North Eastern Regional Power Committee

Agenda

For

121st OCC Sub-Committee Meeting

Time of meeting : 10:00 Hrs.

Date of meeting : 5th May, 2016 (Thursday)

Venue : "Hotel Nandan", Guwahati.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 120th MEETING OF OPERATION SUB-COMMITTEE OF NERPC.

The minutes of 120th meeting of Operation Sub-committee held on 6th April, 2016 at Guwahati were circulated vide letter No. NERPC/SE (O)/OCC/2016/4556-4591 dated 12th April, 2016.

The Sub-committee may confirm the minutes of 120th OCCM of NERPC as no comments/observations were received from the constituents.

ITEMS FOR DISCUSSION

B. OPERATIONAL PERFORMANCE AND GRID DISCIPLINE DURING APRIL, 2016

As per the data made available by NERLDC, the grid performance parameters for APRIL, 2016 are given below:

NER PERFORMANCE DURING APRIL, 2016

	Energy Met (MU)		w.r.t. Mar,16 % inc (+) /dec (-)	Energy Reqr. (MU)		w.r.t. Mar,16 % inc (+) /dec (-)	% inc (+) /dec (-) of energy reqr vs met. In Apr, 16
States	**Apr-16**	**Mar-16**		**Apr-16**	**Mar-16**		
Ar. Pradesh	53.17	61.47	-13.50	54.38	62.19	-12.56	-2.28
Assam	578.78	667.81	-13.33	634.10	693.58	-8.58	-9.56
Manipur	50.76	69.44	-26.90	53.97	70.51	-23.46	-6.32
Meghalaya	119.57	142.73	-16.23	119.57	142.73	-16.23	0.00
Mizoram	39.97	41.05	-2.63	41.29	41.85	-1.34	-3.30
Nagaland	51.21	60.67	-15.59	52.86	61.81	-14.48	-3.22
Tripura	142.32	120.45	18.16	145.37	123.41	17.79	-2.14
Region	**1035.77**	**1163.62**	**-10.99**	**1101.55**	**1196.08**	**-7.90**	**-6.35**

States	Demand Met (MW)		w.r.t. Mar,16 % inc (+) /dec (-)	Demand in (MW)		w.r.t. Mar,16 % inc (+) /dec (-)	% inc (+) /dec (-) of Demand vs met. In April, 16
	Apr-16	Mar-16		Apr -16	Mar-16		
Ar. Pradesh	139	113	23.01	141	115	22.61	-1.44
Assam	1356	1316	3.04	1446	1343	7.67	-6.64
Manipur	146	155	-5.81	146	155	-5.81	0.00
Meghalaya	295	315	-6.35	295	315	-6.35	0.00
Mizoram	82	84	-2.38	83	86	-3.49	-1.22
Nagaland	110	114	-3.51	110	114	-3.51	0.00
Tripura	264	248	6.45	272	251	8.37	-3.03
Region	**2358**	**2367**	**-0.38**	**2479**	**2442**	**1.52**	**-5.13**

REGIONAL GENERATION & INTER-REGIONAL EXCHANGE IN MU

Month---->	Apr-16	Mar-16
Total Generation in NER (Gross)	1626.52	1019.18
Total Central Sector Generation (Gross)	1380.45	783.60
Total State Sector Generation (Gross)	246.07	235.58
Inter-Regional Energy Exchange		
(a) NER-ER	327.38	152.77
(b) ER-NER	402.07	283.69
(c)NER-NR	11.70	101.91
(d)NR-NER	301.20	53.84
© Net Import	364.2	82.85

AVERAGE FREQUENCY (Hz)

Month---->	Apr-16	Mar-16
	% of Time	% of Time
Below 49.9 Hz	12.74	8.69
Between 49.9 to 50.05 Hz	69.92	70.02
Above 50.05 Hz	17.34	21.29
Average	49.98	50.00
Maximum	50.32	50.35
Minimum	49.64	49.68

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

During 121st OCC meeting, the status as informed by different beneficiaries are as follows:

SN	Items	Status as given in 121st OCC Meeting	Status as given in 120th OCC Meeting
a. New Projects			
1	Trial operation and CoD of Unit -I of Bongaigoan TPS of NTPC		As per NERLDC CoD on 01.04.2016.
2	400/220kV, 2x315 MVA ICT of NTPC at Bongaigaon		**No representative**

3	Trial operation and CoD of Monarchak GBPP of NEEPCO		November, 2016
4	Kameng HEP of NEEPCO two units (2 x 150 MW) Next two units (2x150 MW)		November, 2016 March, 2017
5	Pare HEP of NEEPCO (2 x 55 MW)		June, 2017
6	400 kV D/C Silchar - Melriat line of PGCIL		December, 2016
7	220kV Rangia - Salakati of AEGCL		June, 2016
8	132kV Monarchak – Surjamaninagar D/C of TSECL		**No representative**
9	400/132 kV, 2nd 125 MVA ICT at Pallatana		June, 2016
10	132kV Pasighat – Aalong of Ar. Pradesh		**No representative**
11	132kV Doyang– Wokha		July 2016
12	220 kV Line Reactor Bay at AGBPP		May,2016
13	220 kV, 20 MVAR Bus Reactor at AGBPP		May,2016
14	132kV Surjamaninagar Bay at OTPC		July, 2016
15	400kV D/C Balipara – Kameng of Ar. Pradesh		June,2016
16	RHEP 80 MVAR Bus Reactor		Referred to next SCM of CEA.
17	Balipara 315 MVA 400/220 kV ICT		May,2016
18	SLDCs (Ar. Pradesh, Manipur, Mizoram, Nagaland)		Sept/Oct, 2016 (Building hand over by respective state by June16). For Manipur-July16
b. Elements under breakdown/ upgradation			
19	63MVAR Reactor at Byrnihat of Me.PTCL		Order placed, Commissioning by June 2016

20	Up-gradation of 132 kV Lumshnong-Panchgram line		Tendering in process
21	Switchable line Reactors at 400kV Balipara & Bongaigoan		April 2016 (at Balipara end) BNC end by September, 2016.
22	PLCC Panels at Loktak end of Loktak – Ningthoukhong 132 kV feeder and Loktak - Rengpang 132 kV feeder		July 2016
23	LILO of 132kV Ranganadi – Nirjuli at Pare of NEEPCO		May 2016
24	LILO of 132kV Ranganadi – Itanagar (Chimpu) at Pare of NEEPCO		**No representative**

Concerned constituents may kindly intimate the status.

C.2 CT Ratio of Transmission Lines in NER & Enhancement of Loadability of Lines:

The latest status as informed in the 120th OCC is given in **Annexure - C.2.**
As indicated by DGM, NERTS, procurement of 21 nos. CTs for all lines up-gradation of CT ratios of NERTS, including 132 kV Doyang – Dimapur D/C, will take at least 6 months time.

Constituents, NERPC/NERLDC may kindly intimate the status and members may deliberate.

C.3 Finalization of Operating Procedures of State Grid of NER:

As per clause no 5.1.g of IEGC, detailed operating procedures for each state grid shall be developed and maintained by the respective SLDC.

Latest status of approval of these documents from OCC forum of NERPC is as follow:-

Sl No	Description	Status of approval from OCC forum of NERPC
1	Operating Procedure of Ar. Pradesh 2015	**Not submitted**
2	Operating Procedure of Assam 2015	Submitted
3	Operating Procedure of Manipur 2015	**By 30.04.2016**
4	Operating Procedure of Meghalaya 2015	Submitted
5	Operating Procedure of Mizoram 2015	Submitted
6	Operating Procedure of Nagaland 2015	Submitted
7	Operating Procedure of Tripura 2015	**Not submitted**

NERLDC/NERPC may kindly update the status.

C.4 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 draft LGBR 2016-17 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	Apr16	May16	Jun16	Jul16	Aug16	Sep16
Ar. Pradesh	67	71	68	73	73	73
Assam	775	791	816	872	872	847
Manipur	82	77	76	80	80	80
Meghalaya	170	175	165	175	175	170
Mizoram	42	42	42	45	45	45
Nagaland	65	68	72	77	77	72
Tripura	112	122	122	122	128	122
NER	**1313**	**1346**	**1361**	**1424**	**1450**	**1409**

Name of State	Oct16	Nov16	Dec16	Jan17	Feb17	Mar17
Ar. Pradesh	73	68	68	68	59	74
Assam	816	714	714	714	648	740
Manipur	85	88	95	92	88	90
Meghalaya	185	195	210	220	185	190
Mizoram	46	46	48	48	42	42
Nagaland	74	68	71	69	68	68
Tripura	133	112	122	128	102	128
NER	**1412**	**1291**	**1328**	**1339**	**1192**	**1332**

Availability:

Name of State	Apr16	May16	Jun16	Jul16	Aug16	Sep16
Ar. Pradesh	46	58	82	92	79	74
Assam	483	544	649	737	703	682
Manipur	58	69	85	108	102	99
Meghalaya	100	149	191	250	258	258
Mizoram	38	44	54	63	59	57
Nagaland	42	51	66	83	79	77
Tripura	185	204	204	222	213	208
NER	**950**	**1119**	**1330**	**1557**	**1493**	**1455**

Name of State	Oct16	Nov16	Dec16	Jan17	Feb17	Mar17
Ar. Pradesh	67	52	54	51	45	55
Assam	648	567	580	567	502	564
Manipur	95	81	76	71	61	69
Meghalaya	209	150	138	125	115	123
Mizoram	54	48	44	43	39	45
Nagaland	71	55	54	50	45	50
Tripura	225	211	224	222	190	217
NER	**1370**	**1163**	**1171**	**1130**	**997**	**1121**

Members may please discuss.

C.5 Monthly MW requirement & availability of each state of NER:

The following figures were taken from LGBR 2016-17 of NERPC. These figures are to be reviewed.

A. Peak Demand in MW

Name of State	Apr16	May16	Jun16	Jul16	Aug16	Sep16
Ar. Pradesh	142	142	137	137	142	147
Assam	1451	1472	1498	1508	1560	1539
Manipur	168	168	168	163	168	163
Meghalaya	405	405	405	405	400	405
Mizoram	90	90	95	90	90	90
Nagaland	125	125	125	140	140	140
Tripura	270	291	296	296	301	291
NER	**2651**	**2693**	**2724**	**2739**	**2801**	**2775**

Name of State	Oct16	Nov16	Dec16	Jan17	Feb17	Mar17
Ar. Pradesh	143	132	132	137	137	147
Assam	1513	1508	1518	1456	1352	1466
Manipur	163	179	184	179	179	173
Meghalaya	415	425	430	430	425	420
Mizoram	95	95	101	101	90	95
Nagaland	140	135	135	135	125	125
Tripura	321	275	260	250	250	281
NER	**2790**	**2749**	**2760**	**2688**	**2558**	**2707**

B. Peak Availability in MW

Name of State	Apr16	May16	Jun16	Jul16	Aug16	Sep16
Ar. Pradesh	127	144	195	165	140	138
Assam	1012	1134	1305	1249	1170	1222
Manipur	131	173	184	196	179	181
Meghalaya	257	304	373	433	455	482
Mizoram	83	100	123	117	108	111
Nagaland	109	129	145	142	134	137
Tripura	324	355	369	365	350	357
NER	**2043**	**2340**	**2695**	**2675**	**2534**	**2627**

Name of State	Oct16	Nov16	Dec16	Jan17	Feb17	Mar17
Ar. Pradesh	154	140	129	128	127	179
Assam	1251	1202	1169	1152	1108	1278
Manipur	188	175	147	151	142	188
Meghalaya	442	360	340	312	346	386
Mizoram	117	109	99	98	101	120
Nagaland	142	129	124	122	120	141
Tripura	386	369	373	370	355	392
NER	**2681**	**2484**	**2381**	**2331**	**2298**	**2682**

C. Off Peak Demand in MW (08:00 Hrs)

Name of State	Apr16	May16	Jun16	Jul16	Aug16	Sep16
Ar. Pradesh	78	78	75	75	78	81
Assam	943	898	944	950	952	939
Manipur	109	109	109	106	109	106
Meghalaya	223	223	223	223	220	223
Mizoram	59	59	62	59	59	59
Nagaland	75	75	75	84	84	84
Tripura	184	198	201	201	205	198
NER	**1670**	**1639**	**1689**	**1698**	**1706**	**1689**

Name of State	Oct16	Nov16	Dec16	Jan17	Feb17	Mar17
Ar. Pradesh	79	73	73	75	75	81
Assam	983	935	956	932	852	909
Manipur	106	116	120	116	116	112
Meghalaya	228	234	237	237	234	231
Mizoram	62	62	66	66	59	62
Nagaland	84	81	81	81	75	75
Tripura	218	187	177	170	170	191
NER	**1760**	**1687**	**1708**	**1677**	**1581**	**1661**

D. Off Peak Availability in MW (08:00 Hrs)

Name of State	Apr16	May16	Jun16	Jul16	Aug16	Sep16
Ar. Pradesh	40	50	99	122	102	100
Assam	734	824	1014	1126	1048	1068
Manipur	65	87	119	168	152	148
Meghalaya	198	230	305	416	428	445
Mizoram	50	61	88	102	93	93
Nagaland	72	84	105	123	115	116
Tripura	362	303	326	345	331	335
NER	**1420**	**1640**	**2054**	**2402**	**2269**	**2304**

Name of State	Oct16	Nov16	Dec16	Jan17	Feb17	Mar17
Ar. Pradesh	81	56	59	57	72	69
Assam	982	927	956	935	927	985
Manipur	132	115	92	84	94	102
Meghalaya	377	295	290	261	303	318
Mizoram	86	75	72	69	78	82
Nagaland	103	89	92	89	93	95
Tripura	343	317	335	329	322	339
NER	**2104**	**1875**	**1896**	**1824**	**1888**	**1989**

Members may please discuss.

D. NEW ITEMS

D.1 Generation Planning (ongoing and planned outages)

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

Generating Station	Units running	MW	MU	Reservoir
Khandong				
Kopili				
Kopili-II				
Ranganadi			Subject to inflow	
Doyang				
Loktak				
AGBPP	-	-	-	-
AGTPP	-	-	-	-

Hydro planning

In view of outage of Kopili units, proper planning is essential for utilization of available water of other reservoir based stations so that adequate generation can be maintained upto April/May, 2016.

Since water level at Loktak HEP is in comfortable position, the plant will be utilized in the peak hours during complete shutdown of Kopili HEP.

The Committee may discuss and approve the proposed shutdown by Generating Stations as given in Annexure – D.2 below.

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.

The sub-Committee may kindly discuss and approve the transmission line outages proposed by Constituents for May, 2016 - June, 2016 as enclosed at Annexure- D.2.

D.3 Furnishing Reactive Power Absorption Data for last one year:

As per Para no. 9.9.1 of Recommendations of Enquiry Committee on Grid Disturbance, the regulatory provisions regarding absorption of reactive power by generating units needs to be implemented.

It is requested that you may please furnish instances when Reactive Power support was provided by Generators for last one year.

The latest Capability Curve of each generator in Soft Copy may also be provided.

During 120th OCCM, NERLDC informed that daily report in the desired format is being submitted by AGTPP (RC Nagar) regularly. The forum requested other power plants to kindly submit the same.

NEEPCO, NHPC & NTPC may kindly intimate the status.

D.4 Furnishing of Technical and Commercial data for computation of PoC Charges and Losses for Q2 of 2016-17 (July 2016 – September 2016):

As per provisions of the CERC (Sharing of Inter State Transmission Charges and Losses) Regulations, 2010 as amended from time to time, the following data are required for Computation of PoC Charges & Losses for 2nd Quarter of 2016-17 (July 2016 – September 2016):

- Yearly Transmission Charges (YTC) – As per Format I
- Technical details of new transmission elements & generating units which are expected to commence commercial operation during July 2016 - September 2016 (As per Format-II)
- Details of Long term and Medium term contracts (As per Format IIIA)
- Nodewise Forecast maximum withdrawal and injection data (As per Format IIIB)
- Maximum Injection and Withdrawal data for corresponding quarter of last 3 years (As per Format IIIC)

Letter in this regard from NLDC, POSOCO and Approved Formats for furnishing the relevant data (Format I, Format II, Format III) have been emailed to all DICs of NER on 05th April 2016. Formats for data submission are also available on website of NLDC at the following link: http://posoco.in/transmission_pricing/formats.

The requisite data/information may please be forwarded to NLDC at implementingagency@posoco.in with a copy to NERLDC at nerldc@yahoo.co.in latest by **30th April 2016**.

AEGCL, MePTCL and TSECL are requested to indicate the YTC data for July-September 2016 period of their transmission lines approved by CERC for inclusion in PoC Computations. The YTC data must be submitted as per Format-I only (Approved Format).

AEGCL, NEEPCO, DoP, Nagaland and MSPCL has already submitted the data.

DoP, Arunachal Pradesh, MePTCL, P&E, Mizoram, TSECL, NTPC, NHPC and OTPC is requested to submit the data.

Members may please discuss.

D.5 Estimated Transmission Availability Certificate (TAC) for the month of March, 2016 & Proposed Methodology from April, 2016 onwards:

NETC and POWERGRID, NERTS have submitted TAC data of March, 2016 in the first/second week of April, 2016. This will enable issuance of verification by NERLDC and certification by NERPC on monthly basis within stipulated time frame. Both NETC and NERTS are advised to follow the agreed time schedule in future to avoid accumulation of reports and corresponding delay.

The following procedure is presently being followed for verification of outage of transmission elements of POWERGRID till date:

1. The outage data for month 1 is submitted to NERLDC by the utility by 2nd week of month 2 for verification. NERLDC verifies the same & forwards the observations/ comments to NERPC by end of month 2. Trippings & other critical outages for month 1 are discussed in the succeeding PCC meeting (i.e. in month 3).
2. Based on comments/observations of NERLDC & PCC (if any), certification of system availability for month 1 is carried out by NERPC by end of Month 3 & TAC is issued accordingly.

Now, since it is decided to convene PCC every three months, hence modification of the above procedure is required for facilitating timely issuance of TAC by NERPC. The following revised procedure is therefore proposed in connection with certification of availability of POWERGRID elements.

1. The outage data of elements for month 1 shall be submitted by POWERGRID to NERLDC/NERPC by 2nd/3rd of Month 2 for discussion in the succeeding OCC meeting (to be held in 1st or 2nd week of month - 2). Observations/comments on the outage data (for month - 1) shall be submitted by all constituents to NERPC by end of month.

2. Based on observation/comments received from NERLDC & constituents & justifications/supporting data submitted by POWERGRID, NERPC shall issue TAC for month 1 by 1st week of month 3.

Members may please discuss.

D.6 Accountability of Outage of ± 800KV HVDC BNC-Agra link during the period from 01.02.2016 to 13.03.2016

The ± 800KV HVDC BNC-Agra Link was out of service w.e.f., 01.02.2016 to 13.03.2016 due to:

1. Failure of Converter Transformer Bushing at BNC end,
2. Subsequently, due to outage of line on account of damage and theft by miscreants.

The converter transformer of Pole-1 at HVDC Biswanath Chariali tripped on 01.02.2016 at 02:07 Hrs. due to operation of DC Differential and Buchholz protection of R-Phase Y-Y Transformer of Pole-1. Subsequently, during testing / investigation, it was found that secondary line side bushing failed completely at bottom portion. The restoration of the transformer by replacement of failed Bushing and subsequent Oil Filling and Filtration was done on 27.02.2016. Finally, the transformer was made ready for service on 29.02.2016 after allowing stabilization time and oil testing.

Meanwhile, during patrolling of the ± 800KV HVDC BNC-Agra Line prior to charging it was found that miscreants had damaged the line conductors by removing top layers of Aluminium strands in the line section from loc. 838 to 843 (NER Portion) involving a sectional length of 1.72KM. Further, there was theft of conductor in the

line at different locations during the outage. The restoration of the line, however, got delayed due to non-concurrence of shut down of 132KV Dhaligaon - Gossaigaon Line by AEGCL on account of Election related meetings under Aegis of the District Administration. Finally, the line could be restored with the help of District Administration on 13.03.2016 at 23:02 Hrs.

The availability of the said asset is accounted in Northern Region. However, the outage of the asset during the entire period from 01.02.16 to 13.03.16 was mainly due to issues pertaining to NER Portion. Hence, this agenda is placed for consideration of accountability of the said outage for enabling certification of availability of the Asset during the month of Feb'16 and Mar'16 as below:

1. The ± 800KV HVDC BNC-Agra Link was out of service during the period from 01.02.16 to 29.02.16 due to outage of Converter Transformer at Biswanath Chariali. Hence, the outage for this period will be attributable to POWERGRID.

2. Further, the ± 800KV HVDC BNC-Agra Link remained out of service from 01.03.16 to 13.03.16 due to outage of the Transmission Line on account of sabotage & theft in the transmission line caused by miscreants. This is a force majeure condition & beyond the control of POWERGRID. Hence this outage is not attributable to POWERGRID & is proposed to be booked under the category LMAC (Line outage caused by miscreants).

Members may please discuss.

D.7 Assessment of Total Transfer Capability (TTC), Transmission Reliability Margin (TRM) and Available Transfer Capability (ATC) by SLDC on respective Inter-State Transmission Corridor

SLDCs of NER are requested to assess the above on monthly basis, 5 months in advance (eg: TTC/TRM/ATC for the month of July to be calculated by 26th of March), for further assessment of TTC, ATC and TRM of NER–ER corridor, group of control areas, individual control areas with the region and state-control-area to state-control-area by NERLDC, if required.

SLDCs are also requested to send study results for Peak (Export & Import) & Off Peak (Export & Import) along with assumptions in details and 6 nos ".sav" case files (Base Case for Peak & Off Peak, Off Peak & Peak Export & Off Peak & Peak Import) to NERLDC by 10th of the month for the fifth month. All India ".sav" case files have been sent to SLDCs. SLDCs are requested to use this ".sav" case files while computing TTC, ATC & TRM for their state control area.

The study results conducted by NERLDC is attached in **Annexure-III.**

The study results for assessment of Total Transfer Capability (TTC), Transmission Reliability Margin (TRM) and Available Transfer Capability (ATC) have not been received from any SLDC of NER.

Updated Base Cases have been already mailed to all the SLDCs on 02.05.16. All SLDCs are requested to assess the Total Transfer Capability (TTC), Transmission Reliability Margin (TRM) and Available Transfer Capability (ATC) and submit the cases to NERLDC for the month of September'16 by 10th May, 2016.

NERLDC may kindly deliberate on this issue.

D.8 Implementation of Automatic Demand Management Scheme (ADMS)

Hon'ble CERC directed vide order in Petition No. 113/MP/2014 on 31.12.15 to submit PERT charts & action plans for Implementation of Automatic Demand Management Scheme (ADMS) by SLDCs of NER and to implement ADMS by 30.06.16 . Hon'ble CERC directed RLDCs to submit the report of status of implementation of Automatic Demand Management Scheme (ADMS) by SLDCs of NER by 31.08.16.

SLDCs of NER are requested to furnish monthly report of status of implementation of Automatic Demand Management Scheme (ADMS) by SLDCs of NER.

In 117th OCCM, AGM SLDC, Assam suggested that since ADMS involves connectivity to 33kV substations, a separate meeting with the DISCOMS is required. The forum agreed and requested NERPC to kindly convene the meeting at a suitable date.

NERLDC requested SLDCs of NER to submit the report of status of implementation of Automatic Demand Management Scheme (ADMS) by SLDCs of NER by 15.08.16.

During 118th OCCM, SE(O) informed that during the recent workshop on RTUs, some of the firms have intimated that they can help the NER constituents related to implementation of Automatic Demand Management Scheme (ADMS) by giving some presentation on the issue.

The Sub-committee requested NERPC to conduct a workshop/seminar on ADMS by calling some of the reputed firms viz. ABB, ALSTOM, WIZIMAX, SCHENIDER etc. and also to request all the DISCOMs (dealing with R-APRDP), SLDCs for the benefit of the constituents.

The SLDCs of NER agreed to submit the report of status of implementation of ADMS to NERLDC by 15.08.2016.

In 117th OCCM after the brief presentation by C-DAC, SE(O) suggested that C-DAC may help with the software implementation of ADMS at SLDC level. He also informed the forum that workshop on ADMS would be organized very soon.

The workshop on ADMS was conducted on 07.04.2016.

All concerned utilities, NERLDC/NERPC may kindly intimate the status.

D.9 Rectification of phase notations in NER grid:

It has been found that PMUs are showing different phasors w.r.t different nodes of same grid. It is suspected that there are change in phase notations in NER grid & connectivity.

During 1st NETeST meeting, the forum advised that mixing of Phases (change in phase reference w.r.t. one utility is sometimes different from another) as reflected by PMU data in regional grid is to be corrected. Forum requested that the same may be taken up OCC forum of NERPC.

In 118th OCCM, DGM, NERTS informed that the problem is at Agartala end and the same will be rectified soon.

NERLDC informed that due to mismatch in phase notations, angles reported by PMUs are erroneous and Agartala PMU was reporting wrong at the time of the OCC meeting. Also, due to mismatch in phase markings in some places like 400 kV Azara, DR prints received from two ends of the 400 kV lines from Azara showed mismatch in phases. AEGCL was requested to take up correction in phase notations at the earliest.

During 120th OCCM, DGM(AM), NERTS informed that work at Surjamaninagar has been completed. The forum requested AEGCL to kindly expedite the work at Azara.

NERTS, AEGCL & NERLDC may kindly intimate the status.

D.10 Transformer Tap optimization

System study was conducted by NERLDC considering load, generation and network pattern of May, 2016 during Peak & Off Peak periods. Suggested taps position of important transformers in NER for maintaining bus voltages within permissible limit as well as to minimize system losses are attached at **Annexure – D.10.**

During 118th OCCM, NERLDC circulated the results of tap-optimisation study for discussion. NERLDC also circulated the scatter plots at 400/220 kV Bongaigaon (PG), 400/220 kV Balipara (PG), 400/220 kV Misa (PG), 400/132 kV Ranganadi (NEEPCO), 400/132 kV Silchar (PG) and 400/132 kV Palatana (OTPC) to depict the pattern of voltages for the months of October 2015 – January 2016, to aid in tap optimization. It was iterated that due to non-availability of correct data in SCADA system from 400/220 kV Azara, 400/220 kV Byrnihat, 132 kV Biswanath Chariali (PG), scatter plots could not be developed for these substations. NERLDC requested to ensure proper data from all 400 kV substations, considering their importance.

After detailed deliberation, the Sub-committee suggested that transformer tap position can be tested at Byrnihat sub-station first and the outcome can be monitored by NERLDC if the voltage will improve.

In 119th OCCM, SE, SLDC, MeECL informed that voltage profile at 400kV Byrnihat S/S would be supplied by MeECL periodically.
NERLDC may please deliberate.

D.11 Issues related to mismatched figures of installed capacity of NER.

The figures of installed capacity of NER by CEA (As on 31.01.16) is not matching with figures of installed capacity of NER prepared by NERLDC based on data provided by SLDCs of NER. Ministry of Power (MOP) had requested NERLDC to resolve this issue.

The installed capacity of NER prepared by CEA and by NERLDC is attached in **Annexure – D.11**.

During 120th OCCM, DGM(SO-I), NERLDC informed that Mizoram, Meghalaya and Manipur have already submitted their installed capacity figures. MeECL said whatever they have furnished is final. NERLDC pointed that Bairabi Power Station has not been included in the statement furnished by Mizoram and requested for clarification in this regard. The forum requested all remaining constituents to submit their actual Installed Capacity figures as soon as possible. Moreover, the state utilities were requested to approach CEA formally for derating or deleting any generation capacity.

NERLDC may please intimate the status.

D.12 Submission of data according to Standards of Performance of ISTS Regulations 2012, CERC

As per Standards of Performance of ISTS Regulations 2012, CERC, the following data are required on monthly basis for computation of Dependability Index, Security Index and Reliability Index:

1. Nc – Number of correct operations during the month
2. Nu - Number of unwanted operations during the month
3. Nf - Number of failures to operate at internal power system faults during the month
4. Ni - Number of incorrect operations during the month

In addition of above data, data of five or more tripping of a transmission element in a month are also required. These data are to be sent to CERC on monthly basis.

POWERGRID and NETC are requested to furnish these data on monthly basis by 10th of every month for the previous month.

During 120th OCCM, The forum requested POWERGRID to submit the data for NETC & NERTS lines.

NERLDC may please intimate the status.

D.13 Furnishing of Ramp-Up, Ramp-Down, Technical Minimum of Units :

A meeting of the Sub-Committee on 'Review of 12th Plan and Generation Planning' headed by Member (Planning), CEA was held on 7th March, 2016. During the meeting, CEA projected maximum ramping requirement of 30000-36000 MW/hour for about 60 hours (out of 8760 hours) during 2021-22 in view of increase in solar generation.

It is requested to furnish the unit-wise Ramp-Up, Ramp-Down, Technical minimum of Generating Units.etc based on data provided by manufacturer as per the attached format.

Format for submission of these data mailed to all ISGSof NER & SLDCs of NER on 9th March, 2016. OTPC has already submitted the details.

The format is attached as **Annexure-I.**

In 120th OCCM, the forum requested concerned generating stations to kindly submit the same.

NERLDC/NERPC may please intimate the status.

D.14 High Voltage in Palatana :

During the month of January'16 -50 % of the time, February'16 -96% of the time& March'16 -61 % of the timethe voltage of Palatana 400 kV bus was more than 420 kV. The Palatana Bus reactor was charged for the first time at 14:49 Hrs on 14.03.16. The bus reactor tripped at 16:11 hrs on 15.03.16. Bus Reactor at Palatana is under outage since 16:11 hrs of 15.03.16.

OTPC is requested to inform the status of Bus Reactor at Palatana.

In 120th OCCM, DGM(O&M), OTPC informed that the reactor might have developed some incipient faults. However exact cause can be ascertained after tests are conducted by OEM. He agreed to revert back to the forum.

Members may please discuss.

D.15 Disturbance in Bangladesh system fed from 132 kV Surjamaninagar, TSECL:

At 21:06 Hrs on 04th April 2016, there were multiple fault trippings in Tripura system, leading to tripping of 132 kV Surjamaninagar – Comilla D/C lines and disturbance in South Comilla and adjoining areas of Bangladesh.

Tripping of 132 kV AGTPP – Agartala I & II and 132 kV Palatana – Surjamaninagar S/C line occurred at 21:06 Hrs alongwith blackout of AGTPP.

The relay indication at Palatana end of 132 kV Palatana – Surjamaninagar S/C line shows tripping on DP, Zone-III, 45.7 km and relay indications at AGTPP end of 132 kV AGTPP – Agartala I & II lines show tripping on DP, Zone-III & DP, Zone-II respectively. These indicate fault within the Tripura power system that did not clear on time leading to this disturbance including Bangladesh loads. Relay indications of no lines have been received from TSECL.

Such incident involving International Connections is serious and needs to be investigated in detail to arrive at the root cause and prevent further occurrence.

NEEPCO, TSECL, OTPC, NERTS-POWERGRID are requested to furnish details of tripping of lines, first information report, Disturbance Recorders, Event Loggers and any other relevant information to aid in analysis of the incidence.

In 120th OCCM, forum requested the concerned utilities furnish the details at the earliest.

NERLDC may please deliberate.

D.16 Updated List of Important Grid Elements of NER May 2016 (Draft):

As per Clause No 5.2.c of IEGC, List of Important Grid Elements of NER May 2016 (Draft) prepared. Updated List of Important Grid Elements of NER May 2016 (Draft) e-mailed to regional entities of NER and also available in NERLDC website.
It is requested to furnish data required for finalization of List of Important Grid Elements May 2016 by 15th May'16. This document will be finalized by 20th May'16.

The document is password protected. Password may be collected from SOII department of NERLDC.

This is for information & necessary action please.

D.17 Pre monsoon activity of transmission elements:

It was observed that number of tripping of transmission elements in NER increased during monsoon period of last year. For minimization of tripping transmission

elements in NER, it is requested to complete all activities (like trimming of trees, vegetation issues etc) of transmission elements before monsoon.

Members may please discuss.

D.18 Design & implementation of SPS related to HVDC operation:

BNC-Agra +/- 800 kV HVDC Pole-I under operation since long and power, of the order of around 500 MW, is flowing in either direction depending on the system requirement. Any problem in AC interregional links, especially during power flow from BNC to Agra, may result in disturbance in NER grid. To address the situation it is very much essential to design a SPS scheme and implement as early as possible. All the members are requested to please contribute in designing the SPS.

Other SPS and islanding schemes, which are in place at present, also need to be reviewed considering changes in network topology

Members may please deliberate.

D.19 Prior intimation regarding non-availing of approved shutdown:

It has been observed that on many occasions OCC approved shutdowns are not being availed by the utilities and intimation for most of the cases is communicated just before the schedule time for availing the shutdown [e.g. RHEP BNC recently]. This is creating problem in operational planning as well as other shutdown proposals of different utilities cannot be cleared. The matter has been deliberated in earlier OCC meetings also.

This is for information please.

D.20 Procurement of ERS for NER from PSDF funding:

PSDF Secretariat (NLDC, New Delhi) vide. NLDC-PSDF/NPC-CEA/2016-17/60 dtd. 21st April 2016 has intimated that submission and approval of the schemes is governed in accordance with the guidelines for disbursement of funds from PSDF approved by MoP on 18.9.2014. Guidelines are available on http://psdfindia.in/. The schemes have to be submitted as per formats prescribed in guidelines.

NERPC/NERTS may please deliberate.

D.21 Submission of data regarding large scale integration of Renewable Energy:

MoP vide. 23/2/2005-R&R(Vol-XI) dated 22.03.2016 has forwarded communication of MNRE letter No. 11/7/2013-EFM dated 02.03.2016 wherein it was mentioned regarding compilation of data to meet renewable energy targets of 175 GW by 2020.
The following data are required for the said purpose:
a) Data on the technical capacities of power plants such as minimum load, rate of change of generation, start-up time and down time, minimum standstill time, State-wise and region-wise.
b) Thermal balancing potential of RE rich states today and upto 2020(region-wise also).

c) Theoretical hydro balancing potential of states today and upto 2020(region-wise also).

d) Pumped hydro projects capabilities today and upto 2020(region-wise also).

e)Forecasting and scheduling regulations by States.

Members may please deliberate.

D.22 Schedule Revision of Palatana:

OTPC vide mail dated 27th April 2016 had requested for schedule revision for 11.04.2016 and 16.04.2016. On 11.04.2016 Block-1 Tripped at 20:11 Hrs on SPS-3 protection. So schedule revision equal to actual generation is requested for Block-81 to 85. On 16.04.2016 both Block Tripped due to NE Grid Failure at 12:03 Hrs on 16/04/2016, so schedule revision equal to actual generation required for Block 49&50.

Members may like to discuss.

D.23 Frequent tripping of AGTCCPP units:

It has been reported that AGTCCPP units tripped on nos. of occasions in last couple of days due to heavy jerk in the grid/ Tripura system. This has resulted to heavy stress to the machines in addition to reduce the maintenance interval time. Tripura is requested to analyze the fault and rectify the same at the earliest.

TSECL, NEEPCO, NERLDC may please deliberate.

***D.24* Open-Cycle Generation Certification of NEEPCO:**

As per discussion in previous CCMs of NERPC, Open Cycle Certification of AGBPP is to be prepared on the basis of OCC approved shutdowns. NEEPCO is currently providing open cycle generation as per power plant records. Also open cycle generation SEM data (GT/ST) is to be provided by NERLDC.

Members may like to discuss.

Any other item:

***D.25* Start up Power of Unit#2 of BgTPP of NTPC:**

The commissioning activities of Unit-2/NTPC/Bongaigaon is going to start very soon. So, permission for drawl of start-up power for unit#2 and accordingly energy accounting for segregation of unit#1 firm power and start up power of unit#2 may please be included in the agenda item of forthcoming OCC for discussion and approval as per the existing regulations. SLD has already been given to NERLDC.

Date and Venue of next OCC

It is proposed to hold the 122nd OCC meeting of NERPC on second week of June, 2016. The date & exact venue will be intimated in due course.

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Name of the line	Operating voltage (KV)	Tower Type	Length KM)	Type of Conductor	CT Ratio at either end (max)		CT Ratio at either end (adopted)		Maximum Loading Capacity	Present Loading Capacity)	Remarks
					Stn A	Stn B	Stn A	Stn B			
132KV D/C RC Nagar-Agartala-I**	**132**	**Double Circuit**	**8.384**	**ACSR PANTHER**	**600/1**	**400/1**	**300/1**	**400/1**	**70**	**55**	**Upgradation of conductors of these lines to HTLS conductors has been approved in 5th SCM of NER on 08.08.15. It is proposed to increase the CT ratios at both ends of this D/C to 800/1 each. (Total of 12 CTs will need to be replaced by POWERGRID)**
132KV D/C RC Nagar-Agartala-II**	**132**	**Double Circuit**	**8.384**	**ACSR PANTHER**	**600/1**	**400/1**	**300/1**	**400/1**	**70**	**55**	
132KV S/C Badarpur-Kolasib	132	Single Circuit	107.226	AAAC PANTHER	600/1	600/1	600/1	600/1	75	75	No replacement of CTs required
132KV S/C Kolasib-Aizwal	132	Single Circuit	66.098	AAAC PANTHER	600/1	600/1	600/1	600/1	75	75	No replacement of CTs required
132 KV S/C Badarpur - Khliehriat	132	Single Circuit	76.646	AAAC PANTHER	600/1	600/1	600/1	600/1	75	75	No replacement of CTs required
132 KV S/C Jiribam- Aizwal	**132**	**Single Circuit**	**172.315**	**ACSR PANTHER**	**400/1**	**400/1**	**400/1**	**400/1**	**70**	**70**	**CT ratios need upgradation with 600/1 CTs at both ends of the line, in order to confirm to Dynamic Line ratings as per guidelines of NRCE (Total of 6 no. CTs will need to be replaced by POWERGRID)**
132 KV S/C Jiribam-Haflong	**132**	**Single Circuit**	**100.630**	**ACSR PANTHER**	**400/1**	**400/1**	**400/1**	**400/1**	**70**	**70**	**CT ratios need upgradation with 600/1 CTs at both ends of the line, in order to confirm to Dynamic Line ratings as per guidelines of NRCE (Total of 6 no. CTs will need to be replaced by POWERGRID)**
132KV S/C Khandong -Umrangso-Haflong	**132**	**Single Circuit**	**63.166**	**ACSR PANTHER**	**300/1**	**400/1**	**300/1**	**400/1**	**55**	**55**	**CT ratios need upgradation with 600/1 CTs at Khandong and Umrangshu ends of 132 kV Khandong - Umrangshu lines and Umrangshu & Haflong ends of 132 kV Umrangshu - Haflong lines, in order to confirm to Dynamic Line ratings as per guidelines of NRCE (Total of 12 no. CTs will need to be replaced; 3 CTs at Khandong by NEEPCO; 3 CTs at Umrangshu end of 132 kV Umrangshu - Khandong by AEGCL; 3 CTs at Umrangshu end of 132 kV Umrangshu - Haflong line by AEGCL; 3 CTs a Haflong end of 132 kV Umrangshu - Haflong line by POWERGRID)**
132kV S/C Kumarghat-R.C.Nagar	132	Single Circuit	104.020	ACSR PANTHER	600/1	600/1	600/1	600/1	75	75	No replacement of CTs required
132 KV S/C Loktak - Imphal-II	**132**	**Single Circuit**	**35.040**	**ACSR PANTHER**	**400/1**	**600/1**	**400/1**	**600/1**	**75**	**75**	**CT ratios need upgradation with 600/1 CTs at Loktak end of the line, in order to confirm to Dynamic Line ratings as per guidelines of NRCE (Total of 3 no. CTs will need to be replaced by NHPC)**
132KV S/C Nirjuli-Ranganadi	132	Single Circuit	22.29	ACSR PANTHER	600/1	500/1	600/1	500/1	75	75	No replacement of CTs required
132kv Palatana-Surajmani Nagar	132	Double Circuit	35.00	Twin ACSR Moose	600/1	600/1	600/1	600/1	120	120	No replacement of CTs required

PROPOSED SHUTDOWN OF ELEMENTS FOR 121th OCCM- BAR CHART

SN	Name of Element	May-16 / Jun-16	Time	
1.TRANSMISSION LINES				
1	132 kV Imphal - Ningthukhong bay		08:00 to 15:00	AMP
2	132KV Imphal_Imphal_I		08:00 to 15:00	AMP
3	132 KV D/C R. C. Nagar - Agartala # I		08:00 to 15:00	27/05/2016--Replacement of Conductor at LOC 29-30 (NOTE : 33 kV/ 11 kV line crossing hence Concern from TSECL is required on 13.05.2016) 28/05/2016 -- Jumper replacement at Loc.0I Y & B ph (Middle & Bottom)
4	132 KV D/C R. C. Nagar - Agartala # II		08:00 to 15:00	Jumper replacement at Loc.0I R & B ph (Top and Bottom) conductor.
5	132 KV S/C R. C. Nagar - Kumarghat T/L		08:00 to 15:00	conductor repairing work at Loc. No. 135 - 136
6	132 kv Gohpur - Nirjuli BAY AT GOHPUR SUBSTATION.		07:00 to 16:00	REPLACEMENT OF DEFECTIVE POLE OF 145KV CIRCUIT BREAKER
7	132 kV Salaketi - Gelengphu TL		08:00 to 16:00	Insulator replacement & Cutting falling height tree branches caused by wind.
8	400 kV Bongaigaon - Azara TL		08:00 to 16:00	Jumper tightening
9	400 kV Bongaigaon - Byrnihat TL		08:00 to 16:00	Jumper tightening and Insulator replacement at loc 1026
10	400 kV Bongaigaon - Balipara # III		08:00 to 16:00	For Taking Oil Sample from Bushing. (Balipara # 3 Main Bay is out of service. Hence BLP will be out during Bong - Azara line)
11	400 kV Bongaigaon - Balipara # I		10:00 to 13:00	AMP of Line equipments
12	400 kV Bongaigaon - Balipara # IV		09:00 to 15:00	AMP of Line equipments
13	400 kV Bongaigaon - BTPS # II		10:00 to 13:00	Testing of DPR & Y phase fuse replacement
14	132 kV S/C Aizawl-Zemabawk # I T/L		08:00 to 16:00	AMP
15	132 kV S/C Aizawl-Kolasib T/L		08:00 to 16:00	for clearing of infringement at Loc. Nos.90-91, 116-117.
16	132 kV S/C Aizawl-Kumarghat T/L		08:00 to 16:00	for clearing of infringement at Loc. No.30-31,34-35,55-55A.
17	132 kV Silchar - Hailakandi # II		08:00 to 15:00	CB timing, DCRM, CRM, Relay testing.
18	132 kV Silchar - Imphal # II		08:00 to 15:00	CB timing, DCRM, CRM, Relay testing.
19	132 kV Silchar - Srikona # I @ SRIKONA (AEGCL)		08:00 to 15:00	CB timing, DCRM, CRM, Relay testing, CT Tan Delta , Isolator alignment.
20	132 kV Silchar - Srikona # II @ SRIKONA (AEGCL)		08:00 to 15:00	CB timing, DCRM, CRM, Relay testing, CT Tan Delta , Isolator alignment.
21	132KV, S/C, Badarpur-Kolasib TL		08:00 to 15:00	Jumper tightening
22	132KV, S/C, Badarpur- Kumarghat TL.		08:00 to 15:00	Disc Changing
23	132KV Silchar Imphal Ckt-2		08:00 to 15:00	For fixing of aviation lights as per instruction of civil aviation dept.
24	132KV Silchar Imphal Ckt-2		08:00 to 15:00	For OPEGW Works
25	132KV Rangia Deothang Ckt		10:00 to 14: 00	For alignment of line isolators at Rangia substation
26	132KV, S/C, Badarpur-Jiribam TL		08:00 to 15:00	Jumper tightening
27	400KV Palatana - Bongaigaon TL CKT - I	CKT-I depends on Resolving of ROW.	08:00 to 15:00	Jumper tightening
28	400KV Palatana - Bongaigaon TL CKT - II	CKT-II depends on Resolving of ROW.	08:00 to 15:00	Jumper tightening
29	400 KV Silchar - P. K. Bari TL CKT - I	1	07:00 to 15:00	CKT-I for jungle cutting and jumper nuts & Bolt tigtening.
30	400 KV Silchar - P. K. Bari TL CKT - II		07:00 to 15:00	CKT-II for jungle cutting and jumper nuts & Bolt tigtening.
31	220 KV Misa - Dimapur ckt I		07:00 to 15:00	For repairing conductor, jumper tightening, broken insulator changing
32	220 KV Misa - Dimapur ckt II		07:00 to 15:00	For repairing conductor, jumper tightening, broken insulator changing
33	400 KV Misa - Mariani (NEW) ckt- I		07:00 to 15:00	For fixing of Corona ring on L9 Nos Polymner insu lator.
34	400 KV Misa - Balipara CKT - II		07:00 to 15:00	For re-alignment of spacers and Corona ring.
35	400KV B'Chariali-Ranganadi Ckt - 1		07:00 to 15:00	For shifting of conductor from ERS to new tower.
36	400KV B'Chariali-Ranganadi Ckt - 2		07:00 to 17:00	i. Upto 07.05.2016 - Day Time SD ii. ***From 08.05.2016 to 12.05.2016 Continuous SD*** iii. Again from 13.05.2016 to 16.05.2016 Day time SD. (For erection of new tower, Dismantling of tower etc)
132 kV NIRJULI S/S				
1	TRANSFER BUS ALONG WITH MAIN BUS		08:00 to 16:00	REPLACEMENT OF TRANSFER BUS CONDUCTOR
2	50 MVA ICT-I		08:00 to 16:00	ERECTION OF NEW 145KV CT
3	50 MVA ICT-II		08:00 to 16:00	ERECTION OF NEW 145KV CT
400kV BALIPARA SS				
1	25MVAR Tertiary Reactor-IV		08:00 to 16:00	CT Tan delta timing of CB
2	B'Chariali #I - **63 MVAR L/R**		08:00 to 16:00	DCRM of CB
3	B'Chariali #II - **63 MVAR L/R**		08:00 to 16:00	DCRM of CB
4	400 kV BONGAIGAON #I - **MAIN BAY**		08:00 to 16:00	DCRM of CB
5	400/220 kV ICT (315 MVA) - **MAIN BAY**		08:00 to 16:00	Timing & DCRM
6	400 kV BONGAIGAON #IV - **MAIN BAY**		08:00 to 16:00	Timing & DCRM
7	80 MVAR B/R - II		08:00 to 16:00	Bushing Tand Delta, Timing
8	25MVAR Tertiary Reactor-II		08:00 to 16:00	CT Tan delta timing of CB
9	400 kV Misa # II - MAIN BAY		08:00 to 16:00	DCRM of CB
10	400 kV B'Chariali # III - MAIN BAY		08:00 to 16:00	DCRM of CB
11	400 kV B'Chariali # IV - MAIN BAY		08:00 to 16:00	Timing & DCRM of CB
12	400 kV Bongaigaon # IV - MAIN BAY		08:00 to 16:00	Timing & DCRM of CB
13	220 kV Main Bus 1 & Transfer Bus and 220KV Main Bus-2		08:00 to 16:00	For Connecting ICT - II BAY
400KV BONGAIGAON S/S				
1	400 kV Bus Reactor # 4		10:00 to 14:00	For taking Oil sample from Bushing.
2	400/220 kV ICT (315 MVA)		10:00 to 10:45	ICT Change Over of Units
3	400/220 kV ICT (315 MVA) - MAIN BAY	ICT will remain in service	10:45 to 14:00	AMP of ICT equipments
4	Salakati - Birpara # II -- MAIN BAY		08:00 to 16:00	AMP of Main Bay.
400KV SILCHAR Substation				
1	400 kV Pallatana # I -- L/R (63 MVAR)		08:00 to 16:00	Testing of Relays & protection scheme
2	400 kV B/R - I (63 MVAR)		08:00 to 16:00	Testing of Relays & protection scheme CFT test & Calibaration of OTI/WTI
3	400/132 kV ICT - I		08:00 to 16:00	AMP
4	400 kV Azara - **TIE BAY**	400 kV Silchar- Azara line will remain in service through MAIN BAY	08:00 to 16:00	Core Insulation test (CC, CL & G Terminals)
5	132 kV MAIN BUS - II	132 kV Power will flow from MAIN BUS - I	08:00 to 16:00	132 kV Bus - 2 Isolators aligment and adjustment & remote operation/ SIR.
6	132 kV MAIN BUS - I	132 kV Power will flow from MAIN BUS - II	08:00 to 16:00	132 kV Bus - 1 Isolators aligment and adjustment & remote operation.
7	400/132 kV ICT - II		08:00 to 16:00	AMP
8	400 kV Pallatana - **TIE BAY**	400 kV Silchar- Pallatana line will remain in service through MAIN BAY	08:00 to 16:00	Repeat test of CB DCRM
	MePTCL			
1	22Kv D/C Killing - Misa line		08:00 to 16:00	Maintenance work & jungle clearance
	NEEPCO (AGBP) 220kV			
1	Kathalguri-New Marioni (PG)		09:30 to 14:30	Facilating installation & commissioning works of ABT management system at AGBP
2	Kathalguri-Marioni (ASEB)		09:30 to 14:30	Facilating installation & commissioning works of ABT management system at AGBP
3	Kathalguri-Tinsukia-I		09:30 to 14:30	Facilating installation & commissioning works of ABT management system at AGBP
4	Kathalguri-Tinsukia-II		09:30 to 14:30	Facilating installation & commissioning works of ABT management system at AGBP
5	Kathalguri-Deomali		09:30 to 14:30	Facilating installation & commissioning works of ABT management system at AGBP
	AEGCL			
	ICT/Reactors/Bus at Mariani Sub-Station			
1	132 KV Main Bus		08:00 to 16:00	For dismantling old circuit breaker & replaced by new (CGL) SF6 circuit breaker of 132KV Dimapur Feeder & completing isolator jumpering work connected with main bus of 132KV new SF6 Jorhat-I breaker under ADB Scheme.
	220KV Lines			
1	Samaguri-Mariani II		08:00 to 16:00	Corridor cleaning, Jumper checking
	132KV Lines			
1	LTPS Mariani S/C		08:00 to 16:00	Corridor cleaning, Jumper checking
2	Jorhat-Mariani D/C		08:00 to 16:00	Corridor cleaning, Jumper checking
3	Jorhat-Gargaon-I		08:00 to 16:00	Corridor cleaning, Jumper checking
	66KV Lines			
1	Nazira-Mariani-I		08:00 to 16:00	Corridor cleaning, Jumper checking

Transformer Tap Optimisation Study

Senario : February 2016 — 09-Feb-16

Sl. No.	Substation	Voltage Ratio (kV)	Transformer No.	Capacity in MVA	Controlled Bus	Tap Step (%)	Total Tap Positions	Nominal Tap	Present Tap	Voltage Profile				Optimised Tap Changer Position
										Off-Peak			Peak	
										Nominal Taps	Present Tap setting	After Optimisaton	After Optimisaton	
1	**Balipara**	400/220	1	315	400kV	1.25	17	9	9	422	417	413	407	NO+1 (10)
		220/132	2	50	132kV	1.25	17	9	9	140	140	136	133	NO+2 (11)
		220/132	3	50	132kV	1.25	17	9	9					NO+2 (11)
2	**Bongaigaon**	400/220	1	315	400kV	1.25	17	9	12	419	419	416	412	NO+3 (12)
3	**Salakati**	220/132	1	50	132 kV	1.25	17	13	13	142	138	137	133	NO (13)
		220/132	2	50	132 kV	1.25	17	13	16					NO+3 (16)
4	**Misa**	400/220	1	315	400kV	1.25	17	9	5	423	417	410	404	NO-4 (5)
		400/220	2	315	400kV	1.25	17	9	5					NO-4 (5)
5	**RHEP**	400/132	1	360	400 kV	2.5	17	9	9	424	419	414	409	NO+2 (11)
		400/132	2	360	400 kV	2.5	17	9	9					NO+2 (11)
6	**Azara**	400/220	1	315	400kV	1.25	17	9	8	421	419	416	410	NO-1 (8)
		400/220	2	315	400kV	1.25	17	9	8					NO-1 (8)
7	**Biswanath Chariali (PG)**	400/132	1	200	400 kV	1.25	17	9	8	425	420	415	410	NO-1 (8)
		400/132	2	200	400 kV	1.25	17	9	8					NO-1 (8)
8	**Silchar**	400/132	1	200	400 kV	1.25	17	9	9	419	421	417	409	NO (9)
		400/132	2	200	400 kV	1.25	17	9	9					NO (9)
9	**Byrnihat**	400/220	1	315	400 kV	1.25	17	9	9	426	428	426	420	NO+2 (11)
		400/220	2	315	400 kV	1.25	17	9	9					NO+2 (11)
		220/132	5083/1	160	132 kV	1.25	17	9	9	140	141	141	141	NO-1 (8)
		220/133	5083/1	160	132 kV	1.25	17	9	9					NO-1 (8)
10	**Palatana**	400/132	1	125	132 kV	1.25	17	9	9	140	141	137	134	NO+2 (11)

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

List of Units belonging to NEEPCO

Sl No	Station	*Unit No*	Source	Installed Capacity in MW	Ramp Up Rate/ Min		Ramp Down Rate/ Min		Technical Minimum		Dead-Band/ Forbidden Zone if any	Remarks
					Unit-wise	Station-wise	Unit-wise	Station-wise	Unit-wise	Station-wise		
1	Ranganadi	1	Hydro	135								
2	Ranganadi	2	Hydro	135								
3	Ranganadi	3	Hydro	135								
4	Kopili	1	Hydro	50								
5	Kopili	2	Hydro	50								
6	Kopili	3	Hydro	50								
7	Kopili	4	Hydro	50								
8	Khandong	1	Hydro	25								
9	Khandong	2	Hydro	25								
10	Kopili St II	1	Hydro	25								
11	Doyang	1	Hydro	25								
12	Doyang	2	Hydro	25								
13	Doyang	3	Hydro	25								
14	AGBPP	1	Gas	33.5								
15	AGBPP	2	Gas	33.5								
16	AGBPP	3	Gas	33.5								
17	AGBPP	4	Gas	33.5								
18	AGBPP	5	Gas	33.5								
19	AGBPP	6	Gas	33.5								
20	AGBPP	7	Steam	30								
21	AGBPP	8	Steam	30								
22	AGBPP	9	Steam	30								
23	AGTPP	1	Gas	21								
24	AGTPP	2	Gas	21								
25	AGTPP	3	Gas	21								
26	AGTPP	4	Gas	21								
27	AGTPP	5	Steam	25.5								
28	AGTPP	6	Steam	25.5								
29	Monarchak	1	Gas	65.42								
30	Monarchak	2	Steam	35.58								

List of Units belonging to NHPC

Sl No	Station	*Unit No*	Source	Installed Capacity in MW	Ramp Up Rate/ Min		Ramp Down Rate/ Min		Technical Minimum		Dead-Band/ Forbidden Zone if any	Remarks
					Unit-wise	Station-wise	Unit-wise	Station-wise	Unit-wise	Station-wise		
1	Loktak	1	Hydro	35								
2	Loktak	2	Hydro	35								
3	Loktak	3	Hydro	35								

List of Units belonging to OTPC

Sl No	Station	*Unit No*	Source	Installed Capacity in MW	Ramp Up Rate/ Min		Ramp Down Rate/ Min		Technical Minimum		Dead-Band/ Forbidden Zone if any	Remarks
					Unit-wise	Station-wise	Unit-wise	Station-wise	Unit-wise	Station-wise		
1	Palatana	GT-I	Gas	232.39								
2	Palatana	ST-I	Steam	130.91								
3	Palatana	GT-II	Gas	232.39								
4	Palatana	ST-II	Steam	130.91								

List of Units belonging to NTPC

Sl No	Station	*Unit No*	Source	Installed Capacity in MW	Ramp Up Rate/ Min		Ramp Down Rate/ Min		Technical Minimum				Dead-Band/ Forbidden Zone if any	Remarks
									Unit-wise		Station-wise			
					Unit-wise	Station-wise	Unit-wise	Station-wise	With Oil Firing	Without Oil Firing	With Oil Firing	Without Oil Firing		
1	BgTPP	1	Coal	250										
2	BgTPP	2	Coal	250										
4	BgTPP	3	Coal	250										

List of Units belonging to APGCL

Sl No	Station	*Unit No*	Source	Installed Capacity in MW	Ramp Up Rate/ Min		Ramp Down Rate/ Min		Technical Minimum		Dead-Band/ Forbidden Zone if any	Remarks
					Unit-wise	Station-wise	Unit-wise	Station-wise	Unit-wise	Station-wise		
1	Langpi	1	Hydro	50								
2	Langpi	2	Hydro	50								
3	LTPS	1	Gas	15								
4	LTPS	2	Gas	15								
5	LTPS	3	Gas	15								
6	LTPS	4	Gas	15								
7	LTPS	5	Gas	30								
8	LTPS	6	Gas	30								
9	LTPS	7	Gas	30								
10	LTPS	8	Steam	37.2								
11	NTPS	1	Gas	23								
12	NTPS	2	Gas	23								
13	NTPS	3	Gas	23								
14	NTPS	4	Gas	12.5								
15	NTPS	5	Gas	30								
16	NTPS	6	Gas	22								

List of Units belonging to MePGCL

Sl No	Station	*Unit No*	Source	Installed Capacity in MW	Ramp Up Rate/ Min		Ramp Down Rate/ Min		Technical Minimum		Dead-Band/ Forbidden Zone if any	Remarks
					Unit-wise	Station-wise	Unit-wise	Station-wise	Unit-wise	Station-wise		
1	Umiam St I	1	Hydro	9								
2	Umiam St I	2	Hydro	9								
3	Umiam St I	3	Hydro	9								
4	Umiam St I	4	Hydro	9								
5	Umiam St II	1	Hydro	10								
6	Umiam St II	2	Hydro	10								
7	Umiam St III	1	Hydro	30								
8	Umiam St III	2	Hydro	30								
9	Umiam St IV	1	Hydro	30								
10	Umiam St IV	2	Hydro	30								
11	Umtru	1	Hydro	2.8								
12	Umtru	2	Hydro	2.8								
13	Umtru	3	Hydro	2.8								
14	Umtru	4	Hydro	2.8								
15	Myndtu Leshka	1	Hydro	42								
16	Myndtu Leshka	2	Hydro	42								
17	Myndtu Leshka	3	Hydro	42								
18	Sonapani	1	Hydro	1.5								
19	MPL	1	Coal	8								
20	MPL	2	Coal	43								
21	Adhunik	1	Coal	25								
22	Shyam Century	1	Coal	13.8								
23	Maithan Alloys Ltd	1	Coal	15								

List of Units belonging to TSECL

Sl No	Station	*Unit No*	Source	Installed Capacity in MW	Ramp Up Rate/ Min		Ramp Down Rate/ Min		Technical Minimum		Dead-Band/ Forbidden Zone if any	Remarks
					Unit-wise	Station-wise	Unit-wise	Station-wise	Unit-wise	Station-wise		
1	Gumti	1	Hydro	5								
2	Gumti	2	Hydro	5								
3	Gumti	3	Hydro	5								
4	Baramura	1	Gas	5								
5	Baramura	2	Gas	5								
6	Baramura	3	Gas	6.5								
7	Baramura	4	Gas	21								
8	Baramura	5	Gas	21								
9	Rokhia	1	Gas	8								
10	Rokhia	2	Gas	8								
11	Rokhia	3	Gas	8								
12	Rokhia	4	Gas	8								
13	Rokhia	5	Gas	8								
14	Rokhia	6	Gas	8								
15	Rokhia	7	Gas	21								
16	Rokhia	8	Gas	21								
17	Rokhia	9	Gas	21								

List of Units belonging to Electricity Department, Nagaland

Sl No	Station	*Unit No*	Source	Installed Capacity in MW	Ramp Up Rate/ Min		Ramp Down Rate/ Min		Technical Minimum		Dead-Band/ Forbidden Zone if any	Remarks
					Unit-wise	Station-wise	Unit-wise	Station-wise	Unit-wise	Station-wise		
1	Likimro	1	Hydro	8								
2	Likimro	2	Hydro	8								
3	Likimro	3	Hydro	8								

List of Units belonging to Power & Electricity Department, Mizoram

Sl No	Station	*Unit No*	Source	Installed Capacity in MW	Ramp Up Rate/ Min		Ramp Down Rate/ Min		Technical Minimum		Dead-Band/ Forbidden Zone if any	Remarks
					Unit-wise	Station-wise	Unit-wise	Station-wise	Unit-wise	Station-wise		
1	Serlui B	1	Hydro	4								
2	Serlui B	2	Hydro	4								
3	Serlui B	3	Hydro	4								
4	Bairabi	1	HSD	5.7								
5	Bairabi	2	HSD	5.7								
6	Bairabi	3	HSD	5.7								
7	Bairabi	4	HSD	5.7								