



भारत सरकार Government of India

विद्युत मंत्रालय Ministry of Power

उत्तर पूर्वी क्षेत्रीय विद्युत समिति

North Eastern Regional Power Committee

एन ई आर पी सी कॉम्प्लेक्स, डोंग पारमाओ, लापालाङ, शिल्लोंग-७९३००६, मेघालय  
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No. NERPC/SE (O)/PCC/2020/3092-3129

Dated: February 10<sup>th</sup>, 2020

To,

1. Managing Director, AEGCL, Bijuli Bhawan, Guwahati – 781 001
2. Managing Director, APDCL, Bijuli Bhawan, Guwahati – 781 001
3. Managing Director, APGCL, Bijuli Bhawan, Guwahati – 781 001
4. Director (Generation), Me. PGCL, Lumjingshai, Short Round Road, Shillong – 793 001
5. Director (Distribution), Me. ECL, Lumjingshai, Short Round Road, Shillong – 793 001
6. Director(Transmission), Me. PTCL, Lumjingshai, Short Round Road, Shillong – 793 001
7. Managing Director, MSPDCL, Secure Office Bldg. Complex, South Block, Imphal – 795 001
8. Managing Director, MSPCL, Electricity Complex, Keishampat, Imphal – 795 001
9. Director (Tech.), TSECL, Banamalipur, Agartala -799 001.
10. Director (Generation), TPGCL, Banamalipur, Agartala -799 001.
11. Chief Engineer (WE Zone),Department of Power ,Govt. of Arunachal Pradesh, Itanagar- 791111
12. Chief Engineer (EE Zone),Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791111
13. Chief Engineer (TP&MZ),Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791111
14. Engineer-in-Chief (P&E), Department of Power, Govt. of Mizoram, Aizawl – 796 001
15. Chief Engineer (P), Department of Power, Govt. of Nagaland, Kohima – 797 001
16. CGM, (LDC), SLDC Complex, AEGCL, Kahilipara, Guwahati-781 019
17. Group General Manager, NTPC, Bongaigoan Thermal Power Project, P.O. Salakati, Kokrajhar- 783369
18. ED, NERTS, PGCIL, Dongtieh-Lower Nongrah, Lapalang, Shillong -793 006
19. ED (O&M), NEEPCO Ltd., Brookland Compound, Lower New Colony, Shillong-793003
20. ED (Commercial), NEEPCO Ltd., Brookland Compound, Lower New Colony, Shillong-793003
21. ED (O&M), NHPC, NHPC Office Complex, Sector-33, Faridabad,Haryana-121003
22. Vice President (Plant), OTPC, Badarghat Complex, Agartala, Tripura - 799014
23. GM, NERLDC, Dongtieh, Lower Nongrah, Lapalang, Shillong -793 006
24. Member Secretary, ERPC, 14 Golf Club Road, Tollygunge, Kolkata-700033
25. Chief Engineer, GM Division, Central Electricity Authority, New Delhi – 110066
26. Chief Engineer (NPC), NRPC Complex, Katwaria Sarai, SJSS Marg., New Delhi - 110016

**Sub: Minutes of 54<sup>th</sup> PCC Meeting.**

**Sir/Madam,**

Please find enclosed herewith the minutes of 54<sup>th</sup> PCC Meeting held at Guwahati on the **22<sup>nd</sup> January, 2020** for your kind information and necessary action. The minute is also available on the website of NERPC, **www.nerpc.nic.in**.

Any comments/observations may kindly be communicated to NERPC Secretariat at the earliest.

**Encl: As above**

भवदीय / Yours faithfully,

B. Lyngkhoi  
**Director/ SE**

Copy to:

1. CGM, AEGCL, Bijuli Bhavan, Guwahati - 781001
2. CGM, APGCL, Bijuli Bhavan, Guwahati - 781001
3. CGM, DISCOM, Bijuli Bhavan, Guwahati - 781001
4. Head of SLDC, Me.ECL, Lumjingshai, Short Round Road, Umjarain, Shillong – 793 022
5. Head of SLDC, Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791 111
6. Head of SLDC, Department of Power, Dimapur, Nagaland
7. Head of SLDC, Electricity Department, Govt. of Manipur, Keishampat, Imphal – 795 001
8. Head of SLDC, Department of Power, Govt. of Mizoram, Aizawl – 796 001
9. Head of SLDC, TSECL, Agartala – 799 001
10. Chief Engineer(Elect), Loktak HEP, Vidyut Vihar, Kom Keirap, Manipur- 795124
11. Addl. GM (EED), NTPC Ltd., Bongaigoan Thermal Power Project, P.O. Salakati, Kokrajhar- 783369
12. DGM (C&M), OTPC, 6th Floor, A-Wing, IFCI Tower -61, Nehru Place, New Delhi – 110019.



**Director/ SE**

**North Eastern Regional Power Committee**

**MINUTES OF THE 54<sup>th</sup> PROTECTION COORDINATION**

**SUB-COMMITTEE MEETING OF NERPC**

**Date** : 22/01/2020 (Wednesday)  
**Time** : 14:00 hrs  
**Venue** : “Hotel Landmark”, Guwahati.

The List of Participants in the 54<sup>th</sup> PCC Meeting is attached at **Annexure – I**

Shri A.K. Thakur, Member Secretary, NERPC welcomed all the participants to the 54<sup>th</sup> PCC meeting. He noted the presence of participants from all the utilities except Mizoram, Nagaland and Tripura. He stated that unless all utilities participated regularly and actively; the protection system in the region will remain vulnerable.

Thereafter he requested Shri B. Lyngkhai, Director (O&P) to take up the agenda items for discussion.

Shri B. Lyngkhai, Director (O&P), at the very outset informed the forum that one of the very old member of the forum Sh. A. Mallick, CGM, NERLDC has been transferred out of the region and stated that the forum will really miss him as he is one of the most dedicate and sincere officer. The forum thanked his contribution and long lasting dedication to NER. Member Secretary, NERPC, ED, NERLDC and other senior officers formally felicitated Sh. A. Mallick, CGM, NERLDC.

**A. CONFIRMATION OF MINUTES**

**CONFIRMATION OF MINUTES OF 53<sup>rd</sup> MEETING OF PROTECTION SUB-COMMITTEE OF NERPC.**

The minutes of 53<sup>rd</sup> meeting of Protection Sub-committee held on 11<sup>th</sup> July, 2019 at Guwahati were circulated vide letter No. NERPC/SE/PCC/2018/2565-589 dated 22<sup>nd</sup> July, 2019.

***The Sub-committee confirmed the minutes of 53<sup>rd</sup> PCCM of NERPC as no other comments/observations were received from the constituents.***

**B. ITEMS FOR DISCUSSION**

**1. FOLLOW UP OF REMEDIAL ACTIONS:**

**B.1 Tripping of 00/132kV 2x125MVA ICTs at Palatana:**

- 125 MVA, 400/132 kV ICT 1 & 2 at Palatana tripped on earth fault protection at 05:32 Hrs on 27<sup>th</sup> Aug'19. Tripping was due to unbalance caused by jumper failure in 132 kV Monarchak – Rokhia line.
- 125 MVA, 400/132 kV ICT 1 at Palatana tripped along with GTG-1 at Palatana at 15:55 Hrs on 7<sup>th</sup> Oct'19. Later, while attempting to charge ICT-1, ICT-2 tripped along with all the units in Palatana.

Tripping of both ICTs at Palatana had resulted in low voltage issue in Tripura Power System.

Deliberation of the Sub-group on 11.12.2019:

For event dated 27.08.2019

- Tripping on E/F relay operation
- E/F setting for ICT to be increased to 0.2pu

For event dated 07.10.2019

Analysis of the event:

- GT-1 tripped on Rotor E/F and subsequently trip command was given to STG-1.
- Though Main CB of ST-1 opened, one pole of Tie CB was mechanically jammed
- This triggered LBB operation
- Subsequently(the 2nd time) when both the ICT-1&2 were charged from the HV side, under-voltage protection was triggered due to LV side E/F

Suggested recommendations:

- The reasons for non-opening of one pole of Tie CB to be investigated and detailed report to be submitted.
- LBB operation to be configured in DR channel for all Tie Bays.
- PD settings for Tie CB to be submitted.
- Exact location of LV side E/F to be intimated
- Detailed report to be submitted for UV relay operation.

**Deliberation of the sub-Committee:**

- OTPC communicated that the reason for non-opening of one pole of Tie CB was due to mechanical failure.
- Further, OTPC told that the reason for the 2<sup>nd</sup> time trip on 07/10/2019: for ICT-2 was due to E/F and detailed report mentioning the reasons for trip of ICT-1& units will be communicated by 7<sup>th</sup> February,2020.

***The Sub-Committee noted as above & dropped.***

**Action: OTPC.**

**B.2 Tripping of 220 kV Bus 1 at Misa Substation:**

At 08:52 hrs of 07.01.20, all the elements connected to 220 kV Bus 1 at Misa Substation tripped due to suspected protection mal-operation while availing 163rd OCC approved shutdown of 400/220 kV, 315 MVA ICT -2 at Misa for AMP of bay equipments. During the event, the following elements tripped:

1. 220kV Misa-Dimapur-2 line
- 2.220kV Misa-Byrnihat-1 line
- 3.220kV Misa-Samaguri-2 line
- 4.220kV Misa-Mariani (AS) line
- 5.500 MVA, 400/220 kV ICT-3

It is a matter of serious concern that simultaneous tripping of several critical elements of NER occurred in a short span of time. This poses a great threat to the reliability of the Grid.

There is an utmost need to conduct thorough checking (relay settings, correctness of wirings, healthiness of DC system etc.) and self-audit in the 400 kV and 220kV substations of NER.

In view this issue, it is proposed to submit undertaking by utilities regarding the connection of wirings & relay settings after relay replacement, installation of new relay etc.

**Deliberation of the sub-Committee:**

Sr. DGM (AM), NERTS informed that while availing 163rd OCC approved shutdown of 400/220 kV, 315 MVA ICT -2 at Misa, the other elements connected to 220 KV bus 1 tripped. He further informed the reasons for mal tripping was due to wrong wiring to LBB relay (LBB timer was bypassed for LV side CB of ICT-1).

NERTS stated that the above deficiencies have been rectified and wiring was checked for all the elements at Misa and Bus Bar protection was taken in to service after this.

NERLDC informed the forum that in view of the recent major grid events, self- audit of S/S of NERTS was requested vide letter ref no NERLDC/SO-II/1736 dated 07.01.20. No reply has been received from NERTS in this regard. NERTS was requested to intimate the action plan within 1 week.

***The Sub-Committee noted as above.***

***Action: NERTS***

**B.3 Immediate intimation of grid events to the respective MRT Department by SLDC for submission of DR and EL outputs:**

It is proposed that immediate intimation to the MRT Department should be given by the respected SLDC for facilitating submission of DR and EL files in the tripping portal within 24 Hours for timely analysis of the event.

**Deliberation of the sub-Committee:**

After detailed deliberation the forum recommended the utilities to create a Whatsapp group (if not already present) comprising of concerned utilities in the respective states to facilitate submission of required data within 24 Hrs.

***The Sub-Committee noted as above & dropped.***

***Action: All STUs and all SLDCs.***

**B.4 Frequent tripping of 132kV Balipara - Tenga line:**

132 kV Balipara – Tenga Line tripped 4 times in the month of Jan'20. Power supply to the Khupi area of Arunachal Pradesh Power System was affected due to these events.

It is observed that multiple tap connections have been made in Balipara (PG) – Tenga – Khupi link which is adversely affecting the reliability of the system.

It was earlier decided in the NERPC fora to withdraw the tap connection in the 132 kV Balipara – Khupi link. DoP Arunachal Pradesh is requested to intimate the status of the same. It is also requested to withdraw the tapping(s) in the 132 kV Balipara – Tenga - Khupi, if in place.

**Deliberation of the sub-Committee:**

Director NERPC informed the forum that:

- a. T connection exists at only Bhalukpong Alloy Steel. This arrangement was agreed at ministerial level of Arunachal Pradesh and NERPC forum. However the permission was temporary and same to be dismantled after permissible period.
- b. T connection at Nephichu has already been converted to LILO as communicated by DoP Arunachal Pradesh.

NERLDC opined that it is suspected some more T connection might be there for 132KV Balipara-Khupi, because EMS is showing quite high difference. The forum advised NERLDC to tally SEM figures also.

AE DoP Arunachal Pradesh informed that:

- a. 132/33kV Transformer and LILO arrangement and Bhalukpong Alloy Steel was to be made by Alloy steel and the corresponding amount was to be adjusted in subsequent energy bills. This agreement was modified unilaterally by Alloy Steel and only 132/11kV ICT was commissioned.

The forum requested DoP Arunachal Pradesh to submit a plan for the conversion of all T to LILO before next OCCM.

- b. After 1<sup>st</sup> April 2020, O&M of 132 KV Balipara-Khupi and 132 KV Khupi substation will be done by DoP Arunachal Pradesh.

Regarding Khupi-Kimi(Kameng) line, it was decided :

1. 132kV line charged at 33kV presently shall be converted to 132kV.
2. 132kV Seppa bay at Khupi to be used for 132kV Khupi-Kimi(Kameng).
3. Insulator, line inspection to be carried out by DoP, Arunachal Pradesh.

NERLDC expressed the concerns on the delay in implementation of carrier aided protection in 132 kV Balipara – Tenga – Khupi link and 132 kV Tenga – Dikshi line since it was assured earlier that this will be completed within 2 months. Director, NERPC informed that the matter will be taken up with DoP Ar. Pradesh separately.

***The Sub-Committee noted as above.***

***Action: DoP, Arunachal Pradesh.***

**B.5 Status of submission of FIR and DR & EL outputs for the Grid Events w.e.f**

**01.07.19 to 31.12.19:**

In line with regulation 12 (1) of CEA Grid Standards Regulations and IEGC provision under clause 5.2 (r), FIR and DR & EL Outputs for each grid events are required to be submitted by concerned utilities to NERLDC for detailed investigation and analysis.

Status of uploading of FIR and DR & EL outputs in Tripping Monitoring Portal from Jul'19 to Dec'19 (as on 17.01.2020) is given below:

Name of Utility	Total no. of FIR, DR & EL outputs as per events	% Submission of		
		FIR	DR output	EL output
DoP, Ar. Pradesh	66	3	3	0

AEGCL	183	12	12	4
MSPCL	75	80	1	8
MePTCL	30	27	77	23
P&ED, Mizoram	5	0	0	0
DoP, Nagaland	43	0	0	0
TSECL	69	1	12	0
POWERGRID	550	87	88	76
NEEPCO	332	57	43	31
NHPC	52	2	12	2
NTPC	18	0	6	0
OTPC	30	80	86	55

Concerned Utilities are requested to upload Disturbance Recorder (DR), Event Logger (EL) outputs for grid events along with a First Information Report (FIR) in Tripping Monitoring Portal (<http://103.7.131.234/Trippingnew/Account/Login.aspx>) for analysis purpose.

**Deliberation of the sub-Committee:**

NERLDC informed the forum that element tripping has been informed to all the utilities on daily basis. Non-submission of FIR, DR & EL output status is reported to all utilities for necessary actions after 1week. Again, letter is given from NERLDC to higher management of default utilities for necessary actions to submit the data. Even after so much follow up, response from most of the utilities is poor as seen from the table.

AE DoP Arunachal Pradesh informed that:

1. The DR/EL facility is only available at 132kV Chimpu S/S.
2. It was requested to share the IP of the tripping portal with SLDC.
3. DR output from Chimpu was submitted late in the month of Januray'20 as DR output was unable to download from relay due to PCM software issues.
4. For 132kV Lekhi S/S DR/EL will be submitted from March 2020 onwards.

EE(SP), MePTCL informed that Shri Khongmalai, AE (MRT) MePTCL is the designated official for submission of all DR/EL. It was also informed that DR output from Umtru & Leskha shall be collected from MePGCL by SLDC Meghalaya.

AEGCL informed that:

1. SAS upgradation work is going on in the majority of stations and DRs has been sent since Nov'19 except from Upper Assam where PSDF works are yet to complete. DR output from Upper Assam will be submitted from Apr'20 onwards.
2. Defective DRPC at Panchgram, Pailapool has been made functional.

MSPCL informed that DR output is not generated at Ningthoukhong. It was decided that NERTS will visit Ningthoukhong in Jan'20 for checking and necessary training.

NTPC informed that they are facing network issue likely due to firewall restriction. It was also informed that they will submit the pending data at the earliest.

Further the forum decided that wherever the downloaded EL is not in a transmittable format, the snapshot is to be uploaded in the tripping portal.

***The Sub-Committee noted as above.***

***Action: All utilities above.***

#### **B.6 Verification of Outage Data of NERTS & NETA for the month of Nov'19:**

Reasons of outages for eight number of the outages for the month of Nov'19 are not verified due to non-submission of DR & EL outputs, supporting photographs, weather report etc. List of the outages are attached as **Annexure-B.6** for further discussion.

#### **Deliberation of the sub-Committee:**

The forum requested respective State utilities were requested to give their comments where ever downstream faults are indicated by NERTS for finalization of availability declaration.

The forum referred the matter to the next Sub-Group for further analysis and deliberation.

***The Sub-Committee noted as above.***

***Action: NERPC/NERLDC.***

#### **B.7 Analysis & Discussion on Events, Grid Incidences, Grid Disturbances which occurred in NER Grid w.e.f 1st July 2019 – 31st December 2019.**

The following numbers of Grid Disturbances (GD) & Grid Incidents (GI) occurred during the period **w.e.f 1st July 2019 – 31<sup>st</sup> December 2019. Following annexures are enclosed for discussion:**

- Non-operation of auto recloser in important grid elements for transient faults is attached as **Annexure-B.7(I)**.
- Issues pertaining to carrier aided protection is attached as **Annexure-B.7(II)**
- Channel configuration issue of disturbance recorders is attached as **Annexure-B.7(III)**.
- Time sync. Issue of disturbance recorders is attached as **Annexure-B.7(IV)** to take corrective actions.

Sl. No.	Control Area	Grid Incidents in nos.	Grid Disturbance in nos.	Grid Incidents in nos.	Grid Disturbance in nos.
		(Jul'19 to Dec'19)	(Jul'19 to Dec'19)	(Jan'19 to Dec'19)	(Jan'19 to Dec'19)
1	Palatana	10	1	13	2
2	AGBPP	20	2	42	0
3	AGTPP	11	1	42	2
4	Ranganadi	3	0	4	0
5	Kopili	5	1	8	0
6	Khandong	8	3	12	0
7	Doyang	2	1	2	1
8	Loktak	0	0	1	2
9	BgTPP	6	1	14	0
10	Pare	0	0	1	0
11	Ar. Pradesh	0	31	0	66
12	Assam	0	16	0	28
13	Manipur	0	11	0	30
14	Meghalaya	0	1	0	6
15	Mizoram	0	19	0	38
16	Nagaland	0	4	0	31
17	Tripura	0	8	0	22

Sl. No.	Category of GD / GI	Grid Disturbance in nos.	
		Jul'19 to Dec'19	Jan'19 to Dec'19
1	GI-I	27	65
2	GI-II	38	74
3	GD 1	99	200
4	GD 2	2	4
5	GD 3	0	0
6	GD 4	0	0
7	GD 5	0	2
8	<b>Total GI</b>	<b>65</b>	<b>139</b>
9	<b>Total GD</b>	<b>101</b>	<b>106</b>

***Deliberation of the sub-Committee:***

Issues	Target
Non-operation of auto recloser in important grid elements for transient faults.	To be checked by all the utilities as per annexure B.7(I) by January 2020.
Issues pertaining to carrier aided protection.	To be checked by all the utilities as per annexure B.7(II) by January 2020.
Channel configuration issue of disturbance recorders.	To be checked by all the utilities as per annexure B.7(III) by February 2020.
Time sync. Issue of disturbance.	To be checked by all the utilities as per annexure B.7(IV) by February 2020.

NERLDC informed the following regarding the events for the period Jul-Dec'19:

- Root cause not concluded for 33% of events due to non-submission of data by utilities which is a matter of concern.
- Unwanted tripping for fault beyond line (relay coordination issue): 26%
- Vegetation and Unwanted Relay Operations: 13% each
- Lightning: 7 %
- Others: 8%
- This year tripping of elements was high in 400 kV & 132 kV level compared to last year
- There was a sudden increase in 400 kV line tripping in Dec'18 & Nov'19 due to Bongaigaon (PG) incidents.

NERLDC informed that for Fault beyond line section specifically in case of NERTS. Root Cause could not be analyzed due to absence of sufficient information. The forum decided that each of the individual events would be analyzed in the Sub-Group, in presence of respective state utilities.

Sr. DGM(AM) NERTS informed the following:

Auto-reclosure issues – (i) For 400kV BNC-RHEP-2 MICOM relay internal signal for AR is non-functional. To rectify the same OEM would visit in Feb'20, (ii) 132kV AGTCCPP-Kumarghat : for AR relay at AGTCCPP to be replaced by August 2020. (iii) 132 kV Agartala – AGTCCPP D/C– 3ph AR to be implemented by Feb'20. (iv) 132kV Aizawl-Tipaimukh non-functioning of AR rectified. (v) 220kV Mariani-Mokokchung D/C – AR to be rectified by February 2020.

AEGCL informed that for 400kV Silchar – Azara Carrier channel 1&2 failure blocks the AR. So Communication team would visit Azara and rectify the same by February 2020.

For testing purpose for attending the issue of DT & Carrier channel mix between 400kV Silchar & 400kV Azara Shutdown was requested by AEGCL

***The Sub-Committee noted as above.***

***Action: All concerned utilities.***

### **B.8 Major Grid Events in NER Power System since last Subgroup Meeting held on 11.12.19**

Details of the Grid Disturbances & critical Grid Events in NER Power System since last Subgroup Meeting held on 11.12.19 are given the below:

- a. Blackout of Hailakandi Area of Assam on 27<sup>th</sup> Dec'19.
- b. Blackout of Panchgram Area of Assam on 19<sup>th</sup> Dec'19.
- c. Blackout of Ningthoukong Area of Manipur – 3 times in Dec'19.

- d. Tripping of 400 kV Balipara-Kameng D/C on 23rd Dec'19.
- e. Blackout of Kolasib Area of Mizoram on 3rd Jan'20
- f. Blackout of Khliehriat Area of Meghalaya on 16th Jan'20

**Deliberation of the sub-Committee:**

Regarding disturbances at sl no. a, b, d, f, the forum referred the matter to the next Sub-Group for further analysis and deliberation.

For repeated disturbances in Ningthoukhong Area it was decided that NERTS and MSPCL officials would visit Ningthoukhong on 27.01.2020 to assess reasons for non-downloading of DR,RCA for trippings and take necessary remedial actions if any.

Regarding recurrence of disturbance at Kolasib area Sr. DGM(AM) NERTS stated that it may be due to 132/33kV ICT HV CB gas leakage. The forum requested P&ED Mizoram to rectify at the earliest.

**The Sub-Committee noted as above.**

**Action: NERTS, MSPCL, P&ED Mizoram, NERLDC, NERPC.**

**C. I T E M S   F O R   S T A T U S   R E V I E W**

**C. 1. STANDARDIZATION OF DR CHANNELS:**

<b>Name of the Utility</b>	<b>Status as updated in the 53rd PCC meeting</b>	<b>Latest status</b>
AEGCL	Sample DR outputs of completed R&U stations will be submitted after Aug'19. Sample DR outputs of ongoing R&U stations to be given upon completion of works as per schedule.	NERLDC informed that sample DR outputs have not been received. Only those DRs which have been submitted sporadically subsequent to trippings have been analyzed for proper channel standardization. All utilities are requested to submit DR outputs by February 2020.
MePTCL	DR output of Main-2 relay is not standardized at Killing station. Main-1 DR output from Killing by 26.09.2019. Other stations by July'19	
TSECL	Sample DR output of all stations by July'19	
DoP Ar. Pradesh	Could not be updated as no representative	
MSPCL	Sample DR output of completed R&U stations will be submitted by July'19. Ongoing stations to be given upon completion of works as per schedule.	
P&ED Mizoram	Sample DR output of completed R&U stations by July'19. Ongoing stations to be given upon completion of works as per schedule.	
DoP Nagaland	Could not be updated as no representative	

**The Sub-Committee noted as above.**

**Action: All utilities as above.**

**C. 2 STATUS OF AUTO-RECLOSURE FOR IMPORTANT STATE GRID LINES:**

- Status of AEGCL & MePTCL is monitored in PCC subgroup meeting.
- Other utilities are requested to furnish the target date for Implementation of Auto Reclosure Scheme and furnish the details as decided
- For 132kV Dimapur-Kohima; decision as per previous meeting: 3-ph A/R is to be implemented for 132kV Dimapur-Kohima, with dead line charging at Kohima and check sync at Dimapur.
- Updated list of auto-recloser is attached as **Annexure-C.2.**

***Deliberation of the sub-Committee:***

Director NERPC requested all the utilities to submit target date for auto recloser implementation as per the circulated list.

***The Sub-Committee noted as above.***

***Action: MSPCL, P&ED Mizoram, DoP Ar. Pradesh, DoP Nagaland and TSECL.***

**C.3 Third Party Protection audit of NER Sub-Stations**

The timeline given by various utilities for submission of compliance status (Third Party Audit + Tractabel Audit) is as below:

<b>Name of utility</b>	<b>Status as given in 53rd PCC meeting</b>	<b>Status as per Sub-group meeting on 11.12.19</b>	<b>Status as given in 54<sup>th</sup> PCC meeting</b>
TSECL	To be submitted by 30.06.19	By 31.12.19	By February 2020
DoP Nagaland	By 15.01.19	Could not be updated	
NERTS-POWERGRID(Tractabel Audit)	To be submitted by 30.06.19	By 31.12.19	
DoP Ar. Pradesh	By 15.01.19	Could not be updated	
NHPC	By 31.12.18	Submitted	
P&ED Mizoram	Not updated	Could not be updated	
NTPC	Not updated	Could not be updated	

***The Sub-Committee noted as above.***

***Action: All utilities as above.***

**C.4 Status review against recommendations for GD-IV & V in NER:**

<b>Brief details of the disturbance</b>	<b>Recommendations</b>	<b>Name of utility</b>	<b>Status as updated in 53rd PCC meeting/162nd OCC meeting/Sub-group</b>	<b>Status as updated in 54th PCC meeting</b>
Grid Incidence on 05.12.18 affecting 800kV BNC HVDC and 4 other stations in NER	Review of BNC-APD-Agra Multi-terminal HVDC Pole protection philosophy	NERTS	In progress	<b>The issue has been resolved</b> by reviewing the under voltage setting at BNC as 100%-80%: No Trip 80%-30%- 1 Sec Delay <30%: Instantaneous
GD-V on 03.04.19 affecting southern part of NER & GD-V on 20.04.19 affecting southern part of NER and part of Assam, Meghalaya system	Investigation of conductor failure for 400kV Palatana-Silchar D/C	NETC	Report submitted to NERPC. Failure due to manufacturing defect.	Construction defect as per NTH. Item to be dropped.
	Study for reactive compensation in Tripura System	TSECL	NERPC vide letter dated 11.10.2019 has written to CMD, TSECL for forthwith submission of data. No update from TSECL	By Jan'20
	Identification of feeders for additional UFR based load shedding under Islanding Scheme-II	TSECL	NERPC vide letter dated 11.10.2019 has written to CMD, TSECL for procurement & installation of UFRs. No update from TSECL	By Jan'20
GD-V on 03.04.19 affecting southern part of NER & GD-V on 20.04.19 affecting southern part of NER and part of Assam, Meghalaya system	Standalone EL for integration of relay at AGTCPP by Oct'19	NEEPCO	By Mar'2020	By Mar'2020
	NHPC to procure standalone EL for Loktak HEP	NHPC	Under process exact date of LOA to be confirmed	Could not be updated due to absence of representative.
	Revised SPS-3 scheme offer sought from GE by NERTS	NERTS	M/s GE is yet to submit the detailed breakup. Target: by 30.11.2019	M/s GE could not submit the detailed break up.

	Impedance measurement for 400kV Paltana-Silchar D/C, 400kV Silchar-Azara, 400kV Silchar - Byrnihat	NERTS	Impedance measurement shall be completed by 30.11.19.	Impedance measurement of 400kV Pallatana-Silchar Line done. Results are under examination. Any review in the settings, if required shall be intimated to NERPC by 31.01.20.
	Line parameters to be matched at Silchar, Azara and Byrnihat.	NERTS AEGCL/ MePTCL	The reviewed parameters shall be given to Azara by 30.11.19 for implementation.	Shall be done by 31.01.20. Azara may provide the existing settings.
	NERTS and AEGCL to jointly visit Azara and check exact cause for delay in appearance of voltage input to relay when charged via Tie Breaker	AEGCL	Joint visit done. But the problem of delayed appearance of voltage while charging through Tie CB could not be identified.  AEGCL to take up with OEM	AEGCL, NERTS, NERLDC, NERPC to jointly visit 400kV Azara.

**The Sub-Committee noted as above.**

**Action: NERTS, AEGCL, TSECL, MePTCL, NEEPCO, NETC, NHPC.**

### **C.5 Installation of line differential protection for short lines:**

As per discussion in 53rd PCC meeting and subsequent OCC/Sub-group meetings the status for different STUs are as follows:

<b>Name of utility</b>	<b>Last updated status</b>	<b>Status updated in 54th PCC Meeting</b>
DoP Ar. Pradesh	LDP not required	-
AEGCL	Lines identified. Under Preparation stage.	Lines identified. Under DPR preparation stage.
MSPCL	2 identified 132kV lines. DPR submitted for PSDF funding.	Lines identified. LDP for 132kV Imphal-Imphal and 132kV Jiribm-Jiribam proposed. Under DPR preparation stage.
MePTCL	LoA issued. First tranche of funds received from PSDF.	LOA issued. First tranche of funds received.

P&ED Mizoram	2 identified lines. Under DPR preparation for one line. **	Lines identified for installation of DPR viz. 132kV Aizawl - Luangmual and 132kV Kawmzawl - Khawiva.
DoP Nagaland	Lines identified under DPR preparation stage.	Lines identified. Under DPR preparation stage.
TSECL	Lines not yet identified.	Lines not yet identified. To be taken up in Sub-group.

\*\* One line viz. 132kV Aizawl-Luangmual LDP already implemented but disabled at present to prevent maltripping.

Also as per previous deliberation for the following important lines it was decided to implement LDP as early as possible:

Name of the line	Status of OPGW		Status of relay at both ends	
	Implementing utility	Latest status	Implementing utility	Latest status
132kV DHEP-Sanis	DoP Nagaland	To be intimated by 15 <sup>th</sup> February 2020	NEEPCO	Procurement process initiated.
132kV RHEP-Pare-2	DoP Ar. Pradesh	*	NEEPCO	Procurement process initiated.

**Deliberation of the sub-Committee:**

\*It was decided that for 132kV RHEP-Pare-2 a pair of fiber would be allocated for LDP from 132kV RHEP-Pare-Lekhi. NERTS to execute by February 2020.

**The Sub-Committee noted as above.**

**Action: DoP Nagaland, NERTS, NEEPCO.**

**C.6 Implementation of overvoltage settings for 400kV system**

AEGCL informed that the recommended settings have been implemented at 400kV Azara. It was observed that voltage grading has not been done at RHEP which caused the tripping of 400 kV RHEP – BNC 2 line on 3rd Dec’19. NEEPCO intimated that step of 1 volt (secondary) only is allowable in the relay due to which they have kept voltage setting of both lines at 110%. Forum advised NEEPCO to keep the voltage setting of line-2 at RHEP in the next available higher set point in place of 110%.

Further it was requested of the implementing utilities to share the implemented settings prior to the next PCCM, so that the same may be tabulated for the PCCM.

**Deliberation of the sub-Committee:**

Forum approved the implemented over-voltage settings. The same is attached at **Annexure C.6.**

Following points were decided by the forum:

1. To change the O/V stage-1 time delay setting at AGBPP for 220 kV Mariani(AS) line from 7 sec to 6 sec ( in view of the D/C tripping dated 13<sup>th</sup> & 15<sup>th</sup> Dec'19)
2. To swap O/V stage-1 time delay setting at Mokokchung (PG) for Mokokchung 1 & 2 lines (in view of the temporary configuration change of bus reactor as line reactor)

***The Sub-Committee noted as above.***

**C.7 Implementation of carrier inter-trip for important grid lines**

Decisions as per previous meeting(s):

- Carrier-intertrip to be immediately implemented for all Important grid elements in NER.
- Utilities are requested to update the Status
- List of Important Grid Elements in NER is attached as **Annexure-C.7**

**Deliberation of the sub-Committee:**

Director NERPC requested all the utilities to submit the status by February 2020.

***The Sub-Committee noted as above.***

***Action: All utilities as above.***

**C.8 Status against remedial actions for important grid events:**

<b>Details of the event</b>	<b>Remedial Actions suggested</b>	<b>Name of the utility</b>	<b>Status as per 53rd PCC/Sub-group</b>	<b>Status as per 54<sup>th</sup> PCC</b>
400/ 220 kV, 315 MVA ICT 2 at BGTPP tripped on 15-03-2019 00:11:00 Hrs	Settings of Line differential relay for 220kV BgTPP-BTPS to be reviewed at both ends and testing of the relays to be done	AEGCL/ NTPC	To be completed in next accorded shutdown	
Grid Disturbance in Arunachal Pradesh system(except Khupi, Deomali) on 15.06.19 due to tripping of 400kV BNC-	Vegetation clearance to be done.	NERTS	-	
	to rectify the connections to NR at RHEP for 400kV RHEP-BNC#II	NEEPSCO	-	
	Week infeed feature		-	

RHEP D/C line	to be enabled in case of no generation at RHEP			
Grid Disturbance in Kohima area of Nagaland and Karong area of Manipur on 19.07.19 due to tripping of 132kV Imphal-Karong and 132kV Wokha-Kohima	Instantaneous high set O/C, E/F for 132kV Doyang – Sainis – Wokha-Kohima-Imphal link to be made directional/disabled	DoP Nagaland		
Tripping of 400kV Silchar-Azara and 400kV Silchar-Byrnihat on 02.08.19	SPAR to be tested for 400kV Silchar-Azara	AEGCL/NE RTS	By 11.12.19	
	Voltage input to the DPR at Azara for 400 kV Silchar line to be checked as fluctuation of voltage observed in all 3-phases during dead time	AEGCL	By 11.12.19	
Grid Disturbance in Capital Area of Kohima on 07.08.19 due to tripping of 132kV Imphal-Kohima, 132kV Wokha-Kohima and 132kV Karong-Kohima	Bus strengthening with double conductor and double jumpering to be done at 132kV Kohima S/Sn	DoP Nagaland	-	
Tripping of all Main CBs connected to 400kV Bus-1 at Bongaigaon on 20.11.2019	Z-I of B/U Impedance relay restart to be investigated.	NERTS	Recommended in Sub-group on 11.12.19	By February 2020.
	VT fuse fail non-operation to be investigated.			VT selection circuits are being tested for all Bus Reactors for necessary correction. Un blocking of VT fuse fail referred

				to OEM for investigation.
Disturbance in Capital area of Manipur Power System on 1st Dec'19:	Issues with shared and permissive logic to be sorted.	NERTS	Recommended in Sub-group on 11.12.19	Carrier aided DEF adopted.
	Carrier aided DEF to incorporate SPAR.			By February 2020
Frequent tripping of NETC lines	DEF time co-ordination to be done for Bongaigaon and Azara by Dec'19	NERTS/AEG CL	Recommended in Sub-group on 11.12.19	
	Location Number to be intimated for the events	NETC		
	Patrolling report to be submitted	NETC		

***The Sub-Committee noted as above.***

***Action: All utilities as above.***

**AGENDA ITEMS FROM NERLDC:**

**C.9 Installation of Polymer Insulator and Transmission Line Surge Arrestor in Lightning Prone Areas & Polluted Areas**

Activities to be carried out by state utilities:

- Identification of the lightning prone lines and lightning prone areas
- Measurement of tower footing resistance of all the towers in that area
- Requirement of the number of lightning arrestor and cost estimation.

Status review & details of elements where Polymer Insulator/Transmission Line Surge Arrestor already installed and its performance report

**Deliberation of the sub-Committee:**

Director, NERPC informed the forum that PGCIL is undertaking pilot project for TLSA installation and chemical treatment. Further, based on the results of the pilot the appropriate measure would be suggested.

Sr. DGM(AM) NERTS, informed the forum regarding the 100% benefit after TLSA installation for 132kV Khandong-Khliehriat-I. Further he stated that POWERGRID-CC has suggested that after measurement of tower footing resistance, chemical treatment to be done. Even after treatment no improvement, then TLSA installation to be done.

DGM, MSPCL highlighted the problem of repeated tripping in Karong due to lightning. Forum recommended MSPCL to identify the affected lines. All the other utilities were requested to identify the lines affected due to lightning.

***The Sub-Committee noted as above.***

***Action: All STUs.***

**C.10 Protection Related Information:**

Protection related information for updating list of important grid elements of NER:

- a. Details of Controlled Switching Devices in NER
- b. Lines where Tele-protection is available
- c. Details of LDP
- d. Details of offline fault locators

After repeated follow up, information is yet to submit. It is proposed to include these details in the Protection Database Management System.

**Deliberation of the sub-Committee:**

CGM(SO-II),NERLDC stated that the information though not specifically related to protection however required for analysis, RLDC requests to include in the PDMS so that separate database is not required. The forum agreed and requested NERPC to enquire about feasibility of the same.

***The Sub-Committee noted as above.***

***Action: NERPC.***

**ADDITIONAL AGENDA FROM NEEPCO:**

**C.11 SPS for RHEP-Pare:**

As per discussions in previous OCC meetings the following SPS scheme was approved for RHEP-Pare:

<b>SPS Triggering condition</b>	<b>SPS Action when all three units at RHEP in service</b>	<b>SPS Action when all three units at RHEP in service and both units at Pare in service</b>
Tripping of any one 400/132 kV 360 MVA ICT at RHEP	One unit of RHEP to be tripped.	One unit of RHEP to be tripped and one unit of Pare to be tripped.

**Deliberation of the sub-Committee:**

NEEPCO informed the forum regarding the SPS scheme for RHEP-Pare:

- 1. When all three units at RHEP in service, one unit of RHEP to be tripped with time delay, same will be confirmed by OEM.

2. When all three units at RHEP and both units at Pare in service, tripping of ICT one unit of RHEP and one unit of Pare with time delay, same will be confirmed by OEM.

***The Sub-Committee noted as above.***

***Action: NEEPCO.***

### **C 12 Allocation of Fiber from POWERTEL Link for power System purpose**

The power system data are being transferred across the region through ULDC fibre network as a main path. To increase the reliability of real time data transfer, the fibre network of Powertel may also be utilised as an alternate path to transfer Power System data.

#### **Deliberation of the sub-Committee:**

After detailed deliberation the matter was referred to the next NETeST meeting.

***The Sub-Committee noted as above.***

***Action: NERPC.***

### **Date and Venue of next PCC**

It is proposed to hold the 55<sup>th</sup> PCC meeting of NERPC on second week of April, 2020. The date & exact venue will be intimated in due course.

The meeting ended with thanks to the Chair.

\*\*\*\*\*

**Annexure-I****List of Participants in the 54<sup>th</sup> PCC Meeting of NERPC held on 22.01.2020**

<b>SN</b>	<b>Name &amp; Designation</b>	<b>Organization</b>	<b>Contact No.</b>
1.	Sh. Moli Kamki, AE (E)	Ar. Pradesh	09774003738
2.	Sh. Purik Buchi, AE (E)	Ar. Pradesh	09366118384
3.	Sh. Abhishek Kalita, Asst. Manager	Assam	08486213068
4.	Sh. J.R. Baruah, Dy. Manager, MRT	Assam	07896732915
5.	Sh. N. Jasobanta Singh, DGM, SSD-II	Manipur	07085431782
6.	Smti. Laishram Ritu, DGM (SLDC)	Manipur	09612882984
7.	Smti. Khoisnam Steela, DGM (SLDC)	Manipur	08730831103
8.	Sh. B. Nikhla, EE (System Protection)	Meghalaya	-
9.	Sh. A.G. Tham, AEE (MRT)	Meghalaya	09774664034
10.	Sh. R. Khongmalai, AE (MRT)	Meghalaya	08014137268
11.	Sh. M.N. Tariang, JE (System Protection)	Meghalaya	07005620013
	<b>No Representative</b>	<b>Mizoram</b>	-
	<b>No Representative</b>	<b>Nagaland</b>	-
	<b>No Representative</b>	<b>Tripura</b>	-
12.	Sh. V. Suresh, ED	NERLDC	09449599156
13.	Sh. R. Sutradhar, CGM (SO-I)	NERLDC	09436302714
14.	Sh. Samar Chandra De, GM	NERLDC	09436335369
15.	Sh. Amaresh Mallick, CGM (SO-II)	NERLDC	09436302720
16.	Sh. Jerin Jacob, Dy. Manager	NERLDC	09402120113
17.	Sh. Joypal Roy, DGM (O&M)	NEEPCO	09435577726
18.	Sh. A.S. Nath, DGM (E/M)	NEEPCO	09435339743
19.	Sh. Sundar Moni Mohan, Manager (E/M)	NEEPCO	09436898604
20.	Sh. Bhaskar Mazumder, Manager (E/M)	NEEPCO	09612079362
21.	Sh. H. Talukdar, Sr. DGM (AM)	PGCIL	09436335237
	<b>No Representative</b>	<b>NHPC</b>	-
22.	Sh. Mitangshu Saha, Sr. Executive	OTPC	07085310211
23.	Sh. Rajendran. R, Sr. Manager	NTPC	09445002501
24.	Sh. A.K. Thakur, MS	NERPC	-
25.	Sh. B. Lyngkhai, Director/S.E	NERPC	09436163419
26.	Sh. S. Mukherjee, Dy. Director	NERPC	08794277306

## Annexure-B.6

Comments on details of reason of outages not verified

SL-No	NameOfTheLine	Outage Date and Time	Restoration Date and Time	Outage Duration (HH:MM)	Reason of outage submitted by POWERGRID	Category as per TCT regulations, 2019 (defined as below)	NERLDC Comments/Remarks
1	BALIPARA-KAMENG#1	11/7/2019 13:04	11/8/2019 18:16	5:12	LINE TRIPPED DUE TO FOREST FIRE BURNING BETWEEN LOC NO. 53 - 54	i. Outage due to force majeure	DR output not submitted from both ends
2	BALIPARA-KAMENG#1	11/20/2019 6:12	11/20/2019 7:02	0:50	TRIPPED DUE TO TRANSIENT FAULT.	j. Outage due to faults in substation or bays owned by other agency	DR output not submitted from both ends
3	BALIPARA-KAMENG#1	11/20/2019 19:08	11/22/2019 13:34	18:26	BAMBOO CUT BY UNKNOWN VILLAGERS BETWEEN LOC 57-58 WHICH FELL OVER CONDUCTORS	i. Outage due to force majeure	DR output not submitted from both ends
4	DOYANG_DIMAPUR # 1	11/30/2019 18:16	11/30/2019 18:34	0:18	TRIPPED DUE TO FAULT AT DOWNSTREAM END	j. Outage due to faults in substation or bays owned by other agency	DR output not submitted from Doyang.
5	DOYANG_DIMAPUR # 1	11/30/2019 19:10	11/30/2019 19:24	0:14	TRIPPED DUE TO FAULT AT DOWNSTREAM END	j. Outage due to faults in substation or bays owned by other agency	DR output not submitted from Doyang.
6	132 kV Silchar - Srikona 1 Line	11/16/2019 13:58	11/16/2019 14:22	0:24	The mentioned line didn't trip at Silchar (PG) end. Moreover, as per first hand information from Srikona (AEGCL) SS to RTAMC, at same time, 132kV Srikona-Pailapool state feeder tripped. In case of inclusion in outage report of Nov-19, the same may be evaluated under OMSU category	5 (ii)	DR, EL & FIR not submitted from Srikona (AEGCL),
7	132 kV Silchar - Srikona 2 Line	11/16/2019 13:58	11/16/2019 14:19	0:21	The mentioned line didn't trip at Silchar (PG) end. Moreover, as per first hand information from Srikona (AEGCL) SS to RTAMC, at same time, 132kV Srikona-Pailapool state feeder tripped. In case of inclusion in outage report of Nov-19, the same may be evaluated under OMSU category	5 (ii)	DR, EL & FIR not submitted from Srikona (AEGCL),
8	132 kV Melriat(PG) - Zuangtui Line	11/16/2019 16:50	11/16/2019 16:56	0:06	The mentioned line didn't trip at Melriat (PG) end. No first hand information about tripping at Zemabawk was received on REAL TIME basis. Moreover, no charging code was shared for restoration of the line as per RTAMC log records		DR, EL & FIR not submitted from Zuangtui (P&ED Mizoram)

## Annexure-B.7(l)

## Issues regarding auto recloser for Grid Events for the period 1st Aug'19 to 31st Dec'19

SL_NO	ELEMENTNAME	TRIPPING_DATE_TIME	SENDOWNER	RENDOWNER	Remarks
4	400 kV Palatana - Silchar 1 Line	08/Oct/19 9:01	OTPC	POWERGRID	1. Non-operation of AR at Silcher end needs to be checked and report to be submitted - NERTS
5	400 kV Imphal - Silchar 1 line	08/Oct/19 14:32	POWERGRID	POWERGRID	1. Non-operation of AR at Imphal end needs to be checked and report to be submitted - NERTS
6	400 kV Imphal - Silchar 1 line	20/Aug/19 12:25	POWERGRID	POWERGRID	2. Non-operation of AR at Silchar/3-ph trip at Silchar to be checked - NERTS
7	400 kV Byrnihat - Silchar Line	25/Aug/19 8:50	MePTCL	POWERGRID	AR not operated at Byrnihat
2	400 kV Biswanath Chariali - Ranganadi 2 Line	16/Nov/19 10:14	POWERGRID	NEEPCO	Non-operation of auto recloser at RHEP to be attended - NEEPCO
8	400 kV Biswanath Chariali - Ranganadi 2 Line	03/Oct/19 11:29	POWERGRID	NEEPCO	2. Issue of wrong detection of L-L fault instead of L-E fault by DP at RHEP still persisting. This is to attended at the earliest - NEEPCO 3. AR blocked channel was high from starting of the DR output which needs to be attended - NEEPCO
9	400 kV Biswanath Chariali - Ranganadi 2 Line	02/Aug/19 8:30	POWERGRID	NEEPCO	1. Wiring at RHEP to be checked as B-ph current appears in the DR for R-E fault.
1	400 kV Azara - Silchar Line	11/Nov/19 11:29	AEGCL	POWERGRID	Non-operation of AR to be attended/unwanted DT signal at Sichar to be attended - NERTS/AEGCL
10	400 kV Azara - Silchar Line	19/Oct/19 9:53	AEGCL	POWERGRID	2. DT received at Silchar which needs to be checked-NERTS 3. 3 -ph tripping at Azara
11	400 kV Azara - Silchar Line	24/Oct/19 15:04	AEGCL	POWERGRID	2. DT signal received at Silchar for M-1 relay due to which auto recloser not attempted at Silchar(PG). <u>Reason for DT signal for a L-E fault needs to be addressed.</u> (Wiring of DT & Carrier to be checked at Azara)
12	400 kV Azara - Silchar Line	29/Oct/19 9:00	AEGCL	POWERGRID	2. DT signal received at Silchar for M-1 relay due to which auto recloser not attempted at Silchar(PG). <u>Reason for DT signal for a L-E fault needs to be addressed.</u> (Wiring of DT & Carrier to be checked at Azara)
13	400 kV Azara - Silchar Line	05/Sep/19 0:56	AEGCL	POWERGRID	1. Non-operation of auto recloser at Azara to be attended - AEGCL
14	400 kV Azara - Silchar Line	02/Aug/19 17:13	AEGCL	POWERGRID	AR not operated due to unwanted DT

## Issues regarding auto recloser for Grid Events for the period 1st Aug'19 to 31st Dec'19

SL_NO	ELEMENTNAME	TRIPPING_DATE_TIME	SENDOWNER	RENDOWNER	Remarks
15	400 kV Azara - Silchar Line	15/Aug/19 17:34	AEGCL	POWERGRID	3. Reason for non-operation of AR at Azara to be investigated and necessary corrections to be done - AEGCL
16	400 kV Alipurduar - Bongaigaon 2 Line	19/Oct/19 11:56	POWERGRID	POWERGRID	2. AR circuit needs to be checked-NERTS
17	220 kV Mariani (PG) - Mokokchung (PG) 2 Line	30/Sep/19 8:58	POWERGRID	POWERGRID	2. Non-operation of Auto recloser at Mokokchung (3-ph trip at Mariani even though DP issued B-ph trip) to be investigated and report to be submitted - NERTS
18	220 kV Mariani (PG) - Mokokchung (PG) 2 Line	24/Aug/19 11:39	POWERGRID	POWERGRID	2. Non-operation of AR at Mariani(PG) to be checked - NERTS
3	220 kV Mariani (PG) - Mokokchung (PG) 1 Line	21/Nov/19 15:08	POWERGRID	POWERGRID	AR not operated at Mariani(PG)
19	220 kV Mariani (PG) - Misa Line	28/Sep/19 16:18	POWERGRID	POWERGRID	2. Non-operation of Auto recloser at Mariani (3-ph trip at Mariani even though DP issued Y-ph trip) to be investigated and report to be submitted - NERTS
20	220 kV Dimapur - Misa 1 Line	10/Oct/19 13:15	POWERGRID	POWERGRID	2. Non-operation of AR to be checked and report to be submitted - NERTS
21	220 kV Byrnihat - Misa 1 Line	04/Oct/19 11:57	MePTCL	POWERGRID	4. Non-operation of AR to be investigated & report to be submitted - NERTS & MePTCL
22	132 kV Roing - Pasighat Line	18/Oct/19 11:40	POWERGRID	POWERGRID	AR not operated at Roing
23	132 kV Namsai-Tezu	13/Oct/19 16:04	POWERGRID	POWERGRID	2. Non operation of AR needs to be checked-NERTS.
24	132 kV Monarchak - Udaipur 1 Line	17/Sep/19 10:52	NEEPCO	TSECL	2. Implemenattion of Auto Recloser in all important grid elements in Tripura Power System to avoid unwanted tripping due to transient faults: TSECL & concerned utilities
25	132 kV Monarchak - Rokhia Line	07/Oct/19 7:07	NEEPCO	TSECL	2. Implemenattion of Auto Recloser in all important grid elements in Tripura Power System to avoid unwanted tripping due to transient faults: TSECL & concerned utilities
26	132 kV Monarchak - Rokhia Line	17/Sep/19 10:46	NEEPCO	TSECL	2. Implemenattion of Auto Recloser in all important grid elements in Tripura Power System to avoid unwanted tripping due to transient faults: TSECL & concerned utilities
27	132 kV Loktak - Rengpang Line	12/Oct/19 13:16	NHPC	MSPCL	3. AR circuit at Loktak needs to be checked-Loktak(NHPC)

## Issues regarding auto recloser for Grid Events for the period 1st Aug'19 to 31st Dec'19

SL_NO	ELEMENTNAME	TRIPPING_DATE_TIME	SENDOWNER	RENDOWNER	Remarks
28	132 kV Loktak - Ningthoukhong Line	15/Oct/19 15:26	NHPC	MSPCL	AR not operated at all lines from Loktak
29	132 kV Lekhi - Pare Line	08/Aug/19 12:32	DoP, Arunachal Pradesh	NEEPCO	AR scheme may be implemented
30	132 kV Lekhi - Pare Line	25/Aug/19 12:25	DoP, Arunachal Pradesh	NEEPCO	2. Non-operation of AR at Pare to be checked - NEEPCO
31	132 kV Khliehriat (MePTCL) - Khliehriat (PG) 1 Line	19/Oct/19 14:02	MePTCL	POWERGRID	AR not operated at both ends
32	132 kV Khliehriat (MePTCL) - Khliehriat (PG) 1 Line	03/Sep/19 12:54	MePTCL	POWERGRID	3. Non-operation of AR at both ends to be checked & report to be submitted considering the high chances of lightning fault in this area - NERTS & MePTCL
33	132 kV Khandong - Khliehriat 2 Line	15/Oct/19 13:57	NEEPCO	POWERGRID	2. AR not operated from Khandong needs to be checked-NERTS
34	132 kV Khandong - Khliehriat 1 Line	20/Oct/19 13:13	NEEPCO	POWERGRID	3 phase auto-reclose facility to be checked and rectified at Khandong station.
35	132 kV Khandong - Khliehriat 1 Line	20/Oct/19 13:33	NEEPCO	POWERGRID	3 phase auto-reclose facility to be checked and rectified at Khandong station.
36	132 kV Khandong - Khliehriat 1 Line	21/Sep/19 15:51	NEEPCO	POWERGRID	2. Non-operation of AR to be investigated and report to be submitted - NERTS & NEEPCO
37	132 kV Khandong - Khliehriat 1 Line	07/Aug/19 15:10	NEEPCO	POWERGRID	AR not operated at Khandong
38	132 kV Kahlipara - Sarusajai 3 Line	10/Aug/19 11:35	AEGCL	AEGCL	2. Reason for non-operation of AR to be intimated - AEGCL
39	132 kV Jiribam - Tipaimukh Line	12/Aug/19 10:57	POWERGRID	MSPCL	3. Auto recloser to be checked at Jiribam(PG) - NERTS
40	132 kV Jiribam - Loktak 2 Line	03/Aug/19 2:39	POWERGRID	NHPC	AR not operated at Loktak
41	132 kV Imphal (PG) - Loktak Line	15/Oct/19 15:26	POWERGRID	NHPC	AR not operated at all lines from Loktak
42	132 kV Hailakandi - Silchar 1 Line	22/Aug/19 2:05	AEGCL	POWERGRID	1. Failure of AR at Hailakandi to be checked/PD setting at Hailakandi to be checked -
43	132 kV Gohpur - Nirjuli Line	23/Aug/19 5:19	AEGCL	POWERGRID	AR not operated at Nirjuli
44	132 kV Dimapur - Doyang 2 Line	27/Aug/19 21:30	POWERGRID	NEEPCO	AR not operated at Dimapur
45	132 kV Bokajan - Dimapur Line	21/Sep/19 22:53	AEGCL	POWERGRID	AR not operated at Dimapur PG

## Annexure-B.7(l)

## Issues regarding auto recloser for Grid Events for the period 1st Aug'19 to 31st Dec'19

SL_NO	ELEMENTNAME	TRIPPING_DATE_TIME	SENDOWNER	RENDOWNER	Remarks
46	132 kV Badarpur - Silchar 2 Line	22/Aug/19 1:40	POWERGRID	POWERGRID	2. Non-operation of AR at Badarpur/AR lockout to be checked - NERTS
47	132 kV Badarpur - Silchar 2 Line	22/Aug/19 1:53	POWERGRID	POWERGRID	2. Non-operation of AR at Badarpur/AR lockout to be checked - NERTS
48	132 kV Badarpur - Silchar 1 Line	04/Sep/19 23:23	POWERGRID	POWERGRID	1. Non-operation of A/R at silcher end & Carrier not received at silcher end needs to be checked & report to be submitted - NERTS
49	132 kV Badarpur - Kolasib Line	01/Sep/19 11:44	POWERGRID	P&ED, Mizoram	2. Non-opertaion of Auto Recloser at Kolasib to be checked and report to be submitted - NERTS
50	132 kV Badarpur - Khliehriat Line	19/Oct/19 13:05	POWERGRID	POWERGRID	3. AR circuit needs to be checked-NERTS
51	132 kV Badarpur - Khliehriat Line	01/Sep/19 14:57	POWERGRID	POWERGRID	2. Non-operation of AR at Badarpur to be checked and report to be submitted - NERTS
52	132 kV Badarpur - Khliehriat Line	05/Sep/19 0:46	POWERGRID	POWERGRID	2. Non-operation of A/R at both ends & Carrier not received at Khliehriat end needs to be checked & report to be submitted - NERTS
53	132 kV Badarpur - Khliehriat Line	18/Sep/19 13:45	POWERGRID	POWERGRID	1. Non-operation of auto recloser to be checked and report to be submitted - NERTS
54	132 kV Aizawl - Tipaimukh Line	29/Oct/19 12:00	POWERGRID	MSPCL	4. Non-operation of AR at Aziawl for Tipaimukh feeder to be attended - NERTS
55	132 kV Aizawl - Tipaimukh Line	03/Sep/19 7:58	POWERGRID	MSPCL	2. Non-operation of AR at Aizawl to be checked and report to be submitted - NERTS
56	132 kV Aizawl - Tipaimukh Line	04/Sep/19 20:41	POWERGRID	MSPCL	3. Non-operation of AR at both ends to be checked & report to be submitted - NERTS & MSPCL
57	132 kV Aizawl - Tipaimukh Line	07/Sep/19 14:51	POWERGRID	MSPCL	1. A/R did not attempted at Aizawl end that needs to be checked and report to be submitted - NERTS
58	132 kV Aizawl - Tipaimukh Line	23/Aug/19 0:50	POWERGRID	MSPCL	2. Non-operation of AR at Aizawl to be checked - NERTS
59	132 kV Aizawl - Kumarghat Line	01/Sep/19 20:57	POWERGRID	POWERGRID	2. Non-operation of AR at Kumarghat and carrier signal not received at both ends (as per DR outputs) to be checked and report to be submitted - NERTS
60	132 kV Aizawl - Kolasib Line	28/Sep/19 15:22	POWERGRID	P&ED, Mizoram	2. Implementation of Auto recloser in 132 kV Aizawl - Kolasib Line & 132 kV Badarpur - Kolasib Line - NERTS
61	132 kV AGTCCPP - Kumarghat Line	08/Oct/19 16:11	NEEPCO	POWERGRID	4. AR scheme to be implemented in 132 kV AGTCCPP - Kumarghat Line - NERTS & NEEPCO
62	132 kV AGTCCPP - Kumarghat Line	03/Sep/19 16:57	NEEPCO	POWERGRID	3. Non-operation of AR at both ends to be checked & report to be submitted - NERTS & NEEPCO
63	132 kV AGTCCPP - Kumarghat Line	22/Sep/19 6:29	NEEPCO	POWERGRID	AR not operated

Annexure-B.7(l)

Issues regarding auto recloser for Grid Events for the period 1st Aug'19 to 31st Dec'19

SL_NO	ELEMENTNAME	TRIPPING_DATE_TIME	SENDOWNER	RENDOWNER	Remarks
64	132 kV Khliehriat - Badarpur Line	08/Aug/19 9:49	POWERGRID	POWERGRID	2. Submission of reason for non-operation of AR - NERTS
65	132 kV Khliehriat - Badarpur Line	08/Aug/19 10:18	POWERGRID	POWERGRID	2. Submission of reason for non-operation of AR - NERTS
66	132 kV Khliehriat - Badarpur Line	11/Aug/19 12:49	POWERGRID	POWERGRID	AR not operated at both ends
67	132 kV Khliehriat - Badarpur Line	25/Aug/19 13:57	POWERGRID	POWERGRID	2. Non-operation of AR at Badarpur to be checked - NERTS

## Annexure-B.7(II)

**Issues pertaining to Carrier Aided Protection (Grid Events for the period 1st Aug'19 to 31st Dec'19)**

SL_NO	ELEMENTNAME	TRIPPING_DATE_TIME	SENDOWNER	RENDOWNER	Remarks
1	400 kV Palatana - Silchar 1 Line	08/Oct/2019 09:01	OTPC	POWERGRID	3. Carrier signal not received at both ends needs to be checked and report to be submitted - OTPC & NERTS
2	400 kV Imphal - Silchar 1 line	03/Oct/2019 13:09	POWERGRID	POWERGRID	2. Carrier not received at Silchar(PG) to be checked and report to be submitted - NERTS
3	400 kV Biswanath Chariali - Ranganadi 1 Line	19/11/2019 11:50:00	POWERGRID	NEEPCO	Delayed fault clearance at BNC as carrier not received by DPR
4	220 kV Mariani (PG) - Mokokchung (PG) 2 Line	30/09/2019 08:58:00	POWERGRID	POWERGRID	1. Carrier not received at Mokokchung to be checked and report to be submitted - NERTS
5	220 kV Mariani (PG) - Misa Line	28/09/2019 16:18:00	POWERGRID	POWERGRID	1. Carrier not received at Misa to be checked and report to be submitted - NERTS
6	220 kV Byrnihat - Misa 2 Line	07/11/2019 04:45:00	MePTCL	POWERGRID	Carrier aided trip not operated at Misa
7	220 kV Balipara - Sonabil 1 line	02/08/2019 12:04:00	POWERGRID	AEGCL	2. Heathiness of intertrip protection to be ensured, necessary checking to be done at both ends: NERTS & AEGCL
8	132 kV Monarchak - Udaipur 1 Line	17/09/2019 10:52:00	NEEPCO	TSECL	1. Carrier Aided tripping needs to be implemented in all important grid elements in Tripura Power System to avoid unwanted tripping of healthy elements due to delay in fault clearance: TSECL & concerned utilities
9	132 kV Monarchak - Rokhia Line	07/Oct/2019 07:07	NEEPCO	TSECL	1. Carrier Aided tripping needs to be implemented in all important grid elements in Tripura Power System to avoid unwanted tripping of healthy elements due to delay in fault clearance: TSECL & concerned utilities

## Annexure-B.7(II)

## Issues pertaining to Carrier Aided Protection (Grid Events for the period 1st Aug'19 to 31st Dec'19)

SL_NO	ELEMENTNAME	TRIPPING_DATE_TIME	SENDOWNER	RENDOWNER	Remarks
10	132 kV Monarchak - Rokhia Line	17/09/2019 10:46:00	NEEPCO	TSECL	1. Carrier Aided tripping needs to be implemented in all important grid elements in Tripura Power System to avoid unwanted tripping of healthy elements due to delay in fault clearance: TSECL & concerned utilities
11	132 kV Khliehriat (MePTCL) - Khliehriat (PG) 1 Line	19/Oct/2019 14:02	MePTCL	POWERGRID	2. Carrier signal not received at Khlieriat PG (this resulted in delayed fault clearance) to be investigated and appropriate action to be taken - NERTS & MePTCL
12	132 kV Khliehriat (MePTCL) - Khliehriat (PG) 1 Line	03/09/2019 12:54:00	MePTCL	POWERGRID	1. Carrier signal not received at both ends which resulted in delayed fault clearance to be checked and report to be submitted - NERTS & MePTCL
13	132 kV Khandong - Khliehriat 1 Line	20/Oct/2019 13:13	NEEPCO	POWERGRID	Carrier not received at Khandong
14	132 kV Khandong - Khliehriat 1 Line	20/Oct/2019 13:33	NEEPCO	POWERGRID	3 phase auto-reclose facility to be checked and rectified at Khandong station.
15	132 kV Haflong - Jiribam Line	02/09/2019 08:30:00	POWERGRID	POWERGRID	2. Carrier signal not received at Jiribam (as per DR outputs) to be checked ( <b>this could be the reason for delayed fault clearance</b> ) and report to be submitted - NERTS
16	132 kV Balipara - Tenga Line	09/Oct/2019 13:49	NEEPCO	DoP, Arunachal Pradesh	3. Implementation of carrier aided protection in 132 kV Balipara - Tenga - Khupi link & 132 kV Tenga - Dikshi line and review of Z-2 timing - DoP AP
17	132 kV Balipara - Tenga Line	10/Oct/2019 22:36	NEEPCO	DoP, Arunachal Pradesh	3. Implementation of carrier aided protection in 132 kV Balipara - Tenga - Khupi link & 132 kV Tenga - Dikshi line and review of Z-2 timing - DoP AP

## Annexure-B.7(II)

## Issues pertaining to Carrier Aided Protection (Grid Events for the period 1st Aug'19 to 31st Dec'19)

SL_NO	ELEMENTNAME	TRIPPING_DATE_TIME	SENDOWNER	RENDOWNER	Remarks
18	132 kV Badarpur - Kolasib Line	01/09/2019 11:44:00	POWERGRID	P&ED, Mizoram	Carrier issues at both ends
19	132 kV Badarpur - Khliehriat Line	01/09/2019 14:57:00	POWERGRID	POWERGRID	Carrier issues at both ends
20	132 kV Badarpur - Khliehriat Line	05/09/2019 00:46:00	POWERGRID	POWERGRID	2. Carrier not received at Khliehriat end needs to be checked & report to be submitted - NERTS
21	132 kV Aizawl - Tipaimukh Line	04/09/2019 20:41:00	POWERGRID	MSPCL	1. Carrier signal not received at Aizawl which is to be checked and report to be submitted - NERTS & MSPCL
22	132 kV Aizawl - Kumarghat Line	06/Oct/2019 10:54	POWERGRID	POWERGRID	2. <u>Carrier receive reset time setting may be reviewed at Kumraghat</u> or necessary corrective measures may be taken to avoid delay in detection of fault in appropriate Zone - NERTS
23	132 kV Aizawl - Kumarghat Line	15/Oct/2019 15:03	POWERGRID	POWERGRID	2. <b>Distance channel sent was observed which needs to be checked-NERTS</b>
24	132 kV Aizawl - Kumarghat Line	01/09/2019 20:57:00	POWERGRID	POWERGRID	2. carrier signal not received at both ends (as per DR outputs) to be checked and report to be submitted - NERTS
25	132 kV Aizawl - Kumarghat Line	06/09/2019 12:03:00	POWERGRID	POWERGRID	1. Carrier signal not received at Kumarghat which resulted in delayed fault clearance to be checked and report to be submitted - NERTS
26	132 kV Aizawl - Kumarghat Line	25/09/2019 15:48:00	POWERGRID	POWERGRID	3.Carrier signal not received at both ends to be checked and report to be submitted - NERTS
27	132 kV Aizawl - Kumarghat Line	04/08/2019 16:22:00	POWERGRID	POWERGRID	2. Carrier intertrip to be checked - NERTS

## Annexure-B.7(II)

**Issues pertaining to Carrier Aided Protection (Grid Events for the period 1st Aug'19 to 31st Dec'19)**

<b>SL_NO</b>	<b>ELEMENTNAME</b>	<b>TRIPPING_DATE_TIME</b>	<b>SENDOWNER</b>	<b>RENDOWNER</b>	<b>Remarks</b>
28	132 kV AGTCCPP - Kumarghat Line	08/Oct/2019 16:11	NEEPCO	POWERGRID	3. Carrier signal not received at both ends (as per DR output) needs to be checked and report to be submitted - NEEPCO & NERTS
29	132 kV AGTCCPP - Kumarghat Line	03/09/2019 16:57:00	NEEPCO	POWERGRID	1. Carrier signal not received at both ends which resulted to be checked and report to be submitted - NERTS & NEEPCO
30	132 kV Khliehriat - Badarpur Line	11/08/2019 12:49:00	NULL	NULL	Carrier not received at Badarpur

## Annexure-B.7(III)

## DR Standardization Issues (Grid Events for the period 1st Aug'19 to 31st Dec'19)

SL_NO	ELEMENTNAME (Send - Rend)	TRIPPING_DATE_TIME	SENDOWNER	RENDOWNER	Remarks
1	400 kV Palatana - Silchar 1 Line	08/Oct/2019 09:01	OTPC	POWERGRID	5. DT receive channel configured in DR at Palatana to be checked - OTPC
2	400 kV New Siliguri- Bongaigaon 1 Line	12/11/2019 16:58:00	POWERGRID	POWERGRID	Configuration DT signal status
3	400 kV New Siliguri - Bongaigaon 2 Line	19/Oct/2019 17:53	POWERGRID	POWERGRID	Y (M-2 post fault time ~500 msec). Bongaigaon
4	400 kV Byrnihat - Silchar Line	02/08/2019 17:13:00	MePTCL	POWERGRID	Yes (Main-1at Byrnihat)
5	400 kV Bongaigaon - Byrnihat Line	07/11/2019 11:44:00	POWERGRID	MePTCL	Digital channels of DR of Main-1 relay at Byrnihat not standardized
6	400 kV Bongaigaon - Byrnihat Line	13/11/2019 12:51:00	POWERGRID	MePTCL	Digital channels of DR of Main-1 relay at Byrnihat not standardized
7	400 kV Biswanath Chariali - Ranganadi 2 Line	16/11/2019 10:14:00	POWERGRID	NEEPCO	Configuration of Carrier Send signal in DR at BNC & Carrier receive signal in DR at RHEP
8	400 kV Biswanath Chariali - Ranganadi 1 Line	19/11/2019 11:50:00	POWERGRID	NEEPCO	Configuration of Carrier Send signal in DR at BNC & Carrier receive signal in DR at RHEP
9	400 kV Balipara - Kameng 1 Line	18/11/2019 05:34:00	POWERGRID	NEEPCO	Zones not configured, digital channels not as per approved standard
10	400 kV Balipara - Kameng 1 Line	18/11/2019 11:44:00	POWERGRID	NEEPCO	Zones not configured, digital channels not as per approved standard
11	400 kV Balipara - Bongaigaon 2 Line	08/11/2019 10:39:00	POWERGRID	POWERGRID	Bongaigaon Main-2 (~3 minutes drift); Balipara Main-1 (~1 minutes drift)
12	400 kV Azara - Silchar Line	04/11/2019 22:19:00	AEGCL	POWERGRID	CB status & carrier send, DT send not configured in DR at Azara
13	400 kV Azara - Silchar Line	11/11/2019 11:29:00	AEGCL	POWERGRID	CB status & carrier send, DT send not configured in DR at Azara
14	400 kV Azara - Silchar Line	13/11/2019 05:57:00	AEGCL	POWERGRID	CB status & carrier send, DT send not configured in DR at Azara
15	400 kV Azara - Bongaigaon Line	07/11/2019 11:44:00	AEGCL	POWERGRID	CB status & DT send not configured in DR at Azara
16	220 kV Misa - Samaguri 2 Line	06/08/2019 13:18:00	POWERGRID	AEGCL	Y (Misa)

## Annexure-B.7(III)

## DR Standardization Issues (Grid Events for the period 1st Aug'19 to 31st Dec'19)

SL_NO	ELEMENTNAME (Send - Rend)	TRIPPING_DATE_TIME	SENDOWNER	RENDOWNER	Remarks
17	220 kV Misa - Samaguri 1 Line	03/Oct/2019 11:30	POWERGRID	AEGCL	2. DR standardisation is to be done at Misa (Zone are not configured) - NERTS
18	220 kV Misa - Samaguri 1 Line	06/08/2019 13:18:00	POWERGRID	AEGCL	Y (Misa)
19	220 kV Mariani (PG) - Mokokchung (PG) 2 Line	24/08/2019 11:39:00	POWERGRID	POWERGRID	Y (No zone observed in DR at Mariani)
20	220 kV Mariani (PG) - Mokokchung (PG) 1 Line	21/11/2019 15:08:00	POWERGRID	POWERGRID	Analong channels are not configured in DR
21	220 kV Kopili - Misa 1 Line	07/Oct/2019 04:59	NEEPCO	POWERGRID	2. DR standardisation is to be done at Misa (Zone are not configured) - NERTS
22	220 kV Dimapur - Misa 2 Line	30/09/2019 14:38:00	POWERGRID	POWERGRID	DR not standadized at Misa
23	220 kV Dimapur - Misa 1 Line	10/Oct/2019 13:15	POWERGRID	POWERGRID	3. Zone of operation to be configured in DR at Dimapur & Misa and CB status for all phases to be configured at Misa - NERTS
24	220 kV Dimapur - Misa 1 Line	02/11/2019 09:58:00	POWERGRID	POWERGRID	DR not standadized at Misa
25	220 kV Byrnihat - Misa 2 Line	07/11/2019 04:45:00	MePTCL	POWERGRID	Digital channels not standardized at Misa
26	220 kV Byrnihat - Misa 1 Line	04/Oct/2019 11:57	MePTCL	POWERGRID	2. Post Fault DR timing should be standarized as it is available for only 600 msec /200 msec from Byrnihat end and misa end respectively . 3. Distance zones & CB status not configured at misa end. DR is to be standardised
27	132KV-KHLIEHRIAT(ME)-LUMSNONG	10/08/2019 00:50:00	MePTCL	MePTCL	Carrier sent: Not configured/labelled at KHL MePTCL end)
28	132 kV Roing - Tezu Line	27/08/2019 10:05:00	POWERGRID	POWERGRID	Y (Roing, No zone)
29	132 kV Roing - Pasighat Line	18/Oct/2019 11:40	POWERGRID	POWERGRID	Carrier sent :Not configured at Roing

## Annexure-B.7(III)

## DR Standardization Issues (Grid Events for the period 1st Aug'19 to 31st Dec'19)

SL_NO	ELEMENTNAME (Send - Rend)	TRIPPING_DATE_TIME	SENDOWNER	RENDOWNER	Remarks
30	132 kV Ranganadi-Itanagar line	11/09/2019 00:22:00	NEEPCO	DoP, Arunachal Pradesh	5. CB status to be configured in DR at RHEP & Pare for 132 kV Itanagar line - NEEPCO
31	132 kV Ranganadi - Pare 2 Line	15/08/2019 19:27:00	NEEPCO	NEEPCO	Y (CB status not configured in DR at Pare)
32	132 kV Pare - Itanagar Line	04/09/2019 01:57:00	NEEPCO	DoP, Arunachal Pradesh	2. CB status to be configured in DR at Pare - NEEPCO
33	132 kV Pare - Itanagar Line	04/09/2019 03:03:00	NEEPCO	DoP, Arunachal Pradesh	2. CB status to be configured in DR at Pare - NEEPCO
34	132 kV Pare - Itanagar Line	11/09/2019 00:22:00	NEEPCO	DoP, Arunachal Pradesh	5. CB status to be configured in DR at RHEP & Pare for 132 kV Itanagar line - NEEPCO
35	132 kV Palatana - Udaipur Line	01/11/2019 12:45:00	TSECL	TSECL	CB status not configured at Udaipur
36	132 kV Motonga (Bhutan) - Rangia Line	12/Oct/2019 13:53	BPCL	AEGCL	1. DR Channels needs standardized at Rangia-NERTS
37	132 kV Motonga (Bhutan) - Rangia Line	03/08/2019 14:10:00	BPCL	AEGCL	Y (CB status at Rangia), Pre fault & Post fault time in DR output to be as per approved standards-NERTS
38	132 kV Motonga (Bhutan) - Rangia Line	06/08/2019 11:08:00	BPCL	AEGCL	Y (CB status at Rangia), Pre fault & Post fault time in DR output to be as per approved standards-NERTS
39	132 kV Motonga (Bhutan) - Rangia Line	06/08/2019 11:32:00	BPCL	AEGCL	Y (CB status at Rangia), Pre fault & Post fault time in DR output to be as per approved standards-NERTS
40	132 kV Monarchak - Udaipur 1 Line	17/09/2019 10:52:00	NEEPCO	TSECL	CB status & Carrier sent : Not configured at Monarchak
41	132 kV Monarchak - Udaipur 1 Line	09/11/2019 20:58:00	NEEPCO	TSECL	CB status to be configured in DR at Monarchak
42	132 kV Monarchak - Rokhia Line	01/09/2019 14:18:00	NEEPCO	TSECL	3. CB status & carrier send channel to be configured in DR of 132 kV Rokhia - Monarchak line at Monarchak - NEEPCO
43	132 kV Monarchak - Rokhia Line	17/09/2019 10:46:00	NEEPCO	TSECL	CB status & Carrier sent : Not configured at Monarchak

## Annexure-B.7(III)

## DR Standardization Issues (Grid Events for the period 1st Aug'19 to 31st Dec'19)

SL_NO	ELEMENTNAME (Send - Rend)	TRIPPING_DATE_TIME	SENDOWNER	RENDOWNER	Remarks
44	132 kV Khliehriat (MePTCL) - Khliehriat (PG) 2 Line	19/Oct/2019 14:02	MePTCL	POWERGRID	2. CB status to be configured in DR at Khliehriat (MePTCL & PG) - MePTCL
45	132 kV Khliehriat (MePTCL) - Khliehriat (PG) 1 Line	19/Oct/2019 14:02	MePTCL	POWERGRID	3. CB status to be configured in DR at Khliehriat (MePTCL) - MePTCL
46	132 kV Khandong - Umranshu Line	18/09/2019 14:43:00	NEEPCO	AEGCL	2. Standardization of DR output (CB status, carrier status) at Khandong for Umrangsho feeder - NEEPCO/AEGCL
47	132 kV Kahlipara - Sarusajai 3 Line	10/08/2019 11:35:00	AEGCL	AEGCL	Y (Standardization of DR outputs at Sarusajai - AEGCL)
48	132 kV Jiribam - Pailapool Line	12/Oct/2019 09:27	POWERGRID	AEGCL	2. CB status needs to be incorporated in DR channel- AEGCL
49	132 kV Hailakandi - Silchar 1 Line	22/08/2019 02:05:00	AEGCL	POWERGRID	Y (CB status not updated from Silchar)
50	132 kV Haflong - Umranshu Line	06/Oct/2019 14:14	POWERGRID	AEGCL	2. Circuit Breaker status configured in DR at Haflong for 132 kV Umranshu Line to be checked (status not changed as per DR output) and report to be submitted - NERTS
51	132 kV Dimapur - Doyang 1 Line	12/08/2019 13:33:00	POWERGRID	NEEPCO	Y (DT send and receive not configured at Dimapur)
52	132 kV Badarpur - Silchar 2 Line	22/08/2019 01:40:00	POWERGRID	POWERGRID	Y (CB status not updated from Silchar)
53	132 kV Badarpur - Silchar 2 Line	22/08/2019 01:53:00	POWERGRID	POWERGRID	Y (CB status not configured in DR-Silchar; Carrier , Carrier sent-configuration needs checking-Badarpur)
54	132 kV Badarpur - Silchar 1 Line	22/08/2019 18:51:00	POWERGRID	POWERGRID	Y (no zone of detection observed in DR neither breaker status at Silchar)
55	132 kV Aizawl - Kumarghat Line	03/Oct/2019 14:50	POWERGRID	POWERGRID	2. CB status to configured in DR at Aizawl for Kumarghat line - NERTS

## Annexure-B.7(III)

## DR Standardization Issues (Grid Events for the period 1st Aug'19 to 31st Dec'19)

SL_NO	ELEMENTNAME (Send - Rend)	TRIPPING_DATE_TIME	SENDOWNER	RENDOWNER	Remarks
56	132 kV Aizawl - Kumarghat Line	01/09/2019 20:57:00	POWERGRID	POWERGRID	3. CB status configured in DR at Aizawl for Kumarghat feeder to be checked and issues to be addressed - NERTS
57	132 kV Aizawl - Kumarghat Line	06/09/2019 12:03:00	POWERGRID	POWERGRID	2. CB status to be configured in DR at Aizawl end-NERTS
58	132 kV Aizawl - Kumarghat Line	25/09/2019 15:48:00	POWERGRID	POWERGRID	2. CB status to be configured at Aizawl for Kumarghat line - NERTS
59	132 kV AGTCCPP - Kumarghat Line	08/Oct/2019 16:11	NEEPCO	POWERGRID	2. Carrier sent and CB Breaker status to be configured in DR at Agtccpp end: NEEPCO
60	132 kV AGTCCPP - Kumarghat Line	03/09/2019 16:57:00	NEEPCO	POWERGRID	4. CB status to be configured in DR at AGTCCPP for all the 132 kV lines - NEEPCO
61	132 kV AGTCCPP - Kumarghat Line	22/09/2019 06:29:00	NEEPCO	POWERGRID	4. CB status to be configured in DR at AGTCCPP for all the 132 kV lines - NEEPCO

## Annexure-B.7(IV)

## DR Time Drift Issues (Grid Events for the period 1st Aug'19 to 31st Dec'19)

SL_NO	ELEMENTNAME	TRIPPING_DATE_TIME	SENDOWNER	RENDOWNER	Remarks
1	400 kV New Siliguri - Bongaigaon 2 Line	19/Oct/2019 17:53	POWERGRID	POWERGRID	275 msec drift at Bongaigaon
2	400 kV Biswanath Chariali - Ranganadi 1 Line	19/Nov/2019 11:50	POWERGRID	NEEPCO	~1 sec drift at BNC
3	400 kV Alipurduar - Bongaigaon 2 Line	02/Nov/2019 11:50	POWERGRID	POWERGRID	130 msec (Main-2 relay at Bongaigaon)
4	220 kV Misa - Samaguri 1 Line	03/Oct/2019 11:30	POWERGRID	AEGCL	15000 msec(main-2 at Misa)
5	220 kV Mariani (PG) - Mokokchung (PG) 1 Line	21/Nov/2019 15:08	POWERGRID	POWERGRID	~1 minutes at Mokokchung
6	220 kV Dimapur - Misa 1 Line	02/Nov/2019 09:58	POWERGRID	POWERGRID	drift ~126 msec at Misa
7	220 kV Byrnihat - Misa 2 Line	07/Nov/2019 04:45	MePTCL	POWERGRID	Misa end DR not time sync (year 1987)
8	132KV-KHLIEHRIAT(ME)-LUMSNONG	10/08/2019 00:50:00	MePTCL	MePTCL	1 Hrs drift at KHL(MePTCL) as per control room records
9	132 kV Ziro- Daporijo	16/Oct/2019 14:34	POWERGRID	DoP, Arunachal Pradesh	4 minutes (Ziro)
10	132 kV Roing - Pasighat Line	18/Oct/2019 11:40	POWERGRID	POWERGRID	11 minutes (Roing)
11	132 kV Palatana - Udaipur Line	01/Nov/2019 12:45	TSECL	TSECL	1 Hr dirft at udaipur
12	132 kV Namsai-Tezu	13/Oct/2019 16:04	POWERGRID	POWERGRID	5 seconds drift at Tezu
13	132 kV Motonga (Bhutan) - Rangia Line	03/08/2019 14:10:00	BPCL	AEGCL	3. Time drift of ~4 minutes to be addressed - NERTS
14	132 kV Motonga (Bhutan) - Rangia Line	06/08/2019 11:08:00	BPCL	AEGCL	3. Time drift of ~4 minutes to be addressed - NERTS
15	132 kV Motonga (Bhutan) - Rangia Line	06/08/2019 11:32:00	BPCL	AEGCL	3. Time drift of ~4 minutes to be addressed - NERTS
16	132 kV Monarchak - Udaipur 1 Line	09/Nov/2019 20:58	NEEPCO	TSECL	~8sec drift at Monarchak

## Annexure-B.7(IV)

**DR Time Drift Issues (Grid Events for the period 1st Aug'19 to 31st Dec'19)**

<b>SL_NO</b>	<b>ELEMENTNAME</b>	<b>TRIPPING_DATE_TIME</b>	<b>SENDOWNER</b>	<b>RENDOWNER</b>	<b>Remarks</b>
17	132 kV Khliehriat (MePTCL) - Khliehriat (PG) 2 Line	19/Oct/2019 14:02	MePTCL	POWERGRID	1 minutes (Khliehriat (PG))
18	132 kV Jiribam(PG) - Jiribam(MA) Line	26/Oct/2019 03:35	POWERGRID	MSPCL	~300 msec (Jiribam PG)
19	132 kV Jiribam - Pailapool Line	12/Oct/2019 09:27	POWERGRID	AEGCL	4 minutes (Pailapol)
20	132 kV Jiribam - Pailapool Line	15/Oct/2019 12:18	POWERGRID	AEGCL	~5 mutes w.r.t control room operator timing
21	132 kV Jiribam - Loktak 2 Line	09/08/2019 13:01:00	POWERGRID	NHPC	500 msec drift at Jiribam
22	132 kV Haflong - Jiribam Line	02/09/2019 08:30:00	POWERGRID	POWERGRID	Y (360 msec time drift of DR at Jiribam(PG))
23	132 kV Daporijo - Ziro line	15/Oct/2019 15:19	DoP, Arunachal Pradesh	POWERGRID	4 minutes (Ziro)
24	132 kV AGTCCPP - Kumarghat Line	08/Oct/2019 16:11	NEEPCO	POWERGRID	4 minutes (AGTCCPP)

## Details of Auto Recloser of Lines in North Eastern Regional Grid

SI No	Voltage Level	Name of Element (Emanating - Terminating)	Ckt ID	Tower Configuration (S/C or D/C)	Agency at End 1	Agency at End 2	Owner	AR Details (SPAR/3-Ph AR/Not Available/Information not Available)	Remarks
1	132 kV	132 kV South Comilla (Bangladesh) - Surajmani Nagar	1	D/C	PGCB	POWERGRID	POWERGRID	Information not Available	Information not Available
2	132 kV	132 kV South Comilla (Bangladesh) - Surajmani Nagar	2	D/C	PGCB	POWERGRID	POWERGRID	Information not Available	Information not Available
1	132 kV	132 kV Gelyphu (Bhutan) - Salakati	1	S/C	BPCL	POWERGRID	POWERGRID	3-ph AR in service at Salakati	
2	132 kV	132 kV Motonga (Bhutan) - Rangia	1	S/C	BPCL	AEGCL	POWERGRID & BPC	3-ph AR in service at Rangia	
1	400 kV	400 kV Azara - Bongaigaon	1	D/C	AEGCL	POWERGRID	NETC(1.8%) & AEGCL (98.2%)	SPAR in service	
2	400 kV	400 kV Azara - Silchar	1	D/C	AEGCL	POWERGRID	NETC(37.5%) & AEGCL(62.5%)	SPAR in service	
3	400 kV	400 kV Balipara - Biswanath Chariali	1	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
4	400 kV	400 kV Balipara - Biswanath Chariali	2	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
5	400 kV	400 kV Balipara - Biswanath Chariali	3	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
6	400 kV	400 kV Balipara - Biswanath Chariali	4	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
7	400 kV	400 kV Balipara - Bongaigaon	1	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
8	400 kV	400 kV Balipara - Bongaigaon	2	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
9	400 kV	400 kV Balipara - Bongaigaon	3	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
10	400 kV	400 kV Balipara - Bongaigaon	4	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
11	400 kV	400 kV Balipara - Misa	1	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
12	400 kV	400 kV Balipara - Misa	2	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
13	400 kV	400 kV Biswanath Chariali - Ranganadi	1	D/C	POWERGRID	NEEPCO	POWERGRID	SPAR in service	
14	400 kV	400 kV Biswanath Chariali - Ranganadi	2	D/C	POWERGRID	NEEPCO	POWERGRID	SPAR in service	
15	400 kV	400 kV Bongaigaon - Byrnihat	1	D/C	POWERGRID	MePTCL	NETC(97.91 %) & MePTCL(2.09%)	SPAR in service	
16	400 kV	400 kV Binaguri - Bongaigaon	1	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
17	400 kV	400 kV Binaguri - Bongaigaon	2	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
18	400 kV	400 kV Alipurduar - Bongaigaon	1	D/C	POWERGRID	POWERGRID	ENICL	SPAR in service	
19	400 kV	400 kV Alipurduar - Bongaigaon	2	D/C	POWERGRID	POWERGRID	ENICL	SPAR in service	
20	400 kV	400 kV BgTPP - Bongaigaon	1	D/C	NTPC	POWERGRID	POWERGRID	SPAR Available	Due to LDP, SPAR is not attempting

## Details of Auto Recloser of Lines in North Eastern Regional Grid

SI No	Voltage Level	Name of Element (Emanating - Terminating)	Ckt ID	Tower Configuration (S/C or D/C)	Agency at End 1	Agency at End 2	Owner	AR Details (SPAR/3-Ph AR/Not Available/Information not Available)	Remarks
21	400 kV	400 kV BgTPP - Bongaigaon	2	D/C	NTPC	POWERGRID	POWERGRID	SPAR Available	Due to LDP, SPAR is not attempting
22	400 kV	400 kV Byrnihat - Silchar	1	D/C	MePTCL	POWERGRID	NETC(98.06%)& MePTCL(1.94%)	SPAR in service	
23	400 kV	400 kV Pallatana - Silchar	1	D/C	OTPC	POWERGRID	NETC	SPAR in service	
24	400 kV	400 kV Pallatana - Silchar	2	D/C	OTPC	POWERGRID	NETC	SPAR in service	
1	220 kV	220 kV AGBPP - Mariani	1	S/C	NEEPCO	AEGCL	POWERGRID	Information not available	AGBPP-SPAR enabled, Mariani end- POWERGRID may intimate
2	220 kV	220 kV AGBPP - Mariani(PG)	1	S/C	NEEPCO	POWERGRID	POWERGRID	SPAR in service	
3	220 kV	220 kV Mariani - Misa	1	S/C	AEGCL	POWERGRID	POWERGRID	Information not available	POWERGRID may intimate the status
4	220 kV	220 kV Mariani (PG) - Misa	1	S/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
1	132 kV	132kV Imphal - Silchar	1	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
2	132 kV	132kV Imphal - Silchar	2	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
3	132 kV	132kV P K Bari - Silchar	1	D/C	TSECL	POWERGRID	POWERGRID	SPAR in service	
4	132 kV	132kV P K Bari - Silchar	2	D/C	TSECL	POWERGRID	POWERGRID	SPAR in service	
1	220 kV	220 kV AGBPP - Deomali	1	S/C	NEEPCO	DoP,Arunachal Pradesh	DoP, Arunachal Pradesh	Information not available	DoP AP may intimate the status
2	220 kV	220 kV AGBPP - Tinsukia	1	S/C	NEEPCO	AEGCL	AEGCL	SPAR not in service	SPAR available at both ends, but is not enabled at AGBPP as per Audit report
3	220 kV	220 kV AGBPP - Tinsukia	2	S/C	NEEPCO	AEGCL	AEGCL	SPAR not in service	SPAR available at both ends, but is not enabled at AGBPP as per Audit report
4	220 kV	220 kV Agia - Azara	1	D/C	AEGCL	AEGCL	AEGCL	Not Available	SPAR available at Azara. At Agia by the end of January 2020.
5	220 kV	220 kV Agia - Boko	1	D/C	AEGCL	AEGCL	AEGCL	Not Available	SPAR available at Azara. At Agia by the end of January 2020.
6	220 kV	220 kV Agia - BTPS	1	D/C	AEGCL	AEGCL	AEGCL	Not Available	At BTPS SPAR completed. At Agia End testing of new panels are going on. Will be completed in two months time.
7	220 kV	220 kV Agia - BTPS	2	D/C	AEGCL	AEGCL	AEGCL	Not Available	At BTPS SPAR completed. At Agia End testing of new panels are going on. Will be completed in two months time.
8	220 kV	220 kV Azara - Boko	1	D/C	AEGCL	AEGCL	AEGCL	Not Available	SPAR available at Azara. At Boko, the testing of the new panels are yet to be started. By March 2020.
9	220 kV	220 kV Azara - Sarusajai	1	D/C	AEGCL	AEGCL	AEGCL	Not Available	SPAR available at Azara, other end will be done in R&M works

## Details of Auto Recloser of Lines in North Eastern Regional Grid

Sl No	Voltage Level	Name of Element (Emanating - Terminating)	Ckt ID	Tower Configuration (S/C or D/C)	Agency at End 1	Agency at End 2	Owner	AR Details (SPAR/3-Ph AR/Not Available/Information not Available)	Remarks
10	220 kV	220 kV Azara - Sarusajai	2	D/C	AEGCL	AEGCL	AEGCL	Not Available	SPAR available at Azara, other end will be done in R&M works
11	220 kV	220 kV Balipara - Sonabil	1	S/C	POWERGRID	AEGCL	AEGCL	SPAR in service	AEGCL & POWERGRID may confirm
12	220 kV	220 kV Alipurduar - Salakati	1	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
13	220 kV	220 kV Alipurduar - Salakati	2	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
14	220 kV	220 kV BTPS - Salakati	1	D/C	AEGCL	POWERGRID	POWERGRID	Not Available	SPAR available at BTPS end. Carrier communication link is yet to be established. In the AR logic, AR is blocked if comm. Link is absent.
15	220 kV	220 kV BTPS - Salakati	2	D/C	AEGCL	POWERGRID	POWERGRID	Not Available	SPAR available at BTPS end. Carrier communication link is yet to be established. In the AR logic, AR is blocked if comm. Link is absent.
16	220 kV	220 kV Dimapur - Misa	1	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
17	220 kV	220 kV Dimapur - Misa	2	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
18	220 kV	220 kV Jawaharnagar - Samaguri	1	D/C	AEGCL	AEGCL	AEGCL	Not Available	SPAR available at JawaharNagar, other end will be done in R&M works
19	220 kV	220 kV Jawaharnagar - Sarusajai	1	D/C	AEGCL	AEGCL	AEGCL	Not Available	SPAR available at JawaharNagar, other end will be done in R&M works
20	220 kV	220 kV Karbi Langpi - Sarusajai	1	S/C	APGCL	AEGCL	AEGCL	Not Available	SPAR will be done in R&M works
21	220 kV	220 kV Karbi Langpi - Sarusajai	2	S/C	APGCL	AEGCL	AEGCL	Not Available	SPAR will be done in R&M works
22	220 kV	220 kV Byrnihat - Misa	1	S/C	MePTCL	POWERGRID	MePTCL	SPAR in service	
23	220 kV	220 kV Byrnihat - Misa	2	S/C	MePTCL	POWERGRID	MePTCL	SPAR in service	
24	220 kV	220 kV Kopili - Misa	1	D/C	NEEPCO	POWERGRID	POWERGRID	SPAR in service	
25	220 kV	220 kV Kopili - Misa	2	D/C	NEEPCO	POWERGRID	POWERGRID	SPAR in service	
26	220 kV	220 kV Kopili - Misa	3	S/C	NEEPCO	POWERGRID	POWERGRID	SPAR in service	
27	220 kV	220 kV Mariani (AEGCL) - Samaguri	1	S/C	AEGCL	AEGCL	AEGCL	Not Available	will be done in PSDF scheme
28	220 kV	220 kV Mariani (PG) - Mokokchung (PG)	1	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
29	220 kV	220 kV Mariani (PG) - Mokokchung (PG)	2	D/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
30	220 kV	220 kV Misa - Samaguri	1	D/C	POWERGRID	AEGCL	POWERGRID	Information not available	POWERGRID may intimate the status
31	220 kV	220 kV Misa - Samaguri	2	D/C	POWERGRID	AEGCL	POWERGRID	Information not available	POWERGRID may intimate the status
32	220 kV	220 kV NTPS - Tinsukia	1	D/C	AEGCL	AEGCL	AEGCL	Not Available	will be done in PSDF scheme
33	220 kV	220 kV NTPS - Tinsukia	2	D/C	AEGCL	AEGCL	AEGCL	Not Available	will be done in PSDF scheme

## Details of Auto Recloser of Lines in North Eastern Regional Grid

SI No	Voltage Level	Name of Element (Emanating - Terminating)	Ckt ID	Tower Configuration (S/C or D/C)	Agency at End 1	Agency at End 2	Owner	AR Details (SPAR/3-Ph AR/Not Available/Information not Available)	Remarks
34	220 kV	220 kV Samaguri - Sarusajai	1	D/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
35	220 kV	220 kV Samaguri - Sarusajai	2	D/C	AEGCL	AEGCL	AEGCL	Not Available	will be done in PSDF scheme
35	220 kV	220 kV Samaguri - Sonabil	1	S/C	AEGCL	AEGCL	AEGCL	Not Available	Due to problem at Samaguri end. Implemented in R&M scheme funded from PSDF
36	220 kV	220 kV Samaguri - Sonabil	2	S/C	AEGCL	AEGCL	AEGCL	Not Available	Due to problem at Samaguri end. Implemented in R&M scheme funded from PSDF
1	132 kV	132 kV Agartala - AGTCCPP	1	D/C	TSECL	NEEPCO	POWERGRID	Not Available	SPAR available at AGTCCPP, PLCC is not in service
2	132 kV	132 kV Agartala - AGTCCPP	2	D/C	TSECL	NEEPCO	POWERGRID	Not Available	SPAR available at AGTCCPP, PLCC is not in service
3	132 kV	132 kV Agartala - Bodhjannagar	1	S/C	TSECL	TSECL	TSECL	Distance Relay(P442) commissioned.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.	Distance Relay(P442) commissioned.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.
4	132 kV	132 kV Agartala - Dhalabil	1	S/C	TSECL	TSECL	TSECL	Distance Relay(P442) commissioned.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.	Distance Relay(P442) commissioned.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.
5	132 kV	132 kV Agartala - Rokhia	1	D/C	TSECL	TSECL	TSECL	Distance Relay(P442) commissioned.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.	Distance Relay(P442) commissioned.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.
6	132 kV	132 kV Agartala - Rokhia	2	D/C	TSECL	TSECL	TSECL	Distance Relay(P442) commissioned.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.	Distance Relay(P442) commissioned.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.
7	132 kV	132 kV Agia - Mendipathar	1	S/C	AEGCL	MePTCL	MePTCL	Not Available	Agia end: 3-ph AR will be implemented under R&M works, Mendipathar- MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by September 2019.
8	132 kV	132 kV AGTCCPP - Kumarghat	1	S/C	NEEPCO	POWERGRID	POWERGRID	SPAR/TPAR not in service	AGTCCPP: 1 AR facility available; Kumarghat: Gang Operated CBs
9	132 kV	132 kV Aizawl - Jiribam	1	S/C	POWERGRID	POWERGRID	POWERGRID	3-Ph AR in service	

## Details of Auto Recloser of Lines in North Eastern Regional Grid

SI No	Voltage Level	Name of Element (Emanating - Terminating)	Ckt ID	Tower Configuration (S/C or D/C)	Agency at End 1	Agency at End 2	Owner	AR Details (SPAR/3-Ph AR/Not Available/Information not Available)	Remarks
10	132 kV	132 kV Aizawl - Kolasib	1	S/C	POWERGRID	P&ED, Mizoram	POWERGRID	3-Ph AR in service	POWERGRID may confirm
11	132 kV	132 kV Aizawl - Kumarghat	1	S/C	POWERGRID	POWERGRID	POWERGRID	3-Ph AR in service	
12	132 kV	132 kV Aizawl - Luangmual	1	S/C	POWERGRID	P&ED, P&ED, Mizoram	P&ED, Mizoram	Not Available	
13	132 kV	132 kV Aizawl - Melriat(PG)	1	S/C	POWERGRID	POWERGRID	POWERGRID	Not Available	
14	132 kV	132 kV Ambasa - Gamaitila	1	S/C	TSECL	TSECL	TSECL	Distance Relay(P442) commissioned.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.	Distance Relay(P442) is not erected.132 KV breaker are 3-ph. gang operated.
15	132 kV	132 kV Ambasa - Kamalpur	1	S/C	TSECL	TSECL	TSECL	Distance Relay(P442) commissioned.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.	Distance Relay(P442) is not erected.132 KV breaker are 3-ph. gang operated.
16	132 kV	132 kV Ambasa - P K Bari	1	S/C	TSECL	TSECL	TSECL	Distance Relay(P442) commissioned.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.	Distance Relay(P442) commissioned.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.
17	132 kV	132 kV Badarpur - Jiribam	1	S/C	POWERGRID	POWERGRID	POWERGRID	Information not available	POWERGRID may intimate the status
18	132 kV	132 kV Badarpur - Kolasib	1	S/C	POWERGRID	P&ED, Mizoram	POWERGRID	Information not available	POWERGRID may intimate the status
19	132 kV	132 kV Badarpur - Kumarghat	1	S/C	POWERGRID	POWERGRID	POWERGRID	3-Ph AR in service	
20	132 kV	132 kV Badarpur - Panchgram	1	S/C	POWERGRID	AEGCL	POWERGRID	Information not available	<b>POWERGRID may intimate the status, Panchgram end: 3 ph AR will be implemented under R&amp;M</b>
21	132 kV	132 kV Badarpur - Silchar	1	D/C	POWERGRID	POWERGRID	POWERGRID	Information not available	Silchar end: AR in BCU available, <b>AEGCL may intimate the status</b>
22	132 kV	132 kV Badarpur - Silchar	2	D/C	POWERGRID	POWERGRID	POWERGRID	Information not available	Silchar end: 3-ph AR in BCU available, <b>AEGCL may intimate the status</b>
23	132 kV	132 kV Balipara - Bhalukpong	1	S/C	POWERGRID	DoP, Arunachal Pradesh	NEEPCO & DoP, Arunachal Pradesh	Not Available	
24	132 kV	132 kV Balipara - Depota	1	S/C	POWERGRID	AEGCL	AEGCL	Not Available	AEGCL&POWERGRID may intimate the plan of action

## Details of Auto Recloser of Lines in North Eastern Regional Grid

Sl No	Voltage Level	Name of Element (Emanating - Terminating)	Ckt ID	Tower Configuration (S/C or D/C)	Agency at End 1	Agency at End 2	Owner	AR Details (SPAR/3-Ph AR/Not Available/Information not Available)	Remarks
25	132 kV	132 kV Balipara - Sonabil	1	S/C	AEGCL	AEGCL	AEGCL	Information not available	Sonabil end: 3-ph AR available, <b>Balipara end: POWERGRID may intimate</b>
26	132 kV	132 kV Baramura - Gamaitilla	1	S/C	TSECL	TSECL	TSECL	Distance Relay(P442) is not erected.132 KV breaker are 3-ph. gang operated.	Distance Relay(P442) is not erected.132 KV breaker are 3-ph. gang operated.
27	132 kV	132 kV Baramura - Jirania	1	S/C	TSECL	TSECL	TSECL	Distance Relay(P442) is not erected.132 KV breaker are 3-ph. gang operated.	Distance Relay(P442) is not erected.132 KV breaker are 3-ph. gang operated.
28	132 kV	132 kV Bhalukpong - Khupi	1	S/C	DoP, Arunachal Pradesh	NEEPCO	NEEPCO & DoP, Arunachal Pradesh	Not Available	
29	132 kV	132 kV Biswanath Chariali - Pavoi	1	D/C	POWERGRID	AEGCL	POWERGRID	Not Available	Pavoi end- 3-ph AR will be implemented, BNC: POWERGRID may intimate the status
30	132 kV	132 kV Biswanath Chariali - Pavoi	2	D/C	POWERGRID	AEGCL	POWERGRID	Not Available	Pavoi end- 3-ph AR will be implemented, BNC: POWERGRID may intimate the status
31	132 kV	132 kV Pavoi - Sonabil	1	S/C	AEGCL	AEGCL	AEGCL	Not available	TPAR is available both at Pavoi and Sonabil. Carr. Comm. Is yet to be established.
32	132 kV	132 kV Bodhjannagar - Jirania	1	S/C	TSECL	TSECL	TSECL	Distance Relay(P442) commissioned.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.	Distance Relay(P442) is not erected.132 KV breaker are 3-ph. gang operated.
33	132 kV	132 kV Bokajan - Dimapur	1	S/C	AEGCL	POWERGRID	AEGCL	Not available	
34	132 kV	132 kV Bokajan - Golaghat	1	S/C	AEGCL	AEGCL	AEGCL	Not available	AEGCL may intimate the plan of action
35	132 kV	132 kV BTPS - Dhaligaon	1	D/C	AEGCL	AEGCL	AEGCL	Not available	3-ph AR under R&M
36	132 kV	132 kV BTPS - Dhaligaon	2	D/C	AEGCL	AEGCL	AEGCL	Not available	3-ph AR under R&M
37	132 kV	132 kV BTPS-Kokrajhar	1	S/C	AEGCL	AEGCL	AEGCL	Not available	AEGCL may intimate the plan of action
38	132 kV	132 kV Bilashipara-Kokrajhar	1	S/C	AEGCL	AEGCL	AEGCL	Not available	AEGCL may intimate the plan of action
39	132 kV	132 kV Bilashipara-Gauripur	1	S/C	AEGCL	AEGCL	AEGCL	Not available	AEGCL may intimate the plan of action
40	132 kV	132 kV Bornagar - Dhaligaon	1	S/C	AEGCL	AEGCL	AEGCL	Not available	AEGCL may intimate the plan of action

## Details of Auto Recloser of Lines in North Eastern Regional Grid

SI No	Voltage Level	Name of Element (Emanating - Terminating)	Ckt ID	Tower Configuration (S/C or D/C)	Agency at End 1	Agency at End 2	Owner	AR Details (SPAR/3-Ph AR/Not Available/Information not Available)	Remarks
41	132 kV	132 kV Bornagar - Rangia	1	S/C	AEGCL	AEGCL	AEGCL	Not available	AEGCL may intimate the plan of action
42	132 kV	132 kV Budhjangnagar - Surjamaninagar	1	D/C	TSECL	TSECL	TSECL	Not available	Distance Relay(P442) commissioned at BudhjungNgar.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.
43	132 kV	132 kV Budhjangnagar - Surjamaninagar	2	D/C	TSECL	TSECL	TSECL	Not available	Distance Relay(P442) commissioned at BudhjungNgar.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.
44	132 kV	132 kV Dhalabil - Kamalpur	1	S/C	TSECL	TSECL	TSECL	Not available	Distance Relay(P442) is not erected.132 KV breaker are 3-ph. gang operated.
45	132 kV	132 kV Dhaligaon-Gossaigaon	1	S/C	AEGCL	AEGCL	AEGCL	Not available	AEGCL may intimate the plan of action
46	132 kV	132 kV Dharmanagar - Dullavcherra	1	S/C	TSECL	AEGCL	AEGCL	Not available	AEGCL&TSECL may intimate the plan of action
47	132 kV	132 kV Dullavcherra - Hailakandi	1	S/C	AEGCL	AEGCL	AEGCL	Not available	AEGCL may intimate the plan of action
48	132 kV	132 kV Dharmanagar - P K Bari	1	S/C	TSECL	TSECL	TSECL	Distance Relay(P442) is not erected.132 KV breaker are 3-ph. gang operated.	Distance Relay(P442) commissioned.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.
49	132 kV	132 kV Dimapur - Doyang	1	D/C	POWERGRID	NEEPCO	POWERGRID	SPAR in service	
50	132 kV	132 kV Dimapur - Doyang	2	D/C	POWERGRID	NEEPCO	POWERGRID	SPAR in service	
51	132 kV	132 kV Dimapur - Imphal	1	S/C	POWERGRID	POWERGRID	POWERGRID	SPAR in service	
52	132 kV	132 kV Dimapur (PG) - Dimapur (DoP, Nagaland)	1	S/C	POWERGRID	ED, DoP, Nagaland	DoP, Nagaland	Not Available	DoP Nagaland may please intimate the plan of action
53	132 kV	132 kV Dimapur (PG) - Dimapur (DoP, Nagaland)	2	S/C	POWERGRID	ED, DoP, Nagaland	DoP, Nagaland	Not Available	DoP Nagaland may please intimate the plan of action
54	132 kV	132 kV Dimapur (PG) - Kohima	1	S/C	POWERGRID	ED, DoP, Nagaland	DoP, Nagaland	Not Available	3-ph AR available at Dimapur(PG). DoP Nagaland may please intimate the plan of action
55	132 kV	132 kV Doyang - Mokokchung (DoP, Nagaland)	1	S/C	NEEPCO	ED, DoP, Nagaland	DoP, Nagaland	Not Available	
56	132 kV	132 kV Doyang - Sanis	1	S/C	NEEPCO	DoP, Nagaland	DoP, Nagaland	Not Available	

## Details of Auto Recloser of Lines in North Eastern Regional Grid

<i>Sl No</i>	<i>Voltage Level</i>	<i>Name of Element (Emanating - Terminating)</i>	<i>Ckt ID</i>	<i>Tower Configuration (S/C or D/C)</i>	<i>Agency at End 1</i>	<i>Agency at End 2</i>	<i>Owner</i>	<i>AR Details (SPAR/3-Ph AR/Not Available/Information not Available)</i>	<i>Remarks</i>
57	132 kV	132 kV EPIP II - Byrnihat	1	D/C	MePTCL	MePTCL	MePTCL	Not Available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by September 2019.
58	132 kV	132 kV EPIP II - Byrnihat	2	D/C	MePTCL	MePTCL	MePTCL	Not Available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by September 2019.
59	132 kV	132 kV EPIP II - Umtru	1	D/C	MePTCL	MePTCL	MePTCL	Not Available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by November 2019.
60	132 kV	132 kV EPIP II - Umtru	2	D/C	MePTCL	MePTCL	MePTCL	Not Available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by November 2019.
61	132 kV	132 kV Gauripur-Gossaigaon	1	S/C	AEGCL	AEGCL	AEGCL	Not available	AEGCL may intimate the plan of action
62	132 kV	132 kV Gohpur - Pavo	1	S/C	AEGCL	AEGCL	AEGCL	Not available	AEGCL may intimate the plan of action
63	132 kV	132 kV Gohpur - Nirjuli	1	S/C	AEGCL	POWERGRID	POWERGRID	Not available	AEGCL may intimate the plan of action
64	132 kV	132 kV Golaghat - Mariani (AEGCL)	1	S/C	AEGCL	AEGCL	AEGCL	Not available	AEGCL may intimate the plan of action
65	132 kV	132 kV Haflong - Jiribam	1	S/C	POWERGRID	POWERGRID	POWERGRID	Not available	AEGCL may intimate the plan of action
66	132 kV	132 kV Haflong - Umranshu	1	S/C	AEGCL	POWERGRID	AEGCL	Not available	AEGCL may intimate the plan of action
67	132 kV	132 kV Imphal (MSPCL) - Imphal (PG)	1	S/C	MSPCL	POWERGRID	POWERGRID	Not available	AEGCL may intimate the plan of action
68	132 kV	132 kV Imphal (MSPCL) - Imphal (PG)	2	S/C	MSPCL	POWERGRID	POWERGRID & MSPCL	Not available	AEGCL may intimate the plan of action
69	132 kV	132 kV Imphal (MSPCL) - Karong	1	S/C	MSPCL	MSPCL	MSPCL	Not Available	AEGCL may intimate the plan of action
70	132 kV	132 kV Imphal (PG) - Ningthoukong	1	S/C	POWERGRID	MSPCL	MSPCL	Not Available	AEGCL may intimate the plan of action
71	132 kV	132 kV Imphal (PG) - Loktak	1	S/C	POWERGRID	NHPC	POWERGRID	SPAR in service	
72	132 kV	132 kV Jiribam - Loktak	2	S/C	POWERGRID	NHPC	POWERGRID	SPAR in service	
73	132 kV	132 kV Jiribam - Pailapool	1	S/C	POWERGRID	AEGCL	AEGCL/ MSPCL	Not Available	POWERGRID & AEGCL may intimate the plan of action

## Details of Auto Recloser of Lines in North Eastern Regional Grid

SI No	Voltage Level	Name of Element (Emanating - Terminating)	Ckt ID	Tower Configuration (S/C or D/C)	Agency at End 1	Agency at End 2	Owner	AR Details (SPAR/3-Ph AR/Not Available/Information not Available)	Remarks
74	132 kV	132 kV Jiribam(PG) - Jiribam(MA)	1	S/C	POWERGRID	MSPCL	MSPCL	Not available	AEGCL may intimate the plan of action
75	132 kV	132 kV Jorhat - Mariani	1	S/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
76	132 kV	132 kV Jorhat - Mariani	2	S/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
77	132 kV	132 kV Jorhat - Nazira	1	S/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
78	132 kV	132 kV Kahilipara - Kamalpur	1	S/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
79	132 kV	132 kV Kamalpur - Rangia	1	D/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
80	132 kV	132 kV Kamalpur - Rangia	2	D/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
81	132 kV	132 kV Kahilipara - Sarusajai	1	D/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
82	132 kV	132 kV Kahilipara - Sarusajai	2	D/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
83	132 kV	132 kV Kahilipara - Sarusajai	3	D/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
84	132 kV	132 kV Sarusajai - Sishugram	1	D/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
85	132 kV	132 kV Kamalpur - Sishugram	1	S/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
86	132 kV	132 kV Kahilipara - Umtru	1	D/C	AEGCL	MePTCL	MePTCL	Not Available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by Deceber 2019
87	132 kV	132 kV Kahilipara - Umtru	2	D/C	AEGCL	MePTCL	MePTCL	Not Available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by Deceber 2019
88	132 kV	132 kV Kamalpur - P K Bari	1	S/C	TSECL	TSECL	TSECL	Distance Relay(P442)is not erected.132 KV breaker are 3-ph. gang operated.	Distance Relay(P442) commissioned.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.
89	132 kV	132 kV Karong - Kohima	1	S/C	DoP, Nagaland	MSPCL	MSPCL(65.3%) / DoP, Nagaland(34.7%)	Not Available	
90	132 kV	132 kV Khandong - Khliehriat	1	S/C	NEEPCO	POWERGRID	POWERGRID	SPAR in service	

## Details of Auto Recloser of Lines in North Eastern Regional Grid

SI No	Voltage Level	Name of Element (Emanating - Terminating)	Ckt ID	Tower Configuration (S/C or D/C)	Agency at End 1	Agency at End 2	Owner	AR Details (SPAR/3-Ph AR/Not Available/Information not Available)	Remarks
91	132 kV	132 kV Khandong - Khliehriat	2	S/C	NEEPCO	POWERGRID	POWERGRID	Information not available	POWERGRID may intimate the status
92	132 kV	132 kV Khandong - Kopili	1	S/C	NEEPCO	NEEPCO	POWERGRID	SPAR kept in non-auto mode	(SPAR facility available)
93	132 kV	132 kV Khandong - Kopili	2	S/C	NEEPCO	NEEPCO	POWERGRID	AR kept in non-auto mode	Gang operated CB at Kopili end (Owner:POWERGRID)
94	132 kV	132 kV Khandong - Umranshu	1	S/C	NEEPCO	AEGCL	POWERGRID & AEGCL	Not Available	Due to problem at Umrangshu end, Single pole CB, AR relay available at Khandong end
95	132 kV	132 kV Khliehriat - Badarpur	1	S/C	POWERGRID	POWERGRID	POWERGRID	3-Ph AR in service	
96	132 kV	132 kV Khliehriat - Mustem	1	S/C	MePTCL	MePTCL	MePTCL	Not available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by January 2020.
97	132 kV	132 kV Mustem - NEHU line	1	S/C	MePTCL	MePTCL	MePTCL	Not available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by January 2020.
98	132 kV	132 kV Khliehriat (MePTCL) - Khliehriat (PG)	1	S/C	MePTCL	POWERGRID	POWERGRID	Not available	
99	132 kV	132 kV Khliehriat (MePTCL) - Khliehriat (PG)	2	S/C	MePTCL	POWERGRID	MePTCL	Not available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by January 2020.
100	132 kV	132 kV Khliehriat- NEIGRIHMS	1	S/C	MePTCL	POWERGRID	MePTCL	Not available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by January 2020.
101	132 kV	132 kV Kumarghat - P K Bari	1	S/C	POWERGRID	TSECL	TSECL	Not Available	Scheme not available at PK Bari end; PLCC not available
102	132 kV	132 kV Lekhi - Nirjuli	1	S/C	DoP, Arunachal Pradesh	POWERGRID	DoP, Arunachal Pradesh & POWERGRID	Information not available	DoP, Arunachal Pradesh & POWERGRID may please intimate the status
103	132 kV	132 kV Pare - Ranganadi	1	S/C	DoP, Arunachal Pradesh	NEEPCO	DoP, Arunachal Pradesh & POWERGRID	AR kept in non-auto mode	
104	132 kV	132 kV Loktak - Ningthoukhong	1	S/C	NHPC	MSPCL	MSPCL	Not Available	
105	132 kV	132 kV Loktak - Rengpang	1	S/C	NHPC	MSPCL	MSPCL	Not Available	

## Details of Auto Recloser of Lines in North Eastern Regional Grid

<i>Sl No</i>	<i>Voltage Level</i>	<i>Name of Element (Emanating - Terminating)</i>	<i>Ckt ID</i>	<i>Tower Configuration (S/C or D/C)</i>	<i>Agency at End 1</i>	<i>Agency at End 2</i>	<i>Owner</i>	<i>AR Details (SPAR/3-Ph AR/Not Available/Information not Available)</i>	<i>Remarks</i>
106	132 kV	132 kV LTPS - Mariani	1	S/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
107	132 kV	132 kV LTPS - Moran	1	S/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
108	132 kV	132 kV LTPS - Nazira	1	D/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
109	132 kV	132 kV LTPS - Nazira	2	D/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
110	132 kV	132 kV LTPS - NTPS	1	D/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
111	132 kV	132 kV LTPS - Sonari	1	D/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
112	132 kV	132 kV Mariani (AEGCL) - Mokokchung ( DoP, Nagaland)	1	S/C	AEGCL	ED, DoP, Nagaland	AEGCL(40%)/ DoP, Nagaland(60%)	Not Available	
113	132 kV	132 kV NEHU - Mawlai	1	S/C	MePTCL	MePTCL	MePTCL	Not available	MePTCL will implement the 3 Ph AR in parallell with ongoing R&M works of PLCC &DPC by January 2020.
114	132 kV	132 kV Mawlai - Umiam Stage I	2	S/C	MePTCL	MePTCL	MePTCL	Not available	MePTCL will implement the 3 Ph AR in parallell with ongoing R&M works of PLCC &DPC by January 2021.
115	132 kV	132 kV Mawphlang - Nongstoin	1	S/C	MePTCL	MePTCL	MePTCL	Not available	MePTCL will implement the 3 Ph AR in parallell with ongoing R&M works of PLCC &DPC by March 2020.
116	132 kV	132 kV Mawphlang - Umiam Stg I	1	D/C	MePTCL	MePTCL	MePTCL	Not available	MePTCL will implement the 3 Ph AR in parallell with ongoing R&M works of PLCC &DPC by March 2020.
117	132 kV	132 kV Mawphlang - Umiam Stg I	2	D/C	MePTCL	MePTCL	MePTCL	Not available	MePTCL will implement the 3 Ph AR in parallell with ongoing R&M works of PLCC &DPC by March 2020.
118	132 kV	132 kV Mawphlang- Mawlai	1	S/C	MePTCL	MePTCL	MePTCL	Not available	MePTCL will implement the 3 Ph AR in parallell with ongoing R&M works of PLCC &DPC by January 2021.
119	132 kV	132 kV Melriat(PG) - Zuangtui	1	S/C	POWERGRID	P&ED, Mizoram	POWERGRID	Not Available	POWERGRID may intimate the status

## Details of Auto Recloser of Lines in North Eastern Regional Grid

<i>Sl No</i>	<i>Voltage Level</i>	<i>Name of Element (Emanating - Terminating)</i>	<i>Ckt ID</i>	<i>Tower Configuration (S/C or D/C)</i>	<i>Agency at End 1</i>	<i>Agency at End 2</i>	<i>Owner</i>	<i>AR Details (SPAR/3-Ph AR/Not Available/Information not Available)</i>	<i>Remarks</i>
120	132 kV	132 kV Mendipathar - Nangalbibra	1	S/C	MePTCL	MePTCL	MePTCL	Not available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by Septemeber 2019.
121	132 kV	132 kV Mokochung (PG) - Mokochung (DoP, Nagaland)	1	D/C	POWERGRID	DoP,Nagaland	POWERGRID	Information not available	
122	132 kV	132 kV Mokochung (PG) - Mokochung (DoP, Nagaland)	2	D/C	POWERGRID	DoP,Nagaland	POWERGRID	Information not available	
123	132 kV	132 kV Monarchak - Rokhia	1	S/C	NEEPCO	Monarchak	TSECL	Not available	Distance Relay(P442) commissioned at Rokhia.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.
124	132 kV	132 kV Monarchak - Udaipur	1	S/C	NEEPCO	Monarchak	TSECL	Not available	Distance Relay(P442) commissioned at Udaipur. Hardware connection is going on.132 KV breaker are 3-ph. gang operated.
125	132 kV	132 kV Myntdu Leshka - Khleihriat	1	D/C	MePTCL	MePTCL	MePTCL	Not available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by April 2020.
126	132 kV	132 kV Myntdu Leshka - Khleihriat	2	D/C	MePTCL	MePTCL	MePTCL	Not available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by April 2020.
127	132 kV	132 kV Nangalbibra - Nongstoin	1	S/C	MePTCL	MePTCL	MePTCL	Not available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by November 2019.
128	132 kV	132 kV NEHU - NEIGRIHMS	1	S/C	MePTCL	MePTCL	MePTCL	Not available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by May 2020.
129	132 kV	132 kV NEHU - Umiam	1	D/C	MePTCL	MePTCL	MePTCL	Not available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by June 2020.
130	132 kV	132 kV NTPS - Tinsukia	1	S/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
131	132 kV	132 kV NTPS - Sonari	1	D/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
132	132 kV	132 kV Pailapool - Srikona	1	D/C	AEGCL	AEGCL	AEGCL	Not Available	AEGCL may intimate the plan of action
133	132 kV	132 kV Palatana - Surjamaninagar	1	D/C	OTPC	POWERGRID	POWERGRID	Not Available	Gang operated CB at Palatana end

## Details of Auto Recloser of Lines in North Eastern Regional Grid

Sl No	Voltage Level	Name of Element (Emanating - Terminating)	Ckt ID	Tower Configuration (S/C or D/C)	Agency at End 1	Agency at End 2	Owner	AR Details (SPAR/3-Ph AR/Not Available/Information not Available)	Remarks
134	132 kV	132 kV Palatana - Udaipur	1	S/C	TSECL	OTPC	TSECL	Not Available	Distance Relay(P442) commissioned.Hardware connection is going on.132 KV breaker are 3-ph. gang operated.
135	132 kV	132 kV Hailakandi - Silchar	1	S/C	AEGCL	POWERGRID	POWERGRID	Information not available	Silchar end: AR in BCU available, AEGCL may intimate the status
136	132 kV	132 kV Panchgram - Srikona	1	S/C	AEGCL	AEGCL	AEGCL	Not Available	Will be implemented under R&M works funded from PSDF
137	132 kV	132 kV Ranganadi - Ziro	1	S/C	NEEPCO	POWERGRID	POWERGRID	SPAR in service	
138	132 kV	132 kV Roing - Pasighat	1	S/C	POWERGRID	POWERGRID	POWERGRID	Information not available	POWERGRID may intimate the status
139	132 kV	132 kV Roing - Tezu	1	S/C	POWERGRID	POWERGRID	POWERGRID	Information not available	POWERGRID may intimate the status
140	132 kV	132 kV Sarusajai - Umtru	1	D/C	AEGCL	MePTCL	MePTCL	Not Available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by May 2020.
141	132 kV	132 kV Sarusajai - Umtru	2	D/C	AEGCL	MePTCL	MePTCL	Not Available	MePTCL will implement the 3 Ph AR in paralell with ongoing R&M works of PLCC &DPC by May 2020.
142	132 kV	132 kV Silchar - Srikona	1	D/C	POWERGRID	AEGCL	POWERGRID	Information not available	Silchar end: AR in BCU available, AEGCL may intimate the status
143	132 kV	132 kV Silchar - Srikona	2	D/C	POWERGRID	AEGCL	POWERGRID	Information not available	Silchar end: AR in BCU available, AEGCL may intimate the status
144	132 kV	132 kV Umiam - Umiam St I	1	S/C	MePTCL	MePTCL	MePTCL	Not Available	MePGCL may intimate the plan of action
145	132 kV	132 kV Umiam St I - Umiam St II	1	S/C	MePTCL	MePTCL	MePTCL	Not Available	MePGCL may intimate the plan of action
146	132 kV	132 kV Umiam St I - Umiam St III	1	D/C	MePTCL	MePTCL	MePTCL	Not Available	MePGCL may intimate the plan of action
147	132 kV	132 kV Umiam St I - Umiam St III	2	D/C	MePTCL	MePTCL	MePTCL	Not Available	MePGCL may intimate the plan of action

## Details of Auto Recloser of Lines in North Eastern Regional Grid

<i>Sl No</i>	<i>Voltage Level</i>	<i>Name of Element (Emanating - Terminating)</i>	<i>Ckt ID</i>	<b>Tower Configuration (S/C or D/C)</b>	<b>Agency at End 1</b>	<b>Agency at End 2</b>	<b>Owner</b>	<b>AR Details (SPAR/3-Ph AR/Not Available/Information not Available)</b>	<b>Remarks</b>
148	132 kV	132 kV Umiam St III - Umiam St IV	1	D/C	MePTCL	MePTCL	MePTCL	Not Available	MePGCL may intimate the plan of action
149	132 kV	132 kV Umiam St III – Umiam St IV	2	D/C	MePTCL	MePTCL	MePTCL	Not Available	MePGCL may intimate the plan of action
150	132 kV	132 kV Umiam St III - Umtru	1	D/C	MePTCL	MePTCL	MePTCL	Not Available	MePGCL may intimate the plan of action
151	132 kV	132 kV Umiam St III - Umtru	2	D/C	MePTCL	MePTCL	MePTCL	Not Available	MePGCL may intimate the plan of action
152	132 kV	132 kV Umtru - Umiam St IV	1	D/C	MePTCL	MePTCL	MePTCL	Not Available	MePGCL may intimate the plan of action
153	132 kV	132 kV Umtru - Umiam St IV	2	D/C	MePTCL	MePTCL	MePTCL	Not Available	MePGCL may intimate the plan of action
154	132 kV	132 kV Pare - Lekhi	1	S/C	NEEPCO	DoP, Arunachal Pradesh	NEEPCO, DoP, Arunachal Pradesh & POWERGRID	Not Available	
155	132 kV	132 kV Ranganadi - Itananar	1	S/C	NEEPCO	DoP, Arunachal Pradesh	NEEPCO & DoP, Arunachal Pradesh	Information not available	

## Over Voltage Settings of NER

SI No	Substation	Element Details	Suggested Over Voltage Settings Stage I		Suggested Over Voltage Settings Stage II	
			Voltage (in percentage)	Time delay (in seconds)	Voltage (in percentage)	Time delay (in seconds)
1	400 kV Bongaigaon	Balipara III	110	4	140	0.1
		BgTPP I	110	5	140	0.1
		Balipara I	110	6	140	0.1
		New Siliguri I	110	7	140	0.1
		Alipurduar I	111	4	140	0.1
		Byrnihat	111	5	140	0.1
		Alipurduar II	111	6	140	0.1
		BgTPP II	111	7	140	0.1
		Azara	112	4	140	0.1
		Balipara II	112	5	140	0.1
		New Siliguri II	112	6	140	0.1
Balipara IV	112	7	140	0.1		
2	400 kV Balipara	Bongaigaon III	110	4	140	0.1
		Kameng-I	110	5	140	0.1
		Bongaigaon I	110	6	140	0.1
		Misa I	110	7	140	0.1
		Biswanath Charali I	111	4	140	0.1
		Biswanath Charali III	111	5	140	0.1
		Biswanath Charali II	111	6	140	0.1
		Kameng-II	111	7	140	0.1
		Biswanath Charali IV	112	4	140	0.1
		Bongaigaon II	112	5	140	0.1
		Bongaigaon IV	112	7	140	0.1
Misa II	112	6	140	0.1		
3	400 kV Biswanath Charali	RHEP I	110	5	140	0.1
		Balipara I	111	4	140	0.1
		Balipara III	111	5	140	0.1
		Balipara II	111	6	140	0.1
		RHEP II	111	7	140	0.1
		Balipara IV	112	4	140	0.1
4	400 kV Silchar	Palatana I	110	4	140	0.1
		Azara	110	5	140	0.1
		Palatana II	111	6	140	0.1
		Byrnihat	111	7	140	0.1
5	400 kV Palatana	Silchar I	110	4	140	0.1
		Silchar II	111	6	140	0.1
6	400 kV Ranganadi	Biswanath Charali I	110	5	140	0.1
		Biswanath Charali II	112	7	140	0.1
7	400 kV Byrnihat	Bongaigaon	111	5	140	0.1
		Silchar	110	7	140	0.1
8	400 kV Azara	Bongaigaon	112	4	140	0.1
		Silchar	110	5	140	0.1

**Over Voltage Settings of NER**

SI No	Substation	Element Details	Suggested Over Voltage Settings Stage I		Suggested Over Voltage Settings Stage II	
			Voltage (in percentage)	Time delay (in seconds)	Voltage (in percentage)	Time delay (in seconds)
9	400 kV BgTPP	Bongaigaon I	110	5	140	0.1
		Bongaigaon II	111	7	140	0.1

### Over Voltage Settings of NER

SI No	Substation	Element Details	Suggested Over Voltage Settings Stage I		Suggested Over Voltage Settings Stage II	
			Voltage (in percentage)	Time delay (in seconds)	Voltage (in percentage)	Time delay (in seconds)
10	400 kV Misa	Balipara I	110	7	140	0.1
		Balipara II	112	6	140	0.1
11	220 kV Mariani(PG)	Mokokchung-I	110	6	140	0.1
		Mokokchung-II	110	7	140	0.1
		AGBPP	111	7	140	0.1
		Misa	111	6	140	0.1
12	220 kV Mokokchung	Mariani(PG) I	112	7	140	0.1
		Mariani(PG) II	110	6	140	0.1
13	220 kV Mariani(AS)	NTPS	110	6	140	0.1
		Samaguri	110	7	140	0.1
		AGBPP	111	7	140	0.1
		Misa	111	6	140	0.1
14	220 kV AGBPP	Mariani(AS)	111	6	140	0.1
		Mariani(PG)	111	7	140	0.1

Notes: Series compensated D/C lines, may be kept more than 113%

Revised from proposed settings  
 New recommendation

**List of Lines in North Eastern Regional Grid**

Annexure-C.7

Sl No	Name of Element (Emanating - Terminating)	Ckt ID	Agency at End 1	Agency at End 2	Name of Owners	TLSA	Megger /off line Fault locator	Controlled Switching Device (CSD)	Line Differential Protection Availability	OPGW Availability	PLCC Availability	Carrier Aided Protection Availability (Yes/No)
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**A. International Lines**

**a. 400 kV Lines (Charged at 132 kV)**

1	South Comilla (Bangladesh) - Surajmani Nagar	1	PGCB	TSECL	POWERGRID & PGCB	NA				Available		
2	South Comilla (Bangladesh) - Surajmani Nagar	2	PGCB	TSECL	POWERGRID & PGCB	NA				NA		

**b. 132 kV Line**

1	Gelyphu (Bhutan) - Salakati	1	BPCL	POWERGRID	POWERGRID				Not Available	Available		
2	Motonga (Bhutan) - Rangia	1	BPCL	AEGCL	POWERGRID							

**c. 11 kV Line**

1	Moreh - Tamu (Myanmar)	1	MSPCL	ESE, Myanmar	MSPDCL & ESE, Myanmar							
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**B. +/- 800 kV HVDC Lines**

1	Agra - Biswanath Chariali	Pole 1	POWERGRID	POWERGRID	POWERGRID							
2	Agra - Biswanath Chariali	Pole 2	POWERGRID	POWERGRID	POWERGRID							

**C. 400 kV Lines**

1	Azara - Bongaigaon	1	AEGCL	POWERGRID	NETC(1.8%) & AEGCL(98.2%)				No			
2	Azara - Silchar	1	AEGCL	POWERGRID	NETC(37.5%) & AEGCL(62.5%)				No			
3	Balipara - Biswanath Chariali	1	POWERGRID	POWERGRID	POWERGRID							
4	Balipara - Biswanath Chariali	2	POWERGRID	POWERGRID	POWERGRID							
5	Balipara - Biswanath Chariali	3	POWERGRID	POWERGRID	POWERGRID							
6	Balipara - Biswanath Chariali	4	POWERGRID	POWERGRID	POWERGRID							
7	Balipara - Bongaigaon	1	POWERGRID	POWERGRID	POWERGRID			Not Installed	Not Available			
8	Balipara - Bongaigaon	2	POWERGRID	POWERGRID	POWERGRID			Not Installed	Not Available			
9	Balipara - Bongaigaon	3	POWERGRID	POWERGRID	POWERGRID			Not Installed	Not Available			
10	Balipara - Bongaigaon	4	POWERGRID	POWERGRID	POWERGRID			Not Installed	Not Available			

**C. 400 kV Lines**

11	Balipara - Misa	1	POWERGRID	POWERGRID	POWERGRID	NA		No	NA	YES		
12	Balipara - Misa	2	POWERGRID	POWERGRID	POWERGRID	NA		No	NA	YES		
13	Biswanath Chariali - Ranganadi	1	POWERGRID	NEEPCO	POWERGRID							
14	Biswanath Chariali - Ranganadi	2	POWERGRID	NEEPCO	POWERGRID							

**List of Lines in North Eastern Regional Grid**

Annexure-C.7

Sl No	Name of Element (Emanating - Terminating)	Ckt ID	Agency at End 1	Agency at End 2	Name of Owners	TLSA	Megger /off line Fault locator	Controlled Switching Device (CSD)	Line Differential Protection Availability	OPGW Availability	PLCC Availability	Carrier Aided Protection Availability (Yes/No)
15	Bongaigaon - Byrnihat	1	POWERGRID	MePTCL	NETC(97.91 %) & MePTCL(2.09%)							
16	New Siliguri - Bongaigaon	1	POWERGRID	POWERGRID	POWERGRID							
17	New Siliguri - Bongaigaon	2	POWERGRID	POWERGRID	POWERGRID							
18	Alipurduar - Bongaigaon	1	POWERGRID	POWERGRID	ENICL							
19	Alipurduar - Bongaigaon	2	POWERGRID	POWERGRID	ENICL							
20	BgTPP - Bongaigaon	1	NTPC	POWERGRID	POWERGRID			Not Installed	Available			
21	BgTPP - Bongaigaon	2	NTPC	POWERGRID	POWERGRID			Not Installed	Available			
22	Byrnihat - Silchar	1	MePTCL	POWERGRID	NETC(98.06%)& MePTCL(1.94%)							
23	Pallatana - Silchar	1	OTPC	POWERGRID	NETC							
24	Pallatana - Silchar	2	OTPC	POWERGRID	NETC							
25	Imphal - Silchar	1	POWERGRID	POWERGRID	POWERGRID	No		NA				
26	Imphal - Silchar	2	POWERGRID	POWERGRID	POWERGRID	No		NA				
27	Balipara - Kameng	1	POWERGRID	NEEPCO	POWERGRID							
28	Balipara - Kameng	2	POWERGRID	NEEPCO	POWERGRID							

**D. 400 kV Lines (Charged at 220 kV)**

1	AGBPP - Mariani	1	POWERGRID	POWERGRID	POWERGRID	Nil	1 Off Line Fault Locator/2 Megger	No		Available		
2	AGBPP - Mariani(PG)	2	POWERGRID	POWERGRID	POWERGRID	Nil		No		Available		
3	Mariani - Misa	1	AEGCL	POWERGRID	POWERGRID	NA			NA			
4	Mariani (PG) - Misa	1	POWERGRID	POWERGRID	POWERGRID	NA			NA			

**E. 400 kV Lines (Charged at 132 kV)**

1	Silchar-Melriat	1	POWERGRID	POWERGRID	POWERGRID	NA			NIL	YES		
2	Silchar-Melriat	2	POWERGRID	POWERGRID	POWERGRID	NA			NIL	NO		
3	P K Bari - Silchar	1	TSECL	POWERGRID	POWERGRID							
4	P K Bari - Silchar	2	TSECL	POWERGRID	POWERGRID							
5	Palatana - Surjamaninagar	1	OTPC	TSECL	POWERGRID	NA				NA		

**F. 220 kV Lines**

1	AGBPP - Deomali	1	NEEPCO	DoP, Arunachal Pradesh	DoP, Arunachal Pradesh							
2	AGBPP - Tinsukia	1	NEEPCO	AEGCL	AEGCL							
3	AGBPP - Tinsukia	2	NEEPCO	AEGCL	AEGCL							
4	Agia - Azara	1	AEGCL	AEGCL	AEGCL							
5	Agia - Boko	1	AEGCL	AEGCL	AEGCL							
6	Agia - BTPS	1	AEGCL	AEGCL	AEGCL							
7	Agia - BTPS	2	AEGCL	AEGCL	AEGCL							
8	Azara - Boko	1	AEGCL	AEGCL	AEGCL							
9	Azara - Sarusajai	1	AEGCL	AEGCL	AEGCL							
10	Azara - Sarusajai	2	AEGCL	AEGCL	AEGCL							

**F. 220 kV Lines**

11	Alipurduar - Salakati	1	POWERGRID	POWERGRID	POWERGRID							
12	Alipurduar - Salakati	2	POWERGRID	POWERGRID	POWERGRID							

**List of Lines in North Eastern Regional Grid**

Annexure-C.7

Sl No	Name of Element (Emanating - Terminating)	Ckt ID	Agency at End 1	Agency at End 2	Name of Owners	TLSA	Megger /off line Fault locator	Controlled Switching Device (CSD)	Line Differential Protection Availability	OPGW Availability	PLCC Availabilty	Carrier Aided Protection Availability (Yes/No)
13	Balipara - Sonabil	1	POWERGRID	AEGCL	AEGCL							
14	Bongaigaon-Salakati	1	POWERGRID	POWERGRID	POWERGRID			Not Installed	Available	Available		
15	Bongaigaon-Salakati	2	POWERGRID	POWERGRID	POWERGRID			Not Installed	Available	Available		
16	BTPS - Salakati	1	AEGCL	POWERGRID	POWERGRID			Not Installed	Not Available	Available		

**List of Lines in North Eastern Regional Grid**

Annexure-C.7

Sl No	Name of Element (Emanating - Terminating)	Ckt ID	Agency at End 1	Agency at End 2	Name of Owners	TLSA	Megger /off line Fault locator	Controlled Switching Device (CSD)	Line Differential Protection Availability	OPGW Availability	PLCC Availability	Carrier Aided Protection Availability (Yes/No)
17	BTPS - Salakati	2	AEGCL	POWERGRID	POWERGRID			Not Installed	Not Available	Available		
18	Dimapur - Misa	1	POWERGRID	POWERGRID	POWERGRID				NA			
19	Dimapur - Misa	2	POWERGRID	POWERGRID	POWERGRID				NA			
20	Jawaharnagar - Samaguri	1	AEGCL	AEGCL	AEGCL							
21	Jawaharnagar - Sarusajai	1	AEGCL	AEGCL	AEGCL							
22	Karbi Langpi - Sarusajai	1	APGCL	AEGCL	AEGCL							
23	Karbi Langpi - Sarusajai	2	APGCL	AEGCL	AEGCL							
24	Byrnihat - Misa	1	MePTCL	POWERGRID	MePTCL							
25	Byrnihat - Misa	2	MePTCL	POWERGRID	MePTCL							
26	Kopli - Misa	1	NEEPCO	POWERGRID	POWERGRID				NA			
27	Kopli - Misa	2	NEEPCO	POWERGRID	POWERGRID				NA			
28	Kopli - Misa	3	NEEPCO	POWERGRID	POWERGRID				NA			
29	Mariani (AEGCL) - Samaguri	1	AEGCL	AEGCL	AEGCL							
30	Mariani (PG) - Mokocheung (PG)	1	POWERGRID	POWERGRID	POWERGRID							
31	Mariani (PG) - Mokocheung (PG)	2	POWERGRID	POWERGRID	POWERGRID							
32	Misa - Samaguri	1	POWERGRID	AEGCL	POWERGRID				NA			
33	Misa - Samaguri	2	POWERGRID	AEGCL	POWERGRID				NA			

**F. 220 kV Lines**

34	NTPS - Tinsukia	1	AEGCL	AEGCL	AEGCL							
35	NTPS - Tinsukia	2	AEGCL	AEGCL	AEGCL							
36	Samaguri - Sonapur	1	AEGCL	AEGCL	AEGCL							
37	Sarusajai-Sonapur	1	AEGCL	AEGCL	AEGCL							
38	Samaguri - Sonabil	1	AEGCL	AEGCL	AEGCL							
39	Samaguri - Sonabil	2	AEGCL	AEGCL	AEGCL							

**G. 132 kV Lines**

1	Agartala - AGTCCPP	1	TSECL	NEEPCO	POWERGRID	NA						
2	Agartala - AGTCCPP	2	TSECL	NEEPCO	POWERGRID	NA						
3	Agartala - Bodhjanagar	1	TSECL	TSECL	TSECL							

**List of Lines in North Eastern Regional Grid**

Annexure-C.7

Sl No	Name of Element (Emanating - Terminating)	Ckt ID	Agency at End 1	Agency at End 2	Name of Owners	TLSA	Megger /off line Fault locator	Controlled Switching Device (CSD)	Line Differential Protection Availability	OPGW Availability	PLCC Availability	Carrier Aided Protection Availability (Yes/No)
4	Agartala - Dhalabil	1	TSECL	TSECL	TSECL							
5	Agartala - Rokhia	1	TSECL	TSECL	TSECL							
6	Agartala - Rokhia		TSECL	TSECL	TSECL							
7	Agia - Mendipathar	1	AEGCL	MePTCL	MePTCL							
8	AGTCCPP - Kumarghat	1	NEEPCO	POWERGRID	POWERGRID							
9	Aizawl - Tipaimukh	1	POWERGRID	MSPCL	POWERGRID	37 nos. of TLSA, Make-Oblum	1.0	-	NO	NO		
10	Aizawl - Kolasib	1	POWERGRID	P&ED, Mizoram	POWERGRID	09 nos. of TLSA, Make-Oblum		-	NO	Yes		
11	Aizawl - Kumarghat	1	POWERGRID	POWERGRID	POWERGRID	30 nos. of TLSA, Make-Oblum		-	NO	Yes		
12	Aizawl - Luangmual	1	POWERGRID	P&ED, Mizoram	P&ED, Mizoram	0.0		-	NO	NO		
13	Aizawl - Melriat(PG)	1	POWERGRID	POWERGRID	POWERGRID				NIL			
14	Ambasa - Gamaitila	1	TSECL	TSECL	TSECL							
15	Ambasa - Kamalpur	1	TSECL	TSECL	TSECL							
16	Ambasa - P K Bari	1	TSECL	TSECL	TSECL							

**G. 132 kV Lines**

17	Badarpur - Jiribam	1	POWERGRID	POWERGRID	POWERGRID				NO			
18	Badarpur - Kolasib	1	POWERGRID	P&ED, Mizoram	POWERGRID							

**List of Lines in North Eastern Regional Grid**

Annexure-C.7

Sl No	Name of Element (Emanating - Terminating)	Ckt ID	Agency at End 1	Agency at End 2	Name of Owners	TLSA	Megger /off line Fault locator	Controlled Switching Device (CSD)	Line Differential Protection Availability	OPGW Availability	PLCC Availability	Carrier Aided Protection Availability (Yes/No)
19	Badarpur - Kumarghat	1	POWERGRID	POWERGRID	POWERGRID							
20	Badarpur - Panchgram	1	POWERGRID	AEGCL	POWERGRID							
21	Badarpur - Silchar	1	POWERGRID	POWERGRID	POWERGRID							
22	Badarpur - Silchar	2	POWERGRID	POWERGRID	POWERGRID							
23	Balipara - Bhalukpong	1	POWERGRID	DoP, Arunachal Pradesh	NEEPCO & DoP, Arunachal Pradesh							
24	Balipara - Ghoramari	1	POWERGRID	AEGCL	AEGCL							
25	Balipara - Sonabil	1	AEGCL	AEGCL	AEGCL							
26	Baramura - Gamaitilla	1	TSECL	TSECL	TSECL							
27	Baramura - Jirania	1	TSECL	TSECL	TSECL							
28	Bhalukpong - Khupi	1	DoP, Arunachal Pradesh	NEEPCO	NEEPCO & DoP, Arunachal Pradesh							
29	Biswanath Chariali - Pavo	1	POWERGRID	AEGCL	POWERGRID							
30	Biswanath Chariali - Pavo	2	POWERGRID	AEGCL	POWERGRID							
31	Pavo - Sonabil	1	AEGCL	AEGCL	AEGCL							
32	Bodhjannagar - Jirania	1	TSECL	TSECL	TSECL							
33	Bokajan - Dimapur	1	AEGCL	POWERGRID	AEGCL							
34	Bokajan - Golaghat	1	AEGCL	AEGCL	AEGCL							
<b>G. 132 kV Lines</b>												
35	BTPS - Dhaligaon	1	AEGCL	AEGCL	AEGCL							
36	BTPS - Dhaligaon	2	AEGCL	AEGCL	AEGCL							
37	Budhjannagar - Surjamaninagar	1	TSECL	TSECL	TSECL							

**List of Lines in North Eastern Regional Grid**

Annexure-C.7

Sl No	Name of Element (Emanating - Terminating)	Ckt ID	Agency at End 1	Agency at End 2	Name of Owners	TLSA	Megger /off line Fault locator	Controlled Switching Device (CSD)	Line Differential Protection Availability	OPGW Availability	PLCC Availability	Carrier Aided Protection Availability (Yes/No)
38	Budhjangnagar - Surjamaninagar	2	TSECL	TSECL	TSECL							
39	Dhalabil - Kamalpur	1	TSECL	TSECL	TSECL							
40	Dharmanagar - Dullavcherra	1	TSECL	AEGCL	AEGCL							
41	Dullavcherra - Hailakandi	1	AEGCL	AEGCL	AEGCL							
42	Dharmanagar - P K Bari	1	TSECL	TSECL	TSECL							
43	Dimapur - Doyang	1	POWERGRID	NEEPCO	POWERGRID				No	Yes		
44	Dimapur - Doyang	2	POWERGRID	NEEPCO	POWERGRID				No	Yes		
45	Dimapur - Imphal	1	POWERGRID	POWERGRID	POWERGRID				No	Yes		
46	Dimapur (PG) - Dimapur (DoP, Nagaland)	1	POWERGRID	DoP, Nagaland	DoP, Nagaland							
47	Dimapur (PG) - Dimapur (DoP, Nagaland)	2	POWERGRID	DoP, Nagaland	DoP, Nagaland							
48	Dimapur (PG) - Kohima	1	POWERGRID	DoP, Nagaland	DoP, Nagaland							
49	Doyang - Mokokchung (DoP, Nagaland)	1	NEEPCO	DoP, Nagaland	DoP, Nagaland							
50	Doyang-Sanis	1	NEEPCO	DoP, Nagaland	DoP, Nagaland							
<b>G. 132 kV Lines</b>												
51	Hailakandi - Silchar	1	AEGCL	POWERGRID	POWERGRID							
52	Hailakandi - Silchar	2	AEGCL	POWERGRID	POWERGRID							
53	EPIP II - Byrnihat	1	MePTCL	MePTCL	MePTCL							
54	EPIP II - Byrnihat	2	MePTCL	MePTCL	MePTCL							
55	EPIP II - Umtru	1	MePTCL	MePTCL	MePTCL							
56	EPIP II - Umtru	2	MePTCL	MePTCL	MePTCL							
57	Gohpur - Pavoi	1	AEGCL	AEGCL	AEGCL							
58	Gohpur - Nirjuli	1	AEGCL	POWERGRID	POWERGRID	Not Installed	YES	NA	Not Used	Available		
59	Golaghat - Mariani (AEGCL)	1	AEGCL	AEGCL	AEGCL							
60	Haflong - Jiribam	1	POWERGRID	POWERGRID	POWERGRID	No	Yes	NA	NO	YES(some part)		
61	Haflong - Umranshu	1	AEGCL	POWERGRID	AEGCL							
62	Imphal (MSPCL) - Imphal (PG)	1	MSPCL	POWERGRID	POWERGRID							
63	Imphal (MSPCL) - Imphal (PG)	2	MSPCL	POWERGRID	POWERGRID & MSPCL							
64	Imphal (MSPCL) - Karong	1	MSPCL	MSPCL	MSPCL							

**List of Lines in North Eastern Regional Grid**

Annexure-C.7

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65	Imphal (PG) - Ningthoukong	1	POWERGRID	MSPCL	MSPCL							
66	Imphal (PG) - Loktak	1	POWERGRID	NHPC	POWERGRID							
67	Jiribam - Loktak	2	POWERGRID	NHPC	POWERGRID	No	Yes	NA	NO	No		
68	Jiribam - Pailapool	1	POWERGRID	AEGCL	AEGCL/ MSPCL							
69	Jiribam(PG) - Jiribam(MA)	1	POWERGRID	MSPCL	MSPCL							
70	Jiribam-Tipaimukh	1	POWERGRID	MSPCL	POWERGRID	No	Yes	NA	NO	NO		
71	Jorhat - Mariani	1	AEGCL	AEGCL	AEGCL							
72	Jorhat - Mariani	2	AEGCL	AEGCL	AEGCL							
73	Jorhat - Nazira	1	AEGCL	AEGCL	AEGCL							

**G. 132 kV Lines**

74	Kahilipara - Kamalpur	1	AEGCL	AEGCL	AEGCL							
75	Kahilipara - Sarusajai	1	AEGCL	AEGCL	AEGCL							
76	Kahilipara - Sarusajai	2	AEGCL	AEGCL	AEGCL							
77	Kahilipara - Sarusajai	3	AEGCL	AEGCL	AEGCL							
78	Kamakhya-Sarusajai	1	AEGCL	AEGCL	AEGCL							
79	Kamakhya-Sishugram	1	AEGCL	AEGCL	AEGCL							
80	Kahilipara - Umtru	1	AEGCL	MePTCL	MePTCL							
81	Kahilipara - Umtru	2	AEGCL	MePTCL	MePTCL							
82	Kamalpur - P K Bari	1	TSECL	TSECL	TSECL							
83	Karong - Kohima	1	DoP, Nagaland	MSPCL	MSPCL (65.3%) / DoP, Nagaland (34.7%)							
84	Khandong - Khliehriat	1	NEEPCO	POWERGRID	POWERGRID	in 16 towers				No		
85	Khandong - Khliehriat	2	NEEPCO	POWERGRID	POWERGRID	100% TOWERS (Make-Oblum & Raychem)				Yes		
86	Khandong - Kopili	1	NEEPCO	NEEPCO	POWERGRID	NIL				No		
87	Khandong - Kopili	2	NEEPCO	NEEPCO	POWERGRID	NIL				Yes		
88	Khandong - Umranshu	1	NEEPCO	AEGCL	POWERGRID & AEGCL							
89	Khliehriat - Badarpur	1	POWERGRID	POWERGRID	POWERGRID	in 12 towers				Yes		
90	Khliehriat - Mustem	1	MePTCL	MePTCL	MePTCL							
91	Mustem - NEHU line	1	MePTCL	MePTCL	MePTCL							
92	Khliehriat (MePTCL) - Khliehriat (PG)	1	MePTCL	POWERGRID	POWERGRID	NIL				Yes		

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93	Khliehriat (MePTCL) - Khliehriat (PG)	2	MePTCL	POWERGRID	MePTCL							
94	Khliehriat- NEIGRIHMS	1	MePTCL	POWERGRID	MePTCL							
95	Kumarghat - P K Bari	1	POWERGRID	TSECL	TSECL							
96	Lekhi - Nirjuli	1	DoP, Arunachal Pradesh	POWERGRID	DoP, Arunachal Pradesh & POWERGRID	Not Installed	Yes	NA	Not Available	Yes		
97	Lekhi - Pare	1	DoP, Arunachal Pradesh	NEEPCO	DoP, Arunachal Pradesh & POWERGRID	Not Installed	Yes	NA	Not Available	Yes		

**G. 132 KV Lines**

98	Loktak - Ningthoukhong	1	NHPC	MSPCL	MSPCL							
99	Loktak - Renggang	1	NHPC	MSPCL	MSPCL							
100	LTPS - Mariani	1	AEGCL	AEGCL	AEGCL							
101	LTPS - Moran	1	AEGCL	AEGCL	AEGCL							
102	LTPS - Nazira	1	AEGCL	AEGCL	AEGCL							
103	LTPS - Nazira	2	AEGCL	AEGCL	AEGCL							
104	LTPS - NTPS	1	AEGCL	AEGCL	AEGCL							
105	LTPS - Sonari	1	AEGCL	AEGCL	AEGCL							
106	Mariani (AEGCL) - Mokokchung ( DoP, Nagaland)	1	AEGCL	ED, DoP, Nagaland	AEGCL(40%)/ DoP, Nagaland(60%)							
107	NEHU - Mawlai	1	MePTCL	MePTCL	MePTCL							
108	Mawlai - Umiam Stage I	2	MePTCL	MePTCL	MePTCL							
109	Mawphlang - Nongstoin	1	MePTCL	AEGCL	MePTCL							
110	Mawphlang - Umiam Stg I	1	MePTCL	MePTCL	MePTCL							
111	Mawphlang - Umiam Stg I	2	MePTCL	MePTCL	MePTCL							
112	Mawphlang- Mawlai	1	MePTCL	MePTCL	MePTCL							
113	Melriat(PG) - Zuangtui	1	POWERGRID	P&ED, Mizoram	POWERGRID				NIL			
114	Mendipathar - Nangalbibra	1	MePTCL	MePTCL	MePTCL							
115	Mokokchung (PG) - Mokokchung (DoP, Nagaland)	1	POWERGRID	DoP,Nagaland	POWERGRID	Nil	yes	No	Yes, Micom Schneider	Available		
116	Mokokchung (PG) - Mokokchung (DoP, Nagaland)	2	POWERGRID	DoP,Nagaland	POWERGRID	Nil	Yes	No	Yes, Micom Schneider	Available		
117	Monarchak - Rokhia	1	NEEPCO	TSECL	TSECL							
118	Monarchak - Udaipur	1	NEEPCO	TSECL	TSECL							
119	Myntdu Leshka - Khliehriat	1	MePTCL	MePTCL	MePTCL							
120	Myntdu Leshka - Khliehriat	2	MePTCL	MePTCL	MePTCL							

**List of Lines in North Eastern Regional Grid**

Annexure-C.7

Sl No	Name of Element (Emanating - Terminating)	Ckt ID	Agency at End 1	Agency at End 2	Name of Owners	TLSA	Megger /off line Fault locator	Controlled Switching Device (CSD)	Line Differential Protection Availability	OPGW Availability	PLCC Availability	Carrier Aided Protection Availability (Yes/No)
121	Namsai-Tezu	1	POWERGRID	POWERGRID	POWERGRID	NO	Megger available	NA	NO	NO		
122	Nangalibra - Nongstoin	1	MePTCL	MePTCL	MePTCL							
123	NEHU - NEIGRIHMS	1	MePTCL	MePTCL	MePTCL							
124	NEHU - Umiam	1	MePTCL	MePTCL	MePTCL							

**G. 132 kV Lines**

125	NTPS - Tinsukia	1	AEGCL	AEGCL	AEGCL							
126	NTPS - Sonari	1	AEGCL	AEGCL	AEGCL							
127	Pailapool - Srikona	1	AEGCL	AEGCL	AEGCL							
128	Palatana - Udaipur	1	TSECL	TSECL	TSECL							
129	Panchgram - Srikona	1	AEGCL	AEGCL	AEGCL							
130	Pare- Itanagar	1	NEEPCO	DoP, Arunachal Pradesh	DoP, Arunachal Pradesh & NEEPCO							
131	Ranganadi- Itanagar I	1	POWERGRID	DoP, Arunachal Pradesh	DoP, Arunachal Pradesh							
132	Ranganadi - Pare	1	NEEPCO	NEEPCO	POWERGRID	Not Installed	Yes	NA				
133	Ranganadi - Pare	2	NEEPCO	NEEPCO	DoP, Arunachal Pradesh & NEEPCO							
134	Ranganadi - Ziro	1	NEEPCO	POWERGRID	POWERGRID	03 nos, make: OBLUM	1.0			Yes		
135	Roing - Pasighat	1	POWERGRID	POWERGRID	POWERGRID	NO	1.0		NO	NO		
136	Roing - Tezu	1	POWERGRID	POWERGRID	POWERGRID	NO	1.0		NO	NO		
137	Sarusajai - Umtru	1	AEGCL	MePTCL	MePTCL							
138	Sarusajai - Umtru	2	AEGCL	MePTCL	MePTCL							
139	Silchar - Srikona	1	POWERGRID	AEGCL	POWERGRID							
140	Silchar - Srikona	2	POWERGRID	AEGCL	POWERGRID							
141	Umiam - Umiam St I	1	MePTCL	MePTCL	MePTCL							
142	Umiam St I - Umiam St II	1	MePTCL	MePTCL	MePTCL							
143	Umiam St I - Umiam St III	1	MePTCL	MePTCL	MePTCL							
144	Umiam St I - Umiam St III	2	MePTCL	MePTCL	MePTCL							
145	Umiam St III - Umiam St IV	1	MePTCL	MePTCL	MePTCL							
146	Umiam St III - Umiam St IV	2	MePTCL	MePTCL	MePTCL							
147	Umiam St III - Umtru	1	MePTCL	MePTCL	MePTCL							
148	Umiam St III - Umtru	2	MePTCL	MePTCL	MePTCL							

**List of Lines in North Eastern Regional Grid**

Annexure-C.7

Sl No	Name of Element (Emanating - Terminating)	Ckt ID	Agency at End 1	Agency at End 2	Name of Owners	TLSA	Megger /off line Fault locator	Controlled Switching Device (CSD)	Line Differential Protection Availability	OPGW Availability	PLCC Availability	Carrier Aided Protection Availability (Yes/No)
149	Umtru - Umiam St IV	1	MePTCL	MePTCL	MePTCL							
150	Umtru - Umiam St IV	2	MePTCL	MePTCL	MePTCL							

**Lines expected to be commissioned during 2019-20 (After commissioning of these elements, they will be considered as important elements of NER)**

**B. 220 kV Lines**

1	BTPS - Rangia	1	AEGCL	AEGCL	AEGCL							
2	BTPS - Rangia	2	AEGCL	AEGCL	AEGCL							

**C. 132 kV Lines**

1	Palatana- Surajmaninagar	2	OTPC	TSECL	POWERGRID							
2	Monarchak - Surajmaninagar	1	NEEPCO	TSECL	TSECL							
3	Monarchak - Surajmaninagar	2	NEEPCO	TSECL	TSECL							