

MINUTES OF THE 92nd
OPERATION COORDINATION SUB-COMMITTEE MEETING
OF NERPC

Date : 06/12/2013 (Friday)
Time : 10:00 hrs
Venue : "Hotel Pragati Manor", Guwahati.

The List of Participants in the 92nd OCC Meeting is attached at **Annexure - I**

Shri S.K. Ray Mohapatra, Member Secretary (I/C), NERPC welcomed all the delegates of constituents to the 92nd OCC meeting. He mentioned that contribution to the forum by the participants of the constituents plays an important role in development of the region. He highlighted about some of the important issues to be discussed in the meeting viz. SPS, Islanding scheme and UFR based load shedding, standard procedure to be followed before declaration of CoD for transmission system. Further, he mentioned that it has been brought to notice that Tawang, being a very important place as far as country's defense establishment is concerned, is not connected with the NER grid. At present the small /mini/micro hydro generating stations in and around Tawang is feeding the area at 33kV level. Entire stretch from Bomdila - Dirang - Sela Pass-Tawang - Bomula (China border) is occupied predominately by National army. Considering the importance of Tawang as it is situated close to International border, 132 kV D/C link from existing Khupi / Kimi Sub-station to Tawang via Bomdila / Dirang may be desirable so that reliable power supply can be extended to these areas and beyond. He also mentioned that the decisions of 14th TCC meeting of NERPC held in Agartala on September 4, 2013 was circulated to all the constituents and all have conveyed their approval except Assam. He requested Assam to take up the matter with their concerned Authority to get it approved at the earliest for the benefit of the region.

Thereafter, Member Secretary I/C requested Shri B. Lyngkhoi, SE(O), NERPC to take up the agenda items for discussion.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 91st MEETING OF OPERATION SUB-COMMITTEE OF NERPC.

S.E (O) informed that the minutes of 91st meeting of Operation Co-ordination Sub-committee held on 15th November, 2013 at Itanagar were circulated vide letter No. NERPC/SE (O)/OCC/2013/6144-6177 dated 27th November, 2013.

The Sub-committee confirmed the minutes of 91st OCCM of NERPC as no observations or comments were received from the constituents.

SE (O), NERPC then requested NERLDC to give the presentation on the grid performance of NER during the month of November, 2013.

The presentation as given by NERLDC is given as below:

ITEMS FOR DISCUSSION

B.1. OPERATIONAL PERFORMANCE AND GRID DISCIPLINE DURING NOV' 13

As per the data made available by NERLDC, the grid performance parameters for November, 2013 are given below:

NER PERFORMANCE DURING NOVEMBER, 2013

States	Energy Met (MU)			Energy Reqr. (MU)		
	Nov-13	Oct-13	% inc(+)/dec(-)	Nov-13	Oct-13	% inc(+)/dec(-)
Ar. Pradesh	41.83	40.465	3.4	44.93	42.61	5.4
Assam	563.83	645.619	-12.7	580.29	676.2	-14.2
Manipur	43.54	42.099	3.4	46.46	45.48	2.2
Meghalaya	136.82	138.288	-1.1	156.87	148.78	5.4
Mizoram	37.77	36.3	4.0	39.25	37.8	3.8
Nagaland	42.78	42.091	1.6	44.49	43.85	1.5
Tripura	99.58	105.389	-5.5	104.35	108.98	-4.2
Region	966.15	1050.251	-8.0	1016.64	1103.7	-7.9

States	Demand Met (MW)		% inc(+)/dec(-)	Demand in (MW)		% inc(+)/dec(-)
	Nov-13	Oct-13		Nov-13	Oct-13	
Ar. Pradesh	120	113	6.2	120	115	4.3
Assam	1155	1220	-5.3	1169	1266	-7.7
Manipur	123	111	10.8	124	114	8.8
Meghalaya	298	276	8.0	300	278	7.9
Mizoram	65	60	8.3	66	61	8.2
Nagaland	96	99	-3.0	96	99	-3.0
Tripura	207	250	-17.2	208	254	-18.1
Region	1966	2048	-4.0	2046	2140	-4.4

REGIONAL GENERATION & INTER-REGIONAL EXCHANGE IN MU

Month---->	Nov-13	Oct-13
Total Generation in NER (Gross)	763.05	932.18
Total Central Sector Generation (Gross)	471.97	594.26
Total State Sector Generation (Gross)	291.08	337.92
Inter-Regional Energy Exchange		
(a) NER-ER	12.37	27.719
(b) ER-NER	225.99	144.089
© Net Import	213.62	116.37

AVERAGE FREQUENCY (Hz)

Month---->	Nov-13	Oct-13
	% of Time	% of Time
Below 49.7 Hz	1.17	0.79
Between 49.7 to 50.2 Hz	91.23	89.23
Above 50.2 Hz	7.6	9.98
Average	50.02	50.04
Maximum	50.51	50.63
Minimum	49.48	49.28

From the above table, it is seen that energy demand met and peak met of the region have decreased 8% & 4% respectively. The import from ER has increased considerably.

The Summary of Category A, B, C Messages issued by NERLDC for the constituents of NER for the Month of November, 2013 is given as below:

State	A (<49.8 Hz)		B (<49.7 Hz)		C (<49.7 Hz) Persistent Overdrawal		Total	
	Oct'13	Nov'13	Oct'13	Nov'13	Oct'13	Nov'13	Oct'13	Nov'13
Ar. Pradesh	01	04	00	01	00	00	01	05
Assam	01	05	00	01	00	00	01	06
Manipur	01	04	00	00	00	00	01	04

Meghalaya	01	04	00	00	00	00	01	04
Mizoram	01	00	00	00	00	00	01	00
Nagaland	01	06	00	00	00	00	01	06
Tripura	00	05	00	01	00	00	00	06

SE (O) informed that in response to the Petition No. 131/MP/2013 of NERLDC, CERC has directed NERPC to monitor the compliance of various provisions of the grid code by the SLDCs and the constituents of North Eastern Region and to bring to the notice of the Commission any instances of specific violation of the Grid code by any of the constituents. In the petition NERLDC desired that

- a) All the STUs/SLDCs of the North Eastern Region to properly forecast their demand and make adequate arrangements to avoid dependence on UI for meeting their demand or for injecting short term surplus power, irrespective of the frequency.
- b) All the STUs/SLDCs Regional Entities of the North Eastern Region not to vary of drawal/generation more than 20 MW without prior intimation to consent of NERLDC.

SE (O) requested all the constituents for compliance of various provisions of the grid code for safety of the grid.

The Sub-committee noted as above.

FOLLOW UP ACTION

C.1 Synchronization of Pallatana Module -I

In the 91st OCC meeting, representative of OTPC informed that rotor earth fault problem has been resolved and machine is ready for PPA test subject to availability of clean gas. Further he informed that ONGC has assured that cyclone separator will be installed within the next 10-15 days (i.e. by 05.12.2013). Also he stated that since CERC has given their extension for infirm power injection till 31.12.2013, all efforts to complete the remaining test would be of utmost importance to them. He requested the forum to allow them to generate upto the full load for 72 (seventy two) hours for PPA test before declaring CoD. He also informed that one Gas compressor is expected to reach site from BHEL's factory at Hyderabad by mid of January, 2014 and accordingly the trial operation of the Unit-II is expected in June, 2014.

DGM, NERLDC requested OTPC to intimate them one week in advance so that necessary action can be taken up with the constituents for ensuring smooth operation of the grid during PPA tests.

Deliberation of the Committee

OTPC informed that ONGC has already carried out 4th round of pigging, Performance Heater Test is under progress and the same will be completed soon. He also intimated that cyclone separator will be installed by 15th December, 2013. For installation of cyclone separator, shut down of machine for 4-5 days is normally required. However, he mentioned that without waiting for installation of cyclone separator, the Unit#1 will be synchronized on 10-12-2013 and PPA test including other trial run operations would be carried out so that CoD can be achieved within 31st December, 2013. He requested all the constituents to extend their support during PPA test.

All the constituents agreed to extend their support to OTPC and this lean hydro season is very much suitable for achieving the maximum generation required for trial operation / PPA tests. The committee requested OTPC to co-ordinate with NERLDC for ensuring smooth operation of the grid during PPA tests and to intimate NERLDC about the schedule of tests / trial operation at least one week in advance.

The Sub-committee also reviewed the status of Pallatana & Transmission lines. The status as informed by OTPC and POWERGRID is as follows:

SN	Items	Present status
1	Trial operation of Unit -I of OTPC at Palatana	December, 2013
2	Trial operation of Unit -II of OTPC at Palatana	June, 2014
3	400KV D/C Silchar - Melriat line	June, 2014
4	400KV D/C Silchar - Imphal line	June, 2014
5	220KV D/C Mariani (New) - Mokokchung	March, 2014
6	400KV D/C Byrnihat-Bongaigaon line	March, 2014 (Byrnihat-Ajara section likely to be completed by January 2014)
7	400kv Balipara – Bongaigaon D/C line # 3 & 4 with FSC	March, 2014

The Sub-committee noted as above.

C.2 Independent third party audit of protection system:

During 91st OCC meeting, SE (O) informed that the estimated cost projected in the DPR for rectification / renovations of substations / generating stations of seven states of the region is about Rs. 816 crores.

In the meantime the draft project proposal prepared by NERPC was sent to constituent states of the region for suggestion/comments / observations and no response was received from any states except Assam. After incorporating the suggestion from Assam, the draft project proposal has already been submitted to Secretary, Ministry of Power (Govt. of Tripura) with request to submit the proposal, on behalf of the region, to Ministry of Power (Govt. of India) through Chairman NERPC & Hon'ble Minister of Power, Govt. of Tripura.

Member Secretary I/C requested all constituent states of the region to take up the issue with their respective Power Ministry for approaching the Ministry of Power, Govt. of India so that funding under NLCP-Central is approved at the earliest and the schemes is implemented early for smooth operation of the grid for the benefit of the region as well as for the country. He also highlighted that the project funded under NLCP-Central will be executed by Central Agency as per the guidelines.

CE, Ar. Pradesh expressed reservation on implementation of the scheme by Central Agency. He was of the opinion that funds should be given to the States instead of getting the work done by Central Agency as the state agencies are more familiar with ground reality and can execute the work in a better manner. He requested all other constituent states to look into the matter regarding the funding pattern and executing agency.

DGM, POWERGRID stated that certain works need to be carried out on urgent basis by the NER constituents even if funding is not available from external resources in order to avoid unwarranted tripping / system isolation and smooth operation of the Grid. Accordingly, he suggested that based on the protection audit report, essential rectification work should be taken up at the earliest without waiting for funding.

Deliberation of the Committee

Member Secretary I/C requested all constituent states of the region to take up the issue with their respective Power Ministry for approaching the Ministry of Power,

Govt. of India so that fund is made available from NLCPR-Central at the earliest and the schemes is implemented early for smooth operation of the grid for the benefit of the region as well as for the country.

The Sub-committee noted as above.

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 14th TCC meeting, the quantum of UFR based load shedding has been approved by the Committee as decided in the 88th & 13th PCC meeting as given below:

SN	Stages	Frequency (in Hz)	State-wise Load Shedding	Total Load shedding (in MW)
1	Stage-I	49.2	Arunachal = 5 MW Assam = 55 MW Manipur = 5 MW Meghalaya = 15 MW Mizoram = 5 MW Nagaland = 5 MW Tripura = 10 MW	100
2	Stage-II	49.0	Arunachal = 5 MW Assam = 55 MW Manipur = 5 MW Meghalaya = 15 MW Mizoram = 5 MW Nagaland = 5 MW Tripura = 10 MW	100
3	Stage-III	48.8	Arunachal = 5 MW Assam = 55 MW Manipur = 5 MW Meghalaya = 15 MW Mizoram = 5 MW Nagaland = 5 MW Tripura = 10 MW	100
4	Stage-IV	48.6	Arunachal = 5 MW Assam = 55 MW Manipur = 5 MW Meghalaya = 15 MW Mizoram = 5 MW Nagaland = 5 MW Tripura = 10 MW	100
	Total load shedding			400

Assam, Tripura, Mizoram & Meghalaya have submitted the list of feeders and quantum of load shedding at different stages.

During 91st OCC meeting, all other constituent states (Ar. Pradesh, Manipur and Nagaland) of the region agreed to submit the list of feeders at the earliest. Mizoram has submitted the proposed feeders for UFR based load shedding for 20MW. Details could not be discussed in the absence of the representative from Mizoram. Further, the Sub-committee suggested for introduction of time delay in operation of UFRs and requested POWERGRID to look into the matter so that the same can be finalized in the next OCC/PCC meeting. POWERGRID agreed.

Deliberation of the Committee

The Committee reviewed the list of feeders identified for UFR based load shedding by the constituent states of the region. In the meeting the representative of Nagaland also submitted the list of feeders identified for UFR based load shedding. Assam was requested to ensure that feeders / loads considered under four staged (49.2 Hz, 49.0 Hz, 48.80Hz, 48.60Hz) UFR based load shedding should not form part of proposed islanded pocket. Assam, Meghalaya & Nagaland informed that the implementation of UFR based load shedding for 1st & 2nd Stage would be completed by January, 2014 and Mizoram by February, 2014. The status pertaining to Ar. Pradesh, Manipur & Tripura could not be updated since no representative was present. All constituent states of the region, except Ar. Pradesh and Manipur, have identified the feeders for UFR based load shedding. The details of UFR based load shedding is given at **Annexure – C.3 (i)**.

The Sub-committee noted as above.

C.4 Lines under long outages

During the 92nd 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 **January, 2014**.
- b) 132kV Mariani – Mokokchung line - [Since Apr'02]

EE, DoP, Nagaland informed that 60 strings of insulators have been replaced and rest of the work is likely to be completed by **December, 2013 and charging of line is expected in January 2014.**

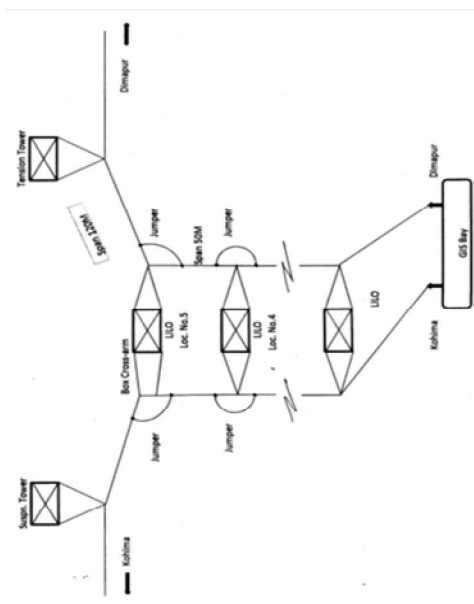
c) 39km of 132kV Rengpang – Jiribam line – [Since Oct'02]

The status could not be updated since representative from Manipur was present.

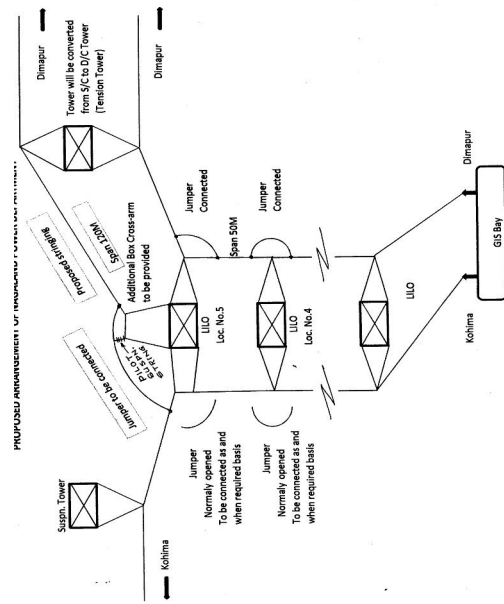
d) LILO of 132 kV Dimapur (Nagaland) – Kohima (Nagaland) line at 220/132 kV Dimapur (PGCIL) Substation- [Since Aug'11]:

The representative of Nagaland informed that work for upgrading the existing 3x20 MVA by 2x100 MVA is in progress. Also he informed that some minor modification in one of the tower is required for completion of LILO and Dept. of Power had already engaged a firm for designing the same and the drawing was submitted to POWERGRID for examination.

Meanwhile, POWERGRID has informed that the issue of LILO of 132 kV Dimapur (Nagaland) – Kohima (Nagaland) Line at 220/132 kV Dimapur (PGCIL) Substation is pending since August, 2011. DoP, Nagaland has communicated POWERGRID for rearrangement of original LILO as below which will change the configuration of Original Missing Link Project:



Original Arrangement



Proposed Arrangement

With the proposed scheme, the LILO will change as below:

1. There will be connectivity of Dimapur (PG) SS with Dimapur (State) SS through 132kV Dimapur (PG) – Dimapur (State) Circuit # 2.
2. There will be connectivity of Dimapur (State) SS with Kohima (State) SS through 132kV Dimapur (State) – Kohima (State) Circuit. The 132kV Kohima Bay (GIS) at Dimapur (PG) station will be kept as redundant bay for use in case of exigency.

Deliberation of the Committee

EE, DoP, Nagaland informed that the above modification will enhance the reliability of the power supply to Kohima. Further, he stated that the present arrangement of power supply to Kohima via the GIS substation of POWERGRID will continue and the modification will provide an alternate connection to Kohima. Moreover, the cost of modification will be borne by DoP, Nagaland. He requested POWERGRID to give their consent at the earliest.

DGM, POWERGRID stated that they have to take up the matter with their corporate office at Gurgaon for approval of proposed modification (i.e. incorporation of additional Box Cross Arm at Tower Location No. 5). Further, he enquired from Nagaland that till the time the proposed arrangement is implemented, whether the connectivity with Kohima substation will be through LILO arrangement at PGCIL's Dimapur GIS substation or will be connected directly with Kohima substation bypassing the GIS substation.

EE, DoP, Nagaland informed that the connectivity to Kohima till the implementation of the scheme will be fed directly bypassing POWERGRID S/S. The committee suggested DoP, Nagaland to utilize the LILO arrangement with GIS for connectivity to Kohima.

The Sub-committee agreed with the modified proposal of Nagaland and requested POWERGRID to take up matter for early approval of their competent authority. POWERGRID agreed.

The Sub-committee noted as above.

C.5 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 and are under implementation.

Case 1: Tripping of generating unit of OTPC at Palatana

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

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

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

The scheme for all the four cases will be as follows:

Case 1: When Palatana unit trips:

- i. When generator at Palatana trips a signal will be generated from trip relay of the unit.
- ii. This signal should trip the CB of 132 kV Silchar – Srikona D/C & 132 kV Silchar – Panchgram lines at Silchar.
- iii. Subsequent to tripping of 132 kV Silchar – Panchgram line, the CB at Badarpur of 132 kV Badarpur – Panchgram line should be tripped.
- iv. After these trippings an instant load of 80 MW will be relieved during off-peak hours & 130 MW will be relieved during peak hours which will prevent the system from cascade tripping
- v. Then manual demand disconnection/management should be imposed.

Case 2: When 400 kV Palatana-Silcher (D/C) lines trip

- i. When both the ckts of 400 kV Palatana – Silchar lines trips, a signal will be generated from trip relays at Silchar
- ii. This signal should trip the CBs at Silchar end of 132 kV Silchar – Srikona D/C & 132 kV Silchar – Panchgram lines.
- iii. Subsequent to tripping of 132 kV Silchar – Panchgram line, the CB at Badarpur end of 132 kV Badarpur – Panchgram line should be tripped.

- iv. After these trippings an instant load of 80 MW will be relieved during off-peak hours & 130 MW will be relieved during peak hours which will prevent the system from cascade tripping
- v. Then manual demand disconnection/management should be imposed.

Case 3: 400 kV Silchar – Byrnihat line (with generation at Pallatana)

When 400 kV Byrnihat – Silchar lines trip, signal will be generated from trip relays at Silchar

- i. This signal should trip CB of GTG/STG of Generating Unit at Palatana. But unit may run in Full Speed No Load (FSNL) condition.
- ii. An instant relief of load of 230/130 MW will prevent the system from cascade tripping.
- iii. Then manual demand disconnection/management should be imposed.

Case 4: When 400 kV Silchar – Byrnihat line trip (without generation at Pallatana)

- i. When 400 KV Byrnihat – Silchar line trips, a signal will be generated from trip relays at Silchar.
- ii. This signal should trip the CB of 132 kV Silchar – Srikona D/C & 132 kV Silchar – Panchgram lines at Silchar.
- iii. Subsequent to tripping of 132 kV Silchar – Panchgram line, a signal will be generated from trip relay of 132 KV Silchar – Panchgram line. This signal should trip the CB at Badarpur of 132 kV Badarpur – Panchgram line.
- iv. After these trippings an **instant load relief** of around **95 MW in Peak Hours** which will prevent the system from cascade tripping.
- v. Then manual demand disconnection/management may be imposed, if necessary. Load reduction in 132 kV pocket is required for SPS under Case-I & Case –IV and the scheme has already been implemented by NERTS in line with discussion in OCC forum.

For Case-II, generation reduction at Palatana as well as load reduction in 132 kV pocket are required. Load reduction part has already been implemented by NERTS in line with discussion in OCC forum. Regarding generation reduction, it has been seen from the study that injection of power at Palatana should be reduced to around 20 MW excluding own auxiliary consumption.

For Case-III, generation reduction to the tune of 200 MW is required in case Unit # 1 is running under full load i.e the generation should be brought down to around 150 MW. The scheme will be kept in 'OFF' mode/ineffective mode in case generation is around 150 MW. OTPC, BHEL will plan how the required generation reduction will be effected for implementation of the schemes under Case-II & Case-III.

SPS will be reviewed from time to time after implementation for further improvement based on the system requirement. The SPS will be reviewed again when the second Unit at Palatana is connected to the NER grid.

GM, NERLDC stated that the main concern is for SPS corresponding to Case – II & III above and requested OTPC to look into the matter for implementation at the earliest.

GM (Plant), OTPC stated that such reduction of load at very short duration would be difficult. However, he stated that no proposal has been received from BHEL. However, BHEL's representative will be requested to visit the site again and discuss with NERLDC along with OTPC so that matter can be resolved at the earliest. Subcommittee requested OTPC to resolve the issue at the earliest in consultation with NERLDC & BHEL.

During 90th OCC meeting, DGM, POWERGRID informed that SPS associated with all the above cases has already been implemented w.e.f. 14.09.13 at their end. OTPC has to execute the work associated with SPS corresponding to Case – II & III. SE(O) informed that OTPC vide their letter No. OTPC/UDP/Pallatana/13-14/768 dated 26.09.2013 has communicated that the machine will take about 12.5 minutes to come down to house load from full generation of about 350MW. The SPS will be reviewed again when the second Unit at Palatana is connected to the NER grid and also after commissioning of the Silchar – Bongaigaon 400kV line.

In the 91st OCC meeting, the subcommittee requested OTPC to take up the matter with BHEL and the SPS for Case II & III should be implemented at the earliest without further delay. In case any problem is encountered due to implementation of the SPS, the scheme will be modified / reviewed by the sub-committee. OTPC agreed for early implementation.

DGM, NERLDC requested OTPC & NERTS to confirm the implementation of Case-I at the earliest through written communication to NERLDC & NERPC so that the same can be activated as and when required specially during PPA test of Palatana.

Deliberation of the Committee

The Sub-committee reviewed the status of implementation of the scheme and the current status are:

Case I: OTPC stated that necessary action at their end would be completed by 7.12.2013 and the scheme will be made operational.

Case 2-3: OTPC stated that for the remaining cases, BHEL has already circulated internally about the SPS schemes proposed to be implemented to BHEL & OTPC and their observations if any has to be given by 15.01.2014. After that the exact status will be made available.

Case - 4: Has already been implemented by POWERGRID.

POWERGRID confirmed that the work associated with all four (4) SPS have already been completed at their end.

The Sub-committee requested OTPC to go ahead with the implementation of the scheme as suggested in consultation with BHEL without further delay and in case any problem arises, the same will be reviewed again and modified as per system requirement.

The Sub-committee noted as above.

C.6 Implementation of islanding scheme in NER

During the 87th OCC 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: Island comprising of generating units of AGBPP (Gas), NTPS (Gas) & LTPS (Gas) and loads of Upper Assam system & Deomali area (Ar. Pradesh) [Total Generation: 380-400MW and load: 200MW (off peak)-300MW (peak)]	(a) 220 kV New Mariani (PG) – AGBPP	UFR-1 [At New Mariani (PG)]	POWERGRID
		(b) 220 kV New Mariani (PG) – Misa		
		(c) 220 kV Mariani – Misa	UFR-2 [At Mariani, Samaguri of AEGCL]	AEGCL
		(d) 220 kV Mariani – Samaguri		
		(e) 132 kV Mokukchung – Mariani		
		(f) 132 kV Dimapur (PG) – Bokajan	UFR-3 [At Dimapur (PG)]	POWERGRID
2	ISLAND AT 48.20 Hz: Island comprising of generating units of AGTPP (Gas), generating units at Baramura (Gas), Rokhia (Gas) & Gumati (Hydro) and loads of Tripura system & Dullavcherra area (Assam) [Total Generation: 150-160MW and load: 110MW (off-peak)-150MW (peak)]	132 kV Palatana – Udaipur	UFR-1 [At Palatana]	OTPC
		132 kV Palatana – Surjamani Nagar		
		132 kV Silchar – Dullavcherra	UFR-2 [At Silchar]	POWERGRID
		132 kV AGTPP – Kumarghat	UFR-3 [At Kumarghat]	POWERGRID
		132 kV P K Bari – Kumarghat		
3	ISLAND AT 47.90 Hz: Isolation of NER from NEW grid at ER-NER boundary with rest of the generation and load of NER	To be decided after system study		

During 89th OCC meeting, the Sub-committee had decided to form a sub-group to look into the matter and discuss in detail for implementation of the islanding scheme 1 & 2.

The study group would comprise of representatives from Assam, Tripura, NEEPCO, POWERGRID, NERPC, NERLDC & IIT, Guwahati.

During 91st OCC meeting, SE (O) informed that the above meeting of Study group could not be held at Kahilipara on 25.10.2013 due to unavoidable circumstances and the same was postponed.

The subcommittee had requested Assam (for NTPS, LTPS), NEEPCO (for AGBPP,

AGTPP) and Tripura (for Rokhia, Baramura & Gumati Generating plants) to provide following information during the meeting.

- a. H : Machine Inertia Constant in p.u. on Machine Base (including turbine inertia)
- b. R : Governor Permanent Droop in p.u.
- c. D : Turbine Damping Factor/Co-efficient in p.u. on Machine Base
- d. Pmax/Qmax : Maximum Generator Active/Reactive Power Output (in MW)
- e. Pmin/Qmin : Minimum Generator Active/Reactive Power Output (in MW)

AGM (Protection), AEGCL had requested NERPC to include MD, APGCL/APDCL in the mailing list so that data pertaining to generation can be obtained from them. NERPC agreed.

The Sub-committee decided to have the **meeting of the sub-group at 13:30 PM on 29th November, 2013 at SLDC, Kahilipara to discuss about the Islanding scheme**. Assam, Tripura, NEEPCO, POWERGRID, NERPC & NERLDC were requested to depute their concerned persons for discussion so that course of action can be finalized for implementation of the islanding scheme.

Accordingly, the 1st meeting of the subgroup on the Islanding Scheme was held on 29.11.2013 at SLDC, Kahilipara and the deliberation in the meeting was as follows:

1. NERLDC gave brief presentation on system studies carried out in connection with 1st and 2nd islanding schemes. NERLDC informed that in case of 1st islanding scheme, in general the generation (in the proposed islanded pocket) will be more (of the order of 100-150MW) than the connected load depending on peak/off-peak and summer/winter/monsoon condition. Similarly in case of 2nd islanding scheme the generation (in the proposed islanded pocket) will be more (of the order of 30 -50MW) than the connected load under off-peak condition and less (of the order of 20-25MW) than the connected load under peak condition. The gap between expected generation and load will vary and hence proper load generation balance would be required for survival of islanded pocket.
2. It was decided to focus on implementation of 1st Islanding scheme comprising of generating units of AGBPP (Gas), NTPS (Gas) & LTPS (Gas) and associated load of Upper Assam System, Deomali Area of Arunachal Pradesh.

3. The representatives of NEEPCO, AEGCL & Tripura were requested to send the machine data to IIT, Guwahati & NERLDC by 1st week of December 2013. In case relevant information is not available with the generating companies, standard values may be assumed for the studies.
4. Professor Tripathy of IIT, Guwahati was requested to carry out relevant system studies associated with the proposed islanding schemes based on the relevant machine data provided by LTPS, NTPS, AGPPP, AGTTP, and Tripura. Simulation should be carried out by opening unit (s) of AGBPP / NTPS / LTPS to see the behavior of the system. NERLDC will also carry out similar exercise in consultation with Prof. Tripathy and the result of study will be discussed in OCC/PCC meetings.
5. Feeders / loads considered under four staged (49.2 Hz, 49.0 Hz, 48.80Hz, 48.60Hz) UFR based load shedding /any manual shedding should not form part of proposed islanded pocket.
6. During discussion it was brought to notice that machines at Namrup, Lakwa and AGBPP are quite old, unit sizes are also quite different and of different make. Moreover, being gas based machines, reduction in generation by way of reducing fuel/gas input may not practically feasible and hence de-synchronization / isolation of generating unit (s) one after the other, operating with own house load, will be done to balance load and generation. It was decided that the de-synchronization / isolation of generating unit (s) of AGBPP will be followed by units of Namrup and Lakwa as per requirement to achieve required load and generation balance.
7. UFR may also be installed in feeders / loads for automatic load shedding.
8. Programmable Logic Controller (PLC), UFR and df/dt relays etc. may be required at generating stations and substations for automatic balancing of load and generation.
9. The scheme will be formulated by NEEPCO and PGCIL in association with NERLDC and the target date of implementation of 1st Islanding Scheme proposed at 48.8Hz is January 2014.

10. The Committee also decided that the 2nd Islanding Scheme proposed at 48.2Hz will be implemented soon in similar line after implementation of 1st islanding scheme.
11. In general, the house was of the opinion that proposed 3rd islanding scheme (the isolation of NER from ER at 47.9Hz) should not be considered for the time being as most of the time NER is importing power from ER except during high hydro season. The isolation of NER from ER could be detrimental for NER Grid and NER grid may not survive after isolation.

Deliberation of the Committee

SE(O) stated that as the matter had already been deliberated during the meeting held on 29.11.2013, he requested the forum to discuss about the implementation of the scheme so that the same shall be in place before January 2014.

After detailed deliberation, the Sub-committee decided to have the meeting of representative (s) of Assam, NEEPCO, POWERGRID, NERLDC & NERPC at Shillong during December 2013 to discuss about the implementation plan so that the first Islanding scheme proposed at 48.8 HZ will be implemented by January 2014. The date of the meeting will be intimated by NERPC.

The Sub-committee noted as above.

C.7 Release of day ahead drawal schedule based on actual requisition by Constituents instead of open and full capacity requisition:

During 91st OCC meeting, DGM, TSECL stated that while NERLDC considered the technical minimum limits of the stations as declared by the generators, they should also consider technical minimum limit / generation capacity of the generating plants of Tripura while requesting for reduction of state generation.

DGM, NERLDC stated that they are honouring the technical minimum capacity declared by ISGS for preparation of schedule. Regarding reduction of state generation in case of contingency, he suggested to adjust generation of different units maintaining individual generation either on lower side or higher side outside the dead bands of units.

EE, SLDC (Ar. Pradesh) also informed that even though they have agreed for the scheduling on a day ahead basis, but due to non-availability of SLDC, they are unable to know about the quantum of rescheduling on the next day (implementation day) and by the time they received the message the timing was already over and hence the State has to bear unnecessary burden of paying UI.

CE, AP stated that many 33KV & 11 KV lines are connected between Ar. Pradesh & Assam and hence requested Assam to help them by informing to the concern SLDC officers of Ar. Pradesh whenever revision is taking place for the benefit of the State till they have a full fledged SLDC. Assam agreed to help them.

Deliberation of the Committee

The Sub-committee enquired from all constituents, if they have encountered any difficulties till date in the process of implementation of requisition based scheduling. All constituents informed that no such problem is being faced by them till date. ***The Sub-committee decided to discuss / review in case any problem arises.***

C.8 Installation of Harmonic Filters:

During the 91st OCC meeting, SE (E), DoP, Ar. Pradesh informed that installation of harmonic filters will be completed by November, 2013.

Deliberation of the Committee

Since no representative from DoP, Ar. Pradesh was present; the status could not be updated.

The Sub-committee noted as above.

C.9 Frequent Tripping Of 33kV System of DOP, AP at Nirjuli and Ziro:

The status of tripping of 33kV Feeders at Nirjuli and Ziro Sub Station, as informed by POWERGRID, is as below:

(a) Tripping 33kV Feeders at Ziro

SN	Feeder	Jan'10 – Jun'13		Tripping in Aug'13	
		Nos.	Nos. / Month	Nos.	Nos. / Month
1	Kurung- Kamey	766	18.23	19	19
2	Old Ziro Feeder	440	10.47	3	3
3	Kimin Feeder	1208	28.76	61	61

(b) Tripping 33kV Feeders at Nirjuli

SN	Feeder	Jan'10 – Jun'13		Tripping in Aug,13	
		Nos.	Nos. / Month	Nos.	Nos. / Month
1	AP – 1	262	6.23	7	7
2	AP – 2	590	14.07	17	17
3	AP – 4	82	1.95	2	2

In OCC/PCC/TCC forum, the committee has expressed concern for frequent tripping in 33kV system of Ar. Pradesh. POWERGRID informed that such repeated tripping resulted in failure of transformers at Ziro & Nirjuli substation. The 5MVA, 132/33kV (Y-Phase) ICT of 132kV Ziro Sub Station failed on 10.09.2013 causing complete power supply disruption at Ziro. The supply was restored at Ziro on 15.09.2013 by replacing the failed unit with available spare unit. This has commercial impact on the constituents of the region. The representative of Assam re-iterated that on request of Ar. Pradesh all constituents had agreed to include augmentation of transformation capacity at above substations as the regional project although Ar. Pradesh was the exclusive beneficiary. Hence committee desired that Ar. Pradesh should look into the matter seriously to reduce the frequent tripping in 33kV system so that unwarranted failure of transformers is not repeated.

The details of failure of transformers and status of tripping of 33kV Feeders at Nirjuli and Ziro Sub Station, as informed by POWERGRID, was discussed in detail in 91st OCC/15th PCC meeting. Similarly the frequent tripping at Deomali substation of Ar. Pradesh due to fault in their 33KV side was also discussed in above meetings. Subcommittee also reiterated that if tripping is not reduced failure of major equipments cannot be prevented.

CE, DoP, Ar. Pradesh had assured the forum that all efforts will be made to improve the situation and had also informed that he would organize a separate meeting with officials of POWERGRID, NEEPCO and NERPC to discuss and resolve the issue.

Deliberation of the Committee

Since no representative from DoP, Ar. Pradesh was present; the status could not be updated.

The Sub-committee noted as above.

C.10 T- Connection of Lekhi & Bhalukpong sub-Station

During 91st OCC meeting, SE (E) DoP, Ar. Pradesh informed that the LILO at Lekhi will be completed by December, 2013 as stated earlier and the LILO works (tower structure & control room etc.) at Bhalukpong is under progress and the same will be completed by March, 2014.

DGM, POWERGRID informed that a section of the existing 132 KV S/C Nirjuli – Dikrong line [Section covering location No. 1 to 23 including location 134 (common tower for NDTL & GITL)] near Doimukh area is required to be diverted/shifted on account of construction of a new Railway Line. POWERGRID has been given a time schedule of two years (i.e. up to May, 2015) by the District Administration to complete the diversion work. Preliminary works towards this realignment have already been taken up by POWERGRID. During diversion/shifting, the LILO is to be disconnected from its existing position (in between the location No. 10 & 11).

CE, DoP, AP informed that he would organize a separate meeting with officials of POWERGRID and NERPC to discuss and resolve the issue.

Deliberation of the Committee

Since no representative from DoP, Ar. Pradesh was present; the status could not be updated.

The Sub-committee noted as above.

C.11 Single-Phase Auto-Reclosure (SPAR) of Transmission Lines.

The status of SPAR as reviewed during the 75th OCC meeting is as under.

Sl. No.	Name of the Line	Ownership	Status as per 75 th OCC meeting
1.	220kV Kopili - Misa # I & II	NEEPCO	December, 2012
2.	220kV Salakati - BTPS - I & II [Ckt#I]	AEGCL	December, 2012
3.	220kV Balipara - Samaguri	AEGCL	December, 2012
4.	132kV Khandong - Haflong	NEEPCO	December, 2012
5.	132kV Khandong - Kopili	NEEPCO	

During 90th OCC meeting, Sr. Manager, NEEPCO requested POWERGRID to help them so that the SPAR associated with 220kV Kopili - Misa # I & II can be made operational.

DGM, POWERGRID agreed to complete the above work by October, 2013.

Regarding other lines, the representative of NEEPCO informed that order has already been placed for procurement of single pole CBs and the implementation of SPAR will be completed immediately after installation of CBs.

Further, DGM, POWERGRID informed that in North Easter Region, following 132kV Lines do not have Single Pole Auto Reclose (SPAR) facility because Gang (3P) Operated Circuit Breaker at one or both ends.

SN	Name of the Line	End 1	End 2
1	132kV Gohpur-Nirjuli	3P	3P
2	132kV Aizawl-Kumarghat	3P	3P
3	132kV Badarpur-Kolasib	3P	3P
4	132kV Kolasib-Aizwal	3P	1P
5	132kV Badarpur-Jiribam	3P	3P
6	132kV Badarpur-Khlieriat	1P	3P
7	132kV Badarpur-Silchar # 1	3P	1P
8	132kV Badarpur-Kumarghat	3P	3P
9	132kV Badarpur-Badarpur	3P	3P

10	132kV Kumarghat-R C Nagar	3P	NEEPCO (1P)
11	132kV K'dong-K'riat # I	3P	NEEPCO (MOCB)
12	132kV K'dong-K'riat # II	3P	3P
13	132kV K'riat(PG)-K'riat(M)	3P	3P
14	132kV Jiribam-Loktak II	3P	NHPC
15	132kV Nirjuli-Ranganadi	3P	NEEPCO (3P)
16	132kV Ranganadi-Ziro	NEEPCO (3P)	1P
17	132kV Agartala-RC Nagar # 1	3P	NEEPCO (1P)
18	132kV Agartala-RC Nagar # 2	3P	NEEPCO (1P)

During the deliberation DGM, POWERGRID stated that for reliable operation of transmission system, SPAR plays important role during transient fault. So far as 132kV Lines are concerned, these are more prone to transient fault because of low clearance. Moreover, NER is prone to lightening and hence many instances of transient tripping of 132kV lines are observed during lightening. Under such circumstance implementation of SPAR is most important / essential at 132kV level for which replacement of the existing Gang (3P) Operated Breaker by single pole CBs is required for increasing availability.

During 91st OCC meeting, Sr. Manager (E/M), NEEPCO informed that SPAR for 220 KV Kopili – Misa #I is functioning; whereas, some problem is there with SPAR on line #2 and the same will be rectified soon. Regarding 132 KV Khandong-Halflong and 132 KV Khandong – Kopili, order has been placed for procurement of CBs and the work is likely to be completed by March, 2014.

DGM, LDC, Assam stated that SPAR on 220 KV Salakati – BTPS #I has already been incorporated. Regarding 220 KV Salakati- BTPS #2 and 220 KV Balipara – Samaguri, the SPAR could not be implemented due to CB problem. He stated that they will look into the matter and work is expected to be completed by March, 2014.

The Sub-committee enquired about the requirement of SPAR in all the above stated 18 nos. of lines.

Member Secretary (I/C) stated that SPAR may also be required to be implemented in other important lines.

Deliberation of the Committee

Assam informed that the SPAR on 220KV Balipara – Samaguri has already been implemented on 01.12.2013

DGM, NERLDC stated that for increasing the availability of lines, the provision of SPAR is essential in all these lines of the NER grid.

The subcommittee agreed with the proposal for replacement of the existing Gang Operated three pole (3P) Circuit Breakers by single pole (1P) CBs for implementation of SPAR. The matter will be taken up in TCC/RPC forum for approval.

The Sub-committee noted as above.

C.12 Enhancement of loadability of 132 KV Lines by putting double jumper and increasing CT Ratio (if required):

At present in following 132kV Lines the jumpers are single which causes restriction in power flow:

SN	Transmission Lines	Length (KMs)	D.O.C.O	Remarks
1	S/C Badarpur-Kolasib	107.23	01.02.00	
2	S/C Kolasib-Aizwal	66.10	01.02.00	
3	S/C Aizwal – Zemabawk	6.72	01.09.88	
4	D/C Doyang - Dimapur-I & II	92.53	01.04.97	
5	S/C Gohpur – Nirjuli	42.50	01.07.91	
6	S/C Imphal - Imphal-I	1.50	01.04.97	
7	S/C Imphal-Imphal-II	0.44	01.04.13	
8	S/C Jiribam – Aizwal	172.32	01.09.88	
9	S/C Jiribam-Haflong	100.63	01.08.87	
10	S/C Khandong – Haflong	63.17	01.10.87	
11	S/C Khandong - Khliehriat-I	42.48	01.03.84	
12	S/C Khandong - Khliehriat-II	40.93	01.02.00	
13	S/C Khandong - Kopili – II	11.56	01.11.10	
14	S/C Khliehriat-Khliehriat	7.80	01.02.00	
15	S/C Ranganadi-Ziro	44.52	01.04.04	
16	D/C Silchar-Srikona-I & II	1.20	01.04.12	
17	D/C Silchar-Badarpur-I & II	19.20	01.05.12	
18	D/C Silchar-Hailkandi-I & II	17.30	01.07.12	

Further, following 220kV Lines in NER often gets overloaded which may cause load flow restriction:

SN	Transmission Lines	Length (KMs)	D.O.C.O	Remarks
1	S/C Balipara-Tezpur	8.62	01.02.00	
2	D/C Misa-Dimapur-I & II	123.52	01.04.96	
3	220 KV D/C Misa-Kopili - I & II	72.79	01.03.84 01.02.88	
4	S/C Misa-Kopili-III.	75.79	01.02.00	
5	D/C Misa-Samaguri-I & II	34.44	01.03.84 01.02.88	

During 91st OCC meeting, DGM, POWERGRID requested forum to review the above lines for requirement of enhancement of loadability. Accordingly, DGM, NERLDC requested POWERGRID to furnish the present CT Ratio / CT Rating of above lines for further review by NERLDC.

Deliberation of the Committee

DGM, POWERGRID had furnished the CT ratio of above lines and the same is enclosed at **Annexure C.12**.

The Sub-committee noted as above.

C.13 Monthly MU requirement & availability of each state of NER as per format:

As per 2013-14 LGBR of NER, monthly estimated MU requirement & availability of NER states are as per format below. The figures are to be reviewed/confirmed.

Requirement

Name of State	Dec13	Jan14	Feb14	Mar14	Apr14
Ar. Pradesh	54.78	51.60	49.31	43.81	
Assam	607.09	574.81	478.68	538.87	
Manipur	53.75	58.29	44.99	45.06	
Meghalaya	168.46	185.86	165.68	168.29	
Mizoram	36.44	37.05	32.44	38.08	
Nagaland	47.33	53.83	44.08	46.74	
Tripura	106.16	112.21	84.84	103.83	
NER	1074.01	1073.64	900.02	984.67	

Availability

Name of State	Dec13	Jan14	Feb14	Mar14	Apr14
Ar. Pradesh	34.39	31.22	27.83	33.17	
Assam	420.20	389.88	353.85	389.73	
Manipur	49.97	46.97	42.79	48.00	
Meghalaya	135.61	122.77	107.65	112.41	
Mizoram	41.83	40.33	37.53	40.98	
Nagaland	39.05	35.31	32.20	35.54	
Tripura	100.90	96.91	87.85	97.09	
NER	821.94	763.38	689.71	756.92	

These data required for system study, daily report, computation of TTC-ATC and preparation of reports for various meetings of Ministries, CEA, Constituents etc.

DGM, NERLDC informed that the above data have not been received by them and hence have taken the figures from LGBR. He requested the constituents to check the data and suggest any changes, if required.

Deliberation of the Committee

The Sub-committee requested all the constituents to check the data given above and intimate, if figures have to be updated/corrected.

All the constituents confirmed that the data projected above is correct.

DGM, NERLDC informed that the data for April, 2014 could not be projected as the LGBR of NERPC has not been published. He requested NERPC to finalize the LGBR at the earliest. NERPC agreed.

The Sub-committee noted as above.

C.14 CT Ratio of Transmission Lines:

For determining present loadability limits of Transmission lines of NER (132 kV & above), all constituents are requested to send the following details of CTs at both ends of their lines at the earliest: Present Setting of CT Ratio & PSM Setting (for protection) and CT specification.

It was discussed during 91st OCC meeting that the data to be provided at the earliest. However, no data was received from any utility.

C.15 Bay Owner Details of Inter-State Transmission Lines:

NERLDC requested all the constituents to provide the Owner detail of Bays at both ends of all Inter-State Transmission Lines at the earliest for ensuring proper co-ordination among all concerned.

Deliberation of the Committee

The Sub-committee requested all the constituents to provide the information to NERLDC at the earliest for better operation of the grid.

All the constituents agreed to provide the above information in respect of C. 14 & C.15 at the earliest.

The Sub-committee noted as above.

C.16 Submission of data according to Standards of Performance of ISTS Regulations, 2012, CERC:

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

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

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

In this regard, three letters (01.11.13, 01.08.13 & 01.07.13) are sent to ISTS licensees to furnish these data for previous month by 10th day of the month.

POWERGRID have furnished Nc, Nu, Nf & Ni for the period w.e.f Oct12 to Mar13. The above data not yet received from NETC w.e.f Oct 12 to Oct 13 & from POWERGRID Apr13 to Oct13.

This is a regulatory requirement. ISTS licensees are requested to furnish these data for previous month by 10th day of the month. POWERGRID & NETC are also

requested to furnish these data for the period w.e.f. Oct12 to Mar13 & w.e.f Oct 12 to Oct 13 respectively.

Also POWERGRID and NETC are requested to furnish these data on monthly basis by 10th of every month for the previous month. This may please be adhered to.

Deliberation of the Committee

DGM, POWERGRID informed that the data pertaining to them have already been submitted to NERLDC. DGM, NERLDC requested NERTS to furnish the data through Corporate OS deptt of POWERGRID.

The Sub-committee noted as above.

C.17 Power Atlas for NER and States of NER:

The Power Atlas of NER and States of NER in pdf format and in AutoCAD format was circulated to all SLDCs of NER for checking before finalization. You are requested to kindly suggest modifications, if any. The Power Atlas is to be finalized after incorporating your comments before 31st December, 2013.

The Power Maps may be used at SLDC level for better visualization.

Deliberation of the Committee

DGM, NERLDC requested all the constituents to go through the SLDs forwarded by them and give their observations/modifications at the earliest. He also requested the constituents to nominate the Nodal Officer for the same.

The name of nodal officers as decided by the Sub-committee is as follows:

Ar. Pradesh : Sh. Tarik Mize, EE, SLDC (09774007853)
Assam : Sh. B.C. Bordoloi, DGM, SLDC (09435045675)
Manipur : Sh Birjit Singh, SE (09436065214)
Meghalaya : Sh. F.E. Kharshiing, SE, SLDC (09863066960)
Mizoram : Sh. Lalrema, SE, SLDC (09436140353)
Nagaland : Sh. A. Jakhalu, EE, SLDC (09436002696)
Tripura : Sh. B. Debbarma, DGM, SLDC (09436450501)

The Sub-committee noted as above.

C.18 Trial Operation of Transmission Elements:

During the 91st OCC meeting, MS I/C informed that during the hearing of the Petition No: 96/TT/2011 dated 27.09.2013 by CERC, Hon'ble Commission has directed RPCs to discuss the issue of trial operation of transmission elements and submit the proposal to CEA who in turn shall submit a consolidated proposal regarding trial operation of transmission elements to the Commission. The staff of the Commission shall study the proposal made by CEA and make suitable changes to the existing Regulations to deal with all such cases in future.

The Sub-committee enquired from POWERGRID about the steps/procedures being followed by them so far before declaring the transmission elements CoD.

DGM, POWERGRID informed before test charging of the line, clearance from Electrical Inspectorate, Govt. of India, Ministry of Power has to be obtained first. There after NERLDC gives the clearance after getting all the statutory clearances viz. RIO, Metering, Communication etc. After test charging, they will monitor any defects found in the transmission elements and rectify the same. Regarding duration of charging etc., he informed that there are no clear guide lines to be followed for declaration of CoD.

The Sub-committee suggested that mere completion of test charge should not be basis for declaration of CoD. Some members were of the view that actual power flow, wherever possible, should be monitored for certain period of time before declaration of CoD and no planned shutdown should be allowed for certain period of time.

Deliberation of the Committee

Before test charging of the line, pre-commissioning tests are carried out. The availability protection system, installation of SEM, and availability of reliable communication link for transfer of data to RLDC are ensured. The statutory clearance from RIO is obtained. In some cases, it has been seen that the commissioning of bays at either end or both end of the line are not complete and power flow in the line is not possible.

After detailed deliberation, the Sub-committee endorsed the views of WRPC and suggested that the actual power flow, wherever feasible, should also be observed for 24 hours.

The Sub-committee noted as above.

C.19 Formation of Study Group:

In the 91st OCC meeting, MS I/C informed that P&E Dept, Govt. of Mizoram has already formed a System Study Group and requested other State constituents to follow the same. He stressed upon the importance of the study group. The objective of formation of study group is to develop the capability of each state to carry out various studies relating to their own transmission network as well as for regional network independently for different contingencies so that corrective measures can be taken accordingly. The soft copy of relevant files including SLD for the existing network of each state (compatible to PSSE software) was also handed over to the participants during the first meeting of system study group of NER, organized on 20.08.2013 at NERLDC, Shillong so that system studies for different conditions can be carried out by them independently. NERLDC has also agreed to provide all kind of support to State constituents for system studies. Constituents are also requested to study their network for reactive power management. Member Secretary I/C informed that Prof. P. Tripathi, IIT, Guwahati has been included as the member of the study group of NER to assist the constituents in various system studies relating to NER region as well as constituent states. Faculty from NITs of respective states may also be included in their system study group.

Deliberation of the Committee

The Sub-committee requested all the other constituents to form their own study group at the earliest for their benefit.

The Sub-committee noted as above.

C.20 Mock Black Start Drill:

During 91st OCC meeting, NERLDC informed that as part of the Disaster Management Policy of GOI and IEGC, they have to coordinate/carry out mock black start of power plant/energize of death substation. Accordingly NERLDC proposes to carry out the same during Nov, Dec 2013 for which suitable plant/substations have been identified [details will be furnished during the meeting].

Deliberation of the Committee

DGM, NERLDC intimated that mock black start have been successfully carried out on Doyang HEP on 27.11.2013 and Ranganadi HEP on 03.12.2013.

As decided in the 91st OCC meeting, NERLDC had furnished the procedure and steps to be followed during the exercise to the concerned utilities beforehand.

The Sub-committee noted as above.

D. NEW ITEMS

D.1 Proforma for Operational Statistics

The operational Statistics as given below was not furnished in the meeting.

- (i) – Schedule Vs Actual Generation.
- (ii) – Peak Demand: Schedule Vs Actual.
- (iii) – Integrated Operation of the system.
- (iv) – Details of DC, schedules and injections from Central sector stations, drawal schedules and entitlements of constituents.
- (v) – Details of major reservoirs in NER.

The operational statics were shown in the presentation by NERLDC.

The Sub-committee noted as above.

D.2 State-wise anticipated peak demand/requirement, shortage for December, 2013 & January - April, 2014.

The sub-Committee reviewed & finalized the anticipated peak demand/energy requirement/Availability (without Pallatana generation) for the months of December, 2013 & January - April, 2014.

A. Peak Demand

SN.	State	Peak Demand (MW) Dec' 13	Peak Demand (MW) Jan' 13	Peak Demand (MW) Feb' 14	Peak Demand (MW) Mar' 14	Peak Demand (MW) Apr' 14
1	Ar. Pradesh	130	120	95	95	
2	Assam	1350	1300	800	800	
3	Manipur	130	120	105	105	
4	Meghalaya	300	280	230	230	
5	Mizoram	85	75	55	55	
6	Nagaland	120	100	80	80	
7	Tripura	260	230	155	155	
	Region	2355	2245	1520	1520	

B. Peak Availability

SN.	State	Peak Availability (MW) Dec' 13	Peak Availability (MW) Jan' 13	Peak Availability (MW) Feb' 13	Peak Availability (MW) Mar' 13	Peak Availability (MW) Apr' 14
1	Ar. Pradesh	100	100	100	100	
2	Assam	850	830	830	830	
3	Manipur	110	110	110	110	
4	Meghalaya	240	240	240	240	
5	Mizoram	65	60	60	60	
6	Nagaland	95	85	85	85	
7	Tripura	180	160	160	160	
	Region	1600	1585	1585	1585	

The Committee noted as above.

D.3 Generation Planning (ongoing and planned outages)

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

Khandong –	0.454 MU
Kopilli –	3.552 MU (NEEPCO will co-ordinate with NERLDC)
Ranganadi -	Subject to inflow
Doyang –	0.692 MU
Loktak –	2.520 MU

The Committee discussed and approved the following proposed shutdown by Generating Stations.

1. Complete Shutdown of Khandong in February, 2014 for R&M works:

The works involve:- replacement of stator with new one which has already been built up and tested at site, replacement of underwater parts like top cover, pivot ring, guide vanes etc. with SS materials, weld build up of damaged embedded under water parts like stay ring, spiral casing etc. with SS coating. The above works shall be carried out by M/S BHEL.

NEEPCO therefore proposed to have a complete shutdown of Khandong HEP for 40 (forty) days. The exact date will be intimated accordingly.

The Sub-committee has approved the shutdown of Khandong HEP and requested NEEPCO to intimate the date at the earliest.

The Sub-committee also approved the extension of AGBPP STG – Unit# 8 upto 28.02.2014

The Committee noted as above.

D.4 Outage Planning Transmission elements

After detail discussion the sub-committee approved the shutdown as proposed by POWERGRID, Assam (AEGCL), Meghalaya and NEEPCO for December, 2013 to February, 2014 as given in Annexure – D.4.

The Sub-committee noted as above.

D.5 Estimated Transmission Availability Certificate (TAC) for the month of October, 2013.

The Estimated Transmission System Availability for the month of November, 2013, furnished by PGCIL, is **99.9820%**. The detail outage data for calculation of Transmission System Availability furnished by PGCIL is at **Annexure D.5**. NER constituents are requested to kindly communicate their views and observations, if any, by 28th December, 2013 so that Final TAC for the month of November, 2013 may be finalized by NERPC Secretariat.

The Sub-committee noted as above.

D.6 Major grid disturbances in the previous month (November, 2013)

As intimated by NERLDC, there was no major grid disturbance during the month of November, 2013 pertaining to NER.

Members may kindly note.

D.7 Transformer Tap Optimization

NERLDC informed that it was observed in real time Grid operation that voltages at some particular buses are not within the permissible limit as per IEGC. To maintain the voltage within permissible limit, it is necessary to optimize the tap position of some transformers located at different sub-stations. Therefore, a system study has been conducted by NERLDC considering load-generation and network pattern of July, 2013 during Peak & Off-Peak periods, with appropriate taps changing of transformers of NER. Study report at **Annexure D.7**.

During the 91st OCC meeting, the Sub-committee requested all the concern constituents to take necessary action accordingly for changing the tap position of the transformer (s).

Deliberation of the Committee

The Sub-committee requested all the concerned constituents to verify the current tap position and intimate to NERLDC at the earliest. Constituents agreed.

The Committee noted as above.

D.8 Grid security problem in Capital & Dhaligoan areas of Assam:

NERLDC informed that loading of 220 kV BTPS-Salakati D/C is more than 140 MW in each circuit during certain period of peak hours. Under this condition Capital & Dhaligoan areas of Assam including Nangalbibra load are not secure under N-1 criteria. To remain secured under N-1 criteria, flow on in this line should be kept below 100 MW in each circuit.

During the 91st OCC meeting, the Sub-committee requested Assam & Meghalaya to restrict their drawal as per the instruction of NERLDC for safety of the grid.

DGM, NERLDC suggested that augmentation of 220 KV BTPS (NTPC) & 220 KV BTPS (Assam) is required to enhance the capacity of the corridor so that more power can be drawn by Assam & Meghalaya (through 132 KV Agia – Nangalbibra line)

CGM, LDC stated that they will look into the proposal and the same will be discussed in OCC meeting.

Deliberation of the Committee

CGM, LDC stated that commissioning of 2nd curcuit of BTPS-Agia is scheduled in January, 2014 and with the re-commissioning of 160 MVA the loading in BTPS would be enhanced and load in Samaguri will be diverted accordingly, hence the above proposal may be kept in abeyance for the time being.

The Committee noted as above.

D.9 Grid connectivity to Tawang areas of Ar. Pradesh:

It has been brought to notice that power supply position in Tawang area is very erratic and most of the time the area is without power supply. Moreover, Tawang, being a very important place as far as country's defense establishment is concerned, is not connected with the NER grid. At present the small /mini/micro hydro generating stations in and around Tawang is feeding the area at 33kV level. Entire stretch from Bomdila – Dirang - Sela Pass-Tawang - Bomula (China border) is occupied predominately by National army. Considering the importance of Tawang as it is situated close to International border, 132 kV D/C link from existing Khupi / Kimi Sub-station to Tawang via Bomdila / Dirang may be desirable so that reliable power supply can be extended to these areas and beyond.

Deliberation of the Committee

The Sub-committee discussed the matter in detailed about the importance of extending reliable power supply to Tawang considering the strategic importance of Tawang as far country's defense establishment is concerned. In absence of the representative of Ar. Pradesh, the action plan of Ar. Pradesh for extending reliable power supply to Tawang could not be known. The forum is of the opinion that as the line has to pass through difficult terrain, dense forest and high altitude snow bound areas, the design/construction of such line would be very difficult for state utility and 132 kV D/C link from existing Khupi / Kimi Sub-station to Tawang via Bomdila / Dirang and associated substations may be treated as regional project. However, the view of Ar. Pradesh in this regard would be required and may be discussed in next OCC.

The Committee noted as above.

D.10 Single Bus (400 kV) Operation at RHEP:

NERLDC informed that only one 400 kV Bus is under operation at RHEP, though the arrangement is Double Main Bus system, due to some problem in bus coupler bay. Under this condition system reliability has been reduced. RHEP is requested to please intimate exact reason and likely restoration time.

RHEP availed 132 kV bus shutdown on 24.11.2013, the details of testing carried out may please be intimated for the knowledge of the forum.

Deliberation of the Committee

DGM, NERLDC requested NEEPCO to restore the bus coupler bay at the earliest for enhancing reliability of the system with two buses. NEEPCO agreed to that.

The Committee noted as above.

D.11 Seminar on 'Restoration Procedure of NER grid:

NERLDC is planning to organize a seminar on 'Restoration Procedure of NER grid' one day before or after the OCC meeting of January, 2014. The exact date may

please be finalized for required arrangement. Participation of 2-4 executives of all the utilities is requested considering its importance for system security.

Deliberation of the Committee

DGM, NERLDC requested all the utilities to ensure maximum participation of System Operators in the seminar. All the utilities assured the same.

The Committee noted as above.

D.13 Uploading of monthly outage proposals in NERPC website and other issues like delay in returning of shutdown, frequent requisition for shutdown of elements other than already approved list etc:

The above issues are very important and required to be deliberated for actions by concerned from the angle of CERC regulations/ CEA guidelines etc for ensuring smooth & secure grid operation. This was discussed in 91st OCC meeting.

Deliberation of the Committee

NERLDC requested NERPC to ensure uploading of outage proposal as well as approved list of shutdowns in their website in line with CERC regulations/ CEA guidelines. NERPC agreed.

SE(O) NERPC requested all utilities to do proper outage planning so that subsequent requisitions for Shutdowns can be avoided.

Members agreed to that.

The Committee noted as above.

D.14. ULDC communication problem with important stations & SLDCs:

NERLDC informed that they have been observed that the ULDC communication link with following stations & SLDCs are either not working or very erratic thereby causing serious operational problems.

Stations – Silchar, Palatana, Salakati, Mokokchung, Ningthoukhong, Karong etc.

SLDCs -- NEHU, Kahelipara, Agartala, Imphal(S), Dimapur(S),

All concerned are requested to please take corrective actions for restoration of the links for ensuring smooth operation of the grid.

Deliberation of the Committee

DGM, NERLDC stated that due to non-availability of above communication links they are experiencing difficulties in real time operation and requested all concerned to take corrective actions at the earliest to ensure reliable operation of the grid.

Members informed that this problem is mainly due to outage of PUNCOM exchanges and there is less possibility of early restoration of the same. In some cases PLCC links are under long outage resulting communication problems.

The Committee noted as above.

D.15. Date & Venue of next OCC meeting

It is proposed to hold the 93rd OCC meeting of NERPC in second week of January, 2014. The exact date & venue will be intimated in due course.

The meeting ended with thanks to the Chair.

Annexure-I

List of Participants in the 92nd OCC meeting held on 06/12/2013

SN	Name & Designation	Organization	Contact No.
	No Representatives	Ar. Pradesh	
1.	Sh. H.C. Phukan, CGM, SLDC	Assam	09435559447
2.	Sh. P. K. Sarma, GM (Com-T)	Assam	09435344083
3.	Sh. B. C. Bordoloi, DGM, SLDC	Assam	09435045675
4.	Sh. P. Hazarika, DGM	Assam	09435193264
5.	Sh. J. K. Baishya, AGM, SLDC	Assam	09435041494
6.	Sh. A. K. Saikia, AGM, SLDC	Assam	09864116176
7.	Sh. K. Goswami, AGM, Com-T	Assam	09864020019
8.	Sh. G.K. Bhuyan, AGM, (Protection)	Assam	09954055295
9.	Sh. A. Bhattacharjee, DM (Protection)	Assam	09435332928
	No Representatives	Manipur	
10.	Sh. T. Gidon, EE, SLDC	Meghalaya	09863063375
11.	Sh. K. Lyngwa, EE (T&T)	Meghalaya	
12.	Sh. Vanlalrema, SE, SLDC	Mizoram	09436140353
13.	Sh. A. Jakhalu, EE (Trans)	Nagaland	09436002696
	No Representatives	Tripura	
14.	Sh. N. R. Paul, DGM (SO -I)	NERLDC	09436302723
15.	Sh. Anupam Kumar, Engineer	NERLDC	09436335379
16.	Sh. P. Kanungo, DGM	NERTS	09436302823
17.	Sh. Bhaskar Goswami, Sr. Mgr.	NEEPCO	09436163983
18.	Sh. R. C. Singh, Mgr (E)	NHPC	09436894889
19.	Sh. Parshuram Saha, Advisor(O&M)	OTPC	08974728670
20.	Sh. S.K. Ray Mohapatra, MS I/C	NERPC	09818527857
21.	Sh.B. Lyngkhoi, SE (O)	NERPC	09436163419
22.	Sh. S. M. Jha, EE (O)	NERPC	09831078162

Annexure - C. 3 (ii)

SN	Name of State	Total Quantum of Load Shedding required	Location where URF installed (Feeder's Name)	Stage	Load in each feeder	Quantum of Load shedding (MW) implemented	Additional quantum of load shedding required
1	Ar. Pradesh	20	At Satyam Ispat (11 KV Banderdewa - Satyam Ispat)	Stage - I (49.2 Hz)		3.5	1.5
			To be identified	Stage - II (49.0 Hz)		0	5
			To be identified	Stage - III (48.8 Hz)		0	5
			To be identified	Stage - IV (48.6 Hz)		0	5
2	Assam	220	At Gauripur (132 KV Dhaligoan - Gossaigoan - Gauripur)	Stage - I (49.2 HZ)	16	54.5	0
			At Sipajhar (132 KV Depota - Rowta - Sipajhar)		10		
			At Dhemaji (132 KV Gohpur - Nalkata - Dhemaji)		11		
			At Majuli (132 KV Nalkata - Majuli)		2.5		
			At Baghjap (132 KV Kahilipara - Chandrapur - Baghjap)		15		
			At Diphu (132 KV Samaguri - Sankardev - Diphu)	Stage - II (49.0 Hz)	11	61	
			At Gohpur (132 KV Samaguri - B. Chariali - Gohpur)		8		
			At Rupai (132 KV Tinsukia - Rupai + AP Load)		17		
			At Jogighopa (132 KV Dhaligoan - Jogighopa)		7		
			At Sankardevnagar (132 KV Samaguri - Sankardevnagar)		18		

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

4	Meghalaya	60	At Nangalbibra (33 KV Mendipathar - Nangalbibra)	Stage - I (49.2 Hz)	6.5	15	0
			At Rongkhon (33 KV Garobadha I - Rongkhon)		8.5		
			At Mawphlang (132/33 KV, 20 MVA Transformer)	Stage - II (49.0 Hz)		15	0
			At Khliehriat (132/33 KV, 20 MVA Transformer)	Stage - III (48.8 Hz)	12	15	0
			At Nongstoin (33 KV Nongstoin - Mairang)		3		
			At Mawlai (33 KV Mawlai - Nongthymmai)	Stage - IV (48.6 Hz)	7.5	15	0
			At NEHU (33 KV NEHU - Happy Valley)		7.5		
5	Mizoram	20	At 132 KV Khawiva (33 KV Khawiva - Sazaikawn)	Stage - I (49.2 Hz)	2.38	5.09	0
			At Bukpui (33 KV Bukpui - Chhingchhip)		2.71		
			At Zuangtui (6.3 MVA, 33/11 KV Transformer - I)	Stage - II (49.0 Hz)	5.31	5.31	0
			At Zuangtui (6.3 MVA, 33/11 KV Transformer - II)	Stage - III (48.8 Hz)	4	5.1	0
			At Tlangnuam (33 KV Tlangnuam - Aibawk)		1.1		
			At Chawnpui (6.3 MVA, 33/11 KV Transformer - I)	Stage - III (48.6 Hz)	3	5.2	0
At Zuangtui (11 KV Zuangtui - Chaltlang)	2.2						

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

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

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

STATUS OF UFR IMPLEMENTATION IN NER

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

PROVISIONAL LIST OF PROPOSED SHUTDOWN OF ELEMENTS FOR THE PERIOD 07.12.2013 TO 07.02.2014

1. Transmission Lines

SL. No.	Name of Transmission Line	Purpose	Areas/Feeders affected
TRANSMISSION LINES			
1	400KV Misa-Mariani(new)	For providing safe working clearance during tower erection(2 Nos.) in connection with shifting work of vulnerable loc.585,586 & 587 on Pile foundation For facilitating stringing of Ckt-II along re-aligned route in connection with shifting work of vulnerable loc.585,586 & 587 on Pile foundation.	400KV Misa-Mariani(new)
2	400KV Misa-Mariani(old)	For facilitating stringing of Ckt-I along re-aligned route in connection with shifting work of vulnerable loc.585,586 & 587 on	400KV Misa-Mariani(old)
3	132KV Loktak-Imphal-II	For installation of additional tower in the span 113-114 for enhancement of ground clearance & safety	132KV Loktak-Imphal-II
4	400KV Balipara-Bongaigaon-I	For facilitating replacemnet of defective Insulator strings identified through PID	400KV Balipara-Bongaigaon-I
5	400KV Balipara-Bongaigaon-II		400KV Balipara-Bongaigaon-II
6	400KV Silchar-Byrnihat(NETC)	For replacement of existing 390KV LAs installed against Line Reactor with 336KV LA in view of change in design parameter.	400KV Silchar-Byrnihat(NETC)
7	400KV Silchar-Pallatana-I(NETC)		400KV Silchar-Pallatana-I (NETC)
8	400KV Silchar-Pallatana-II(NETC)		400KV Silchar-Pallatana-II (NETC)
9	132KV Jiribam-Loktak-II	For installation of additional tower in the span 111-112 for enhancement of ground clearance & safety	132KV Jiribam-Loktak-II
10	220KV Misa-Byrnihat -1(MeECL) Line	Annual maintenance Program	220KV Misa-Byrnihat -1 Line
11	220KV Misa-Byrnihat -2(MeECL) Line	Annual maintenance Program	220KV Misa-Byrnihat -2 Line

2. SUBSTATIONS

SN	Name of Substation	Purpose	Areas/Feeders affected
1	400KV Bongaigaon S/s		
i	400KV New Siliguri-I Tie bay	For dismantling of existing CT & subsequent overhauling, erection, testing & commissioning	400KV New Siliguri-I Tie bay
ii	400KV Balipara-II Tie bay		400KV Balipara-II Tie bay
2	400KV Balipara S/s		
i	400/220KV, 315MVA ICT	Annual maintenance Program	400/220KV, 315MVA ICT
ii	400/220KV, 315MVA ICT Main Bay	Annual maintenance Program	ICT shall remain in service thro' Tie bay
iii	400/220KV, 315MVA ICT Tie Bay	Annual maintenance Program	ICT shall remain in service thro' Main bay
iv	400KV 80MVAR Bus Reactor-II	For replacement of existing 390KV LAs installed against Line/Bus Reactor with 336KV LA in view of change in design parameter.	400KV 80MVAR Bus Reactor-II
v	63 MVAR Bongaigaon-III Line reactor		63 MVAR Bongaigaon-III Line reactor
vi	63 MVAR Bongaigaon-IV Line reactor		63 MVAR Bongaigaon-IV Line reactor
vii	132KV Khupi Bay	Annual maintenance Program	132KV Balipara-Khupi line
3	400KV Silchar S/s		
i	400KV, 63MVAR Bus Reactor-I	For replacement of existing 390KV LAs installed against Bus Reactor with 336KV LA in view of change in design parameter.	400KV, 63MVAR Bus Reactor-I
ii	400KV, 63MVAR Bus Reactor-II		400KV, 63MVAR Bus Reactor-II
4	220 kV Dimapur S/S		
i	220/132KV, 100MVA ICT-I	For overhauling of OLTC of all the 3 single ph units of ICT	220/132KV, 100MVA ICT-I
5	400KV Misa-Substation		
i	400 KV ICT-1 Main Bay	Annual maintenance Program	ICT shall remain in service thro' Tie bay
6	220 KV Kopili(NEPCO) S/s		
i	200/132KV, 160MVA ICT	Complete Testing of ICT as a post-commissioning stutory requirement	200/132KV, 160MVA ICT

POWER GRID CORPORATION OF INDIA LIMITED
OPERATION SERVICE DEPARTMENT, NERTS, SHILLONG
Exception Report

MONTH: NOVEMBER-13

Sl. No.	Name of the Element		Ckt No		Duration of Outage and Attributable To								Category	Reason of Outage
	Outage		Restoration		POWERGRID		Other Constituents		Sys.Const/Natural calamities/ Militant activities		Outage under categories of Deemed Available			
	Date	Time	Date	Time	Hrs.	Mns.	Hrs.	Mns.	Hrs.	Mns.	Hrs.	Mns.		
AIZWAL_KUMARGHAT														
1	07/11/2013	14:32	07/11/2013	17:02	00	00	00	00	02	30	00	00	LMAC	ESD taken for clearing of tree cut by villagers from unhill side leaning near loc 31-
Sub-Total					00	00	00	00	02	30	00	00		
BADARPUR_KHLIERIAT														
2	25/11/2013	08:34	25/11/2013	15:43	00	00	00	00	00	00	07	09	LCSD	Strengthening of jumpers along the line for enhanced loadability
3	26/11/2013	07:07	26/11/2013	15:19	00	00	00	00	00	00	08	12	LCSD	"
4	27/11/2013	07:02	27/11/2013	15:20	00	00	00	00	00	00	08	18	LCSD	"
Sub-Total					00	00	00	00	00	00	23	39		
DIMAPUR_IMPHAL														
5	09/11/2013	12:00	09/11/2013	13:30	00	00	00	00	01	30	00	00	LMAC	ESD taken for clearing of tree branch in betn loc 516-17 cut by villager
Sub-Total					00	00	00	00	01	30	00	00		
IMPHAL_IMPHAL #1														
6	08/11/2013	06:52	08/11/2013	07:02	00	00	00	10	00	00	00	00	OMSU	Problem in State 33 KV System
7	09/11/2013	05:55	09/11/2013	06:40	00	00	00	45	00	00	00	00	OMSU	Problem in state 33 KV system
Sub-Total					00	00	00	55	00	00	00	00		
JIRIBAM_LOKTAK # 2														
8	28/11/2013	09:00	28/11/2013	15:40	00	00	00	00	06	40	00	00	LMAC	ESD taken for clearing of tree felled near loc 112-114 & 165-166 by miscreants
Sub-Total					00	00	00	00	06	40	00	00		
KHANDONG_HAFLONG														
9	01/11/2013	18:07	02/11/2013	14:34	00	00	00	00	00	00	20	27	OSFD	SD taken by NEEPCO for attending CB problem
10	09/11/2013	10:12	09/11/2013	10:50	00	00	00	38	00	00	00	00	OMSU	Line opened manually in view of mismatch in ph currents(problem at Khandong end)
Sub-Total					00	00	00	38	00	00	20	27		
KHANDONG_KHLIERIAT I														
11	20/11/2013	07:20	20/11/2013	15:46	00	00	08	26	00	00	00	00	OMSU	SD taken for earth cutting in the spans 32-33 & 118-19 for enhanced ground clearance

Sl. No.	Name of the Element		Ckt No		Duration of Outage and Attributable To								Category	Reason of Outage
	Outage		Restoration		POWERGRID		Other Constituents		Sys.Const/Natural calamities/ Miltant activities		Outage under categories of Deemed Available			
	Date	Time	Date	Time	Hrs.	Mns.	Hrs.	Mns.	Hrs.	Mns.	Hrs.	Mns.		
Sub-Total					00 : 00		08 : 26		00: 00		00 : 00			
KUMARGHAT_R C NAGAR														
12	17/11/2013	11:36	17/11/2013	12:34	00 : 00		00 : 00		00 : 00		00 : 58	OSPD	SD taken by NEEPCO	
Sub-Total					00 : 00		00 : 00		00: 00		00 : 58			
LOKTAK_IMPHAL			# 2											
13	09/11/2013	05:55	09/11/2013	06:35	00 : 00		00 : 40		00 : 00		00 : 00	OMSU	Tripped on Problem in state 33KV system	
14	11/11/2013	07:03	11/11/2013	15:33	00 : 00		00 : 00		00 : 00		08 : 30	LCSO	Strengthening of jumpers along the line for enhanced loadability	
15	12/11/2013	07:00	12/11/2013	15:37	00 : 00		00 : 00		00 : 00		08 : 37	LCSO	"	
16	13/11/2013	07:01	13/11/2013	15:55	00 : 00		00 : 00		00 : 00		08 : 54	LCSO	"	
17	14/11/2013	07:06	14/11/2013	16:20	00 : 00		00 : 00		00 : 00		09 : 14	LCSO	"	
18	15/11/2013	08:03	15/11/2013	15:54	00 : 00		00 : 00		00 : 00		07 : 51	LCSO	"	
19	16/11/2013	07:14	16/11/2013	17:42	00 : 00		00 : 00		00 : 00		10 : 28	LCSO	"	
20	17/11/2013	10:07	17/11/2013	16:55	00 : 00		00 : 00		00 : 00		06 : 48	LCSO	"	
Sub-Total					00 : 00		00 : 40		00: 00		60 : 22			
NIRJULI-RANGANADI														
21	21/11/2013	07:20	21/11/2013	15:07	00 : 00		00 : 00		00 : 00		07 : 47	OSPD	SD taken by NEEPCO for relay testing	
22	22/11/2013	07:16	22/11/2013	16:00	00 : 00		08 : 44		00 : 00		00 : 00	OMSU	SD taken for repairing of condr damaged during earthing activity by PWD(AP)	
23	23/11/2013	10:56	23/11/2013	11:44	00 : 00		00 : 48		00 : 00		00 : 00	OMSU	To facilitate Bus SD by NEEPCO	
24	24/11/2013	07:27	24/11/2013	15:54	00 : 00		08 : 27		00 : 00		00 : 00	OMSU	To facilitate 132KV Bus SD at NEEPCO end	
Sub-Total					00 : 00		17 : 59		00: 00		07 : 47			
RANGANADI-ZIRO														
25	17/11/2013	07:26	17/11/2013	14:54	00 : 00		00 : 00		00 : 00		07 : 28	OSPD	SD taken by NEEPCO for relay testing	
26	21/11/2013	18:16	21/11/2013	18:24	00 : 00		00 : 08		00 : 00		00 : 00	OMSU	Tripped due to protn maloperaton at RHEP end	
27	21/11/2013	18:56	21/11/2013	19:23	00 : 00		00 : 27		00 : 00		00 : 00	OMSU	"	
28	23/11/2013	10:52	23/11/2013	11:45	00 : 00		00 : 53		00 : 00		00 : 00	OMSU	To facilitate Bus SD by NEEPCO	
29	24/11/2013	07:27	24/11/2013	15:43	00 : 00		00 : 00		00 : 00		08 : 16	OSPD	To facilitate 132KV Bus SD at NEEPCO end	
Sub-Total					00 : 00		01 : 28		00: 00		15 : 44			

Sl. No.	Name of the Element		Ckt No		Duration of Outage and Attributable To								Category	Reason of Outage		
	Outage		Restoration		POWERGRID		Other Constituents		Sys.Const/Natural calamities/ Miltant activities		Outage under categories of Deemed Available					
	Date	Time	Date	Time	Hrs.	Mns.	Hrs.	Mns.	Hrs.	Mns.	Hrs.	Mns.				
IMPHAL-IMPHAL			# 2													
30	08/11/2013	06:52	08/11/2013	07:06	00	00	00	14	00	00	00	00	OMSU	Problem in state 33 KV System		
Sub-Total					00	00	00	14	00	00	00	00				
BALIPARA_TEZPUR																
31	25/11/2013	10:30	25/11/2013	15:13	00	00	00	00	00	00	04	43	OSPD	SD taken by Samaguri(AEGCL) end		
32	26/11/2013	09:19	26/11/2013	13:56	00	00	00	00	00	00	04	37	OSPD	SD taken by Samaguri for installation of DPR		
Sub-Total					00	00	00	00	00	00	09	20				
MISA_SAMAGURI			# 1													
33	12/11/2013	12:37	12/11/2013	13:04	00	00	00	27	00	00	00	00	OMSU	Tripped due to fault in Samaguri-Sarusajai line(state)		
Sub-Total					00	00	00	27	00	00	00	00				
MISA_SAMAGURI			# 2													
34	01/11/2013	11:27	01/11/2013	15:36	04	09	00	00	00	00	00	00	OMST	ESD taken for attending burnt contacts of Isolator at Samaguri end		
35	12/11/2013	12:37	12/11/2013	13:05	00	00	00	28	00	00	00	00	OMSU	Tripped due to fault in Samaguri-Sarusajai line(state)		
Sub-Total					04	09	00	28	00	00	00	00				
SALAKATI-BTPS			# 1													
36	12/11/2013	14:30	12/11/2013	15:42	00	00	00	00	00	00	01	12	OSFD	ESD taken by AEGCL		
Sub-Total					00	00	00	00	00	00	01	12				
MISA-MARIANI(NEW)																
37	19/11/2013	07:35	19/11/2013	17:15	00	00	00	00	09	40	00	00	LNCC	SD taken for providing safe working clearance at loc 586 of ongoing nile fdn		
Sub-Total					00	00	00	00	09	40	00	00				
BALIPARA_BONGAIGAON			# 1													
38	05/11/2013	08:10	05/11/2013	16:30	00	00	00	00	08	20	00	00	LNCC	SD taken for replacement of defective Insulator (as per minutes of SCC meeting)		
39	06/11/2013	08:08	06/11/2013	15:22	00	00	00	00	07	14	00	00	LNCC	SD taken for replacement of defective Insulator (as per minutes of SCC meeting)		
40	07/11/2013	08:03	07/11/2013	15:50	00	00	00	00	07	47	00	00	LNCC	SD taken for replacement of defective Insulator (as per minutes of SCC meeting)		
41	08/11/2013	08:13	08/11/2013	15:16	00	00	00	00	07	03	00	00	LNCC	SD taken for replacement of defective Insulator (as per minutes of SCC meeting)		
42	11/11/2013	08:03	11/11/2013	16:25	00	00	00	00	08	22	00	00	LNCC	SD taken for replacement of defective Insulator (as per minutes of SCC meeting)		
43	12/11/2013	08:03	12/11/2013	14:45	00	00	00	00	06	42	00	00	LNCC	"		
Sub-Total					00	00	00	00	45	28	00	00				
BALIPARA_BONGAIGAON			# 2													

Sl. No.	Name of the Element		Ckt No		Duration of Outage and Attributable To								Category	Reason of Outage
	Outage		Restoration		POWERGRID		Other Constituents		Sys.Const/Natural calamities/ Miltant activities		Outage under categories of Deemed Available			
	Date	Time	Date	Time	Hrs.	Mns.	Hrs.	Mns.	Hrs.	Mns.	Hrs.	Mns.		
44	05/11/2013	23:41	06/11/2013	07:47	00	00	00	00	00	00	08	06	LVRD	H/T for vol. regu. On RLDC instruction vide code 4910
Sub-Total					00	00	00	00	00	00	08	06		
BALIPARA-RANGANADI			# 1											
45	01/11/2013	22:17	02/11/2013	17:09	00	00	00	00	00	00	18	52	LVRD	H/T for vol. regu. On RLDC instruction vide code 4890
46	16/11/2013	23:34	17/11/2013	08:40	00	00	00	00	00	00	09	06	LVRD	H/T for vol. regu. On RLDC instruction vide code 4999
47	17/11/2013	08:40	17/11/2013	15:24	00	00	00	00	00	00	06	44	OSPD	SD taken by NEEPCO for relay testing
48	18/11/2013	00:27	18/11/2013	07:55	00	00	00	00	00	00	07	28	LVRD	h/T for vol. regu. On RLDC instruction vide code 5012
49	18/11/2013	07:55	18/11/2013	17:20	00	00	00	00	00	00	09	25	OSPD	SD taken by NEEPCO for relay testing
50	20/11/2013	14:52	20/11/2013	15:07	00	00	00	15	00	00	00	00	SBBU	bus-bar prtn. Optd. At RHEP end
Sub-Total					00	00	00	15	00	00	51	35		
BALIPARA-RANGANADI			# 2											
51	02/11/2013	17:00	02/11/2013	23:25	00	00	00	00	00	00	06	25	GOMD	Kept open as per instruction of RLDC
52	04/11/2013	00:02	04/11/2013	05:37	00	00	00	00	00	00	05	35	LVRD	H/T for vol. regu. On RLDC instruction vide code 4895
53	04/11/2013	23:27	05/11/2013	06:36	00	00	00	00	00	00	07	09	LVRD	H/T for vol. regu. On RLDC instruction vide code 4897
54	14/11/2013	11:20	14/11/2013	16:11	04	51	00	00	00	00	00	00	OMST	ESD taken for testing of PLCC & autoreclosure
55	16/11/2013	00:08	16/11/2013	15:56	00	00	00	00	00	00	15	48	LVRD	H/T for vol. regu. On RLDC instruction vide code 4993
56	19/11/2013	07:26	19/11/2013	15:52	00	00	00	00	00	00	08	26	OSPD	SD taken by NEEPCO for relay testing
57	20/11/2013	14:52	20/11/2013	15:35	00	00	00	43	00	00	00	00	SBBU	bus-bar prtn. Optd at RHEP end
Sub-Total					04	51	00	43	00	00	43	23		
Grand Total					09	00	32	13	65	48	242	33		

CT RATIO

SN	Transmission Lines	Length (KMs)	D.O.C.O	CT Ratio(Adopted)		Remarks
				End 1	End 2	
132kV Line						
1	S/C Badarpur-Kolasib	107.23	01.02.00	600/1	600/1	
2	S/C Kolasib-Aizwal	66.10	01.02.00	600/1	600/1	
3	S/C Aizwal - Zemabawk	6.72	01.09.88	300/1	600/1	
4	D/C Doyang - Dimapur-I & II	92.53	01.04.97	300/1	300/1	
5	S/C Gohpur - Nirjuli	42.50	01.07.91	300/1	300/1	(1no.CT will be replaced by Dec13 & onward we may adopt CTR600/1 both ends.)
6	S/C Imphal - Imphal-I	1.50	01.04.97	600/1	400/1	
7	S/C Imphal-Imphal-II	0.44	01.04.13	600/1	400/1	
8	S/C Jiribam - Aizwal	172.32	01.09.88	400/1	400/1	
9	S/C Jiribam-Haflong	100.63	01.08.87	400/1	400/1	
10	S/C Khandong - Haflong	63.17	01.10.87	300/1	400/1	
11	S/C Khandong - Khliehriat-I	42.48	01.03.84	300/1	600/1	
12	S/C Khandong - Khliehriat-II	40.93	01.02.00	600/1	600/1	
13	S/C Khandong - Kopili - II	11.56	01.11.10	600/1	600/1	
14	S/C Khliehriat-Khliehriat-1	7.80	01.02.00	600/1	600/1	
15	S/C Ranganadi-Ziro	44.52	01.04.04	300/1	300/1	
16	D/C Silchar-Srikona-I & II	1.20	01.04.12	500/1	600/1	CT capacity is 1000/500/1 at Silchar end
17	D/C Silchar-Badarpur-I & II	19.20	01.05.12	500/1	600/1	
18	D/C Silchar-Hailkandi-I & II	17.30	01.07.12	500/1	300/1	
220kV Line						
19	S/C Balipara-Tezpur	8.62	01.02.00	800/1	800/1	
20	D/C Misa-Dimapur-I & II	123.52	01.04.96	500/1	500/1	
21	220 KV D/C Misa-Kopili - I	72.79	01.03.84	500/1	500/1	
22	220 KV D/C Misa-Kopili - II	72.79	01.02.88	500/1	500/1	
23	S/C Misa-Kopili-III.	75.79	01.02.00	800/1	500/1	
24	D/C Misa-Samaguri-I	34.44	01.03.84	500/1	500/1	
25	D/C Misa-Samaguri-II	34.44	01.02.88	500/1	500/1	