भारत सरकार Government of India
विद्युत मंत्रालय Ministry of Power
उत्तर पूर्वी क्षेत्रीय विद्युत समिति
North Eastern Regional Power Committee
मेघालया स्टेट हाउसिगं फिनांस को- आपरेटिव सोसायटी लि. बिल्डिगं
Meghalaya State Housing Finance Co-Operative Society Ltd. Building
नांग्रिम हिल्स, शिलोंग - ७९३००३
Nongrim Hills, Shillong – 793003.

ISO 9001:2008

Ph. No: 0364 - 2520050
Fax No: 0364 - 2520030
Website: www.nerpc.nic.in

No. NERPC/SE (O)/OCC/2014/**1982-2017** Dated: September 22, 2014

To,

1. Managing Director, AEGCL, Bijuli Bhawan, Guwahati – 781 001
2. Managing Director, APDCL, Bijuli Bhawan, Guwahati – 781 001
3. Managing Director, APGCL, Bijuli Bhawan, Guwahati – 781 001
4. Director (Generation), Me. PGCL, Lumjingshai, Short Round Road, Shillong – 793 001
5. Director (Distribution), Me. ECL, Lumjingshai, Short Round Road, Shillong – 793 001
6. Director(Transmission), Me. PTCL, Lumjingshai, Short Round Road, Shillong – 793 001
7. Managing Director, MSPDCL, Electricity Complex, Keishampat, Imphal – 795 001
8. Managing Director, MSPCL, Electricity Complex, Keishampat, Imphal – 795 001
9. CGM, (LDC), SLDC Complex, AEGCL, Kahilipara, Guwahati-781 019
10. Chief Engineer (WE Zone),Department of Power ,Govt. of Arunachal Pradesh, Itanagar- 791111
11. Chief Engineer (EE Zone),Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791111
12. Chief Engineer (TP&MZ),Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791111
13. Engineer-in-Chief (P&E), Department of Power, Govt. of Mizoram, Aizawl – 796 001
14. Chief Engineer (P), Department of Power, Govt. of Nagaland, Kohima – 797 001
15. General Manager, TSECL, Agartala – 799 001
16. Group General Manager, NTPC, Bongaigoan Thermal Power Project, P.O. Salakati, Kokrajhar- 783369
17. ED, NERTS, PGCIL, Dongtieh-Lower Nongrah, Lapalang, Shillong -793 006
18. ED (O&M), NEEPCO Ltd., Brookland Compound, Lower New Colony, Shillong-793003
19. ED (Commercial), NEEPCO Ltd., Brookland Compound, Lower New Colony, Shillong-793003
20. ED (O&M), NHPC, NHPC Office Complex, Sector-33, Faridabad,Haryana-121003
21. GM (Plant), OTPC, Badarghat Complex, Agartala, Tripura - 799014
22. GM, NERLDC, Dongtieh, Lower Nongrah, Lapalang, Shillong -793 006
23. Member Secretary, ERPC, 14 Golf Club Road, Tollygunge, Kolkata-700033
24. Chief Engineer, GM Division, Central Electricity Authority, New Delhi – 110066

Sub: Minutes of the 101st OCC Meeting - Reg.

Sir,

The Minutes of the 101st OCC Meeting of NERPC held on 10.09.2014 at "Hotel Nandan", Guwahati is enclosed for favour of kind information and necessary action please**.**

Any comments or observations may kindly be communicated at the earliest.

With warm regards,

Encl: As above

भवदीय / Yours faithfully,

बि. लिंगखोइ / B. Lyngkhoi
निदेशक **/ Director/ SE**

Copy to:

1. CGM, AEGCL, Bijuli Bhavan, Guwahati - 781001
2. CGM, APGCL, Bijuli Bhavan, Guwahati - 781001
3. CGM, DISCOM, Bijuli Bhavan, Guwahati - 781001
4. Head of SLDC, Me.ECL, Lumjingshai, Short Round Road, Umjarain, Shillong – 793 022
5. Head of SLDC, Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791 111
6. Head of SLDC, Department of Power, Dimapur, Nagaland
7. Head of SLDC, Electricity Department, Govt. of Manipur, Keishampat, Imphal – 795 001
8. Head of SLDC, Department of Power, Govt. of Mizoram, Aizawl – 796 001
9. Head of SLDC, TSECL, Agartala – 799 001
10. Chief Engineer(Elect), Loktak HEP,Vidyut Vihar, Kom Keirap, Manipur- 795124
11. Addl. GM (EED), NTPC Ltd., Bongaigoan Thermal Power Project, P.O. Salakati, Kokrajhar- 783369
12. DGM (C&M), OTPC, 6th Floor, A-Wing, IFCI Tower -61, Nehru Place, New Delhi – 110019.

वी. लिंगारेड्डी

निदेशक / **Director/ SE**

North Eastern Regional Power Committee

MINUTES OF THE 101st OPERATION COORDINATION SUB-COMMITTEE MEETING OF NERPC

Date : 10/09/2014 (Wednesday)
Time : 10:00 hrs
Venue : "Hotel Nandan", Guwahati.

The List of Participants in the 101st OCC Meeting is attached at **Annexure – I**

Shri B. Lyngkhoi, SE (Operation), NERPC welcomed all the participants to the 101st OCC meeting. He thanked OTPC and team of GE engineers from USA for the excellent work by bringing the unit before the scheduled time. He informed that the forum had allowed OTPC to take shutdown of Unit #1 with great difficulty in-spite of depleted reservoir levels in the region, but stated that soon after OTPC was allowed for shutdown monsoon had arrived and most of the reservoirs were almost full, which have eased the shortfall. But soon after OTPC is brought back to service, Kopili HEP was out from the grid and 200 MW was again not available due to heavy leakage in MI valve. Further, on 04.09.2014 one of the STG Unit#3 of Kathalguri had accidently caught fire and somehow NEEPCO managed to douse out the fire in time which prevented to major catastrophe and due to this the power loss in the grid is 8-9 MW. He stated that though generation in August, 2014 has increased about 28% (i.e. 936 MU in August, 2013 to 1199 MU in August, 2014) but our requirement met increased by only 5% (i.e. 1156 MU against 1101 MU) for the same month of previous year. He highlighted that during the meeting, the issue of Transmission Availability Certification (TAC) and the methodology in which NERPC/NERLDC should certify it, issue of Automatic Demand Management Scheme (ADMS), Transmission Reliability Margin (TRM) etc., would be discussed in thread bear as per CERC's Order. He informed that during the PCC meeting held on 09.09.2014 some of the suggestions taken by the forum would be highlighted in this forum so that further suggestions/comments can be firmed up further. He requested all the members to actively participate in the meeting for fruitful outcome of the meeting.

Thereafter, the agenda items for discussion were taken up.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 100th MEETING OF OPERATION SUB-COMMITTEE OF NERPC.

The minutes of 100th meeting of Operation Sub-committee held on 13th August, 2014 at Guwahati were circulated vide letter No. NERPC/SE (O)/OCC/2014/1731-1766 dated 22nd August, 2014.

NERLDC vide mail dated 24.08.2014 has communicated their observation in respect of 100th OCC minutes of the meeting on Item No. D.4 under TTC of NER-ER Corridor under N-1 Criteria & enhancement of TRM of NER-ER Corridor as below:

"Import Reliability Margin of NER-ER Corridor will be 300 MW considering SPS based load relief. This is for information to the members of OCCM of NERPC. As per detailed procedure for relieving congestion in real time operation of CERC, Import Reliability Margin of NER-ER Corridor will be taken as 300 MW".

Also In the 2nd paragraph of D.9, NTPC vide mail dated 03.09.2014 has requested to record as below:

AGM, NTPC stated that test charging of Bongaigoan TTs (Tie-Transformers) have been completed along with 4 no. 400KV bays. Further charging of start-up power upto 6.6 KV has been planned in the 2nd week of September 2014".

The Sub-committee endorsed the above comments from NERLDC & NTPC and the minute of 100th OCCM of NERPC was confirmed as no other comments/observations were received from the constituents.

ITEMS FOR DISCUSSION

B.1. OPERATIONAL PERFORMANCE AND GRID DISCIPLINE DURING AUGUST, 2014

As per the data made available by NERLDC, the grid performance parameters for August, 2014 are given below:

NER PERFORMANCE DURING AUGUST, 2014

	Energy Met (MU)			Energy Reqr. (MU)		
States	**Aug-14**	**July-14**	**% inc(+)/dec(-)**	**Aug -14**	**July-14**	**% inc(+)/dec(-)**
Ar. Pradesh	52.96	**50.54**	4.8	55.21	**52.23**	5.7
Assam	732.62	**756.43**	-3.1	795.61	**820.21**	-3.0
Manipur	56.18	**49.42**	13.7	58.36	**51.77**	12.7
Meghalaya	131.27	**131.41**	-0.1	152.17	**154.74**	-1.7
Mizoram	35.42	**35.85**	-1.2	37.08	**37.59**	-1.3
Nagaland	53.48	**49.71**	7.6	55.20	**51.72**	6.7
Tripura	94.98	**93.31**	1.8	103.81	**100.68**	3.1
Region	**1156.93**	**1166.6**	-0.8	**1257.44**	**1268.9**	-0.9

	Demand Met (MW)			Demand in (MW)		
States	**Aug-14**	**July-14**	**% inc(+)/dec(-)**	**Aug-14**	**July-14**	**% inc(+)/dec(-)**
Ar. Pradesh	116	**116**	0.0	118	**118**	0.0
Assam	1242	**1187**	4.6	1379	**1329**	3.7
Manipur	138	**125**	10.7	141	**131**	8.2
Meghalaya	280	**297**	-5.7	288	**299**	-3.8
Mizoram	81	**82**	-1.7	85	**83**	2.3
Nagaland	116	**117**	-0.9	121	**120**	0.9
Tripura	235	**238**	-1.3	240	**239**	0.7
Region	**2053**	**1996**	2.9	**2356**	**2263**	4.1

REGIONAL GENERATION & INTER-REGIONAL EXCHANGE IN MU

Month---->	**Aug-14**	**July-14**
Total Generation in NER (Gross)	1199.45	1139.61
Total Central Sector Generation (Gross)	831.51	795.39
Total State Sector Generation (Gross)	367.94	344.22
Inter-Regional Energy Exchange		
(a) NER-ER	80.58	18.85
(b) ER-NER	65.61	81.81
© Net Import	-14.97	198.752

AVERAGE FREQUENCY (Hz)

Month---->	**Aug-14**	**July-14**
	% of Time	% of Time
Below 49.7 Hz	39.38	35.15
Between 49.7 to 50.2 Hz	48.33	49.99
Above 50.2 Hz	12.29	14.86
Average	49.92	49.93
Maximum	50.34	50.36
Minimum	49.36	49.32

From the above table, it is seen that energy requirement & requirement met (MU) of the region decreased slightly where as peak met (MW) increased slightly from the previous month

The Summary of Messages issued by NERLDC for the constituents of NER for the Month of August, 2014 is given as below:

Constituents	Deviation Violation Message			Zero crossing Violation Message		
	Alert	Emergency	Total	Alert	Emergency	Total
AP	2	63	65	2	31	33
Assam	2	34	36	3	19	22
Manipur	0	25	25	0	3	3
Meghalaya	1	47	48	2	5	7
Mizoram	1	45	46	1	4	5
Nagaland	3	48	51	0	12	12
Tripura	1	73	74	0	17	17
AGBPP	0	0	0	0	0	0
AGTPP	0	0	0	0	0	0
RHEP	0	0	0	0	0	0
KOPILI	0	0	0	0	0	0
KHANDONG	0	0	0	0	0	0
KOPILI –II	0	0	0	0	0	0
DHEP	0	0	0	0	0	0
LOKTAK	0	2	2	0	0	0
PALATANA	0	3	3	0	0	0

The Sub-committee requested to avoid the deviation and try to maintain within the permissible limit for the safety of the grid.

FOLLOW UP ACTION

C.1 Synchronization of Pallatana Module -II

The CoD of Unit # 1 of OTPC was declared on 04.01.2014 and 3rd Gas Booster Compressor (GBC) is still in BHEL's factory at Hyderabad. The status is being monitored in subsequent OCC meetings and despite several requests from OTPC, ONGC cannot enhance the amount of supply of gas till date. While monitoring the status of transmission lines associated with evacuation of Pallatana Unit # 1 generation, representative from NETC informed that loop in of one circuit of 400 kV

D/C Silchar – Bongaigoan at Byrnihat S/S has been completed, but the line cannot be charged further since bay for loop out of this circuit is yet to be completed by Meghalaya. Further, NETC informed the members that 400 kV Silchar – Azara – II will be completed by June, 2014 and as intimated by Assam that 400kV sub-station is also ready for charging and once this line is completed, Azara-Byrnihat-I will be back charged through loop out circuit of Azara towards Byrnihat. NETC also mentioned that the balance section of Azara-Bongaigoan can be commissioned after 3 (three) months of getting the forest clearance for two locations in Aie valley and in Goalpara Division respectively.

Deliberation of the Committee

Representative from OTPC informed that CoD of Unit-II is expected to be commissioned by October / November 2014.

The Sub-committee also reviewed the status of commissioning of second unit of OTPC at Pallatana, following Transmission lines of POWERGRID and substation at Azara of Assam. The status as informed by OTPC, Assam and POWERGRID is as follows:

SN	Items	Present status
1	Trial operation and CoD of Unit -II of OTPC at Palatana	Trial run is expected in October, 2014 and CoD is expected in Oct-Nov, 2014
2	400KV D/C Silchar - Melriat line	March, 2015
3	400KV D/C Silchar - Imphal line	November, 2014
4	220KV D/C Mariani (New) – Mokokchung	October, 2014
5	400KV D/C Byrnihat-Bongaigaon line	Byrnihat – Azara section charged on 28.07.2014. Azara–Bongaigaon section is expected by December, 2014
6	400kV Balipara – Bongaigaon D/C line # 3 & 4 with FSC	Forest clearance received. Expected to be commissioned by September 2014
7	400/220 kV sub-station at Azara of Assam	Completed

The Sub-committee requested OTPC to furnish the details for trial run of Unit #2 in advance to NERLDC. OTPC agreed.

The Sub-committee also discussed in detailed about the mechanism of power evacuation at Azara since loop out bay at Byrnihat is not ready. The forum suggested that Assam has to look for implementation of Reverse Power Relay, before drawing power (loading) the sub-station. Assam agreed.

The Sub-committee noted as above.

C.2 SPS scheme for Pallatana

The following four (4) System Protection Scheme (SPS) associated with generating Unit#1 (363.3MW) of OTPC at Palatana has been planned for NER:

Case 1: Tripping of generating unit of OTPC at Palatana

Case 2: Tripping of 400 kV D/C Palatana- Silchar line (with generation from OTPC's plant at Palatana)

Case 3: Tripping of 400 kV Silchar-Byrnihat line (with generation from OTPC's plant at Palatana)

Case 4: Tripping of 400 KV Silchar – Byrnihat line (without generation from OTPC's plant at Palatana)

During 95th OCC meeting, the Sub-committee had reviewed the status of implementation of the scheme and the status was as follows:

Case I & Case IV: Has already been implemented

Case 2-3: GM, OTPC stated that implementation of SPS -2 & 3 mentioned above was discussed in detail and the scheme was finalized in the meeting held with BHEL at Palatana on 17.01.2014. Subsequently some modification has been carried out by BHEL and same will be circulated to all. The commercial offer for implementation of scheme is expected in 10days time and the scheme is will be implemented very soon after completion of procurement process.

OTPC had requested POWERGRID to look into following issues:

(a) SPS at OTPC end should not be modified with commissioning of 2nd Circuit of Silchar _ Bongaigaon 400kV line.

(b) Trip command from two different sources should be available to desynchronize the machine to avoid unwarranted tripping of generating Unit when the generation is more than 200MW. During 93rd OCC meeting, subcommittee had suggested OTPC for getting input from Circuit breakers at both ends of the line (Silchar & Byrnihat) through communication link and to discuss the matter with POWERGRID.

(c) Two out of three logics [i.e. inputs from circuit breaker (s), master trip relay (s) etc.] shall be utilized for desynchronisation of Gas Turbines. During 93rd OCC meeting, subcommittee had suggested OTPC to discuss the matter with POWERGRID.

Deliberation of the Committee

The Sub-committee agreed to refer the issue to system study group to study the special protection schemes associated with Palatana in detail. NERPC will convene a meeting shortly at NERLDC, Shillong to discuss for early implementation of the SPS Case II & III as well as other issues of Islanding Schemes etc.

C.3 Details of Installations and self-certification (by STUs and CTUs) in respect of operationalisation of Under Frequency Relays (UFRs) in NER systems and additional requirement of UFR and df/dt relays:

The OCC regularly review the status of UFR based load shedding in the region. The status as updated in 101st OCC meeting is as below.

Assam & Nagaland: UFRs based load shedding for 220MW & 20MW have been implemented by both the States. However, UFR operation and amount of load relief reports are to be sent to NERLDC regularly. Assam & Nagaland agreed to do the needful.

Manipur: Informed that UFRs based load shedding for all the four stages have been implemented, however, the exact amount of load relief would be furnished soon. Relays have been tested and reports are sent to NERLDC. UFR operation and amount of load relief reports will be sent to NERLDC regularly.

Tripura: UFRs based load shedding for Stages I & II have been implemented. Tendering is done for Stages II & IV, after evaluation of tenders; approval from TSECL Board will be taken. It is expected to implement Stages II & IV by November 2014.

Meghalaya: UFRs based load shedding for Stages I, II & III completed. 4th stage implementation process is held up due to law and order problem in Garo Hills. Reports of UFR operations are sent regularly to NERLDC.

Arunachal Pradesh: 1st stage completed. 2nd stage is under consideration, exact status will be intimated in next OCC. 3rd and 4th stages implementation will take more time.

Mizoram: Status could not be updated as no representative from Mizoram was present.

It was also informed in earlier OCC meeting that UFR operation report in prescribed format on monthly basis is received from Mizoram regularly but other beneficiaries have not sent any information. It was requested that all constituent states of the region to complete the installation of UFRs required for all four stages by July, 2014 end and start furnishing of UFR operation reports to NERPC & NERLDC on monthly basis before OCC meetings.

Implementation of UFR load shedding based on average load as per CERC order in Petition No. 263/MP/2012 on 19.12.13: As per para no 13 of CERC order in Petition No. 263/MP/2012 on 19.12.13:

Quote

We have heard the parties and perused the pleadings. We are in agreement with the petitioner that there is a need to review and estimate the actual load on the feeders and the constituents should consider average load in the feeders for computation of target relief on identified feeders. As sufficient load relief has not been achieved, the respondents are directed to identify more feeders for installation of UFR and df/dt relays and submit the details to SRPC.

Unquote

At present, UFR load shedding based on maximum load is implemented in NER. When UFR based load shedding are required, load of identified feeders are not generally at peak load. As such sufficient load relief will not be achieved for system

requirement. NER beneficiaries are accordingly requested to compute average load of identified feeders where UFRs are installed and to identify additional feeders for installation of UFRs to fulfill the target based upon average load.

Regarding the CERC order mentioned above to compute average load and fulfillment of target, the sub-committee agreed that more feeders need to be identified for sufficient load relief and the status may be monitored in OCC/PCC forum. However, system study is required to identify the amount of load relief before finalization of additional feeders.

C.4 Lines under long outages

During the 100th OCC meeting, the issue for restoration of these lines was reviewed by the committee and the status was as follows:

a) 220kV BTPS – Agia line (one ckt) – [Since Nov'97]: The representative of Assam informed that the work has been **completed on 25.07.2014.**

DGM, NERLDC informed that after commissioning of the line, ATC is reduced by 20/30 MW but system reliability has been increased. However, when one of the circuit of 400 kV Balipara - Bongaigaon D/C line will be under shut down the import ATC will be more compared to earlier cases.

b) 132kV Mariani – Mokokchung line - [Since Apr'02]

Since Assam & Nagaland have decided to discuss the issue bilaterally, ***it was agreed to drop the agenda item.***

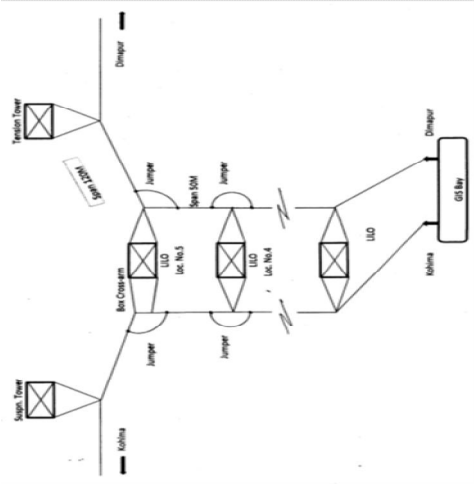
c) 39km of 132kV Rengpang – Jiribam line – [Since Oct'02]

Manipur representative informed that towers are faulty in locations 90 and 91 due to constructions railway line and road by Ministry of Railway and BRTF. Compensation for the same is awaited from the 2 parties and repairing work may be completed after 2 months from receipt of the compensations. The line is expected to be restored by October 2014.

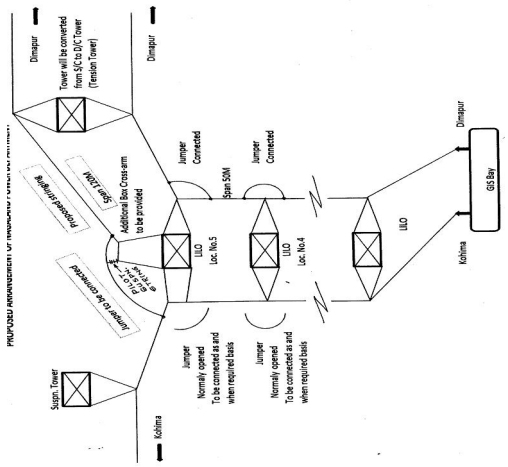
The sub-committee noted as above.

C.5 LILO of 132 kV Dimapur (Nagaland) - Kohima

LILO of 132 kV Dimapur (Nagaland) – Kohima (Nagaland) line at 220/132 kV Dimapur (PGCIL) Substation- [Since Aug'11]:



Before Modification



After Modification

During 100th OCC meeting, EE, DoP, Nagaland informed that that the arrangement recommended by POWERGRID is being implemented. The modification work would be completed by August, 2014 and the matter will be intimated in the next OCC.

Deliberation of the Committee

EE, DoP, Nagaland informed that towers have been erected and stringing is about to start. The work is likely to be completed by September 2014.

The Sub-committee noted as above.

C.6 CT Ratio of Transmission Lines in NER:

During 99th OCC meeting, NERLDC informed that the details of CTs have been received from Tripura, Meghalaya, Nagaland and Kopili (NEEPCO). Assam has handed over the CT details to NERLDC/NERPC during the meeting. NEEPCO informed that details of CT for the remaining stations have already been sent to NERLDC. NERLDC requested NEEPCO to submit again as they have not received the details. Manipur stated that the details of CT will be furnished soon. The subcommittee requested Manipur, Mizoram & AR. Pradesh to submit the CT details to NERLDC at the earliest.

Deliberation of the Committee

The sub-committee requested NERLDC to finalize the list of lines and highlight the restricting/constraints in the power flow on those lines with the existing CT ratio, so that if required, enhancement of CTs would be carried out by the concerned constituents accordingly. It was also suggested that details of CTs which are not being sent to NERLDC may also be highlighted. The required enhancement detail may be furnished by NERLDC in next OCC

C.7 Furnishing Geographic Co-ordinates of Nodes of NER Grid:

Power Maps of NER states are being developed by CBIP. To represent nodes of NER Grid in power maps, Co-ordinates of **existing Nodes, Nodes under construction** & **identified future Nodes** (66 kV & above) of NER Grid are required. Power Utilities of NER are requested to furnish latitude & longitudes of Nodes of NER Grid.

All the constituents have agreed to furnish the above data to NERLDC at the earliest. However, no data from any power utility have been received till date except Meghalaya and Tripura. Assam representative stated in the 99th OCC meeting that they have outsourced the work and the same would be furnished in the next OCC meeting.

Deliberation of the Committee

All the beneficiary states except Manipur have submitted the required information.

The subcommittee requested Manipur to furnish the data at the earliest & the Manipur agreed to furnish soon.

C.8 Up-dated Operating Procedures of NER 2014:

As decided in last OCCM of NERPC, Operating Procedures of NER 2014 in MS Word format & MS Excel format uploaded in NERLDC website and also e-mailed to regional entities of NER to furnish comments/suggestion of this document by 20th September, 2014.

The subcommittee noted.

C.9 Single Line Diagram of Sub-stations, Switching Stations & Power Stations of NER:

Constituents of NER are requested to furnish Single Line Diagram of Sub-Stations, Switching Stations & Power Stations owned by them at the earliest as these diagrams are required for proper visualization.

Deliberation of the Committee

DGM, NERLDC informed that only NERTS have submitted the required information. All other constituents are requested to submit the same at the earliest.

SE(O) stated that SLD of sub-stations, switching & power stations is one of the requisite information relating to preparation of DPR for R&U scheme for funding from PSDF and he mentioned that the revised formats as desired by NLDC/ CEA have been circulated to all the beneficiaries and requested them to furnish the updated status by 15th September 2014 so that the same may be pursued with NLDC/ CEA. He requested all the constituents to submit the DPR to NLDC and CEA with a copy to NERPC at the earliest.

AEGCL informed that Single Line Diagrams (SLDs) of some sub-stations in which the equipments required to be replaced may take some time. However, they assured that the same will be prepared and sent as early as possible. Further, AEGCL informed that DPR for R&U scheme has already sent by them to NLDC & CEA with a copy to NERPC.

Meghalaya & Nagaland have assured that the DPR for above scheme will be sent within one week.

The sub-committee noted.

C.10 Transformer Tap Optimization:

DGM, NERLDC informed that System study was conducted by them considering load, generation and network pattern of September, 2014 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 C.10**. The settings will be reviewed in March, 2015 and also as and when abnormal voltage profile/loss is observed in NER Grid.

Deliberation of the Committee

Representative from NERLDC informed the members that the suggested transformer tap positions have been mailed and sent by post to all the constituents for examination and implementation of the same.

Members noted the same and it was agreed that NERLDC will directly contact the concerned sub-station whenever tap changing of transformer is required.

C.11 Monthly MU requirement & availability of each state of NER as per format:

The following figures of state wise MU requirement and availability were taken from LGBR 2014-15 of NERPC. State wise MU requirement and availability for these months are to be checked. Constituents may kindly verify if the above data are correct.

Requirement:

Name of State	Sep14	Oct14	Nov14	Dec14	Jan15
Ar. Pradesh	70	70	65	65	65
Assam	825	790	660	680	690
Manipur	65	65	65	65	70
Meghalaya	145	170	175	175	195
Mizoram	36	43	43	40	41
Nagaland	60	65	55	55	60
Tripura	120	120	110	120	125
NER	**1321**	**1323**	**1173**	**1201**	**1246**

Availability:

Name of State	Sep14	Oct14	Nov14	Dec14	Jan15
Ar. Pradesh	69	58	47	43	40
Assam	583	534	461	454	439
Manipur	78	72	64	59	56
Meghalaya	268	231	158	148	133
Mizoram	50	46	39	36	36
Nagaland	56	52	38	34	32
Tripura	148	147	134	138	137
NER	**1252**	**1130**	**941**	**914**	**873**

- *These data required for preparation of various reports.*

Constituents may kindly note.

C.12 Monthly MW requirement & availability of each state of NER:

The following figures which were agreed during 101st are given below:

A. Peak Demand in MW

Name of State	Sep14	Oct14	Nov14	Dec14	Jan15
Ar. Pradesh	139	136	125	125	130
Assam	1350	1380	1435	1450	1380
Manipur	135	140	135	135	150
Meghalaya	310	335	350	345	390
Mizoram	86	87	90	80	79
Nagaland	100	140	120	125	130
Tripura	260	310	270	250	245
NER	**2380**	**2528**	**2525**	**2460**	**2455**

B. Peak Availability in MW

Name of State	Sep14	Oct14	Nov14	Dec14	Jan15
Ar. Pradesh	101	130	120	118	110
Assam	1045	993	874	867	835
Manipur	122	134	115	118	109
Meghalaya	401	415	290	276	246
Mizoram	91	91	80	79	75
Nagaland	95	86	75	75	70
Tripura	300	295	285	281	275
NER	**2155**	**2145**	**1839**	**1814**	**1719**

As decided in 96th OCCM, SLDCs are requested to provide the following data:-

A. Off Peak Demand in MW (0800 Hr)

Name of State	Sep14	Oct14	Nov14	Dec14	Jan15
Ar. Pradesh	77	75	69	69	72
Assam	868	856	890	899	856
Manipur	81	84	81	81	90
Meghalaya	202	201	210	207	234
Mizoram	57	57	59	52	51
Nagaland	72	84	72	75	78
Tripura	175	202	176	163	159
NER	**1460**	**1485**	**1555**	**1470**	**1465**

B. Off Peak Availability in MW (0800 Hr)

Name of State	Sep14	Oct14	Nov14	Dec14	Jan15
Ar. Pradesh	121	121	115	114	107
Assam	903	914	831	835	817
Manipur	114	114	104	105	102
Meghalaya	437	390	276	264	240
Mizoram	89	84	76	76	73
Nagaland	83	78	70	71	68
Tripura	284	284	279	274	271
NER	**1955**	**1910**	**1751**	**1740**	**1465**

Constituents requested that the above format may be left blank and the same will be finalized in the meeting and circulate with the minutes.

D. NEW ITEMS

D.1 Generation Planning (ongoing and planned outages)

Hydro Generation Planning: In view of heavy rainfall in the region during August, 2014, NERLDC was requested to intimate the present reservoir level in hydro plants of the region and the planning of generations accordingly. The same is given as below:

The availability of hydro stations of NEEPCO/NHPC are as follows:

Generating Station	Units running	MW	MU	Reservoir
Khandong	1	25	0.60	719.55 (Spilling)
Kopili	100MW expecting by 16.09.2014			Spilling
Kopili-II	1	25	0.6	609.58 (radial gate open)
Ranganadi	3	405	Subject to inflow	
Doyang	3	63	1.476	318.95
Loktak	3	105	70 MU/month	767.6
AGBPP	6 GTs + 2 STGs	200	-	-
AGTPP	4 GTs	75	1.80	-

Notes: - 1) STG#3 of AGBPP under emergency shutdown from 04.09.14 till 3 months.

The sub-committee noted as above.

D.2 Water level and spillage data of hydro stations

Historical data of reservoir level and spillage data of Hydro stations are not available with NERLDC. This information is sometimes asked by various authorities to facilitate in making database for the same. All concerned are requested to furnish the available information to NERLDC as early as possible.

Deliberation in the meeting

DGM, NERLDC informed that the format was sent to all the constituents for necessary submission of data. However, till date no constituents have submitted the data to NERLDC.

The Sub-committee once again requested all the constituents to furnish the data to NERLDC at the earliest.

D.3 Outage Planning Transmission elements

SE (O), NERPC stated that as agreed in the 99th OCC meeting, 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.

Further, he stated that for all inter-regional outage proposals and all outages requiring curtailment/rescheduling of generation/load the rescheduled outage plan if any, must be sent to NERPC Secretariat and only on receiving approval/consent from NERPC secretariat, NERLDC shall process the rescheduled proposal as per the procedure approved by OCC forum. 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 reconfirmed to NERLDC on 7th of the month by 1000 Hr. This practice is necessary to ensure optimal capacity utilization and the time required for associated system study/coordination by/amongst RLDC/NLDC.

Cancellation/Deferment of Shutdown programs approved in OCC forum.

In certain cases, it has been observed that some critical shutdown programs approved in OCC forums are cancelled / deferred by NERLDC on real-time basis at the last moment when extensive mobilization of resources is done at working site. A recent example, shutdown of 132KV Haflong-Jiribam line, which was approved in the 100th OCC forum, was cancelled at the last moment by NERLDC on grounds of non-availability of Palatana generation. The said shutdown was critical in nature in terms of possibility of collapse of an endangered tower and the same was

deliberated in OCC forum prior to its approval. Further, OCC approved shutdown of 132KV Aizawl-Kumarghat line was also cancelled by NERLDC both on the ground of non-availability of Palatana generation. It is to be mentioned that both the said shutdown were approved in the OCC forum considering non-availability of Palatana generation.

POWERGRID stated that in case of such sudden deferment/cancellation of approved shutdown, the transmission licensee is compelled to demobilize all resources & a huge time is consumed for subsequent re-mobilization. In the process, undesirable delay in execution of the job takes place & in certain cases, it becomes difficult to complete the job during the current working season itself. Further, in case of critical maintenance, such delay may lead to major breakdown of elements resulting in unmanageable situation.

Deliberation in the meeting

DGM, NERLDC informed the members that shutdown of the above lines has been deferred due to non-availability of Palatana generation in line with IEGC provisions considering system constraint. The same was also done on many cases earlier. Shutdown of Palatana was not approved when NERLDC gave provisional clearance to NERPC for approving the shutdowns prior to the meeting on the basis of lists submitted by the entities as per prevailing practice. Moreover, NERPC also always insists and advise NERLDC for implementing the shutdowns cleared by them subject to real time situation on various occasions when approached by constituents.

NERLDC appraised the forum regarding the various provisions for deferring planned shutdowns on the ground of system contingency. It is to be mentioned here that the above shutdowns were of planned nature as these were taken up in OCCM.

It was noted that NERLDC representative was not present in the 100th OCC meeting. However, approved shutdowns of OCC are displayed properly in the website of NERPC **under Operational Activities/OCC Approved shutdown.** The same need not be intimated separately to any constituent. Moreover, shutdown of 132KV Haflong-Jiribam line has been granted by NERLDC under emergency shutdown which clearly indicates that the system condition was healthy enough to allow the proposed shutdown.

Regarding Emergency shutdown, NERLDC stated that during emergency situations shutdowns are approved compromising various reliability/security aspects which should not done in case of planned nature of shutdowns. So, when shutdown of 132kV Haflong – Jiribam line was applied through emergency route the same was accorded despite reliability issues.

It was agreed that all shutdown proposal should be approved in the OCC forum and agencies should avoid deferment from the approved shutdown period. Emergency shutdowns should be avoided unless the situation is emergent in nature or the proposed shutdown cannot wait for next OCC for proper approval. NERLDC was requested to ensure the same while granting shutdown in real time basis.

The sub-Committee may kindly discuss and approve the transmission line outages proposed by Constituents for August - October, 2014 as enclosed at Annexure- D.3

D.4 TTC of NER-ER Corridor under N-1 Criteria & enhancement of TRM of NER-ER Corridor:

Subsequent to the commissioning of Azara S/s and associated transmission lines etc, it has been observed from system study that sensitivity towards BTPS has increased and accordingly the credible contingency for calculation of TTC of NER-ER Corridor under present condition is taken as collapse of tower of 220kV BTPS Salakati line [i.e. N-1-1 Criteria] and the TTC is 780/600 MW during Off-peak/Peak considering N-1 of Misa ICT also. Further as per detailed procedure for relieving congestion in real time operation of CERC, size of largest generating unit in the control area/ group of control area/Region will be import transmission reliability margin (TRM) of the corridor. Import TRM of NER-ER corridor is presently taken as 50 MW. However now 363 MW of Palatana is largest size of machine in NER Grid and being located in southern part of the region the TRM is directly related to the outage of this unit. Accordingly import TRM of NER-ER corridor needs to be revised; around 300 MW considering SPS based load relief is considered.

During 100th OCC meeting, the forum did not agree to import TRM of NER-ER corridor and revision of 300 MW load relief SPS.

Deliberation in the meeting

DGM, NERLDC further informed that as per detailed procedure for relieving congestion in real time operation of CERC, size of largest generating unit in the control area/ group of control area/Region is import transmission reliability margin (TRM) of the corridor. Installed capacity of Palatana Module 1 which is largest size machine of NER and located in southern part of the region is 363 MW. Import TRM is directly related to the outage of this machine.

Import TRM of NER-ER corridor was revised to 300 MW considering SPS based load relief. However, Import TRM of NER-ER corridor will be 35/50 MW during the period of outage of Module of Palatana.

NERLDC gave presentation on system studies, carried out by them, elaborating the methods to arrive at the TRM of 300 MW. The issues of sensitivities of different corridors in case of tripping of Palatana units which result in enhanced TRM were appreciated by the constituents.

The forum requested NERPC Secretariat to take up the matter with higher authorities on the matter so that some special relaxation for TRM may be given to NER states considering insufficient transmission corridors. In the meantime, system study group will finalize the amount of SPS related load relief for each state so that TRM may be reduced to desirable amount.

Committee noted as above.

D.5 Review of Generation Run-back frequency setting of Pallatana machines:

It has been observed that Pallatana generation starts decreasing when system frequency is more than 50.60 Hz (Generation run back continues till frequency reaches 50.3 Hz). It is requested to review the settings to avoid sharp decrease of generation in case of system isolation resulting collapse of the system.

During 100th OCC meeting, OTPC representative informed that the matter will be taken up by them with the manufacturer and the status would be intimated in the next OCC meeting.

The unit was under shut down w.e.f 20.08.14 to 01.09.14 and it is understood that OTPC carried out several activities in presence of manufacturer's representative.

Deliberation in the meeting

OTPC representative informed that the run-back frequency is set at 50.7 Hertz and re-setting frequency is set at 50.5 Hertz. The machine settings are yet to be confirmed by GE which may be intimated in the next OCC meeting.

Committee noted as above.

D.6 Status/Load ability of 132 kV Lumshnong – Panchgram Line:

Meghalaya informed that since the line is old, loading of above line needs to be fixed at a safe thermal limit. Hence both Assam & Meghalaya may look into the matter for strengthening of the system.

During 98th OCC meeting, Assam informed the members that healthiness of the line has been checked by AEGCL till Panchgram and it was found that the line is very old and cannot be loaded up to 50 MW. Healthiness of the line from Lumshnong end may be confirmed from Me. PTCL.

During 99th OCC meeting, Member Secretary (I/C) informed that the 132kV Lumshnong – Panchgram line is an interstate line benefiting the NER region. Strengthening of this line is essential to increase the loadability of the line beyond 50MW and this will require huge expenditure. He further stated that possibility of funding from PSDF may be explored as per PSDF guidelines.

He advised Me.ECL to apply for funding from PSDF by filling in prescribed formats as provided by CEA/NLDC.

SE, Me. ECL informed that the DPR for the same is almost ready and the same will be sent to NERPC Secretariat for further action in this regard.

Deliberation in the meeting

Forum requested NERLDC to carryout system study to assess the required loadability of the above line and intimate the Operation & Protection sub-committee responsible for system security & reliability so that the concerned constituents may take appropriate action as per recommendation of the committee.

The sub-committee noted as above.

D.7 Status of Construction of:

1. **220/132/33 kV sub-station at Sonapur**
2. **LILO of 132 kV Kahilipara – Umtru Line at Byrnihat.**

During 99th OCC meeting, members requested Assam and Meghalaya to resolve the matter bilaterally and inform the members in the next OCCM.

Deliberation in the meeting

SE, SLDC, Me. ECL informed that meeting between Assam & Meghalaya was held on 01.08.2014 and they have decided to resolve bilaterally. Hence the agenda may be dropped and if required, the same will be intimated by them once resolved.

Committee noted as above.

D.8 Frequent disruption of power supply to Kameng HEP:

It was informed in 99th OCC meeting that, the Department of Power, Govt. of Arunachal Pradesh was allowed to draw power from a Tee-connection at Tipi (near Bhalukpong) from the 132 kV Balipara - Khuppi Transmission Line. The Tee-connection was energized on 31-05-11 and drawal of power was temporarily allowed for two months only within which time the LILO System was supposed to be commissioned. It may be noted that the drawal of power in the 132 kV Balipara - Khuppi Line is monitored from Balipara end and therefore the drawal of power in the said Tee-connection is being accounted.

However, due frequent over-drawal by Department of Power, Govt. of Arunachal Pradesh from the said Tee-connection, 132kV Balipara-Khuppi line is frequently opened from Balipara substation which hampers the construction work of Kameng HEP of NEEPCO.

It was agreed in the 99th OCC meeting that NEEPCO will remove the Tee-Connection in consultation with Ar. Pradesh.

During 100th OCC meeting, the Sub Committee also expressed serious concern about the Tee-Connection made at Bhalukpong from Balipara-Khuppi Tr line which is not permissible as per IE rules. The OCC forum has advised NEEPCO to open the T-connection with immediate effect.

Deliberation in the meeting

After detailed deliberation, the sub-committee decided that Ar. Pradesh should ensured that first priority of power supply should be extended to their local domestic consumers, then uninterrupted construction power supply to Kameng HEP of NEEPCO and whatever surplus after meeting these two loads, they can extend power supply to the other bulk consumer at Bhalukpong.

D.9 Commissioning of 315 MVA ICT at NTPC Bongaigoan & also 220 kV BTPS(Assam):

NTPC D/C line for off loading 220kV Salakati-BTPS D/C line – It has been observed that the 220 kV Salakati – BTPS D/C line is getting overloaded during peak hours posing threat to system security. For off-loading the link it is requested to NTPC for taking actions for early commissioning of 315 MVA ICT at NTPC Bongaigaon & also 220 kV BTPS(Assam) – NTPC D/C line for off loading 220kV Salakati-BTPS D/C line. As no representatives from NTPC were present in the 99th OCC meeting, the subcommittee advised NERLDC/NERPC to take up the matter with NTPC for early commissioning of 315 MVA ICT at NTPC Bongaigoan.

NERPC vide letter dated 30.07.2014 has written to NTPC in this regard, but no reply was received from them.

During 100th OCC meeting, NTPC stated that test charging of Bongaigoan TTs (Tie-Transformers) have been completed along with 4 no. 400KV bays and charging of start-up power upto 6.6 KV will be completed by September 2014.

Deliberation in the meeting

Since no representative from NTPC was present, the status could not be updated.

The Committee noted as above.

D.10 Maintenance of Inter-State and Intra-State Transmission in Ar. Pradesh:

Arunachal Pradesh has 4 segments of EHT transmission lines connected to NER grid at Hoj, Balipara and Kathalguri. Presently they are maintained by POWERGRID, NEEPCO and DOP Arunachal Pradesh as per ownership of the lines. These four segments do not have interconnections of any kind within the territorial

jurisdiction of the state of Arunachal Pradesh. As such, at times of line breakdown of any of these segments, maintaining power supply to those areas becomes impossible due to lack of alternate transmission line, throwing the entire area into darkness for quite long causing extreme hardship to basic users and causing huge economical losses to industry and commerce. This is aggravated by multiplicity of agencies engaged in maintaining this system of only about 389 circuit KM within the state. For instance, Hoj-Ziro 132 KV by POWERGRID, Ziro-Daporijo-Aalo 132 KV by DOP Arunachal and Balipara-Bhalukpong-Khupi by NEEPCO. Such kind of present arrangement had caused lots of confusion amongst field level staffs due to difficulty in having an inter-organisational coordination/interaction on day to day basis at the affected areas in real time. In the event of system failures and occurrence of faults in the systems prolonged response time and delays in restoration time has been observed due to lack of co-ordination. Such situation had arisen on several occasions in the past and had to leave the faulty line unattended for long time.

A case of such an instance had been reported in 132 KV Balipara-Bhalukpong-Khupi line in the month of June 2014 where the transmission line between Bhalukpong- khupi remained off for about 20 days keeping entire two districts of West Kameng and East Kameng in absolute darkness. The cause was due to damage of Tower No 159 near Ziro Point by landslide on 22nd June 2014. The line is under maintenance by NEEPCO of which the work has been outsourced to M/S Mega Electric reportedly on Annual Maintenance Contract basis.

M/S Mega Electric responsible for all such works is not able to keep up its responsibilities and it is always the DOP Arunachal Pradesh who had to do the actual work of maintenance looking at the importance and urgency of the issue. During the same month of last year the same line remained faulty for 15 days simply just because petty preventive maintenance as basic as clearance of jungles was not carried out by the agency. In other words, the NEEPCO is not bearing its responsibility of maintaining and upkeep of the line.

In the circumstances and the scenario existing in the state of Arunachal Pradesh, it is proposed to place before the Committee and to discuss and to take a resolution as follows:

1. All 132 KV and above Transmission line functioning as Inter- State connectivity should be transferred to the PGCIL (CTU).

2. All 132 KV and above which are Intra-State shall be transferred to the STU (i.e. Department of Power, Arunachal Pradesh).

3. Henceforth Intra-state systems should not be developed by PGCIL as regional projects unless it is done under a bi-lateral agreement with the concerned state.

Deliberation in the meeting

1. All 132 KV and above Transmission line functioning as Inter- State connectivity should be transferred to the PGCIL (CTU).

The sub-committee suggested that since different lines are owned by different organizations having different approved tariffs, some of them are included in the Associated Transmission System of generating stations, transferring ownership is complicated issue and practically not feasible. The sub-committee requested that concerned organizations should ensure maintenance of the corresponding lines.

2. All 132 KV and above which are Intra-State shall be transferred to the STU (i.e. Department of Power, Arunachal Pradesh).

Same as Sl. No. 1 above.

3. Henceforth Intra-state systems should not be developed by PGCIL as regional projects unless it is done under a bi-lateral agreement with the concerned state.

PGCIL is developing regional projects for 132 kV lines and above, as the projects below 132 kV level cannot be included in the Point of Connection tariff as per CERC regulation. Any project below 132 kV level may be constructed by PGCIL under bi-lateral agreement with the concerned state, and the same will not be included in national transmission tariff.

The sub-committee noted as above.

D.11 Agenda items from TSECL:

D.11.1 Load & Generation planning for Durga Puja:

TSECL: The estimated peak demand of the state during Durga Puja will be 300 MW. Availability from own generation will be about 90MW.The balance 210 MW has to be drawn from the grid. Like previous year TSECL needs support from all NER states,

NERLDC, NERPC, PGCIL, OTPC, NEEPCO, and NHPC. TSECL has requested Meghalaya & Mizoram for additional support like previous year for 40MW & 30 MW respectively. Accordingly Open access arrangement is being done apart from bilateral drawal from Mizoram & Meghalaya.

NERLDC: Like previous years it is required to finalize advance planning for Durga Puja Load & generation. For this, demand of states and availability of generators are required for the puja days so that prior actions for tying up imports by states and planning for secure operation of grid can be finalized. All beneficiary states & ISGS are requested to furnish their demand & tentative availability quantum for the period so that operational planning can be finalized by NERLDC in advance.

Deliberation of the Committee

Sr. Mgr, TSECL informed that Me.ECL has agreed to give 40 MW during Puja and he expressed his sincere appreciation to them and stated that the same will be reciprocated by TSEL. He also informed that Mizoram has been requested to support about 30 MW and the approval is awaited from them.

NERLDC gave a presentation for system studies considering 5 different contingency cases (presentation enclosed at Annexure D.11.1) during Peak hours on the Puja days elaborating limiting factors which may restrict TSECL drawal.

The sub-committee noted as above and requested TSECL to strictly adhere to the grid real time instruction of NERLDC during puja festival so as to avoid any incidences.

D.11.2 Revision of scheduling is not intimated well in time to SLDC,Tripura.

In the 100th OCC meeting, it was decided that Palatana will go on shutdown from 00:00hrs of 20/08/14 & accordingly NERLDC published the entitlement for the beneficiary. On that basis, TSECL planned their schedule of drawal & injection based on the available generation as notified by NERLDC.

However it has been observed that suddenly at about 11:15hrs on 19/08/14, Palatana has rescheduled its generation from 00:00 hrs to 11:30hrs for 20/08/14 resulting in huge surplus generation in respect of TSECL. As per DSM regulation, TSECL is forced to back down its own generation as well as central sector

generation to match with real time operation. Due to sudden change of schedule, huge penalty along with other applicable charges like POC, POSSOCO, Fixed charges etc has to be borne by TSECL while TSECL is no way liable for such act.

Deliberation of the Committee

Shutdown of Palatana Unit-I was approved by 100th OCC from 00:00 Hrs of 20.08.14 for combustion inspection as stipulated by the manufacturer. The shutdown was very critical as GE gas turbine needs to be inspected after completing 8000 EOH. The shutdown has been delayed for many months as hydro generations in the region was minimized due to low rainfall till August 2014. The shutdown is finally approved with minimum period for inspection from 00:00 Hrs of 20.08.14 till 00:00 Hrs of 04.09.14 (18 days only). The approved shutdown was then uploaded in the website of NERPC http://www.nerpc.nic.in under Operational Activities/OCC Approved shutdown. However, while availing shutdown in real time, NERLDC delayed the approved shutdown till 11:45 hrs of 20.08.14, causing difficulties in the load management.

Further, constituents informed that they have received the information only at 23:15 hrs when all the beneficiary states have already committed to buy power from Exchange to meet the shortfall during Palatana shutdown from 00:00 hrs. As the exchange commitment cannot be cancelled, the delay in shutdown caused huge financial loss to the beneficiary states due to Deviation Settlement Mechanism, reduction in own generation, etc. without any lapse from their part. The very spirit of demand management system is defeated due to improper communication, which could have been communicated by NERLDC well in time before committing to exchange. Besides, it was also felt that load relief of 200 MW in NER is insufficient to help the grid as other regions are having more Installed Capacities compared to NER.

DGM, NERLDC stated that due to backing down/ shutdown of considerable quantum of generation in Northern Region, NLDC, which is the apex body for ensuring system security of the entire country, directed NERLDC to delay approved planned shutdown of Pallatana station. The information was received from NLDC at 20:00 hrs and OTPC was requested to defer their shutdown accordingly. Ultimately OTPC agreed to defer the shutdown upto 11:30 hrs of 20.08.14 (intimated through

mail at 21:56 hrs) and accordingly the information was sent to SLDCs at 21:58 hrs by NERLDC which is well within the time stipulated in IEGC. NERLDC also stated that in a dynamic scenario of large Power System some actions might be required to take in real time for system security & reliability necessitating minor changes in planned nature of activities. Hence, if OCC approved shutdowns are made sacrosanct then system security might have to be sacrificed which is not desirable.

After detailed deliberation, it was decided that such incident may be prevented in future to the extent possible and NERLDC may safeguard the interest of beneficiaries at all times. Any deferment from approved shutdown timing may be communicated to all constituents concerned, well in time so that proper demand management can be taken care by the constituents.

D.12 Sale of power, under requisition, over drawal & shortfall:

It has been observed that some beneficiaries are under-requisitioning their share from ISGS as well as selling and simultaneously shortfall is also shown. Beneficiaries are requested to clarify the matter i.e. sales/under requisition could take place irrespective of shortages and not necessarily are an indication of surplus. It is further observed that beneficiaries also indicate shortfall even when sufficient import ATC margin was available for purchase of power through STOA. It may however be noted that shortfall figures furnished by beneficiaries are part of reports furnished to MOP and other agencies; NERLDC has been asked to clarify the dichotomy. In view of this, beneficiaries are requested to furnish the breakup and nature of shortfall figures so that the same can be appraised to concerned authorities accordingly.

Deliberation in the meeting

After deliberation, it was agreed that concerned beneficiaries, while sending daily reports to NERLDC, may intimate the reasons of shortfall if any. Different categories for shortfall may be made so that proper justification is made while depicting shortfall in the state since under-requisition, over-drawal, etc are also observed in the same time. The reasons of shortfall maybe due to transmission constraint in the downstream evacuation, commercial reasons, etc.

The Committee noted as above.

D.13 Outage of entire Power Station:

On 28.08.14 at 2129 hrs all the running units of AGBPP tripped due to tripping of station transformer, as intimated by AGBPP control room. It is to mention here that Palatana Block-I was under shut down during that period. Despite of the severity of the issue, detail report has not been issued by AGBPP regarding exact cause of the tripping, which is a violation of grid code. NEEPCO is requested to take proper action for event reporting in line with IEGC for any event. In case the tripping of all the running units is attributable to the failure of the station transformer only, NEEPCO may plan a backup mechanism to avoid repetition of such incidents.

Deliberation in the meeting

NEEPPCO informed that due to some maintenance work, the units were kept under the same bus and unfortunately that very bus tripped causing outage of all the units. He further stated that such case was rarely occurred and NEEPCO has taken due care that such incident will not happen again.

The Committee noted as above.

D.14 Automatic Demand Management Scheme (ADMS):

Assam stated that the Honorable Commission in its order dated 25.04.2014 in Petition No. SM/005/ 2014 has directed all Officer In Charge of the respondents State Transmission Utilities/ SLDCs to Show cause latest by 15.05.2014, as to why action under Section 142 of the Electricity act 2003 should not be taken against them for non compliance with CERC's direction and the provisions of the Act and the Grid Code with regard to implementation of the Automatic Load Management Scheme.

In this regard a reply was given by Assam to Hon'ble commission that due to non availability of in house expert, the ADMS could not be implemented in Assam. However the other schemes like installation of UFR, Islanding scheme, SPS etc. were intimated to the commission. But the petitioner NLDC in the hearing intimated that the ADMS scheme is basically to restrict the over drawl of power from the system and every State/Distribution Licensees should install ADMS without any delay in order to maintain the security of the grid.

During 98th OCC meeting, SE(O) informed that ADMS was discussed in other RPCs also and stated that none of the States have implemented ADMS fully. However, some states in SR are in the progress of using ToD metering for bulk consumers

and tariff is different for different time so as to encourage them to shift part of their overall electricity use from peak demand where the tariff is high. By using this mechanism overdrawl especially during peak hours is reduced. He also mentioned that best way to implement this ADMS is by integrating through SCADA which constituents can explore the possibility. Further, he stated that many new schemes proposed by POWERGRID viz., GSES, WAMS etc., are in the offing but the logic, technology and so on are yet to be fully understood. He requested constituents to send their views to CERC about the difficulties faced by them.

AGM, SLDC, Assam stated that issue has been taken up by them with CERC and they have explained to them about the action taken by Assam like UFR based load shedding and the GSES scheme of POWERGRID etc.,, but the same was not agreed by CERC.

The sub-committee unanimously decided that they will request NLDC or POWERGRID to arrange the seminar in this regard so that the logic, technology, communication facilities etc., need to be understood first before they can proceed further.

Deliberation in the meeting

SE(O) informed that he has discussed the matter with other RPCs and only WRPC is in advance stage for implementation of ADMS. However, a presentation on ADMS related issue was given by TATA Power in OCC meeting of NRPC and stated that he will take up the matter with them and request to give a presentation in next OCC meeting.

The Committee noted as above.

D.15 Submission of data/information of transmission elements expected to be added/commissioned within next 2 months to NERLDC:

DGM, NERLDC informed that List of transmission elements which are expected to be added/commissioned within next 2 months is to be informed to NERLDC by concerned transmission utility. All data related to these elements are to be furnished as per formats circulated by NLDC vide letter dated 26.05.14 within stipulated time.

For kind information to the OCC members.

D.16 Estimated Transmission Availability Certificate (TAC) for the month of July, 2014.

The Estimated Transmission System Availability for the month of July, 2014, furnished by PGCIL, is **99.9820%.** The detail outage data for calculation of Transmission System Availability furnished by PGCIL, is at **Annexure D.16.** NER constituents are requested to kindly communicate their views and observations, if any, by 29th September, 2014 so that Final TAC for the month of August, 2014 may be finalized by NERPC Secretariat.

Deliberation of the Committee

SE (O) informed that as per Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014-19, the Transmission System Availability factor for a calendar month (TAFM) w.e.f. 1st April, 2014 shall be calculated by the respective transmission licensee, got it verified by the concerned RLDC and certified by the Member Secretary, Regional Power Committee of the concerned region, separately for each AC and HVDC transmission system. He highlighted some of the important points on the regulation regarding transmission availability calculations as follows:

- For Ac system, two trippings per year shall be allowed.
- After two trippings in a year, additional 12 hours outage shall be considered in addition to the actual outage
- In case of outage of a transmission element affecting evacuation of power from the generating station, outage hour shall be multiplied by a factor of 2.
- The weightage factor for each category of transmission elements shall be calculated as per regulation.

The procedure for finalizing certification by NERLDC was deliberated in detail and the following points were agreed: -

Planned Outages: -

1. In all cases of outages, RLDC will certify the actual outage period. The outage period will be cross-checked with the approved outage period in OCC forum. All planned outages should be availed by the executing agency as approved in the OCC forum.

2. Any deferment from approved outage hours and approved outage days may be

intimated by the agency to NERPC with a copy to NERLDC, justifying the reason of deferment. The deferred hours/ days without proper justification will be deducted from the availability period.

Emergency Outages: -

1. Outages beyond the control of the agency when neither RPC nor RLDC could be informed earlier and immediate remedial actions are required.
2. Outages planned in OCC forum but are of emergency in nature like tower in danger; CBs need immediate replacement, etc. However, the agency has to intimate RPC with a copy to RLDC.
3. Outages that cannot be delayed till next OCC forum for proper approval.
4. However, the agency has to intimate RLDC with the reason of outage for all the above cases which may be approved in OCC forum.

Transient Outages: -

1. Outages that are of transient in nature due to lightning, mal-operation of relays, etc.
2. Transient Earth Fault, Auto-reclosure, phase-to-phase fault, etc.
3. Outages due to infringements.
4. However, the agency has to intimate RLDC with the reason of outage for all the above cases which may be approved in OCC forum.

Outages due to others: -

1. Outages due to fault in the downstream protection.
2. Outages as per direction of RLDC for desired system condition.
3. Outages due force majeure/ Acts of God.
4. However, the agency has to intimate RLDC with the reason of outage for all the above cases which may be approved in OCC forum.

Force Majeure: -

1. Act of God including lightning, drought, fire and explosion, earthquake, volcanic eruption, landslide, flood, cyclone, typhoon, tornado, geological surprises, or exceptionally adverse weather conditions which are in excess of the statistical measures for the last hundred years; **or**
2. Any act of war, invasion, armed conflict or act of foreign enemy, blockade, embargo, revolution, riot, insurrection, terrorist or military action; **or**
3. Industry wide strikes and labour disturbances having a nationwide impact in India;
4. However, the agency has to intimate RLDC with the reason of outage for all the above cases which may be approved in OCC forum.

Conditions given in SoR: -

1. Only 2 trippings per annum allowed for each AC system, additional 12 hours may be added for each tripping in case of trippings more than 2 in a year.
2. Further, in case of outage of a transmission element affecting evacuation of power from a generating station, outage hours shall be multiplied by a factor of **2**.

Further suggestions of PCC/ OCC: -

1. In case of force majeure due to lightning, the agency may send DR waveform to RLDC/ RPC for further studies.
2. Option of installing lightning mapping was suggested.
3. NERTS was requested to give presentation in next OCC to highlight the DR waveform nature so that same can be used for certification.
4. Two trippings per year is allowed for each AC system.
5. In case of trippings attributable to other agency, system study group may find out the cause of tripping, only tripping attributable to the concerned agency may be considered for 2 trippings per annum.

6. In case of trippings affecting evacuation of power from a generating station, ***the***

same may be reviewed in next OCC/ PCC to finalize: -

a) Whether lines directly connected to the station should be considered? **Or**

b) Lines not directly connected to the station but also affecting the generation should also be considered?

Further, sub-committee discussed the issue for understanding of trippings of line due to lightening.

DGM, POWERGRID informed that the lightening phenomenon can be understood by some of the methods below:

(a) DR Record
(b) Installation of Lightning mapping equipment
(c) Enquiring whether condition of particular locality.

The sub-committee requested POWERGRID to give presentation in next OCC of lightning phenomenon and also to have better understanding of all the issues before finalization. POWERGRID agreed.

The Committee noted as above.

Additional Agenda:

1. RTU & SIC Replacement for All CS stations –ULDC scheme:

In line with discussion of 17th, 18th, 19th UCC Meeting, replacement of all Central sector RTUs are required to carried out as per urgent technical requirement.

Accordingly, POWERGRID have already gone ahead with replacement of RTUs (14nos. of PG station) along with other works under NTAMC project.

However, as per request from NERLDC in 19th UCC forum, POWERGRID we may explore for RTUs (for other CS/ISGS stations) to be purchased under SLDC expansion project subject to maintenance beyond warranty period of the same is to be taken up by respective utility only.

The list/names of RTUs (station names where RTUs to be installed) are as follows:

a) ***Misa, Balipara, Bongaigaon, Dimapur, Khliehriat, Badarpur, Jiribam, Haflong, Kumarghat, Aizwal, Salakati, Imphal, Nirjuli, Ziro. The work for the same has already been taken up along with on-going NTAMC project of POWERGRID.***

As Silchar & Mariani SS of POWERGRID are newly commissioned, Gateway/RTUs are working OK, hence the same are not considered.

b) ***Kopili, Khandong, Ranganadi, RC Nagar, Doyang, Loktak, Kathalguri i.e. all old RTUs of ISGS CS stations (along with Kolasib) as was considered under original ULDC scheme.***

Total Nos. of RTUs-22 nos. The same was also emphasized & agreed upon in recent UCC-20th meeting

However, actual cost for RTUs of PG station will be based on rates of NTAMC project contract & that of non-PG stations will be as per rates of RTU considered under NER-SLDC expansion project

Deliberation of the Committee

The members opined that communication & related node equipments (RTU/SDH/Multiplexers etc.) as required for SCADA telemetry are the inherent part of protection and so UCC agenda/meeting should be a part of PCC Meeting under NERPC forum.

SE(O) stated that as requested by the forum, the same will be discussed with NERLDC and status will be intimated in the next PCC/OCC meetings for needful solution.

The Committee noted as above.

2. Augmentation of 2x50 MVA, 220/132kV ICT at Balipara:

The constituent states have already issued clearance to augment the exiting 2 x 50 MVA, 220/132 kV transformers at Balipara (PGCIL) 400/220/132 kV substation to 2 x 160 MVA transformers. In the last OCC meeting, query was raised about the progress of the proposal but no suitable information was received from the member present of concern constituent, as such, it was requested to record in the MoM, but nothing has been mentioned on this issue.

It may be noted that power is drawn from the afore mentioned transformers to its full capacities, even then the North Bank of Assam namely the Mangaldoi and Darrang districts are to face acute shortage of power and thereby resort to regular load shedding to the tune of 25 MW. AEGCL desires that the said project should be implemented at the earliest.

3. Construction of 2nd circuit of 132 kV Ranganadi - Nirjuli:

The progress of proposal for construction of 132 kV 2nd circuit line from Ranganadi to Nirjuli inter-state line may be apprised by the concern authority, as the same was approved by the Standing Committee meeting held on Jan'2014.

Deliberation of the Committee

SE(O) stated that the issue in Sl. No.2 & 3 above has been approved by the Standing Committee held on 3rd January, 2014, but the same has to be endorsed in the next NERPC meeting before proceeding further.

The Committee noted as above.

4. Connection of Energy Meter to Bus PT instead of CVT:

NEEPCO informed that Power Grid had directly connected the Ex Bus Injection meters of the Khandong – Khliehriat–II and Khandong -Kopili -II feeder from the respective line CVTs. All line Ex bus injection meters of Khandong –Khl-I, Khandong –Kopili –I and Khandong –Haflong lines are connected to Bus PT of 132 KV Bus.

The CVT output is frequency dependent voltage and should not be used in energy meter circuit. As per IEGC, the energy meters are to be connected directly to the BUS PT/Voltage transformer. It may be noted that there is no voltage drop in the Bus PT output at Switch yard and in the Energy meter terminal. This was tested by NEEPCO on 8.7.2014 for both Bus-A and Bus-B PT. Rather the Voltage output of the CVT measured at the energy meter terminal of KHL-II and Kopili -II line is found to be always more than the voltage measured at the Energy meter Terminal of Khl-I, Kopili-I and Haflong line.

Because of this the two feeders of power grid is always recording more energy in the secondary side than actual energy injected in the lines at 132 KV level. The net EX bus import/ Export (Ex-bus injection) is showing erroneous result. NEEPCO is to pay Deviation Charges for this in accurate energy meter reading.

POWER GRID is requested to shift the Energy meter connection for 110 Volt supply to BUS PT Circuit through Bus selection relay at the earliest. NEEPCO had no objection if other indicating meters (other than Energy meters) are connected to respective line CVTs. The results are enclosed.

Result of measurement of Bus PT voltage, CVT voltage in the metering panel of Khandong SY

Reading -I

Measured Terminal	BUS-A PT Voltage at MK of PT (Switch yard)	BUS PT Voltage at duplex Panel
R-N	63.2	63.0
Y-N	63.4	63.2
B-N	63.2	63.1
R-Y	109.6	109.4
R-B	109.6	109.4
Y-B	110.0	109.4

Reading –III

CVT Voltage at the Energy meter terminal of KHL-II	BUS -A PT Voltage at Control Panel	Remarks
61.9	63.1	KHL-II feeder is connected to Bus-A
65.3	63.5	
64.1	63.4	
110.1	109.7	
109.8	109.6	
112.6	110.2	

Reading-II

Measured Terminal	BUS-B PT Voltage at MK of PT (Switch yard)	BUS PT Voltage at duplex Panel
R-N	63.5	63.3
Y-N	63.6	63.4
B-N	63.6	63.5
R-Y	110.4	110
R-B	110.4	110.2
Y-B	110.6	110.1

Reading -IV

Voltage at the Energy meter terminal of Kop-II	BUS -A PT Voltage at Control Panel	Remarks
63.1	62.8	KOP-II feeder is connected to Bus-A
63.3	63.1	
62.9	62.9	
109.6	109.2	
109.3	109.1	
109.6	109.4	

NB: All the voltages were measured simultaneously while taking the reading using identical Millimeters and prior calibration done.

Deliberation of the Committee

POWERGRID informed that the connection of meters in CVT core is a standard practice and the same is done as per approved scheme with the consent of NERLDC If NEEPCO desires to connect the meters in Bus PT prior approval from NERLDC may be obtained.

The Committee noted as above.

5. Procurement of Laptops in place of DCDs:

In the 19th CC meeting, members had decided to procure laptops instead of DCDs and NERTS had agreed to go for laptops (in place of DCDs) in the next round of procurement. In the 20th CC meeting, NERTS informed that action for procurement of laptops could not be taken up as details viz., number of laptops, location where laptops are to be provided etc., has not been finalized. It was agreed that NERTS will discuss the issue in the next OCC meeting and finalize the quantities etc.

Deliberation of the Committee

DGM, NERTS stated that Coordinators (metering issue) of each state utility will be provided 1no. notepads/laptops initially. Respective coordinators/utility will be responsible for further maintenance & proper handling of the same. Based on the performance of same more nos. of laptops will be procured.

The Committee noted as above.

Date & Venue of next OCC meeting

It is proposed to hold the 102nd OCC meeting of NERPC in third week of October, 2014. 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 101st OCC Meetings held on 10/09/2014

SN	Name & Designation	Organization	Contact No.
1.	Sh. N. Perme, EE	Ar. Pradesh	09436288643
2.	Sh. M.K. Bordoloi, CGM,SLDC	Assam	09435203996
3.	Sh. A.N. Dev Choudhury, AGM (TRC)	Assam	09854120791
4.	Sh. J.P. Choudhury, AGM (Com), APDCL	Assam	09954055295
5.	Sh. J.K. Baishya, AGM, LD-Com, AEGCL	Assam	09435041494
6.	Sh. Karuna Sarma, AGM, AEGCL	Assam	09435013532
7.	Sh. A.K. Saikia, DGM,LDC, AEGCL	Assam	09401026118
8.	Sh. M.B.C. Sharma, DGM (SSD-II), MSPCL	Manipur	09436020911
9.	Sh.F.E. Kharshiing, SE, SLDC	Meghalaya	09863066960
10.	Sh. B. Wankhar, EE (MO)	Meghalaya	09436105914
11.	Sh.T. Gidon, EE, SLDC	Meghalaya	09774479956
	No Representatives	**Mizoram**	
12.	Sh. A. Jakhalu, EE (Trans.)	Nagaland	09436002696
13.	Sh. U. Debbarma, DGM	Tripura	09436462848
14.	Sh. D. Pal, Sr. Manager	Tripura	09436500244
15.	Sh. N. R. Paul, DGM (SO-I)	NERLDC	09436302723
16.	Sh. A. Mallick, DGM (SO-II)	NERLDC	09436302720
17.	Sh. B. Medhi, Dy. Mgr.(SO-I)	NERLDC	09436335376
18.	Sh. B.K. Chakraborty, DGM (E)	NEEPCO	09436309730
19.	Sh. Tanya Taji, Sr.Mgr.	NEEPCO	09436042053
20	Sh. J. Ray, Sr.Mgr (E)	NEEPCO	09435577726
21.	Sh.S. Patton, Sr.Mgr (E)	NEEPCO	09436434913
22.	Sh. N. Chakraborty, Asstt. Mgr.(Projects)	NETC	07896022335
23.	Sh.Ratan Singh Basnet, Executive Engineer	NETC	08974003531
	No Representatives	**NTPC**	
	No Representatives	**NHPC**	
24.	Sh. A. Patir, GM (O&M)	NERTS	09436302529
25.	Sh. P.Kanungo, DGM(OS)	NERTS	09436302823
26.	Sh. N.Gupta, Manager (O)	OTPC	09774233426
27.	Sh.T.Pandey, DGM (O&M)	OTPC	09402144712
28.	Sh. B.Lyngkhoi, Director/S.E (O)	NERPC	09436163419
29.	Sh. Lalrinsanga, A.S	NERPC	09436161886
30.	Sh. S.M.Jha, Dy.Director	NERPC	08731845175

Annexure-C.10

Transformer Tap Optimisation Data

Senario : September'2014 — 01/Sep/14

Sl. No.	Substation	Voltage Ratio (kV)	Transformer No.	Capacity in MVA	Controlled Bus	Tap Step (%)	Total Tap Positions	Nominal Tap	OFFPEAK Suggested	PEAK Suggested	Voltage Profile				Rmax	Rmin
											Off-Peak		Peak			
											Pre-OPF	Post-OPF	Pre-OPF	Post-OPF		
1	Balipara	400/220	1	315	400kV	1.25	17	9	NO	NO	399	399	403	404	1.1	0.9
		220/132	2	50	132kV	1.25	17	9	NO	NO	128	128	126	128	1.1	0.9
		220/132	3	50	132kV	1.25	17	9	NO	NO					1.1	0.9
2	Bongaigaon	400/220	1	315	400kV	1.25	17	9	NO	NO	404	404	406	406	1.1	0.9
3	Salakati	220/132	1	50	132 kV	1.25	17	13	NO	NO	133	133	136	136	1.05	0.95
		220/132	2	50	132 kV	1.25	17	13	NO	NO					1.05	0.95
4	Misa	400/220	1	315	400kV	1.25	17	9	NO	NO	400	400	403	404	1.1	0.9
		400/220	2	315	400kV	1.25	17	9	NO	NO					1.1	0.9
5	RHEP	400/132	1	360	400 kV	**2.5**	17	9	NO	NO	400	400	402	402	1.2	0.8
		400/132	2	360	400 kV	**2.5**	17	9	NO	NO					1.2	0.8
6	Azara	400/220	1	315	400kV	1.25	17	9	NO	NO	400	399	403	411	1.1	0.9
		400/220	2	315	400kV	1.25	17	9	NO	NO					1.1	0.9
7	Silchar	400/132	1	200	400 kV	1.25	17	9	**NO**	**NO-1**	**406**	**405**	**410**	**409**	1.1	0.9
		400/132	2	200	400 kV	1.25	17	9	**NO**	**NO-1**					1.1	0.9
8	Byrnihat	400/220	1	315	400 kV	1.25	17	9	**NO-2**	**NO+4**	**410**	**408**	**415**	**405**	1.1	0.9
		400/220	2	315	400 kV	1.25	17	9	**NO-2**	**NO+4**					1.1	0.9
		220/132	5083/1	160	132 kV	1.25	17	9	**NO+1**	**NO-3**	**137**	**134**	**139**	**136**	1.1	0.9
		220/133	5083/1	160	132 kV	1.25	17	9	**NO+1**	**NO-3**					1.1	0.9
9	Palatana	400/132	1	125	132 kV	1.25	17	9	**NO+1**	**NO**	**136**	**135**	**135**	**135**	1.1	0.9
10	Dimapur	220/132	1	100	220 kV	1.25	17	13	**NO**	**NO-4**	**225**	**225**	**225**	**229**	1.05	0.95
		220/132	2	100	220 kV	1.25	17	13	**NO**	**NO-4**					1.05	0.95
11	KOPILI	220/132	1	60	132 kV	1.25	17	5	NO	NO	227	227	227	233	1.15	0.85
		220/132	2	160	132 kV	1.25	17	13	NO	NO					1.05	0.95
12	Sarusajai	220/132	1	100	132kV	1.25	17	13	**NO-2**	**NO**	**127**	**131**	**126**	**130**	1.05	0.95
		220/132	2	100	132kV	1.25	17	13	**NO-2**	**NO**					1.05	0.95
		220/132	3	100	132kV	1.25	17	13	**NO-2**	**NO**					1.05	0.95
13	Samaguri	220/132	1	50	132kV	1.25	17	13	**NO-1**	**NO**	**132**	**132**	**132**	**135**	1.05	0.95
		220/132	2	50	132kV	1.25	17	13	**NO-1**	**NO**					1.05	0.95
		220/132	3	50	132kV	1.25	17	13	**NO-1**	**NO**					1.05	0.95
14	Mariani	220/132	1	100	220 kV	1.25	17	13	**NO-4**	**NO-4**	**227**	**226**	**227**	**231**	1.05	0.95
		220/132	2	100	220 kV	1.25	17	13	**NO-4**	**NO-4**					1.05	0.95
15	Tinsukia	220/132	1	50	220 kV	1.25	16	13	**NO-3**	**NO-3**	**231**	**228**	**230**	**231**	1.0375	0.9625
		220/132	2	50	220 kV	1.25	16	13	**NO-3**	**NO-3**					1.0375	0.9625
16	BTPS	220/132	HT1819/13078	160	220 kV	1.25	17	9	NO	NO	224	224	224	225	1.1	0.9
		220/132	6004522	80	220 kV	1.25	17	9	NO	NO					1.1	0.9
17	Agia	220/132	T8265/4	50	220 kV	1.25	23	13	NO	NO	221	222	224	224	1.125	0.875
18	Boko	220/132	T09286/1	50	220 kV	1.14	17	13	NO	NO	222	223	224	224	1.0456	0.9544
19	NTPS (Local)	220/132	A.T.No.1	50	220 kV	1.25	17	13	NO	NO	231	229	230	231	1.05	0.95
		220/132	A.T.No.1	50	220 kV	1.25	17	13	NO	NO					1.05	0.95

Note : a) NO indicates Nominal Tap position, b) Tap changers are assumed to be installed on the HV bus in all cases, c) NO-1 when LV bus is controlled bus, indicates transferring MVAR from HV bus to LV bus to improve voltage of the LV bus

* NO = Nominal Tap Position

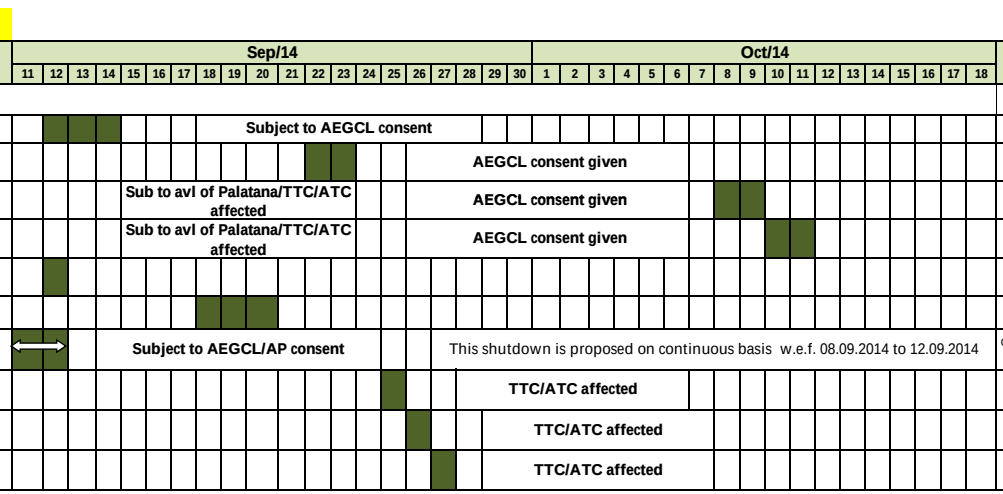
Approved SHUTDOWN OF POWERGRID ELEMENTS FOR THE MONTH OF SEPT-14 & OCT-14

POWERGRID

SN	Name of Element	Time	Purpose
	A.TRANSMISSION LINES		
1	132KV Dhaligaon-Gossaigaon(AEGCL)	7:00 to 15:00 Hrs	For facilitating string work of 800KV HVDC line
2	132KV Badarpur-Badarpur(ASEB)	7:00 to 15:00 Hrs	For mass-replacement of existing Insulators in the line(passing through heavily polluted zone) with Polymer Insulators.
3	220KV Salakati-BTPS-I	7:00 to 15:00 Hrs	For mass-replacement of existing Insulators in the line(passing through heavily polluted zone) with Polymer Insulators.
4	220KV Salakati-BTPS-II	7:00 to 15:00 Hrs	For mass-replacement of existing Insulators in the line(passing through heavily polluted zone) with Polymer Insulators.
5	132KV Aizawl-Kumarghat line	7:00 to 15:00 Hrs	For facilitating replacement of existing/old Line Isolators which have completed their useful life.
6	400KV Ranganadi-Balipara-II	7:00 to 15:00 Hrs	Erection of new tower at loc.37N in connection with Diversion of theline on account of Railway track construction
7	132KV Lekhi-Ranganadi	Cont. SD from 08.09.14(8:00 Hr) to 12.9.14(16:00 Hr)	For facilitating shifting of tower loc.52 endangered by eartcutting. This SD has been deferred in the last 3 OCC meetings.
	220 kV Birpara - Salakati I	7:00 to 15:00 Hrs	For C & Tan delta measurement & other AMP activities.
	220 kV Birpara - Salakati II	7:00 to 15:00 Hrs	For C & Tan delta measurement & other AMP activities.
	220 kV Misa - Balipara I	7:00 to 15:00 Hrs	For C & Tan delta measurement & other AMP activities.
	B. SUBSTATION		
1	**400KV SILCHAR SUBSTATION**		
i	400kV, 50MVAR Pallatana-I Line Reactor	7:00 to 15:00 Hrs	For C & Tan delta measurement & other AMP activities. No effect on feeder
ii	400kV, 50MVAR Pallatana-II Line Reactor	7:00 to 15:00 Hrs	For C & Tan delta measurement & other AMP activities. No effect on feeder
iii	400/132KV, 200MVA ICT-I	7:00 to 15:00 Hrs	For C & Tan delta measurement & other AMP activities.
2	**400KV BALIPARA SUBSTATION**		
i	400KV Main Bus-II	7:00 to 15:00 Hrs	For connection with Biswanath Chariali Bay-I & II
ii	400KV Ranganadi-II Main Bay	7:00 to 15:00 Hrs	For C & Tan delta measurement & other AMP activities. No effect on feeder
iii	220/132 KV,50MVA ICT(NEEPCO)	7:00 to 15:00 Hrs	For C & Tan delta measurement & other AMP activities.
3	**BONGAIGAON SUBSTATION**		
i	400KV New Siliguri-I Main Bay	7:00 to 15:00 Hrs	For C & Tan delta measurement & other AMP activities. No effect on feeder
ii	400KV New Siliguri-I Tie Bay	7:00 to 15:00 Hrs	For C & Tan delta measurement & other AMP activities. No effect on feeder
iii	400KV New Siliguri-II Tie Bay	7:00 to 15:00 Hrs	For C & Tan delta measurement & other AMP activities. No effect on feeder
iv	400/220KV, 315MVA ICT	7:00 to 15:00 Hrs	For C & Tan delta measurement & other AMP activities. No effect on feeder
v	220KV Birpara-I Bay	7:00 to 15:00 Hrs	For C & Tan delta measurement & other AMP activities. **Feeder shall remain under shutdown.**
vi	220KV Birpara-II Bay	7:00 to 15:00 Hrs	For C & Tan delta measurement & other AMP activities. **Feeder shall remain under shutdown.**
4	**MISA SUBSTATION**		
i	400KV Balipara-I Main(2) Bay	7:00 to 15:00 Hrs	For C & Tan delta measurement & other AMP activities. **Feeder shall remain under shutdown.**

AEGCL

	132 kV Bus at Srikona S/S	9:00 to 17:00 Hrs	Pre-Puja maintenance
	132 kV Panchgram-Srikona	9:00 to 17:00 Hrs	Pre-Puja maintenance
	132 kV Srikona-Pailapool	9:00 to 17:00 Hrs	Pre-Puja maintenance
	132 kV Srikona-Silchar I & II	9:00 to 17:00 Hrs	Pre-Puja maintenance



132 kV Bus at Panchgram	10:00 to 16:00 Hrs	Pre-Puja maintenance
220 kV Sarusajai-Mizra I	TTC/ATC affected	9:00 to 12:00 Hrs	Pre-Puja maintenance
220 kV Sarusajai-Mizra II	TTC/ATC affected	9:00 to 12:00 Hrs	Pre-Puja maintenance
220 kV Sarusajai-Samaguri II	TTC/ATC affected	9:00 to 12:00 Hrs	Pre-Puja maintenance
100 MVA TR I at Sarusajai S/S		9:00 to 12:00 Hrs	Pre-Puja maintenance
100 MVA TR II at Sarusajai S/S		9:00 to 12:00 Hrs	Pre-Puja maintenance
100 MVA TR III at Sarusajai S/S		9:00 to 12:00 Hrs	Pre-Puja maintenance
TSECL			
132 kV P K Bari Main Bus		9:00 to 15:00 Hrs	Pre-Puja maintenance
132 kV P K Bari - Mission tilla		9:00 to 15:00 Hrs	Pre-Puja maintenance
132 kV P K Bari - Gaurinagar		9:00 to 15:00 Hrs	Pre-Puja maintenance
132 kV Agartala - Dhalabil		9:00 to 15:00 Hrs	Pre-Puja maintenance
132 kV Agartala - Kamalpur		9:00 to 15:00 Hrs	Pre-Puja maintenance
132 kV Surjamani Nagar main bus		9:00 to 15:00 Hrs	Pre-Puja maintenance
132 kV Gamatila - Ambassa		9:00 to 15:00 Hrs	Pre-Puja maintenance
132 kV Gamatila bus		9:00 to 15:00 Hrs	Pre-Puja maintenance


Daytime SD


: Continuous Shutdown