

North Eastern Regional Power Committee

Agenda

For

128th OCC Sub-Committee Meeting

Time of meeting : 10:00 Hrs.

Date of meeting : 19th January, 2017 (Thursday)

Venue : "Hotel Nandan", Guwahati.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 127th MEETING OF OPERATION SUB-COMMITTEE OF NERPC.

The minutes of 127th meeting of Operation Sub-committee held on 14th December, 2016 at Guwahati were circulated vide letter No. NERPC/SE (O)/OCC/2016/4556-4591 dated 26th December, 2016.

Observation of OTPC in Item No. D.27 will be recorded in 128th OCC minutes

The Sub-committee may confirm the minutes of 127th OCCM of NERPC as no comments/observations were received from the constituents.

ITEMS FOR DISCUSSION

B.1. ACTION TAKEN:

DIFFERENCE IN ACTUALS VS LGBR:

Energy Requirement:

Name of State	Oct16 (actual)	Oct16 (LGBR)	Nov16 (actual)	Nov16 (LGBR)	Dec16 (actual)	Dec16 (LGBR)
Ar. Pradesh	63.04	73	58.87	68	62.50	68
Assam	834.99	816	706.25	714	685.17	714
Manipur	64.22	85	62.19	88	70.84	95
Meghalaya	149.79	185	136.75	195	144.88	210
Mizoram	40.17	46	42.74	46	48.88	48
Nagaland	68.16	74	59.82	68	62.99	71
Tripura	131.88	133	53.00	112	58.81	122
NER	1352.26	1412	1119.62	1291	1134.05	1328

Energy Availability:

Name of State	Oct16 (actual)	Oct16 (LGBR)	Nov16 (actual)	Nov16 (LGBR)	Dec16 (actual)	Dec16 (LGBR)
Ar. Pradesh	61.67	67	57.73	52	61.39	54
Assam	812.85	648	694.49	567	669.55	580
Manipur	61.72	95	60.66	81	69.56	76
Meghalaya	149.79	209	136.75	150	144.88	138
Mizoram	38.90	54	41.52	48	47.66	44
Nagaland	66.71	71	58.56	55	61.77	54
Tripura	130.59	225	51.96	211	58.14	224
NER	1322.23	1370	1101.68	1163	1112.96	1171

Demand:

Name of State	Oct16 (act)	Oct16 (LGBR)	Nov16 (act)	Nov16 (LGBR)	Dec16 (actual)	Dec16 (LGBR)
Ar. Pradesh	128	143	127	132	131	132
Assam	1673	1513	1531	1508	1388	1518
Manipur	145	163	152	179	161	184
Meghalaya	300	415	312	425	310	430
Mizoram	95	95	97	95	97	101
Nagaland	130	140	128	135	127	135
Tripura	284	321	266	275	230	260
NER	2466	2790	2377	2749	2245	2760

It has been observed that there is considerable difference in case of Manipur, Meghalaya and Tripura. Previous OCC forums had requested that states may check the reasons for such variation as to whether due to forecasting error or other reasons, and intimate.

Concerned states may please intimate the reasons thereof.

2. IMPLEMENTATION OF PROJECTS FUNDED FROM PSDF:

State	ADMS	CAPACITOR INSTALLATION
Arunachal Pradesh		
Nagaland		
Mizoram		
Manipur		
Tripura		
Assam		
Meghalaya		

States may please intimate the latest status.

3. Reasons For Demand - Supply Gap And Its Variation:

It was deliberated in the 4th NPC meeting that monthly power supply position prepared & published by CEA based on the data furnished by the states reflected shortages in almost all the states. However, a number of those states intimated adequate availability of power. This meant that the deficit/shortage in such states was actually not the deficit in true sense but demand-supply gap due to reasons other than

shortage of power. The other reasons for the demand-supply gap could be inadequate availability of power, transmission constraint, distribution constraint, financial constraint, etc. The reason for demand-supply gap needed to be clearly mentioned to reflect true picture of power supply position in different states and also to invite attention of various agencies including policy makers to the specific problem areas in the power sector for suitable solution.

After deliberation it was decided in the meeting that all the RPCs would advise the states in their respective regions to intimate broad break-up of demand-supply gap due to various reasons, or at least, the main reason(s) for demand-supply gap in each month.

In 126th OCCM, S.E. (C&O), NERPC informed the forum that as per communication received from GM Division CEA, unscheduled load shedding and scheduled load shedding for peak demand met instance is to be provided. Accordingly, all the constituents & NERLDC were requested to indicate the latter from November, 2016 onwards. The forum requested DoP Ar. Pradesh, MSPCL and DoP Nagaland to submit the shortfall figures periodically.

In 127th OCCM, S.E.(C&O), NERPC once again requested the SLDCs to indicate breakup of short fall figures clearly. He requested NERLDC to provide the breakup in monthly reports clearly and highlight the cases where not provided.

NERLDC expressed that differences are coming up on account of several reasons, and proper accounting of captive load and generation is to be done by SLDCs. In case the captive power consumption is not included, the overall demands met of the states are reflecting less than actual. All SLDCs were requested to check and reflect the captive generation figures in their daily operational reports.

NERPC will circulate the Installed Capacity figures compiled by them for ratification by all.

NERPC, NERLDC & SLDCs may please intimate the latest status.

4. Long Outage of Important Grid Elements:

Name of the Element	Name of Utility	Status
63MVAR Reactor at Byrnihat	MePTCL	
400KV 80MVAR Bus Reactor At Palatana	OTPC	

B.2. OPERATIONAL PERFORMANCE AND GRID DISCIPLINE DURING DECEMBER, 2016

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

NER PERFORMANCE DURING DECEMBER, 2016

States	Energy Met (MU)		w.r.t. Nov,16 % inc (+) /dec (-)	Energy Reqr. (MU)		w.r.t. Nov,16 % inc (+) /dec (-)	% inc (+) /dec (-) of energy reqr vs met. In Dec,16
	Dec-16	Nov-16		Dec-16	Nov-16		
Ar. Pradesh	61.39	57.73	6.34	62.50	58.87	6.17	-1.78
Assam	669.55	694.49	-3.59	685.17	706.25	-2.98	-2.28
Manipur	69.56	60.66	14.67	70.84	62.19	13.91	-1.81
Meghalaya	144.88	136.75	5.95	144.88	136.75	5.95	0.00
Mizoram	47.66	41.52	14.79	48.88	42.74	14.37	-2.50
Nagaland	61.77	58.56	5.48	62.99	59.82	5.30	-1.94
Tripura	58.14	51.96	11.89	58.81	53.00	10.96	-1.14
Region	1112.96	1101.68	1.02	1134.05	1119.62	1.29	-1.86

States	Demand Met (MW)		w.r.t. Nov,16 % inc (+) /dec (-)	Demand in (MW)		w.r.t. Nov,16 % inc (+) /dec (-)	% inc (+) /dec (-) of Demand vs met. In Dec,16
	Dec-16	Nov-16		Dec-16	Nov-16		
Ar. Pradesh	129	127	1.57	131	127	3.15	-1.53
Assam	1389	1524	-8.86	1388	1531	-9.34	0.07
Manipur	157	151	3.97	161	152	5.92	-2.48
Meghalaya	310	312	-0.64	310	312	-0.64	0.00
Mizoram	96	96	0.00	97	97	0.00	-1.03
Nagaland	127	126	0.79	127	128	-0.78	0.00
Tripura	231	266	-13.16	230	266	-13.53	0.43
Region	2223	2314	-3.93	2245	2377	-5.55	-0.98

REGIONAL GENERATION & INTER-REGIONAL EXCHANGE IN MU

Month---->	Dec-16	Nov-16
Total Generation in NER (Gross)	1197.89	1180.98
Total Central Sector Generation (Gross)	844.02	947.74
Total State Sector Generation (Gross)	205.76	233.24
Inter-Regional Energy Exchange		
(a) NER-ER	177.63	33.07
(b) ER-NER	36.39	460.46
(c)NER-NR	18.34	401.67
(d)NR-NER	323.55	52.14
© Net Import	163.97	77.85

AVERAGE FREQUENCY (Hz)

Month---->	Dec-16	Nov-16
	% of Time	% of Time
Below 49.9 Hz	11.22	9.28
Between 49.9 to 50.05 Hz	69.95	72.20
Above 50.05 Hz	19.26	18.50
Average	50.00	50.00
Maximum	50.31	50.27
Minimum	49.67	49.99

C. OLD ITEMS

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

During 128th OCC meeting, the status as informed by different beneficiaries is as follows:

SN	Items	Status as given in 127 th OCC Meeting	Status as given in 127 th OCC Meeting
a. New Projects			
1	Trial operation and CoD of Unit -II of Bongaigoan TPS of NTPC		Synchronization by January, 2017 & CoD by 31.03.2017
2	400/220kV, 2x315 MVA ICT of NTPC at Bongaigaon		January,2017
3	Trial operation and CoD 36MW STG of Monarchak GBPP of NEEPCO		December, 2016 (subject to gas availability)
4	Kameng HEP of NEEPCO two units (2 x 150 MW) Next two units (2x150 MW)		Unit #1 Oct'17 Unit #2 Nov'17 Unit #4 Dec'17
5	Pare HEP of NEEPCO (2 x 55 MW)		Unit #1 July'17 Unit #2 Aug'17
6	400 kV D/C Silchar - Melriat line of PGCIL		June, 2017.
7	220kV Rangia - Salakati of AEGCL		December, 2016
8	132kV Monarchak – Surjamaninagar D/C of TSECL		March, 2017
9	400/132 kV, 2nd 125 MVA ICT at Pallatana		Synchronized on 08.10.2016 COD expected by 25.12.2016
10	132kV Pasighat – Aalong of Ar. Pradesh		December, 2016.
11	132kV Doyang– Wokha		December, 2016.

Agenda for 128th OCC Meeting to be held on 19th January, 2017

12	220 kV, 20 MVAR Bus Reactor & bay at AGBPP		15.12.2016 - test charged 20.12.2016 - CoD
13	132kV Surjamaninagar Bay at OTPC		31.08.2017
14	400kV D/C Balipara – Kameng of Ar. Pradesh		March 2017.
15	RHEP 80 MVAR Bus Reactor		Tendering in process.
16	SLDCs (Ar. Pradesh, Manipur, Mizoram, Nagaland)		Manipur - Dec'16, Mizoram- Jan'17, Nagaland-handover of building by Dec'16, AP- Work started.
17	400/220 kV 315 MVA ICT-II at Bongaigaon		Manufacturing stage
18	220/132 kV, 2x160 MVA ICTs at Balipara		By 31 st August 2017(LOA date).
19	220/132 kV, 1x160 MVA ICT with GIS Bay at Kopili		By 31 st August 2017(LOA date).
20	400/132 kV, 1x315 MVA ICT-III at Silchar		December, 2017(LOA date).
21	Replacement of 2x315 MVA ICTs with 2x500 MVA ICTs at Misa (PG)		December, 2017(LOA date).
22	400 kV Silchar – Misa D/C		Under TBCB
23	1x125 MVAR Bus Reactor at 400 kV at Balipara		December, 2017(LOA date).
24	1x125 MVAR Bus Reactor at 400 kV Bongaigoan		December, 2017(LOA date).
25	Bays at Hailakandi & 132V Silchar-Hailakandi		March, 2017.
b. Elements under breakdown/ upgradation			
26	63MVAR Reactor at Byrnihat of Me.PTCL		Forum requested MeECL& PGCIL to jointly discuss with CGL.

Agenda for 128th OCC Meeting to be held on 19th January, 2017

27	Up-gradation of 132 kV Lumshnong-Panchgram line		Reports given to be analyzed by MePTCL.
28	Switchable line Reactors at 400kV Balipara & Bongaigaon		Balipara - Oct'16 Bongaigaon - Dec'16.
29	PLCC Panels at Loktak end of Loktak – Ningthoukhong 132 kV feeder and Loktak - Rengpang 132 kV feeder		Work(s) have been included in tender for additional line of 132kV Loktak-Ningthoukhong
30	LILO of 132kV Ranganadi – Nirjuli at Pare of NEEPCO by PGCIL		Jan'17
31	LILO of 132kV Ranganadi – Itanagar (Chimpu) at Pare of Ar. Pradesh		Bay at Pare under construction Bay 1: December 2016 Bay 2: March 2017
32	400KV 80MVAR Bus Reactor at OTPC Palatana		OTPC informed there has been no response from BHEL. Forum suggested that OTPC initiate commercial action. By 31.12.2016

Concerned constituents may kindly intimate the status.

C.2 Furnishing of UFR Report and status of Implementation:

As per recommendation of enquiry Committee, the status of installation of UFR in NER was already circulated earlier. It is gathered that, 18.5 MW quantum is yet to be implemented in Arunachal Pradesh & Manipur.

The 123rd OCC forum decided that monthly report is not being furnished. As per clauses of relevant regulations, and Order of Hon'ble CERC in matter of Petition no. 113/MP/2014, NERLDC and NERPC are mandated to submit status of UFR operation and non-operation to CERC. SLDCs were thus requested to submit UFR operation details (feeder-wise quantum of load relief to be indicated) on monthly basis, and even if no UFR operated in particular month, it should indicated as NIL.

The latest status as informed by NERLDC in 127th OCC:

Arunachal Pradesh	Furnished for Sept'16
Assam	Furnished for Nov'16
Manipur	Furnished for Aug'16

Agenda for 128th OCC Meeting to be held on 19th January, 2017

Meghalaya	Furnished for Nov'16
Mizoram	Furnished for Nov'16
Nagaland	Furnished for Oct'16
Tripura	Furnished for Oct'16

The 127th OCC forum requested all the SLDCs/state utilities to certify healthiness of the relays while submitting the UFR operation report monthly.

NERPC/NERLDC may please inform the status.

C.3 Load Forecast Error:

At present day-ahead hourly load forecast data on daily basis is being prepared by NERLDC based on the data sent by SLDCs. It has been observed that there is a huge difference between the forecasted load and the actual demand met.

A comparison between the forecasted load and the actual demand met of all the states of NER was circulated earlier.

In 126th OCCM, NERLDC displayed a comparison graph of one particular day in October, depicting the variations in Load forecast versus Actuals. The variations were quite significant, and even the diurnal trend of load was not being captured in the load forecasts. NERLDC requested all SLDCs to share the forecast methodology being followed, for improvement and bringing in accuracy in the forecasts.

In 127th OCCM, Sr. Engineer, NERLDC informed that high error in load forecast versus actual existed for the most of the NER states, and Manipur load forecast has been found to be the best amongst forecast of other SLDCs of NER. The forum requested MSPCL to kindly highlight through a brief presentation in next OCC meeting about the method followed by them to forecast load.

All SLDCs agreed to review their load forecast methodology and share with OCC forum.

NERLDC may please intimate the status.

D. NEW ITEMS

D.1 Generation Planning (ongoing and planned outages)

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

Generating Station	Units running	MW	MU	Reservoir
Khandong				
Kopili				
Kopili-II				
Ranganadi			Subject to inflow	

Doyang				
Loktak				
AGBPP	-	-	-	-
AGTPP	-	-	-	-

Hydro planning

The outage of other generating stations may be approved considering the present water levels in reservoirs.

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

D.2 Outage Planning Transmission elements

It was agreed in the 99th OCC meeting that shutdown will be availed only after approval is given by the OCC forum. It was also agreed that deferment/revision of outages elements other than already approved in OCC will be henceforth put/displayed in the website of NERPC (**under Operational Activities/OCC Approved shutdown**) as per CERC regulations/ CEA guidelines etc for ensuring smooth & secure grid operation.

Furnishing request of shut down of the element, which was approved by NERPC, by Indenting Agency (ISTS licensees/STUs/Generating Companies) to NERLDC: Planned shutdown approved by NERPC shall be considered for implementation by NERLDC on D-3 basis. If an outage is to be availed on say 10th of the month, the shutdown availing agency would reconfirm to NERLDC on 7th of the month by 10:00 Hr. This practice is necessary to ensure optimal capacity utilization and the time required for associated system study/coordination by/amongst RLDC/NLDC.

In 124th OCCM, SE(C&O) strongly opined that constituents should inform to NERPC/NERLDC in case shutdown is not avail as approved in the OCC meeting and should mention clearly the reason for not availing the shutdown. The full list of shutdown would be placed in the next OCC by NERLDC so that proper record can be made in future for generating units as well as transmission lines. All constituents endorsed the view of SE(C&O).

The sub-Committee may kindly discuss and approve the transmission line outages proposed by Constituents for January, 2017 - February, 2017 at Annexure- D.2., which is available in the website of NERPC.

D.3 Estimated Transmission Availability Certificate (TAC) for the month of September & October, 2016:

NETC and POWERGRID have submitted the outage data for the month of September & October, 2016. So the attributability of outage of the said elements may please be finalized.

Members may please discuss.

D.4 Furnishing of Technical and Commercial data for computation of PoC Charges and Losses for Q1 of 2017-18 (April 2017 – June 2017):

In the 3rd Validation Committee meeting for PoC application period Oct'15-Dec'15, held on 30th September 2015, at NLDC conference Hall, CERC had proposed a methodology for ratification of projected data at RPC form.

In line with the decision in the Validation Committee meeting, Members may please submit generation, demand and YTC data for Q1 of 2017-18..

Members may please submit data for Q1 (2017-18).

D.5 Assessment of Total Transfer Capability (TTC), Transmission Reliability Margin (TRM) and Available Transfer Capability (ATC) by SLDC on respective Inter-State Transmission Corridor

Updated PSSE Base Cases have been **mailed to all the SLDCs on 01.12.16**. All SLDCs are requested to assess the Total Transfer Capability (TTC), Transmission Reliability Margin (TRM) and Available Transfer Capability (ATC) **for the month of January'16** using these cases, and submit the study cases and results to NERLDC **by 15th December, 2016**.

NERLDC has assessed the state control area wise, state subsystem wise and group of control-area wise TTCs for NER Grid, on behalf of SLDCs of NER. The study results conducted by NERLDC will be shown during the meeting.

SLDCs are requested to check the TTC of their control areas as computed by NERLDC and **issue comments, if any by 20th December'16**.

If no comments received from any states, TTC, ATC & TRM figures of State control area and group of control areas as assessed by NERLDC will be considered as final **and may be uploaded on website**.

As per discussions in 122nd OCC meeting of NERPC, all SLDCs of NER may host the assessed TTC / ATC / TRM figures on their website for information dissemination.

Members may please discuss.

D.6. Certification of open cycle generation of AGBPP for FY 15-16:

As per methodology decided in 87th OCC meeting and modus operandi decided in 19th & 20th CCM the open cycle generation of AGBPP for FY 15-16 is to be certified. Accordingly it is requested of NERLDC to kindly verify "the generator operation in OC mode due to some fault and problem is resolved in a reasonable time, with DC revision". After verification by NERLDC, certification would be done by NERPC.

In 127th OCCM, Manager, NERLDC informed that the verification for FY 15-16 is under process. He also suggested that the exercise be made periodical so that no backlogs remain. S.E.(C&O), NERPC welcomed the suggestion and requested NEEPCO to submit the outage data monthly.

NERLDC may please inform the outage verification status.

Members may please deliberate.

D.7. Renovation and Modernization of Umiam Stage-III HEPP (2 x 30 Mw)

In line with the policy for taking up Renovation & Modernization (R & M) of old hydroelectric power plants initiated by the Ministry of Power, Government of India, MEECL has decided to take up R & M of Umiam Stage-III HEP (2 x 30 Mw) commissioned in 1979, considering the aggravated condition of the power plant.

In 126th OCCM, S.E., MePGCL informed that Umiam Stage-III has already completed its useful life having been in service for 37 years since commissioning. He requested that R&M cost be funded from PSDF.

S.E.(C&O),NERPC informed that R&M of power plants are not specifically funded from PSDF under PSDF regulations. However they may be funded under extraordinary Cl.4.1.(e). He requested MePGCL to submit the proposal at the earliest so that the matter may be followed up with NLDC/CERC.

MeECL/NERPC may please inform the status.

D.8. Reporting of commissioned transmission elements for TARANG App.

TARANG (Transmission App for Real Time Monitoring and Growth) Mobile App & Web Portal has been developed by REC Transmission Projects Company Ltd (RECPTL) for progress monitoring of transmission systems on Pan-India basis, which was launched by Hon'ble Minister of State for Power on 17th August 2016. The app can be downloaded on smartphones or be accessed through its website (www.tarang.website).

As part of the responsibility charter, POSOCO has been assigned the responsibility to update the systems under operation in the 'Completed Transmission Systems' section of the app.

In order to provide this information to the Ministry of Power, it is requested to provide the details of commissioning of transmission elements in respective state for each month by the 3rd day of the next month to NERLDC.

In 126th OCCM, Sr. Engineer, NERLDC emphasized the need for furnishing this data for TARANG app devised by Ministry of Power, Govt. of India for information to the public. It was also mentioned that during recent visit to Guwahati on 11.11.2016, the same was emphasized by Joint Secretary (Power). NERLDC requested all utilities to submit the data to: nerldc@yahoo.co.in by 3rd of every month for the previous month.

In 127th OCCM, Sr. Engineer, NERLDC informed that whatever elements have been commissioned in previous month need to be mailed to NERLDC by 3rd of every month.

DGM, SLDC, AEGCL requested that respective transmission utilities may be approached for the required data.

DGM(MO),NERLDC clarified that the details of any EHV commissioned elements within a State are supposed to be available with SLDCs, so there should not arise any difficulty in this regard. It was agreed that SLDCs would furnish the data.

NERLDC may please inform the status.

D.9. Installation of DAS to monitor FRC for generators:

In continuation to discussions in 125th OCC meeting on this matter, and letter from ED-NLDC dtd. 10th October'16, it is requested that all generators may take urgent action to ensure Primary response as per stipulation [As per Sec.1(4) of Part-II of CEA's Grid Connectivity standards, 0-10% droop for hydro generator governors ; 3-6% droop for Thermal generator governors].

Also, as per Section 11.2.(i) of CEA's Technical Standards for Construction, all generating stations must store important analog data in 1 seconds interval.

NEEPCO has informed that AGTPP and Ranganadi HEP have properly working DAS, that are capable of storing Machine side data like Voltage, frequency, Active power generation, Reactive power generation, Line currents, etc. Also, it was confirmed in last OCC that DAS at AGBPP is installed but not time-synchronized.

All generating stations may confirm that their governors are properly tuned for giving primary response as per regulations.

Also, NEEPCO may intimate the status of installation of DAS for their remaining generating stations.

In 127th OCCM, Sr. Engineer, NERLDC once again reiterated that DAS is required for analyzing response of governors and their absence severely impairs calculation of FRC.

Sr. Manager, NEEPCO informed that installation of DAS in case of old generating units of Kopili, Khandong and Doyang involves huge financial involvement. He assured that management would be apprised of the requirement and any decision taken in this regard would be informed to the forum.

NEEPCO may please inform the status.

D.10. Electricity Demand Patterns of all states of NER for 2008-2016

A report has been prepared by POSOCO for analysis of Demand Patterns of years 2008-2016 period. Based on the report, patterns can be identified for meeting the demand in respect of time of day, day of year, evening / morning peak, seasons, etc.

The report has been mailed to all the states of NER on 17th Nov'16. It is requested that concerned persons of states may go through the report and mark their comments in respect of the specific state-wise pattern observed in meeting demand. This would help identifying constraints / characteristics of load / others in states of NER. Any specific inputs like local holiday, festivals etc may please be mentioned as mapped with the profile of Demand met.

Mapping of the load patterns is required in respect of the following parameters:

Constraints in power drawal from ISTS system due to congestion / constraint in ISTS lines.

Constraints in power drawal from ISTS system due to congestion / constraint in Intra-State lines

Constraints in load serving by DISCOM on account of non-adequate Distribution Transformation capacity, leading to chopping-off of Peak Demands

Low power availability due to Financial Constraints of DISCOM / Regulation of Power Supply, etc.

Disturbance in state on account of militancy, etc. leading to poor growth of economy Imposition of Demand restriction by DISCOM to reduce AT&C losses. Political decisions in state leading to high growth / decay of demand Prevailing Climatic conditions.

Human behavior like early riser, Office closing and starting times, etc.

Type of loads – Residential (Lighting, Heating, Air-conditioning etc), Commercial (Heavy industry requiring constant power supply, etc.), Tariff mechanism of states = Time of use, etc. Availability of Peak Load / Base Load plants in state Etc.

For getting constraints in meeting load or characteristics of load, report may be forwarded to concerned persons in DISCOM for comments. All the comments may be compiled together by SLDC and send to NERLDC via email to nerldc@yahoo.co.in

In 127th OCCM, Sr. Engineer, NERLDC gave a detailed presentation which is attached in Annexure- D.19. After detailed deliberation it was decided that SLDCs would analyze the observations from Long-term demand analysis of states of NER Grid, based on presentation by NERLDC and report of NLDC, in consultation with all stake-holders of SLDCs including DISCOMs. The SLDCs would give a short presentation in next OCC meeting presenting their observations.

Members may please discuss.

D.11. Finalization of the Annual Load Generation Balance Report (LGBR) for Peak as well as Off-peak scenarios and the Annual outage plan for 2017-18 by 31.12.16 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.

For performing system studies, load forecasting, outage management and various other activities, it is necessary that LGBR report for the upcoming Financial Year is available beforehand. All entities are requested to furnish their details to NERPC for finalisation of LGBR.

For purpose of system studies, it is requested that Demand Figures of states for the months of April'17, May'17, and June'17 be indicated to NERLDC.

In 127th OCCM, it was decided that the utilities would submit their figures at the earliest to NERPC.

NERLDC intimated that for computation of TTC/ATC figures on 5 months ahead basis, the LGBR figures as indicated by NERPC are required. To facilitate TTC calculations, the forum was requested to submit figures for April'17, May'17 and June'17 at the earliest to NERLDC.

NERPC may please intimate the status.

D.12. Status of reactors under outage in NER Grid

400 kV Nodes in NER Grid are experiencing high voltage during Off-Peak hours. As per information available with NERLDC, the following reactors are under outage:

63 Mvar Line Reactor of 400 kV Balipara - Bongaigaon III line at Bongaigaon is under out since 12.11.16.

400 kV, 80 Mvar Bus Reactor at Misa is under outage since 03.12.16.

400 kV, 63 Mvar Bus Reactor at Byrnihat is under outage since 09.12.14

400 kV, 80 Mvar Bus Reactor at Palatana is under outage since 15.03.16

200 kV, 2x12.5 Mvar Bus Reactor at Samaguri is under long outage.

132 kV, 2x2 Mvar Bus Reactor at Dharmanagar is under long outage.

It is requested to inform the status of restoration of the above reactors at the earliest.

Apart from the above reactors, it is also requested to provide commissioning status of the following reactors:

20 Mvar Line Reactor of 220 kV AGBPP - New Mariani (PG) line at AGBPP

Conversion of line Reactors of 400 kV Balipara - Bongaigoan I & II lines at Balipara and Bongaigaon to Bus reactors (4 Nos.)

400 kV, 1x125 Mvar Bus Reactor at Balipara

400 kV, 1x125 Mvar Bus Reactor at Bongaigaon.

400 kV, 1x80 Mvar Bus Reactor at Ranganadi.

220 kV, 1x31.5 Mvar Bus Reactor at Mokokchung (PG).

In view the Critical voltage profile of NER Grid in Off-Peak hours, it is suggested no shutdown of Reactors in NER Grid shall be availed unless in case of Emergency.

In 127th OCCM, DGM (AM), NERTS informed the following:

400kV 50 MVAR Bus Reactor at Misa is under gasket replacement and filtration will be brought back in service shortly.

400kV, 63 MVAR, Balipara – III Line reactor at Bongaigaon suffered winding failure and required to be sent to factory for repair. Out of two spare reactors for Biswanath-Chariali one would be shifted to Bongaigaon to restore Balipara-III Line Reactor.

Commissioning of 20 MVAR line reactor of 220kV AGBPP-New Mariani at AGBPP - would be completed by 20.12.2016

NERLDC expressed seriousness in outage of several reactors, and particularly when Lean hydro is ongoing. The matter of outage of Palatana reactor was discussed in detail. Presently voltage profile at Palatana is critical, and restoration is necessary. Palatana informed issues with BHEL in that they are not getting any reply from BHEL. The forum suggested OTPC should take up with BHEL in a 15 days time frame, and intimate what is the future course of action within 1 month to OCC forum. In case of delay by BHEL, OTPC should make arrangement for restoration by engaging 3rd party vendors.

Status of Restoration of other reactors:

400kV, 63 MVAR, Balipara – III Line reactor at Bongaigaon suffered winding failure and required to be sent to factory for repair. Out of two spare reactors for Biswanath-Chariali one would be shifted to Bongaigaon to restore Balipara-III Line Reactor. After repair of damaged reactor, the same would be replenished to BNC.

20 MVAR line Reactor at AGBPP => Expected by 20th Dec, 2016.

50 MVAR BR at Misa => Shutdown taken for additional 2 days for Gasket replacement. Will return to service shortly.

63 MVAR BR at Byrnihat => CGL yet to visit site although they accepted the offer. PG/MePTCL to follow up for early restoration.

2x12.5 BR at Samaguri => AEGCL to inform status in next meeting

6. 2x2 MVAR BR at Dharmanagar => TSECL to inform status in next meeting.

AEGCL/TSECL/MeECL/NERTS may please inform the latest status.

D.13. Comments on Staff Paper or Draft Regulations

Honourable CERC has notified the following Staff Paper or Draft Regulations:

Staff Paper on National Open Access Registry vide public notice 25th November'16. It is available at http://www.cercind.gov.in/2016/draft_reg/SP.pdf

The comments/suggestions of the stakeholders are invited on the above staff paper latest by 20.12.2016. The 127th OCC forum requested NERPC to organize a special meeting cum workshop to discuss the draft as well as existing important regulations. The same was agreed to be convened by NERPC before next OCC. The workshop is to be held on 18.01.2017. Members are requested to participate in workshop for fruitful deliberation.

D.14. Constraint in Bipolar Operation of +/- 800 kV HVDC Biswanath Chariali – Agra

As communicated by NLDC, in case of operation of the HVDC Bipole BNC-Agra link for power flow in Agra-BNC direction, it is not possible to operate the Bipole link in Constant Power mode. In this scenario for operation in Agra-BNC direction, only constant current mode is possible wherein upon tripping of any pole, the other will not share load and the filters may also not disconnect.

During lean hydro (winter) months, NER may import power from NR through this Bipole link to relieve congestion of Eastern-Regional grid. In constant current mode operation, if the filter banks do not trip immediately after reduction of power flow through the link, the 400 kV Nodes in NER may experience severe overvoltage (due to low fault level of around 4000 MVA at 400 kV Biswanth Chariali) that may lead to tripping of the 400 kV lines from Biswanth Chariali, Ranganadi, Balipara, Bongaigaon, and trigger a major disturbance in NER.'

Considering the importance of this link in operation of NER grid, NERTS may intimate the following:

- Issues related to operation of +/- 800 kV Agra-BNC bipole in Constant Power Mode
- Time required for disconnection of Filter Banks at BNC in case while running in Constant Current Mode, 1 Pole gets blocked / tripped?
- Maximum possible Power Flow in Agra to BNC direction (separately for different modes of operation)

In 127th OCCM, NERLDC explained that in case of power flow in Agra-BNC direction in Bipolar mode, the poles operated independently of each other and thus the cause of concern in grid operation, particularly in Lean Hydro season in NER. The matter was discussed at length.

S.E.(C&O),NERPC concluded that POWERGRID to depute concerned person from Biswanath-Chariali HVDC to attend next OCCM for fruitful deliberation of agenda items pertaining to HVDC operation, and clarification of any queries of forum members.

NERTS, POWERGRID may intimate the forum.

D.15. LFO in NER Grid from 09:20 Hrs on 08th Dec'16 at AGTPP.

A low frequency oscillation has been observed in NER Grid from around 09:20 Hrs on 08th Dec'16.

The beginning of oscillation coincides with beginning of de-synchronization process of AGTPP GT # 2 that was taken under Emergency Shutdown. Also, one lobe of continuous oscillation end coincides with the time of actual de-synchronization of AGTPP GT # 2.

The oscillations are continuously going on near 132 kV Agartala bus, as observed from PMU, and are prominently in voltage. There is no significant effect on Active power / frequency. At present, there is about 5-6 A oscillation in current on 132 kV Agartala - AGTPP I line.

Considering the above situation and request from AGTPP to bring down voltage from 136 kV (which is normal) to 132 kV (Nominal); it is suspected that AVR's at units of AGTPP are acting in a manner leading to growth of oscillations.

It is also to be mentioned that Sustained Low Frequency oscillations around 0.4 Hz is being observed at 132 kV Agartala PMU over the last few days.

AGTPP is requested to view this matter seriously and check their terminal voltage, excitation currents, and also furnish to NERLDC the Event Logger from 09:15 Hrs of 8th Dec'16 onwards.

AGTPP, Palatana, Monarchak and TPGL is requested to provide data of 1 milli-second resolution of Terminal voltage of units / MW generation / MVAR generation.

In 127th OCCM, NERLDC explained the phenomenon of LFO, oscillation in Voltage, and requirement for seriousness in such matter. NERLDC requested all utilities to co-operate in this matter. It was noted that even after requests to AGTPP-Control Room and Sh. Joypal Roy, Sr. Manager (NEEPCO), data for analysis of LFO is not being received by NERLDC.

Sr. Manager (NEEPCO) informed that DAS is installed at AGTPP-Extension. NERLDC requested NEEPCO to furnish this data at the earliest corresponding to case of 08th December'16.

All generators were requested to remain alert in respect of reporting / monitoring of oscillations.

NERLDC may please inform the status.

D.16. Dedicated voice communication and Data channel:

Dedicated voice communication with Substations and Generating Stations needs to be checked daily. Currently in most of the stations only one link is installed. In some stations VOIP phones are out (NLDC, Doyang, Kathalguri etc). Redundant of links need to be established on priority. Details of status of voice communication is attached in Annexure-I.

SCADA data from KATHALGURI, DOYANG, KOPILI, KHANDONG, RANGANADI, ITANAGAR, ZIRO etc are out since long due to which Grid management activity is severely affected.

RTU Outage details are given below:

Sl. No.	Station Name	Date of Outage
1	Ranganadi	21.05.16
2	Ziro	07.08.16
3	Kopili	09.05.15
4	Doyang	24.01.15
5	Khandong	16.09.16

Agenda for 128th OCC Meeting to be held on 19th January, 2017

6	Khatalguri	25.07.16
7	Haflong	14.09.16
8	Itanagar	01.08.16

All stake holders are requested to take suitable action for early restoration.

In 127th OCCM, Sr. Manager, NEEPCO informed the following:

RTU for RHEP is at tendering stage.

AGBPP RTU commissioned. By Jan 2017 data would be received at NERLDC subject to link restoration.

RTUs for Kopili, Khandong and Doyang in final stage of LOA.

NERTS and DoP Ar. Pradesh were requested to update the status by next OCC meeting.

NERTS/DoP Ar. Pradesh may please inform the status.

AGENDA ITEM FROM NEEPCO:

D.17. Strengthening of capacity of Khandong Bus as per grid requirement:

The normal life of 2x25MW Khandong Power Station is going to be completed in April'2019. We are in the process of R&M of the Power Station for life extension. Accordingly, order has been placed with M/s CPRI for field study and DPR preparation.

Though the generation from Khandong & Kopili Stage-II Power Station in peak hydro season is hardly 70MW and Khandong Bus is well equipped for evacuation of that quantum of energy. But In Kopili Power Station SY there is already one 220/132KV, 160MVA autotransformer is there and one more similar transformer is under installation. There are two 132KV lines from Khandong to Kopili. The new lines is having Zebra conductor and it is leant that the conductor of old line will also be changed to higher capacity.

As you are aware that Khandong SY is having double Bus with transfer facility and bus conductor is single Zebra and all the jack buses and jumpers are single panther.

In this scenario, NEEPCO may be informed whether any strengthening of Khandong Bus is required. Same shall be included in the scope of study and suitable decision shall be taken subject to the strength of the existing structures.

NEEPCO may please deliberate.

AGENDA ITEMS FROM AEGCL:

D.18. High voltage issues at 220 KV sides of Tinsukia and Namrup:

NRPP commissioning activities are going on and they are facing high voltage problem at 220 KV side which hampering the commissioning activities. As Kathalguri Generating Station is the only available source of voltage regulation. So, necessary action may be initiated in order to regulate the voltage for smooth running of commissioning activities of NRPP.

AEGCL may please deliberate.

D.19. Delay in flow of information about curtailment of URS requisition of power from NTPC ER:

AEGCL may please deliberate.

D.20. Restoration of 220 KV Tinsukia- Kathalguri real time SCADA Data:

AEGCL may please deliberate.

AGENDA ITEMS FROM NERLDC:

D.21. Overvoltage tripping of 220 kV Mariani – Mokokchung I & II lines due to error in Y-phase voltage measurement:

In the quarter from October'16 to December'16, there were multiple trippings of 220 kV Mariani – Mokokchung I & II lines on Stage-1 Overvoltage. The list of trappings of these lines are as follows:

Tripping of 220 kV Mariani – Mokokchung I & II lines from October'16 to December'16			
Sl. No.	Date and Time of tripping	End-1 (Mariani) Relay indications	End-2 (Mokokchung) Relay indications
1	06-10-2016 12:29	Over Voltage	Direct Trip Received
2	25-10-2016 02:59	Not Furnished	Over Voltage
3	26-10-2016 00:03	Over Voltage	Not Furnished
4	27-10-2016 23:19	Direct Trip Received	Over Voltage, Y phase, 1.10 pu
5	28-10-2016 23:11	No tripping	Over Voltage, Y phase, 1.10 pu
6	30-10-2016 00:42	Over Voltage	Direct Trip Received
7	30-10-2016 23:38	Direct Trip Received	Over Voltage, Y phase, 1.10 pu
8	31-10-2016 22:34	Direct Trip Received	Over Voltage, Y phase, 1.10 pu
9	01-11-2016 23:02	Direct Trip Received	Over Voltage, Y phase, 1.10 pu
10	02-11-2016 22:39	Direct Trip Received	Over Voltage, Y phase, 1.10 pu

Agenda for 128th OCC Meeting to be held on 19th January, 2017

11	04-11-2016 04:13	Over Voltage	Over Voltage, Y phase, 1.10 pu
12	05-11-2016 21:27	Direct Trip Received	Over Voltage, Y phase, 1.10 pu
13	13-11-2016 21:59	Over Voltage	Direct Trip Received
14	14-11-2016 21:34	Over Voltage	Direct Trip Received
15	15-11-2016 23:01	Direct Trip Received	Over Voltage, Y phase, 1.10 pu
16	17-11-2016 01:59	Over Voltage	Over Voltage, Y phase, 1.10 pu
17	19-11-2016 04:01	Over Voltage	Over Voltage, Y phase, 1.10 pu
18	20-11-2016 22:20	Direct Trip Received	Over Voltage, Y phase, 1.10 pu
19	28-11-2016 00:15	Direct Trip Received	Over Voltage, Y phase, 1.11 pu
20	28-11-2016 22:48	Direct Trip Received	Over Voltage, Y phase, 1.12 pu
21	30-11-2016 01:00	Direct Trip Received	Over Voltage, Y phase, 1.12 pu
22	05-12-2016 23:51	Direct Trip Received	Over Voltage, Y phase, 1.12 pu

From the Disturbance recorders pertaining to above trippings, it has been observed that tripping of the lines occurred due to Overvoltage in Y-phase at 220 kV Mokokchung (PG) in almost all cases with voltage persisting at around 140 kV (Y Ph-E) while the other 2 phase voltages were 4-5 kV below the Y Ph-E.

It is suspected that the multiple tripping of these lines are on account of error in CVT in Y-phase at Mokokchung end, and is preventable upon action by POWERGRID for rectification.

NERTS was emailed in this regard on 20th December'16, but no reply has been received.

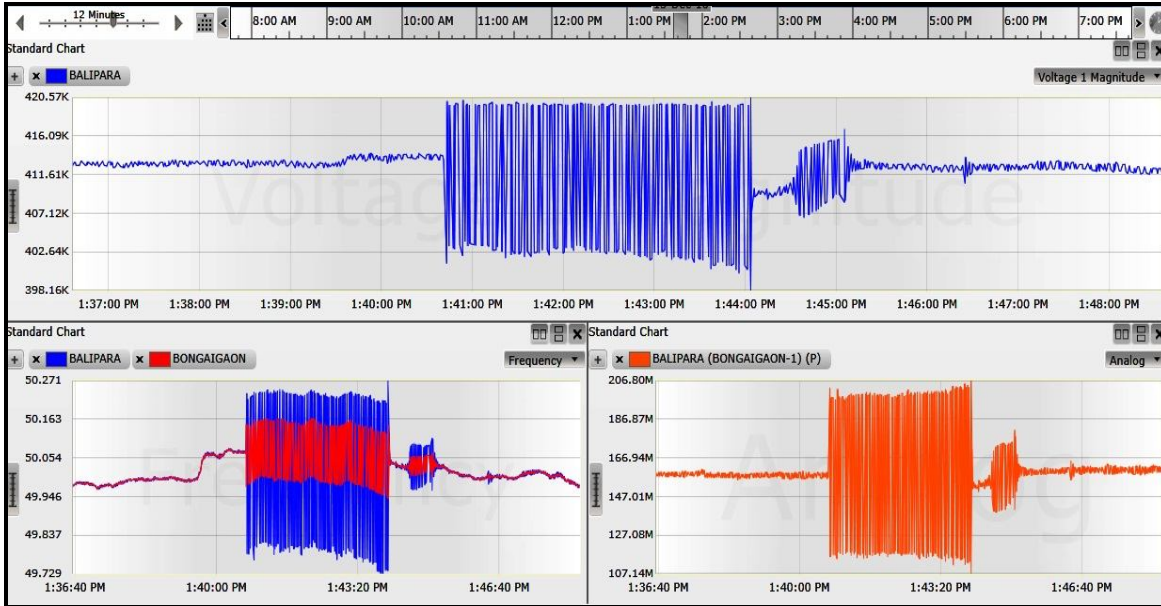
The multiple tripping of 220 kV Mariani (PG) – Mokokchung (PG) I and outage of 220 kV Mariani (PG) – Mokokchung (PG) II since 12.07.16 has decreased the reliability of Mokokchung area of Nagaland. Presently both the circuits are out since 26-12-16.

Members may discuss.

D.22. Severe Oscillation on +/- 800 kV HVDC Biswanath Chariali (NER) – Agra (NR) Bipole:

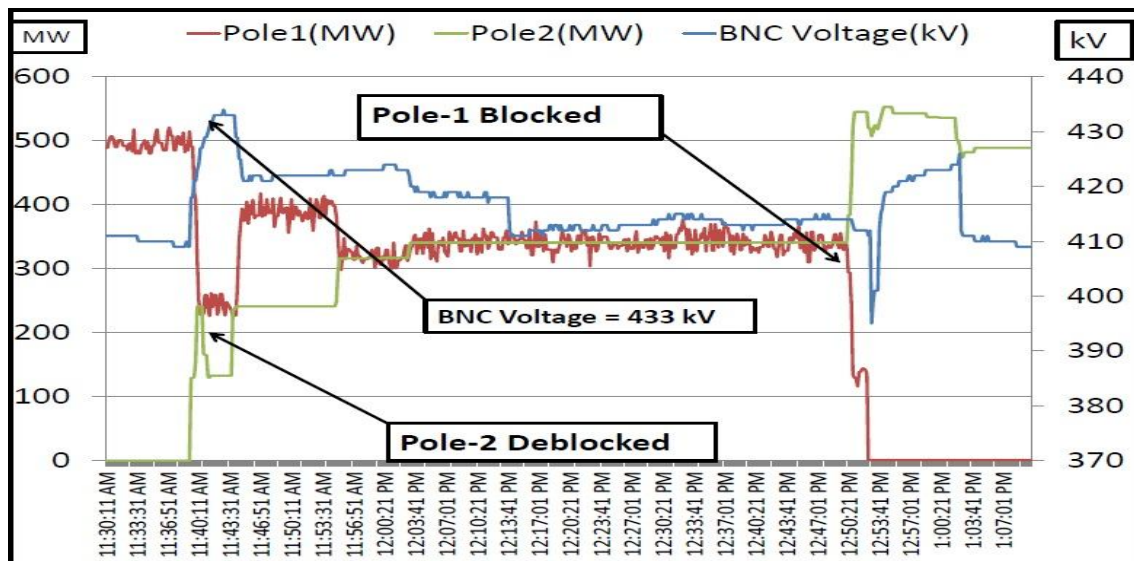
On 15th December'16 w.e.f. 1340 Hrs to 1345 Hrs, severe oscillation was observed on +/- 800 kV HVDC Biswanath Chariali (NER) – Agra (NR) link while under Bipolar operation in Current Control mode from Agra to Biswanath-Chariali.

During the period, flow on HVDC BiswanathChariali-Agra Pole-II was found to vary by about 200 MW, causing fluctuations in line flows at 400 kV Bongaigaon - Balipara line of nearly 100 MW / circuit. Oscillation of nearly 20 kV in voltage at 400kV Balipara, and nearly 0.4 Hz in frequency at Balipara was observed.



Information was requested from BNC vide emails from NERLDC dated 15th Dec, 18th Dec and 28th Dec'16.

Similarly on 05th January'17 at around 11:39 Hrs, oscillations have been recorded in active power at the time of deblocking of +/-800 kV HVDC BNC Agra for around 45 seconds. Pole-I was blocked at 1252 hrs on 05th January'17.



HVDC BNC was requested to submit report in respect of these 2 occasions, citing root cause, remedial measures taken, Sequence of events, etc. to enable secure operation of interconnected grid.

Inspite of multiple follow-up with HVDC BiswanathChariali for looking into the matter of oscillation, there has been no response. Also, in matters of Grid events, response from HVDC BiswanathChariali has not been forthcoming, which is detrimental for integrated power system operation.

Members may discuss.

D.23. Low Frequency Oscillations (LFOs) at 132 kV Agartala:

There have been several instances of Low Frequency oscillations as observed from PMU at 132 kV Agartala in the period from 1st October'16 to 11th January'17.

The area around 132 kV Agartala is rich in generation with nearby gas-based generation plants at Palatana CCGT (726 MW), AGTP-CC (130 MW), Monarchak GBP (101 MW), Rokhia GBP (63 MW) and Baramura GBP (42 MW).

Oscillation log from October'16 to December'16					
SN	Date	Starting Time	Duration	Mode of LFO	Remarks
1	10-Oct-16	17:28 Hrs	39 Hrs	0.4 Hz	-
2	04-Dec-16	22:11 Hrs	20 Hrs	0.4 Hz	-
3	08-Dec-16	09:20 Hrs	10 Hrs	0.3 Hz	Oscillation during switching of Desynchronisation of AGTPP U#2 due to abnormality in fan
4	03-Jan-17	07:43 Hrs	3 Hrs	0.4 Hz	Oscillations started with tripping of AGTPP GT # 4
5	10-Jan-17	22:04 Hrs			At the same block (22:00 Hrs-22:15 Hrs), Kopili schedule was charged from 187 MW to 141 MW
6	11-Jan-17	23:23 Hrs			

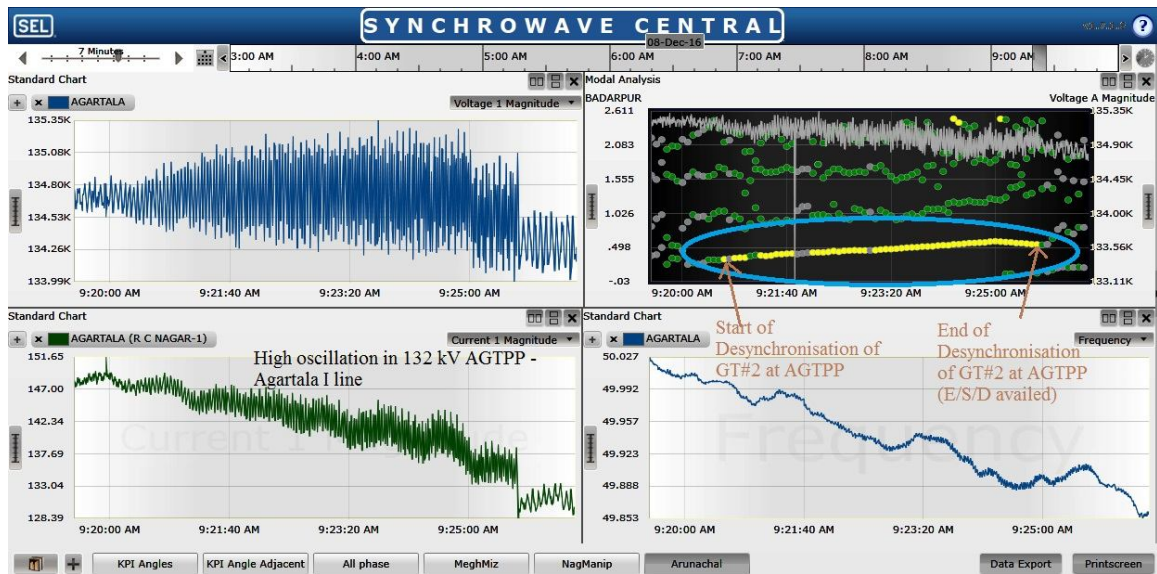
On 3 particular instances, oscillations have been traced to have originated on account of switching events at AGTPP-CC of NEEPCO.

On 08th December'16 from 09:20 Hrs onwards, oscillation was seen prominently in Voltage at 132 kV Agartala PMU. No significant oscillation was observed in Active power / Frequency. In line current on 132 kV AGTPP – Agartala I line, an oscillation of nearly 5-6 A in magnitude was observed.

Upon investigation with data from PMU and SCADA-Sequence of Events, it was found that the oscillations started with de-synchronization of AGTPP GT # 2.

Agenda for 128th OCC Meeting to be held on 19th January, 2017

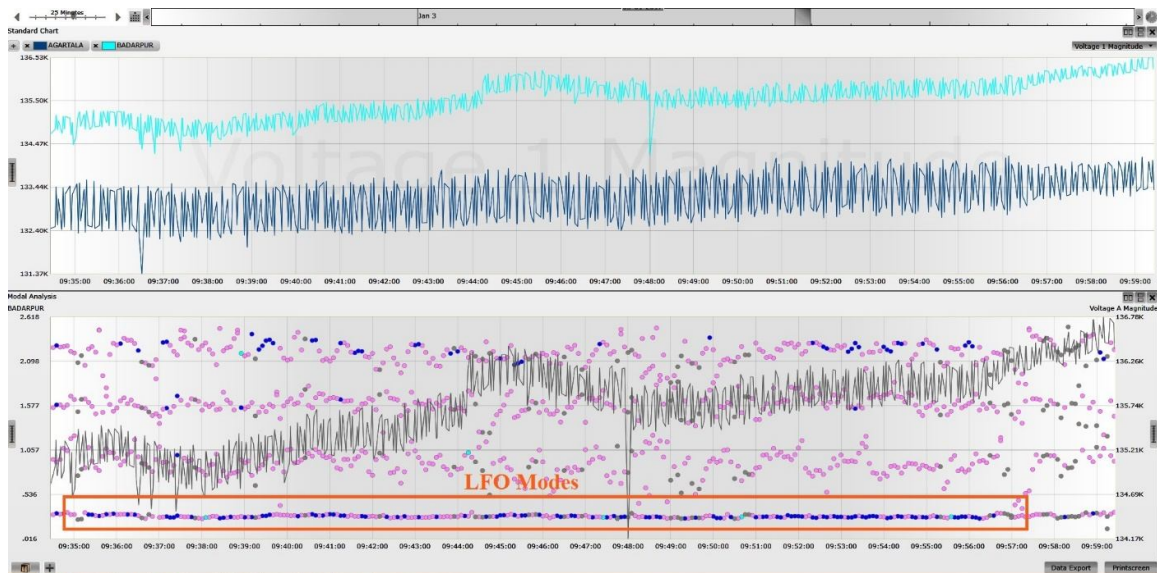
Considering the oscillation in voltage and request from AGTPP in real time to control voltage (although 132 kV Agartala voltage was around 136 kV, which is well within permissible voltage limits), it is suspected that oscillations occurred due to contribution of Automatic Voltage Regulator (AVR) of AGTPP units.



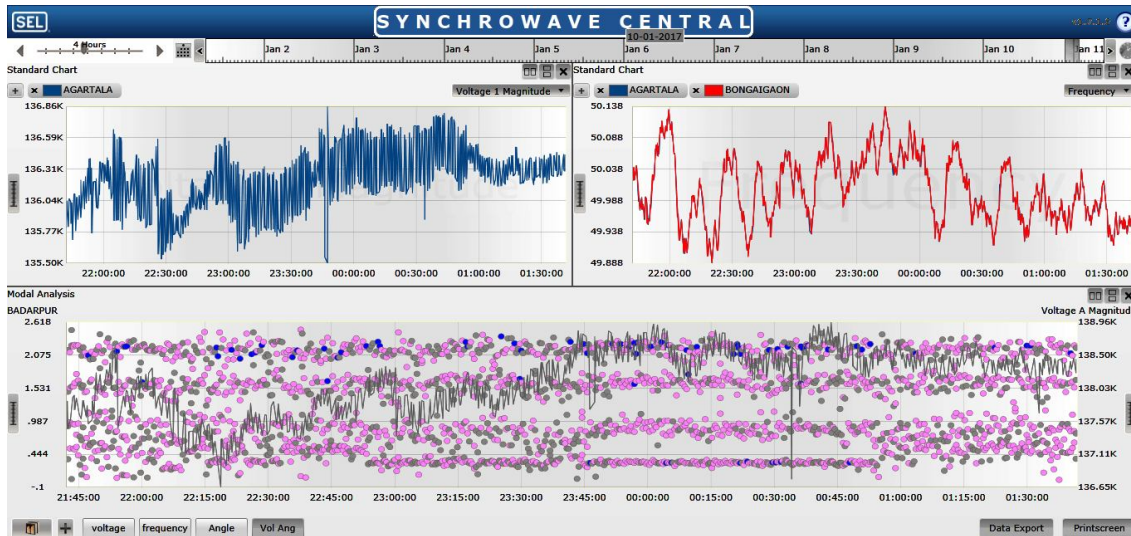
On 03rd January'17 from 07:43 Hrs onwards, oscillation was seen prominently in Voltage, at 132 kV Agartala PMU for a long duration of around 3 Hours.

Upon investigation, it was found that the oscillations started with tripping of AGTPP GT # 4.

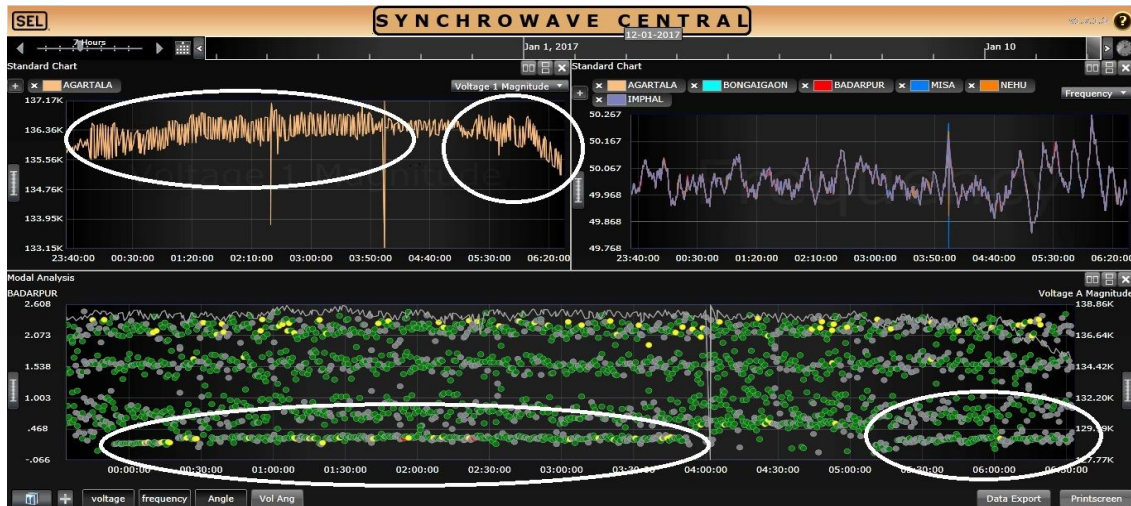
Considering that the mode of oscillation and nature of trigger was the same, it is also suspected due to action of AVR of the in-service AGTPP units.



On 10th January'17 from 22:04 Hrs onwards, oscillation was seen prominently in Voltage, at 132 kV Agartala PMU.



On 11th January'17 from 23:23 Hrs onwards, oscillation was seen prominently in Voltage, at 132 kV Agartala PMU.



Members may discuss.

D.24. Frequent tripping of units of AGBPP (NEEPCO) due to tripping of Gas Compressor:

During the period from October'16 to December'16, there has been multiple tripping of units of Assam Gas Based Power Plant (AGBPP) of NEEPCO, resulting in lower availability of power for NER Grid. The list of trippings of units of AGBPP on account of tripping of Gas Compressor are listed below:

Sl. No.	Date of tripping	Time of tripping in Hrs	Unit tripped	Reason for tripping
1	15.10.2016	11:43	6	Due to tripping of GC # 2

Agenda for 128th OCC Meeting to be held on 19th January, 2017

2	15.10.2016	20:20	7	Due to tripping of GC#1 on valve sequence failed
3	15.10.2016	20:20	8	
4	16.10.2016	20:30	2	Due to tripping of GC # 3
5	16.10.2016	20:30	4	
6	16.10.2016	20:30	7	
7	17.10.2016	08:58	2	Due to tripping of GC#1
8	17.10.2016	08:58	7	
9	17.10.2016	08:58	3	
10	17.10.2016	08:58	4	
11	17.10.2016	08:58	8	
12	13.12.2016	00:56	2	Due to tripping of GC#3
13	13.12.2016	00:56	7	
14	16.12.2016	17:10	2	Due to tripping of GC#3
15	16.12.2016	17:10	4	
16	16.12.2016	17:10	7	
17	18.12.2016	08:17	2	Due to tripping of GC#3
18	18.12.2016	08:17	7	
19	23.12.2016	11:16	2	Due to tripping of GC#3
20	23.12.2016	11:16	7	
21	25.12.2016	11:42	4	Due to tripping of GC#2

Members may discuss.

D.25. Periodic Inspection of UFRs installed in NER:

As per recommendation of Enquiry Committee, 400 MW UFR installation have been completed in North Eastern Region. However, during several Grid Disturbances in NER it has been observed that adequate amount of Load Relief could not be attained by UFRs.

As per Clause No. 5.2.(n) of Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010, it has been stated that RPC Secretariat shall carry out periodic inspection of the under frequency relays and maintain proper records of the inspection.

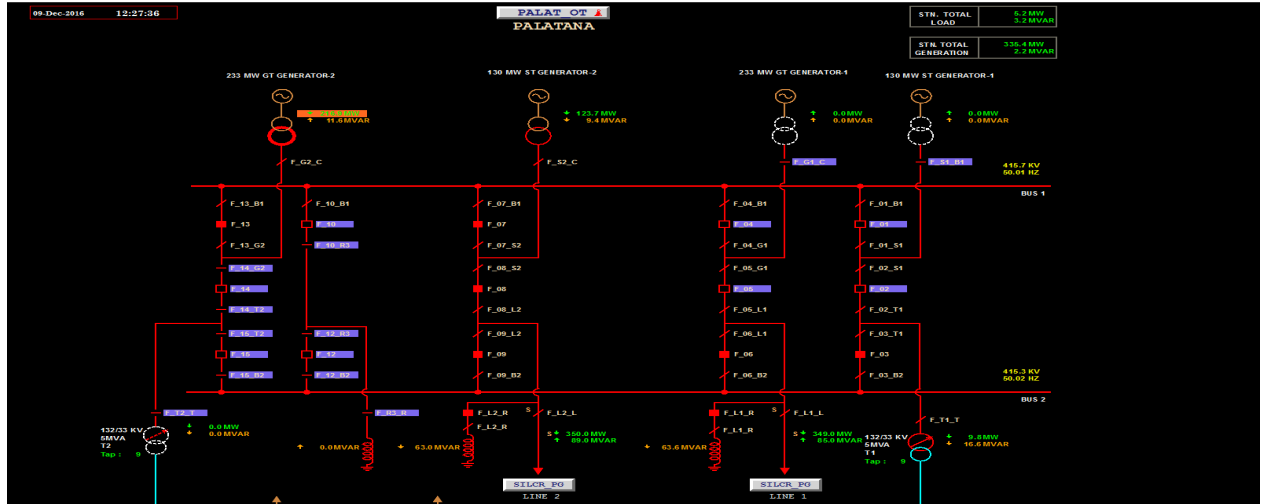
As per Hon'ble Central Electricity Regulatory Commission Order dated 27.11.15 on Petition No. 113/MP/2014, it has also been stated that no information regarding periodic inspection of the UFRs by NERPC is available.

NERPC is requested to carry out periodic inspections of the Under Frequency Relays installed in NER.

Members may discuss.

D.26. Incomplete Dia at 400 kV Palatana and islanding of Palatana generators on 07th December'16 and modification of SPS-1 related to unit tripping:

Units of Palatana CCGT (OTPC) tripped at 1155 hrs on 07.12.16 due to high frequency on account of islanding from rest of NER Grid. It was noted that OTPC, Palatana was keeping only one tie breaker closed between BUS 1 and BUS 2. So tripping of that tie CB led to isolation of Generator side bus and Line side bus.



As deliberated during, 127th OCC Meeting, OTPC, Palatana agreed to keep the tie breakers in service. However, as per email communication by OTPC dtd. 28.12.2016, several technical difficulties was cited in this matter. This would, however, compromise the reliability of NER Grid and may lead to recurrence of events of forced islanding of Palatana like that of 07th December'16.

In such case when all Dia will be closed but one or more generators are under outage at 400 kV Palatana, the SPS-1 related to load reduction may get affected if existing logic for SPS-1 does not take into account that all Circuit Breakers will be closed irrespective of unit outage.

It is to be ensured that in case of outage of any generators or ICTs, the SPS operation associated with the trippings of Palatana generators or ICTs should operate correctly.

Members may discuss.

Any other item:

Date and Venue of next OCC

It is proposed to hold the 129th OCC meeting of NERPC on second week of February, 2016. The date & exact venue will be intimated in due course.
