North Eastern Regional Power Committee

Agenda
For
94th OCC & 18th PCC Joint Sub-Committee Meeting

Time of meeting : 10:00 Hrs.

Date of meeting : 18th February, 2014 (Tuesday)

Venue : Hotel Nandan, G.S. Road, Guwahati.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 93rd MEETING OF OPERATION SUB-COMMITTEE OF NERPC.

The minutes of 93rd meeting of Operation Sub-committee held on 21st January, 2014 at Guwahati were circulated vide letter No. NERPC/SE (O)/OCC/2013/7013-7046 dated 29th January, 2014.

CONFIRMATION OF MINUTES OF 17th MEETING OF PROTECTION SUB-COMMITTEE OF NERPC.

The minutes of 17th meeting of Protection Sub-committee held on 21st January, 2014 at Guwahati were circulated vide letter No. NERPC/SE (O)/OCC/2013/7013-7046 dated 29th January, 2014.

The shutdown of AGTP Unit # 3 was applied by NEEPCO for approval for a period of one month and the same was discussed in detailed during the 93rd OCC meeting; however, the shutdown of AGTP Unit #3 was not approved by the forum. Due to oversight the above shutdown was not mentioned in the minutes of 93rd OCC meeting. ***Members may kindly note.***

No observations or comments were received from the constituents. The Sub-committee may confirm minutes of 93rd OCCM & 17th PCCM of NERPC.

As intimated earlier, there is a presentation by Mr. Sonjib Banerjee of M/s Manav Energy Pvt. Ltd. on "safety through design using Modern Concepts of A.C. Earthing, maintenance-free earthing, e-monitoring and Lightning & Surge Protection".

M/s Manav Energy Pvt. Ltd may kindly give the presentation.

ITEMS FOR DISCUSSION

B. OPERATIONAL PERFORMANCE AND GRID DISCIPLINE DURING JAN, 2014

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

NER PERFORMANCE DURING JANUARY, 2014

	Energy Met (MU)			Energy Reqr. (MU)		
States	**Jan-14**	**Dec-13**	**% inc(+)/dec(-)**	**Jan-14**	**Dec-13**	**% inc(+)/dec(-)**
Ar. Pradesh	46.93	**48.76**	-3.7	49.51	**51.791**	-4.4
Assam	571.58	**557**	2.6	612.27	**591.314**	3.5
Manipur	47.89	**47**	2.5	51.71	**50.446**	2.5
Meghalaya	157.47	**147**	7.4	179.57	**168.186**	6.8
Mizoram	39.49	**42**	-5.1	41.65	**43.022**	-3.2
Nagaland	48.73	**48**	0.7	50.87	**50.36**	1.0
Tripura	91.62	**101**	-9.4	93.00	**105.696**	-12.0
Region	**1003.7**	**990**	1.4	**1078.59**	**1060.815**	1.7

	Demand Met (MW)			Demand in (MW)		
States	**Jan-14**	**Dec-13**	**% inc(+)/dec(-)**	**Jan-14**	**Dec-13**	**% inc(+)/dec(-)**
Ar. Pradesh	116	124	-6.5	118	125	-5.7
Assam	1079	1065	1.3	1089	1153	-5.5
Manipur	129	129	0.0	129	130	-0.4
Meghalaya	330	313	5.4	343	312	9.2
Mizoram	82	79	3.8	84	80	5.2
Nagaland	106	104	1.9	107	105	1.5
Tripura	201	191	5.2	201	194	3.6
Region	**1925**	**1890**	1.9	**2009**	**2009**	4.3

REGIONAL GENERATION & INTER-REGIONAL EXCHANGE IN MU

Month---->	**Jan-14**	**Dec-13**
Total Generation in NER (Gross)	816.76	729.890
Total Central Sector Generation (Gross)	541.9	441.697
Total State Sector Generation (Gross)	274.86	288.193
Inter-Regional Energy Exchange		
(a) NER-ER	17.26	15.421
(b) ER-NER	221.12	280.57
© Net Import	203.86	265.15

AVERAGE FREQUENCY (Hz)

Month---->	**Jan-14**	**Dec-13**
	% of Time	% of Time
Below 49.7 Hz	0.51	1.97
Between 49.7 to 50.2 Hz	90.06	89.5
Above 50.2 Hz	9.43	8.6
Average	50.03	50.02
Maximum	50.67	50.69
Minimum	49.4	49.33

From the above table, it is seen that energy demand requirement met and peak met of the region have increased 1.4% and 1.9% respectively. The import from ER has also decreased considerably due to OTPC, Pallatana U #1 generation.

C.1 Synchronization of Pallatana Module -I

During 93rd OCC meeting, the Sub-committee had reviewed the status of commissioning of second unit of OTPC at Pallatana & Transmission lines. The status as informed by OTPC and POWERGRID is as follows:

SN	Items	Present status
1	Trial operation of Unit -II of OTPC at Palatana	June, 2014
2	400KV D/C Silchar - Melriat line	June, 2014
3	400KV D/C Silchar - Imphal line	June, 2014
4	220KV D/C Mariani (New) – Mokokchung	March, 2014
5	400KV D/C Byrnihat-Bongaigaon line	March, 2014 (Byrnihat-Ajara section likely to be completed by January 2014)
6	400kV Balipara – Bongaigaon D/C line # 3 & 4 with FSC	March, 2014 [FSC commissioned on 11.01.2014]

Committee may like to discuss and review the current status of progress:

SN	Items	Present status
1	CoD of Unit -I of OTPC at Palatana	
2	Trial operation of Unit -II of OTPC at Palatana	
3	400KV D/C Silchar - Melriat line	
4	400KV D/C Silchar - Imphal line	
5	220KV D/C Mariani (New) – Mokokchung	
6	400KV D/C Byrnihat-Bongaigaon line	
7	400kV Balipara – Bongaigaon D/C line # 3 & 4 with FSC	

C.2 Independent third party audit of protection system:

During 93rd OCC meeting, the constituent states were requested to take up the matter with their respective Power Ministry so that funding for execution of above work is made available from NLCPR-Central to the constituent states of the region at the earliest. The up-gradation of protection system / renovations of substations / generating stations are essential for safety, security and reliable operation of the system. Hence subcommittee requested that based on the protection audit report, initiative should be taken by constituent states of the region for taking up essential activities in some of the sub stations / generating stations at their own expenses without waiting for funding to avoid unwarranted tripping / system isolation.

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 93rd OCC meeting, the Committee reviewed the UFR based load shedding and the status is given as below:

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

Assam: UFRs based load shedding for 220MW have been implemented and UFRs have been made operational in all identified feeders (i.e. 100% implementation) – **Completed.**

Manipur: The identification of the feeders for the required quantum of UFR based load shedding at different stages will be implemented by January 2014.

Meghalaya: The Sub-committee requested Meghalaya to utilize the existing stand alone UFRs for Stage – I & II of revised UFR based load shedding. Meghalaya agreed to complete the installation of above UFRs by February, 2014.

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

Nagaland: UFRs required for Stage – III is already in place, installation of UFRs for Stage – I & II will be completed by January, 2014 and installation of UFRs for Stage – IV will be completed soon.

Tripura: The Sub-committee requested Tripura to utilize the existing stand alone UFRs for Stage – I & II of revised UFR based load shedding. Tripura agreed to complete the installation of above UFRs by February, 2014.

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 may now like to know about the status of implementation of UFRs based load shedding in respect of (Meghalaya, Mizoram, Tripura and Nagaland) and discuss about the identification of the feeders, the quantum of UFR based load shedding at different stages and implementation plan of Ar. Pradesh and Manipur.

C.4 Lines under long outages

The status for restoration of following lines as reviewed in the 93rd OCC meeting is given below:

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 Mokokchong 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.

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

EE, DoP, Manipur informed that site for relocation of new tower (due to ground clearance problem caused due to road cutting by BRTF) has been identified and the work is likely to be completed and line will be charged by February, 2014.

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

DGM, POWERGRID stated that the project proposal for suggested modification have already been sent to their corporate office at Gurgaon for approval (i.e. incorporation of additional Box Cross Arm at Tower Location No. 5). Further, he informed that the corporate office is insisting for connectivity with Kohima through LILO arrangement at POWERGRID's GIS substation at Dimapur.

The subcommittee also suggested DoP, Nagaland to utilize the LILO arrangement at GIS substation at Dimapur for the connectivity to Kohima. Nagaland agreed to highlight the issue to higher authority.

POWERGRID/ Nagaland/Manipur may kindly intimate the current status.

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)

During 93rd OCC meeting, the Sub-committee had reviewed the status of implementation of the scheme and the current status is as follows:

Case I: OTPC and POWERGRID had informed that the problem with communication link which will be sorted out soon.

Case 2-3: OTPC stated that for implementation of SPS -2 & 3 mentioned above, BHEL & OTPC have already discussed in detail and finalized the scheme in the meeting held at Palatana on 17.01.2014.The scheme will be implemented very soon after procurement of hardware required for the SPS. The SPS will be come into picture only when generation is more than 200MW. The approved SPS wiring diagram submitted by OTPC & POWERGRID was circulated along with the Minutes.

The representative of OTPC requested the forum for following:

(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. Subcommittee 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 desynchronisation of Gas Turbines. Subcommittee suggested OTPC to discuss the matter with POWERGRID.

Case – 4: Has already been implemented by POWERGRID and tested ok.

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

The Sub-committee expressed concern about early implementation of SPS -2 & 3 and noted as above.

NERLDC informed that with present high level of generation the schemes need to be in place urgently for system security. OTPC may please intimate the latest status. Moreover load relief for existing schemes also needs to be reviewed in view of

slightly modified implementation of the schemes. **SPS-5, related to tripping of 220 kV Misa-Byrnihat D/C line, which was proposed by NERLDC in earlier OCC, needs to be implemented immediately in view of high tripping rate of these lines.** NERTS may please intimate the logistics available in this respect. Review of schemes related to Palatana considering synchronization of 2nd Block-II machine and commissioning of full length of 400 kV Silchar – Bongaigaon D/C lines is also essential to address post commissioning scenarios.

OTPC/POWERGRID may intimate the current status of implementation of SPS.

C.6 Implementation of Islanding Scheme in NER:

During the 93rd OCC meeting, the committee had decided the following islanding scheme and associated frequencies levels for creation of islands in NER:

DGM, POWERGRID informed the scope of works pertaining to implementation of **Islanding scheme in NER** (i.e. Island-1 at 48.80Hz with 5 Sec delay and Island-2 at 48.50 Hz with 5 Sec delay) has been completed through activation of Under Frequency Relays (inbuilt to different DPRs) for tripping of identified lines.

Island - 1

The sub-committee discussed about implementation of 1st Islanding scheme (proposed at 48.8Hz with 5 sec delay). Subcommittee decided that the opening of 220kV New Mariani (PG) – Misa line is not required for 1st Islanding scheme. Accordingly POWERGRID was requested to modify the logic in UFR / communication link so that 220kV New Mariani (PG) – Misa line is not disconnected.

The representative of NEEPCO informed that the UFR, inbuilt to different DPRs of the 220kV line, will be utilized for de-synchronisation of Gas Turbine (s) in each module at AGBPP. In addition to above, subcommittee advised NEEPCO to use the UFR of the generators as back up for de-synchronisation of Gas Turbine (s). NEEPCO has also agreed to develop 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. NEEPCO has agreed to complete the work associated with 1st islanding scheme by February 15, 2014.

Assam informed that UFRs of identified lines (220kV lines) associated with 1st Islanding scheme has been made operational / activated. Assam was requested to active the UFRs of identified lines (at 132kV level) for required load shedding at 48.5Hz, 48.6Hz and 48.7Hz. Assam has agreed to complete the work associated with 1st islanding scheme by February 15, 2014. With completion of above works by NEEPCO, POWERGRID and Assam, the 1st Islanding scheme will be in place.

Island - 2

The sub-committee discussed about implementation of 2nd Islanding scheme (proposed at 48.5Hz with 5 sec delay). POWERGRID and OTPC confirmed that UFRs of identified lines associated with 2nd Islanding scheme has been activated. With completion of these works, 2nd Islanding scheme is considered to be in place.

After incorporating above decisions of the sub-committee, the modified Islanding schemes would be as follows:

SN	Islanding Scheme	Lines required to be opened	UFR Location	Implementing Agency
1	**ISLAND AT 48.80 Hz with 5 Sec delay :** Island comprising of generating units of AGBPP (Gas), NTPS (Gas) & LTPS (Gas) and loads of Upper Assam system &Deomali area (Ar. Pradesh) **[Total Generation: 380-400MW and load: 200MW (off peak)-300MW (peak)]**	(a) 220 kV New Mariani (PG) – AGBPP	UFR-1 [At New Mariani (PG)]	**PGCIL**
		(b) 220 kV Mariani – Misa	UFR-2 [At Mariani, Samaguri of AEGCL]	**AEGCL**
		(c) 220 kV Mariani – Samaguri		
		(d) 132 kV Mokukchung – Mariani		
		(e) 132 kV Dimapur (PG) – Bokajan	UFR-3 [At Dimapur (PG)]	**PGCIL**
		(f) Generators to be desynchronized for reduction of generation [if Generation > Load in the islanded pocket]		
		(g) De-synchronization / isolation of one GT and one ST from each of two modules of AGBPP, which are in operation, leading to reduction of generation of about 80-90 MW [i.e each module will contribute to reduction of about 40-45MW. (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	**ISLAND AT 48.50 Hz with 5 Sec delay :** Island comprising of generating units of AGTPP (Gas), generating units at Baramura (Gas), Rokhia (Gas) &Gumati (Hydro) and loads of Tripura system &Dullavcherra area (Assam) **[Total Generation: 150-160MW and load: 110MW (off-peak) &—170-180MW (peak)]**	132 kV Palatana – Udaipur	UFR-1 [At Palatana]	**OTPC**
		132 kV Palatana – Surjamani Nagar		
		132 kV Silchar – Dullavcherra	UFR-2 [At Silchar]	**PGCIL**
		132 kV AGTPP – Kumarghat	UFR-3 [At Kumarghat]	**PGCIL**
		132 kV P K Bari – Kumarghat		
3	**ISLAND AT 47.90 Hz:** Isolation of NER from NEW grid at ER-NER boundary with rest of the generation and load of NER	To be decided after system study		

Subcommittee had also decided that two UFRs (one as back up) need to be activated at Mariani (by POWERGRID & Assam), Samaguri (by Assam), Dimapur (by POWERGRID), Palatana (by OTPC), Silchar (by POWERGRID), and Kumarghat (by POWERGRID) instead of one UFR as decided earlier.

In future, in case any problem arises, both islanding schemes will reviewed and modified as per system requirement.

The Committee may like to know the present status.

C.7 Installation of Harmonic Filters:

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

Since no representative from DoP, Ar. Pradesh was present during 93rd OCC meeting; the status could not be updated. However, DGM, POWERGRID stated that once the installation of Harmonic filter is done, the conformity tests will have to be carried out.

The Committee may like to review the status.

C.8 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

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.

Since no representative from DoP, Ar. Pradesh was present during 92nd OCC meeting; the status could not be updated.

The Committee may like to review the status. POWERGRID may intimate about the outcome of the meeting.

C.9 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).

The Committee may like to review the current status. POWERGRID may intimate about the outcome of the meeting.

C.10 CT Ratio of Transmission Lines

For determining present loadability limits of Transmission lines of NER (132 kV & above), all constituents(excluding POWERGRID) were requested to send the following details of CTs at both end of their lines at the earliest including present setting of CT Ratio & PSM Setting (for protection) and CT specification. It was further discussed during 90th, 91st, 92nd and 93rd OCCMs but except for TSECL other utility have not provided these data till date.

The Committee may like to discuss.

C.11 Bay & Line Ownership Details of Inter-State Transmission Lines:

POWERGRID have provided details of owner of bays in POWERGRID premises owned by other constituents and of Bays in premised of other constituents owned by POWERGRID. However, POWERGRID have to furnish the bay owner details of others lines of POWERGRID terminated at the premises of other utilities.

Bay owner details & line owner details with line length & % of line length of the following lines are to be furnished by the utilities at the earliest:

1. 132 kV Agia – Nangalbibra
2. 132 kV Kahelipara – Umtru I
3. 132 kV Kahelipara – Umtru II
4. 132 kV Sarusajai – Umtru I
5. 132 kV Sarusajai – Umtru II
6. 132 kV Panchgram – Lumshnong
7. 132 kV Dharmanagar – Dullavcherra
8. 132 kV P K Bari – Kumarghat
9. 132 kV Udaipur – Palatana
10. 132 kV Surjamaninagar – Palatana I
11. 220 kV AGBPP – Tinsukia I
12. 220 kV AGBPP – Tinsukia II
13. 132 kV Karong – Kohima
14. 132 kV Mariani – Mokokchung
15. 66 kV Bokajan – Dimapur
16. 132 kV Doyang – Wokha
17. 132 kV Loktak – Ningthoukong
18. 132 kV Loktak – Rengpang

19. 132 kV Jiribam(PG) – Jiribam(Manipur)
20. 132 kV Haflong(PG) – Haflong (Assam)
21. 132 kV Ningthoukhong – Imphal(PG)
22. 132 kV Imphal – Imphal(PG) II

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.

During 93rd OCC meeting, 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 at the earliest.

Committee may like to discuss.

C.12 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.

During 92nd OCC meeting, 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. R. Debbarma, DGM, SLDC (09436130960)

NERLDC have informed that Draft Power Maps developed by CBIP as part of development of Power Atlas on All India level was circulated among all states of NER in AutoCAD and PDF formats for checking and validation. Comments were received from only Mizoram and Tripura. Other constituents are requested to validate their state maps at the earliest. Pop-up fields of flash applications for Power Atlas have been updated with the data received from the utilities. Data which were not received from the utilities have been kept blank. The updated data have been mailed to all constituents on 11th February 2014 at 1515 Hrs.

Constituents may kindly intimate the current status.

C.13 Formation of Study Group:

During 93rd OCC meeting, the Sub-committee had requested all the other constituents to form their own study group at the earliest for their benefit. NERLDC may intimate about the expected date of training programme (intermediate level training programme) on PSSE software.

The Committee may like to discuss the present status.

C.14 Monthly MU requirement & availability of each state of NER as per format:

The following figures of state wise MU requirement and availability for Jan14, Feb14 & Mar14 taken from LGBR 2013-14 of NERPC. State wise MU requirement and availability for these months are to be checked. As LGBR 2014-15 not yet finalized, State wise MU requirement and availability for Apr14 & May14 are to be provided at the earliest by the respective constituents

Requirement:

Name of State	Feb14	Mar14	Apr14	May14	Jun14
Ar. Pradesh	49.31	43.81			
Assam	478.68	538.87			
Manipur	44.99	45.06			
Meghalaya	165.68	168.29			
Mizoram	32.44	38.08			
Nagaland	44.08	46.74			
Tripura	84.84	103.83			
NER	**900.02**	**984.67**			

Availability:

Name of State	Feb14	Mar14	Apr14	May14	Jun14
Ar. Pradesh	27.83	33.17			
Assam	353.85	389.73			
Manipur	42.79	48.00			
Meghalaya	107.65	112.41			
Mizoram	37.53	40.98			
Nagaland	32.20	35.54			
Tripura	87.85	97.09			
NER	**689.71**	**756.92**			

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

Constituents may kindly furnish the data to NERLDC.

D. N E W I T E M S

D.1 Operational Statistics for the month of January, 2014

The different proforma for Operational Statistics required for every month are given in Annexure below:

(i)– Schedule Vs Actual Generation & Requirement.

(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.

Committee may like to discuss the present status.

D.2 State-wise anticipated peak demand/requirement, shortage for February - June, 2014.

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

S.N.	State	Peak Demand (MW) Feb' 14	Peak Demand (MW) Mar' 14	Peak Demand (MW) Apr' 14	Peak Demand (MW) May' 14	Peak Demand (MW) Jun' 14
1	Ar. Pradesh	120	95	95		
2	Assam	1300	800	800		
3	Manipur	120	105	105		
4	Meghalaya	280	230	230		
5	Mizoram	75	55	55		
6	Nagaland	100	80	80		
7	Tripura	230	155	155		
	Region	2245	1520	1520		

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

S.No.	State	Peak Availability (MW) Feb' 14	Peak Availability (MW) Mar' 14	Peak Availability (MW) Apr' 14	Peak Availability (MW) May' 14	Peak Availability (MW) Jun' 14
1	Ar. Pradesh	100	100	100		
2	Assam	830	830	830		
3	Manipur	110	110	110		
4	Meghalaya	240	240	240		
5	Mizoram	60	60	60		
6	Nagaland	85	85	85		
7	Tripura	160	160	160		
	Region	1585	1585	1585		

D.3 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 - With the onset of winter season, 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, say upto April, 2014.

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

D.4 (A) Outage Planning Transmission elements

***The sub-Committee may kindly discuss and approve the transmission line outages proposed by Constituents for February - April, 2014 as enclosed at* Annexure- D.4 (A)**.

POWERGRID or any other agency availing shutdown through OCC forum should strictly adhere to the timing approved in the meeting as this can result in financial loss to beneficiaries. Further, beneficiaries may be penalized by Commission under section 142 of the Act after Deviation Settlement Mechanism will be implemented

from 17.02.2014.

The concern agency will intimate RLDC/RPC and concerned beneficiaries at least 2 hours prior to the approved restoration time if additional extension will be required for restoration of the line. RLDC shall then revise schedule accordingly so that beneficiaries can follow the revised schedule until the line is restored.

If the agency fails to restore the line within approved restoration time and fails to intimate the same, any commercial loss incurred by the concerned beneficiaries will have to be borne by the agency. Further, any penalty by Commission to concerned beneficiaries due to such un-approved extension of shutdown timing will be borne by the agency.

NERLDC/NERPC or any other appropriate authority may report the non-compliance to CERC if consistent un-approved extension is sought.

The sub-Committee may kindly discuss.

D.4 (B) Line outages Planned vs. Implemented:

The planned outages approved by the OCC Sub-committee has to be complied by the executing agency and in case the same is not availed or deferred, the same has to be intimated with reasons why the shutdown could not be availed so that proper planning can be made by NERLDC/NERPC. The same will be monitored henceforth.

The sub-Committee may kindly discuss.

D.5 (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.5 (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.5 (C) Power supply to Rural Villages:

Name of the State:

Month & Year:

Total Electrified villages			RGGVY villages		Hours of Supply					
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.

D.6 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.

During the meeting held on 07.02.2014 at NERLDC, Shillong, the issue was raised again by Tripura. They requested the forum to analyze the common issue faced by generators as well as the beneficiaries so that a clear mechanism can be followed while implementing the requisition. The forum suggested NERPC/NERLDC to look into the matter so that the same can be discussed and finalized in the next OCC meeting.

Committee may like to discuss and finalize the techno-economical minimum generation for all the ISGS in NER.

D.7 Transformer Tap optimization:

A system study has been conducted by NERLDC considering load generation and network pattern of February 2014, during Peak & Off Peak periods , with suggested taps position of important transformers in NER for maintaining bus voltages within permissible limit as well as to minimize system losses(study report at **Annexure – D.7**).

Committee may like to discuss.

D.8 STOA RATE for North Eastern Region:

As per Clause 10 of CERC (Open Access in inter-State Transmission) (Amendment) Regulations, 2009 issued vide notification No. L-7/105(121)/2007-CERC dated 20th May 2009, State Commissions of respective states are required to specify transmission charges for use of state network in Rs./MWh. In case transmission charges for use of state network are not specified, the same is payable at the rate of Rs. 80/- per MWh. All States are requested to kindly intimate NERLDC latest transmission charges being specified by respective State Commission at the earliest for financial year 2014-15. If STOA rate is not specified, Rs. 80/- per MWh will be considered.

Committee may like to discuss.

D.9 Palatana (OTPC) units trippings due to fog:

Due to fog and associated issues the Palatana units are tripping very frequently during morning hours, causing serious problem in NER Grid. OTPC is requested to

take urgent action to address the problem and avoid tripping of unit during winter morning hours. Recent tripping details are given below:

Sl No	Name of the generating Unit	Outage		Restoration	
		Date	time	Date	time
1	GTG-I	01.02.14	0630	29.01.14	1009
2	STG-I	01.02.14	0641	29.01.14	1100
3	GTG-I	02.02.14	0542	02.02.14	1009
4	STG-I	02.02.14	0541	02.02.14	1102
5	GTG-I	03.02.14	0806	03.02.14	1008
6	STG-I	03.02.14	0756	03.02.14	1133
7	GTG-I	05.02.14	0322	05.02.14	0940
8	STG-I	05.02.14	0322	05.02.14	1102
9	GTG-I	10.02.14	0436	10.02.14	1048
10	STG-I	10.02.14	0436	10.02.14	1127

Committee may like to discuss.

D. 10 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/plan 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. 11 Submission of data according to Standards of Performance of ISTS Regulations 2012, CERC:

As per Standards of Performance of ISTS Regulations 2012, CERC, ISTS licensees are required to furnish data for determination of performance standards on monthly basis. The matter has been discussed in previous OCC meetings. POWERGRID has furnished the data pertaining to SoP (Standards of Performance) upto Sep'13 while no data have been received from NETC.

In addition of above, 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.

POWERGRID and NETC are requested to furnish the data till January 2014 and provide the SoP data on monthly basis regularly by 10th of every month for the previous month.

D.12 Real time data:

It is observed that while availing S/D specific RTU stops reporting and creating visualization as well as real time Grid Management problem. For example Itanagar S/s data is out due to S/D of 132 KV Nirjuli-Naharlagun line from 09.02.14 and

Kathalguri data is out from 11.02.14 due to S/D of 220 KV Kathalguri-New Mariani-Misa line. Earlier also Ranganadi data remains out whenever 400 KV Ranganadi-Balipara-1 line goes under S/D. Alternate communication channel is to be arranged by POWERGRID/User so that availability of telemetry is ensured in such S/D situation. Further seven (7) nos of important CS RTUs as furnished below are out and Grid visibility has gone down drastically and application like "State estimation" are not running properly.

1. KUMARGHAT: Out from 04.02.14.
2. BYRNIHAT: Out from 04.01.14.
3. ZIRO: Out from 04.12.13.
4. TANAGAR: Out from 09.02.14.
5. KATHALGURI: Out from 11.02.14.
6. MARIANI_PG: Out from 11.02.14.
7. KOLASIB: Out from 12.02.14.

Members may deliberate and ensured immediate restoration of the above these RTUs

D.13 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 MePGCL are furnishing monthly progress report of elements on regular basis, others are also requested to furnish the same.

D.14 Repeated Synchronization Problem:

NERLDC vide letter dated 30.01.2014 had informed that there were multiple trippings of 132 KV POWERGRID lines on 29.01.2014 at around 04:02 hrs (details enclosed at **Annexure – D.14**) in addition of tripping of 400 Kv Silchar – Byrnihat line. This resulted isolation of Manipur, Mizoram, South Assam, part of Meghalaya & Tripura. Though the isolated area was re-synchronized at 04:12 hrs, there was generation loss of about 215 MW in the isolated portion.

NERLDC stated that tripping of lines are part of power system operation and usually beyond the control of system operators/substation engineers, graceful restoration requires close co-ordination amongst the substation engineer, system operators and other stake holders. The importance of close co-ordination has been highlighted earlier also, however, in the incident it appears that there was lack of efforts at the substation level to fully understand the situation resulting in rough synchronization by performing various switching actions unilaterally and without even obtaining "code" from NERLDC for such action. This is the third time where rough synchronization has happened in a row.

The Sub-Committee may like to discuss.

D.15 Furnishing of Technical & Commercial Data for computation of PoC Charges & Losses for April – June, 2014:

Designated ISTS Customers (DICs) are requested to submit the data for New Transmission Assets, Yearly Transmission Charges (YTC), Forecast Injection and Withdrawal and Node-wise Injection/Withdrawal data as per Format I, Format II & Format III (Formats are available in http://posoco.in/transmission_pricing/formats) to the Implementing Agency (NLDC, POSOCO) along with copy to NERLDC for computation of PoC Charges and Losses for Apr14-Jun14 at the earliest. Soft copy of these filled up formats are also to be sent to the Implementing Agency (NLDC, POSOCO) along with copy to NERLDC at the earliest. Letter for submission of these data as per formats was e-mailed to all DICs on 10.01.14.

The Sub-Committee may like to discuss.

D.16 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.16.** 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.17 Estimated Transmission Availability Certificate (TAC) for the month of January, 2014.

The Estimated Transmission System Availability for the month of January, 2014, furnished by PGCIL, is **99.9820%.** The detail outage data for calculation of TransmissionSystem Availabilityfurnished by PGCIL, is at **Annexure D.17.** NER constituents are requested to kindly communicate their views and observations, if any, by 27th February, 2014 so that Final TAC for the month of January, 2014 may be finalized by NERPC Secretariat.

The Sub-Committee may like to discuss.

D.18 Grid connectivity to Tawang areas of Ar. Pradesh:

During 92nd OCC, 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.

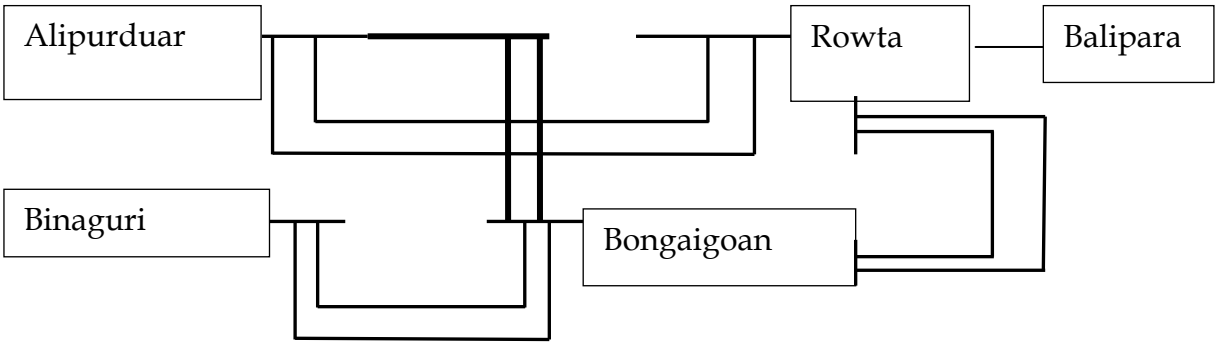
The Committee may like to discuss the matter and Ar. Pradesh may express their view in this regard.

D.19 Grid strengthening for safe and secure operation of NER grid:

During 93rd OCC meeting following proposal was discussed for safe and secure operation of NER Grid.

More in feed points need to be planned and implemented for improving reliability and security of NER Grid. At present NER Grid is connected to rest of NEW Grid through Bongaigaon and Salakati Sub-Station. As per Master Plan of HEPs in Arunachal Pradesh of CEA, there will be +/- 800 kV HVDC Sub-Station at Rowta and LILO of 400 kV Balipara – Bongaigaon I & II and LILO of 400 kV Balipara – Bongaigaon III & IV will at Rowta. AC part of +/- 800 kV Rowta HVDC S/S along with these LILO arrangements may be programmed for early completion. The 400 kV Rowta – Bongaigaon III & IV may be modified as 400 kV Rowta – Alipurduar D/c and 400 kV Alipurduar - Bonaigaon D/c for creating one more in feed point for NER.

Thus proposed scheme drawing is as follows:



With above modification, NER will have one more connectivity with ER, in case there is any problem (say bus fault) at Bongagoan Sub-station.

The Sub-committee has requested the constituents to give their comments for further discussion on the matter.

The Committee may like to discuss the matter

D.20 Workshop / Seminar on emerging issues funded from Reactive Pool Account

During 93rd OCC meeting, the Sub-committee had decided that seminars / workshops on emerging issues, which are very–much essential for the benefit of NER constituent, should be organized by NERPC/NERLDC at different places of NER.

The Committee may like to discuss and work out the methodology and funding requirement for organizing such seminars/workshops.

D.21 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.

NHPC/OTPC may inform the current status so that Committee can discuss and finalize the document.

D.22 Major grid disturbances in the previous month (January, 2014)

As intimated by NERLDC, there was no major grid disturbance during the month of January, 2014 pertaining to NER.

Members may kindly note.

D.23 Deviation Settlement issued by CERC:

As decided in the 93rd OCC meeting, NERPC/NERLDC has arranged the meeting regarding deviation settlement issued by CERC on 07.02.2014 at Shillong. During the meeting, NERLDC had highlighted the pros & cons of the above regulation and the committee thanked and appreciated NERLDC for giving the presentation on deviation settlement mechanism. The views and comments of the members are given below:

a) All the members felt that unless adequate infrastructures (viz. Transmission networks, ICTs etc.) are provided in the region, it would be very difficult to accept the above regulation.

b) SLDCs are available in only three states in NER, whereas four states (viz. Ar. Pradesh, Manipur, Mizoram & Nagaland) do not have SLDCs and implementation of the deviation mechanism will have adverse commercial impact on small states of NER.

c) The forum also has reservation on the regulation about the status of run of the river project and felt that RoR should be exempted from deviation regulation.

The members decided that the matter would be taken up with appropriate authority.

Committee may like to decide the course of action.

D.24 Palatana (OTPC) Schedule and its subsequent revision:

As per definition in IEGC, the plant has been considered as ISGS having shares of all 7 states of NER. The plant has merchant share of 13.498623% of its capacity i.e. 2x49 MW. The merchant quantum is being sold at Power exchange as per the day-ahead availability. In case of downward revision of DC by Pallatana, the corresponding share of all the beneficiaries is allocated and the merchant quantum based on the earlier higher DC is added to arrive at the generation schedule of Pallatana. This results in a schedule more than DC. Similar scheduling methodology is also being adopted for other ISGSs imposing regulation and selling the regulated quantum in PX. [The same philosophy is also followed in case of transmission constraint.] The actual generation of Pallatana for that block is distributed to constituents as per their share allocation and jack up Pallatana schedule to accommodate PX transaction. In case of tripping of the unit, revision is given effect w.e.f 4th block keeping their sale of merchant quantum intact.

Presently the above scheduling methodology is being followed at NERLDC.

Committee may like to note.

D.25 Hydro Scheduling:

CERC has issued IEGC (Indian Electricity Grid Code) (Second Amendment) Regulations, 2014 which shall come into force with effect from 17.2.2014. In this new amendment, 4th day adjustment of hydro power plant has been removed and also the schedule revision option for Run of the river power plant has also been removed which means no real time revision will be allowed for Hydro power plant except under forced outage.

Committee may like to note.

D.26 NLDC guidelines for charging of any new transmission/generation assets:

Owner of the asset shall submit the request for probable commissioning/ charging of new assets for the calendar month latest by 5th day of the month to the respective RLDC & NLDC, along with the status of activities (NLDC letter enclosed as **Annexure D.26**). RLDC shall study the impact of commissioning/charging of new asset and, based on its examination of the preparedness of the Utility, may forward its recommendations to NLDC who would also examine the issue independently considering the All India grid. The owner of the new asset shall inform the concerned RLDC/NLDC about the commissioning and charging of the element, at least three (3) days in advance, with the current status of activities mentioned in the checklist.

Committee may like to note.

D.27 Any other item:

E. N E W I T E M S

E.1 Major Events in North-Eastern Regional Grid during the period January, 2014

A. Tripping of 220 kV Misa-Byrnihat lines:

220 kV Misa – Byrnihat I line tripped at 0353 Hr & 0535 Hr of 18.01.14, tripped at 0135 Hr, 0506 Hr & 0617 Hr of 29.01.14, tripped at 0058 Hr & 0529 Hr of 30.01.14, tripped at 0243 Hr on 04.02.14, and tripped at 0511 Hr & 0603 Hr on 09.02.14.

220 kV Misa – Byrnihat II line tripped at 0616 Hr on 27.01.14, 0509 Hr on 29.01.14, and tripped at 0409 Hr and 0547 Hr on 09.02.14.

B. Disturbance in Manipur System:

At 1333 Hr on 21.01.14, 132 kV Dimapur-Imphal tripped while 132 kV Loktak – Imphal and 132 kV Imphal – Ningthoukong lines were out of service.
Load Loss: 35 MW

At 1115 Hr on 23.01.14, 132 kV Dimapur-Imphal and 132 kV Loktak-Ningthoukong lines tripped while 132 kV Loktak – Imphal was out of service. Due to tripping of these elements, power supply to Manipur (except Jiribam & Rengpang load) got disrupted.
Load Loss: 68 MW
At 0421 Hr on 26.01.14, 132 kV Imphal(PG) – Imphal I and II lines tripped.
Load Loss: 30 MW

At 1104 Hr on 31.01.14, 132 kV Imphal(PG) – Imphal I and II lines tripped.
Load Loss: 62 MW

At 1005 Hr on 05.02.14, 132 kV Imphal(PG) – Imphal I and II lines tripped.
Load Loss: 48 MW

At 1259 Hr on 08.02.14, 132 kV Imphal(PG) – Imphal I and II lines tripped followed by tripping of 132 kV Loktak – Ningthoukong at **1310 Hr**. Due to tripping of these elements, power supply to Manipur (except Jiribam & Rengpang load) got disrupted.
Load Loss: 48 MW

At 1402 Hr on 08.02.14, 132 kV Loktak – Ningthoukong tripped.
Load Loss: 20 MW

C. Disturbance in Assam System:

At 1704 Hr on 24.01.14, 2x50 MVA 220/132 kV ICTs at Balipara tripped. This led to load loss in Assam and Arunachal Pradesh.
Load Loss: 112 MW

D. Disturbance in Nagaland System:

At 0930 Hr on 03.02.14, 132 kV Dimapur(PG) – Dimapur S/C tripped. Due to tripping of this element, power supply to Nagaland (except Mokokchung load) got disrupted.
Load Loss: 55 MW

E. SPS Mal-operation:

At 1749 Hr on 22.01.14, SPS-I related to Palatana mal-operated during synchronization of Palatana GTG-I leading to unwanted tripping of lines.

F. Major Events in North-Eastern Regional Grid:

List of multiple tripping of elements and tripping of important elements in North-Eastern Regional Grid during the period w.e.f. 02nd December, 2013 to 12th January, 2014 are attached at **Annexure - F**.

Date and Venue of next OCC

It is proposed to hold the 95th OCC meeting of NERPC on first week of March, 2014. As per roaster, Mizoram will be the host for 95th OCC meeting. The exact venue will be intimated in due course.

****

Annexure - C. 3

SN	Name of State	Total Quantum of Load Shedding required	Location where URF installed (Feeder's Name)	Stage	Load in each feeder	Quantum of Load shedding (MW) implemented	Additional quantum of load shedding required
1	Ar. Pradesh	**20**	**At 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**	**0**
			At Gohpur (132 KV Samaguri - B. Chariali - Gohpur)		8		
			At Rupai (132 KV Tinsukia - Rupai + AP Load)		17		
			At Jogighopa (132 KV Dhaligoan - Jogighopa)		7		
			At Sankardevnagar (132 KV Samaguri - Sankardevnagar)		18		

SN	Name of State	Total Quantum of Load Shedding required	Location where URF installed (Feeder's Name)	Stage	Load in each feeder	Quantum of Load shedding (MW) implemented	Additional quantum of load shedding required
2	Assam		**At Gossaigoan** (132 KV Dhaligoan - Gossaigoan)	**Stage - III (48.8 Hz)**	7	**59**	**0**
			At Rowta (132 KV Depota - Rowta)		18		
			At Chandrapur (132 KV Kahilipara - Chandrapur)		12		
			At Nalkata (132 KV Gohpur - Nalkata)		11		
			At Bokakhat (132 KV Jorhat - Bokakhat)		11		
			At Sishugram (132 KV Sarusajai - Sishugram)	**Stage - IV (48.6 Hz)**	45	**57**	**0**
			At Ledo (132 KV Tinsukia - Ledo)		12		
3	Manipur	**20**	**At Yurembam** (33 KV Yurembam - Leimakhong)	**Stage - I (49.2 Hz)**		**3**	**2**
			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 of	Location where URF installed (Feeder's Name)	Stage	Load in each	Quantum of Load	Additional
6	Nagaland	**20**	**At Mokokchung** (66 KV Mokokchung - Tuli)	**Stage - I** **(49.2 Hz)**		**6**	**0**
			At Dimapur (33 KV Dimapur - AP -I)	**Stage - II** **(49.0 Hz)**		**4.5**	**0**
			At Kohima (132 KV Kohima - Wokha)	**Stage - III** **(48.8 Hz)**		**5**	**0**
			At Dimapur (33 KV Dimapur - Refferal Hospital)	**Stage - IV** **(48.6 Hz)**		**4.5**	**0**
7	Tripura	**40**	**At Badharghat** (33 KV Badarghat - Bishalghar)	**Stage - I** **(49.2 Hz)**	8.5	**11**	**0**
			At Badharghat (33 KV Badarghat - Takarjala)		2.5		
			At 66 KV Rabindra Nagar (33 KV Rabindra Nagar - Melaghar)	**Stage - II** **(49.0 Hz)**	6.5	**10**	**0**
			At 66 KV Rabindra Nagar (33 KV Rabindra Nagar - Kathalia)		3.5		
			At 79 Tilla (33 KV, 79 Tilla - Mohanpur)	**Stage - III** **(48.8 Hz)**	7.5	**14.5**	**0**
			At 79 Tilla (33 KV, 79 Tilla - Durjoy Nagar)		7		
			At 79 Tilla (33 KV, 79 Tilla - College Tilla)	**Stage - IV** **(48.6 Hz)**		**12.5**	**0**

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

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

STATUS OF UFR IMPLEMENTATION IN NER

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

ANNEXURE- D.7

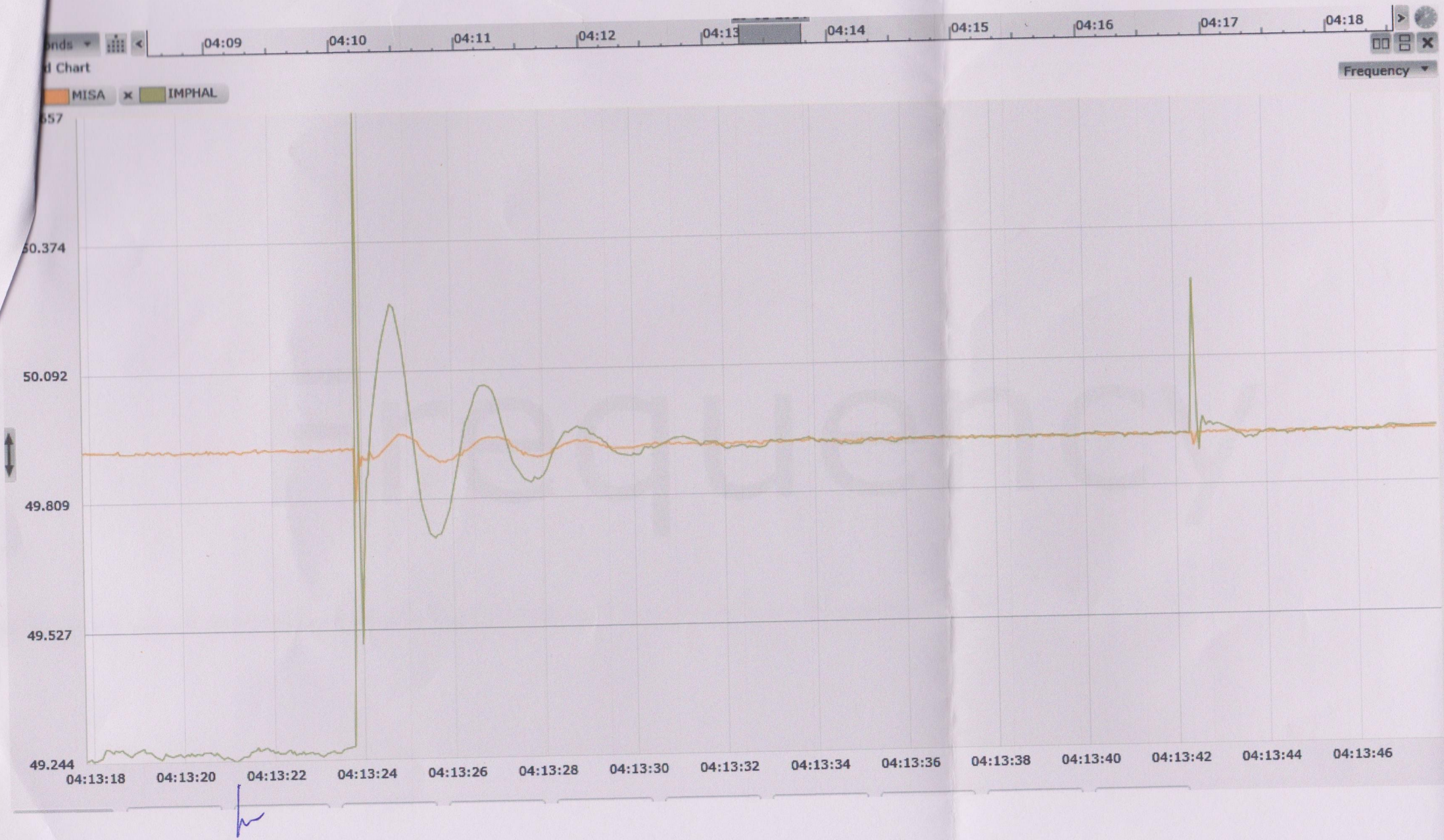
Transformer Tap Optimisation Data (Half Yearly Review)

(April'13 to September'13) 16/Jul/13

Sl. No.	Substation	Voltage Ratio (kV)	Transformer No.	Capacity in MVA	Controlled Bus	Tap Step (%)	Total Tap Positions	Nominal Tap	OFFPEAK Suggested	PEAK Suggested
1	Balipara	400/220	1	315	400kV	1.25	17	9	NO+1	NO
2		220/132	2	50	220kV	1.25	17	9	NO	NO
3	Bongaigaon	400/220	1	315	400kV	1.25	17	9	NO+2	NO
4	Salakati	220/132	1	50	132kV	1.25	17	13	NO	NO+1
5		220/132	2	50	132kV	1.25	17	13	NO	NO+1
6	Dimapur	220/132	1	100	132kV	1.25	17	13	NO+1	NO+1
7		220/132	2	100	132kV	1.25	17	13	NO+1	NO+1
8	Misa	400/220	1	315	400kV	1.25	17	9	NO+2	NO+1
9		400/220	2	315	400kV	1.25	17	9	NO+2	NO+1
10	RHEP	400/132	1	360	400 kV	2.5	17	9	NO	NO
11		400/132	2	360	400 kV	2.5	17	9	NO	NO
12	KOPILI	220/132	1	60	132kV	1.25	17	5	Not in Service	Not in Service
13		220/132	2	160	132 kV	1.25	17	13	NO-1	NO-1
14	Sarusajai	220/132	1	100	132 kV	1.25	17	13	NO	NO-2
15		220/132	2	100	132 kV	1.25	17	13	NO	NO-2
16		220/132	3	100	132 kV	1.25	17	13	NO	NO-2
17	Samaguri	220/132	1	50	132 kV	1.25	17	13	NO	NO-1
18		220/132	2	50	132 kV	1.25	17	13	NO	NO-1
19		220/132	3	50	132 kV	1.25	17	13	NO	NO-1
20	Mariani	220/132	1	100	220 kV	1.25	17	13	NO+1	NO+1
21		220/132	2	100	220 kV	1.25	17	13	NO+1	NO+1
22	Tinsukia	220/132	1	50	220 kV	1.25	16	13	NO	NO
23		220/132	2	50	220 kV	1.25	16	13	NO	NO
24	BTPS	220/132	HT1819/13078	160	220 kV	1.25	17	9b	NO+1	NO
25		220/132	6004522	80	220 kV	1.25	17	9b	NO+1	NO
26	Agia	220/132	T8265/4	50	132 kV	1.25	23	13	NO	NO-1
27	Boko	220/132	T09286/1	50	132 kV	1.14	17	13	NO	NO
28	NTPS (Local)	220/132	A.T.No.1	50	132 kV	1.25	17	13	NO	NO
29		220/132	A.T.No.1	50	132 kV	1.25	17	13	NO	NO
30	Killing	400/220	1	315	220 kV	1.25	17	9	NO	NO
31		400/220	2	315	220 kV	1.25	17	9	NO	NO
32		220/132	5083/1	160	220 kV	1.25	17	9	NO	NO
33		220/133	5083/1	160	220 kV	1.25	17	9	NO	NO
34	Silchar	400/132	1	200	220 kV	1.25	17	9	NO	NO
35		400/132	2	200	220 kV	1.25	17	9	NO	NO

*** NO = Nominal Tap Position**

ANNEXURE - D.14



ANNEXURE- D.16

ABSTRACT OF STATEWISE/SYSTEMWISE/CONSTITUENTWISE PEAK DEMAND- vs- AVAILABILITY IN NORTH EASTERN REGION FOR THE PERIOD FROM APRIL-2014 TO MARCH-2015

(ALL FIGURES IN MW & NET)

SL.NO	PARTICULARS	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	ARUNACHAL PRADESH												
	i) NET MAX DEMAND	134	109	132	121	116	139	136	117	113	114	115	116
	ii) NET POWER AVAILABILITY- Own Source	2	2	2	6	6	6	4	4	2	2	2	2
	- Central Sector	122	129	135	135	134	101	132	127	106	100	97	120
	iii) SURPLUS(+)/DEFICIT(-)	-10	22	5	20	24	-32	0	14	-6	-13	-16	5
2	ASSAM												
	i) NET MAX DEMAND	1265	1355	1410	1440	1480	1400	1380	1435	1450	1380	1235	1380
	ii) NET POWER AVAILABILITY- Own Source	211	211	271	271	271	271	271	211	211	211	211	211
	Central Sector	684	723	750	744	734	657	730	691	623	604	600	658
	iii) SURPLUS(+)/DEFICIT(-)	-370	-422	-390	-426	-476	-472	-379	-533	-616	-565	-424	-512
3	MANIPUR												
	i) NET MAX DEMAND (OWN)	110	135	125	130	130	135	140	135	135	150	135	140
	ii) NET POWER AVAILABILITY- Own Source	5	5	5	5	5	5	5	5	5	5	5	5
	- Central Sector	113	119	133	133	133	117	129	124	110	106	105	116
	iii) SURPLUS(+)/DEFICIT(-)	9	-11	13	8	9	-13	-6	-6	-20	-38	-25	-18
4	MEGHALAYA												
	i) NET MAX DEMAND	355	345	355	335	310	310	335	350	345	390	385	360
	ii) NET POWER AVAILABILITY- Own Source	99	129	170	246	257	252	193	102	89	76	61	55
	Central Sector	194	206	215	214	210	191	210	198	177	171	172	187
	iii) SURPLUS(+)/DEFICIT(-)	-62	-11	30	125	158	133	68	-50	-79	-143	-153	-119
5	MIZORUM												
	i) NET MAX DEMAND	72	78	81	81	81	86	82	86	75	73	73	84
	ii) NET POWER AVAILABILITY- Own Source	14	17	20	25	25	25	20	15	15	14	13	12
	Central Sector	68	71	75	74	74	63	72	69	61	58	58	65
	iii) SURPLUS(+)/DEFICIT(-)	9	10	14	19	18	2	11	-2	1	0	-1	-7
6	NAGALAND												
	i) NET MAX DEMAND	95	100	125	130	115	100	130	110	115	120	110	119
	ii) NET POWER AVAILABILITY- Own Source	9	12	15	20	20	20	15	10	10	9	8	7
	Central Sector	86	71	75	74	74	63	72	69	61	58	58	65
	iii) SURPLUS(+)/DEFICIT(-)	1	-17	-35	-36	-21	-17	-43	-31	-44	-53	-45	-46
7	TRIPURA												
	i) NET MAX DEMAND	215	215	230	225	280	260	310	280	250	240	220	260
	ii) NET POWER AVAILABILITY- Own Source	94	109	109	114	114	114	114	114	109	109	109	109
	Central Sector	175	180	187	186	187	171	183	179	168	164	164	174
	iii) SURPLUS(+)/DEFICIT(-)	54	74	66	76	20	25	-13	13	27	34	53	24
8	NORTH EASTERN REGION												
	i) NET MAX DEMAND	2246	2337	2458	2462	2513	2429	2514	2514	2483	2466	2273	2459
	ii) SIMULTANEOUS MAX.DEMAND	2202	2291	2410	2414	2463	2382	2464	2464	2434	2418	2228	2411
	CONSIDERING 1.02 AS DIVERSITY FACTOR												
	iii) NET POWER AVAILABILITY- Own Source	434	485	592	687	698	693	622	461	441	426	409	401
	Central Sector	1442	1497	1569	1560	1545	1363	1528	1457	1306	1261	1253	1385
	SURPLUS(+)/DEFICIT(-)	-370	-354	-297	-215	-269	-373	-363	-596	-736	-779	-610	-673

NERPC/LGBR 14-15

ABSTRACT OF STATEWISE/SYSTEMWISE/CONSTITUENTWISE ENERGY REQUIREMENT- vs- AVAILABILITY IN NORTH EASTERN REGION FOR THE PERIOD FROM APRIL-2014 TO MARCH-2015

(ALL FIGURES IN MU & NET)

SL.NO	PARTICULARS	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	TOTAL 2014-15
1	ARUNACHAL PRADESH													
	i) NET ENERGY REQUIREMENT	59	50	57	61	62	64	64	53	56	53	50	48	678
	ii) NET ENERGY AVAILABILITY- Own Source	5	5	4	6	6	6	6	4	4	3	3	4	56
	- Central Sector	40	46	58	73	74	65	52	39	36	34	31	36	584
	iii) SURPLUS(+)/DEFICIT(-)	-13	1	5	18	18	6	-7	-10	-16	-16	-16	-8	-38
2	ASSAM													
	i) NET ENERGY REQUIREMENT	505	605	645	725	735	715	675	600	640	605	505	570	7523
	ii) NET ENERGY AVAILABILITY- Own Source	116	131	158	184	190	184	161	127	99	95	80	89	1613
	- Central Sector	319	353	396	471	476	431	388	337	328	321	291	324	4434
	iii) SURPLUS(+)/DEFICIT(-)	-70	-121	-91	-70	-69	-101	-125	-136	-213	-189	-134	-157	-1476
3	MANIPUR													
	i) NET ENERGY REQUIREMENT	36	48	49	59	59	61	59	60	56	62	48	51	648
	ii) NET ENERGY AVAILABILITY- Own Source	4	4	4	4	4	4	4	4	4	4	4	4	43
	- Central Sector	49	55	62	81	87	79	70	56	50	49	44	50	732
	iii) SURPLUS(+)/DEFICIT(-)	17	10	16	25	32	22	15	0	-2	-9	-1	2	128
4	MEGHALAYA													
	i) NET ENERGY REQUIREMENT	165	165	145	160	150	145	170	175	175	195	175	175 #	1996
	ii) NET ENERGY AVAILABILITY- Own Source	57	74	98	142	148	145	111	59	52	44	35	32 #	996
	- Central Sector	90	100	113	137	138	125	113	97	93	91	82	91 #	1269
	iii) SURPLUS(+)/DEFICIT(-)	-18	10	66	119	136	125	54	-20	-31	-61	-58	-52 #	269
5	MIZORUM													
	i) NET ENERGY REQUIREMENT	36	36	36	39	37	35	41	41	38	40	35	40	452
	ii) NET ENERGY AVAILABILITY- Own Source	6	10	10	11	11	10	10	7	6	7	6	7	100
	- Central Sector	29	32	37	45	47	42	36	31	29	28	26	29	411
	iii) SURPLUS(+)/DEFICIT(-)	-1	6	11	18	21	17	5	-4	-3	-5	-3	-5	59
6	NAGALAND													
	i) NET ENERGY REQUIREMENT	50	56	54	60	50	60	65	55	50	60	45	50	655
	ii) NET ENERGY AVAILABILITY- Own Source	2	4	10	13	15	16	16	6	4	3	2	2	93
	- Central Sector	37	32	37	45	47	42	36	31	29	28	26	29	419
	iii) SURPLUS(+)/DEFICIT(-)	-11	-19	-7	-1	12	-2	-13	-18	-17	-29	-17	-19	-142
7	TRIPURA													
	i) NET ENERGY REQUIREMENT	100	110	105	120	120	120	120	110	120	125	95	120	1363
	ii) NET ENERGY AVAILABILITY- Own Source	51	55	54	56	56	55	57	52	54	54	48	54	645
	- Central Sector	99	105	110	124	128	119	113	102	101	100	91	101	1294
	iii) SURPLUS(+)/DEFICIT(-)	50	51	59	61	63	54	49	45	36	29	44	35	575
8	NORTH EASTERN REGION													
	i) NET ENERGY REQUIREMENT	950	1069	1091	1222	1213	1199	1195	1093	1135	1140	953	1055	13315
	ii) NET ENERGY AVAILABILITY- Own Source	241	284	336	415	430	419	365	258	222	208	179	191	3547
	- Central Sector	664	722	814	976	996	901	809	692	667	652	590	660	9143
	iii) SURPLUS(+)/DEFICIT(-)	-45	-63	60	169	213	121	-21	-143	-246	-280	-185	-204	-625
	MU/DAY	32	34	36	39	39	40	39	36	37	37	34	34	36

NERPC/LGBR 14-15

POWER GRID CORPORATION OF INDIA LIMITED

OPERATION SERVICE DEPARTMENT, NERTS, SHILLONG

Exception Report

MONTH : JANUARY-14

Sl. No.	Name of the Element / Outage Date	Outage Time	Ckt No / Restoration Date	Restoration Time	Duration of Outage and Attributable To: POWERGRID Hrs.	POWERGRID Mns.	Other Constituents Hrs.	Other Constituents Mns.	Sys.Const/Natural calamities/ Miltant activities Hrs.	Sys.Const/Natural calamities/ Miltant activities Mns.	Outage under categories of Deemed Available Hrs.	Outage under categories of Deemed Available Mns.	Category	Reason of Outage
BADARPUR_KOLASIB														
1	15/01/2014	04:41	15/01/2014	07:14	00	00	02	33	00	00	00	00	OMSU	Tripped due to PT failure at Kolasib(state) S/s
Sub-Total					00	00	02	33	00	00	00	00		
AIZWAL_ZEMEBAK			**# 2**											
2	09/01/2014	07:37	09/01/2014	16:06	00	00	00	00	08	29	00	00	LNCC	SD taken for mass- replacement of Defective Insulator strings
3	10/01/2014	07:00	10/01/2014	15:01	00	00	00	00	08	01	00	00	LNCC	"
4	11/01/2014	07:00	11/01/2014	14:55	00	00	00	00	07	55	00	00	LNCC	"
5	12/01/2014	07:00	12/01/2014	14:36	00	00	00	00	07	36	00	00	LNCC	"
Sub-Total					00	00	00	00	32	01	00	00		
BADARPUR_KHLIERIAT														
6	29/01/2014	04:07	29/01/2014	04:20	00	00	00	00	00	13	00	00	GGDC	Tripped due to overloading during partial grid disturbance
Sub-Total					00	00	00	00	00	13	00	00		
BADARPUR_KUMARGHAT														
7	10/01/2014	04:41	10/01/2014	04:51	00	00	00	00	00	10	00	00	LNCC	Flashover at loc.11(Rph)
8	29/01/2014	04:02	29/01/2014	04:15	00	00	00	00	00	13	00	00	LNCC	Tripped due to flashover at loc.11 during heavy fog
9	31/01/2014	10:20	31/01/2014	15:53	00	00	00	00	05	33	00	00	LNCC	SD taken for replacement of Insulator strings at loc.11 damaged due to flashover during
Sub-Total					00	00	00	00	05	56	00	00		
DIMAPUR_IMPHAL														
10	02/01/2014	11:58	02/01/2014	12:11	00	00	00	13	00	00	00	00	OMSU	Fault in state system
11	21/01/2014	13:33	22/01/2014	14:10	00	00	00	00	24	37	00	00	LMAC	A big Pine tree cut & felled in the span 235-236 by miscreants
12	23/01/2014	11:15	23/01/2014	11:33	00	00	00	18	00	00	00	00	OMSU	Fault in Manipur system
13	29/01/2014	04:07	29/01/2014	04:15	00	00	00	00	00	08	00	00	GGDC	Tripped due to overloading during partial grid disturbance
Sub-Total					00	00	00	31	24	45	00	00		
GOHPUR_NIRJULI														

Sl. No.	Name of the Element / Outage Date	Outage Time	Ckt No / Restoration Date	Restoration Time	Duration of Outage and Attributable To: POWERGRID Hrs.	POWERGRID Mns.	Other Constituents Hrs.	Other Constituents Mns.	Sys.Const/Natural calamities/ Miltant activities Hrs.	Sys.Const/Natural calamities/ Miltant activities Mns.	Outage under categories of Deemed Available Hrs.	Outage under categories of Deemed Available Mns.	Category	Reason of Outage
14	20/01/2014	08:40	20/01/2014	09:00	00	00	00	20	00	00	00	00	OMSU	Tripped due to CB failure at State S/Y
Sub-Total					00	00	00	20	00	00	00	00		
IMPHAL_IMPHAL			**#1**											
15	19/01/2014	16:30	19/01/2014	20:10	00	00	03	40	00	00	00	00	OMSU	Line kept open by Imphal(State) due to fire breakout at their S/Y
16	26/01/2014	04:21	26/01/2014	04:51	00	00	00	30	00	00	00	00	OMSU	Problem at state end(Manipur)
17	31/01/2014	11:04	31/01/2014	11:11	00	00	00	07	00	00	00	00	OMSU	Tripped due to problem at Manipur(state) S/s
Sub-Total					00	00	04	17	00	00	00	00		
JIRIBAM_HAFLONG														
18	29/01/2014	04:07	29/01/2014	04:13	00	00	00	00	00	06	00	00	GGDC	Tripped due to overloading during partial grid disturbance
Sub-Total					00	00	00	00	00	06	00	00		
JIRIBAM_LOKTAK			**# 2**											
19	08/01/2014	08:07	11/01/2014	19:22	00	00	00	00	00	00	83	15	LCSD	SD taken for erection of new tower betn loc.111-112
Sub-Total					00	00	00	00	00	00	83	15		
KHANDONG_KHLIERIAT			**I**											
20	15/01/2014	13:16	16/01/2014	16:58	00	00	00	00	27	42	00	00	LMAC	Tree cut by villagers fallen over condr in betn loc 129-30
Sub-Total					00	00	00	00	27	42	00	00		
LOKTAK_IMPHAL			**# 2**											
21	01/01/2014	23:04	02/01/2014	08:41	00	00	00	00	00	00	09	37	LVRD	h/T for vol. regu. On RLDC instruction vide code 5257
22	12/01/2014	14:46	12/01/2014	15:22	00	00	00	00	00	36	00	00	LMAC	Jhoom burning observed between loc.11-12
23	21/01/2014	07:15	21/01/2014	17:11	00	00	00	00	00	00	09	56	LCSD	SD taken for installation of new tower
24	23/01/2014	07:02	25/01/2014	18:30	00	00	00	00	00	00	59	28	LCSD	"
Sub-Total					00	00	00	00	00	36	79	01		
NIRJULI-RANGANADI														
25	17/01/2014	07:37	17/01/2014	17:53	00	00	10	16	00	00	00	00	OMSU	SD taken by Railways for shifting loc.4 to loc.6
26	18/01/2014	07:05	18/01/2014	17:19	00	00	10	14	00	00	00	00	OMSU	"
27	19/01/2014	07:09	19/01/2014	16:30	00	00	09	21	00	00	00	00	OMSU	"
28	22/01/2014	07:47	22/01/2014	17:20	00	00	09	33	00	00	00	00	OMSU	SD taken by State (AP)
29	23/01/2014	07:24	23/01/2014	16:35	00	00	09	11	00	00	00	00	OMSU	SD taken by AP

Sl. No.	Name of the Element / Outage Date	Outage Time	Ckt No / Restoration Date	Restoration Time	Duration of Outage and Attributable To: POWERGRID Hrs.	POWERGRID Mns.	Other Constituents Hrs.	Other Constituents Mns.	Sys.Const/Natural calamities/ Miltant activities Hrs.	Sys.Const/Natural calamities/ Miltant activities Mns.	Outage under categories of Deemed Available Hrs.	Outage under categories of Deemed Available Mns.	Category	Reason of Outage
30	24/01/2014	07:16	24/01/2014	17:26	00	00	10	10	00	00	00	00	OMSU	SD taken by State(AP)
Sub-Total					00	00	58	45	00	00	00	00		
KOLASIB-AIZAWL														
31	15/01/2014	04:41	15/01/2014	06:38	00	00	01	57	00	00	00	00	OMSU	Tripped due to PT failure at Kolasib(State) S/s
32	31/01/2014	14:52	31/01/2014	15:10	00	00	00	00	00	18	00	00	LMAC	Tripped due to Jhoom Burning
Sub-Total					00	00	01	57	00	18	00	00		
SILCHAR-HAILAKANDI			**#2**											
33	21/01/2014	10:16	21/01/2014	15:25	00	00	05	09	00	00	00	00	OMSU	SD taken by AEGCL
34	30/01/2014	10:14	30/01/2014	16:29	00	00	06	15	00	00	00	00	OMSU	SD taken by State(AEGCL)
Sub-Total					00	00	11	24	00	00	00	00		
BALIPARA_TEZPUR														
35	20/01/2014	10:16	20/01/2014	11:03	00	00	00	47	00	00	00	00	OMSU	Fault beyond line jurisdiction
36	22/01/2014	09:27	22/01/2014	16:59	00	00	07	32	00	00	00	00	OMSU	SD taken by State end(AEGCL)
Sub-Total					00	00	08	19	00	00	00	00		
MISA_DIMAPUR			**# 1**											
37	16/01/2014	11:29	16/01/2014	11:46	00	17	00	00	00	00	00	00	LEFT	Transient E/F
Sub-Total					00	17	00	00	00	00	00	00		
MISA_DIMAPUR			**# 2**											
38	16/01/2014	10:50	16/01/2014	17:02	06	12	00	00	00	00	00	00	OMST	ESD taken for attending hot spot in terminal connector of Isolator
39	17/01/2014	12:25	17/01/2014	15:12	00	00	02	47	00	00	00	00	OMSU	Patrolling revealed no abnormality, sabotage suspected
Sub-Total					06	12	02	47	00	00	00	00		
MISA-KOPILI			**# 1**											
40	23/01/2014	10:19	23/01/2014	14:35	00	00	04	16	00	00	00	00	OMSU	line section patrolled, no abnormality found.
41	29/01/2014	13:16	29/01/2014	16:30	00	00	00	00	03	14	00	00	LMAC	Jhoom burning between loc.311-312
Sub-Total					00	00	04	16	03	14	00	00		
MISA-MARIANI(NEW)														
42	11/01/2014	07:51	11/01/2014	17:06	00	00	00	00	09	15	00	00	LNCC	SD taken in connection with shifting of loc 585 586 587 on Pile fdn
43	12/01/2014	07:49	12/01/2014	16:41	00	00	00	00	08	52	00	00	LNCC	"

Sl. No.	Name of the Element / Outage Date	Outage Time	Ckt No / Restoration Date	Restoration Time	Duration of Outage and Attributable To: POWERGRID Hrs.	POWERGRID Mns.	Other Constituents Hrs.	Other Constituents Mns.	Sys.Const/Natural calamities/ Miltant activities Hrs.	Sys.Const/Natural calamities/ Miltant activities Mns.	Outage under categories of Deemed Available Hrs.	Outage under categories of Deemed Available Mns.	Category	Reason of Outage
44	15/01/2014	08:03	15/01/2014	16:40	00	00	00	00	08	37	00	00	LNCC	"
45	16/01/2014	08:01	16/01/2014	16:48	00	00	00	00	08	47	00	00	LNCC	"
46	17/01/2014	07:58	17/01/2014	16:51	00	00	00	00	08	53	00	00	LNCC	"
47	18/01/2014	07:54	18/01/2014	17:11	00	00	00	00	09	17	00	00	LNCC	"
48	19/01/2014	07:59	19/01/2014	16:30	00	00	00	00	08	31	00	00	LNCC	"
49	20/01/2014	07:56	20/01/2014	16:34	00	00	00	00	08	38	00	00	LNCC	"
Sub-Total					00	00	00	00	70	50	00	00		
KATHALGURI-MARIANI(NEW)														
50	11/01/2014	07:51	11/01/2014	17:13	00	00	00	00	00	00	09	22	LVRD	H/T for vol. regu. on RLDC instruction
51	12/01/2014	07:49	12/01/2014	16:58	00	00	00	00	00	00	09	09	LVRD	h/T for vol. regu. On RLDC instruction
52	15/01/2014	08:03	15/01/2014	16:44	00	00	00	00	00	00	08	41	LVRD	h/T for vol. regu. On RLDC instruction
53	16/01/2014	08:01	16/01/2014	16:53	00	00	00	00	00	00	08	52	LVRD	h/T for vol. regu. On RLDC instruction
54	17/01/2014	07:55	17/01/2014	17:13	00	00	00	00	00	00	09	18	LVRD	H/T for vol. regu. on RLDC instruction
55	18/01/2014	07:54	18/01/2014	17:19	00	00	00	00	00	00	09	25	LVRD	H/T for vol. regu. on RLDC instruction
56	19/01/2014	07:59	19/01/2014	17:38	00	00	00	00	00	00	09	39	LVRD	H/T for vol. regu. on RLDC instruction
57	20/01/2014	07:56	20/01/2014	16:39	00	00	00	00	00	00	08	43	LVRD	H/T for vol. regu. on RLDC instruction
Sub-Total					00	00	00	00	00	00	73	09		
BALIPARA-RANGANADI			**# 1**											
58	01/01/2014	23:04	02/01/2014	08:41	00	00	00	00	00	00	09	37	LVRD	H/T for vol. regu. On RLDC instruction vide code 5257
59	02/01/2014	23:55	03/01/2014	06:40	00	00	00	00	00	00	06	45	LVRD	H/T for vol. regu. On RLDC instruction vide code 5264
60	03/01/2014	22:36	04/01/2014	07:07	00	00	00	00	00	00	08	31	LVRD	h/T for vol. regu. On RLDC instruction vide code 5270
61	07/01/2014	23:43	08/01/2014	06:40	00	00	00	00	00	00	06	57	LVRD	h/T for vol. regu. On RLDC instruction vide code 5304
62	10/01/2014	02:11	10/01/2014	06:41	00	00	00	00	00	00	04	30	LVRD	h/T for vol. regu. On RLDC instruction vide code 5324
63	11/01/2014	23:26	12/01/2014	07:14	00	00	00	00	00	00	07	48	LVRD	h/T for vol. regu. On RLDC instruction vide code 5341
64	14/01/2014	00:01	14/01/2014	07:06	00	00	00	00	00	00	07	05	LVRD	h/T for vol. regu. On RLDC instruction vide code 5350
65	15/01/2014	23:01	16/01/2014	06:30	00	00	00	00	00	00	07	29	LVRD	h/T for vol. regu. On RLDC instruction vide code 5359

Sl. No.	Name of the Element / Outage Date	Outage Time	Ckt No / Restoration Date	Restoration Time	Duration of Outage and Attributable To: POWERGRID Hrs.	POWERGRID Mns.	Other Constituents Hrs.	Other Constituents Mns.	Sys.Const/Natural calamities/ Miltant activities Hrs.	Sys.Const/Natural calamities/ Miltant activities Mns.	Outage under categories of Deemed Available Hrs.	Outage under categories of Deemed Available Mns.	Category	Reason of Outage
66	18/01/2014	01:50	18/01/2014	08:33	00	00	00	00	00	00	06	43	LVRD	h/T for vol. regu. On RLDC instruction vide code 5382
Sub-Total					00	00	00	00	00	00	65	25		
BALIPARA-RANGANADI			**# 2**											
67	04/01/2014	22:46	05/01/2014	17:14	00	00	00	00	00	00	18	28	LVRD	h/T for vol. regu. On RLDC instruction vide code 5282
68	05/01/2014	23:19	06/01/2014	09:27	00	00	00	00	00	00	10	08	LVRD	h/T for vol. regu. On RLDC instruction vide code 5287
69	06/01/2014	22:35	07/01/2014	07:02	00	00	00	00	00	00	08	27	LVRD	h/T for vol. regu. On RLDC instruction vide code 5291
70	07/01/2014	13:45	07/01/2014	14:20	00	00	00	00	00	00	00	35	LVRD	h/T for vol. regu. On RLDC instruction vide code 5296
71	08/01/2014	23:04	09/01/2014	17:05	00	00	00	00	00	00	18	01	LVRD	h/T for vol. regu. On RLDC instruction vide code 5314
72	10/01/2014	23:06	11/01/2014	08:08	00	00	00	00	00	00	09	02	LVRD	h/T for vol. regu. On RLDC instruction vide code 5314
73	12/01/2014	23:19	13/01/2014	07:43	00	00	00	00	00	00	08	24	LVRD	h/T for vol. regu. On RLDC instruction vide code 5348
74	14/01/2014	22:43	15/01/2014	06:57	00	00	00	00	00	00	08	14	LVRD	H/T for vol. regu. On RLDC instruction VIDE CODE 5352
75	16/01/2014	17:10	16/01/2014	17:55	00	00	00	00	00	00	00	45	OSFD	ESD taken by RHEP(NEEPCO)
76	17/01/2014	00:04	17/01/2014	09:24	00	00	00	00	00	00	09	20	LVRD	h/T for vol. regu. On RLDC instruction vide code 5372
77	19/01/2014	00:05	19/01/2014	07:10	00	00	00	00	00	00	07	05	LVRD	h/T for vol. regu. On RLDC instruction vide code 5388
Sub-Total					00	00	00	00	00	00	98	29		
Grand Total					**06**	**29**	**95**	**09**	**165**	**41**	**399**	**19**		

Period from 13/01/14 to **ANNEXURE - F**

Sl. No.	Name of Transmission Element/Generator Tripped	Owner / Utility	Date of Event	Time of Event	Effect (Loss of Generation/ Load in MW)
A. Multiple / Repeated tripping					
1	132 kV Aizawl - Kolasib	POWERGRID	15.01.2014	0441	Load Loss: 6 (Mizoram)
	132 kV Badarpur - Kolasib				
2	220 kV Misa - Dimapur I	POWERGRID	16.01.2014	1129	-
	132kV Dimapur - Bokajan	AEGCL			
3	220 kV Misa - Brynihat I	MePTCL	18.01.20104	0353	-
				0535	
4	132 kV Dimapur - Imphal S/C	POWERGRID	21.01.2014	1333	Load Loss: 35 (Manipur)
5	132 kV Loktak - Ningthoukong S/C	Manipur	23.01.2014	1115	Load Loss: 68 (Manipur)
	132 kV Dimapur - Imphal S/C	POWERGRID			
6	132 kV Imphal(PG) - Imphal I	Manipur	26.01.2014	0421	Load Loss: 30 (Manipur)
	132 kV Imphal(PG) - Imphal II				
7	220 kV Misa - Byrnihat I	MePTCL	29.01.2014	0135	-
				0506	
				0617	
8	400 kV Silchar- Byrnihat	POWERGRID	29.01.2014	0406	Load Loss: 25(Meghalaya) 5(Mizoram) 36 (South Assam) 18 (Manipur)
	132 kV Badarpur- Khliehriat			0407	
	132 kV Jiribam -Halflong				
	132 kV Dimapur- Imphal				
9	220 kV Misa - Byrnihat I	MePTCL	30.01.2014	0058	-
				0529	
10	132 kV Imphal(PG) - Imphal I	POWERGRID	31.01.2014	1104	Load Loss: 62 (Manipur)
	132 kV Imphal(PG) - Imphal II	Manipur			
11	132 kV Silchar - Srikona I	POWERGRID	01.02.2014	0640	Load Loss: 24
	133 kV Silchar - Srikona II				
	132 kV Silchar - Panchgram				
	132 kV Badarpur - Panchgram				
12	220 kV Misa- Kopili I	POWERGRID	01.02.2014	1139	-
				1207	

B. Unit tripping

1	Khandong U#2	NEEPCO	14.01.2014	2028	Generation Loss: 18
2	Khandong U#2	NEEPCO	15.01.2014	1528	Generation Loss: 20
3	AGBPP U#2	NEEPCO	15.01.2014	2020	Generation Loss: 30
4	AGBPP U#5	NEEPCO			Generation Loss: 33
5	AGBPP U#4	NEEPCO		2045	Generation Loss: 21
6	Palatana GTG I	OTPC	21.01.2014	0508	Generation Loss: 106
7	Palatana STG I	OTPC			Generation Loss: 90
8	AGTPP U# 3	NEEPCO	22.01.2014	0349	Generation Loss: 20
9	AGBPP U-2	NEEPCO	27.01.2014	0957	Generation Loss: 43
10	AGBPP U-4				
11	Palatana GTG-1	OTPC	29.01.2014	0407	Generation Loss: 130
12	Palatana STG-1				Generation Loss: 95
13	Loktak U-2	NHPC	29.01.2014		Generation Loss: 25
14	AGBPP U-2	NEEPCO	30.01.2014	1002	Generation Loss: 45
15	AGBPP U-4			1008	
16	AGBPP U-2	NEEPCO	31.01.2014	1110	Generation Loss: 43
17	AGBPP U-4			1120	
18	Palatana GTG-1	OTPC	01.02.2014	0639	Generation Loss: 22
19	Palatana STG-1			0630	Generation Loss: 36
20	Palatana GTG-1	OTPC	02.02.2014	0543	Generation Loss: 25
21	Palatana STG-1			0541	Generation Loss: 56

C. Tripping of critical element

1	132 kV Khandong - Khliehriet I	POWERGRID	15.01.2014	1315	-
2	220 kV Misa - Dimapur II	POWERGRID	17.01.2014	1223	-
3	132 kV Nirjuli - Gohpur S/C	POWERGRID	20.01.2014	0840	22
4	220 kV Balipara - Samaguri S/C	AEGCL	20.01.2014	1016	-
5	220 kV Misa - Kopili I	POWERGRID	23.01.2014	1017	-
6	220/132 kV, 2x50 MVA ICTs at Balipara	AEGCL	24.01.2014	1704	112
7	400 kV Silchar - Palatana I	NETC	26.01.2014	0149	-
8	220 kV Misa - Byrnihat II	MePTCL	27.01.2014	0616	-
9	132 kV Badarpur- Kumarghat	POWERGRID	29.02.2014	0402	-
10	220 kV Misa - Byrnihat II	MePTCL	29.01.2014	0509	-
11	132 kV Aizawl- Kolasib	POWERGRID	31.01.2014	1452	-
12	132 kV Loktak- Ninthoukong	POWERGRID	31.01.2014	1755	Load Loss: 25 (Manipur)

D. SPS Maloperation

1	132 kV Silchar - Srikona I	AEGCL	22.01.2014	1749	-
2	132 kV Silchar - Srikona II				
3	132 kV Silchar - Panchgram				