informed that exact date of programme will be intimated later.

The Sub-Committee noted as above.
Action: All Constituents.

D.39. Comprehensive Scheme Award for Power Sector for FY 2016-2017

SE (O&P), NERPC informed that CEA vide letter No. 8/X/TEC/GM/2018 Dated 02.02.2018 has intimated that GM Div, CEA is the nodal agency for the Transmission System Availability Awards Scheme (Scheme Code: Tr-1) category of award under the above scheme. He requested all the eligible constituents to send the data to CEA accordingly.

The Sub-Committee noted as above.
Action: All Constituents.

Date & Venue of next OCC meeting

It is proposed to hold the 141st OCC meeting of NERPC on second week of February, 2018. However, the exact date and venue will be intimated in due course.

The meeting ended with thanks to the Chair.

*****

Annexure-I

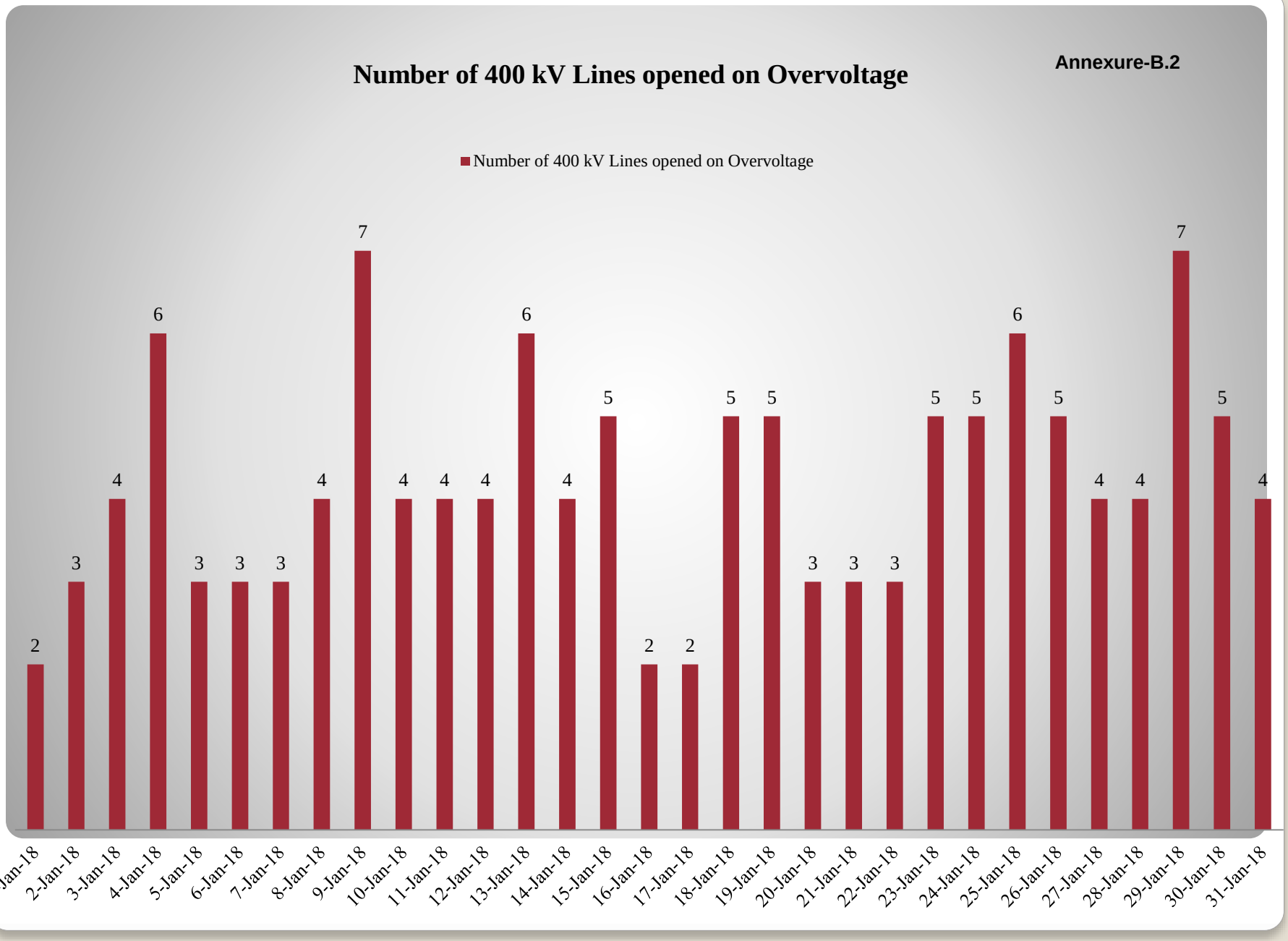
List of Participants in the 141st OCC Meetings held on 14.02.2018

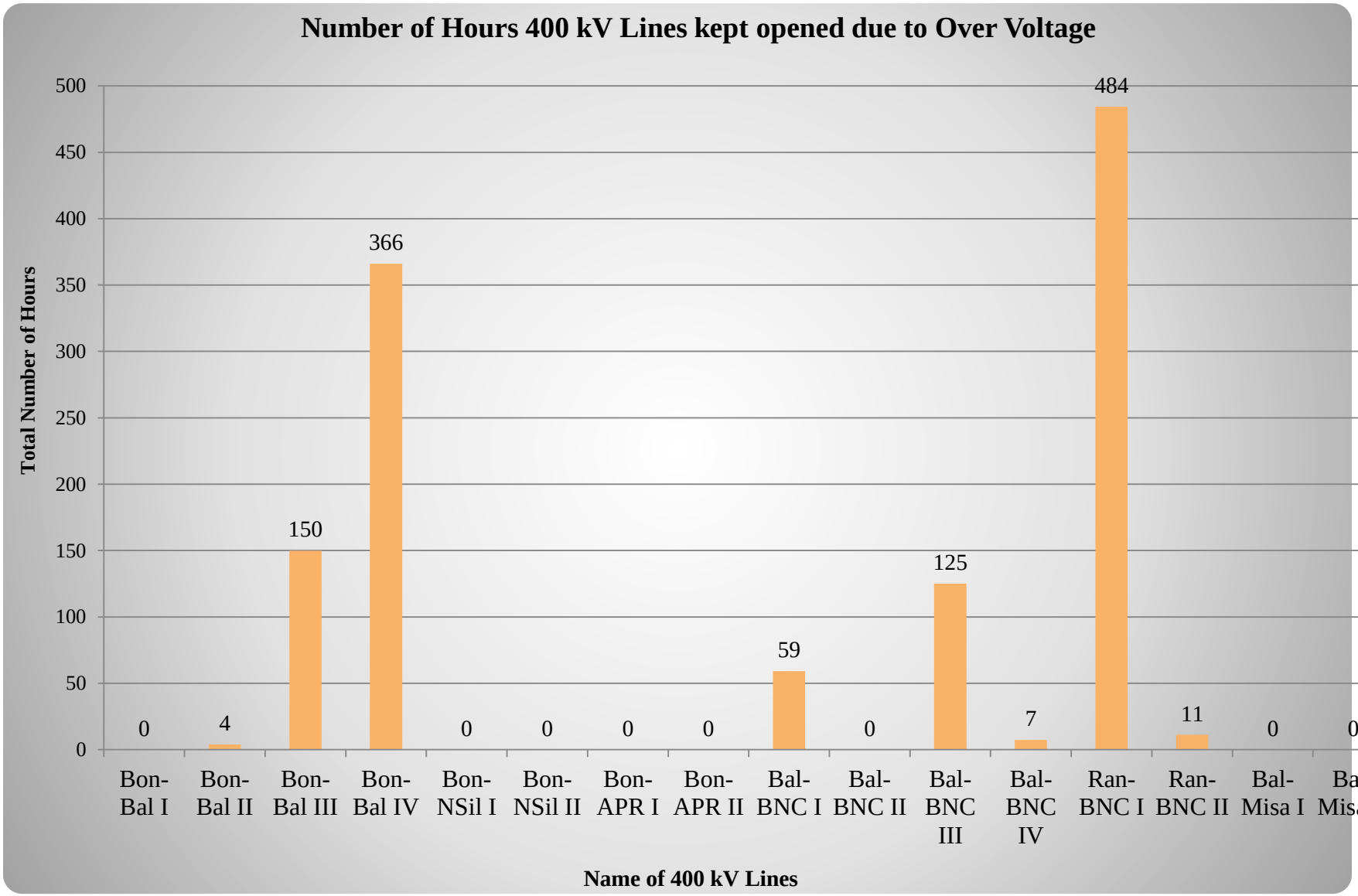
SN	Name & Designation	Organization	Contact No.
	No Representatives	Ar. Pradesh	-
1.	Sh. R. Choudhury, DGM, APDCL	Assam	09435143426
2.	Sh. Dipesh Ch. Das, AGM (LDC)	Assam	09954110254
3.	Sh. Bikramaditya Das, DGM, LDC	Assam	-
4.	Sh. Bimal Ch.Borah ,AGM, SLDC	Assam	-
5.	Sh. J. Das, DGM AEGCL	Assam	-
6.	Sh. K. Goswami, Consultant, APDCL	Assam	09864020019
7.	Sh. Z.A. Choudhury, CGM, SLDC	Assam	09435371734
8.	Sh. H. Shanti Kumar Singh, GM, SLDC	Manipur	08837009146
9.	Sh. Alokesh Koch, AEE, SLDC	Meghalaya	08257060204
10.	Sh. W. Khyriem, EE, GSPD	Meghalaya	09856007107
11.	Sh. Ronald Kharmawphlang, AE, SLDC	Meghalaya	08787693359
12.	Sh. B. Nikhla, EE, SP, MePTCL	Meghalaya	09436314163
13.	Sh. B. Narry, AEE, C&C, MePTCL	Meghalaya	09089000911
14.	Sh. Benjamin L. Thumtea, Sr. EE,SLDC	Mizoram	09436151424
15.	Sh. Lalremruata Sailo, JE, SLDC	Mizoram	09612614372
16.	Sh. Nitovi A.Wotsa, EE, SLDC	Nagaland	-
17.	Sh. Debabrata Pal, Sr. Manager (Comml.)	Tripura	09436500244
18.	Sh. Joypal Roy, Sr. Manager (E/M)	NEEPCO	09435577726
19.	Sh. N.R. Paul, GM	NERLDC	09436302723
20.	Sh. R. Sutradhar , DGM (MO)	NERLDC	09436302714
21.	Sh. Ankit Jain, Sr. Engineer	NERLDC	09436335381
22.	Smt. Momai Dey, Sr. Engineer	NERLDC	09436302716
23.	Sh. Jerin Jacob, Engineer	NERLDC	09402120113
24.	Sh. Keshab Borah, AE	NERLDC	07399276312
25.	Sh. Rajat Nag, Sr. A.E	PGCIL	09402134283
26.	Sh. Pawan Tigga, Engineer (E)	NHPC	09402769593
27.	Sh. Narendra Kr Gupta, Sr. Manager (O&M)	OTPC	09774253426
28.	Sh. Kangkan Paul, Manager Asst.	NTPC	09435029230
29.	Sh. Ratan Singh Basnet, Asst. Mgr	NETC	08811072489
30.	Sh. P.K. Mishra, Member secretary	NERPC	09968380242
31.	Sh. B. Lyngkhoi, Director/S.E (O)	NERPC	09436163419

32.	Sh. Farooque Iqbal, EE	NERPC	09868172987
33.	Sh. S. Mukherjee, AEE	NERPC	08794277306
34.	Sh. S. Imam, AEE	NERPC	08986666366
35.	Sh. S. Ranjan,AE	NERPC	08794276168

Annexure-B.2

Number of 400 kV Lines opened on Overvoltage





Bon-Bongaigaon,Bal-Balipara,Ran-Ranganadi,BNC-Biswanath Charali,APR-Alipurduar, NSil- NewSilliguri

Annexure-D.23

Procedure for interconnection of a new Non-ISTS Elements connected to node of Regional Entity

National Load Despatch Centre(NLDC) vide letter dated 26th May 2014, issued procedure for inter connection of a new transmission element belonging to any transmission licensee, which is a part of inter-state transmission system.

As per clause no. 4.1 & 4.2 of CEA (Technical Standards for Connectivity to the Grid) regulations, 2007; a new connection shall not cause any adverse effect on safe operation, integrity and reliability of the grid.

In order to ensure the safe operation, integrity and reliability of the regional grid while charging new Non-ISTS elements to nodes of regional entities, the following procedure has been developed based on Procedure for interconnection of a new transmission element, which is a part of inter-state transmission system, belonging to any transmission licensee by NLDC.

In accordance with the above provisions and as a part of RLDC operating procedure, procedure for interconnection of a new transmission element belonging to any transmission licensee has been formulated to enable RLDCs for secure and reliable interconnection of new elements. The details of the same are as follows:

1. All the Transmission Licensees intending to commission any Non- ISTS transmission element connected to nodes of regional entities, shall intimate the concerned RLDC the details as given below, **generally (10) days** prior to the anticipated date of first test charging through respective SLDC.
    a. **Annexure A1:** Intimation regarding anticipated charging of the line along with the list of the desired documents being submitted as per **Format I.**
    b. **Annexure A2**: List of elements to be charged and Element Rating details as per **Format IA**
    c. **Annexure A3**: Single line diagram of the concerned sub stations, along with status of completion of each dia/ bus/breakers clearly indicating which elements are proposed to be charged.
    d. **Annexure A4**: List of SCADA points to be made available (as per standard requirement, RLDC would need all MW and MVAr data, voltage and frequency of all

the buses, all the breaker and isolator positions, OLTC tap positions, Main-1/Main-2 protection operated signals)

e. Annexure A5: Location of Energy meters as per relevant CEA regulations

f. Annexure A6: Connection Agreement, wherever applicable along with all annexures.

2. In additions to these documents, charging instructions, details of approval of the transmission scheme from the Standing Committee / STU, availability of line reactors as per approved scheme, approval for changes in the approved scheme, technical parameters of the transmission element required for network modelling shall be made available by STU, as the case may be, to RLDCs.

3. Within 3 days of submission of above information by the Transmission Licensee, concerned RLDC shall acknowledge the receipt of the same, as per **Format II**, and seek clarifications, if any. The transmission licensee shall submit the desired information/documents to the concerned RLDC within next **three days.**

4. The request for charging of new transmission element and towards start of the trial operation as per Format III shall be submitted by the Transmission Licensee to the concerned RLDC, **generally three (3) days** prior to the date of first time charging. There could be a separate schedule for test charging and the final schedule for trial operation, which may be mentioned in the **Format-I** itself. The Transmission Licensee shall also submit the following documents in this regard:
    a. **Annexure B1:** Request for charging of the new transmission element along with the summary of the undertakings being submitted as per **Format III**
    b. **Annexure B2:** Undertaking in respect of Protective systems as per **Format III A**
    c. Annexure B3: Undertaking in respect of Telemetry and communication as per **Format III B**
    d. **Annexure B4:** Undertaking in respect of Energy metering as per **Format III C**
    e. **Annexure B5:** Undertaking in respect of Statutory clearances as per **Format III D**

5. On satisfying itself with the submitted information as stated above under Para 4, the RLDC would issue a provisional approval for charging to the Transmission Licensee as per **Format IV** within two days of receipt of above documents. On the designated day, the transmission licensee shall charge the transmission line and do trial operation as per the timeline mentioned

in **Format III,** after obtaining the real-time code from RLDC. All attempts would be made by the real time operating personnel at the concerned RLDC to facilitate charging and commissioning of the new element at the earliest, subject to availability of real time data and favourable system conditions.

6. Post successful charging and commissioning of the element, following documents shall be submitted by the Transmission Licensee:
    a. **Annexure C1**: Values of the concerned line flows and related voltages as per local SCADA just before and after charging of the transmission element.
    b. **Annexure C2:** Special Energy Meter (SEM) Reading corresponding to the trial run
    c. **Annexure C3:** Output of Disturbance Recorders / Event Loggers

Documents to be submitted while commissioning of Non-ISTS Elements connected to Regional Entity

Annexure	Subject	Remarks
Annexure A1	Intimation regarding anticipated charging of the line along with other documents	As per Format I
Annexure A2	List of elements to be charged and Element Rating details	As per Format I A
Annexure A3	Single line diagram of the concerned sub stations, along with status of completion of each dia/ bus/breakers	
Annexure A4	List of SCADA points to be made available (as per standard requirement, RLDC would need all MW and MVAr data, voltage and frequency of all the buses, all the breaker and isolator positions, OLTC tap positions, Main-1/Main-2 protection operated signals)	
Annexure A5	Type and Location of Energy meters as per relevant CEA regulations	
Annexure A6	Connection Agreement, wherever applicable along with all annexures	
Annexure B1	Request for charging of the new transmission element along with the summary of the undertakings being submitted	As per Format III
Annexure B2	Undertaking in respect of Protective systems	As per Format III A
Annexure B3	Undertaking in respect of Telemetry and communication	As per Format III B
Annexure B4	Undertaking in respect of Energy metering	As per Format III C
Annexure B5	Undertaking in respect of Statutory clearances	As per Format III D
Annexure C1	Values of the concerned line flows and related voltages just before and after charging of the element	
Annexure C2	Special Energy Meter (SEM) Reading corresponding to the trial run	
Annexure C3	Output of Disturbance Recorders / Event Loggers	

Annexure A1

Format I

Intimation by Transmission Licensee regarding anticipated charging of new elements

< Name of Transmission Licensee >

Name of the transmission element :

Type of Transmission Element : Transmission Line / ICT / Bus Reactor / Line Reactor / Bus / Bay/Series Capacitor/Series Reactor

Voltage Level : AC/DC kV

Owner of the Transmission Asset :

Likely Date and time of Charging :

Place:

Date:

(Name and Designation of the authorized person with official seal)

Encl: Please provide full details.

☐ **Annexure A2:** Format IA: List of elements to be charged and Element Rating details

☐ **Annexure A3:** Single line diagram of the concerned sub stations, alongwith status of completion of each dia /bus/breakers

☐ **Annexure A4:** List of SCADA points to be made available

☐ **Annexure A5:** Location of installation of Energy meters as per relevant CEA Regulations

☐ **Annexure A6:** Connection Agreement, if applicable along with all annexures

Annexure A2

Format I A

List of elements to be charged and Element Rating details

I. List of Elements to be charged:

II. Element Ratings

a. Transmission Line

1	From Substation	
2	To Substation	
3	Voltage Level (kV)	
4	Line Length (km)	
5	Conductor Type	
6	No of sub Conductors	

b. **ICT**

1	Voltage (HV kV / LV kV)	
2	Capacity (MVA)	
3	Transformer Vector group	
4	Total no of taps	
5	Nominal Tap Position	
6	Present Tap Position	
9	Tertiary Winding Rating and Ratio	
10	% Impedance	

c. **Shunt / Series Reactor**

1	Substation Name / Line Name	
2	Voltage	
3	MVAR Rating	
4	Switchable / Non Switchable	
5	In case of Bus Reactor, whether it can be taken as line reactor	

(Name and Designation of the authorized person with official seal)

Annexure A4

< Name and Address of Transmission Licensee>

Undertaking by Transmission Licensee in respect of SCADA points

The following Transmission element is proposed to be charged on _____tentatively around _____ Hrs.

Name of Transmission Element:

The SCADA Points shall be made available are as per the following details:

Sl no	**Name of substation**	**Feeder Name**	**List of SCADA points**

Place:
Date:

(Name and Designation of the authorized person with official seal)

Annexure A5

< Name and Address of Transmission Licensee>

Undertaking by Transmission Licensee in respect of Energy metering

The following Transmission element is proposed to be charged on _____tentatively around _____ Hrs.

Name of transmission element:

Special Energy Meters (SEMs) conforming to CEA (Installation and Operation of Meters) Regulations, 2006 have been installed and commissioned. The SEMs are calibrated in compliance of regulation 9 of Part-I of CEA (Technical Standard for Grid Connectivity) Regulations 2007 as per the following details:

S no	**Name of substation**	**Feeder name**	**Make of meter**	**Meter no**	**CT Ratio**	**PT/CVT Ratio**
1	Sending end					
2	Receiving end					

Data Format Conformity: Yes / No
Polarity as per Convention: Yes / No
Time Drift Correction carried out: Yes/No

The data from the above meters would be forwarded on weekly basis to the RLDC as per section 6.4.21 of the Indian Electricity Grid Code (IEGC) (as amended from time to time) and also as and when requested by the RLDC.

Place:
Date:

(Name and Designation of the authorized person with official seal)

Format II

<Name of RLDC>

Acknowledgement of Receipt by

RLDC

This is to acknowledge that the intimation of likely charging of (Name of the transmission element) has been received from (Name of the owner of the transmission asset) on (Date).

Kindly complete the technical formalities in connection with energy metering, protection and real time data and communication facilities and inform us of the same three (3) days before charging of the above transmission element as per Formats III, IIIA, IIIB, IIIC and IIID.

Or

The intimation is incomplete and the following information may be submitted within three (3) days of issue of this acknowledgment receipt.

1. _____-
2. _____
3. _____

……..

Date

Signature

Name:

Designation:

RLDC:

Annexure B1

Format III

<Name of Transmission Licensee>

Request by Transmission Licensee for first time charging and start of Trial Operation

Past references :

Name of the transmission element :

Type of Transmission Element : Transmission Line / ICT / Bus Reactor / Line Reactor / Bus / Bay

Voltage Level :

Owner of the Transmission Asset :

Proposed Date and time of first time Charging :

Place:

Date:

(Name and Designation of the authorized person with official seal)

Encl:

Annexure B2: Undertaking in respect of Protective systems as per Format IIIA

Annexure B3: Undertaking in respect of Telemetry and communication as per Format IIIB

Annexure B4: Undertaking in respect of Energy metering as per Format IIIC

Annexure B5: Undertaking in respect of Statutory clearances as per Format IIID

Annexure B2

Format IIIA

< Name and Address of Transmission Licensee>

Undertaking by Transmission Licensee in respect of Protective systems

The following transmission element is proposed to be charged on _____<date> tentatively around ____ hours.

Sl no and Name of transmission element:

1.0 It is certified that all the systems as stipulated in Part-III of the Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations, 2007 (as amended from time to time) have been tested and commissioned and would be in position when the element is taken into service.

2.0 The protective relay settings have been done as per the guidelines of the Regional Power Committee (RPC) as per section 5.2 l of the Indian Electricity Grid Code (IEGC). The necessary changes have also been made/would be made appropriately for the following lines at the following substations:

Sl No:	Name of the substation	Name of the line

Place:
Date:

(Name and Designation of the authorized person with official seal)

Annexure B3

Format IIIB

< Name and Address of Transmission Licensee>
Undertaking by Transmission Licensee in respect of Telemetry and communication

The following transmission element is proposed to be charged on _____<date> tentatively around ____ hours.

S no and Name of transmission element:

The list of data points that would be made available to RLDC in real time had been indicated vide communication dated _____. It is certified that the following data points have been mapped and real time data would flow to RLDC immediately as the element is charged and commissioned.

S no	**Name of substation**	**Data point (analog as well as digital) identified in earlier Communication dated**	**Point to point checking done jointly with RLDC (Y/N)**	**Data would be available at RLDC (Y/N)**	**Remarks (path may be specified)**
1	Sending end	Analog			
		Digital			
		SoE			
		Main Channel			
		Standby Channel			
		Voice Communication (Specify)			
2	Receiving end	Analog			
		Digital			
		SoE			
		Main Channel			
		Standby Channel			
		Voice Communication (Specify)			

It is also certified that the data through main channel is made available to RLDC as well as alternate communication channel is available for data transfer to RLDC to ensure reliable and redundant data as per IEGC (as amended from time to time). Also, Voice communication is established as per IEGC. The arrangements are of permanent nature. In case of any interruption in data in real time, the undersigned undertakes to get the same restored at the earliest.

Place:

Date:

(Name and Designation of the authorized person with official seal)

Annexure B4

Format IIIC

< Name and Address of Transmission Licensee>

Undertaking by Transmission Licensee in respect of Energy metering

The following transmission element is proposed to be charged on _____ <date> tentatively around ____ hours.

Sl. No. and Name of transmission element:

Special Energy Meters (SEMs) conforming to CEA (Installation and Operation of Meters) Regulations, 2006 have been installed and commissioned. The SEMs are calibrated in compliance of regulation 9 of Part-I of CEA (Technical Standard for Grid Connectivity) Regulations 2007 as per the following details:

Sl no	Name of substation	Feeder name	Make of meter	Meter no	CT Ratio	PT/CVT Ratio
1	Sending end					
2	Receiving end					

Data Format Conformity: Yes / No
Polarity as per Convention: Yes / No
Time Drift Correction carried out: Yes/No

The data from the above meters would be forwarded on weekly basis to the RLDC as per section 6.4.21 of the Indian Electricity Grid Code (IEGC) (as amended from time to time) and also as and when requested by the RLDC.

(RLDC to indicate the email ids where the data has to be forwarded).

Place:

Date:

(Name and Designation of the authorized person with official seal)

Annexure B5

Format III D

< Name and Address of Transmission Licensee>

Undertaking by transmission licensee in respect of statutory clearances

It is hereby certified that all statutory clearances in accordance with relevant CERC Regulations / CEA standards / CEA regulations and PTCC route approval for charging of _____ _____ _____ _____ have been obtained from the concerned authorities.

Place:

Date:

(Name and Designation of the authorized person with official seal

Format IV

Approval for charging

<Name of RLDC>

For Approval no:

To,

The Transmission Licensee,

Sub: Charging of <Name of Transmission element>----Provisional approval

Ref: 1) Your application dated in Format-I
2) RLDC response dated in Format-II
3) Your request and details forwarded on dated in Format III, IIIA, IIIB, IIIC and IIID

Madam/Sir,

1) The above documents have been examined by RLDC and permission for charging of <Name of Transmission element> on or after _____ _ is hereby accorded. This approval is provisional and in the intervening period, if any of the conditions given in the undertakings submitted by you are found to be violated, the approval stands cancelled. Kindly obtain a real time code from the appropriate RLDC for each element switching.

2) The following shortcomings have been observed in the documents at S no 3) above.

a.
b.
c.

Please rectify the above shortcomings at the earliest to enable RLDC to issue the provisional approval for test charging and commissioning of <Name of transmission element>.

Thanking you,

Yours faithfully,

(Name and designation of authorized personnel with seal)