North Eastern Regional Power Committee

Agenda
For
96th OCC & 20th PCC Joint Sub-Committee Meeting

Time of meeting : 10:00 Hrs.

Date of meeting : 4th April, 2014 (Friday)

Venue : NERLDC Conference Hall, Lapalang, Shillong.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 95th MEETING OF OPERATION SUB-COMMITTEE OF NERPC.

The minutes of 95th meeting of Operation Sub-committee held on 12th March, 2014 at Guwahati were circulated vide letter No. NERPC/SE (O)/OCC/2014/7643-7676 dated 21st March, 2014.

CONFIRMATION OF MINUTES OF 19th MEETING OF PROTECTION SUB-COMMITTEE OF NERPC.

The minutes of 19th meeting of Protection Sub-committee held on 12th March, 2014 at Guwahati were circulated vide letter No. NERPC/SE (O)/OCC/2014/7643-7676 dated 21st March, 2014.

No observations or comments were received from the constituents. The Sub-committee may confirm minutes of 95th OCCM & 19th PCCM of NERPC.

ITEMS FOR DISCUSSION

B. OPERATIONAL PERFORMANCE AND GRID DISCIPLINE DURING MAR, 2014

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

NER PERFORMANCE DURING MARCH, 2014

	Energy Met (MU)			Energy Reqr. (MU)		
States	**Mar-14**	**Feb-14**	**% inc(+)/dec(-)**	**Mar-14**	**Feb-14**	**% inc(+)/dec(-)**
Ar. Pradesh		**41.72**			43.98	
Assam		**506.66**			547.02	
Manipur		**43.57**			46.37	
Meghalaya		**130.52**			146.63	
Mizoram		**36.03**			37.37	
Nagaland		**43.27**			45.08	
Tripura		**79.60**			81.23	
Region		**881.40**			**947.68**	

	Demand Met (MW)			Demand in (MW)		
States	**Mar-14**	**Feb-14**	**% inc(+)/dec(-)**	**Mar-14**	**Feb-14**	**% inc(+)/dec(-)**
Ar. Pradesh		116			119	
Assam		1085			1163	
Manipur		128			129	
Meghalaya		296			297	
Mizoram		77			79	
Nagaland		104			104	
Tripura		206			207	
Region		**1929**			**2025**	

REGIONAL GENERATION & INTER-REGIONAL EXCHANGE IN MU

Month---->	**Mar-14**	**Feb-14**
Total Generation in NER (Gross)		690.96
Total Central Sector Generation (Gross)		457.48
Total State Sector Generation (Gross)		233.48
Inter-Regional Energy Exchange		
(a) NER-ER		17.05
(b) ER-NER		218.06
© Net Import		201.01

AVERAGE FREQUENCY (Hz)

Month---->	**Mar-14**	**Feb-14**
		% of Time
Below 49.7 Hz		
Between 49.7 to 50.2 Hz		69.98
Above 50.2 Hz		5.34
Average		50.05
Maximum		50.71
Minimum		49.37

March Data to be updated in the Minutes of the 96th OCC to be issued accordingly

C.1 Synchronization of Pallatana Module -I

The CoD of Unit # 1 of OTPC was declared on 04.01.2014 and 3rd Gas Booster Compressor (GBC) is still in BHEL's factory at Hyderabad.

During 95th OCC meeting, the constituents expressed concerned about the frequent tripping of Unit #1 at Palatana and emphasized that the generation from OTPC is very crucial for meeting the power demand of the region under present scenario. The representative of OTPC informed that due to presence of foreign particles in the pipe line, the machine tripped and in the mean time the problem has been resolved after cleaning operation. The representative of Tripura insisted for deferring the shut down programme of OTPC which was approved in 94th OCC meeting. However, the subcommittee advised OTPC to go ahead with earlier decision. GM, NERLDC wanted that all planned activities / testing / trial run before synchronization of the Unit #2 are not being communicated properly to NERLDC and OTPC is required to provide following information well in advance, which has bearing on grid operation:

- Quantum of power to be taken from Grid
- The date and time of synchronization of Unit #2
- Program for injection of infirm power etc.

The DGM of OTPC assured for providing relevant information before synchronization of Unit #2 and all planned activities / testing / trial run would be communicated properly in advance to NERLDC for smooth operation of the grid. TSECL stated that frequent changes in schedule by OTPC have made it difficult for proper planning by the beneficiaries. Subcommittee requested OTPC to look into the matter and should avoid such practice.

During the discussion it was also brought to the notice of constituents of the region that the present level of generation from Unit #1 cannot be maintained, when Unit # 2 will go for full load test due to non-availability of full quantum of gas. Moreover, quantum of power generated from Unit # 2 will be treated as infirm power. The financial implication to the beneficiaries, under present scenario, when Unit #1 / Unit #2 / both Units generate power, was also highlighted to the constituents / beneficiaries of the region. The greater is the quantum of infirm power more is likely to be financial burden on the beneficiaries of NER, if the required quantum of gas is not available for running both Units. TSECL and other beneficiary states also suggested that OTPC should maintain adequate generation from Unit #1 which is more reliable than infirm power from Unit#2.

The status of commissioning of second unit of OTPC at Pallatana & Transmission lines reviewed by the Sub-committee is as follows:

SN	Items	Present status
1	Trial operation of Unit -II of OTPC at Palatana	March 2014 and CoD is expected in June, 2014
2	400KV D/C Silchar - Melriat line	September, 2014
3	400KV D/C Silchar - Imphal line	June, 2014
4	220KV D/C Mariani (New) – Mokokchung	June, 2014
5	400KV D/C Byrnihat-Bongaigaon line	March, 2014 (Byrnihat-Azara section completed except stringing of 4 spans and erection of tower in one location and other disputed area)
6	400kV Balipara – Bongaigaon D/C line # 3 & 4 with FSC	March, 2014 subject to availability of forest clearance for 5.2 kms. Of the line. [FSC commissioned on 11.01.2014]

The Sub-committee may review the status of commissioning of second unit of OTPC at Pallatana, Transmission lines of POWERGRID and substation at Azara of Assam given below:

SN	Items	Present status
1	Trial operation and CoD of Unit -II of OTPC at Palatana	
2	400KV D/C Silchar - Melriat line	
3	400KV D/C Silchar - Imphal line	
4	220KV D/C Mariani (New) – Mokokchung	
5	400KV D/C Byrnihat-Bongaigaon line	
6	400kV Balipara – Bongaigaon D/C line # 3 & 4 with FSC	
6	400/220kV substation at Azara of Assam	

C.2 SPS scheme for Pallatana

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

Case 1: Tripping of generating unit of OTPC at Palatana

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

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

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

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

Case I & Case IV: Has already been implemented

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

OTPC had requested POWERGRID to look into following issues:

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

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

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

The representative of OTPC informed that order has been placed on BHEL for supply of material and the required material is expected to reach the site within 10 to 15 days and the implementation of SPS -2 & 3 will be completed by April 2014.

GM, NERLDC informed that SPS needs to be reviewed after commissioning of Unit #2. Sub-committee requested OTPC to pursue with BHEL for early implementation of the scheme.

DGM, NERTS informed that the required scheme for SPS-5 will be submitted to NERPC & NERLDC by end of March 2014.

In the meantime, POWERGRID has furnished the SPS -5 Scheme for Pallatana generation in connection with tripping of 220 KV Byrnihat – Misa D/C as given in **Annexure – C.2**. POWERGRID further informed that since the scheme has to be implemented at 220 KV sub-station of Me. ECL, their consent and views are necessary before implementation of the scheme.

The Sub-committee may like to discuss.

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

During 95th OCC meeting, the Committee reviewed the status of UFR based load shedding as given below:

Ar. Pradesh: EE, SLDC stated that installation of UFRs for Stage-I i.e for load shedding of 5MW has been completed. The identification of feeders and installation of UFRs for load relief of another 15 MW (5 MW in each of 3 remaining stages) would be completed soon.

Assam: UFRs based load shedding for 220MW have been implemented.

Manipur: The representative of Manipur stated that identification of the feeders and installation of UFRs for the required quantum of UFR based load shedding at different stages will be completed soon.

Meghalaya: During 94th OCC meeting, EE, SLDC had stated that due to law and order problem in Garo Hills, one (1) UFR each from NEHU & Nongstoin has been shifted and will be installed at 2x33 KV Mawphlang S/S. The Sub-committee had requested Meghalaya to complete the work associated with utilization of the existing standalone UFRs for Stage – I & II of revised UFR based load shedding by February, 2014 and to complete the installation of UFRs for Stage – III &IV by April 2014. EE, SLDC informed that the installation of UFRs up to stage-II has been completed.

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

Nagaland: During 94th OCC meeting, EE, SLDC had stated that UFR for stage – III is already in place and installation of UFRs for Stage – I & II will be completed by February, 2014 and installation of UFRs for Stage – IV will be completed by April, 2014.

Tripura: The Sub-committee had requested Tripura to complete the work associated with utilization of the existing standalone UFRs for Stage – I & II of revised UFR based load shedding by February, 2014 and to complete the installation of UFRs for Stage – III &IV by April 2014.

The subcommittee once again requested all constituent states of the region to complete the installation of UFRs required for all four stages by April 2014.

The Sub-committee may now like to know about the status of implementation of UFRs based load shedding in respect of (Ar. Pradesh, Manipur, Meghalaya, Mizoram, Tripura and Nagaland

C.4 Lines under long outages

During the 95th OCC meeting, the issue for restoration of these lines was reviewed by the committee and the status was as follows:

a) 220kV BTPS – Agia line (one ckt) – [Since Nov'97]: Material has already been procured and the target for completion of work is **June, 2014.**

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

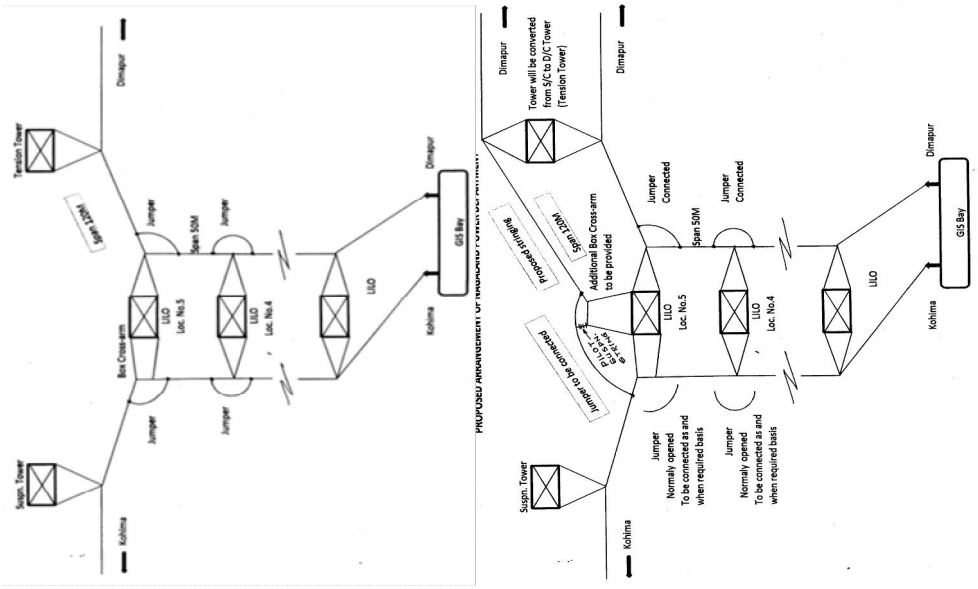
During 93rd OCC meeting, SDO, DoP, Nagaland had informed that the work associated with replacement of insulators in the section of line within Nagaland territory has been completed and the line was test charged in January, 2014 from Mokokchung till Langtho (the border point of Nagaland) and now the remaining portion from Langtho – Mariani, which is under the jurisdiction of Assam, has to be completed by Assam. Assam had requested Nagaland to write to their concern Authority regarding charging of the line so that the line can be revived at the earliest. The Sub-committee had requested Nagaland to give a copy of communication to NERPC Secretariat so that the same can be pursued by them with Assam. Nagaland agreed. AGM of Assam had requested Nagaland to check the adequacy of CT ratio at Mokokchung end and had enquired about the test charging voltage level. DGM, POWERGRID had requested Nagaland to check their CT ratio before charging the above line.

During 95th OCC meeting, the representative of Nagaland had informed that CE, Nagaland has already communicated to MD, AGECL in this regard vide their letter No.CEL/TB/NERPC/OCC/MEETING/3326 dated 04-03-2014. Subcommittee requested Assam and Nagaland to sort out the issue as early as possible.

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

During 93rd OCC, EE, DoP, Manipur had informed that site for relocation of new tower (due to ground clearance problem caused due to road cutting by BRTF) has been identified. The representative of Manipur informed that the work is in progress and line would be charged by March, 2014.

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



Before Modification After Modification

During 93rd OCC meeting, the subcommittee had suggested DoP, Nagaland to utilize the LILO arrangement at GIS substation at Dimapur for the connectivity to Kohima. The EE, SLDC, Nagaland informed that the CB of GIS bay tripped on 6th February 2014 while the line was operating through LILO arrangement. The DGM POWERGRID informed that the problem with the CB of GIS bay would be rectified by 20th February 2014 and requested Nagaland to use the LILO arrangement at Dimapur GIS substation of POWERGRID. Nagaland agreed.

During 95th OCC meeting, DGM, POWERGRID informed that the project proposal for suggested modification (i.e. incorporation of additional Box Cross Arm at Tower Location No. 5) has been approved by competent authority of POWERGRID with following condition.

"Normal arrangement should be as per approved and implemented scheme i.e. Dimapur (PG) – Dimapur (State) 132kV S/C and Dimapur (PG) – Kohima 132kV S/C. Only during contingency at Dimapur (PG), it may be operated as Dimapur (State) – Kohima 132kV S/C."

The communication in this regard has already been issued, vide letter No. NESH/OS/F-1004/475 dated 25-02-2014, addressed to EE, Electrical Transmission division, DoP, Govt. of Nagaland.

Subcommittee requested Nagaland to look into the matter and revert back in next OCC meeting.

POWERGRID, Nagaland, Assam and Manipur may kindly intimate the current status.

C.5 Release of day ahead drawal schedule based on actual requisition by Constituents instead of open and full capacity requisition:

During 94th OCC meeting, SE (O) highlighted about the deliberations of OCC meeting of WRPC regarding minimum technical level of generation by thermal generating stations in WR.

During 95th OCC meeting, GM, NERLDC highlighted about the decision of SRPC on technical minimum level of generation for thermal generating station. During the work shop on "Regulations related to Grid Operation and Electricity Market" organized by NERLD various decision of Hon'ble Commission and other deliberation regarding the technical minimum level of generation was also brought to the notice of the constituents of the region. The representative of NEEPCO highlighted following issues and the difficulties being faced by them during the operation of the plant.

a) The gas based stations in the Region are considered as base load stations and required to run at constant load to maintain the quality power supply. If the load varies from time to time, generators may face problem with availability of fuel as per requirement. If Generator's demand for gas is reduced, Gas supplier(s), generally, either divert gas to other agency or throttle the gas to avoid flaring. Once gas supply is restricted by throttling at supply source, the NEEPCO / generator (s) face difficulties like in case of AGTPP. The Agartala Gas Turbine Plant of NEEPCO (84MW) face logistical difficulties in opening the valves for normalization of gas supply, mainly during dusk to dawn hours owing to security concerns. Hence, it becomes difficult to increase the generation in peak hours commensurate with the requirement or follow the schedule.

b) The gas turbines are designed to deliver maximum efficiency at base load. Hence operating them at part loads would mean operating with lower efficiency, resulting in higher station heat rates. Since recovery of landed cost of fuel gas is dependent upon operation within the Normative Gross Station Heat Rates fixed by the Hon'ble Commission, operating at higher station heat rates will result in commercial losses by way of under recovery of fuel cost.

c) Generators have entered into long term agreement with the gas suppliers. As per the take or pay quantity obligation of the agreement, generators have to pay to gas supplier for actual quantity of gas subject

to minimum payment for 90% of contracted quantity (i.e. Minimum Guaranteed Quantity). The present "Techno-Commercial Minimum" is based on the drawal of gas quantity upto 90% (i.e. MGQ) of the contracted quantity. In the event of less requisition (resulting to less schedule) by the beneficiaries, generator(s) have to pay huge amount of money to the gas suppliers without generating power. This extra expenditure on gas will add to the landed cost of gas and consequentially inflate the Energy Charge Rate (ECR).

The representative of OTPC informed that the technical minimum generation of Unit (s) is 65% of the rated capacity of the Unit

In the regulations of CERC, there is no mention about techno-economic / techno-commercial minimum generation for the generating stations of Gas / Thermal based power plants. Considering the deliberation in various forums & other RPCs and after detail discussion, the following decision has been taken by the subcommittee regarding technical Minimum level for Gas Based generating stations in NER till any further directive is issued in this regard.

(a) The Technical Minimum for Combined Cycle Gas Based Power Plant of OTPC at Palatana would be 65% of Declared Capacity (DC).

(b) The Technical Minimum for Combined Cycle Assam Gas Based Power Plant (AGBPP) of NEEPCO at Kathalguri would be 70% of Declared Capacity (DC).

(c) Based on above decision of the subcommittee, the preparation of Schedules and subsequent revisions would be done by NERLDC.

The Committee may like to know if there is anything more to discuss.

C.6 Deviation Settlement issued by CERC:

During the meeting on 07.02.2014 at Shillong, NERLDC had highlighted the pros & cons of the regulation on deviation settlement mechanism.

During 94th OCC meeting, the representative of TSECL informed that in their opinion "Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matter) Regulations, 2014" in its present form is not suitable for small region like NER and accordingly review petition has been filed by TSECL and requested for support of NER constituents for favourable disposal of the petition. The following issues were raised by the beneficiaries and Generating companies of the region during the deliberation:

1. NER is the smallest of all five regions in the country in terms of installed capacity and energy requirement and is different from other regions in number of ways. The maximum demand and energy demand met of the region is about 1300MW (off-peak) – 2200MW (peak) and 32MU - 37MU per day respectively. The maximum demand and energy demand met of small states like Ar. Pradesh, Manipur, Mizoram and Nagaland is of the order of 70MW-120MW and 1.2MU-1.5MU per day respectively. The geographic location, terrain category and climate & weather condition of states of the region is different from other regions. Unlike other regions, the generating stations of this region are predominantly Gas based or Hydro based, Gas based stations are operating as base load plants and at present there is no coal / lignite based thermal power plant in the region. Working months are very limited. Most of the transmission lines passes through hilly & difficult terrain, dense forest and crosses major rivers like Brahmaputra etc.

2. 132kV network constitute the back bone of transmission system unlike other regions. Most of the 132kV lines are S/C lines, redundancy level is very low and N-1 criteria cannot be applied in many corridors as some of the important links are S/C. The redundancy level and transformation capacity is also inadequate at many substations. The transmission constraints in other region, particularly in ER, restrict the TTC/ATC limit resulting in curtailment of STOA.

3. This is the only region in the country where four states (Ar. Pradesh, Manipur, Mizoram, and Nagaland) are without proper SLDC. It is difficult to monitor grid parameters, over drawal / under drawal without fully functional SLDC.

4. All Gas based power plants of NER have contract agreement with Gas supplying agencies like ONGC / GAIL. The reduction in utilization of quantum of gas supply below a certain level (say 80% or 90%) of the contracted quantum raises contractual issues with the gas supplying agencies and attracts penalty.

5. Due to shortage in supply of required quantum of gas, the full capacity of machine is not being utilized.

6. Over the years the quality of gas supplied by the agencies like ONGC / GAIL has deteriorated. The reduction in calorific value of gas has resulted in increase in requirement of quantum of gas for same output. This has necessitated enhancement of capacity of engine & compressor and in absence of which frequent tripping of Generating Units have been experienced resulting in loss of generation and overdrawal by utilities during that period.

7. During monsoon period / during unexpected heavy rain fall, increase in generation by generators due to sudden inflow in Run of the River (ROR) based hydro stations results in forced under drawal by utilities / beneficiaries. It is pertinent to mention that under such situation the states like Assam, Meghalaya and Tripura are forced to back down their own

generation to avoid underdrawal. But small states like Ar. Pradesh, Manipur, Mizoram, and Nagaland have hardly any generation of their own to back down to avoid underdrawal.

8. Sudden load crash, due to disruption of distribution network of the utilities, is a common phenomenon in NER during monsoon period / during unexpected heavy rain fall. Utilities / beneficiaries of NER are forced to go in underdrawal mode and surplus power cannot be sold on Power exchange because of day ahead concept and transmission constraint in evacuation of surplus power outside the region. Moreover, the utilities will have to pay unnecessarily the Capacity Charge for the DC of generators till the revival of the distribution system, which normally takes 2-12 hours depending on severity of damage. In the process the utilities are penalized heavily. Although in four (4) time blocks, the schedule of generation is modified by RLDC, but it is limited to technical minimum declared / specified by generating company.

9. The Unit size of Gas based power plant of NEEPCO is small of the order of 21 MW (GT) / 63.5MW (GT: 33.5MW + ST: 30MW). But the Unit size of Combined Cycle Gas based power plant of OTPC is of order of 363.3MW (GT: 232.39MW + ST: 130.91MW), the biggest gas based generating Unit in the region, which cannot operate in open cycle mode and constitute about 28% of off-peak demand of the region (i.e about 1300MW). The availability and non-availability of such unit affect drastically the drawal pattern of beneficiaries / utilities and leads to deviation from schedule, which would attract penalty to generators / beneficiaries. Similar is the situation in case of Ranganadi HEP with installed capacity of (3x135MW).

10. In the regulations of CERC, there is no mention about techno-economic / techno-commercial minimum generation for the generating stations of Gas / Thermal based power plants. But in general the DC of Generators of gas based power plants is found to be above certain level (techno-economic / techno-commercial minimum) so that PAFM as per CERC norm is achieved and quantum of gas supply do not go below a certain level in order to avoid penalty of gas supply agency (s), even if demand is not there.

During 95th OCC meeting, the representative of TSECL informed that based on their Petition No. 6/RP/2014 on “Review of Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matter) Regulations, 2014”, the Hon’ble commission has directed to implead NERPC, NERLDC and NLDC as parties to the petition. The Hon’ble Commission has also directed the parties to file their replies by 14-03-2014, with an advance copy to the review petitioner who may file its rejoinder, if any, on or before 21-03-2014. The review petition shall be listed for hearing on 27-03-2014.

Committee may like to discuss about outcome of the hearing of Petition by CERC on 27-03-2014.

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

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

Requirement:

Name of State	Apr14	May14	Jun14	Jul14	Aug14
Ar. Pradesh	59	50	57	61	
Assam	505	605	645	725	
Manipur	36	48	49	59	
Meghalaya	165	165	145	160	
Mizoram	36	36	36	39	
Nagaland	50	56	54	60	
Tripura	100	110	105	120	
NER	**951**	**1070**	**1091**	**1224**	

Availability:

Name of State	Apr14	May14	Jun14	Jul14	Aug14
Ar. Pradesh	45	51	62	79	
Assam	435	484	554	666	
Manipur	53	59	66	85	
Meghalaya	147	174	211	279	
Mizoram	35	42	47	56	
Nagaland	39	36	47	58	
Tripura	150	160	164	180	
NER	**904**	**1006**	**1151**	**1403**	

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

Constituents may kindly furnish the data to NERLDC.

D. NEW ITEMS

D.1 Generation Planning (ongoing and planned outages)

NEEPCO/NHPC/OTPC may kindly intimate the availability for hydro stations:

Khandong – MU
Kopilli – MU
Ranganadi - MU
Doyang – MU
Loktak – MU
Pallatana - MU

Hydro generation planning for lean hydro period - The reservoir levels in all the hydro stations have started depleting. Hence proper planning is required to utilize the available water for entire lean hydro period.

***The Committee may discuss and approve the proposed shutdown by Generating Stations at* Annexure – D.1**.

D.2 State-wise anticipated peak demand/requirement, shortage for April - August, 2014.

The sub-Committee may review the anticipated peak demand/energy requirement and finalize the same for the months of April - August, 2014.

S.N.	State	Peak Demand (MW) Apr' 14	Peak Demand (MW) May' 14	Peak Demand (MW) Jun' 14	Peak Demand (MW) Jul' 14	Peak Demand (MW) Aug' 14
1	Ar. Pradesh	104	109	120	121	
2	Assam	1200	1350	1400	1400	
3	Manipur	110	120	110	125	
4	Meghalaya	280	300	320	300	
5	Mizoram	65	75	80	85	
6	Nagaland	90	100	110	105	
7	Tripura	185	200	250	225	
	Region	2034	2254	2390	2358	

The sub-Committee may review the anticipated peak availability and finalize the same for the months of April - August, 2014.

S.No.	State	Peak Availability (MW) Apr' 14	Peak Availability (MW) May' 14	Peak Availability (MW) Jun' 14	Peak Availability (MW) Jul' 14	Peak Availability (MW) Aug' 14
1	Ar. Pradesh	100	110	130	130	
2	Assam	900	950	1200	1200	
3	Manipur	120	130	130	130	
4	Meghalaya	240	280	300	320	
5	Mizoram	75	80	85	90	
6	Nagaland	85	95	95	95	
7	Tripura	180	220	260	270	
	Region	1700	1865	2200	2235	

D.3 Outage Planning Transmission elements

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

D.4 (A) Power Cut/Restrictions on Industries:

a) All industries are allowed to run their units on all days of week & if they want to avail staggered holiday, then they will have to stagger on notified day only & cannot avail as per their choice.

b) All industries are required to keep their recess timings staggered.

Name of State	Details	Quantum of power cut (MW)	Restriction Timing		Total Energy cut (MUs/day)
			From	To	
	(a) Power restrictions (evening peak hour) on non continuous process HT/LT Industries (b) Load shedding				
	(c) Other information 1. Weekly off 2. Staggering of power supply				

The Sub-Committee may like to discuss.

D.4 (B) Power supply to Agricultural Sector & Rural Sector (Annexure – D.5B):

Name of State	Details	From Date	To Date	Supply Hours per day		
				Max (hrs)	Min (hrs)	Average (hrs)
	3-phase supply (DLF)					
	3-phase supply (Irrigation)					

The Sub-Committee may like to discuss.

D.4 (C) Power supply to Rural Villages:

Name of the State:

Month & Year:

Total Electrified villages			RGGVY villages		Hours of Supply						Energy supplied in Rural Areas during the month (MU)
Total No. of inhabited villages as per 2011 census	No. of inhabited villages Electrified	No. of electrified villages where power supply is provided for minimum 6 Hrs every day during the month	No. of villages electrified under RGGVY	No. of electrified villages under RGGVY where power supply is provided for minimum 6 Hrs. every day during the month	In villages electrified under RGGVY			In Other Villages			
					Min.	Max.	Avg.	Min.	Max.	Avg.	

SE (O) stated that so far no constituents have furnished the above data and once again requested the constituents to furnish the above data every month as the same is to be submitted to CEA & MoP on monthly basis. Assam stated that all the above information is available with Distribution Company (DISCOM) and requested NERPC

to write to them. The same was supported by Meghalaya & Tripura. The Sub-committee requested all the concerned constituent states to forward the information to their respective Distribution Divisions and at the same time NERPC will also pursue the matter with their DISCOMs.

The Sub-Committee may like to discuss.

D.5 LGBR for 2014 - 2015:

The LGBR for 2014 -15 for NE Region is required to be finalized. All the constituents are requested to submit the data for preparation of LGBR at the earliest as per the proforma given at **Annexure – D.5.** The formats include the outage planning for Generating units as well as important transmission elements in state and central sector.

Meanwhile NERPC has prepared the draft LGBR regarding the demand and availability in MWs & MUs for 2014-2015.

Constituents may kindly check the draft LGBR prepared and also requested to submit the above data in the format furnished by NERPC at the earliest.

Constituents are requested to kindly submit the above data in the format furnished by NERPC at the earliest.

D. 6 Outage of transmission line elements:

As per IEGC, Load Generation Balance Report (LGBR) for Peak as well as Off-Peak scenarios and the Annual Outage Plan for all elements as per list of Important Elements for the following financial year required to be finalized by 31st December of each year. These reports/plans are valuable inputs to the operation of Power System as well as calculation of Transfer Capability, and hence need to be finalized at the earliest.

Committee may like to discuss.

D.7 Progress Report of Ongoing Projects:

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

Currently, only NTPC, NEEPCO and Me. PGCL are furnishing monthly progress report of elements on regular basis, others are also requested to furnish the same.

D.8 Implementation of Power Line Carrier Communication (PLCC) link on 132 kV Pallatana – Banduar Line:

Tripura vide letter dated 24.03.2014 has intimated that communication link between Palatana & Banduar is yet to be established through 132KV S/C line between Palatana & Banduar, which was commissioned for providing Start up Power to Palatana about 2 years back against fund placed by OTPC.

After commissioning of Palatana Project, start up power as & when required is drawn by OTPC from Grid through this line and energy accounting in this regard is settled through regional accounting. Prior to commissioning of Palatana Project start up power is provided by TSECL but after COD of project start up power is provided from Grid. Thus, this line is no more used for intrastate line rather it is now used as ISTS line.

In line with earlier understanding we had framed estimate for Rs 60, 52,987/- to OTPC for placement of fund for taking up work of commissioning link between Palatana & Banduar. The matter was discussed in 18th UCC meeting too. Recently, OTPC communicated that they may not be in position to place fund unless this line is treated as ISTS.

Since the line is presently serving to meet the requirement of OTPC for startup Power drawing from Grid as well as reverse Power flow during normal hours and energy accounting is reflected at REA. Therefore, it justifies declaring as ISTS.

Committee may like to discuss.

D.9 Up-gradation of 132 kV Halflong, 132 kV Jiribam, 132 kV Kumarghat and 132 kV Aizawl Sub-station on completion of 25 years age and capitalization during Tariff Block (2014-19):

In NER, the sub stations constructed under ATLP Scheme viz. Haflong, Jiribam, Aizawl and Kumarghat have already completed 25 years. Meanwhile, in recent past, POWERGRID has replaced (a) LTAC and DCDB, (b) Distance Protection Relays, (c) SF6 Circuit Breakers, (d) PLCC Panels and (e) Isolators.

But, the replacement of said equipments will not help to enhance the life of the stations without replacement of other essential items like Control & Power Cables, Auxiliary Relays etc. Further, the said stations do not have Bus Bar and Local Breaker Back up protection scheme which is essential for reliable operation of substation in general and Grid in particular considering increasing trend of Fault Level.

Now, with incremental expenditure the stations can be converted to SAS along with replacement of cables, auxiliary relays etc. and incorporation of Bus Bar and LBB Scheme.

The job will be carried out during Tariff Block 2014-19 and proposed to be capitalized.

Committee may like to discuss.

D.10 Requirement of establishment viz. Office, Store and Field Hostel at Umrangso for POWERGRID maintenance staff at Kopili HEP:

During the Standing Committee Meeting on 3rd January 2014, it has been decided that POWERGRID will carry out the replacement of existing 60MVA 220/132kV ICT by another 1x160MVA 220/132kV ICT at Kopili HEP of NEEPCO along with up-gradation/replacement of complete 132kV Bus Scheme including switchgear etc. with GIS and 220kV bay equipments (AIS) and protection scheme.

Hence, after setting up the said asset, a maintenance group of POWERGRID will be posted at Kopili HEP for which an establishment is required to be provided in terms of Field Hostel (for 8 to 10 persons), Office and Store at Umrangsoo site.

Accordingly, NEEPCO may confirm the availability of Building (s) for setting up said establishment for POWERGRID.

Committee may like to discuss.

D.11 Capitalization of various works carried out during Tariff Block (2009 – 2014):

During the Tariff Block 2009-14, POWERGRID has carried out various works required as per CEA regulations/system requirement and the same are proposed to be capitalized. The activities are listed below:

SN	Activity	Year of Execution	Remarks
1	Installation of N_2 Fire Extinguisher System (14 nos.) in Transformers and Reactors at Salakati (2 nos.), Dimapur (4 nos.), Nirjuli (2 nos.), Ziro (4 nos.), Kumarghat (1 no.) & Aizawl (1 no.) Sub Station	2013-14	As per CEA Notification dated 20.08.2010
2	Installation of 2nd Numerical Relays (20 nos.) for 220kV Lines. (a) Misa-Dimapur D/C – 4 nos. (b) Misa-Kopili D/C – 2 nos. (c) Misa-Kopili S/C – 1 nos. (d) Misa – Samaguri D/C – 4 nos. (e) Misa–Mariani–Kathalguri D/C-4 no. (f) Balipara-Samaguri – 1 no. (g) Salakati-Birpara D/C – 2 nos. (h) Salakati-BTPS D/C – 2 nos.	2013-14	As per CEA Regulation 2007

3	Replacement of Old (more than 15 years age) and Obsolete ETI PLCC Panels (38 NOS) at Misa (6 nos.), Samaguri (2 nos.), Kopili (3 nos.), Salakati (2 nos.), BTPS (2 nos.), Dimapur (3 nos.), Imphal (2 nos.), Loktak (2 nos.), Jiribam (3 nos.), Haflong (2 nos.), Aizawl (2 nos.), Khliehriat (1 nos.), Khandong (3 nos.), Nirjuli (2 nos.), Gohpur (1 nos.), Kumarghat (1 no.) and Ranganadi (1 no.).	2012-13	As per CERC Notification 21.02.2014

Committee may like to note.

D.12 Capitalization of various works carried taken up/to be taken up during Tariff Block (2009 – 2014):

During the Tariff Block 2014-19, POWERGRID will take up various works required as per CEA regulations/system requirement and the same are proposed to be capitalized. The activities are listed below:

SN	Activity	Remarks
1	Installation of Hydrant System at Salakati, Nirjuli, Ziro, Kumarghat & Aizawl Sub Station as per Regulation	As per CEA Notification dated 20.08.2010
2	Installation of 220kV Bus Bar Protection Scheme at Dimapur Sub Station as per Regulation	As per CEA Regulation 2007
3	Optical Terminal Equipments (SDH) against Obsolete SDH	Already agreed by constituents in UCC Meeting
4	Installation of Fire Alarm system in Control Rooms	As per CEA Notification dated 20.08.2010
5	Replacement of Old (more than 25 years age) Bay Equipments viz: Isolator, CT & CVT of POWERGRID bays at Samaguri (AEFCL) Sub Station	As per CERC Notification 21.02.2014
9	Strengthening of Suspension towers of 400KV Balipara-Bongaigaon line	As per system requirement

Committee may like to discuss.

D.13 Commissioning of 400 kV Balipara # 3 & 4 Line Reactor at 400/220 kV Bongaigoan Sub-station:

The 63MVAR, 400KV Line Reactor # 3 & 4 of 400kV D/C (Quad) Balipara-Bongaigaon Line # 3 & 4 at 400/220kV Bongaigaon Sub Station commissioned during March 2014. The said reactors are in use with Bus as and when required by the system to facilitate shut down maintenance of other reactors in Grid as being done for 63MVAR, 400KV Line Reactor # 3 & 4 of 400kV D/C (Quad) Balipara-Bongaigaon Line # 3 & 4 at 400/220kV Balipara Sub Station.

Committee may like to note.

D.14 Estimated Transmission Availability Certificate (TAC) for the month of February, 2014.

The Estimated Transmission System Availability for the month of February, 2014, furnished by PGCIL, is **99.9820%.** The detail outage data for calculation of Transmission System Availability furnished by PGCIL, is at **Annexure D.14.** NER constituents are requested to kindly communicate their views and observations, if any, by 27th March, 2014 so that Final TAC for the month of February, 2014 may be finalized by NERPC Secretariat.

The Sub-Committee may like to discuss.

D.15 Major grid disturbances in the previous month (March, 2014)

As intimated by NERLDC, there was one major grid disturbance on 19.03.2014. There was a load loss of 1040 MW and generation loss of 860 MW.

Members may like to discuss.

D.16 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)	(a) 220 kV New Mariani (PG) – AGBPP	UFR-1 [At New Mariani (PG)]	**PGCIL**
		(b) 220 kV Mariani – Misa	UFR-2 [At Mariani,	**AEGCL**

	and loads of Upper Assam system & Deomali area (Ar. Pradesh) **[Total Generation: 380-400MW and load: 200MW (off peak)-300MW (peak)]**	(c) 220 kV Mariani – Samaguri	Samaguri of AEGCL]	
		(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) (i) **[if load > generation in the islanded pocket]**		
		(j) 132kV Tinsukia – Ledo S/C line (at 48.7Hz instantaneous).	UFR [At Tinsukia]	**AEGCL**
		(k) 66kV Tinsukia – Rupai S/C line (at 48.6Hz instantaneous)		**AEGCL**
		(l) 132kV Jorhat – Bokakhat line (at 48.5Hz instantaneous)	UFR [At Jorahat / Bokakhat]	**AEGCL**
2	**<u>ISLAND AT 48.50 Hz with 5 Sec delay :</u>** Island comprising of generating units of AGTPP (Gas), generating units at Baramura (Gas), Rokhia (Gas) & Gumati (Hydro) and loads of Tripura	132 kV Palatana – Udaipur	UFR-1 [At Palatana]	**OTPC**
		132 kV Palatana – Surjamani Nagar		
		132 kV Silchar – Dullavcherra	UFR-2 [At Silchar]	**PGCIL**

	system & Dullavcherra area (Assam) **[Total Generation: 150-160MW and load: 110MW (off-peak) &170-180MW (peak)]**	132 kV AGTPP – Kumarghat 132 kV P K Bari – Kumarghat	UFR-3 [At Kumarghat]	**PGCIL**
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		

Both the Islanding schemes were implemented as discussed in OCC/PCC forum and it was decided that two UFRs (one as back up) are to provided for disconnection of lines as well as generators. Further subcommittee had suggested for use the UFR of the generators as back up for de-synchronization of Gas Turbine (s) and for developing the logic to identify the Units, which are in service / operation so that these modules are de-synchronized/ isolated from the system in order to achieve the load and generation balance and to activate the Automatic Governor Control of each module. It was also decided that in future, in case any problem arises, both islanding schemes will reviewed and modified as per system requirement.

During the recent grid NER disturbance on 19-03-2014, it has been observed that none of the islanding scheme including NTPS islanding scheme has worked as expected although the frequency had gone below 48.5 Hz and even persisted for more than 5 secs. Therefore, there is need for reviewing the schemes and the deficiency in the scheme needs to be deliberated. The malfunctioning protection system has also been brought to the notice by NERLDC.

The UFR operation at following locations and details of DR may please be discussed:

(a) at Mariani, Dimapur, Silchar and Kumarghat substations of PGCIL
(b) at Mariani, Samaguri, Tinsukia, Jorhat, Bokakhat substations and NTPS of AEGCL
(c) at Mariani, Dimapur, Silchar and Kumarghat substations of PGCIL
(c) at AGBPP of NEEPCO
(d) at Palatana substation of OTPC

NERLDC may present the PMU signature and other details.

NERLDC vide letter dated 24.03.2014 has communicated & requested NERPC Secretariat to constitute a suitable committee to investigate the cause of disturbance.

Committee may like to discuss about the deficiencies and suggest for improvement required.

D.17 Investment Approval for "Expansion/Up-gradation of SCADA/EMS System of SLDCs of North Eastern Region" and implementation of Unified Real Time Dynamic State Measurement (URTDSM) Scheme:

POWERGRID vide letter dated 17.02.2014 has intimated that the Board of Directors of POWERGRID have accorded investment approval for expansion/up-gradation of SCADA/EMS system of SLDCs of North Eastern Region in its 298th meeting of Board of Directors held on 5th February, 2014. The project includes SLDCs in Ar. Pradesh, Manipur, Mizoram and Nagaland, installation of new EMS/SCADA platform in Assam, Meghalaya and Tripura and construction of control room building of MEECL. **The estimated cost of project at December 2013 price level is Rs. 56.18 crores (including IDC of Rs. 3.17 crores).** The project s proposed to be implemented through domestic borrowings / bonds / external commercial borrowings and POWERGRID's internal resources with Debt: Equity ratio 70:30.**The project is scheduled to be commissioned within 27 months from the date of approval of Board of Directors i.e. February 5, 2014. As per decision of 14th NERPC, POWERGRID would depute their representative(s) to Arunachal Pradesh, Manipur, Mizoram and Nagaland to finalize the space requirement and discuss other issues related to establishment of SLDCs.**

POWERGRID vide letter dated 21.01.2014 has also intimated that the Board of Directors of POWERGRID have accorded investment approval for URTDS scheme including North Eastern Region in its 297th meeting of Board of Directors held on 13.01.2014. The project includes installation of 86 numbers of PMUs (ISTS– 50 and STU– 36), 6 nos. of Master Phasor Data Concentrator (MPDC) and 2 nos. Super Phasor Data Concentrator (SPDC) in two stages at an estimated cost of Rs. 50.77 Crores (Phase – I = 49 PMUs at an estimated cost of Rs. 24.23 Crores and Phase – II = 37 PMUs at an estimated cost of Rs. 26.54 Crores). The project s proposed to be implemented through domestic borrowings / bonds / external commercial borrowings and POWERGRID's internal resources with Debt: Equity ratio 70:30. **The project is scheduled to be commissioned within 27 months from the date of approval of Board of Directors i.e. 13th January, 2014.**

Members may like to note.

D.18 Any other item:

The workshop on Smart Grid and Cyber security is being organized by CEA at Guwahati in May 2014.

E. NEW ITEMS

E.1 Insufficient back up of Auxiliary Power Supply 110 V DC and 50 V DC at Gohpur Sub-station of AEGCL:

The 110V DC and 50V DC power supply at 132kV Gohpur (AEGCL) Sub Station has no back up at present as intimated by our Nirjuli Group. AEGCL may please verify the same and carry out replacement in case of no/poor backup.

Members may like to discuss.

E.2 Standardization of Protection Scheme for Generating stations in NER:

During 13th PCC meeting, the Sub-committee had suggested that Generator protection Philosophy including protection for Generator Transformer (GT), Unit Auxiliary Transformer (UAT), Station Auxiliary Transformer (SAT), Excitation Transformers should also be prepared and had requested all the Central sector and State sector Generating companies in NER (NEEPCO, NHPC, NTPC & OTPC; Assam, Meghalaya, Tripura) to furnish their practices. A draft document was prepared and circulated to all.

During 17th PCC meeting, the subcommittee had reviewed the Protection Philosophy for Generator [Hydro / Thermal (Coal / Gas based) Generator], Generator Transformer (GT), Unit Auxiliary Transformer (UAT), Station Auxiliary Transformer (SAT) / Station Supply Transformer (SST), Excitation Transformer. The Sub-committee had requested NHPC and OTPC to prepare protection philosophy for Generator, GT, UAT & SAT separately for Hydro Power Plants and Gas Based Power Plants respectively taking the help of draft document.

During 19th PCC meeting, the matter could not be discussed due to paucity of time.

The Committee may like to discuss and finalize the document.

E.3 Major Events in North-Eastern Regional Grid during the period March, 2014

NERLDC may kindly intimate any major events/trippings during March, 2014 & Sub-committee may like to discuss.

Date and Venue of next OCC

It is proposed to hold the 97th OCC meeting of NERPC on first week of May, 2014. As per roaster, Mizoram will be the host for 97th OCC meeting. The exact venue will be intimated in due course.

****

नॉर्थ ईस्टर्न ईलैक्ट्रिक पावर कॉरपोरेशन लि.
(भारत सरकार का उपक्रम)
NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
(A GOVT. OF INDIA ENTERPRISE)
OFFICE OF THE EXECUTIVE DIRECTOR (O & M)

No. – NEEPCO/ED(O&M)/OPR-08/2094-95 Date: 28.03.2014

To

The Superintending Engineer (O)
NERPC, CEA
MSHFCOS Ltd. Nongrim Hills, Shillong – 03.

Sub: - Agenda item for 96th OCC Meeting.
Ref: - Your letter no.-NERPC/SE(O)/OCC/2014/7587-620 dated 21.03.2014
Sir,

Reference is invited to the above.

The shut down program for few units of NEEPCO is furnished below for discussion and approval in 96th OCC Meeting:-

Unit no.	From	Expected date of return	Reason
AGBP STG#3	17.04.2014	16.10.2014	Major overhauling of the unit. Like STG U # 1 & 2, rotor & other stationary parts may be required to send to BHEL works at Hyderabad.
AGBP U # 6	20.04.2014	15.05.2014	Hot Gas Path Inspection.
Doyang U # 2	15.04.2014	15.05.2014	APM & installation new governor with RGMO

Approval of OCC forum is highly solicited.
Thanking you.

Yours faithfully

28/03/2014

Sr. Manager (El)

Copy for kind information to:-
DGM (SO), NERLDC, Shillong – 06.

STATE LOAD DESPATCH CENTRE

ASSAM ELECTRICITY GRID CORPORATION LTD.

KAHILIPARA , GUWAHATI – 781019,

Ph: 0361-2387929 , Fax: 0361-2382263

E-mail : sldcaseb@rediffmail.com , website : www.asebsldc.org

From: The AGM, SLDC, Kahilipara

To: The Member Secretary, NERPC, Shillong

Copy to: The DGM SO-II, NERLDC, Shillong

Message No: 31/04/14/1130 **Date: 31/04/14**

Time of origin : 11:30 hrs

SUB : Shut down programme for approval in upcoming 96th OCC meeting

Please accord approval for daytime shut-down of the following grid elements/line on the given dates in the upcoming 96th OCC meeting for replacement of 132 KV C.T. clamps.

1. **132 KV Panchgram-Lumsnong line w.e.f. 09:00-17:00 hrs on 05-04-2014**
2. **132KV Panchgram Main Bus w.e.f. 11:00-11:30 hrs on 05-04-2014**

This is for your kind information & placement in the upcoming 96th OCC meeting for necessary approval please.

Regards

-sd-

AGM, SLDC

AEGCL , Kahilipara

PROPOSED SHUTDOWN OF ELEMENTS FOR 96TH OCC MEETING

1. Transmission Lines

SL. No.	Name of Transmission Line		Purpose	Areas/Feeders affected
TRANSMISSION LINES				
1	400KV D/C Balipara-Ranganadi-I	(i)08.04.2014(8:00 to 15:00 Hrs) (ii) 25.04.2014 to 27.04.2014(7:00 to 15:00 Hrs)	(i)For testing of DPR including simulation of CB operation.(ii) Diversion of the line section loc.36 to loc.40 on account of Railway Track construction	400KV D/C Balipara-Ranganadi-I
2	400KV D/C Balipara-Ranganadi-II	28.04.2014 to 30.04.2014(7:00 to 15:00 Hrs)	Diversion of the line section loc.36 to loc.40 on account of Railway Track construction	400KV D/C Balipara-Ranganadi-II
3	132KV S/C Badarpur-Jiribam line ***(Approved in 95th OCCM)***	25.04.2014 (8:00 Hrs) to 30.03.2014 (17:00 Hrs) **Cont.SD**	For installation of new towers in the span loc.15 to loc.17 & stringing thereof on account of Highway Construction.	132KV S/C Badarpur-Jiribam line
4	132KV Haflong-Jiribam line	05.05.2014 (8:00 Hrs) to 09.05.2014 (17:00 Hrs) **Cont.SD**	For installation of new towers in the span loc.48 to loc.54 & stringing thereof on account of 4 lane Highway Construction.	132KV Haflong-Jiribam line
5	132KV Nirjuli-Ranganadi line	05.05.2014 (8:00 Hrs) to 07.05.2014 (17:00 Hrs) **Cont.SD**	For shifting of vulnerable location No.52 affected due to indiscriminate earthcutting near the location.	132KV Nirjuli-Ranganadi line
6	220KV Balipara-Samaguri line	07.04.2014 (7:00 to 15:00 Hrs)	For facilitating stringing on new towers in connection with shifting of line section **13-15**(Rly Gauge conversion)	220KV Balipara-Samaguri line
7	220KV Misa-Samaguri-I	17.04.2014(7:00 to 15:00 Hrs)	Replacement of Isolator hanger assembly. Isolators are more than 25 yrs old.	220KV Misa-Samaguri-I
8	220KV Misa-Samaguri-II	18.04.2014(7:00 to 15:00 Hrs)	Replacement of Isolator hanger assembly. Isolators are more than 25 yrs old.	220KV Misa-Samaguri-II
9	220KV Misa-Kopili-III ***(re-schedulement of shutdown approved in 95th OCCM)***	20.04.2014 to 27.04.2014(8:00 to 16:00 Hr)	Mass Replacement of defective Insulators identified thro' PID.	220KV Misa-Kopili-III
10	220KV D/C Agia-BTPS(AEGCL) line	18.04.2014 to 21.04.2014(7:00 to 1:00)	For facilitating stringing of 400KV Balipara - Bongaigaon line between loc.20/0 & 21/0(power line crossing). The shutdown was put up for approval	220KV D/C Agia-BTPS(AEGCL) line
11	220KV Misa-Dimapur-I	18.04.2014(7:00 to 15:00 Hrs)	Annual Maintenance Plan	220KV Misa-Dimapur-I
12	132KV Salakati-Gelephug line ***(approved in 95th OCCM)***	07.04.2014 to 09.04.2014(7:00 to 15:00)	For replacement of broken insulator strings damaged due to lightning.	132KV Salakati-Gelephug line
13	220KV Misa-Mariani(New)	09.04.2014(7:00 to 15:00 Hrs)	For shifting of LA on new foundation endangered due to sinking	220KV Misa-Mariani(New)
14	220KV Misa-Mariani(Old)	29.04.2014(7:00 to 15:00 Hrs)	For shifting of LA on new foundation endangered due to sinking	220KV Misa-Mariani(Old)

2. SUBSTATIONS				
SN	**Name of Substation**		**Purpose**	
1	**400KV Silchar S/s**			
i	400/132KV, 200MVA ICT-II	07.04.2014 & 08.04.2014(8:00 to 15:00)	For post commissioning statutory inspection/checking by OEM	400/132KV, 200MVA ICT-II
2	**220/132KV Dimapur S/s**			
i	220/132KV, 100MVA ICT-I	23.04.2014(8:00 to 15:00 Hrs)	Phase shifting of ICT	220/132KV, 100MVA ICT-I
ii	132KV Dimapur(State) Bay	10.04.2014(7:00 to 15:00 Hrs)	For attending Hotspots in Jumpers & Droppers	132KV Dimapur- Dimapur(State) line
3	**400KV Bongaigaon S/s**			
i	400KV Balipara-II Tie Bay	12.04.2014(7:00 to 15:00 Hr)	Replacement of existing CTs with overhauled CTs	400KV Balipara-II Tie Bay
ii	400KV Main Bus-I	07.04.2014 & 11.04.2014(7:00 to 15:00 Hrs)	For replacement of existing Twin Strung Bus with Quad strung Bus in Balipara-I Main Bay	All feeders shall remain in service thro' Main Bus-II
iii	400KV Main Bus-II	08.04.2014 & 10.04.2014 (7:00 to 15:00 Hrs)	For facilitating replacement of existing Twin Strung Bus with Quad Strung Bus in Balipara-I Main Bay.**The shutdown was put up for approval in 94th OCCM but was not granted.**	(i)400KV Balipara-Bongaigaon-I, 80MVAR Bus Reactor-III & IV will remain continuously out from 29.03.14 to 31.03.14.(ii)All other feeders shall remain in service through Main Bus-I