भारत सरकार Government of India
विद्युत मंत्रालय Ministry of Power
उत्तर पूर्वी क्षेत्रीय विद्युत समिति
North Eastern Regional Power Committee
एन ई आर पी सी कॉम्प्लेक्स, डोंग पारमाओ, लापालाङ, शिल्लोंग-७९३००६, मेघालय
NERPC Complex, Dong Parmaw, Lapalang, Shillong - 793006, Meghalaya

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No. NERPC/SE (O)/OCC/2015/***3952-87*** Dated: February 06, 2015

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 105th OCC Meeting - Reg.

Sir,

The Minutes of the 105th OCC Meeting of NERPC held on 23.01.2015 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,

बी. लिंगखोइ

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. लिंगारेड्डु

निदेशक / **Director/ SE**

North Eastern Regional Power Committee

MINUTES OF THE 105th OPERATION COORDINATION SUB-COMMITTEE MEETING OF NERPC

Date : 23/01/2015 (Friday)
Time : 10:00 hrs
Venue : "Hotel Nandan", Guwahati.

The List of Participants in the 105th OCC Meeting is attached at **Annexure – I**

Shri B. Lyngkhoi, Director/SE(O), NERPC introduced Shri P.K. Mishra the new Member Secretary of NERPC. He informed that Shri Mishra has joined NERPC on 10.12.2014 and further said that prior to joining NERPC he had served in different Divisions and capacities in CEA HQR, Regional Inspectorial Organization (RIO), Chennai, Narmada Control Authority and also in Ministry of Defence. His long association & experiences in Power Sector and in Administration will help N.E. Region to take to the new height.

He also introduced & welcomed Shri M.P. Singh, Director (FS&A), CEA who had come to attend the meeting after discussion with Dept. of Power, Govt. of Arunachal Pradesh. He requested the members to furnish various data to CEA whenever sought by them.

Shri P.K. Mishra welcomed all the participants to the 105th OCC meeting and stated that constituent members should attend various Sub-committee of NERPC regularly and take active participation in the discussion for fruitful outcome. Further, he stated that N.E. Region is now a part of NEWS Grid and hence all constituents should adhere to maintain grid discipline for safety and security of the system.

Thereafter, he requested Shri B. Lyngkhoi to take up the agenda items for discussion.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 104th MEETING OF OPERATION SUB-COMMITTEE OF NERPC.

The minutes of 104th meeting of Operation Sub-committee held on 5th December, 2014 at Dimapur were circulated vide letter No. NERPC/SE (O)/OCC/2014/3291-3326 dated 15th December, 2014.

The Sub-committee confirmed the minutes of 104th OCCM of NERPC as no comments/observations were received from the constituents.

ITEMS FOR DISCUSSION

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

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

NER PERFORMANCE DURING DECEMBER, 2014

	Energy Met (MU)			Energy Reqr. (MU)		
States	**Dec-14**	**Nov-14**	**% inc(+)/dec(-)**	**Dec-14**	**Nov-14**	**% inc(+)/dec(-)**
Ar. Pradesh	57	**54**	5.9	65.0	**65.0**	0.0
Assam	567	**634**	-10.6	680.0	**660.0**	3.0
Manipur	65	**67**	-4.0	65.0	**70.0**	-7.1
Meghalaya	159	**140**	14.0	175.0	**175.0**	0.0
Mizoram	39	**37**	5.3	40.0	**43.0**	-7.0
Nagaland	44	**62**	-28.8	60.0	**65.0**	-7.7
Tripura	81	**79**	3.5	120.0	**110.0**	9.1
Region	**1013**	**1072.98**	-5.6	**1205.00**	**1188.00**	1.4

	Demand Met (MW)			Demand in (MW)		
States	**Dec-14**	**Nov-14**	**% inc(+)/dec(-)**	**Dec-14**	**Nov-14**	**% inc(+)/dec(-)**
Ar. Pradesh	117	**116**	0.6	125	**125**	0.0
Assam	1204	**1250**	-3.7	1450	**1435**	1.0
Manipur	139	**138**	0.7	140	**140**	0.0
Meghalaya	367	**338**	8.6	370	**350**	5.7
Mizoram	86	**80**	7.5	90	**90**	0.0
Nagaland	123	**115**	7.0	125	**120**	4.2
Tripura	210	**222**	-5.4	250	**270**	-7.4
Region	**2170**	**2125**	2.1	**2460**	**2525**	-2.6

REGIONAL GENERATION & INTER-REGIONAL EXCHANGE IN MU

Month---->	**Dec-14**	**Nov-14**
Total Generation in NER (Gross)	833	862.57
Total Central Sector Generation (Gross)	555	597.24
Total State Sector Generation (Gross)	278	265.33
Inter-Regional Energy Exchange		
(a) NER-ER	16.61	13.31
(b) ER-NER	236.90	220.76
© Net Import	220.29	207.45

AVERAGE FREQUENCY (Hz)

Month---->	**Dec-14**	**Nov-14**
	% of Time	% of Time
Below 49.9 Hz	23.02	15.29
Between 49.9 to 50.05 Hz	48.96	53.97
Above 50.05 Hz	28.02	30.74
Average	49.98	50
Maximum	50.58	50.42
Minimum	49.54	49.58

From the above table, it is seen that energy requirement met (MU) of the region decreased from the previous month, whereas requirement of energy increased from the previous month.

FOLLOW UP ACTION

C.1 Synchronization of Palatana Module -II

During 104th OCC meeting, representative from OTPC informed that CoD of Unit-II is expected to be completed by December 2014.

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

SN	Items	Status as given in 104th OCC Meeting	Status as on 105th OCC
1	Trial operation and CoD of Unit -II of Palatana	OTPC Unit-II is running- IDLN tuning for 10 days from December 2nd week then trail run for 15 days from end of December, 2014.	*OTPC Unit-II is running- IDLN tuning for 10 days from December 2nd week then trail run for 15 days from end of December, 2014.
2	Trial operation and CoD of Unit -I of NTPC at Bongaigoan	Trial operation and CoD of Unit -I of NTPC at Bongaigoan completed on 29th Nov, 2014. Expected COD by March, 2015	Expected Date for Synchronization of Unit -# I by 31st March, 2015
3	400KV D/C Silchar - Melriat line	June, 2015	June, 2015
4	400KV D/C Silchar - Imphal line	December, 2014	February, 2015
5	220KV D/C Mariani (New) – Mokokchung	December, 2014	February, 2015
6	400KV D/C Byrnihat-Bongaigaon line	December, 2014	January, 2015
7	400KV D/C Azara - Bongaigaon line	December, 2014	Test charged completed on 14th January, 2015

*The detail programme for synchronization of Pallatana Unit - #2 is given below:

As per programme received from BHEL, they desire to do the IDLN tuning on Unit-2 in Combined Cycle full load Mode between 5-6 February, 2015. After this, a shutdown will be taken on Unit – 2 for removal of precision instruments and Unit will be restarted on 12 February, 2015 for 15 days Trail Run and PPA Test during which, again full loading of the machine in Unit-2 will be performed.

	ACTIVITIES	DAYS	START	FINISH	REMARKS
A	**iDLN TUNING, ANALYSIS & REPORT**				
1	Arrival at site, GE inventory check, unit walk down to locate instrument location trend file set up and verification of control constants.	Day 1 (OFF LINE)	01.02.15	01.02.15	
2	Pre-test readiness check Conduct-6 hrs CEMS drift check	Day 2 (OFF LINE)	02.02.15	02.02.15	
3	1. GE precision instrument installation and Data Acquisition checks and trouble shooting. 2.Compressor Water wash preparation and water washing (off line)	Day 3 & 4 (OFF LINE)	03.02.15	04.02.15	Off line water wash audit
4	1. Conduct integrated DLN tuning at 76% and base load. 2.Data analysis and review	Day 5 & 6 (ON LINE)	05.02.15	06.02.15	Gas availability for Full loading
5	1. Shut down. 2. Finalise control setting and finalization of post tuning correction. 3. Removal of GE precision instruments. Discussion/ MOM/ Report preparation.	Day 7 & 8 (ON LINE)	07.02.15	08.02.15	Shut down for removal of GE precision instruments
6	Shut to continue to attend any observation during iDLN tuning	3	09.02.15	11.02.15	Total s/d- Sl no. 5 & 6 is 5 days
7	Restart for 15 days Trail and including Reliability Run and PPA Test	15	12.02.15	26.02.15	
8	COD				Declaration by OTPC

C.2 SPS scheme for Palatana

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)

The OCC Sub-committee continuously review the status of implementation of the scheme and the status as intimated in the 99th OCC Meeting is given below:

Case I: Already implemented.

Case II & III: 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 offer of BHEL is intimated by OTPC but the required schematic diagram as agreed in the 97th OCC meeting is unavailable.

Case III & IV (POWERGRID Part): The SPS – 3 & SPS – 4 will have to be made operational in case of tripping / outage of both 400kV Silchar – Byrnihat and 400kV Sichar – Azara Line for which POWERGRID has to carry out the modification of existing scheme.

OTPC had requested POWERGRID to look into following issues:

(a) SPS at OTPC end should not be modified with commissioning of 2nd Circuit of 400kV Silchar - Bongaigaon line. It is agreed in earlier OCC meetings that the SPS associated with Palatana need to be reviewed including enhancement of load shedding and NERLDC was requested accordingly to review the SPS on 99th OCC meeting.

(b) Trip command from two different sources should be available to desynchronize the machine to avoid unwanted 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 de-synchronization of Gas Turbines. During 93rd OCC meeting, subcommittee had suggested OTPC to discuss the matter with POWERGRID.

During 103rd OCC meeting, OTPC representative informed the members that BHEL has already implemented the scheme for reduction of generation of Palatana to 200 MW immediately on operation of SPS – 3.

DGM, NERTS informed that the necessary modification of SPS – 3 & SPS – 4 will done by November 2014.

OTPC was requested to submit the detail scheme of SPS – II & III to NERLDC. OTPC agreed and informed that they have completed SPS at their end and will inform through letter. Logic will be send to NERLDC by OTPC.

Enhancement of quantum of load relief during SPS operation:

The matter was deliberated in last OCC meeting and it was decided to convene meeting of identified committee for the review of SPS schemes to ensure higher load relief as well as changes to be incorporated in the schemes in view of changes in network topology. Further OTPC informed the house the status of SPS-3 [NERLDC is of the opinion that the elaborate scheme furnished by M/s BHEL may not be necessary and tripping of the identified CB will be serve the purpose. In addition the SPS-3 requires to be upgraded to incorporate addition of Silchar - Azara 400 kV line.

The matter was studied and deliberated by the system study group of NERPC on 14.10.2014 at NERLDC, Shillong. The minutes are reproduced below: -

1. Lumshnong – Khliehriat will be disconnected and Lumshnong will be fed from Panchgram.

Once SPS-1 or SPS – 2 or SPS -4 operates, then Lumshnong S/s will be tripped and a load relief of 15 MW may be expected.

2. Dharmanagar - P.K. Bari will remain disconnected from P.K. Bari and Dharmanagar & Dullavcherra will be fed from Silchar S/S radially.

Once SPS-1 or SPS – 2 or SPS -4 operates, then 132kV Sichar - Dullavcherra feeder will be tripped at Silchar End through SPS and relief of 14 MW load can be achieved.

POWERGRID, NERTS will have to incorporate the tripping of 132kV Sichar - Dullavcherra feeder in SPS-1 & SPS-2.

The above suggestions may be reviewed by system study committee as and when required.

During 104th OCC meeting, DGM, NERTS informed the members that the incorporation of tripping of 132kV Sichar - Dullavcherra feeder in SPS-1 & SPS-2 will be completed by November 2014.

The Sub-committee requested POWERGRID to complete the wiring for all the cases above in co-ordination with OTPC and also requested OTPC to extend all help to POWERGRID if necessary.

Deliberation of the Committee

DGM, NERTS informed the members that the incorporation of tripping of 132kV Sichar - Dullavcherra feeder in SPS-1 & SPS-2 has been completed in December 2014.

DGM, OTPC requested NERTS to send the schematic wiring to them for future reference. NERTS agreed.

The Sub-committee felt that after commissioning of 400kV Azara-Bongaigoan, the SPS scheme will be reviewed again by the system studies group and finalize the same.

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 latest status intimated during the 104th OCC meeting is given 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 and they have started sending regularly.

Manipur: Informed that UFRs based load shedding for all the four stages have been implemented, the feeders name and 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 III & IV and M/s Alstom is awarded for implementation. It is expected to implement Stages III & IV by February, 2015.

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: EE, SLDC informed that UFRs based load shedding for 20MW have been implemented by them for all stages. S.E (O) requested Ar. Pradesh to send the list of feeders and also to send the report to NERLDC regularly.

Mizoram: EE, SLDC, Mizoram informed that UFR based load shedding for Stages I has been completed. Stage - II is under consideration which may be expected to be implemented by December 2014. Stage - III & IV is likely to be completed by February, 2015. Mizoram is sending the UFR reports regularly for the implemented stages.

SE(O) informed that as per guidelines by CEA its mandatory to inspect at least one third of UFRs in the region during the year. In view of the above, inspection will be carried out in the month of January, 2015. The itinerary will be intimated in due course.

The sub-committee noted as above.

C.4 Lines under long outages

During the 101st OCC meeting, the issue for restoration of these lines was reviewed by the committee and the status was as follows:

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

Manipur representative informed that towers are faulty in locations 90 and 91 due to constructions of 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 after receipt of the compensations. The line is expected to be restored by October 2014.

During 104th OCC meeting, Manipur representative informed that the work will be completed by end of December, 2014.

Deliberation of the Committee

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

The Sub-committee noted as above.

C.5 CT Ratio of Transmission Lines in NER:

During 102nd OCC meeting, it was decided that CT ratios of transmission lines of NER are to be enhanced for enhancement of transfer capability & reliable grid operation. List of these transmission lines are available in minutes of 102nd OCCM of NERPC. NEEPCO has submitted CT configuration details; it is requested to furnish the adopted CT ratio details.

OTPC and NEEPCO informed that the works pertaining to them have been completed and the same has been sent to NERLDC.

During 104th OCC meeting, DGM, NERTS stated that NERLDC should first study the loadability and quantum of the power flow requires on each line so that concerned utilities can upgrade the required CT for the particular line instead of generalizing the issue. Moreover, NERLDC should clearly specify if the proposed ratings of the CTS are assessed on the basis of metering core or protection core. NERLDC confirmed that the ratios are based on loadability of lines and hence based on metering core.

The Sub-committee requested NERLDC to prepare the fresh list of feeders where loadability of the line is necessary for enhancement along with corresponding CT ratio.

Deliberation of the Committee

SE (O) stated that the issue will be discussed in Item No. D.8.

The Sub-committee noted.

C.6 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.

During 101st OCC meeting, NERLDC informed that all the beneficiary states except Manipur have submitted the required information. Now NERLDC informed that NEEPCO (Khupi S/S), POWERGRID (Mariani, Mokokchung, Melriat, Namsai, Tezu & Roing), NHPC (Loktak HEP & Lower Subansiri HEP), OTPC (Palatana GBPP) and NTPC (Bongaigaon TPP) have not furnished these data till date.

During 102nd OCC meeting, Manipur representative stated that they had already sent to GM, NERLDC. Tripura representative submitted to NERLDC during the meeting. NERTS agreed to submit soon. NEEPCO will check and submit. OTPC agreed to submit soon. POWERGRID (Biswanath Chariali, Mariani, Mokokchung, Melriat, Namsai, Tezu & Roing), NHPC (Lower Subhansiri HEP), OTPC (Palatana GBPP) and NTPC (Bongaigaon TPP) have not furnished these data till date.

During 104th OCC meeting, NERLDC informed that Ar. Pradesh, Assam & Meghalaya have not furnished geographical co-ordinates of the nodes as furnished by them.

The above constituents have agreed to furnish the information as per format of NERLDC soon.

Deliberation of the Committee

DGM, NERLDC requested the constituents to refer to Annexure – C.6 and informed that Ar. Pradesh, Assam & Meghalaya have furnished the information for Pasighat, Barnagar & GVIL Cement S/S respectively. Assam & Meghalaya have agreed to submit other places soon.

The Sub-committee has decided that all the remaining constituents should furnish the information as per list mentioned in Annexure – C.6 by February, 2015 positively.

C.7 Single Line Diagram of Sub-stations, Switching Stations & Power Stations of NER:

During 104th OCC meeting, NERLDC informed that NEEPCO, NHPC, Ar. Pradesh, Assam, Manipur, Meghalaya, Nagaland & Tripura have not furnished geographical co-ordinates of the nodes as per **Annexure – C.7.**

Now NERLDC informed that POWERGRID, OTPC, NHPC (except Lower Subansiri), NTPC & DoP, Arunachal Pradesh (except Pasighat), P&E, Mizoram (except Sihmuii), Me. PTCL (except as per list at **Annexure – C.7**), DoP, Nagaland (except as per list at Annexure IV), TSECL (as per list at **Annexure – C.7**) have furnished. Single Line Diagrams of nodes of AEGCL (except as per list at **Annexure – C.7**) have been collected from DPR for rectification of Protection System. NEEPCO (as per list at **Annexure – C.7**), NHPC (for Lower Subansiri), DoP, Arunachal Pradesh (for Pasighat), AEGCL (as per list at **Annexure – C.7**), MSPCL (as per list at Annexure IV), Me. PTCL (as per list at **Annexure – C.7**), P&E, Mizoram (for Sihmuii), DoP, Nagaland (as per list at Annexure IV), and TSECL (as per list at **Annexure – C.7**) are requested to furnish Single Line Diagram of nodes as these diagrams are required for system studies, outage coordination etc.

In the meeting it was confirmed that AP has submitted the SLD of Pasighat S/S.

Deliberation of the Committee

The Sub-committee has decided that all the remaining constituents should furnish the information as per list mentioned in Annexure – C.7 by February, 2015 positively.

C.8 Finalization of Annual Load Generation Balanced Report (LGBR) for peak as well as off-peak scenarios and the Annual outage plan for 2015-2016 by 31.12.2014 as per IEGC:

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

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

Deliberation of the Committee

SE (O) informed that draft LGBR for 2015-2016 has been prepared by NERPC. He requested all the constituents to go through the draft LGBR attached at **Annexure – C.8** and give their comments/observations at the earliest so that the same can be finalized by 31.01.2015. He further requested that all the generators and transmission utilities to give their plan shutdown for FY 2015-16.

Assam requested NERPC to mail the generation data received from NEEPCO, OTPC & NHPC so they can also prepare their own LGBR. The same was endorsed by other constituents also. NERPC agreed.

The sub-committee noted as above.

C.9 Latest status of FGMO/RGMO implementation in different generating stations:

To update the available record of FGMO/RGMO implementation in NER it is requested that the latest unit-wise status of implementation of FGMO/RGMO in different Central & State sector generating stations may please be furnished to NERLDC at the earliest.

During 104th OCC meeting, NERLDC highlighted the present status available with them as attached at **Annexure – C.9**, members agreed to send the updated status to NERLDC at the earliest.

Deliberation of the Committee

The Sub-committee has decided that all the concerned constituents should furnish/update the information as per list mentioned in Annexure – C.9 by February, 2015 positively.

C.10 Submission of list of feeders connected to essential load:

As per clause no 5.8.c of IEGC, essential loads are to be restored on priority during restoration process. Constituents of NER are requested to furnish list of feeders connected to essential load at the earliest to incorporate in next version of Black start & Restoration Procedures of NER.

During 104th OCC Meeting, all SLDCs were requested to prepare restoration procedure in respect of concerned states and intimate essential loads with quantum to be restored on priority to NERLDC at the earliest.

Deliberation of the Committee

DGM, NERLDC informed that above list of feeders have been received from Ar. Pradesh, Assam & Tripura. He requested the remaining constituents to submit the above information latest by February, 2015.

The sub-committee noted as above.

C.11 Progress Report of Ongoing Project:

Progress reports of ongoing generation and transmission projects of NER need to be communicated to NERLDC by all constituents on monthly basis as per format. The progress of different elements are necessary for incorporation in Operational Feedback and other reports as also for preparation of Base Case for system study in NER. Accordingly, constituents are requested to furnish the progress report of their elements by 10th of every month for the previous month.

Currently, only NTPC, NEEPCO and Me. PGCL are furnishing monthly progress report of elements on regular basis.

During 104th OCC meeting, members agreed to send the required information as per format attached at ***Annexure – C.11***

Deliberation of the Committee

The Sub-committee has requested NERPC to write to all the Heads of Organizations to furnish the above information as per Annexure – C.11 at the earliest.

C.12 Formats for new unit expected to be commissioned within 2 months:

Information related to new units which are expected to be added/ commissioned within next 2 months needs to be furnished to NERLDC by concerned utilities as per format at Annexure below.

The technical data are necessary for preparation of Base Case for system study in NER (NEEPCO is requested to furnish the information/data of AGTPP Unit 5 & 6 and Monarchak Unit I & II) which may be furnished as per **Annexure-C.12 (i) & (ii).**

During 104th OCC meeting, the Sub-committee requested all those utilities, who are likely to commission their new units/elements within next two months, to apply in the prescribed format **C.12 (i) & (ii).**

Deliberation of the Committee

Sr. Manager, NEEPCO informed that the formats have already forwarded to site and the same will be submitted within February, 2015.

The Sub-committee noted as above.

C.13 Requisition of ERS:

During 103rd OCC meeting, Assam has intimated that they are planning to procure 8 (eight) numbers of ERS for their transmission networks. The procurement will be funded from PSDF as discussed during the meeting with Member (Power System), CEA on 10.11.2014.

The forum requested all the constituents to furnish to NERPC the requirement at the earliest so that the consolidated requirements of NER can be sent to CEA.

In the meantime, ERS requisition has been received from Assam, Ar. Pradesh, Manipur, Mizoram, Nagaland & Meghalaya.

During 104th OCC meeting, the Sub-committee requested NERPC to work out the methodology regarding ERS requisition sent by the constituents so that the consolidated scheme can be put up to CEA for funding from Central Government as intimated by Member Secretary, NERPC.

Deliberation of the Committee

SE (O) informed that ERS requisition has been received from all the constituents, but the matter was discussed with Member Secretary I/C, NERPC to procure one set each of ERS (13 elements for one set) for the 7 constituents and one set as spare to be kept in central location. The same has been forwarded to CEA for funding of above 8 ERS from PSDF.

Assam informed that they have come to know that only two (2) ERS has been agreed by CEA to be funded from PSDF.

Member Secretary stated that he will take up the matter with CEA since considering the terrain and geographical conditions it would be futile if only 2 ERS is being agreed for NER. Moreover, it would be very difficult to find the methodology about the locations of keeping these two ERS.

Representative from ENICL enquired if these ERS can also be utilized by transmission agency.

The Sub-committee suggested that it is mandatory for all the transmission utility to have their own set of ERS. However, till they procure, the same may be extended to them in case of any exigency on rent charges.

The Sub-committee noted as above.

C.14 SPAR for Loktak HEP:

NHPC informed that Single Phase Auto-reclosure scheme is going to be installed at Loktak -Jiribam – II and Loktak – Imphal –II feeders in the month of January, 2015. Shutdown of Sub-station at Loktak is required during this time and the exact date will be intimated after getting the date from M/S AREVA (T&D) Ltd.

During 104th OCC meeting, representative from NHPC informed that once M/S AREVA confirms the date of visit, necessary shutdown will be sought for from NERPC and the work is likely to be carried out in January, 2015.

Deliberation of the Committee

NHPC informed that control cable has already been procured and the work will be completed by February, 2015.

The Sub-committee noted as above.

C.15 Requirement of Reactor at Balipara & Bongaigoan:

After commissioning of 400 kV Bongaigaon-New Siliguri III & IV and 400 kV Balipara- Bongaigaon III & IV, persistent high voltage is being observed at Ranganadi for which some 400 kV lines have to be opened to control over-voltage. It is thus proposed to install Bus-reactor at Balipara in order to keep all lines in service. System study is being carried out to assess the requirement of Reactive Compensation which will be circulated in 104th OCC Meeting.

DGM, NERLDC informed that high voltage is observed at Bongaigaon, Balipara & RHEP resulting in opening of 400 kV lines on daily basis to contain over voltage and hence they proposed to install one number 125 MVAR Reactor each at Bongaigaon & Balipara so that opening of lines can be avoided.

During 104th OCC meeting, the Sub-committee requested NERLDC to carry out the system studies to justify the requirement and if necessary the issue can be taken up in the coming Standing Committee meeting.

During the 4th SCM held at Guwahati on 13.12.2014, the issues have been discussed and it was agreed for installation of 125 MVAR Bus Reactors by POWERGRID at Balipara and Bongaigaon.

Deliberation of the Committee

SE (O) informed that during the 4th Standing Committee Meeting held on 13.12.2014, members have agreed for addition 125 MVAR bus reactors by POWERGRID at Balipara and Bongaigaon sub-stations. In case, of space constraints, the same may be installed with GIS bays or in parallel with existing bus reactors.

DGM, NERTS informed that recently one 63 MVAR Reactor at Byrnihat failed and to be sent to CGL factory at Mumbai for repairing. DGM, NERLDC insisted that reactor at Byrnihat is very much essential to contain high voltage and Meghalaya should take up the matter with NERTS at the earliest. Accordingly, DGM, NERTS suggested that one BHEL Make Reactor of same capacity which has already been repaired and lying at Bhopal Works of BHEL can be spared till repairing of the faulty reactor at Byrnihat by CGL. However, for the purpose the request of Me. PTCL is required and accordingly matter will be referred for management approval.

SE, SLDC requested NERPC to write letter to Director, Me. PTCL so that the repaired reactor of POWERGRID at BHEL works can be diverted to Byrnihut immediately for installation and commissioning. NERPC agreed.

During deliberation AECGL requested NERPC & POWERGRID to spare 100MVA, 220/132kV Transformer (Regional Spare) from Dimapur Sub Station for Augmentation of transformation capacity of 220/132kV Samaguri Sub Station by installation of same in place on one no. of existing 50MVA Transformer. AEGCL further informed that the replaced 50MVA transformer can be kept as regional spare till they replenish the 100MVA Transformer which is already under procurement.

DGM, NERTS requested AEGCL to go through the process of approval of RPC for procurement of Regional Spare equipment which are against probable breakdown of critical equipment of Regional project. Further, he opined that such equipments are, in any case, not meant for planned Augmentation of State project.

SE (O), NERPC suggested AEGCL to take up the issue in forthcoming RPC Meeting.

The Sub-committee requested all the constituents to carry out the DGA test regularly to prevent unnecessary failure of equipments.

C.16 <u>Monthly MU requirement & availability of each state of NER as per format:</u>

The following figures of state wise MU requirement and availability were taken from LGBR 2014-15 of NERPC. Constituents may kindly verify if the above data are correct for April, 2015 only.

Requirement:

Name of State	Jan15	Feb15	Mar15	Apr15	May15
Ar. Pradesh	65	55	48	66	70
Assam	690	615	570	640	745
Manipur	70	55	51	65	65
Meghalaya	195	175	175	165	170
Mizoram	41	35	40	40	40
Nagaland	60	55	50	60	60
Tripura	125	120	120	115	125
NER	**1246**	**1090**	**1054**	**1151**	**1275**

Availability:

Name of State	Jan15	Feb15	Mar15	Apr15	May15
Ar. Pradesh	40	31	40	50	57
Assam	439	385	413	520	554
Manipur	56	47	47	66	69
Meghalaya	133	111	110	146	188
Mizoram	36	31	32	43	49
Nagaland	32	27	31	47	43
Tripura	137	112	150	197	211
NER	**873**	**744**	**823**	**1069**	**1171**

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

C.17 Monthly MW requirement & availability of each state of NER:

A. Peak Demand in MW

Name of State	Jan15	Feb15	Mar15	Apr15	May15
Ar. Pradesh	130	130	120	138	138
Assam	1350	1380	1320	1371	1382
Manipur	150	135	140	132	148
Meghalaya	320	310	310	400	400
Mizoram	79	78	84	85	85
Nagaland	130	120	119	120	120
Tripura	245	235	260	280	300
NER	**2455**	**2318**	**2403**	**2526**	**2573**

B. Peak Availability in MW

Name of State	Jan15	Feb15	Mar15	Apr15	May15
Ar. Pradesh	110	101	100	115	126
Assam	835	816	826	961	990
Manipur	109	105	106	127	129
Meghalaya	246	192	200	266	335
Mizoram	75	71	70	86	92
Nagaland	70	66	64	101	87
Tripura	275	272	270	374	377
NER	**1719**	**1623**	**1636**	**2030**	**2136**

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

A. Off Peak Demand in MW (0800 Hr)

Name of State	Jan15	Feb15	Mar15	Apr15	May15
Ar. Pradesh	72	72	70		
Assam	856	766	800		
Manipur	90	81	80		
Meghalaya	234	231	232		
Mizoram	51	51	50		
Nagaland	78	72	74		
Tripura	159	153	155		
NER	**1465**	**1426**	**1461**		

B. Off Peak Availability in MW (0800 Hr)

Name of State	Jan15	Feb15	Mar15	Apr15	May15
Ar. Pradesh	107	100	101		
Assam	817	796	799		
Manipur	102	98	97		
Meghalaya	240	216	220		
Mizoram	73	69	70		
Nagaland	68	64	65		
Tripura	271	268	270		
NER	**1465**	**1611**	**1622**		

The Sub-committee noted as above.

D. NEW ITEMS

D.1 Generation Planning (ongoing and planned outages)

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

Generating Station	Reservoir level as on 15/10/14	MU Content	Present DC MU	No. of days as per current generation
Khandong & Kopili-II	718.00	21.9	0.835	26
Kopili	609.59	185.8	2.304	81
Doyang	321.60	27.2	0.542	50
Loktak	767.69	75.0	1.365	55

Hydro generation planning for lean hydro period - Proper planning is required to utilize the available water for entire lean hydro period, say up to May, 2015.

The sub-committee discussed and approved the proposed shutdown of NEEPCO & NHPC and requested them to adhere to the timing and period granted. The shutdown is enclosed at Annexure – D.3.

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.

During 101st OCC 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.

Deliberation in the meeting

NERLDC informed that Assam, NEEPCO & NHPC has furnished the above information but not as per the format given by NERLDC.

Water level format:

Year		FRL		MDDL	
Station	Month	Date	Water level	Generation in MU	Water utilized in cumecs

Water spillage format:

Year	Station					
Date	Inflow in cumecs	Status of spillage (Spilling/ Not spilling)	Duration		Total	
			From (Hrs.)	To (Hrs.)	Hrs.	Month

Constituents informed that previous data may not be readily available with them, however, present data available will be sent shortly.

The Sub-committee once again requested all the constituents to furnish the data as per format given below to NERLDC at the earliest.

D.3 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.

Deliberation in the meeting

DGM, NERLDC informed that it has been observed that utilities are insisting for according approval for the shutdowns of elements which were approved in earlier OCC meeting without discussing/raising the proposals in latest OCC thereby colliding with the latest approved shutdown on many occasions resulting in system contingency. It is requested to put up afresh the proposals of shutdowns approved in earlier OCC but could not be availed till the current OCC so that the same can be reviewed again in a holistic manner.

DGM, NERTS stated that once shutdown approved in earlier OCC meeting and those are scheduled after next OCC meeting need not be applied again as the list is already available with NERPC. However fresh proposals of next OCC should be reviewed considering the approved shutdowns of previous OCC. Such practice will help to avoid unnecessarily additional communication with sites which may create confusion.

SE(O) stated that the procedure followed by other RPCs to check the list of approved shutdown taken and defer by the agency has to be informed to NERLDC/NERPC so that the same can be compiled and discussed again and concurred in latest OCC. Moreover, the reason for deferment of approved shutdown in OCC has to be spelt out for re-consideration in coming OCC meetings.

The sub-Committee approved the transmission line outages proposed by Constituents for January - February, 2015 is attached at Annexure – D.3.

D.4 Metering Error in Inter-Regional Lines:

During the 23rd CC Meeting, the issue of metering error has been discussed in detailed which are reproduced below:

NERLDC are yet to receive correct SEM readings from Bongaigaon for Bongaigaon-New Siliguri D/C lines. Same is status with Balipara-Bongaigaon D/C also where correct readings from both ends are yet to be received. A time drift status has been received from Bongaigaon duly signed by POWERGRID personnel and we can see time drift of 12 hours 23 minutes and 16 minutes respectively in two circuits of new inter-regional Bongaigaon-New Siliguri lines. Reading from meters with such drift is useless and will have no meaning.

Bongaigaon end meter reading of NPTC-Bongaigaon line showing negative polarity.

The forum felt that no seriousness from any quarter has been taken care to address the issue.

No pre-commissioning check at all before installation of meters which have been insisted many times.

Only option would be to take New Siliguri end reading in current week and in such case loss of the section will be loaded to NER and will have commercial implications.

Non-receipt of readings has created serious constraint in computation of data. Last week, even New Siliguri reading was not available and it has become a nightmare nowadays.

These are all violations of decision taken in CCM.

NERPC may look into it and take appropriate action.

NERLDC may be advised how to proceed with data processing, computation in such cases.

All concerned may be suitably appraised regarding lapses, commercial implications. If necessary, special meeting may be convened to address metering issues.

During 104th OCC meeting, DGM, NERTS informed that both the SEMs at Bongaigaon end of 400 KV Bongaigaon-New Siliguri D/C lines have been replaced DGM, NERLDC informed that correct reading pertaining to 400 KV Balipara - Bongaigaon D/C has not been received till date. Time drifts have also been noticed. He stated that this is a matter of great concern. Moreover, installation of meters at NTPC end of 400 kV Bongaigaon(PG)- NTPC D/C line is still pending.

In addition, Kopili end SEM of Kopili-Misa III feeder is not giving correct reading since quite some time in-spite of NEEPCO is taking-up the matter repeatedly.

AGM, NTPC also stated that DCD at Bongaigoan has not been provided by NERTS.

DGM, NERTS stated that location for installation of SEMs/DCDs is under the jurisdiction of NERLDC and hence constituents should take up the matter with them accordingly.

SE(O) informed that during the 23rd CC Meeting 35 + 50 more SEMs/DCDs have been agreed to be procured by NERTS, once the meters are received by them installation will be done accordingly. Moreover, it was decided that NERTS has to check the meters before installation so that readings can be taken effectively.

Now, NERLDC intimated that there are many SEM related issues being faced in NER and we have been discussing these in OCC as well as CCM. Please refer item 8.5 of minutes of 23rd. CCM (attached) where there are many time bound activities. In the meeting, NERLDC made a presentation highlighting metering issues.

The deadline for resolution no. 3 has already elapsed but we have no information about requisite action taken.

If the actions are not taken as per decision, we shall land into more trouble.

To take care of this, it is proposed that NERPC may convene a monthly meeting on metering issues where NERTS, NERLDC and constituents may be present. We can review status of various issues on regular basis.

If we do not take action urgently, there might be serious problem in accounting having huge financial implication.

Deliberation in the meeting

SE(O) informed that the above issue has been discussed in detailed in Special Meeting on Metering held on 22.01.2015 and minutes will be issued along with PCC minutes.

DGM, NERLDC stated that till date the telemetry data from NTPC, Bongaigoan is yet to receive by them.

AGM, NTPC requested that NERTS should complete the work at the earliest. He also stated that any assistance sought by NERTS will be extended by them.

DGM, NERTS stated that wiring from PLCC to NERLDC is pertaining to them but wiring from PLCC has to be carried out by NTPC themselves.

After detailed deliberation, the Sub-committee requested NERTS to depute their engineers to Bongaigoan and the metering issue of the above has to be completed within 31.01.2015.

D.5 20th Transmission Planning:

SE (O) NERPC informed that a joint Standing Committee meeting on Power System Planning for all regions was convened by Chairperson, CEA on 22nd September, 2014 at NRPC, New Delhi. In the meeting the 20-year Transmission Perspective Plan (2014-34) for all the five regions were discussed.

He requested that the following information/data is currently required from each State/Utility of each region may kindly be furnished at the earliest.

Sl. No	Plan	By end of 12th Plan (upto 2017)			By end of 13th Plan (upto 2022)		
State/Utility:							
1	Peak Demand (MW)						
2	Demand Behaviour (profile for season-wise & Annual)	Summer (Peak & Off-peak)	Monsoon (Peak & Off-peak)	Winter (Peak & Off-peak)	Summer (Peak & Off-peak)	Monsoon (Peak & Off-peak)	Winter (Peak & Off-peak)
3	Generation Project target schedule						
4	Transmission Projects (220 kV & above) target schedule						
5	Transformer Capacity addition (220/132 kV & above) target schedule						

Deliberation in the meeting

SE(O) informed that so far only Assam & Tripura has furnished the above data. He stated that above information is very much necessary for Planning Purposes by CEA & MoP and hence requested all the constituents to furnish the data at the earliest.

The Sub-committee has decided that all the concerned constituents should furnish the information as per format mentioned above by 15th February, 2015 positively.

D.6 Low Voltage at Loktak (Manipur) & Mizoram:

During 104th OCC meeting, representative from Loktak informed that low voltage still persist in Loktak sub-station and requested the forum to look into the matter.

The Sub-Committee requested NHPC to install the capacitor bank in order to arrest the low voltage.

Meanwhile, NHPC vide letter dated 30.12.2014 has intimated that still low voltage is persisting. They also mentioned that Loktak power station is trying to feed maximum MVAR up to the extent of the capability of generator and on 29.12.2014 they have to run their second unit unscheduled to meet the reactive power requirement by injecting maximum MVAR, but after all effort the grid voltage was found to be in order of 90kV or even lower sometimes.

Due to low grid voltage on 30.12.2014, the generating unit tripped on excitation fault and Loktak power station is not able to run the generating unit as per schedule.

Further, NERLDC informed that severe low voltage problem at Imphal (PG), Loktak and nodes of Manipur system has been observed during outage of 132 kV Dimapur – Imphal line or 132 kV Loktak – Jiribam line. It was informed by P&E, Mizoram that low voltage problem at nodes of Mizoram system has also been observed.

It is required to install capacitor banks in 33 kV nodes of Manipur & Mizoram system to improve voltage profile of these nodes. Study results for installation of capacitor banks at nodes of Manipur & Mizoram system are attached at **Annexure-D.6.**

Deliberation in the meeting

NERLDC gave a presentation on the above and it can be clearly seen that very low voltage is prevailing in Aizawl, Lunglei & Loktak. They suggested that necessary capacity bank should be installed at the earliest to maintain the voltage level as per IEGC.

After detailed deliberation, the Sub-committee requested NERPC to write to Mizoram & NHPC to change the transformer tap position accordingly and NERLDC may observe the voltage profile for one-two months and if the problem still persists, the Sub-committee may review again and find out the alternative solution.

D.7 Automatic Demand Management Scheme (ADMS):

NER states are supposed to implement Automatic Demand Management Schemes in their respective control areas for automatic disconnection of loads in case of exigencies, in line with IEGC stipulations in clause-5.4.2(d). The matter was raised and deliberated in 101st OCC meeting. So far no intimation received from the States regarding the action taken in this respect. A presentation on the subject was supposed to be arranged by NERPC.

During 104th OCC meeting, the issue has been discussed in detailed and the Sub-committee advised constituents to file the petition to Hon'ble CERC stating the difficulties faced by them in implementation of ADMS

Deliberation in the meeting

After detailed deliberation, the Sub-committee advised constituents to file the petition to Hon'ble CERC stating the difficulties faced by them in implementation of ADMS

D.8 Enhancement of Load-ability of Lines:

As per Transmission Planning Criteria of CEA, Panther and Zebra conductor should be able to carry current up to 400 and 600 Amps approximately [Ambient /Max Conductor capacity 40º/75º respectively]. The equivalent AAAC conductor would also be capable more or less the same loading if not more. However it is observed that the lines mentioned at **Annexure – D.8 (I**) are under loaded, vis a vis above limits, due to restriction imposed by terminal equipment[CT and protection element]. The capacity of the lines is required to be enhanced as per Transmission Planning Criteria of CEA by arranging appropriate terminal equipment for safe, secure & economic operation of NER Grid. Study results for peak hours under various conditions/scenario are attached as per **Annexure – D.8 (II).**

Deliberation in the meeting

The Sub-committee requested all the concerned constituents to check the list of lines pertaining to them in Annexure – D.8 (I&II) and necessary enhancement of CTs should be carried out accordingly as per CEA Guidelines.

D.9 Assessment of Inter State Total Transfer Capability (TTC), Transmission Reliability Margin (TRM) and Available Transfer Capability (ATC) by SLDC on respective Inter-State Transmission Corridor:

As per Clause No. 4.1 of 'Detailed Procedure for Relieving Congestion in Real Time Operation', SLDC shall assess TTC, TRM and ATC on it's inter-state transmission corridor considering a mesh intra-state corridor for import or export of power with the Inter-state Transmission system (ISTS).

SLDCs of NER are accordingly requested to assess the above on monthly basis, 5 months in advance (eg: TTC/TRM/ATC for the month of November to be calculated by 15th of July), for further assessment of TTC, ATC and TRM of NER –ER corridor by NERLDC/NLDC and for assessment of TTC / ATC for a group of control areas, individual control areas within the region and state-control-area to state-control-area by NERLDC, whenever required.

SLDCs are 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 15th of the month for the fifth month. All India *.sav case files have been sent to SLDCs which may be used while computing TTC, ATC & TRM for their state control area.

Deliberation in the meeting

DGM, NERLDC informed that all SLDCs should conduct study and assess the TTC/TRM/ATC of their own network also for relieving congestion in the grid. He also informed that PSS-E software for carry out the above study were distributed to all constituents and training was also imparted. NER States can do load flow study and in case of any problem they may consult NERLDC or depute their concerned engineer, along with Dongle & Laptop, to NERLDC for study their cases with the assistance of NERLDC Engineers.

After detailed discussion, the Sub-committee requested all SLDCs 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 15th of the month for the fifth month.

D.10 Restoration Procedure of NER Grid:

DGM, NERLDC informed that the "Restoration Procedure of NER Grid" has been finalized & uploaded in NERLDC website. In this connection a seminar on restoration procedure will be organized by NERLDC in Guwahati on 4th February, 2015. All the SLDCs are requested to give small presentations (10-20 minutes) in the seminar regarding their own system for the knowledge of all other utilities. All the utilities of NER are requested to please nominate at least two participants, for the Seminar, who are associated with the system operation.

The Sub-committee requested all the constituents to nominate atleast two officials from each organization and also to prepare small presentation as mentioned above for fruitful outcome of the meeting.

D.11 Consent for STOS bilateral transaction:

DGM, NERLDC informed that it has been observed in several occasions that the consent for bilateral transaction is being given by STU or Commercial departments of State utilities instead of SLDC as per regulation. This is creating confusions and Nodal RLDCs are hesitating to process the applications. All concerned are requested to kindly ensure consent for SLDC only.

Deliberation in the meeting

The Sub-committee requested that SLDCs should give the consent for their respective States regarding bilateral STOA transaction. No request other than SLDCs will be entertained by NERLDC or other RLDCs.

D.12 High loading of 400/220 kV, 315 MVA ICT at Bongaigoan:

NERLDC informed that it has been observed that 400/220 kV, 315 MVA ICT at Bongaigaon is highly loaded at peak hours. In case of tripping of this ICT, Capital area, Dhaligaon area & Samaguri area of Assam & Nangalbibra area of Meghalaya & part of North Bengal & Bhutan system may be collapsed. To ensure safe, secure & reliable operation of this areas of NER, SPS based load shedding in above areas of NER is to be designed. AEGCL & Me. PTCL are requested to identify load which can be disconnected through this SPS after tripping of this ICT. Study results are attached at **Annexure – D.12.**

Deliberation in the meeting

SE, SLDC, Meghalaya raised the issue that during the 24.12.2014, Assam has disconnected the power supply from Agia side and this has made them inconvenient when the peak load has already started. He requested that in case they are not in a position to supply more load to Meghalaya from Agia – Nagalbibra the same can be informed in advance.

Assam expressed regret if such thing had happened and they will take care that such thing will not repeat again.

Further, New SPS for system **protection against tripping of 400/220 kV, 315 MVA ICT at Bongaigaon -** With the commissioning of 400kV Bongaigaon – Azara line on 14.01.2015 at 1708 hrs lot of improvement in loading pattern of different elements were observed as follows-

1) Overloading problem of 400/220 kV, 315 MVA ICT at Bongaigaon no more exists
2) Overloading problem of 220 kV Salakati- BTPS D/C line also not being experienced since maximum power requirement of Guwahati and surrounding areas is being met thro' Bongaigaon – Azara line.
3) Nangalbibra load of Meghalaya is being fed from Agia continuously since 220 kV Salakati- BTPS D/C line has become off-loaded.

DGM, NERLDC stated that they have conducted contingency studies related to tripping of 400kV Bongaigaon – Azara line and it is observed that during peak period –

1) 400/220 kV, 315 MVA ICT will be overloaded and may trip.
2) In case of tripping of ICT, 220 kV Salakati- BTPS D/C line will be overloaded and trip.
3) If this line does not trip overloading will take place in 220 kV Siliguri – Birpara D/C line and if this trips cascade tripping might take place affecting power supply in parts of NER & ER.

To avoid this possibility it is proposed to devise a SPS which will trip both ICTs at BTPS(Assam) giving a relief of above 120 MW radial load and thereby saving the system from above possible contingencies.

DGM, NERLDC gave a presentation on the criticalities of the grid after the commissioning of 400 kV Bongaigaon – Azara Line and expressed concern about high loading of Bongaigoan ICT in case of tripping of 400 kV Bongaigaon – Azara Line and possible cascade trippings which may lead to grid disturbance. He requested that as per presentation given the grid is in danger unless a SPS with tripping of radial load (Around 120 MW) at BTPS S/S is implemented at the earliest.

The Sub-committee requested NERPC to co-ordinate the System Studies at the earliest so that issues related to SPS as suggested by NERLDC can be executed at the earliest for safe and secure operation of the grid.

D.13 MSPS for AGTPP after commissioning of Pallatana (2nd Module), Monarchak and AGTPP (new units):

NERLDC informed that it has been observed from study results that after commissioning of Palatana 2nd Module, Monarchak Unit I & II and AGTPP Unit 5 & 6, 132 kV AGTPP – Kumarghat, 132 kV Monarchak – Udaipur, 132 kV Baramura – Teliamura & 132 kV Teliamura- Ambassa lines will be highly loaded. In case of tripping of 132 kV AGTPP - Kumarghat line, following lines will be overloaded as below:

a. 132 kV Monarchak - Udaipur : 72 MW
b. 132 kV Dhalabil - Agartala : 84 MW
c. 132 kV Dhalabil - Kamalpur : 79 MW
d. 132 kV Baramura - Teliamura : 88 MW
e. 132 kV Teliamura - Ambassa : 86 MW
f. 132 kV PK Bari - Kumarghat : 92 MW
g. 132 kV PK Bari - Ambassa : 81 MW
h. 132 kV PK Bari - Kamalpur : 76 MW

To contain loading of the above lines, two units of AGTPP needs to be tripped on SPS. Study results are attached at **Annexure – D.13.**

To contain over loading of the above lines, generation is to be backed down either at AGTPP or Monarchak or generating stations of Tripura through SPS. The SPS may be designed & implemented at the earliest. Study results are attached at **Annexure – D.13.**

Deliberation in the meeting

The Sub-committee requested NERPC to co-ordinate the System Studies at the earliest so that issues related to SPS as suggested by NERLDC can be executed at the earliest for safe and secure of the grid.

D.14 Overdrawal by States:

It is observed that whenever Palatana trips NER beneficiaries overdraw which is understandable for short period considering Palatana is the biggest Unit in the region. However one or two States continue to overdraw more 100% over long period of time despite various reminders from NERLDC putting the whole Grid in jeopardy. As a chain is as strong as the weakest link, indiscipline by one or two States could negate the whole good works done by majority of the States who have taken suitable actions to remain within schedule. All stake holders once again requested to corporate with NERLDC in the matter and maintain grid discipline in the overall interest.

Deliberation in the meeting

DGM, NERLDC informed that whenever Pallatana trips they request the constituents to adhere to their schedule and also follow the real time advises of NERLDC to avert any contingency in the grid or TTC/ATC violation. However, some of the constituents are not willing to back down creating endanger to the grid. He requested the forum to suggest in the matter.

Sr. Manager, TSECL stated that to maintain power supply to the essential services like hospital, police, airport, public administration and avoid law & order situation, it may not be possible to put entire state in dark. However for grid security TSECL will consider maximum 50% load reduction from the grid in the real time during such situation.

Ar. Pradesh & Nagaland also is of the opinion that no State should be overdrawal from the grid at their cost and all should adhere to the instruction of NERLDC.

After detailed deliberation, the Sub-committee advised constituents to strictly adhere to the instruction of NERLDC and in case of any non-cooperation the same may be intimated to NERPC Secretariat so that matter can be taken up with concerned Competent Authority.

D.15 Furnishing of Technical & Commercial Data for Computation of PoC Charges & Losses for 1st Quarter of 2015-16 (April – June, 2015):

As per provisions of the CERC (Sharing of Inter State Transmission Charges and Losses) Regulations, 2010, the following data are required for Computation of PoC Charges & Losses for 1st Quarter of 2015-16 (Apr'15 to Jun'15).

1. Technical details of new transmission elements and generating units which are expected to commence commercial operation during Apr15 to Jun15 as per **Format – D.15 (II)**
2. Yearly Transmission Charges as per Format **Format – D.15 (I)**
3. Nodal Generation information and forecast withdrawal data as per Format **Format – D.15 (III)**

The detailed data formats for the data submission are available on the website of Implemented Agency i.e. NLDC in MS Excel format and may be downloaded from the following link :-

http://posoco.in/transmission pricing/formats

Filled up formats may be sent in soft copy to NLDC through e-mail to implementingagency@powergrid.co.in or implementingagency@posoco.in. A written communication confirming the furnishing of data by e-mail to NLDC may also be sent.

Implementing Agency letter in this regard has been issued and is attached herewith.

Deliberation in the meeting

NERLDC informed that Assam, Meghalaya & Tripura have already furnished the above data.

All constituents have agreed to furnish the PoC data by 31.01.2015.

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

Availability certification of ISTS elements – POWERGRID & NETC submitted outage reports of their lines for certification for the first time for this control period i.e. 2014-19. Being the first certificate to be issued for the control period 2014-19 the same may be thoroughly deliberated by the constituents vis a vis the new tariff

regulation so that any inadvertent mistake can be detected & corrected before issuance of certificate by NERPC.

Procedure for calculation of Transmission system availability factor for a month as per CERC Regulation 2014-19.

The OCC forum have agreed to 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.

In the 102nd OCC meeting, DGM (MO), NERLDC also gave a presentation proposing the procedure for transmission availability certification. Members agreed to the proposal of NERLDC except the following points: -

1. Constituents may be allowed to study the outage data submitted by NERTS on weekly basis after uploading the same in NERTS website. Then more time will be available for comments to be submitted by next OCC.

2. Outage certification of period from April 2014 to June 2014 need to be revised as the same will have effect on number of trippings in a year. Further, constituents are not given the evidence provided by transmission licensees for claiming force majeure due to lightning.

DGM, NERTS also gave a presentation explaining the different waveforms recorded during infringements, lightning, etc.

During 103rd OCC meeting, it was agreed that NERPC will follow the decisions of PCC, OCC and CC forums and any disputed outages will be brought to PCC/OCC forums for further deliberations.

During 104th OCC meeting, POWERGRID raised the issue of delay in issuing of TAC by NERPC and requested to modify the time frame so that TAC can be issued on time.

After detailed deliberation the time frame for issuing of TAC for December, 2014 is given below:

1. NERTS/NETC should furnish the TAC data for December, 2014 along with reasons/justifications latest by 07.01.2015. However, NERLDC may provide the additional outage data latest by 03.01.2015.
2. Matter shall be discussed in OCC meeting scheduled to be held in January, 2015
3. NERPC will circulate though mails to all the constituents to study and give their comments/observations by 27/28th January, 2015.
4. NERLDC will verify the data of December, 2014 by 30/31, January, 2015 after receiving comments/observations from constituents.

5. NERPC will finally issue the TAC for December, 2014 by first week of February, 2015.

6. NERTS/NETC may give their opinions/observations if any in the OCC meeting to be held on February, 2015.

This time frame will be followed for all TACs in future.

Deliberation in the meeting

NERLDC informed that so far NERTS has not furnished the data as per timeframe given above even for October & November, 2014, they requested NERTS to follow the time frame.

DGM, NERTS informed that they will look into the matter and TAC data will be furnished as per time frame in future.

The sub-committee noted as above.

Additional Agenda:

1. Hourly Data:

SE (O) NERPC informed that CEA has requested NERPC to furnish the Hourly Supply Regional Demand and Demand met for every month by first week positively. He requested NERLDC to extend help in this regard.

DGM, NERLDC stated that hourly demand can be furnished by the States and the demand met figures can be taken from SEM data uploaded by NERLDC in their website; which are also sent to NERPC on weekly basis for accounting purposes.

2. Conversion of line reactors of 400 kV Bongaigaon – Balipara line –I & II as bus reactors : NERLDC requested that arrangement may be made at the earliest for conversion of line reactors as bus rectors at Bongaigaon and Balipara ends of 400 kV Bongaigaon – Balipara line –I & II so that over voltage situations during of peak periods can be addressed suitably.

3. **Data availability from NTPC, Bongaigaon Station:** NERLDC stated that at present they are not getting data from NTPC station at Bongaigaon. Data availability may please be ensured at the earliest by NTPC through proper co-ordianation with involved parties to avoid any future complications during commissioning activities.

Date & Venue of next OCC meeting

It is proposed to hold the 106th OCC meeting of NERPC on 24th February, 2015. 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 105th OCC Meetings held on 23/01/2015

SN	Name & Designation	Organization	Contact No.
1.	Sh. Nangkong Perme, EE, SLDC	Ar. Pradesh	09436288643
2.	Sh. A.K. Saikia, DGM,LDC, AEGCL	Assam	09401026118
3.	Sh. Karuna Sarma, AGM (E)	Assam	09435013532
4.	Sh. J.P. Choudhury, AGM (Com), APDCL	Assam	09954055295
5.	Sh. J.K. Baishya, AGM, LD-Com, AEGCL	Assam	09435041494
6.	Sh. A.N D. Choudhury, AGM (TRC)	Assam	09454120791
7.	Sh. Reza Mahmud, System Analyst, APDCL	Assam	
	No Representatives	**Manipur**	
8.	Sh. F.E. Kharshiing, SE, SLDC	Meghalaya	09863066960
9.	Sh. T. Gidon, EE, SLDC	Meghalaya	09774479956
	No Representatives	**Mizoram**	
10.	Sh. A. Jakhalu, EE(T), DMR	Nagaland	09436002696
11.	Sh. D. Pal, Sr. Manager	Tripura	09436500244
12.	Sh. N. R. Paul, DGM (SO-I)	NERLDC	09436302723
13.	Sh. B. Medhi, Dy. Mgr.	NERLDC	09436335376
14.	Sh. Bhaskar Goswami, Sr. Mgr.	NEEPCO	09436163983
15.	Sh. J. Bhattacharya, AGM (O&M)	NTPC	09435720036
16.	Sh. Shashwata Dutta, DGM (O&M)	ENICL	09560300059
17.	Sh. R.C. Kisku, Dy. Mgr. (E)	NHPC	09436894861
18.	Sh. P. Kanungo, DGM(OS)	NERTS	09436302823
19.	Sh. T.P. Pandey, DGM (O&M)	OTPC	08794718423
20.	Sh. P.K. Mishra, Member Secretary	NERPC	09968380242
21.	Sh. B. Lyngkhoi, Director	NERPC	09436163419
22.	Sh. S.M. Jha, Dy. Director	NERPC	08731845175

Annexure C.6

Sl. No.	Name of Substations/ Power Stations	Geographical Coordinates	
		Latitude	Longitude
I. अरुणाचल प्रदेश / Arunachal Pradesh			
1	Pasighat		
II. असम / Assam			
1	Barnagar		
2	BRPL		
3	Ghoramari		
4	HPC,Jagiroad		
5	HPC,Panchgram		
6	Star Cement		
7	CALCOM		
III. मेघालय / Meghalaya			
1	Ampati		
2	CMCL		
3	Greystone		
4	GVIL Cement		
5	Hill Cement		
6	JUD Cement		
7	Lad Nongkrem		
8	Maithan		
9	MCL		
10	Mega Carbide		
11	Mendipathar		
12	MPL		
13	Mustem		
14	Nalari		
15	Sai Prakash		
16	Shyam Century		
17	Trishul		

ANNEXURE-C.8

DRAFT

ABSTRACT OF STATEWISE/SYSTEMWISE/CONSTITUENTWISE PEAK DEMAND- vs- AVAILABILITY IN NORTH EASTERN REGION FOR THE PERIOD FROM APRIL-2015 TO MARCH-2016

(ALL FIGURES IN MW & NET)

SL.NO	PARTICULARS	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16
1	ARUNACHAL PRADESH												
	i) NET MAX DEMAND	138	138	133	133	138	143	139	128	128	133	133	143
	ii) NET POWER AVAILABILITY- Own Source	2	2	2	6	6	6	4	4	2	2	2	2
	- Central Sector	113	123	147	142	136	137	132	114	111	106	108	115
	iii) SURPLUS(+)/DEFICIT(-)	-23	-12	17	16	5	0	-2	-10	-14	-25	-22	-25
2	ASSAM												
	i) NET MAX DEMAND	1371	1382	1439	1469	1510	1428	1408	1464	1479	1407	1259	1408
	ii) NET POWER AVAILABILITY- Own Source	211	211	271	271	271	271	271	211	211	211	211	211
	Central Sector	751	779	893	880	842	848	853	772	744	713	720	767
	iii) SURPLUS(+)/DEFICIT(-)	-410	-392	-275	-318	-397	-309	-284	-481	-524	-484	-328	-430
3	MANIPUR												
	i) NET MAX DEMAND (OWN)	132	148	138	143	149	149	154	149	149	165	148	154
	ii) NET POWER AVAILABILITY- Own Source	5	5	5	5	5	5	5	5	5	5	5	5
	- Central Sector	121	124	149	157	153	152	151	127	128	119	120	126
	iii) SURPLUS(+)/DEFICIT(-)	-6	-19	17	19	10	9	2	-16	-15	-41	-23	-22
4	MEGHALAYA												
	i) NET MAX DEMAND	400	400	400	400	395	400	410	420	425	425	420	410
	ii) NET POWER AVAILABILITY- Own Source	50	110	121	216	244	265	183	109	83	69	70	55
	Central Sector	216	225	257	254	244	246	248	224	215	206	208	221
	iii) SURPLUS(+)/DEFICIT(-)	-134	-65	-22	70	93	111	21	-87	-127	-150	-142	-134
5	MIZORUM												
	i) NET MAX DEMAND	85	85	90	90	90	90	90	95	85	85	85	95
	ii) NET POWER AVAILABILITY- Own Source	14	17	20	25	25	25	20	15	15	14	13	12
	Central Sector	72	75	88	88	84	84	84	74	72	68	70	74
	iii) SURPLUS(+)/DEFICIT(-)	1	7	18	23	19	19	14	-5	2	-2	-2	-9
6	NAGALAND												
	i) NET MAX DEMAND	120	120	120	135	130	135	140	130	130	135	125	135
	ii) NET POWER AVAILABILITY- Own Source	9	12	15	20	20	20	15	10	10	9	8	7
	Central Sector	92	75	88	88	84	84	84	74	72	68	70	74
	iii) SURPLUS(+)/DEFICIT(-)	-19	-33	-17	-27	-26	-31	-41	-46	-48	-58	-47	-54
7	TRIPURA												
	i) NET MAX DEMAND	280	300	300	305	305	300	340	295	275	270	260	300
	ii) NET POWER AVAILABILITY- Own Source	94	109	109	114	114	114	114	114	109	109	109	109
	Central Sector	265	268	287	289	284	285	284	269	267	260	263	268
	iii) SURPLUS(+)/DEFICIT(-)	78	77	96	98	93	99	58	88	101	99	112	77
8	NORTH EASTERN REGION												
	i) NET MAX DEMAND	2526	2573	2619	2675	2716	2644	2681	2680	2670	2620	2430	2644
	ii) SIMULTANEOUS MAX.DEMAND	2477	2523	2568	2623	2663	2592	2629	2627	2618	2568	2383	2592
	CONSIDERING 1.02 AS DIVERSITY FACTOR												
	iii) NET POWER AVAILABILITY- Own Source	385	466	543	657	685	706	612	468	435	419	418	401
	Central Sector	1630	1670	1909	1898	1828	1836	1836	1654	1610	1540	1559	1645
	SURPLUS(+)/DEFICIT(-)	-512	-437	-166	-120	-203	-101	-233	-557	-625	-661	-453	-598

DRAFT

ABSTRACT OF STATEWISE/SYSTEMWISE/CONSTITUENTWISE ENERGY REQUIREMENT- vs- AVAILABILITY IN NORTH EASTERN REGION FOR THE PERIOD FROM APRIL-2015 TO MARCH-2016

(ALL FIGURES IN MU & NET)

SL.NO	PARTICULARS	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	TOTAL 2014-15
1	ARUNACHAL PRADESH													
	i) NET ENERGY REQUIREMENT	66	70	67	67	72	72	72	67	67	67	57	72	816
	ii) NET ENERGY AVAILABILITY- Own Source	5	5	4	6	6	6	6	4	4	3	3	4	56
	- Central Sector	45	52	64	83	80	73	60	50	46	44	39	44	679
	iii) SURPLUS(+)/DEFICIT(-)	-16	-13	1	22	14	7	-6	-13	-17	-20	-14	-24	-81
2	ASSAM													
	i) NET ENERGY REQUIREMENT	640	745	790	845	845	840	800	675	690	700	625	725	8920
	ii) NET ENERGY AVAILABILITY- Own Source	116	128	148	178	184	180	154	133	132	106	96	103	1658
	- Central Sector	404	426	487	570	554	516	490	438	430	414	375	422	5523
	iii) SURPLUS(+)/DEFICIT(-)	-120	-191	-156	-97	-106	-144	-157	-104	-128	-180	-155	-201	-1738
3	MANIPUR													
	i) NET ENERGY REQUIREMENT	65	65	70	75	75	75	75	75	75	80	65	70	865
	ii) NET ENERGY AVAILABILITY- Own Source	4	4	4	4	4	4	4	4	4	4	4	4	43
	- Central Sector	62	65	75	97	97	92	86	76	72	68	58	64	911
	iii) SURPLUS(+)/DEFICIT(-)	1	4	8	26	26	20	15	4	0	-9	-3	-3	89
4	MEGHALAYA													
	i) NET ENERGY REQUIREMENT	165	170	160	170	170	165	180	190	200	210	180	185	2145
	ii) NET ENERGY AVAILABILITY- Own Source	29	64	70	128	145	153	109	63	50	41	37	32	921
	- Central Sector	117	124	141	166	162	151	144	129	126	121	109	122	1612
	iii) SURPLUS(+)/DEFICIT(-)	-19	18	51	124	137	139	73	2	-25	-48	-33	-30	388
5	MIZORUM													
	i) NET ENERGY REQUIREMENT	40	40	40	42	42	40	45	45	42	43	37	44	500
	ii) NET ENERGY AVAILABILITY- Own Source	6	10	10	11	11	10	10	7	6	7	6	7	100
	- Central Sector	37	39	45	55	54	50	46	41	39	37	34	38	514
	iii) SURPLUS(+)/DEFICIT(-)	2	9	15	24	23	20	11	2	4	1	3	1	115
6	NAGALAND													
	i) NET ENERGY REQUIREMENT	60	60	65	65	65	65	65	65	65	65	65	65	770
	ii) NET ENERGY AVAILABILITY- Own Source	1	4	6	12	16	16	12	8	5	4	3	2	89
	- Central Sector	46	39	45	55	54	50	46	41	39	37	34	38	524
	iii) SURPLUS(+)/DEFICIT(-)	-12	-18	-14	2	5	1	-7	-16	-21	-24	-28	-25	-157
7	TRIPURA													
	i) NET ENERGY REQUIREMENT	115	125	125	130	130	130	130	120	130	135	110	135	1512
	ii) NET ENERGY AVAILABILITY- Own Source	28	35	31	34	35	32	36	30	34	35	22	34	385
	- Central Sector	169	176	181	200	198	190	189	177	179	175	159	175	2167
	iii) SURPLUS(+)/DEFICIT(-)	83	86	87	104	103	92	94	87	83	75	71	74	1039
8	NORTH EASTERN REGION													
	i) NET ENERGY REQUIREMENT	1151	1274	1316	1394	1399	1387	1367	1237	1269	1300	1139	1296	15528
	ii) NET ENERGY AVAILABILITY- Own Source	190	248	272	373	400	401	330	248	234	199	171	185	3253
	- Central Sector	879	920	1037	1226	1200	1121	1061	951	931	896	807	903	11931
	iii) SURPLUS(+)/DEFICIT(-)	-82	-106	-7	205	201	135	25	-38	-104	-205	-160	-209	-344
	MU/DAY	38	41	44	45	45	46	44	41	41	42	41	42	43

ANNEXURE-C.9

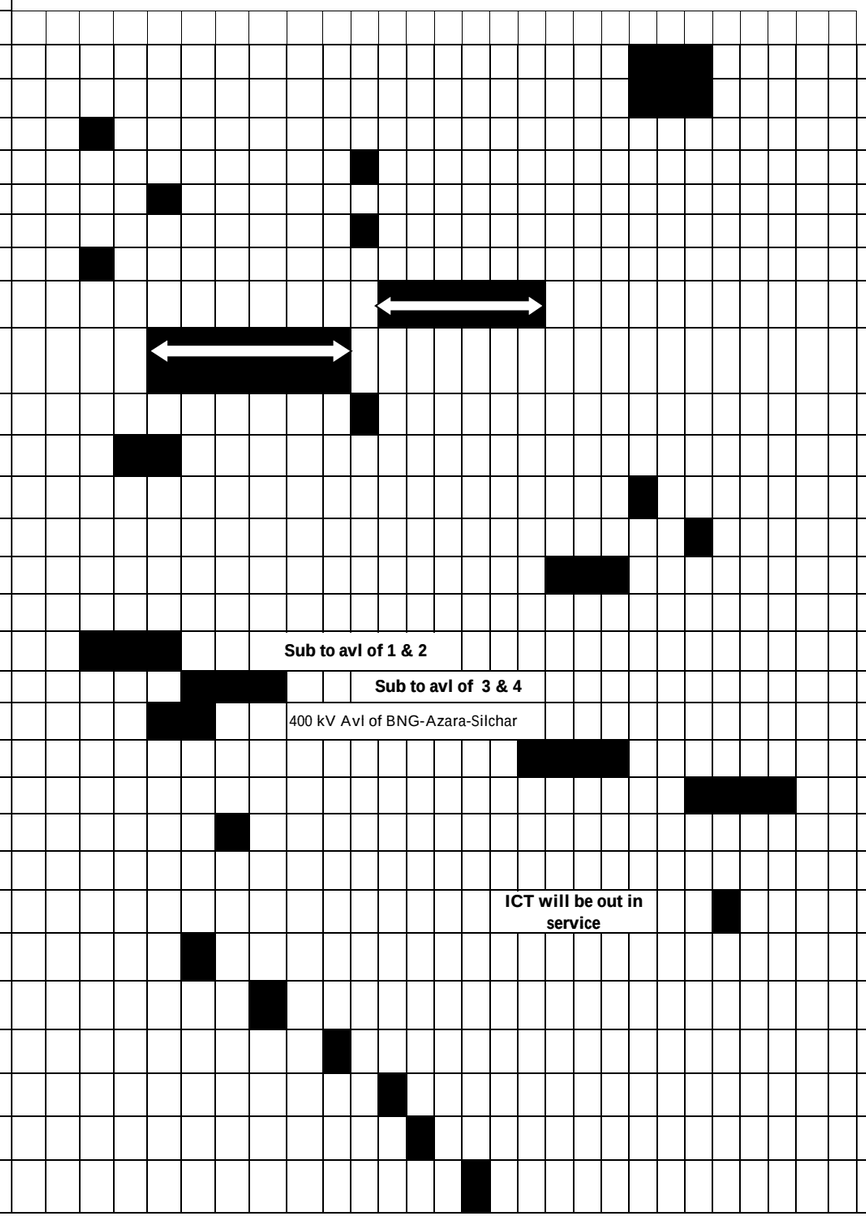
Unit Wise RGMO Status Details (Participating in RGMO)

Sl No	Utility	Power Station to be under RGMO	Hydro/ Thermal	Unit No	Capacity	Declared by Plant that Unit under RGMO		Telemetry Status
						PARTICIPATING	PARTICIPATING Response/Test Not Observed	
NORTH EASTERN REGION								
104	NEEPCO	RHEP	H	1	135	YES	Not tested	ok
105				2	135	YES	Not tested	ok
106				3	135	YES	Not tested	ok
107		KOPILI	H	1	50	No		ok
108				2	50	No		ok
109				3	50	No		ok
110				4	50	No		ok
111		KHANDONG	H	1	25	No		ok
112				2	25	No		ok
113		KOPILI STG-II	H	1	25	No		ok
114		DOYANG	H	1	25	No		ok
115				2	25	No		ok
116				3	25	No		ok
117	ASEB	LANGPI	H	1	50	No		Not Available
118				2	50	No		Not Available
	MeECL	UMIUM STG III	H	1	30	No		0k
				2	30	No		0k
		UMIUM STG IV	H	1	30	YES	Not tested	0k
				2	30	YES	Not tested	0k
		MLHEP	H	1	42	YES	Not tested	Not Available
				2	42	YES	Not tested	Not Available
NORTH EASTERN REGION-ISGS								
211	NHPC	LOKTAK	H	1	35	No		ok
212				2	35	No		ok
213				3	35	No		ok
IPP								

ANNEXURE-D.3

APPROVED SHUTDOWN OF POWERGRID ELEMENTS FOR THE MONTH OF JAN-15 & FEB-15

SN	Name of Element	Time	Purpose
	POWERGRID		
A.	**TRANSMISSION LINES**		
1	400 KV D/C Misa-Balipara Ckt# 1 & 2	7:00 to 15:00 Hr	(i)For removal of Earthwire and forming diamond with the Misa-Balipara Line to improve electrical clearance (ii) For facilitating stringing work of HVDC line
2	220 KV Samaguri- Sarusajai Ckt# 1 & 2 (AEGCL)	7:00 to 15:00 Hr	
3	220KV Samaguri-Misa Ckt#1	7:00 to 15:00 Hr	Jumper tightening along the line in view of high loadability of the line
4	132 KV Gohpur-Itanagar line	7:00 to 15:00 Hr	Upgradation of Yph CT at Nirjuli end from existing 300/1 to 600/1
5	132KV Ranganadi-Ziro line	07:00 Hrs to 15:00 Hrs	132 KV Daporijo Line ICT & all 33KV feeders will be out.
6	132 KV S/C Badarpur-Khliehriat Line	07:00 Hrs to 15:00 Hrs)	Clearing of trees leaning from uphill side along the line
7	132 KV S/C Badarpur-Kumarghat Line	07:00 Hrs to 15:00 Hrs)	
8	400KV Ranganadi-Balipara-I	Continuous SD from 05.02.14(8:00 Hr) to 10.02.14(16:00)	For facilitating shifting of Ckt#1 in connection with Diversion of the line section from loc.36 to loc.40 on account of Railway Track construction.
9	400KV Ranganadi-Balipara-II	Continuous SD from 05.02.14(8:00 Hr) to 10.02.14(16:00)	For facilitating shifting of Ckt#2 in connection with Diversion of the line section from loc.36 to loc.40 on account of Railway Track construction.
10	132 kV S/C Aizwal-Kolasib line	07:00 Hrs to 15:00 Hrs)	For Replacement of damaged Conductor in B-ph between loc.158-159 & Repairing of Damaged outer stands of Y-pf conductor between loc.133-134
11	132kv Aizawl-Kumarghat line	07:00 Hrs to 15:00 Hrs)	Jumper tightening along the line in view of high loadability of the line
12	132 kV Depota-Gohpur(AEGCL) line	7:00 AM to 15:00	For Stringing work of Earth Electrode line.
13	132 kV Depota-Balipara(AEGCL) line	7:00 AM to 15:00	For Stringing work of Earth Electrode line.
14	220 kV Balipara-Samaguri line	7:00 AM to 15:00	For facilitating Stringing work of HVDC line.
15	132kv Rowta-Depota(AEGCL) line	7:00 AM to 15:00	For facilitating Stringing work of HVDC line.
16	400 kV D/C Balipara-Bongaigaon Ckt# 3 & 4	7:00 AM to 15:00	For facilitating Stringing work of HVDC line.
17	400 kV D/C Balipara-Bongaigaon Ckt#1 & 2	7:00 AM to 15:00	For facilitating Stringing work of HVDC line.
18	400 Kv Silchar - Byrnihat	7:00 AM to 15:00	400 kV BYR - Azara work
19	220 Kv Misa - Dim I	7:00 AM to 15:00	Bus bar protection work
20	220 Kv Misa - Dim II	7:00 AM to 15:00	Bus bar protection work
21	132 kV Imphal Bus	7:00 AM to 15:00	For connecting 400 kV Silchar -Imphal line
B. S	**BONGAIGAON SUBSTATION**		
1	220 KV Extension bay at Salakati of 400/220 kV 315 MVA ICT	7:00 to 15:00 Hr	220 KV Incomer CT tan delta test due, CB test due. Also ICT changecover to be done.
i	400 KV 50 MVAR Balipara-I Line Reactor	7:00 to 15:00 Hr	Bushing & winding tan delta . **Shutdown of the feeder for 1/2 an hour each shall be required during opening & closing of the Reactor as per system requirement.**
ii	400 KV 50 MVAR Balipara-II Line Reactor	7:00 to 15:00 Hr	
iii	400 KV 63 MVAR New Siliguri-I Line Reactor	7:00 to 15:00 Hr	Bushing & winding tan delta . **Shutdown of the feeder for 1/2 an hour each shall be required during opening & closing of the Reactor as per system requirement.**
iv	400 KV 63 MVAR New Siliguri-II Line Reactor	7:00 to 15:00 Hr	
v	400 KV 50 MVAR Bus Reactor-I	09:00 Hrs to 13:00 Hrs	Bushing & winding tan delta to be carried out.
vi	400 KV 50 MVAR Bus Reactor-II	09:00 Hrs to 13:00 Hrs	Bushing & winding tan delta to be carried out.



SN	Name of Element	Jan/15							Feb/15																		Time	Purpose
		25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		
vii	**SALAKATI SUBSTATION**																														
2	220 KV Birpara-II Bay																													7:00 to 15:00 Hr	R-ph & B-ph CT Tan delta test
i	220/132 KV 50 MVA ICT-I																													7:00 to 15:00 Hr	Bushing & CT Tan delta test
ii	220/132 KV 50 MVA ICT-2																													7:00 to 15:00 Hr	Bushing & CT Tan delta test
iii	**Balipara SS**																														
3	400 KV 80 MVAR Bus Reactor Bay																													7:00 to 15:00 Hr	i) AMP of main bay ii) AMP of BUS Reactor
i	400 Kv 80 MVAR Bus Reactor Tie Bay										**Reactor should be in service**																		07:00 hrs to 15:00 hrs	AMP of Tie bay
ii	400 KV 63 MVAR Bongaigaon-III Line Reactor																													07:00 hrs to 15:00 hrs	AMP of Line Reactor
iii	400/220/33 KV ICT at Balipara																													7:00 to 15:00 Hr	Tan delta & Capacitance measurement
iv	220/132kV ICT Bay (NEEPCO)					**ICT will be in service or not..?**																								07:00 hrs to 15:00 hrs	Cleaning & tightning of Insulators, clamps etc.
v	400kV Main Bus-I									**There should not be any element outage**																				07:00 hrs to 15:00 hrs	AMP works at Balipara
vi	400kV Main Bus-II																													07:00 hrs to 15:00 hrs	Cleaning & tightning of Insulators, clamps etc.
vii	33kV 25MVAR Tertiary Reactor-1 Bay																													07:00 hrs to 15:00 hrs	AMP of Reactor
viii	33kV 25MVAR Tertiary Reactor-4 Bay																													07:00 hrs to 15:00 hrs	AMP of Reactor, CT & CB
4	**Mariani(New) Substation**																														
i	220KV , 20MVAR Bus Reactor																													7:00 to 15:00 Hr	AMP of Reactor, CT & CB
	NEEPCO																														
	132kV RHEP Switchyard																														
	ENCIL																														
	400 Kv Binaguri - Bongaigaon III																		Sub to NLDC consent											7:00 to 15:00 Hr	Construction work
	400 Kv Binaguri - Bongaigaon IV																		Sub to NLDC consent											7:00 to 15:00 Hr	
	TSECL																														
	132 kV P K Bari - DRM																													09:00 to 15:00 Hrs	Stringing work
	132 kV DRM - DCH																													09:00 to 15:00 Hrs	Stringing work
	MePCTL																														
	220 kv Misa - Byrnihat D/C																													08:00 to 16:00 hrs	Jungle clearance
	132 kv Main Bus at Byrnihat																													08:00 to 16:00 hrs	Sringing Work
	Unit S/D																														
	DHEP # 3		(15/02/15 to 15/03/14)																												Maintenance
	RHEP # 2		(01 /02/15 to 15/02/15)																												Maintenance
	AGBPP GC #2		(24/01/15 to 10/03/15)						No Loss of Generator																						Maintenance
	Koili entire PS		(60 days)			(from 15 / 02/15)																									Maintenance
	Loktak # 1		(01/02/15 to 02/03/15)																												Maintenance
	AEGCL																														
	220 kV Sarusajai - Mirza -I																													7:00 to 15:00 Hr	Repairing of Tower
	220 kV Sarusajai - Mirza -II																													7:00 to 15:00 Hr	Repairing of Tower

Continuous Shutdown

Daytime SD