North Eastern Regional Power Committee

Agenda

For

108th OCC Sub-Committee Meeting

Time of meeting : 10:00 Hrs.

Date of meeting : 23rd April, 2015 (Thursday)

Venue : "Hotel Nandan", Guwahati.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 107th MEETING OF OPERATION SUB-COMMITTEE OF NERPC.

The minutes of 107th meeting of Operation Sub-committee held on 21st March, 2015 at Agartala were circulated vide letter No. NERPC/SE (O)/OCC/2015/4556-4591 dated 31st March, 2015.

NLDC has made an observation & wanted to incorporated in **Item D.7** "**Opening of Breaker from Agartala end**" as below:

Recorded:

NLDC stated that operating procedure has to be followed properly to prevent such incidences. They have suggested that operating procedures of both NEEPCO & Tripura be submitted to NERPC/NLDC/NERLDC so that they can check and if necessary procedures have to be reviewed. NEEPCO & Tripura agreed to furnish the procedures.

To be Recorded:

NLDC stated that operating procedure has to be followed properly to prevent such incidences. They have suggested that operating procedures of both NEEPCO & Tripura be submitted to NERPC so that they can check and if necessary procedures have to be reviewed. NEEPCO & Tripura agreed to furnish the procedures.

Further, to avoid such incidents in future, all the entities may submit their Standard Operating Procedure to NERPC for review.

NERLDC has made an observation & wanted to incorporated in **Item D.8** "**Training on Numerical Relay**" as below:

Recorded:

DGM, NERLDC also informed that NPTI is proposed to conduct training in Guwahati if sufficient numbers of participants are more and they have agreed that boarding and lodging will be provided by them.

To be Recorded:

DGM, NERLDC also informed that in order to facilitate system operators of the region in appearing the certification exam in Basic Level, they have approached NPTI to conduct the training on the subject in Guwahati, which they have agreed if atleast 10 or more participants are confirmed. They have agreed that boarding & lodging will be provided on payment basis. Further, DGM, NERLDC informed that effort will be made to fund the training cost from LDC development fund as per norms.

NLDC informed that provision is available in PSDF for capacity building and requested NERPC/NERLDC to give a comprehensive proposal to so that they can examine the matter.

No other observations or comments were received from any of the constituents. The Sub-committee may discuss & confirm minutes of 107th OCCM of NERPC.

ITEMS FOR DISCUSSION

B. OPERATIONAL PERFORMANCE AND GRID DISCIPLINE DURING MAR, 2015

As per the data made available by NERLDC, the grid performance parameters for March, 2015 are given below:

NER PERFORMANCE DURING MARCH, 2015

	Energy Met (MU)			Energy Reqr. (MU)		
States	**Mar-15**	**Feb-15**	**% inc(+)/dec(-)**	**Mar-15**	**Feb-15**	**% inc(+)/dec(-)**
Ar. Pradesh	47	**51**	-8.8	48	**53**	-9.4
Assam	656	**561**	16.9	688	**588**	16.9
Manipur	58	**55**	5.2	60	**58**	3.8
Meghalaya	149	**146**	1.5	181	**170**	6.4
Mizoram	37	**33**	10.9	38	**35**	8.7
Nagaland	65	**59**	11.6	67	**60**	11.1
Tripura	85	**77**	10.0	88	**80**	10.0
Region	**1096**	**982**	11.5	**1170**	**1044**	12.0

	Demand Met (MW)			Demand in (MW)		
States	**Mar-15**	**Feb-15**	**% inc(+)/dec(-)**	**Mar-15**	**Feb-15**	**% inc(+)/dec(-)**
Ar. Pradesh	107	**115**	-7.0	120	**130**	-7.7
Assam	1215	**1215**	0.0	1320	**1380**	-4.3
Manipur	146	**136**	7.4	148	**140**	5.7
Meghalaya	343	**316**	8.5	360	**320**	12.5
Mizoram	81	**88**	-8.0	84	**89**	-5.6
Nagaland	128	**120**	6.7	130	**120**	8.3
Tripura	233	**212**	9.9	260	**235**	10.6
Region	**2131**	**2155**	-1.1	**2403**	**2318**	3.7

REGIONAL GENERATION & INTER-REGIONAL EXCHANGE IN MU

Month---->	**Mar-15**	**Feb-15**
Total Generation in NER (Gross)	813	713
Total Central Sector Generation (Gross)	233	482
Total State Sector Generation (Gross)	580	230
Inter-Regional Energy Exchange		
(a) NER-ER	14.50	14.48
(b) ER-NER	342.85	328.52
© Net Import	328.35	314.04

AVERAGE FREQUENCY (Hz)

Month---->	**Mar-15**	**Feb-15**
	% of Time	% of Time
Below 49.9 Hz	16.04	11.96
Between 49.9 to 50.05 Hz	59	60.11
Above 50.05 Hz	24.96	27.93
Average	49.99	50
Maximum	50.54	50.55
Minimum	49.52	49.58

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

C.1 Synchronization of Palatana Module -I

During 107th OCC meeting, representative from OTPC informed that CoD of Unit-II is expected to be commissioned by March, 2015.

The Sub-committee would like to review the status of commissioning of second unit of OTPC at Pallatana, first unit of NTPC at Bongaigoan, following Transmission lines of POWERGRID and substation at Azara of Assam. The status as informed by OTPC, NTPC, Assam and POWERGRID is as follows:

SN	Items	Status as given in 107th OCC Meeting	Status as on 107th OCC
1	Trial operation and CoD of Unit -II of Palatana	*Status as given below.	
2	Trial operation and CoD of Unit -I of NTPC at Bongaigoan	• Expected Date for Synchronization of Unit -# I by 31st March, 2015. • COD is expected by September, 2015	
3	Trial operation and CoD of STG -II of AGTPP	• Metering, telemetry, machine data, Connectivity agreement completed/COD for Unit II- May/June, 2015. • STG-I trial run with one boiler is March, 2015.	
4	Trial operation and CoD of Monarchak GBPP	• Metering, telemetry, machine data, Connectivity agreement to be signed soon by Tripura. Synchronization depends upon availability of gas.	
5	400KV D/C Silchar - Melriat line	June, 2015	
6	400KV D/C Silchar - Imphal line	Charged on 16.03.15	
7	220KV D/C Mariani (New) – Mokokchung	April, 2015	

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

POWER BLOCK - 2: TRIAL RUN, RELIABILITY RUN & PPA TEST				
DATE: 03.03.15 Rev - 001				
Sl No	Description	Start	Completion	Remarks
1	Pre discussion on Trial Run between BHEL & OTPC	03.03.15	03.03.15	Held on 03.03.15
2	Box up of HRSG		04.03.15	Installation of Extra Baffle plates completion. By 03.03.05
3	Filling / Signing of all docs. required before start of Trial Run as per Procedure	02.03.15	05.03.15	Protocols-prior to commencement of Trial Operation
4	Readiness of Water system/ Water filling	0	05.03.15	
5	Start of GBC	06.03.15	06.03.15	Start: 15:00 hr
6	Start of GT & Synch	06.03.16	06.03.16	Start: 16:00/ Synch-16:45 hr
7	STG Synch	06.03.17	06.03.17	Synch-22:00 hr
8	Declaration of start of Trial Run	07.03.05	07.03.05	From-00:00 hrs/ 07.03.15
9	Start of 7 days Reliability Run	12.03.15	18.03.14	
10	Start of 3 days PPA Test (Part of Trial Run)	19.03.15	21.03.15	OTPC is to invite their Power Purchase to witness PPA Test
11	Declaration of complete Trial Run		21.03.16	24:00 hrs
12	Joint meeting and record of observations during Trial Run	22.03.15	22.03.15	
13	COD	22.03.15	22.03.15	By OTPC
14	PG Test	15.04.15	22.04.15	
	NOTE:			
1	*Trial Run will be at available load*			
2	*For Reliability run and PPA test, OTPC is to arrange gas/ load for base load. Combined Gas flow of Power Block-1 and 2 should not be more than 110, 000 CM/ Hr to maintain gas quality.*			
3	*OTPC is to provide Desk Operators during Trial Run free of cost.*			
4	*OTPC is to arrange Hydrogen with required purity during Trial Run.*			
5	*Date of Reliability Run and PPA Test can be changed if OTPC desires keeping duration as per contact.*			
6	*During Trial Run, BHEL- R&D Division will conduct experiment for high dB noise.*			
7	*PG Test will start from 15th April 2015 and OTPC is to release the unit for preparing the Test.*			

Concerned constituents may kindly intimate the status.

C.3 Details of Installations and self-certification (by STUs and CTUs) in respect of operationalization 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 107th OCC meeting is given below: -

Assam, Manipur, Mizoram & Nagaland: UFRs based load shedding for 220MW & 20MW respectively 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.

Arunachal Pradesh: EE, SLDC informed that UFRs based load shedding for 20MW have been implemented by them for all stages. Ar. Pradesh had furnished the list of feeders and stated that the report would be sent to NERLDC regularly. SE(O) requested Ar. Pradesh to inform the quantum of load relief in each UFR.

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.

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 March, 2015.

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 March, 2015. The itinerary will be intimated in due course. The complete UFR list is attached at **Annexure – C.3**

Concerned constituents may kindly intimate the status.

C.4 CT Ratio of Transmission Lines in NER & Enhancement of Loadability of Lines:

During 107th OCC meeting, DGM, NERLDC informed that the list of feeders for enhancement of loadability and present CT ratio available with them is given at **Annexure – C.4**. He requested constituents to check the list and update the status pertaining to them and also to intimate about the terminal equipments if the load can carry as per the CT ratio.

Further, DGM, NERLDC informed that now the loadability has to be complied as per the operational guidelines issued by NRCE, of CEA. He requested all the constituents to go through this guideline and give their comments in the next OCC meeting. The NRCE guideline is circulated along with Agenda of OCC.

Constituents may kindly intimate the status and members may deliberate.

C.5 Single Line Diagram of Sub-stations, Switching Stations & Power Stations of NER:

POWERGRID, OTPC, NHPC (**only Loktak**), NTPC & DoP, Arunachal Pradesh, MSPCL, P&E, Mizoram, MePTCL **(partially),** DoP, Nagaland, TSECL **(partially)** & NEEPCO **(partially)** have furnished.

Single Line Diagrams of some of the nodes of AEGCL have been collected from DPR for rectification of Protection System.

NEEPCO **(Khandong, Khupi & RHEP)**, NHPC (**Lower Subansiri**), AEGCL **(Bihaiting, BRPL, Ghoramari, HPC-Jagiroad, HPC-Panchgram, Star Cement & CALCOM)**, MePTCL **(Adhunik Cement, CMCL, Hill Cement, Leshka, Nalari, Sai Prakash & Sonapani)**, and TSECL **(Gumti, Jatanbari & 132 kV Rabindranagar)** are requested to furnish Single Line Diagram of nodes as these diagrams are required for system studies, outage coordination etc.

Concerned constituents may kindly intimate the status.

C.6 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.

During 107th OCC meeting, SE (O) informed that draft LGBR for 2015-2016 has been prepared by NERPC. He further requested that all the generators and transmission utilities to give their plan shutdown for FY 2015-16.

Constituents may please intimate the status & discuss.

C.7 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 as per **Annexure – C.7.**

During 104th OCC meeting, DGM, NERLDC stated that this issue has been discussed many times in the meeting but there was no fruitful outcome. He requested NERPC to look into the matter so that the issue can be resolved at the earliest.

The Sub-committee has requested NERPC to invite the concerned member from Generating Utilities in the next OCC meeting for finalization of the issue.

Accordingly, the special meeting was conducted by NERPC on 06.04.2015 at Shillong and the issues of FGMO/RGMO, SPS etc., have been discussed in thread bear. The minute is enclosed at **Annexure – A.**

Members may like to discuss.

C.8 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.

AEGCL, Me. PTCL & TSECL have only furnished the list. All other states utilities of NER are requested to furnish list of feeders connected to essential load at the earliest.

Constituents may please update the above information.

C.9 Progress Report of Ongoing Projects:

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.

During 107th OCC meeting, SE (O) informed that as per decision of the sub-committee, NERPC vide letter dated 13.02.2015 has written to all the constituents to furnish the status of ongoing projects to NERLDC at the earliest.

NERLDC informed that information has now been received from NTPC, NEEPCO, Meghalaya, Assam & OTPC. NERLDC requested the remaining constituents to furnish the same at the earliest.

The sub-committee requested the remaining constituents to furnish the above information at the earliest. Constituents who do not have any ongoing projects may kindly be informed as NIL report.

Constituents may kindly intimate the status.

C.10 Submission of formats for charging/first time synchronization of new elements:

Information related to charging/first time synchronization of new elements/units is to be furnished to NERLDC (two month in advance). All the activities related to charging/first time synchronization of new elements are to be completed before charging/first time synchronization of new elements. The technical data of the elements are also necessary for preparation of Base Case for system study for NER system.

During the 107th OCC meeting, The Sub-committee requested to intimate the Nodal Officer for above issue so that correspondence can be taken up with them directly. The name of Nodal Officer is given below:

Ar. Pradesh: Shri N. Perme, EE, SDLC.

Assam: Shri B.C. Baruah, DGM, LDC.

Manipur: Shri Haokip

Mizoram: Shri Lalrema, SE, SLDC

Meghalaya: Shri F.E. Kharshing, SE, SLDC/Shri H.F. Shangpliang, EE (MRT)

Nagaland: Shri A. Jakhalu, EE, SLDC

Tripura: Shri Mrinal Sen, Manager

NEEPCO: Shri Bhaskar Goswami, Sr. Manager

NHPC: Shri R.C. Singh, Manager

POWERGRID: Shri Supriyo Paul, Dy. Manager/D. Bhaumick, Engineer

OTPC: Shri N. Gupta, Manager

NTPC: They will intimate soon.

NTPC may kindly intimate the nodal officer and NERLC may inform if they have received any information from any of the constituents.

C.11 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 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 and for assessment of TTC / ATC for a 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 15th 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.

After discussion in the 105th & 106th OCCM, 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.

The latest .sav case files of Off Peak & Peak Cases have been mailed to SLDCs of NER on **7th April, 2015.**

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.

NERLDC is currently computing the TTC/ATC of NER-ER corridor as mandated by regulations of Hon'ble CERC and the same is emailed to all the constituents. States may check the TTC of their control areas as computed by NERLDC and issue comments, if any as TTC, ATC & TRM figures of States control area and group of control areas may be uploaded in NLDC website, if required.

C.12 Requirement of Reactor at Balipara & Bongaigoan:

After commissioning of 400 kV Balipara – Bongaigaon III & IV lines & 400 kV Bongaigaon – New Siliguri III & IV lines, voltage trend at Ranganadi, Balipara & Bongaigaon significantly increases during off peak hours.

To contain voltage at these nodes within IEGC band, one circuit of 400 kV Balipara – Bongaigaon lines, 400 kV Bongaigaon – New Siliguri lines & 400 kV Ranganadi – Balipara lines are kept open during off peak hours.

It was agreed in 4th SCM of NER on 13.12.14 for installation of 125 MVAR Bus Reactors by POWERGRID at Balipara and Bongaigaon.

For immediate solution, Line Reactors of 400 kV Balipara - Bongaigaon I & II at Balipara & Bongaigaon are required to be converted into Bus Reactors.

It was discussed during 105th OCC Meeting of NERPC that this issue is to be resolved at the earliest. Latest status is to be intimated by NERTS, POWERGRID.

C.13 Low Voltage at 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 already furnished by NERLDC.

During 105th OCC 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.

During 106th OCC meeting, SE(O) informed that NERPC vide letter dated 13.02.2015 has already written to NHPC & Mizoram to set the tap position at the maximum.

The Sub-committee suggested that since 400kV Silchar- Imphal & Silchar-Melriat are on the verge of charging and expected that the voltage will improve accordingly. Further, NERLDC may monitor the voltage profile in Loktak & Mizoram if the voltage has improved after changing the tap position of transformers.

Meanwhile, Manipur informed that low voltage will still prevail even after charging of Silchar – Imphal line and hence requested NERPC to suggest installation of capacitor bank.

During 107th OCC meeting, DGM (AM) NERTS informed that after charging of 132kV Silchar- Imphal line the voltage has improved very much. The problem is with downstream only.

After detailed deliberation, the sub-committee suggested Manipur, NHPC & Mizoram to send the SCADA plot of voltage profile of 132kV/33kV node for whole day for 3-4 days to NERLDC so that further study can be made by them before proceeding further course of action.

NERLDC/Constituents may kindly intimate the status.

C.14 Hourly Demand data in MW & Daily MU Requirement:

As per clause no 5.3.c of IEGC, each SLDC shall develop methodologies/mechanisms for daily/weekly/monthly/yearly demand estimation (MW, MVAr and MWH) for operational purpose.

SLDCs of NER are requested to furnish hourly demand data in MW & daily MU requirement to NERLDC in excel file by 2000 Hr on day ahead basis through nerldc@yahoo.co.in.These data are required for real time operation and preparation of reports.

These data are being furnished by AEGCL, MSPCL, Me. PTCL, DoP, Nagaland, & TSECL intermittently.

C.15 Second In-feed for NER-ER Corridor:

At present NER Grid is connected to rest of NEWS Grid through only one in-feed i.e. Bongaigaon - Salakati substation. On 23.02.15 at around 1809 Hrs due to tripping of all the outgoing feeders of 400 kV Bongaigaon substation, 220kV Salakati- BTPS D/C lines overloaded and tripped. This resulted into isolation of NER grid from the rest of NEWS Grid and subsequently major part of NER Grid collapsed.

This type of grid disturbances may be avoided if there is more than one in-feed of NER Grid with ER Grid.

At present Bongaigaon Thermal Power Plant (BgTPP) is connected with 400 kV Bongaigaon S/S through 400 kV Bongaigaon – BgTPP D/C lines. Second in-feed of NER Grid with ER Grid may be formed, albeit at the same geographical location, if one circuit each of 400 kV Bongaigaon – Binaguri lines and 400 kV Bongaigaon – Balipara lines terminated to BgTPP in place of Bongaigaon.

NERLDC pointed out that 2nd in-feed at Balipara can also be formed by connecting one circuit each of 400 kV Bongaigaon – Binaguri lines and 400 kV Bongaigaon – Balipara lines bypassing Bongaigaon S/S subject to technical feasibility.

The Sub-committee decided to jointly visit by NERLDC, NERPC, NERTS and NTPC to explore the possibility of creating additional space to incorporate required number of bays for implementation of above scheme. The issue will be discussed in the next OCC meeting.

NERPC may kindly intimate the status.

C.16 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 2015-16 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	Apr15	May15	Jun15	Jul15	Aug15
Ar. Pradesh	66	70	67	67	72
Assam	640	745	790	845	845
Manipur	65	65	75	75	75
Meghalaya	165	170	160	170	170
Mizoram	40	40	40	42	42
Nagaland	60	60	65	65	65
Tripura	115	125	125	130	130
NER	**1151**	**1275**	**1322**	**1394**	**1389**

Availability:

Name of State	Apr15	May15	Jun15	Jul15	Aug15
Ar. Pradesh	50	57	68	89	86
Assam	520	554	635	748	739
Manipur	66	69	79	101	101
Meghalaya	146	188	221	294	307
Mizoram	43	49	55	66	65
Nagaland	47	43	51	67	70
Tripura	197	211	212	234	233
NER	**1069**	**1171**	**1321**	**1599**	**1601**

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

The following figures were taken from LGBR 2015-16 of NERPC. These figures are to be reviewed.

A. Peak Demand in MW

Name of State	Apr15	May15	Jun15	Jul15	Aug15
Ar. Pradesh	138	138	133	133	138
Assam	1371	1382	1439	1469	1510
Manipur	132	148	138	143	149
Meghalaya	400	400	400	400	395
Mizoram	85	85	90	90	90
Nagaland	120	120	120	135	130
Tripura	280	300	300	305	305
NER	**2526**	**2573**	**2620**	**2675**	**2717**

B. Peak Availability in MW

Name of State	Apr15	May15	Jun15	Jul15	Aug15
Ar. Pradesh	115	126	149	148	143
Assam	961	990	1164	1151	1113
Manipur	127	129	154	162	159
Meghalaya	266	335	387	470	488
Mizoram	86	92	108	113	109
Nagaland	101	87	103	108	104
Tripura	374/230	377/230	396/230	403/230	398/230
NER	**1636**	**2030**	**2136**	**2461**	**2514**

**Tripura indicates 272/230 if Pallatana available/if not available*

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

Name of State	Apr15	May15	Jun15	Jul15	Aug15
Ar. Pradesh	76	76	73	73	76
Assam	900	860	900	905	920
Manipur	86	96	90	93	97
Meghalaya	220	220	220	220	217
Mizoram	55	55	59	55	55
Nagaland	72	72	72	81	78
Tripura	180	194	197	197	201
NER	**1461**	**1573**	**1611**	**1624**	**1644**

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

Name of State	Apr15	May15	Jun15	Jul15	Aug15
Ar. Pradesh	35	48	74	110	108
Assam	771	916	1077	1047	1047
Manipur	52	76	103	136	136
Meghalaya	204	254	321	423	440
Mizoram	50	64	75	92	100
Nagaland	45	56	71	96	95
Tripura	230	230	230	230	230
NER	**1461**	**1644**	**1951**	**2134**	**2156**

D. NEW ITEMS

D.1 Generation Planning (ongoing and planned outages)

NEEPCO/NHPC/OTPC 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 generation planning for lean hydro period - Proper planning is required to utilize the available water for entire lean hydro period, say upto May, 2015.

NHPC vide letter dated 07.03.2015 has requested for shutdown of Loktak Unit #2 w.e.f. 01.04.2015 to 30.04.2015 (AMC). During the above shutdown two units will remain available.

The Committee may discuss and approve the proposed shutdown by Generating Stations.

D.2 Water level and spillage data of Hydro Stations

Historical data of reservoir level & spillage data of hydro stations are not available with NERLDC. This information is sometimes asked by various authorities. To facilitate in making a 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.

During 103rd OCC meeting, the Sub-committee once again requested all the constituents to furnish the data as per format given below to NERLDC at the earliest.

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

During 105th OCC meeting, NERLDC informed that Assam, NEEPCO & NHPC has furnished the above information but not as per the format given by NERLDC.

The Sub-committee once again requested all the constituents to furnish the data as per data available with them 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.

The sub-Committee may kindly discuss and approve the transmission line outages proposed by Constituents for March - April, 2015 as enclosed at Annexure- D.3.

D.4 Frequent Tripping of Pallatana Unit:

NERLDC is allowing sudden/intraday 2nd unit Generation to OTPC without consent of constituent in several occasions for which penalty is imposed including backing down of state Generation. Due to sudden change of schedule, huge penalty along with other applicable charges like POC, POSSOCO, Fixed charges etc has to be borne by TSECL while TSECL is no way liable for such act. Under DSM regulation balancing of schedule & actual drawal has to be strictly maintained.

Revision of schedule of respective unit may be allowed on technical ground but addition & withdrawal of unit in totally without day ahead notice should be discontinued as this is causing severe commercial loss to the states.

NERLDC may kindly intimate deliberate.

D.5 Partial Requisition Based Scheduling:

Partial Requisition based schedule has been implemented in the region except for hydel Generation. But hydel generation frequently changes their schedule which is effected the DSM & penalty imposed for that especially during monsoon. Matter was discussed earlier also; hence it is requested to look into the matter for betterment of the region.

Members may like to discuss.

D.6 Up-dated List of Important Grid Elements of NER May, 2015 (Draft):

As per Clause No 5.2.c of IEGC, List of Important Grid Elements of NER May 2015 (Draft) prepared. Updated List of Important Grid Elements of NER May 2015 (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 2015 by 8th May'15. This document will be finalized by 15th May'15.

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

Members may like to discuss.

D.7 Sharing of Inter-State Transmission Charges & Losses (Third Amendment), Regulations, 2015:

Honorable CERC has notified Sharing of Inter State Transmission Charges and Losses (Third Amendment) Regulations, 2015 on 1st April'15 which is available in NERLDC website. These regulations shall come into force with effect from 1st May'15.

As per provisions of the CERC (Sharing of Inter State Transmission Charges and Losses) (Third Amendment), Regulations, 2015, the Designated ISTS Customers (DICs) are required to submit node-wise forecast injection/withdrawal information and maximum injection/withdrawal data for corresponding quarter of last three years to the Implementing Agency for computation of PoC Charges & Losses for Q1 of 2015-16.

Implementing Agency letter in this regard has been issued and is attached herewith in Annexure- **D.7**. It is requested that data may be furnished within the stipulated date.

Members may like to note.

D.8 Estimated Transmission Availability Certificate (TAC) for the month of March, 2015.

NETC and POWERGRID, NERTS have submitted TAC data of March, 2015 in the first/second week of April, 2015. 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.

Any other item:

Date and Venue of next OCC

It is proposed to hold the 109th OCC meeting of NERPC on second week of May, 2015. The date & exact venue will be intimated in due course.

****

Annexure - C. 3

SN	Name of State	Total Quantum of Load Shedding required	Location where URF installed (Feeder's Name)	Stage	Load in each feeder	Quantum of Load shedding (MW) implemented	Additional quantum of load shedding required
1	Ar. Pradesh	**20**	**At SMS Smelters** (33 KV Lekhi feeders - 3 Nos)	Stage - I (49.2 Hz)		**3.5**	**1.5**
			At Platinum Alloys (11 KV Lekhi feeders - 3 Nos)	Stage - II (49.0 Hz)		**0**	**5**
			At Satyam Ispat Ltd. (33 KV Lekhi feeders - 3 Nos)	Stage - III (48.8 Hz)		**0**	**5**
			At Nirjuli feeder (11 KV Lekhi feeder - 1 No.)	Stage - IV (48.6 Hz)		**0**	**5**
2	Assam	**220**	**At Gauripur** (132 KV Dhaligoan - Gossaigoan - Gauripur)	**Stage - I (49.2 HZ)**	16	**54.5**	**0**
			At Sipajhar (132 KV Depota - Rowta - Sipajhar)		10		
			At Dhemaji (132 KV Gohpur - Nalkata - Dhemaji)		11		
			At Majuli (132 KV Nalkata - Majuli)		2.5		
			At Baghjap (132 KV Kahilipara - Chandrapur - Baghjap)		15		
			At Diphu (132 KV Samaguri - Sankardev - Diphu)	**Stage - II (49.0 Hz)**	11	**61**	**0**
			At Gohpur (132 KV Samaguri - B. Chariali - Gohpur)		8		
			At Rupai (132 KV Tinsukia - Rupai + AP Load)		17		
			At Jogighopa (132 KV Dhaligoan - Jogighopa)		7		
			At Sankardevnagar (132 KV Samaguri - Sankardevnagar)		18		

SN	Name of State	Total Quantum of Load Shedding required	Location where URF installed (Feeder's Name)	Stage	Load in each feeder	Quantum of Load shedding (MW) implemented	Additional quantum of load shedding required
2	Assam		**At Gossaigoan** (132 KV Dhaligoan - Gossaigoan)	**Stage - III** **(48.8 Hz)**	7	**59**	**0**
			At Rowta (132 KV Depota - Rowta)		18		
			At Chandrapur (132 KV Kahilipara - Chandrapur)		12		
			At Nalkata (132 KV Gohpur - Nalkata)		11		
			At Bokakhat (132 KV Jorhat - Bokakhat)		11		
			At Sishugram (132 KV Sarusajai - Sishugram)	**Stage - IV** **(48.6 Hz)**	45	**57**	**0**
			At Ledo (132 KV Tinsukia - Ledo)		12		
3	Manipur	**20**	**At Yurembam** (33 KV Yurembam - Leimakhong)	**Stage - I** **(49.2 Hz)**		**3**	**2**
			At Yaingangpokpi (33 KV Yaingangpokpi - Napetpalli)	**Stage - II** **(49.0Hz)**		**0**	**5**
			At Kongba (33 KV Kongba - Mongsangei)	**Stage - II** **(48.8Hz)**		**0**	**5**
			At Kakching (33 KV Kakching - Wangjing)	**Stage - II** **(48.6Hz)**		**0**	**5**

SN	Name of State	Total Quantum of Load Shedding required	Location where URF installed (Feeder's Name)	Stage	Load in each feeder	Quantum of Load shedding (MW) implemented	Additional quantum of load shedding required
4	Meghalaya	**60**	**At Nangalbibra** (33 KV Mendipathar - Nangalbibra)	**Stage - I** **(49.2 Hz)**	6.5	**15**	**0**
			At Rongkhon (33 KV Garobadha I - Rongkhon)		8.5		
			At Mawphlang (132/33 KV, 20 MVA Transformer)	**Stage - II** **(49.0 Hz)**		**15**	**0**
			At Khliehriat (132/33 KV, 20 MVA Transformer)	**Stage - III** **(48.8 Hz)**	12	**15**	**0**
			At Nongstoin (33 KV Nongstoin - Mairang)		3		
			At Mawlai (33 KV Mawlai - Nongthymmai)	**Stage - IV** **(48.6 Hz)**	7.5	**15**	**0**
			At NEHU (33 KV NEHU - Happy Valley)		7.5		
5	Mizoram	**20**	**At** 132 KV Khawiva (33 KV Khawiva - Sazaikawn)	**Stage - I** **(49.2 Hz)**	2.38	**5.09**	**0**
			At Bukpui (33 KV Bukpui - Chhingchhip)		2.71		
			At Zuangtui (6.3 MVA, 33/11 KV Transformer - I)	**Stage - II** **(49.0 Hz)**	5.31	**5.31**	**0**
			At Zuangtui (6.3 MVA, 33/11 KV Transformer - II)	**Stage - III** **(48.8 Hz)**	4	**5.1**	**0**
			At Tlangnuam (33 KV Tlangnuam - Aibawk)		1.1		
			At Chawnpui (6.3 MVA, 33/11 KV Transformer - I)	**Stage - III** **(48.6 Hz)**	3	**5.2**	**0**
			At Zuangtui (11 KV Zuangtui - Chaltlang)		2.2		

SN	Name of State	Total Quantum	Location where URF installed (Feeder's	Stage	Load in each	Quantum of Load	Additional
6	Nagaland	**20**	**At Mokokchung** (66 KV Mokokchung - Tuli)	**Stage - I (49.2 Hz)**		**6**	**0**
			At Dimapur (33 KV Dimapur - AP -I)	**Stage - II (49.0 Hz)**		**4.5**	**0**
			At Kohima (132 KV Kohima - Wokha)	**Stage - III (48.8 Hz)**		**5**	**0**
			At Dimapur (33 KV Dimapur - Refferal Hospital)	**Stage - IV (48.6 Hz)**		**4.5**	**0**
7	Tripura	**40**	**At Badharghat** (33 KV Badarghat - Bishalghar)	**Stage - I (49.2 Hz)**	8.5	**11**	**0**
			At Badharghat (33 KV Badarghat - Takarjala)		2.5		
			At 66 KV Rabindra Nagar (33 KV Rabindra Nagar - Melaghar)	**Stage - II (49.0 Hz)**	6.5	**10**	**0**
			At 66 KV Rabindra Nagar (33 KV Rabindra Nagar - Kathalia)		3.5		
			At 79 Tilla (33 KV, 79 Tilla - Mohanpur)	**Stage - III (48.8 Hz)**	7.5	**14.5**	**0**
			At 79 Tilla (33 KV, 79 Tilla - Durjoy Nagar)		7		
			At 79 Tilla (33 KV, 79 Tilla - College Tilla)	**Stage - IV (48.6 Hz)**		**12.5**	**0**

Note: **The inbuilt UFR of existing Numerical Relay at identified locations (at 132 KV level) of Assam, Meghalaya & Tripura can be used for above purpose. Existing UFR can also be shifted to new locations, wherever required.**

In respect of Ar. Pradesh, Manipur, Mizoram & Nagaland: Setting of existing UFR needs to be changed in case they use the same Feeder. (i.e. 48.8 Hz to be set to 49.2 Hz for Stage - I), (48.5 to be set to 49.0 Hz for Stage - II) & (48.2 Hz to 48.8 Hz for Stage - III) Feeder is to be identified at the earliest for remaining quantum of load shedding of other stages of 48.8 Hz & 48.6 Hz.

STATUS OF UFR IMPLEMENTATION IN NER

Stage	Load shed Required	Implemented	To be Implemented
Stage - I (49.2 Hz)	100 MW	98.09	1.91
Stage - II (49.0 Hz)	100 MW	95.8	4.19
Stage - III (48.8 Hz)	100 MW	98.6	1.4
Stage - IV (48.6 Hz)	100 MW	94.2	5.8
TOTAL	400 MW	386.69	13.3

Annexure - C.5

List of SLDs of Substations/ Power Stations which not yet submitted by contituents

Sl. No.	Name of Substations/ Power Stations
I. नीपको / NEEPCO	
1	Khandong
2	Khupi
3	Ranganadi
II. एनएचपीसी / NHPC	
1	Lower Subansiri
III. असम / Assam	
1	Bihaiting
2	BRPL
3	Ghoramari
4	HPC,Jagiroad
5	HPC,Panchgram
6	Star Cement
7	CALCOM
IV. मणिपुर / Manipur	
1	Chandel
2	Churachandpur
3	Hundung
4	Imphal (Yurembam)
5	Jiribam
6	Kakching
7	Karong

Sl. No.	Name of Substations/ Power Stations
IV. मणिपुर / Manipur	
8	Kongba
9	Ningthoukhong
10	Rengpang
11	Thanlon
12	Yaingangpokpi
V. मेघालय / Meghalaya	
1	Adhunik Cement
2	CMCL
3	Hill Cement
4	Leshka
5	Nalari
6	Sai Prakash
7	Sonapani
VI. मिज़ोरम / Mizoram	
1	Sinhmui
VII. नागालैंड / Nagaland	
1	Chumukedima
2	Dairy Farm
3	Ganeshnagar
4	Mon
5	Nagnimora
6	Nito Farm

Sl. No.	Name of Substations/ Power Stations
VII. नागालैंड / Nagaland	
7	Power House
8	Tizit
9	Tuensang
10	Tuli
11	Zunheboto
VIII. त्रिपुरा / Tripura	
1	Amarpur
2	Badarghat
3	Bagafa
4	Baramura
5	Baxanagar
6	Belonia
7	Bishramganj
8	Gokulnagar (Bishalgarh)
9	Gumti
10	Jatanbari
11	Ompi
12	Rabindranagar
13	Rokhia
14	Sabroom
15	Satchand
16	Teliamura (Gamaitilla)

Unit Wise FGMO/RGMO Status Details in NER

ANNEXURE-C.7

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

North Eastern Regional Power Committee

MINUTES OF SPECIAL MEETING ON SPS, FGMO

Date : 06/04/2015 (Monday)
Time : 15:00 hrs
Venue : "NERLDC Conference Hall", Shillong.

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

Shri B. Lyngkhoi, Director/SE(O) informed that issue of SPS, FGMO have been discussed in various OCC & PCC Meetings, however, no fruitful outcome has been made so far. Considering the seriousness of the matter as many new stations are coming up and as per IEGC guidelines, it was decided to have a Special meeting to discuss and resolve the matter at the earliest. He thanked all the participants who have attended the meeting in-spite of short notice. He requested all the constituents to actively participate in the meeting so that issues can be resolved. The agenda items were taken up as below:

1. **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 along with above minutes, members agreed to send the updated status to NERLDC at the earliest.

During 107th OCC meeting, DGM, NERLDC stated that this issue has been discussed many times in the meeting but there was no fruitful outcome. He requested NERPC to look into the matter so that the issue can be resolved at the earliest.

The Sub-committee has requested NERPC to invite the concerned member from Generating Utilities in the next OCC meeting for finalization of the issue.

Deliberation of the Committee

SE(O) highlighted the CERC Order and reproduce as below:

"All generating units, which are synchronized with the grid, irrespective of their ownership, type and size, shall have their governors in normal operation at all times. If any generating unit of over fifty (50) MW size (10 MW for North Eastern Region) is required to be operated without its governor in normal operation, the RLDC shall be immediately advised about the reason and duration of such operation. All governors shall have a droop of between 3% and 6%.

All Generating Units, operating at/up to 100% of their Maximum Continuous Rating (MCR) shall normally be capable of (and shall not in any way be prevented from) instantaneously picking up five per cent (5%) extra load for at least five (5) minutes or within technical limits prescribed by the manufacturer when frequency falls due to a system contingency. The generating units operating at above 100% of their MCR shall be capable of (and shall not be prevented from) going at least up to 105% of their MCR when frequency falls suddenly. Any generating unit of over fifty (50) MW size (10 MW for NER) not complying with the above requirement, shall be kept in operation (synchronized with the Regional grid) only after obtaining the permission of RLDC".

He then requested NERLDC to give the presentation on latest status of FGMO/RGMO for further deliberation.

NERLDC gave the latest status of FGMO/RGMO in the region and the same is attached at **Annexure - II**.

DGM (SO-I) NERLDC stated that as seen from the presentation some of the units are showing status as RGMO/FGMO was implemented but whether the same has been tested to prove that RGMO/FGMO are really operational.

Sr. Manager, NEEPCO informed that unless machines are operating at full capacity they have not tested to find out if the 5% (+/-) picking from 100% of their MCR is possible. He mentioned that Ranganadi & Kopili HEPs are facing such problem while others stations FGMO/RGMO as indicated in the Annexure – II is correct. Sr. Manager, NEEPCO also stated that every hydro machine under their control has critical zone and they can not be operated beyond certain amount of load as per manufacturer's instruction. This means that the units can not be run

from 0 MW to full load capcity. Under this circumstances implementation of RGMO may not be possible even if the EHG panel is switched over to electronic panel.

Assam & Meghalaya also endorsed the view of NEEPCO.

NERLDC also informed that telemetry data in case of Langpi HEP of Assam & Leshka HEP of Meghalaya are not received at NERLDC and as per information available RGMO/FGMO are in operational condition. NERLDC requested them to check the telemetry system and make it available at the earliest. Assam & Meghalaya agreed.

After detailed deliberation, the forum requested constituents to file the petition to CERC stating about the problem faced i.r.o RGMO/FGMO by them so that exemption can be granted to them. Further, the forum requested them to intimate the latest status on this issue at the earliest.

The Sub-committee noted as above.

2. Review of SPS I, SPS II, SPS III & SPS IV related to Palatana GBPP, OTPC after commissioning of Palatana Module II

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

SPS I (implemented w.e.f 14.09.13):

In case of tripping of Module I of Palatana, OTPC, load will be disconnected by tripping of the following elements:

132 kV Silchar- Srikona D/C
132 kV Silchar- Panchgram
132 kV Badarpur- Panchgram
132 kV Silchar-Dullavcherra-Dharmanagar

Deliberation of the Committee

The Sub-committee requested OTPC to carry out the wiring for Module – II in series with Module-I so that the SPS for load relief operates only in case of tripping of both the units.

OTPC agreed to complete the wiring of Module – II by 20.04.2015.

NERLDC was of the view that due to more available generation, drawal of constituents in NER Grid would be high. In case of tripping of both Modules of Pallatana, load disconnection has to be carried out to avoid violation of ATC of NER-ER corridor. Any such violation may result in overloading of lines in Eastern Region leading to cascade tripping effect.

The Sub-committee noted as above.

SPS II (implemented w.e.f 23.02.15):

In case of tripping of 400 kV Palatana- Silchar D/C lines (with Module I generation of Palatana, OTPC), load will be disconnected by tripping of the following elements:

132 kV Silchar - Srikona D/C
132 kV Silchar - Panchgram
132 kV Badarpur - Panchgram
132 kV Silchar - Dullavcherra - Dharmanagar

And Generation of Palatana, OTPC will be reduced to around 20 MW excluding their auxiliary consumption.

Deliberation of the Committee

The Sub-committee requested OTPC to carry out the wiring for Module – II in same line as was done in case of Module – I.

DGM (SO-I), NERLDC informed that after tripping of 400 kV Silchar – Palatana I & II lines on 23.02.2015, SPS – II did not operate as planned for load relief.

OTPC informed that generation reduction to around 20 MW is not possible and instead it will go to FSNL mode with no generation. Further, they informed that modules can run in FSNL mode for long time and bringing back the machines after resumption of their connectivity is not a problem, only STG may take some time.

The Sub-committee expressed concern about the issue as by OTPC stated earlier that Modules of Palatana can bring down to in-house load excluding auxiliary consumption to 20 MW and was recorded in minutes accordingly. The Sub-committee requested OTPC to spell out clearly on this issue in the next OCC meeting so that SPS- II can be made operational as plan.

The Sub-committee noted as above.

SPS III (implemented w.e.f 23.02.15):

In case of tripping of 400 kV Silchar - Byrnihat & 400 kV Silchar - Azara lines (with Module I generation of Palatana, OTPC), Generation of Palatana, OTPC will be reduced to around 200 MW.

Deliberation of the Committee

DGM (SO-I), NERLDC stated that in case of tripping of 400 kV Silchar - Byrnihat & 400 kV Silchar - Azara lines (with Module I & II generation of Palatana, OTPC), total Generation of Palatana, OTPC from Module I & II should be reduced to around 200 MW. OTPC agreed to implement the scheme accordingly.

Committee requested OTPC to furnish the status in next OCC meeting.

The Sub-committee noted as above.

SPS IV (implemented w.e.f 14.09.13):

In case of tripping of 400 kV Silchar – Byrnihat & 400 kV Silchar- Azra lines (without generation of Palatana, OTPC), load will disconnected by tripping of the following elements:

132 kV Silchar - Srikona D/C
132 kV Silchar - Panchgram
132 kV Badarpur - Panchgram
132 kV Silchar – Dullavcherra - Dharmanagar

OTPC & POWERGRID informed that above scheme has already been implemented by them.

The Sub-committee noted as above.

3. SPS based load disconnection in case of tripping of 400/220 kV, 315 MVA ICT at Bongaigaon

In case of tripping of 400 kV Bongaigaon – Azara & 400 kV Bongaigaon –Byrnihat lines, 400/220 kV, 315 MVA ICT at Bongaigaon may be overloaded and tripped at peak hours. In case of tripping of this ICT, Capital area, Dhaligaon area of Assam & Nangalbibra area of Meghalaya & North Bengal & Bhutan system may be collapsed.

To safe, secure & reliable operation of these areas of NER, SPS is to be designed for load disconnection in these areas.

It was decided during last SSM that this issue will be discussed with ERPC so that load relief of 120 MW can be shared by Eastern Region also.

Deliberation of the Committee

DGM (SO-I), NERLDC stated that in case of tripping of 400 kV Bongaigaon – Azara & 400 kV Bongaigaon –Byrnihat lines, 220 kV BTPS – Salakati D/C lines may be overloaded and tripped during peak hours. Hence Dhaligaon load of around 120 MW has to be curtailed to maintain loading of 220 kV BTPS – Salakati D/C lines. Further, he stated that such exigency may occur only in extreme case and therefore requested Assam to look into the matter and taking consent of ER for sharing the load is not at all necessary.

NERLDC gave a presentation of different cases in this regard and the same is enclosed at **Annexure – III**.

Assam agreed for load disconnection in Dhaligaon area. However, the Dhaligaon load needs to be kept in radial mode and Bhutan load through 132 kV Rangia – Deothang S/C must not be affected.

After detailed deliberation, the sub-committee requested Assam & POWERGRID to look into the matter and intimate the status in next OCC meeting.

The Sub-committee noted as above.

4. SPS based generation reduction of AGTPP in case of tripping of 132 kV AGTPP – Kumarghat line

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:-

1. 132 kV Monarchak - Udaipur : 72 MW
2. 132 kV Dhalabil - Agartala : 84 MW

3. 132 kV Dhalabil - Kamalpur : 79 MW
4. 132 kV Baramura - Teliamura : 88 MW
5. 132 kV Teliamura - Ambassa : 86 MW
6. 132 kV PK Bari - Kumarghat : 92 MW
7. 132 kV PK Bari - Ambassa : 81 MW
8. 132 kV PK Bari - Kamalpur : 76 MW

During last SSM, the Sub-committee recommended considering the load relief of 32 MW for the time being and if required, the same will be reviewed again.

Deliberation of the Committee

The Sub-committee recommended the importance of this SPS and requested NEEPCO to implement of above SPS with load relief of 32 MW before commissioning of both STGs.

NEEPCO agreed to implement the SPS within April, 2015.

The Sub-committee noted as above.

5. SPS requirement of States

NER states may review the critical loading within their system and the vulnerability of important load centers[if any] and propose SPS scheme so that the same can be implemented in a coordinated manner under the aegis of NERPC to ensure power supply to important load centers during contingencies and also integrity NER grid is maintained.

Deliberation of the Committee

DGM (SO-I) briefed about the importance of SPS in respect of each state for review the critical loading within their system and the vulnerability of important load centers[if any] and therefore requested constituents to look into the matter for the benefit of the system in NER.

EE, Me.ECL informed that one SPS has been implemented by them on 132 kV Umtru – ICPS I & II. He informed that the current status will be intimated to NERPC/NERLDC at the earliest.

The Sub-committee appreciated Meghalaya and requested other states to plan for implementation of SPS accordingly.

The Sub-committee noted as above.

6. Second in-feed for NER-ER Corridor

At present NER Grid is connected to rest of NEWS Grid through only one in-feed i.e. Bongaigaon - Salakati substation. On 23.02.15 at around 1809 Hrs due to tripping of all the outgoing feeders of 400 kV Bongaigaon substation, 220kV Salakati- BTPS D/C lines overloaded and tripped. This resulted into isolation of NER grid from the rest of NEWS Grid and subsequently major part of NER Grid collapsed.

This type of grid disturbances may be avoided if there is more than one in-feed of NER Grid with ER Grid.

At present Bongaigaon Thermal Power Plant (BgTPP) is connected with 400 kV Bongaigaon S/S through 400 kV Bongaigaon – BgTPP D/C lines. Second in-feed of NER Grid with ER Grid may be formed, albeit in the same geographical location, if one circuit each of 400 kV Bongaigaon – Binaguri lines and 400 kV Bongaigaon – Balipara lines terminated to BgTPP in place of Bongaigaon.

Deliberation of the Committee

The Sub-committee recommended the importance of the second in-feed point from ER to NER and suggested that a team comprising from Assam, Meghalaya, NERPC, NERLDC & POWERGRID will visit the Bongaigoan station of NTPC and check the feasibility of space and other parameters so that the scheme can be implemented for the benefit of the region.

NERLDC gave a presentation on the above matter, showing feasibility of such termination of the above lines at 400 kV BgTPP, NTPC station instead of 400 kV Bongaigaon (PGCIL) substation. NERLDC also informed that in case of non-availability of bays at BgTPP, NTPC for termination of lines, a direct line from 400 kV Binaguri to 400 kV Balipara may be explored. A study has been carried out by NERLDC in this regard and presented in the meeting showing voltage rise, power flow etc., in case of outage of Bongaigaon substation.

The Sub-committee noted as above.

7. Implementation of islanding scheme in NER

During the 94thOCC meeting, the committee had decided the following islanding scheme and associated frequencies levels for creation of islands in NER:

SN	Islanding Scheme	Lines required to be opened	UFR Location	Implementing Agency
1	**ISLAND AT 48.80 Hz with 5 Sec delay:** Island comprising of generating units of AGBPP (Gas), NTPS (Gas) & LTPS (Gas) and loads of Upper Assam system & Deomali area (Ar. Pradesh) **[Total Generation: 380-400MW and load: 200MW (off peak)-300MW (peak)]**	(a) 220 kV New Mariani (PG) – AGBPP	UFR-1 [At New Mariani (PG)]	**PGCIL**
		(b) 220 kV Mariani – Misa	UFR-2 [At Mariani, Samaguri of AEGCL]	**AEGCL**
		(c) 220 kV Mariani – Samaguri		
		(d) 132 kV Mokukchung – Mariani		
		(e) 132 kV Dimapur (PG) – Bokajan	UFR-3 [At Dimapur (PG)]	**PGCIL**
		(f) Generators to be desynchronized for reduction of generation [if Generation > Load in the islanded pocket]		
		(g) De-synchronization / isolation of one GT and one ST from each of two modules of AGBPP, which are in operation, leading to reduction of generation of about 80-90 MW [i.e each module will contribute to reduction of about 40-45 MW (GT:30MW+ST:15MW)].	At AGBPP [UFRs of line bays & Generator to be used]	**NEEPCO**
		(h) Lines required to be opened for load shedding of 30MW (off-peak) and 50MW (peak) [if load > generation in the islanded pocket]		
		(i) 132kV Tinsukia – Ledo S/C line (at 48.7Hz instantaneous).	UFR [At Tinsukia]	**AEGCL**
		(j) 66kV Tinsukia – Rupai S/C line (at 48.6Hz instantaneous)		**AEGCL**
		(k) 132kV Jorhat – Bokakhat line (at 48.5Hz instantaneous)	UFR [At Jorahat / Bokakhat]	**AEGCL**

2	**ISLAND AT 48.50 Hz with 5 Sec delay :** Island comprising of generating units of AGTPP (Gas), generating units at Baramura (Gas), Rokhia (Gas) & Gumati (Hydro) and loads of Tripura system & Dullavcherra area (Assam) **[Total Generation: 150-160MW and load: 110MW (off-peak) &170-180MW (peak)]**	132 kV Palatana – Udaipur	UFR-1 [At Palatana]	**OTPC**
		132 kV Palatana – Surjamani Nagar		
		132 kV Silchar – Dullavcherra	UFR-2 [At Silchar]	**PGCIL**
		132 kV AGTPP – Kumarghat	UFR-3 [At Kumarghat]	**PGCIL**
		132 kV P K Bari – Kumarghat		
3	**ISLAND AT 47.90 Hz:** Isolation of NER from NEW grid at ER-NER boundary with rest of the generation and load of NER	To be decided after system study		

Deliberation of the Committee

The Sub-committee put in record that because of the successful operation of Islanding – I, restoration of the grid in NER was carried out at the earliest during the major grid incidence occurred on 23.02.2015. However, Islanding scheme –II was not operated.

NERLDC enquired associated lines pertaining to Islanding –II tripped. Moreover, constituents are requested if any UFRs operated during the above incidence.

DGM (AM), NERTS informed that on that particular day i.e. 23.02.2015, the 132 kV Silchar-Dullavcherra line was in open condition and the other lines i.e. 132 kV R.C. Nagar – Dullavcherra and 132 kV P.K. Bari line tripped on UFRs. Moreover, he requested NERLDC to check the event through PMU if frequency touches 48.50 Hz and also the duration. He suggested to reset the frequency setting from 48.5 Hz to 48.8 Hz. and the committee agreed to the same.

The committee agreed the proposal and the status will be discussed again in next PCC/OCC to review the scheme.

The Sub-committee noted as above.

ADDITIONAL AGENDA

A. System Studies (SS).

DGM (SO-II), NERLDC informed that system studies should be carried out by all the constituents for their own benefit (viz. calculation of ATC/TTC, power flow etc.) and requested NERPC to write to constituents to furnish the name of officers so that training on SS can be carried out frequently and NERLDC will help the constituents in this regard.

The Sub-committee recommended that engineers from SLDCs and Planning should be made mandatory to attend the SS meeting and all constituents should bring their PSS-E software laptops along with Dongle for SS meeting. Moreover, the Sub-committee requested NERPC to write to all the constituents to intimate the status and possession of the laptops issued by CTU/POSOCO and so that no misuse should be allowed. Further, the officers who possess these laptops should be kept ready with them and while on transfer/promotion they should be handed over immediately to the next in-charge so that impart training on them can be made and the name of the next officer should be intimated to NERLDC/NERPC for record.

The Sub-committee noted as above.

B. SPS at Silchar.

DGM (SO-II), NERLDC informed that Silchar is very important station in Southern Assam part of NER Grid and after termination of 132 kV Silchar – Imphal (PG) D/C lines, loading of 2x200 MVA, 400/132 kV Silchar ICTs has increased and persistent violation of N-1 condition was observed during peak hours. In case of overloading & tripping of any ICTs at Silchar during peak hours, there may be cascade tripping of transmission elements of this part of NER and grid disturbance may occur in this part of NER. As more 132 kV lines from 132 kV Silchar (PG) substation are expected to connect load centers in Tripura, Mizoram, the loading of Silchar ICTs are expected to increase further.

He suggested to have one more SPS at Silchar and that the current SPS based load shedding associated with SPS related to Palatana unit tripping may be extended to Silchar substation such that load is disconnected automatically in case of tripping of any ICT at Silchar.

The Sub-committee requested NERLDC to carry out the system study and so that the proposed SPS at Silchar can be discussed further.

The Sub-committee noted as above.

C. Installation of Reactor at Rangandai HEP.

DGM (SO-II) informed that on several occasions NER grid experiencing very high voltage condition during off-peak hours resulting in opening of numbers of 400 kV circuits to contain over voltage especially at RHEP. 400 kV Balipara- RHEP D/C link is operated thro' single circuit only in most of the time sacrificing reliability of the system. Similar is the condition in other corridors including IR link. To address the problem, conversion of line reactors as Bus reactors for 400 kV Bongaigaon-Balipara D/C line and installation of additional bus reactors at Balipara have been proposed [please see SL no C.12 above].

In addition to this, one bus reactor of at least 50 MVAR capacity is required to installed at RHEP so that over voltage problem can be solved

Deliberation of the Committee

SE(O) informed that issue regarding installation of reactor at Ranganadi, the issue has been discussed in last 107th OCC meeting and the Sub-committee has requested NERPC to write to NEEPCO to enquire about the feasibility to counter the high voltage problem at Ranganadi end.

1. Possibility of installation of Bus Reactor either at 400 kV or 132 kV RHEP Switchyards
2. Possibility of running of machine in synchronous condenser mode during lean hydro
3. Possibility of installation of Tertiary reactors if Tertiary winding is available in ICTs at RHEP.

Accordingly, he informed that NERPC has already written to NEEPCO and the reply is awaited. Once the reply is received the matter can be discussed further.

The Sub-committee noted as above.

D. Declaration of state control area wise TTC/ATC

DGM (SO-II) informed that NERLDC is currently computing the TTC/ATC of NER-ER corridor as mandated by regulations of Hon'ble CERC. NERLDC is also computing TTC for state control areas as also for group of control areas in North-Eastern Region. The state-wise control area calculations are mandated to be carried out by respective state utilities as per clause 4.1 of Detailed Procedure of Relieving congestion in Real time operation approved by Hon'ble CERC.

Accordingly, DGM (SO-II) requested the states to carry out system studies on their control areas. The PSSE base cases are also being sent by NERLDC to all SLDCs on monthly basis.

In the meantime, states may check the TTC of their control areas as computed by NERLDC and issue comments, if any as TTC, ATC & TRM figures of States control area and group of control areas may be uploaded in NLDC website, if required.

The sub-committee noted as above.

The meeting ended with thank to the Chair.

****

Annexure-I

List of Participants in the Special Meetings of NERLDC held on 06/04/2015

SN	Name & Designation	Organization	Contact No.
1	Shri. Joypal Roy, Sr. Mgr (M)	NEEPCO	09435577726
2	Shri. P. Kanungo, DGM (AM)	PGCIL	09436302823
3	Shri. S. Paul, Mgr. (AM)	PGCIL	09436302995
4	Shri. Shaishav Ranjan, AE/AD-II	NERPC	08794276168
5	Shri. M. Swer, EE GD-I	Me. PGCL	09436312127
6	Shri. T. Gidon, EE, SLDC	Me. PTCL	09774479956
7	Shri. B.C. Borah, AGM, SLDC	AEGCL	09435119248
8	Shri. Paban Tamly, AGM	AEGCL	09435332262
9	Shri. Jayanta Saud, AGM	APGCL	09435111667
10	Shri. Karuna Sarma, AGM	AEGCL	09435013532
11	Shri. G.K. Bhuyan, AGM	AEGCL	09854015601
12	Shri. N.R. Paul, DGM	NERLDC	09436302723
13	Shri. Amaresh Mallick, DGM	NERLDC	09436302720
14	Shri. B.S. Jamatia, JE	NERLDC	09402148436
15	Shri. B. Medhi, Mgr	NERLDC	09436335376
16	Shri. Deepak Kumar, ET	NERLDC	09741046210
17	Shri. Rahul Chakrabarti, Sr. Engineer	NERLDC	09402507543
18	Shri. Anupam Kumar, Sr. Engineer	NERLDC	09436335379
19	Smti. Momai Dey, Engineer	NERLDC	09436302716
20	Shri. Hector Shangpliang, E.E	Me. PTCL	09863315562
21	Shri. A.G. Tham, AE	Me. PTCL	09774664034
22	Shri. B. Lyngkhoi, Director/SE	NERPC	09436163419

पावर सिस्टम ऑपरेशन कॉरपोरेशन लिमिटेड

(पावरग्रिड की पूर्ण स्वामित्व प्राप्त सहायक कंपनी)

POWER SYSTEM OPERATION CORPORATION LIMITED

(A wholly owned subsidiary of POWERGRID)

पंजीकृत एवं केन्द्रीय कार्यालय: बी-9, प्रथम तल, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली-110 016
Registered & Corporate Office : B - 9, Ist Floor, Qutub Institutional Area, Katwaria Sarai, New Delhi - 110 016
Website : www.posoco.in, www.nldc.in, Tel: 011-26536832, 26524522, Fax: 011-26524525, 26536901

POSOCO/Trans. Pricing/ दिनांक: 10th April 2015

सेवा में,

All Designated ISTS Customers, ISTS Licensees and RPCs (As per list enclosed)

विषय: **Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) (Third Amendment), Regulations, 2015 – Furnishing of Nodal Generation and Demand Information for May 2015 – June 2015.**

Sir,

As per 3rd amendment to the Principal Sharing Regulations (effective from 1st May 2015), the Designated ISTS Customers (DICs) are required to submit node-wise forecast injection/withdrawal information and maximum injection/withdrawal data for corresponding quarter of last three years to the Implementing Agency for computation of PoC Charges & Losses for the Application period.

Extract from Para 2.1.1 of the amendment to Annexure-I of the Principal Regulations is as below:

"The DICs will provide forecast injection/withdrawal information {MW and MVAR (or an assumption about the power factor to be used)} at all the nodes or a group of nodes in a zone (identified a-priori by the Implementing Agency (IA) in the Network. "Typical" injection/withdrawal data based on maximum injection/withdrawal as defined in these regulations shall be provided to the Implementing Agency by the DICs for each of the application period.

DICs shall also provide injection and withdrawal data for the corresponding quarter of last three years. The data provided by the DICs shall be as per the formats prepared by the IA and duly approved by the Commission under the relevant provisions of these Regulations.

……Similarly maximum injection data (for last 3 years as well as projected for the ensuing quarter) for generators embedded within the State system shall be provided by respective SLDC……."

In line with the above provisions and to facilitate the computation of PoC Charges and Losses for the period May - June 2015, it is requested to furnish the following data in the formats attached herewith, to the Implementing Agency latest by 15th April 2015:

1. Node-wise forecast maximum injection and withdrawal data. (Format III(B))
2. Maximum injection and withdrawal data for corresponding quarter of last three years. (Format III (C)).

   Kindly note that the existing Format-III as per the principal regulations, has been slightly modified to accommodate changes as per the 3rd amendment to the sharing regulations. Technical and commercial data as per Format-I and Format-II many also be furnished if not already submitted.

Data / information 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.

सादर धन्यवाद

भवदीय

एस एस बड़ेपंडा

(एस. एस. बड़पंडा)
अपर महाप्रबंधक,
रा. भा. प्रे. के.

प्रति: (1) Chief (Engg.), CERC

Instructions for filling-up Format-III

FORMAT-III(A)

1. Format-III(A) is to be filled up by DICs with details of Long Term and Medium term contracts.

2. Only green coloured cells are to be filled-up.

3. Withdrawal & injection contracts are to be specified seperately against each point.

4. Period of Approval in the format means period of the year.

5. Time duration in the format means time of the day of the specific contracts.

FORMAT-III(B)

1. Format-III(B) is to be filled up by DICs with withdrawal / injection data.

2. Only green coloured cells are to be filled-up.

3. Maximum forecasted Withdrawal & injection figure of each node upto 132 KV level are to be entered. Implementing Agency will specify the nodes / group of nodes on which DICs would submit the forecasted injection/withdrawal. This would be available in the website of implementing agency.

4. In case of injection / withdrawal in a particular node, both data are to be entered against the said node.

5. Data is to be entered for the stipulated blocks for January 2011- March 2011 and April 2011-March2012

6. Section 6.3(c) of the procedures may be referred for filling up Format-III(B)

FORMAT-III(C)

1. Format-III(C) is to be filled up by DICs with withdrawal / injection data.

2. Only green coloured cells are to be filled-up.

3. Peak Demand met during each month of corresponding application period during the last three years to be filled up. Maximum Injection data, of generators embedded within the state system, during each month of corresponding application period during the last three years to be filled up.

Annexure I

FORMAT-III (A)
Details of Long Term and Medium Term Contracts
Information to be submitted by
Designated Inter State Transmission System Customers (DICs)

Name of the DIC:	
Address:	
Contact Person:	
Contact Number:	
E-Mail ID:	

Approval/ Reference Number	Point of Injection	Point of Drawal	Approved Quantum	Period of Approval		Time Duration	
				From	To	From	To

FORMAT-III (B)
For PoC Charge Determination
Forecast Injection / Withdrawal data at all nodes upto 132 kV
Information to be submitted by
Designated Inter State Transmission System Customers (DICs)

Name of the DIC:	
Address:	
Contact Person:	
Contact Number:	
E-Mail ID:	

YEAR	

Application Period:	May 2015 - June 2015

Date :

Sl. No.	Name of Node	Voltage level	Forecasted Maximum Withdrawal		Forecasted Maximum Injection		
			MW	MVAr	MW	MVAr (Max)	MVAr (Min)
Simultaneous Maximum							

FORMAT-III (C)
For PoC Charge Determination
Maximum Injection / Withdrawal data of corresponding application period of last three (3) years. Information to be submitted by
Designated Inter State Transmission System Customers (DICs)

Name of the DIC:	
Address:	
Contact Person:	
Contact Number:	
E-Mail ID:	

YEAR	

Application Period:	May 2015 - June 2015

Date :

Peak Demand Met (Figures in MW)

Sl. No.	Constituent	2012-13		2013-14		2014-15	
		May'12	June'12	May'13	June'13	May'14	June'14

Maximum Injection (Figures in MW)

Sl. No.	Name of Generator	2012-13		2013-14		2014-15	
		May'12	June'12	May'13	June'13	May'14	June'14