North Eastern Regional Power Committee

Agenda For

44th PCC Sub-Committee Meeting

Time of meeting : 10:00 Hrs.

Date of meeting : 20th September, 2016 (Tuesday)

Venue : "Hotel Nandan", Guwahati.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 43rd MEETING OF PROTECTION SUB- COMMITTEE OF NERPC.

The minutes of 43rd meeting of Protection Sub-committee held on 13th July, 2016 at Guwahati were circulated vide letter No. NERPC/SE (O)/PCC/2015/dated 11th July 2016.

No comments/observations were received from the constituents, the Sub-committee may kindly confirm the minutes of 43rd PCCM of NERPC.

ITEMS FOR DISCUSSION

A.1 Implementation of 3-phaseAuto Reclosure Scheme in all lines associated with Khandong and Kopili HEP:

For reliable operation of Power system it is required to implement 3-Phase Auto Reclosure Scheme in all the 132kV lines associated with Kopili and Khandong HEP of NEEPCO. The lists of such lines are:

a) 132kV Khandong – Umrangso - Halflong

b) 132kV Kopili – Khandong #1

During 42nd PCC meeting, AEGCL informed the forum that ETL 441 panel is to be shifted from Khandong to Umrangso and Carrier-Intertripping/AR to be checked by POWERGRID at Haflong. NEEPCO informed that at Khandong end Auto- Reclosure is functioning in all circuits. After detailed deliberation, the forum requested Assam, POWERGRID & NEEPCO to fix the suitable date for joint inspection and the above works should be completed within 30th May 2016.

The 43rd PCC forum viewed the matter seriously as the issue was pending

for a very long time. The Sub-committee directed Assam, POWERGRID and NEEPCO to resolve and complete the work within 31.07.2016.

NEEPCO, NERTS & Assam may kindly intimate the status.

A.2 Implementation of the recommendations of the Protection Audit:

As per Sl. no 9.1.1 & 9.1.4 of Report on Enquiry Committee on Grid Disturbance in Northern Region on 30th July 2012 and in Northern, Eastern & North-Eastern Region on 31st July 2012, thorough Third Party protection audit needs to be carried out periodically along with independent audit of Fault Recording Instruments.

The status as intimated by NERLDC during 42nd PCC meeting is given below:

Status of submission of data related to Third Party Protection Audit			
Name of Constituent	*As per format of Task*	*As per format of NERPC*	*Remarks*
DoP, Ar. Pradesh	*Not submitted*	*Submitted*	*Data as per format of Task Force to be submitted by 30.05.2016*
AEGCL	*Partly submitted (Details as per*	*Partly Submitted (Details as per Annexure-1)*	
TSECL	*Not submitted*	*Submitted*	*Data as per format of NERPC for Surajmaninaga*
			Rabindranagar and Data as per Task Force Format for all
NEEPCO	***AGTPP** Not submitted as per format*	*bmitted as per format*	*Data for AGTPP as per Task Force format by 30.05.2016*

After detailed deliberation in 43rd PCCM, the Sub-committee had decided that those who have not submitted the data as per format of Task Force in Annexure A.2 (II) & also, as per the format of NERPC in Annexure A.2 (i) for 3rd Party Protection Audit are requested to furnish these data by *31.07.2016* positively.

Constituents/NERLDC may kindly intimate the status.

A.3 Status of R&M Implementation of NER from PSDF:

The Sub-committee requested all constituents to complete the proactive actions like taking Board's approval, floating of NITs, selection of bidders etc., as directed by the Hon'ble CERC.

During the meeting held on 11.12.2015 at Delhi under the Chairmanship CEA, the forum expressed concerned about delay in disbursement of fund and execution of R&M works.

The status as given in 42nd PCC meeting is given below:

Nagaland: NIT & LOAs for complete project of Rs. 39.96 Crores – Completed.

Assam: NITs is under progress & LOAs by June-July, 2016 for entire amount of
Rs. 356.50 Crores.

MePTCL: NIT for Rs. 37.52 Cr – completed & LOAs for Rs. 8.66 Cr -out of Rs.
69.19 Crores. The rest NITs & LOAs is expected by June-July, 2016

MePGCL: NIT for Rs. 2.51 Crores & LOAs – Rs. 2.51 Cr out of Rs. 32.43 Crores. Other NITs in progress and LOAs will be completed by June - July, 2016

Tripura: NIT for completed project of Rs. 31.05 Crores – completed, LOAs by June
- July, 2016

Mizoram: NIT is under progress & LOAs likely by June, 2016 for entire amount of Rs. 26.84 Crores.

Ar. Pradesh & Manipur: Approval from MoP is awaited. However, they have informed that NITs have already been prepared by them and the same would be published once the approval from MoP is received.

The forum requested all the constituents to complete the work at the earliest. Further, the forum directed that the status of progress of work be intimated to NERPC Secretariat every month so that the same can be submitted to Hon'ble CERC & CEA.

During the 43rd PCCM, SE, DoP Mizoram stated that tender has been floated

for main equipments and tender papers for diagnostic tools have been completed, however sanction from competent authority is awaited. DGM(SO-II),NERLDC opined that physical progress needs to be checked periodically. S.E.(O),NERPC once again reiterated that award of work is crucial and needs to be expedited urgently. The status of NITs, LOAs will now be reviewed and the same will be filed to Hon'ble CERC about delay as directed

Constituents may kindly intimate the status.

A.5 Root cause analysis of tripping in Southern Part of NER on 08.08.2015 and 24.09.2015 & Remedial Measures:

Remedial Measures suggested by sub group members at the meeting held at NERPC on 29.09.15

The islanding scheme of AGTPP with Tripura system is to be reviewed so as to ensure successful islanding in such cases of isolation in NER Grid.

During 38th PCC meeting, the Sub-Committee decided that in addition to the recommendations of the sub-group the following should be implemented ASAP:

1. Modification to SPS-1 at Palatana: Unit-I and II to be put in AND logic so that SPS-1 would operate.

During 40th PCC meeting, OTPC informed that the work has already been completed.

DGM (SO-II), NERLDC stated that on 15.12.2015, SPS 1 was triggered when only one module is in operation which is not correct. The SPS 1 should be triggered when both the modules are in service. He requested OTPC to check the scheme and do the necessary logic correction at the earliest.

In 41st PCC meeting, DGM(O&M), OTPC suggested that SPS-1 be disabled when one module is not running, meanwhile OTPC would review the scheme and revert back to the forum with suggestions for further modification(if possible). The forum agreed to the proposal. DGM, OTPC also proposed for modification to SPS-3 since now both units are running. It was decided to refer the matter to System Studies sub-group.

In 42nd PCC meeting, SE(O), NERPC informed that due to paucity of time, the System Studies sub-group meeting could not be held during the month and the same will be convened soon. It was discussed that review of Islanding Scheme No
2 are required in view of change in load pattern after commencement of power supply to Bangladesh. NERPC agreed to conduct meeting by end of May.

During the 43rd PCCM, SE(O), NERPC informed that due to paucity of

time, the System Studies sub-group meeting could not be held till now. OTPC representative informed that GD-IV on 09.07.2016 may have been aggravated due to non-modification in SPS-3. He stated that in the current scheme once SPS-3 is activated generation is reduced to 200 MW and the other unit goes under runback. He suggested that there is a need to increase the limit of generation to 250 MW so that technical minimum for Unit-I is satisfied.

NERLDC did not concur to the views of OTPC that non-modification of SPS-3 led to the GD-IV on 09.07.2016. It was iterated that as per discussions on SPS-3 in forums of NERPC, it had been decided that Palatana should back down to 200 MW irrespective of their quantum of generation and this will take care for both the modules of Palatana.

The 12th System Studies sub-group meeting was held on 30th August 2016.

NERPC, NERTS, NERLDC & OTPC may kindly intimate the status.

Root Cause Analysis & Remedial Measures by sub group members at the meeting held at NERPC on 18.11.15 regarding Non-Tripping of Azara-Bongaigoan as raised by AEGCL:

Cause: As per information given by POWERGRID, the incidences above are due to high arcing faults.

Remedial Measures:

a. Explore to increase the resistive reach of Z-2 and Z-3.

b. DEF characteristics should be IDMT in place of definite time with 1100msec opening time at maximum fault level

c. Further, Z-3 setting should be 1000msec and necessary co-ordination is required for associated lines.

d. NERPC Secretariat may extend help wherever necessary Administrative coordination is required for clearance of faults.

During 40th PCC meeting, POWERGRID requested AEGCL to implement Zone 3 setting as per the recommendation of task force. Also DEF delay setting should be 100 ms more than Zone 3 setting with IDMT characteristics. AEGCL proposed for review of Zone 3 setting as recommended by task force. However, POWERGRID opined that there is no scope for review as it is the matter for implementation.

AEGCL insisted for joint meeting for which POWERGRID sought agenda from AEGCL.

The Sub-committee requested NERPC to invite AEGCL during the monthly Sub- committee meeting to discuss about various grid incidences being held every month by NERPC along with above issues of Assam.

During 42nd PCC meeting S.E (O) NERPC requested AEGCL to kindly make it convenient to attend the next Sub-Committee (for GD/GI) meeting, so that the matter may be discussed. The sub-committee requested AEGCL to make Zone-3 protection settings as per Task Force recommendations.

During the 43rd PCCC, It was agreed that during joint visit of POWERGRID and AEGCL to 400 kV Azara for rectification of phase notations, review of DEF and Zone-3 settings as above may also be carried out.

During the 124th OCCM, DGM(AM), NERTS suggested that rather than physically changing the phase notation at Azara end, the matching phases of Silchar and Azara be noted for future analysis. After detailed deliberation the forum agreed to the proposal and decided to drop the agenda item.
It was decided that wherever problem of mismatch in phase-notations arises, is to be listed out by the concerned utility.

NERPC/AEGCL may kindly intimate the status.

A.6 Grid Incidences and Grid Disturbances from January, 2016 to June, 2016:

The following numbers of Grid Disturbances (GD) & Grid Incidents (GI) occurred during the period **w.e.f 1st July, 2016 to 31st August, 2016** :-

SI No	**Control Area**	**Grid Incidens**	**Grid Disturbance**	**Grid Incidents**	**Grid Disturbance**
		Jul'16 to Aug'16	**Jul'16 to Aug'16**	**During 2016**	**During 2016**
1	Palatana	3	1	9	1
2	AGBPP	3	0	13	2

3	AGTPP	6	2	23	2
4	Rangnadi	0	1	0	1
5	Kopili	3	1	1	1
Sl No	**Control Area**	**Grid Incidents**	**Grid Disturbance**	**Grid Incidents**	**Grid Disturbance**
		Jul'16 to Aug'16	**Jul'16 to Aug'16**	**During 2016**	**During 2016**
6	Khandong	4	1	3	1
7	Doyang	3	2	2	2
8	Loktak	0	1	2	2
9	BgTPP	4	0	5	2
10	Arunachal Pradesh	0	16	0	15
11	Assam	0	6	0	27
12	Manipur	0	4	0	35
13	Meghalaya	0	12	0	44
14	Mizoram	0	5	0	15
15	Nagaland	0	26	0	40
16	Tripura	0	2	0	3

Sl . No.	**Category of GD/GI**	**Grid Disturbance in nos**	
		Jul'16 to Aug'16	**During 2016**
1	GI-I	13	36
2	GI-II	13	31
3	GD I	68	219

4	GD II	2	4
5	GD III	0	0
6	GD IV	1	0
7	GD V	0	1
8	**Total GI**	**26**	**67**
9	**Total GD**	**71**	**224**

This is for information to the members. Remedial Measure are to taken by the concerned power utilities of NER

1. Analysis & Discussion on Events, Grid Incidences, Grid Disturbances which occurred in NER Grid w.e.f July'16 to August'16.

The following are the major & minor disturbances occurred in NER Grid w.e.f. July'16 to August'16.

I. Grid Disturbance (GD-IV) in NER on 09.07.16 at 1319 Hrs.

A major disturbance of category GD-IV occurred in NER Grid on 09.07.16 at 1319 Hrs.

It was proposed in 42nd PCC Meeting of NERPC to constitute Enquiry Committee for analysis of Grid Disturbances of Category-IV and V with independent members for root cause analysis.

Empowered Committee meeting took place on 31.08.16 to analyze GD-IV and GD-V in NER. It was concluded that the root cause for GD-IV was the simultaneous lightning strike at tower locations 466 & 467 on 400 kV Silchar – Azara and 400 kV Silchar – Byrnihat lines, which led to multi-phase fault and further tripping of these lines. Due to multi-phase fault, Auto-reclose could not operate.

The forum requested OTPC to take adequate steps in modification of SPS-3 so that such types of incidences do not recur due to delay in backing down of Palatana units.

NERLDC requested that reports of operation of UFRs to be furnished timely from SLDCs of NER Grid, which are necessary for proper analysis of causes of grid failure.

This is for the information of Members please.

II. Balipara Substation Blackout:

1 No of disturbance occurred due to tripping of all lines emanating from

Balipara Substation (**Sl No. 2 of Disturbance Report of NER Grid attached in Annexure-I**).

Due to tripping of all lines emanating from Balipara Substation, Khupi area, Ziro area, Lekhi area & Capital area of Arunachal Pradesh and Pavoi, Gohpur & Depota area of Assam were separated from rest of NER Grid and subsequently collapsed due to load generation mismatch in this area.

Root Cause Analysis:

No trace of reason for Bus-fault found by inspection at Balipara by POWERGRID. Suspected reasons are due to short circuit caused by Monkey (found to be climbing in Gantry in CCTV footage) or due to the earth fault caused by construction work. But, fault in one bus should not have caused tripping of both buses. Problems rectified by PG in co-ordination with CC, POWERGRID as informed by NERTS.

Remedial Measure to be taken:

Ranganadi end Distance Protection relay time delay setting to be modified from 350 msec to around 600 msec, since Rangandi -Biswanath Charali length is more than Biswanath Charali - Balipara line, to be in consistence with recommendations of V.Ramakrishna Task Force committee.

III. Disturbances in Arunachal Pradesh System:

Total **15 Nos** Disturbances have occurred in Arunachal Pradesh system during the month of July'16 to August'16. **(Sl No. 3 to 17 of Disturbance Report of NER Grid attached in Annexure-I)**

1 No of disturbance occurred due to tripping of 132 kV Lekhi – Nirjuli line, while Bus Coupler CB of Gohpur kept open for system requirement **(Sl No. 3 of Disturbance Report of NER Grid attached in Annexure-I)**.

Due to tripping of this element, Nirjuli area of Arunachal Pradesh and Gohpur Area (Gohpur Load) of Assam were separated from rest of NER Grid and subsequently collapsed due to no source in these areas.

Root Cause Analysis:

For Sl. No. 3:

The element tripped due to downstream vegetation fault.

Remedial Measure to be taken:

For Sl. No. 3:

Vegetation clearance to be done by DoP Arunachal Pradesh / POWERGRID and the progress to be reported.

A. Khupi Area :

13 Nos disturbances occurred due to tripping of 132 kV Balipara- Khupi line, **(Sl No. 4 to 16 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of this element, Khupi area of Arunachal Pradesh was separated from rest of NER Grid and subsequently collapsed due to no source in this area.

Root Cause Analysis:

There were vegetation and ground clearance problems in 132 kV Balipara –

Khupi line.

Remedial Measure to be taken:

Vegetation clearance is to be done by NEEPCO. NEEPCO applied for shutdown of 132 kV Balipara – Khupi line to clear vegetation problem. Further progress to be intimated by NEEPCO.

B. Capital Area:

1 No disturbance occurred due to tripping of 132 kV Ranganadi- Lekhi line, **(Sl No. 17 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of this element, Lekhi & Capital areas of Arunachal Pradesh & part of Gohpur area of Assam were separated from rest of NER Grid and subsequently collapsed due to no source in these areas.

Root Cause Analysis:

Over current relay operated at Lekhi for line flow of around 40 MW(from SCADA). DR outputs from Lekhi end to be submitted by POWERGRID to conclude the root cause.

Remedial Measure to be taken:

Lekhi & Ranganadi over current settings to be reviewed. Sub group Committee for GD-GI analysis suggested POWERGRID and NEEPCO to implement over current relay settings as PSM = 1 with CT ratio 600/1 (Power flow during peak hours of approximately 85 – 90 MW should not cause tripping of the line).

Directionality feature of Over Current as well as Earth fault relay to be enabled at Lekhi.

IV. Disturbances in Assam System:

Total **4 Nos** Disturbances have occurred in Assam system during the month of July'16 to August'16. **(Sl. No. 18 to 21 of Disturbance Report of NER Grid attached in Annexure-I).**

A. Dullavcherra Area:

2 Nos disturbances occurred due to tripping of 132 kV Silchar - Dullavcherra line while 132 kV Dullavcherra- Dharmanagar line was kept open for system requirement, **(Sl No. 18 &19 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of these elements, Dullavcherra area of Assam was separated from rest of NER Grid and subsequently collapsed due to no source in this area.

Root Cause Analysis:

One of the reasons of tripping of these lines is vegetation. Root cause could not be concluded due to DR unavailability and unavailability of Relay indications from AEGCL.

Remedial Measure to be taken:

Vegetation problem in the line is to be checked by AEGCL. Frequent patrolling is to be done by AEGCL and Patrolling report to be submitted.

B. Halflong Area & Umrangshu Area:

1 No of disturbance occurred due to tripping of 132 kV Haflong (PG)- Haflong(S) line **(Sl No. 20 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of this element, Haflong area of Assam was separated from rest of NER Grid and subsequently collapsed due to no source in this area.

1 No of disturbance occurred due to tripping of 132 kV Khandong – Umrangshu line and 132 kV Haflong- Umrangshu line **(Sl No. 21 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of this element, Umrangshu area of Assam was separated from rest of NER Grid and subsequently collapsed due to no source in this area.

Root Cause Analysis:

For Sl No. 20

Earth fault at downstream of Haflong (PG) cleared at Haflong(PG). Nature of fault is to be furnished by AEGCL.

For Sl No. 21

Due to vegetation problem.

Remedial Measure to be taken:

For Sl No. 20

Relay co-ordination at downstream level to be done by AEGCL in consultation with POWERGRID.

For Sl No. 21

Vegetation clearance is to be done by POWERGRID & AEGCL. Patrolling report is to be submitted and status of vegetation clearance to be reported by POWERGRID & AEGCL.

V. Disturbances in Manipur System:

Total **4 Nos.** Disturbances have occurred in Manipur system during the month of July'16 to August'16. **(Sl No. 22 to 25 of Disturbance Report of NER Grid attached in Annexure-I).**

A. Capital & Karong Areas:

1 No of disturbances occurred due to tripping of 132 kV Imphal (PG)- Imphal (Manipur) I & II lines, **(Sl No. 22 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of these elements, Capital & Karong area of Manipur were separated from rest of NER Grid and subsequently collapsed due to no source in these areas.

Root Cause Analysis:

Fault was in 132 kV Silchar – Imphal 1 line. Due to this fault, transformer at Imphal (MA) tripped.

Remedial Measure to be taken:

Relay coordination has to be done by MSPCL in consultation with POWERGRID. Reason for tripping of Transformer at Imphal(MA) to be furnished by MePTCL.

B. Ningthoukhong Area:

3 Nos. disturbances occurred due to tripping of 132 kV Loktak-Ningthoukhong line while 132 kV Imphal (PG) - Ningthoukhong line kept open for system constraint, **(Sl No. 23 to 25 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of these elements, Ningthoukhong area of Manipur was separated from rest of NER Grid and subsequently collapsed due to no source in this area.

Root Cause Analysis:

Likely due to vegetation problem in the downstream of Ningthoukhong, 132 kV Loktak - Ningthoukhong line tripped. For further analysis, SLDC, MSPCL shall furnish relay indication pertaining to their end as well as patrolling report.

Remedial Measure to be taken:

Vegetation clearance and tower footing resistance are to be checked by MSPCL. POWERGRID is requested to visit Ningthoukong and check relay co-ordination after renovation work has been done by MSPCL.

VI. Disturbances in Meghalaya System:

Total **13 Nos.** Disturbances have occurred in Meghalaya system during the month of July'16 to August'16. **(Sl No. 26 to 38 of Disturbance Report of NER Grid attached in Annexure-I).**

A. Khliehriat Area:

12 Nos disturbances occurred due to tripping of 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, **(Sl No. 91 to 138 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of these elements, Khliehriat area of Meghalaya was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.

Root Cause Analysis:

132 kV Khliehriat (PG) - Khliehriat (ME) I & II lines tripped due to non-clearance of fault at downstream of Khliehriat (ME) system. Fault generated in downstream of Khliehriat (ME) system mostly due to vegetation or lightning.

Remedial Measure to be taken:

Status of earthing work related to Khliehriat (ME) substations is to be furnished by MePTCL. Tower footing resistance is also to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL and explore the possibility to install tower LAs. The earthing work of Distribution side of Khliehriat (MePTCL) substation is also to be completed, and relays co-ordinated with upstream.

Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.

B. Lumshnong Area:

1 No. of disturbances occurred due to tripping of 132 kV Panchgram - Lumshnong line, while 132 kV Lumshnong - Khliehriat line kept open for system requirement. **(Sl No. 38 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of this element, Lumshnong area of Meghalaya was separated from rest of NER Grid and subsequently collapsed due to no source in this area.

Root Cause Analysis:

Due to vegetation problem in the line, 132 kV Lumshnong - Panchgram line tripped.

Remedial Measure to be taken:

Vegetation clearance is to be done by MePTCL & AEGCL. Patrolling report is to be submitted and status of vegetation clearance is to be reported by MePTCL & AEGCL.

VII. Disturbances in Mizoram System:

Total **4 Nos.** Disturbances have occurred in Mizoram system during the month of July'16 to August'16. **(Sl No. 39 to 42 of Disturbance Report of NER Grid attached in Annexure-I).**

A. Kolasib Area:

1 Nos disturbance occurred due to tripping of 132 kV Kolasib - Badarpur line & 132 kV Kolasib - Aizwal lines, **(Sl No. 39 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of these elements, Kolasib area of Mizoram were separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.

Root Cause Analysis:

Due to fault in the downstream of Kolasib, the lines tripped.

Remedial Measure to be taken:

Relay settings of downstream stations to be furnished to POWERGRID by P&ED Mizoram. POWERGRID to review settings and suggests new settings to avoid tripping of in-feeds to Mizoram. Mizoram to adopt suggested relay settings, and intimate status to PCC forum.

B. Zuangtui Area:

3 Nos. disturbances occurred due to tripping of 132 kV Aizawl - Zuangtui line, **(Sl No. 40 to 42 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of this element, Zuangtui area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.

Root Cause Analysis:

Due to downstream phase to phase fault, 132 kV Aizawl - Zuangtui line tripped.

Remedial Measure to be taken:

The over current and earth fault relay settings for the outgoing feeders at Zuangtui have been reviewed and communicated to P&ED, Mizoram for implementation. Status is to be informed by P&E Deptt, Mizoram. Vegetation clearance is to be done by P&ED, Mizoram in downstream of Zuangtui. Aizawl (PG) to submit DRs in respect of trippings.

VIII. Disturbances in Nagaland System:

Total **24 Nos.** Disturbances have occurred in Nagaland system during the month of July'16 to August'16. **(Sl No. 43 to 67 of Disturbance Report of NER Grid attached in Annexure-I).**

A. Mokokchung Area:

2 Nos disturbances occurred due to tripping of 132 kV Doyang - Mokokchung (NA) line, **(Sl No. 43 to 44 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of this element, Mokokchung area of Nagaland was separated from rest of NER Grid and subsequently collapsed due to no source in this area.

Root Cause Analysis:

Due to fault in the line, 132 kV Doyang - Mokokchung (NA) line tripped.

Remedial Measure to be taken:

Vegetation clearance is to be done by DoP, Nagaland. NEEPCO is to change static relays to Numerical relay or install separate DR in Doyang HEP so that proper analysis can be done for disturbances associated with Doyang HEP. Patrolling report associated to these events is to be submitted by DoP Nagaland.

B. Dimapur Area:

6 Nos. disturbances occurred due to tripping of 132 kV Dimapur (PG) - Dimapur (NA) I line while 132 kV Dimapur (PG) - Dimapur (NA) II line is under shutdown since 18th April'16, **(Sl No. 45 & 50 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of these elements, Dimapur area of Nagaland was separated from rest of NER Grid and subsequently collapsed due to no source in this area.

Root Cause Analysis:

Fault was due to downstream vegetation since 132 kV Dimapur (PG) - Dimapur (NA) I line is a short line and fault was cleared at Dimapur (PG).

Remedial Measure to be taken:

Relay settings of downstream stations of Nagaland is to be checked by DoP,

Nagaland in consultation with POWERGRID. Circuit Breaker problem of Kohima feeder at Dimapur(PG) has been rectified.
Normalization of 132 kV Dimapur (PG) - Dimapur (Nagaland) II line could not be done due to pending consent from DoP Nagaland.
Relay settings of downstream stations to be submitted to POWERGRID by DoP Nagaland for further co-ordination.
Patrolling report is to be submitted and Status of vegetation clearance to be reported by DoP Nagaland.

C. Capital Area:

17 Nos. disturbances occurred due to tripping of 132 kV Dimapur (PG) - Kohima line, **(Sl No. 51 to 67 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of this element, Capital area of Nagaland was separated from rest of NER Grid and subsequently collapsed due to no source in this area.

Root Cause Analysis:

Due to vegetation problem, 132 kV Dimapur (PG) - Kohima line tripped.

Remedial Measure to be taken:

Vegetation clearance is to be done by DoP Nagaland. Relay settings of downstream elements is to be checked by DoP Nagaland in consultation with POWERGRID. Patrolling report is to be submitted and status of vegetation clearance to be reported by DoP Nagaland.

IX. Disturbances in Tripura System:

Total **1 No.** of Disturbance has occurred in Tripura system during the month of July'16 to August'16. **(Sl No. 68 of Disturbance Report of NER Grid attached in Annexure-I).**

1 No disturbances occurred in Tripura system due to tripping of 132 kV AGTPP – Kumarghat line while 132 KV PK Bari – Dharmanagar line, 132 P K Bari- Kumarghat line and 132 KV Agarthala- Dhalabil line kept open for system requirement and 132 KV Agartala- Budhjung Nagar I & II lines, 132 KV Palatana-Udaipur line, 132 KV Surjamani Nagar- Budhjung Nagar I & II lines, 132 KV Surjamani Nagar - Agartala I & II lines were out of service.

Due to tripping of this element, Tripura system along with AGTPP system was separated from rest of NER Grid.

Root Cause Analysis:

Likely due to lightning fault in 132 kV AGTPP – Kumarghat line but yet to conclude due to absence of DR output. Kumarghat(PG) could not submit DR output due to some software issue as informed by POWERGRID.

Remedial Measure to be taken:

NEEPCO is to furnish DR of the event at the earliest for further analysis. SLDC, TSECL to maintain log of lines kept open for system requirement to avoid unnecessary confusions during real time operation. Further to be discussed. TSECL to provide inputs regarding their system configuration.

X. Power Station Black out:

Total **3 Nos.** Power station Black out incident occurred during the month of July'16 to August'16. **(Sl No. 69 to 71 of Disturbance Report of NER Grid attached in Annexure-I).**

A. Kopili & Khandong Power Plants:

1 No disturbances occurred due to tripping of 220 kV Kopili - Misa I & II lines,132 kV Khandong - Khliehriat(PG) I&II lines and 132 kV Khandong - Umrangso line while 220 kV Kopili - Misa III line was under shutdown since 00:15 Hrs of 27.05.2016 due to CB problem at Kopili , **(Sl No. 196 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to evacuation problem, Kopili and Khandong were blacked out.

Root Cause Analysis:

Fault due to vegetation was in Misa-Kopili I line. This fault was cleared and line was reclosed successfully (concluded after analyzing DR outputs). But, the Line-2 tripped on Overcurrent at Kopili end (though current was only 320 A) and this needs to be rectified.

Remedial Measure to be taken:

Over Current setting to be rectified by NEEPCO at Kopili till Main-II Distance Protection is installed and in-built over current feature is to be enabled at Kopili.

B. Doyang Power Plant:

2 Nos. disturbances occurred due to tripping of 132 kV Dimapur - Doyang I & II lines and 132 kV Doyang- Mokokchung line was not restored after tripping. **(Sl No. 71&72 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to evacuation problem, Doyang Power Station was blacked out.

Root Cause Analysis for Sl No 71:

Vegetation fault was in 132 kV Dimapur - Doyang I. Fault was not cleared or cleared after a delay from Doyang end, which caused tripping of circuit II from Dimapur end.

Root Cause Analysis for Sl No 72:

Fault was in 132 kV Dimapur - Doyang II line due to B-N lightning fault as concluded from DR output. Reason for tripping of other lines is to be investigated.

Remedial Measure to be taken for Sl No 71:

NEEPCO to intimate details like reason for delayed clearance and settings of Earth fault relay. After receipt of relay settings from NEEPCO, there are to be properly co-ordinated.

Remedial Measure to be taken for Sl No 72:

Distance Protection Relay time settings to be checked by NEEPCO at Doyang end and complete relay flag details for this event to be furnished by NEEPCO.

A.7 Root cause analysis of Major Grid Disturbance on 16th April 2016 and 09th July 2016:

There were 2 major grid disturbances in NER Grid in 2016.

A meeting of Empowered Committee for root cause analysis of the Grid Disturbances was held on 31st August 2016.

The disturbance of Category-V on 16th April'16 was primarily caused by fault due to lightning strike on 400 kV Bongaigaon – BgTPP (NTPC) I line, which could not be cleared by 400 kV Bongaigaon (PG) end of the line, resulting in tripping of several 400 kV lines at Bongaigaon (PG) from remote ends at 400 kV Binaguri, since as per R-X diagram the fault was lying in the 4th quadrant outside the reach of Distance relay.

The empowered committee for analysis of this disturbance noted that there was no differential protection installed on 400 kV Bongaigaon – BgTPP lines although they were short lines of around 3 kms each. Also, the time setting of Zone-II relays at New-Siliguri end of 400 kV Bongaigaon – NewSiliguri Q/C lines were not as per recommendations of V.Ramakrishna Task Force report. Although there are 400 MW of UFR installed in NER Grid, the UFR operation was not sufficient as observed from PMU plots, even though frequency was below 49.2 Hz for several seconds.

The Disturbance of Category-IV on 09th July'16 was primarily due to multi-phase fault on account of simultaneous lightning strike at tower locations 466 & 467 on 400 kV Silchar – Azara and 400 kV Silchar – Byrnihat lines, and delay in backing down of generation from Palatana CCGT as per SPS-3.

The empowered committee suggested the following:

1) Relay settings of all elements in NER Grid to be made as per recommendations of V.Ramakrishna Task Force report.
2) All substations with List of long lines followed by short lines to be identified and relay settings implementation accordingly.
3) Line differential protection to be installed in all short lines.
4) UFR reports to be submitted by all constituents in case of any event, and periodic inspection of installed UFRs to be carried out for checking healthiness
5) Constituents to ensure healthiness of communication equipment to ensure that real-time voice or data communication is available to NERLDC
6) All requisite details like UFR operation reports, Relay indications, DR outputs, EL outputs, Generator DAS outputs, etc. to be furnished by constituents to enable proper analysis

NERLDC/NERPC may please intimate the status.

Review of remedial actions pertaining to Grid Disturbances w.e.f. 01.01.2016 to 31.03.2016:

Name of	Disturbance	Remedial action suggested	Status
Assam	At 1020 Hrs 25.02.16, 220 kV Misa (PG) - Mariani(AS) (Misa (PG) – Not Furnished and Mariani(AS) – Auto Reclose Lockout) line, 220 kV Samaguri – Mariani(AS) (Samaguri (AS) – DP, ZI, R-E and Mariani(AS) – DP, ZI, R-E) line and 220 kV AGBPP – Mariani(PG)	The 42nd PCC recommended installation of 400/220 kV, 2nd 315 MVA ICT at Bongaigaon & 400/220 kV, 2x315 MVA ICT at BgTPP at the earliest and requested AEGCL to kindly attend the next Sub-Group meeting for review of zone-2 and zone-3 settings and other issues pertaining to co-ordination of relay settings. During 43rd PCCM, Monitoring of installation of ICT referred to OCC. NERLDC also suggested to include review of Earth Fault (TEF) settings and co-ordinate with	
	At 1817 Hrs 16.03.16, 400/220/33 kV, 315 MVA ICT at Bongaigaon (PG) (Bongaogaon(PG) - R-Ph, Over Current), 220 Agia (AEGCL)- Azara (AEGCL) (Agia (AEGCL) - Over Current and Azara (AEGCL) - No Tripping) and 220 kV Boko(AEGCL) – Azara		
Manipur	Multiple tripping of Imphal(PG)- on 04.01.16,05.01.16,12.01.16,21.01.16,24.01.16, 09.02.16,07.03.16,14.03.16,19.03.16 & 26.03.16	DGM(AM), NERTS for Imphal(PG)- settings for DP, EF/OC reduced to isolate from severe faults in Manipur system. suggested that R&M works be expedited. After deliberation the Sub-suggested the following: 1) Yurembam & S/S R&M works to be status reported by Committee (NERLDC/NERTS/NERPC). 2) Expert Committee to action plan for balance activities. 3) After submission of	
	Multiple tripping of 132 kV Loktak)- Ningthoukong(MSPCL) on 01.02.16,19.03.16 &31.03.16		

		NERTS will decide timeline for restoration of settings to normalcy. The forum requested NERPC to write a letter to MD, MSPCL for this issue. During 43rd PCCM, Manager, MSPCL informed that R&M works at 132kV Yurembam & Ningthoukong S/Sn has been completed in all respect(except) testing & commissioning). It was decided that avisit for assessment would be finalized after testing activities are completed. NERTS said that even after renovation of Yurembam	
Arunachal Pradesh	Tripping of 132kV Ranganadi-Lekhi on 19.01.16 & 21.01.16	The EF relay at Lekhi should be made DEF (directional) towards Nirjuli/Itanagar. The Sub-Group also suggested that EF relay setting to be high set with low time delay (if possible) for speedy fault isolation. NERTS informed that in case of tripping of 132kV Nirjuli-Lekhi line, it has been observed that there is no fault in line. So downstream fault is suspected. DGM(AM),NERTS stressed that EF relay at Lekhi for RHEP-Lekhi should be made directional. EE, SLDC, Ar. Pradesh	
	Tripping of 132 kV Dimapur(PG)	The 42nd PCC forum decided no proper analysis	

Nagaland	Multiple tripping of 12.01.16, Tripping of 18.02.16, 21.02.16.	can be done unless details (relay flags, DR etc.) are submitted by DoP Nagaland. However forum suggested that vegetation clearance activities be taken up in earnest by DoP Nagaland to reduce the number of trippings. As no representative from DoP, Nagaland attended in the meeting, the issues could not be discussed in detail. The members expressed concern over non-representation of DoP, Nagaland to the sub-committee. The forum requested NERPC to write a letter to Chief Engineer, DoP, Nagaland for this issue. Nagaland representative assured that in future tripping details (including relay flag, DR,Event Logger etc.) would be	
Mizoram	At 1420 Hrs 09.01.16, 132 kV Aizwal - Kolasib (Aizwal (PG) - Earth Tripping of 132 Zuangtui on 14.03.16,28. At 1621 Hrs 31.03.16, 132 kV Aizwal - Kumarghat (Aizwal (PG) – Not Furnished	The 42nd PCC forum decided no proper analysis can be done unless details (no tripping, relay flags, DR etc.) are submitted by DoP Mizoram. However forum suggested that vegetation clearance activities be taken up in earnest by DoP Mizoram to reduce the number of trippings. As no representative from P&E Dept., Mizoram attended in the meeting, the trippings pertaining to Mizoram system could not be discussed in detail. The members expressed concern	

	B-E and Jiribam- Not Furnished) line tripped.	P&E Dept., Mizoram for this issue. SE, DoP Mizoram assured that in future tripping details (including relay flag, DR etc.) would be sent alongwith patrolling reports.	
Meghalaya	Multiple tripping of 132 kV Khliehriat(PG)-Khliehriat(ME) I&II on 27.0 At 1830 Hrs 29.01.16, 132 kV Agia (AEGCL) – Medipathar (MePTCL) (Agia At 0804 Hrs 04.03.16, 132 kV Lumshong-Panchgram (Lumshong – Earth Fault At 2150 Hrs 30.03.16, 132 kV Nangalbibra (MePTCL) – Medipathar (MePTCL) (Nangalbibra(MePTCL)-DP,ZII, R-Y-B and Medipathar (MePTCL) –No Tripping) line tripped.	Khliehriat: In the Sub-Group meeting preceding 43rd PCCM SE,MePTCL informed that earthing works have been completed except 33kV switchyard. Also Numerical Relays procurement process is underway and as a test case Numerical Relays to be installed for Leshka feeder on 18.07.2016. Regarding installation of line LAs S.E.(O),NERPC requested the state utilities to conduct studies for requirement and prepare DPR in this regard. NERTS informed that the results obtained after installation of line Las would be shared with the members.	

BNC	Tripping of 400kV Ranganadi- BNC I (Overvoltage) on 12.01.16 & 13.01.16.	The 42nd PCC felt proper reactive power compensation is required at BNC-HVDC S/Sn. And it is needed to expedite commissioning of 1 no. Bus Reactor at 400 kV Rangandi. The 43rd PCC forum referred this matter to next SCM of NER.	
	At 1834 Hrs 25.01.16, 132 kV Biswanath Charali - Pavoi I (Biswanath Charali (PG) – No Tripping and Pavoi (AEGCL) – Not Furnished) line, 132 kV Biswanath Charali -Pavoi II (Biswanath Charali (PG) – Over	Forum suggested that vegetation clearance activities be taken up in earnest by AEGCL & DoP Ar. Pradesh to reduce the number of trippings. In 43rd PCCM, the trippings were re-analyzed by the sub-group, the root cause and remedial actions may be referred from A.19(B).	

	Current and Pavoi (AEGCL) – Not Furnished) line, 220/132 kV, 50 MVA ICT I at Balipara (Balipara – Over Current) and 50 MVA ICT II at		
	At 2030 Hrs 25.01.16, 132 kV Biswanath Charali-Pavoi I (Biswanath Charali (PG) – No Tripping and Pavoi (AEGCL) – Earth Fault) line, 132 kV Biswanath Charali-Pavoi II (Biswanath Charali (PG) – Directional Earth Fault		

In 43rd PCCM, NERLDC has requested to submit First Information Report as per IEGC (Grid Code) including Relay indication, Patrolling reports, etc., in case of any event in the Grid as per definition of IEGC, and also requested to submit report of vegetation clearance conducted on monthly basis.

DoP Ar.Pradesh, AEGCL, MSPCL, MeECL, DoP Mizoram, DoP Nagaland, TSECL, NERLDC may please inform the status.

A.9 Tripping of generating units at AGTCCPP-NEEPCO:

a. At 0654 Hrs on 10.01.2016, Units # 3 of AGTPP tripped due to Differential pressure high in inlet air filter (Generation Loss = 14 MW)
b. At 0324 Hrs on 11.01.2016, Units # 2 of AGTPP tripped due to Differential pressure high in inlet air filter (Generation Loss = 13 MW)
c. At 1520 Hrs on 05.02.2016, Unit # 3 of AGTPP tripped due to control system problem (Generation Loss = 15 MW)
d. At 1914 Hrs on 05.02.2016, STG II of AGTPP tripped due to high core temperature (Generation Loss = 20 MW)
e. At 1128 Hrs on 15.02.2016, STG I of AGTPP tripped due to tripping of operator console (Generation Loss = 22 MW)
f. At 1901 Hrs on 03.03.2016, STG II of AGTPP tripped due to operation of Rotor earth fault protection (Generation Loss = 23 MW)
g. At 2340 Hrs on 03.03.2016, Unit # 1 and STG-I of AGTPP tripped due to low control oil pressure (Generation Loss = 34 MW)
h. At 1042 Hrs on 04.03.2016, Unit # 1 of AGTPP tripped due to boiler problem (Generation Loss = 20 MW)

i. At 2127 Hrs on 27.03.2016, Unit # 3 of AGTPP tripped (Generation Loss = 15 MW)

j. At 1031 Hrs on 28.03.2016, Unit # 3 of AGTPP tripped due to problem in Control System (Generation Loss = 4 MW)

During 42nd PCCM, NEEPCO informed that cause and rectification(s) done, if any, would be furnished by them at the earliest. The main cause of this disturbance could be un-cleared fault in Tripura system. However, due to absence of any representative from TSECL, the matter could not be discussed in detail. The sub-committee expressed concern over non-participation of TSECL in PCC meetings inspite of repeated requests.

The forum requested NERPC to write a letter to CMD, TSECL for this issue.

During the 43rd PCCM, DGM(SO-II),NERLDC informed that the list of lines with protection system details in Tripura system were circulated by NERLDC to NERPC, NERTS, Assam, NEEPCO and Tripura after 122nd OCC so that the process of protection audit of 79 Tilla and Surjamaninagar substations of TSECL can be begun. After detailed deliberation it was decided that Shri Prasenjit Sarkar, Manager, NEEPCO would also be a part of audit team.

NEEPCO/NERPC may please intimate the status.

A.11 Completion of activities within specified time as per directives of CERC vide order in Petition No. 113/MP/2014

As per order in Petition No. 113/MP/2014 of Hon'ble CERC, CERC directed to power utilities and organizations of NER to complete the activities within specified time/submit monthly reports as per provisions of IEGC & Grid Standards of CEA etc.

List of actions/activities/reports to be completed within specified time as per directives of CERC vide order in Petition No. 113/MP/2014 attached at - Annexure II.

During 42nd PCC meeting, All the utilities were once again requested to submit compliance status latest by 20.05.2016.

During the 43rd PCCM, the latest status was shared.

Members may please deliberate

A.12 Standardization of Disturbance Recorder Channels:

Disturbance Recorders on Transmission elements are necessary for post disturbance analysis, and identification & rectification of any protection operation. As per CBIP's manual on Protection of Generators, GT, Transformers and Networks, it

is recommended to have minimum 8(eight) analog signals and 16(sixteen) binary signals per bay or circuit. Also, it should have a minimum of 5 sec of total recording time, minimum pre-fault recording time of 100 msec and minimum post-fault recording time of 1000 msec.

POWERGRID had standardized Disturbance Recorder Channels for lines, transformers & reactors.

The Sub-committee requested NERPC/NERLDC to circulate the above standardization to all constituents of NER for giving comments and suggestion by 24.07.15. NERLDC had sent this document to all constituents of NER for giving comments and suggestion by 24.07.15.

Till date no comments has been received from any constituents. It is requested all constituents of NER to standardize Disturbance Recorder Channels at the earliest.

During 42nd PCC meeting, the forum requested NTPC to provide their standardized DR Channels for generator so that it may be standardized for all generating units of NER. NTPC representative readily agreed. S.E.(O) once again requested all the constituents to kindly furnish their comments so that the process may be completed.

During the 43rd PCCM, DGM(SO-II),NERLDC stated since no comments/observations were received from the constituents it may be assumed that the DR channels for line, transformer and reactor is finalized. After detailed deliberation, forum decided DR channels as finalized have to be implemented in all ISTS lines and intra-state lines with numerical relays, within 31.07.2016 and gradually for all 220kV and 132kV lines.

The forum agreed that since Assam system is the largest state system of NER Grid, standardization of DR channels in lines of Assam is felt necessary. It was decided that Assam may complete implementation of standardized DR channels by 31st August 2016, and take help from NERTS if necessary.

NTPC agreed to submit standardized DR channels for generator by 20.07.2016., which can then be discussed for adoption by all generators of NER Grid.

Concerned utilities may please intimate the status.

A.13 <u>Protection System in Tripura and its ramifications in NER grid:</u>

During 40th PCC meeting, SE(O), NERPC stated that the main concern is the protection within Tripura system. As it is learnt that no primary protection system is in place in many of their important lines and any delayed tripping on their system may affect the power supply to Bangladesh. Further, he stated that the issue was brought to the notice of Tripura in many occasions but no positive response was made from Tripura side. After detailed deliberation, the Sub-committee requested NERPC to write letter to highest authority of Tripura with a copy to MoP in this regard.

In 41st PCC meeting, SE(O), NERPC informed the forum that intimation has already been given to Govt. of Tripura, however response in this regard is awaited.

The forum viewed seriously the non participation of TSECL representative in PCC meetings of NERPC and requested that this matter to be raised in the next TCC/RPC meeting.

In 121st OCC meeting in agenda item No. D.23 NEEPCO had raised the matter of frequent tripping of AGTCCPP units “Instances of tripping AGTCCPP units in many occasions exists due to nu-cleared downstream disturbance in Tripura system”. This has resulted to heavy stress to the machines in addition to reduce the maintenance interval time. Tripura is requested to analyze the fault and rectify the same at the earliest." and in item No. D.15 NERLDC had raised the matter of disturbance in power supply to Bangladesh.

As per deliberation of the Sub-Group (preceding 42nd PCC meeting) for analysis of Grid Disturbances the following were suggested for improvement of the protection system in Tripura:-

Proper protection systems are required urgently for 132 kV Surjamaninagar, 132 kV Udaipur and 132 kV 79 Tilla (Agartala).

In response to TSECL representative's request for CTU help in relay settings at the above stations, NERTS suggested that the following may please be provided:

<A> Feeder details- Name of feeder, kV level, Circuit configuration [D/C or S/C], MVA level(Short Circuit level), % impedance, line length, type of conductor, shortest and longest line length at next station at same voltage level.

<B> ICT Details- % impedance, tap position.

<C> Existing connected relay details and relay settings.

<D> C.T. and P.T. ratio for all feeders.

The 42nd PCC forum approved the above. Regarding generation interruption at Palatana GBPP it was suggested that to prevent ICT tripping in case of fault in Tripura system, settings of 132 kV Palatana-S M Nagar and 132 kV Palatana-Udaipur lines are to be changed by OTPC in co-ordination with settings at 132 kV S M Nagar and 132 kV Udaipur S/Sn. Members readily agreed to the suggestion.

DGM(AM), NERTS suggested that Protection Audit of Tripura Power System needs to be done and sent to MoP. The forum unanimously agreed and requested to NERPC to kindly initiate action in this regard.

During deliberation it is discussed that Tripura has to ensure physical existence and proper functioning of Main & Back Up Protective Relays for all the elements connected to 79, Tilla and Surjamani Grid Sub Station buses to avoid undesirable tripping of Main Grid Lines including Bangladesh Line during fault in Tripura System. Further, DGM (AM) suggested forming a group of protection experts from AEGCL, POWERGRID and OPTC to visit Sujamani and 79 Tilla Grid Sub Station for activation and implementation of correction setting to available healthy relays. Further, the same group will carry out Protection Audit of Tripura Power System and submit the recommendation for corrective measures to TSECL, for implementation in stipulated time frame, and NERPC, for monitoring on regular basis in OCC & PCC Meeting. However, in case of any delay in implementation matter will be referred to CERC / MoP. The forum unanimously agreed and requested to NERPC to kindly initiate action in this regard.

As per 43rd PCCM, please refer to discussion in Agenda Item No.A.9.

NERPC/TSECL may please deliberate.

A.15 Maintenance Procedure adopted by utilities:

It has been observed that number of Grid Disturbances in NER occurred due to failure of the equipment. As per Section 20 of the Grid Standards Regulation, 2010 of CEA, each entity shall prepare maintenance procedure for each equipment in line with manufactures recommendations and prudent utility practices.

It is requested to all utilities of NER to follow their maintenance schedule as per maintenance procedures. It is also requested to utilities who have no maintenance procedures, to prepare and finalize maintenance procedures at the earliest.

As per discussions in 43rd PCCM, DGM, SO-II, NERLDC requested the forum to develop Model Maintenance Procedure

for all power utilities as mandated by CEA Grid Standards regulations, Sec.20. After detailed deliberation it was decided that before maintenance procedure be finalised an assessment of testing equipment available with state utilities need to be made. Only after that a committee may be setup to streamline maintenance procedure.

All utilities to submit their testing equipment details for purpose of carrying out maintenance activities, by next OCC meeting.

New Items:

2. Review of Relay settings and Co-ordination:

Most of the Grid disturbances in NER Grid are occurring due to tripping of radial feeders, where the fault lies in downstream region. The faults are being cleared by Remote ends at EHV level instead of clearance at downstream distribution level.

Proper co-ordination of relay-settings amongst all voltage levels may reduce the number of Grid Disturbances in NER grid, and result in less Value of Lost Load.

It is requested that all utilities of NER may submit their relay settings (including Distribution side viz. 33 kV levels) for proper co-ordination with EHV side, to NERTS, NERPC and NERLDC. The relay settings, once approved by the PCC forum, should be adopted by all utilities, and any modification in relay settings should be done only after recommendation by PCC forum.

The major Grid Disturbance of Category-V in NER Grid on 16.04.16 occurred due to mal-operation of relays at 400 kV New-Siliguri end of 400 kV New-Siliguri – Bongaigaon Q/C lines, where the time setting on Zone-II was kept as 350 msec instead of around 600 msec as recommended by V.Ramakrishna Task Force report.
It is proposed that all substation wise List of long lines followed by Short lines be identified, and the relay settings modified accordingly as per recommendations of

V.Ramakrishna Task Force.

3. Review of Zone-II relay settings:

Several disturbances and major trippings in NER Grid are occurring on account of fault due to vegetation etc, resulting in high-resistive faults that fall outside the characteristic of Zone-II of Distance Protection. This results in delayed fault clearance by Earth fault relays, and the trippings are widespread.

In view of this it is proposed that the Resistive reach of Zone-II of Distance protection be reviewed by all utilities.

4. Adoption of Numerical relays:

It has been observed that several lines in NER Grid are having Static / Electromechanical relays as Overcurrent / Earth-fault relays. The Numerical relays, wherever available, have inbuilt Overcurrent / Earth-fault feature. The time-synchronised Disturbance Recording facility is available only in Numerical relays, absence of which lead to inconclusive analysis of Grid events.

It is proposed to enable the inbuilt Overcurrent / Earth-fault feature of Numerical relays, wherever available, to enable receipt of Disturbance Recorder outputs corresponding to all events of NER Grid. The time-synchronised Disturbance Recording facility is available only in Numerical relays, absence of which lead to inconclusive analysis of Grid events. Upon enabling the inbuilt feature of Numerical relays, the existing static / electromechanical relays may but put out of service.

It has been observed that in systems of NEEPCO in particular in Central sector, Numerical relays are not available and Static / electromechanical relays are being used instead. Guidelines of CEA recommend replacement of static / electromechanical relays with Numerical relays which are time synchronised to the Grid.

It is proposed to upgrade all existing Electromechanical / Static relays of Central Sector elements with Numerical relays having Time-synchronised Disturbance Recording facility.

5. Manual for Protection Systems:

It has been noticed that several grid events are occurring on account of different practices for protection adopted by different utilities leading to lack of co-ordination. As per Sec.7 of CEA Technical Standards for Connectivity to the Grid Regulations, 2007, utilities shall develop their own protection manuals conforming to various standards for the reference and use of its personnel.

It is requested to all utilities of NER to develop their own protection manuals consistent with various regulations and orders / reports.

6. Fault / Lack of Synchronisation facility:

On 31st August 2016, there was a disturbance in Tripura system post tripping of 132 kV AGTPP – Kumarghat line while several tie-lines of Tripura system to rest of NER

Grid was kept open.
At the time of synchronisation of the islanded Tripura system with rest of NER Grid, it was found that there exists no synchronisation facility within Tripura system. Further, while attempting to synchronise the island by charging of 132 kV P K Bari – Kumarghat line, the attempt failed due to faulty synchroscope at 132 kV Kumarghat (PG).

Also, at the time of synchronisation of islanded parts of NER Grid during GD-V in NER on 16.04.16, the restoration process got delayed due to faulty synchronisation facility at 132 kV Kumarghat (PG), 132 kV Badarpur (PG).

Availability of synchronisation facility is critical to restoration following Grid Events. It is requested that synchronisation facility be made available at all critical substations of NER Grid, and existing synchronisation facilities at substations be kept healthy at all times.

Any other item:

Date and Venue of next PCC

It is proposed to hold the 44th PCC meeting of NERPC on second week of September, 2016. The exact venue will be intimated in due course.

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Annexure - I

North Eastern Regional Power Committee

MINUTES OF SYSTEM PROTECTION SCHEME

Date : 30/08/2016 (Tuesday)
Time : 11:00 hrs
Venue : "NERLDC Conference Hall", Shillong.

The List of Participants in the Meeting is attached at **Annexure – I**

Shri B. Lyngkhoi, Director/SE(O/Commercial) welcomed all the participants and mentioned that as requested by the OCC forum, the issue of SPS and other related operational issues to be discussed in the sub-group so that the same can be finalized at the earliest. He thanked all the participants and requested to take active participation for fruitful deliberation.

1. Summary of System Protection Schemes (SPS)

Normally all the System protection schemes are proposed, discussed and getting approved in RPC meetings such as OCC, PCC, TCC and RPC Board meetings.

The Summary of System Protection Schemes (SPS) both inter/Intra regional which are in service, and no of schemes Approved, no of schemes under discussion stage are detailed below

Sl. No.	Region	No. of Schemes In service	No. of Schemes approved (yet to be operationalized)	No. of schemes under discussion	Remarks
1	North Eastern Region	9	Nil	Nil	-

The System protection schemes for Inter / intra-regional corridor (Region wise) divided in to three categories as stated below.

i) SPS related to tripping of critical line / corridor

ii) SPS related to safe evacuation of Generation

iii) SPS related to overloading of Transformers

iv) SPS related to maintaining transfer capability

The summary of SPS both inter/intra-regional which are in service, and number of schemes yet to be operationalized based on the categories above are detailed below:

Region	Tripping of critical line(s) / corridor			Safe evacuation of generation			Overloading of Transformers / Critical line(s)			TOTAL
	In Service	Approved	Under Discussion	In Service	Approved	Under Discussion	In Service	Approved	Under Discussion	
NER	4	-	-	2	-	-	3	-	-	9

Also the system protection schemes for inter/intra-regional corridors (region-wise) can be categorized as stated below:

i) SPS related to Generation rejection

ii) SPS related to Load rejection

iii) SPS related to Generation/Load rejection

iv) SPS related to HVDC controls

v) SPS related to others

2. SPS in North Eastern Region

Ref No.	Name of the Scheme	Implementing Agency	Status
SPS/NER/LINE/01	SPS associated with tripping of 400 kV Palatana – Silchar D/C lines	CTU, OTPC AEGCL, MePTCL and TSECL	In Service w.e.f. 23.02.2015
SPS/NER/LINE/02	SPS associated with tripping of 400 kV Silchar – Azara S/C and 400 kV Silchar – Byrnihat S/C lines when there is no generation at Palatana CCGT	CTU, AEGCL, MePTCL and TSECL	In Service w.e.f. 14.09.2013
SPS/NER/LINE/03	SPS associated with overloading of 220 kV Salakati – BTPS D/C lines (PG)	CTU, AEGCL	In service w.e.f 23.06.2015
SPS/NER/LINE/04	SPS associated with tripping of 132 kV Umiam Stg-I to Umiam St-III D/C lines	MePTCL	In service w.e.f June 2015
SPS/NER/GEN/01	SPS associated with tripping of 400 kV Silchar – Azara S/C and 400 kV Silchar – Byrnihat S/C lines during generation of 1st Module of Palatana	CTU, OTPC, AEGCL, MePTCL and TSECL	In Service w.e.f 23.02.2015

SPS/NER/GEN/02	SPS associated with generation evacuation from AGTPP	NEEPCO, CTU	In service w.e.f. 21.07.2015
SPS/NER/TRF/01	SPS associated with tripping of generation of 1st Module of Palatana CCGT (363.3 MW)	CTU, OTPC, AEGCL, MePTCL and TSECL	In Service w.e.f. 14.09.2013
SPS/NER/TRF/02	SPS associated with tripping of 400/132 kV, 2x200 MVA ICTs at Silchar (PG)	CTU, AEGCL	In service w.e.f. 29.06.15
SPS/NER/TRF/03	SPS associated with more than 60 MW loading from LV to HV side of Azara ICTs	AEGCL	In Service w.e.f August 2014

Ref No.	**Name of the Scheme**	**Implementing Agency**	**Status**	
SPS related to tripping of critical line / Corridor				
SPS/NER/LINE/01	SPS associated with tripping of 400 kV Palatana – Silchar D/C lines	CTU, OTPC AEGCL, MePTCL and TSECL	In Service	
SPS/NER/LINE/02	SPS associated with tripping of 400 kV Silchar – Azara S/C and 400 kV Silchar – Byrnihat S/C lines when there is no generation at Palatana CCGT	CTU, AEGCL, MePTCL and TSECL	In Service	
SPS/NER/LINE/03	SPS associated with overloading of 220 kV Salakati – BTPS D/C lines (PG)	CTU, AEGCL	In Service	
SPS/NER/LINE/04	SPS associated with tripping of 132 kV Umiam Stg-I to Umiam St-III D/C lines	MePTCL	In Service	
SPS related to Safe evacuation of generation				

SPS/NER/GEN/01	SPS associated with tripping of 400 kV Silchar – Azara S/C and 400 kV Silchar – Byrnihat S/C lines during generation of 1st Module of Palatana	CTU, OTPC, AEGCL, MePTCL and TSECL	In Service	

SPS/NER/GEN/02	SPS associated with generation evacuation from AGTPP	NEEPCO, CTU	In Service	
SPS related to overloading of Transformers / Critical Line(s)				
SPS/NER/TRF/01	SPS associated with tripping of generation of 1st Module of Palatana CCGT (363.3 MW)	CTU, OTPC, AEGCL, MePTCL and TSECL	In Service	
SPS/NER/TRF/02	SPS associated with tripping of 400/132 kV, 2x200 MVA ICTs at Silchar (PG)	CTU, AEGCL	In Service	
SPS/NER/TRF/03	SPS associated with more than 60 MW loading from LV to HV side of Azara ICTs	AEGCL	In Service	

SPS for NER Grid Security with Modules (GT+ST) of OTPC Palatana generating station (2 x 363.3MW)

SPS 2 - When 400 kV Palatana-Silchar (D/C) lines trip:

Pre-condition:

Following lines should be kept in open condition:

- 132 kV Khliehriat – Lumshnong S/C/ or 132 kV Lumshong- Panchgram
- 132 kV Pailapool – Jiribam line at Jiribam end or 132 kV Srikona- Pailapool
- 132 kV P.K. Bari – Dharmangar S/C or 132 kV Dharmanagar- Dullavcherra will be kept open

Scheme:

i. When both the ckts of 400 kV Palatana – Silchar lines trip, a signal will be generated from trip relays at Silchar.

ii. ~~This signal should trip the HV Circuit Breaker of 400/132 kV, 2x125 MVA Palatana ICTs to maintain safe, secure and reliable operation of Tripura system~~

iii. Palatana Protection to operate at their end and bring gen to house load.

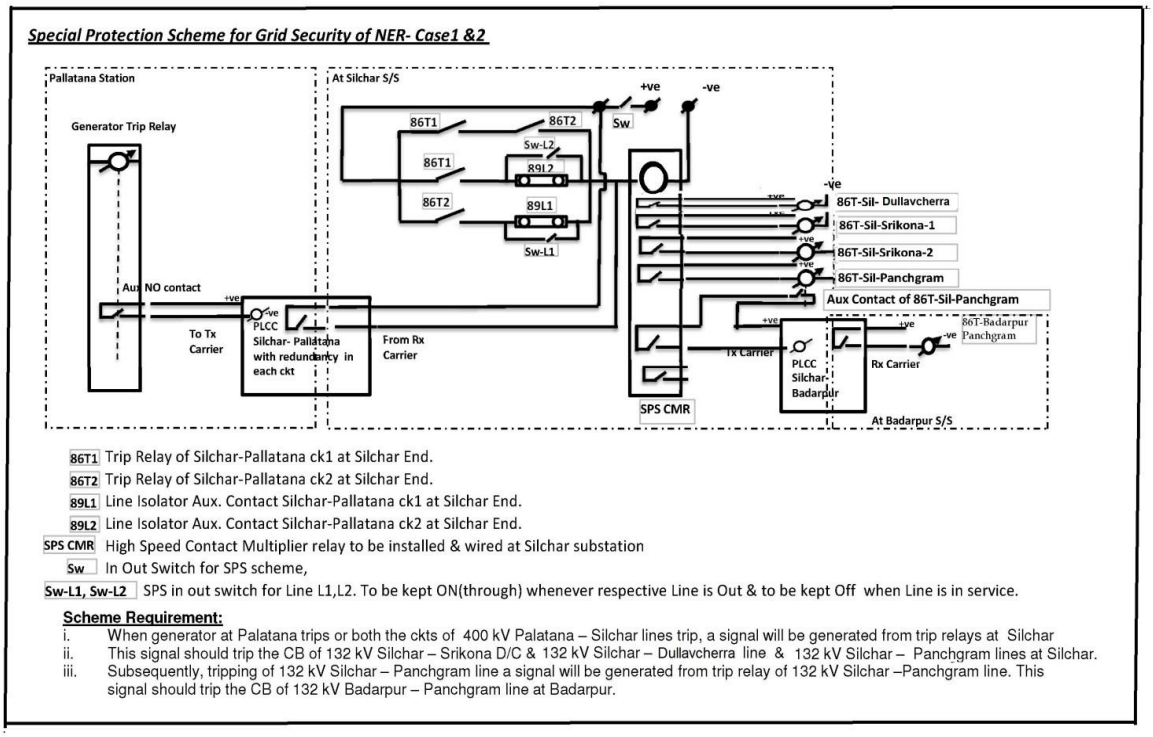
iv. ~~Also this signal should trip CB of 132 kV Silchar – Srikona D/C, 132 kV Silchar – Panchgram S/C & 132 kV Silchar – Dullavcherra S/C lines at Silchar.~~

v. ~~Subsequent to tripping of 132 kV Silchar – Panchgram line, a signal will be generated from trip relay of 132 kV Silchar – Panchgram line. This signal should trip the CB of 132 kV Badarpur – Panchgram line at Badarpur.~~

vi. ~~After these trippings a instant load relief of 109 MW at Off-peak & 159 MW in Peak.~~

vii. The signal from tripping of 400 kV Silchar – Palatana D/C should also enable reduction of Generation of Module I & II of Palatana, OTPC (both GTs to around 20 MW excluding the auxiliary consumption.

viii. Then manual demand management / disconnection should be imposed, if necessary.



SPS for NER Grid Security with Modules (GT+ST) of OTPC Palatana generating station (2 x 363.3MW)

SPS 4 - When 400 kV Silchar – Byrnihat S/C and 400 kV Silchar – Azara S/C line trips (without generation at Palatana)

Pre-condition:

Following lines should be kept in open condition

- 132 kV Khliehriat – Lumshnong S/C
- 132 kV Pailapool – Jiribam line at Jiribam end
- 132 kV PKBari – Dharmangar S/C will be kept open

Scheme:

i. When 400 kV Silchar – Byrnihat line and 400 kV Silchar – Azara line trips, a signal will be generated from trip relays at Silchar. Also, in case of outage of

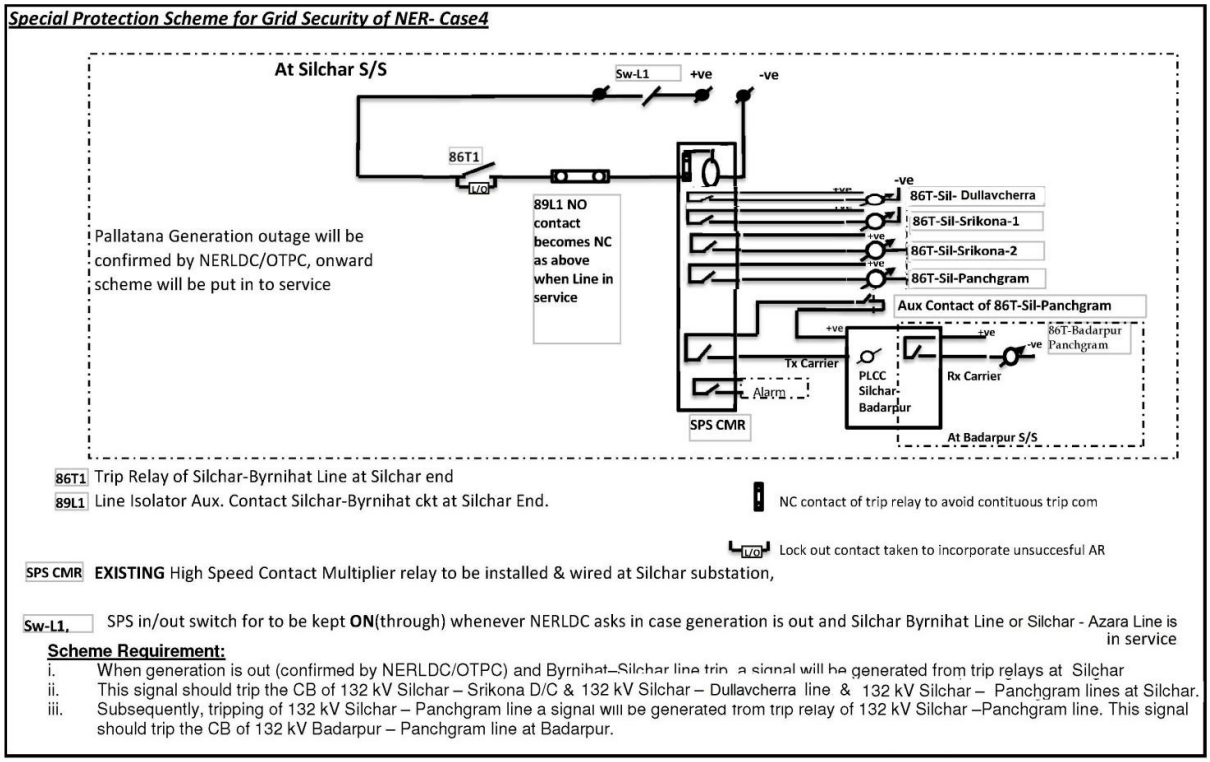
either 400 kV Silchar – Byrnihat line or 400 kV Silchar – Azara line, if other line trips, signal will be generated from trip relays at Silchar.

ii. This signal should trip the CB of 132 kV Silchar – Srikona D/C, 132 kV Silchar – Panchgram S/C & 132 kV Silchar –Dullavcherra S/C lines at Silchar.

iii. Subsequent to tripping of 132 kV Silchar – Panchgram line, a signal will be generated from trip relay of 132 kV Silchar –Panchgram line. This signal should trip the CB of 132 kV Badarpur – Panchgram line at Badarpur.

iv. After these trippings an instant load relief of around 109 MW in Off-Peak and 159 MW in Peak Hours will be obtained.

v. Then manual demand management / disconnection should be imposed, if necessary.



Note:

The SPS schemes as stated above are subject to changes with changing grid conditions. The loads being disconnected with the configuration as per current SPS include loads in South Assam, part of Meghalaya and part of Tripura power systems.

SPS associated with overloading of 220 kV Salakati – BTPS D/C lines

Pre – Condition:

The Dhaligaon area load of Assam needs to be kept in radial mode and Bhutan load through 132 kV Rangia – Deothang S/C must not be affected due to operation of this SPS.

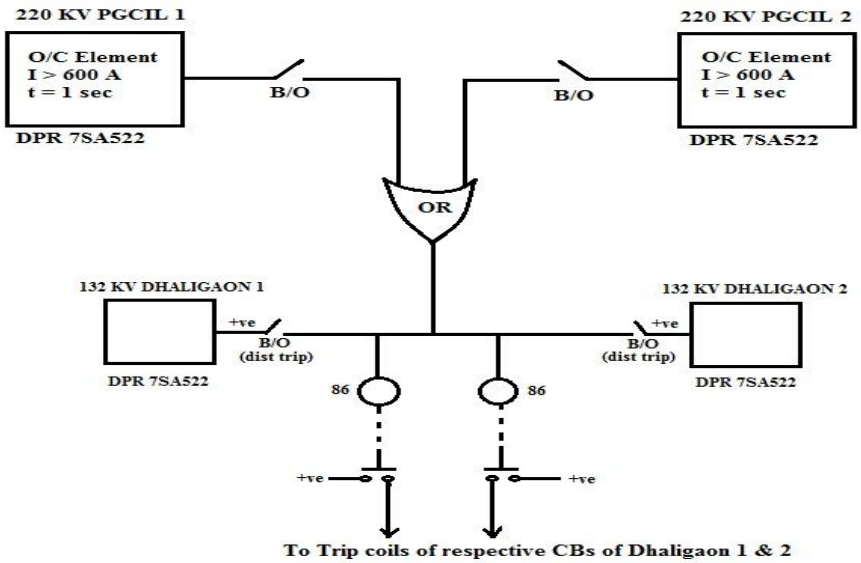
Scheme:

i. To prevent tripping of 220 kV Salakati – BTPS D/C lines, radial loads in Dhaligaon area of Assam may be shed as a precautionary measure.

ii. When 220 kV Salakati – BTPS D/C lines get overloaded (more than 600 Ampere current per circuit) in Salakati – BTPS direction, a signal would be generated that will trip radial loads in Dhaligaon area of Assam by tripping of 132 kV BTPS – Dhaligaon I & II lines.

iii. In case of outage of one circuit of 220 kV Salakati – BTPS D/C lines, and overloading of the existing circuit (more than 600 Ampere in Salakati – BTPS direction), a signal would be generated that will trip radial loads in Dhaligaon area of Assam.

Special Protection Scheme already implemented at 220/132 KV Salakati GSS, AEGCL



- The special protection scheme has been designed to limit the flow of 200MW / 600A load in either or both of the 220KV PGCIL 1 & 2 feeders from Birpara to Salakati. As soon as the load exceeds the set limit, the 132 KV Dhaligaon 1 & 2 feeders shall be disconnected from bus.

NOTE: One CFC logic has been designed for blocking the above Overcurrent protection when Distance protection picks up for any 220 KV feeder faults

SPS associated with tripping of 132 kV Umiam Stg-I – Umiam Stg-III D/C lines

Pre – Condition:

Meghalaya power system shall be segregated into 3 parts by opening of 132 kV Umiam Stg-I – Umiam line & 132 kV Mawlai – Umiam line and 132 kV Nongstoin – Mawphlang line. One part of Meghalaya power system loads shall be fed from Khliehriat (PG) substation, other part connected through 132 kV Agia – Mendipathar line and the 3rd part through 220/132 kV Killing (Byrnihat) substation.

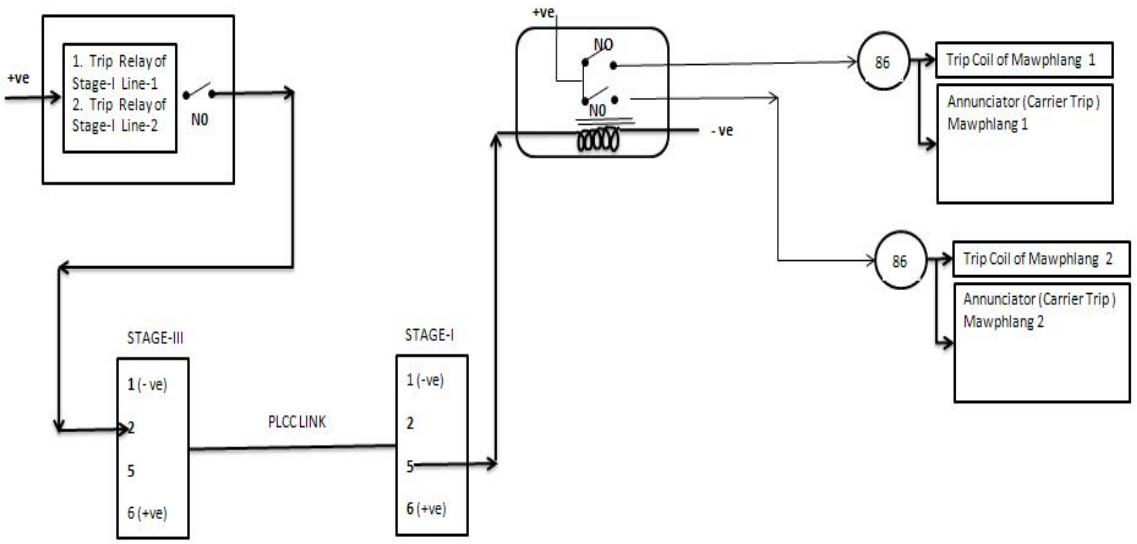
Scheme:

i. To prevent collapse of part of Meghalaya system fed from 220/132 kV Killing (Byrnihat) substation, carrier inter-tripping scheme has been implemented to prevent tripping of 132 kV Umiam St-I – Umiam St-III D/C lines.

ii. In the event of any fault that results in failure or tripping of 132 kV Umiam St-III – Umiam Stg-I D/C lines, a carrier signal would instantaneously be received at the PLCC Protection equipment. The same signal would be transmitted via PLCC link from Stage III to protection equipment at stage I power station. The command is further extended to the tripping circuit at C&R panel resulting in direct trip of two feeders namely, Mawphlang Feeder 1 and Mawphlang Feeder 2 at Stage I power Station shedding a combined load of 25 MW (max) instantaneously.

iii. If Garo Hills load is provided through 132 kB Nangalbibra –Nongstoin line instead of 132 kV Agia-Nangalibra line, then the load relief on account of operation of this SPS shall 75 MW (maximum).

Inter-tripping scheme between 132 kV Umiam St-I to Umiam St-III D/C lines



SPS related to Safe evacuation of Generation

SPS for NER Grid Security with Modules (GT+ST) of OTPC Palatana generating station (2 x 363.3MW)

SPS 3 - When 400 kV Silchar – Byrnihat S/C and 400 kV Silchar – Azara S/C lines trip (with generation at Palatana):

Pre-condition:

Following lines should be kept in open condition

- 132 kV Khliehriat – Lumshnong S/C
- 132 kV Pailapool – Jiribam line at Jiribam end
- 132 kV PKBari – Dharmangar S/C will be kept open

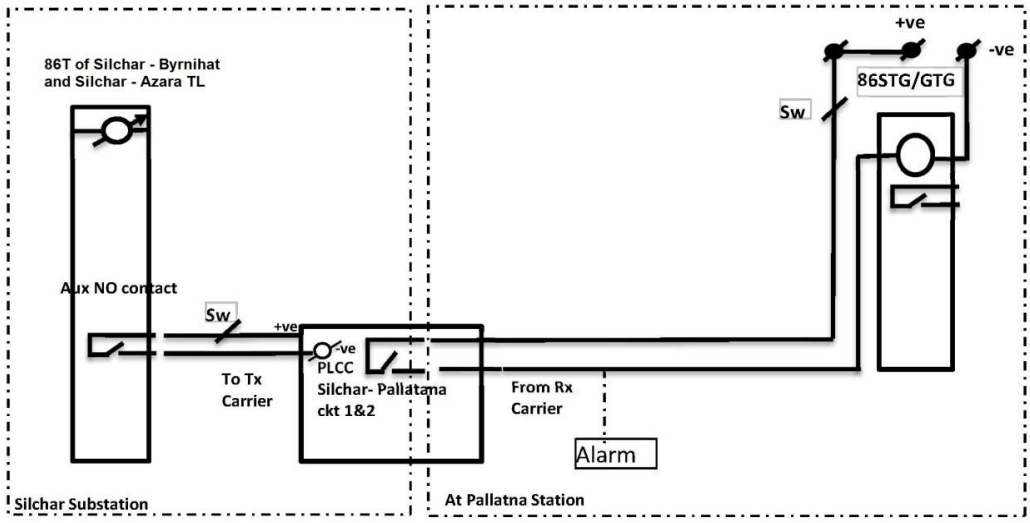
Scheme:

i. When 400 kV Silchar – Byrnihat S/C and 400 kV Silchar – Azara S/C lines trip, signal will be generated from trip relays at Silchar. Also, in case of outage of either 400 kV Silchar – Byrnihat line or 400 kV Silchar – Azara line, if other line trips, signal will be generated from trip relays at Silchar.

ii. This signal should trip CBs of GTG / STG of one Module of Palatana CCGT (as may be required). But the tripped unit of Palatana will be running in FSNL (Full Speed No Load). The units of Palatana may be tripped allowing a maximum of 240 MW generations including auxiliary.

iii. Then manual demand management / disconnection of load should be imposed, if necessary.

Special Protection Scheme for Grid Security of NER- Case:3



86T Trip Relay of Silchar-Pallatana ck1 at Silchar End.

86GTG 86 Trip relay for GTG at Pallatana

Note: At Present spare channel is not available for Silc-Pallatana PLCC links , can be made availble on procurement.

Sw In Out Switch for SPS scheme

Scheme:

i. When 400 kV Byrnihat – Silchar line & 400 kV Silchar - Azara lines trip, signal will be generated from trip relays at Silchar

ii. This signal should trip CB of GTG/STG of at Palatana. But unit will be running in FSNL

iii. A instant relief in line loading of 230/130 MW which will avert the system from cascade tripping.

v. Then manual demand disconnection should be imposed.

SPS for generation from 6 units of AGTPP – Extension project

When 132 kV AGTPP – Kumarghat S/C line trips (with generation from 4 nos. GT and 2 nos. ST-Extension of AGTPP)

Scheme:

i. Under N-1 contingency of 132 kV AGTPP – Kumarghat S/C, with generation from 4 nos. GT (Existing) of AGTPP and 2 nos. ST (Extension) of AGTPP, there may be sudden overloading in several lines outgoing from AGTPP or in Tripura power system.

ii. The tripping of 132 kV AGTPP – Kumarghat line should result in generation reduction of 32 MW at AGTPP (from AGTPP – Extension units) in order to maintain safe line loading on outgoing feeders from AGTPP

(The SPS has been put in service w.e.f. 1300 Hrs of 21-July-2015).

SPS for NER Grid Security with Modules (GT+ST) of OTPC Palatana generating station (2 x 363.3MW)

SPS 1 - When Palatana unit trips:

Pre-condition:

Following lines should be kept in open condition

- 132 kV Khliehriat (MePTCL) – Lumshnong S/C
- 132 kV Pailapool – Jiribam line at Jiribam end
- 132 kV P.K. Bari – Dharmangar S/C will be kept open

Scheme:

i. When both Module of Palatana CCGT trips, a signal will be generated from trip relay of the Modules.

ii. This signal should then trip the CB of 132 kV Silchar – Srikona D/C, 132 kV Silchar – Panchgram S/C & 132 kV Silchar –Dullavcherra S/C lines at Silchar.

iii. Subsequent to tripping of 132 kV Silchar – Panchgram line, a signal will be generated from trip relay of 132 kV Silchar –Panchgram line. This signal should trip the CB of 132 kV Badarpur – Panchgram line at Badarpur.

iv. After these trippings an instant load relief of around 109 MW in Off-Peak and 159 MW in Peak.

v. Then manual demand management / disconnection should be imposed, if necessary.

SPS for tripping of 400/132 kV, 2x200 MVA transformers at Silchar (PG)

Pre-condition:

Following lines should be kept in open condition

- 132 kV Khliehriat – Lumshnong S/C
- 132 kV Pailapool – Jiribam line at Jiribam end
- 132 kV P.K. Bari – Dharmangar S/C will be kept open

Scheme:

i. To maintain safe loading of 400/132 kV, 2x200 MVA transformer at 400/132 kV Silchar (PG) substation, radial loads in Southern part of NER Grid are to be shed.

ii. Upon tripping of any ICT among 2 x 200 MVA, 400/132 kV ICTs at Silchar, a signal shall be generated.

iii. This signal should then trip the CB of 132 kV Silchar – Srikona D/C, 132 kV Silchar – Panchgram S/C & 132 kV Silchar –Dullavcherra S/C lines at Silchar.

iv. Subsequent to tripping of 132 kV Silchar – Panchgram line, a signal will be generated from trip relay of 132 kV Silchar –Panchgram line. This signal should trip the CB of 132 kV Badarpur – Panchgram line at Badarpur.

v. After these trippings an instant load relief of around 109 MW in Off-Peak and 159 MW in Peak.

vi. In case one ICT at 400/132 kV Silchar substation is out-of-service; the SPS will still act to disconnect radial loads in Southern part of NER Grid.

SPS associated with more than 60 MW loading from LV to HV side of 400/220 kV, 2 x 315 MVA Azara ICTs

Scheme:

i. When power flows in 400/220 kV, 2x315 MVA ICTs at Azara (AEGCL) substation from 220 kV to 400 kV, it may lead to overloading of 220 kV Salakati – BTPS D/C lines.

ii. When power flow on 400/220 kV, 2x315 MVA ICTs at Azara (PG) reaches 60 MW from 220 kV to 400 kV side, a relay would pick-up resulting in tripping of 400/220 kV, 2x315 MVA ICTs at Azara (AEGCL).

iii. This will prevent flow of power from 220 kV Salakati – BTPS D/C lines to Southern part of NER Grid, in absence of sufficient generation in Southern part of NER grid.

iv. This may affect load served in Southern part of NER Grid, but will avert tripping of critical corridors in NER Grid.

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16													
क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	400 kV Silchar - Azara	NETC & AEGCL	**00/01/1900 13:07:37.596**	Silchar	DP, ZI, R-Y-E,165.3 Kms.	Not applicable	Yes	Yes	Loss of Load: 249	GD-IV	7/9/2016 13:59	SPS 3 operated	0.102
				Azara	DP, ZI, R-Y-E,98.7 Kms.	Not applicable	No	No					
	400 kV Silchar - Byrnihat	NETC & MePTCL	**09/07/2016 13:07:37.599**	Silchar	DP, ZI, Y-B-E,163.4 Kms.	Not applicable	Yes	Yes			7/9/2016 14:10	SPS 3 operated	
				Byrnihat	DP, ZI, Y-B-E,64.07 Kms.	Not applicable	No	No					
	132 kV Dimapur - Imphal	POWERGRID	**09/07/2016 13:19:00.000**	Dimapur	No Tripping	Not applicable	No	No			7/9/2016 13:53	No SPS	
				Imphal	Power Swing	Not applicable	Yes	No					
	132 kV Khliehriat (PG)-Badarpur	POWERGRID	**09/07/2016 13:19:00.000**	Khliehriat(PG)	Power Swing	Not applicable	No	No			7/9/2016 13:55	No SPS	
				Badarpur	No Tripping	Not applicable	No	No					
	132 kV Palatana-Udaipur	TSECL	**09/07/2016 13:20:06.845**	Palatana	Under Frequency	Not applicable	No	No			7/9/2016 15:00	No SPS	
				Udaipur	Not Furnished	Not applicable	No	No					

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16													
क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	132 kV Surjamaninagar-Palatana I	POWERGRID	**09/07/2016 13:20:06.848**	Surjamaninagar	Not Furnished	Not applicable	No	No			7/9/2016 14:30	No SPS	
				Palatana	Under Frequency	Not applicable	No	No					
	132 kV Silchar-P K Bari I	POWERGRID	**09/07/2016 13:19:00.000**	Silchar	Power Swing	Not applicable	No	No			7/9/2016 14:16	No SPS	
				PK Bari	Not Furnished	Not applicable	No	No					
	132 kV Silchar-P K Bari II	POWERGRID	**09/07/2016 13:19:00.000**	Silchar	Power Swing	Not applicable	No	No			7/9/2016 14:16	No SPS	
				PK Bari	Not Furnished	Not applicable	No	No					
	132 kV AGTPP - Kumarghat	POWERGRID	**09/07/2016 13:19:00.000**	AGTPP	Under Frequency	Not applicable	No	No			7/9/2016 13:59	No SPS	
				Kumarghat	Power Swing	Not applicable	No	No					
	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	**09/07/2016 13:19:00.000**	Silchar	Power Swing	Not applicable	No	No			7/9/2016 14:06	No SPS	
				Dullavcherra	Not Furnished	Not applicable	No	No					

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16

क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
1	132 kV Silchar - Panchgram	POWERGRID & AEGCL	**09/07/2016 13:28:00.000**	Silchar	Due to opeartion of SPS I	Not applicable	No	No			7/9/2016 14:05	SPS 1 operated	
				Panchgram		Not applicable	No	No					
	132 kV Silchar - Srikona I	POWERGRID		Silchar		Not applicable	No	No			7/9/2016 14:03	SPS 1 operated	
				Srikona		Not applicable	No	No					
	132 kV Silchar - Srikona II	POWERGRID		Silchar		Not applicable	No	No			7/9/2016 14:03	SPS 1 operated	
				Srikona		Not applicable	No	No					
	132 kV Badarpur - Panchgram	POWERGRID		Badarpur		Not applicable	No	No			7/9/2016 13:34	SPS 1 operated	
				Panchgram		Not applicable	No	No					
	Palatana GTG I	OTPC	**09/07/2016 13:15:59.745**	Palatana	Over Frequency	Not applicable	Yes	No			7/11/2016 19:36	SPS 3 operated	
	Palatana GTG II	OTPC	**09/07/2016 13:19:59.049**	Palatana	Over Frequency	Not applicable	Yes	No		CD IV	7/9/2016 20:00	No SPS	

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16

क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Palatana STG I	OTPC	**09/07/2016 13:16:09.276**	Palatana	Due to Tripping of GTG-I	Not applicable	Yes	No		GD-IV	7/11/2016 23:10	SPS 3 operated	
	Palatana STG II	OTPC	**09/07/2016 13:28:45.938**	Palatana	Due to Tripping of GTG-II	Not applicable	Yes	No			7/9/2016 21:15	No SPS	
	AGTPP U 1	NEEPCO	**09/07/2016 13:19:00.000**	AGTPP	Under Voltage and Reverse Power Relay operated	Not applicable	No	No	Loss of Generation: 684	GD-IV	7/9/2016 14:05	No SPS	2.429
	AGTPP U 2	NEEPCO	**09/07/2016 13:19:00.000**	AGTPP		Not applicable	No	No			7/9/2016 14:09	No SPS	
	AGTPP U 3	NEEPCO	**09/07/2016 13:24:00.000**	AGTPP	Reverse Power Relay operated	Not applicable	No	No			7/9/2016 14:15	No SPS	
	AGTPP U 4	NEEPCO	**09/07/2016 13:24:00.000**	AGTPP	Under Voltage and Reverse	Not applicable	No	No			7/9/2016 13:26	No SPS	
	AGTPP STG I	NEEPCO	**09/07/2016 13:24:00.000**	AGTPP	Due to Tripping of GTGs	Not applicable	No	No			7/9/2016 18:56	No SPS	
	AGTPP STG II	NEEPCO	**09/07/2016 13:24:00.000**	AGTPP	Due to Tripping of GTGs	Not applicable	No	No			7/10/2016 2:21	No SPS	
	FIR by the constituent	Yes (AGTPP,Tripura,Palatana and POWERGRID)											

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	Brief Description of the Incident	NER Grid was in synchronism with NEWS Grid through 400kV Bongaigaon - New Siliguri II, III and IV lines & 220 kV Birpara - Salakati I & II and and asynchronously connected with NR Grid through +/- 800 kV Biswanath Charali-Agra pole I (400kV Bongaigaon - New Siliguri I kept open from 22:55 Hrs on 25.06.16 to contain over voltage). Southern part of NER Grid(consisting of South Assam, Manipur ,Mizoram, Tripura including radial load of Bangladesh along with AGTPP, Palatana, Loktak & Tripura generation) was connected with rest of NER Grid through 400 kV Silchar - Azara line, 400 kV Silchar – Byrnihat line, 132 kV Imphal – Dimapur line and 132 kV Badarpur – Khliehriat line(132 kV Karong-Kohima line & 132 kV Khliehriat-Lumnsnong line kept open for system requirement and 132 kV Halflong – Jiribam line was under Emergency Shutdown from 11:00 Hrs on 09.07.16).At around 13:19:55.200 Hrs on 09.07.16, 400 kV Silchar – Azara (13:07:37.596 Hrs-DR timing) and 400 kV Silchar – Byrnihat (13:07:37.599 Hrs-DR timing) tripped. Due to delayed backing down of Palatana generation (as per design of SPS-III), 132 kV Badarpur – Khliehriat line and 132 kV Imphal – Dimapur lines tripped on overloading / power swing protection. Due to tripping of these elements, Southern part of NER Grid consisting of South Assam, Manipur, and Mizoram and Tripura systems along with Palatana & AGTPP separated from rest of NER Grid. Tripura systems along with AGTPP & radial load of Bangladesh were connected to NER Grid through 132 kV AGTPP – Kumarghat line, 132 kV Palatana – Surjamaninagar line, 132 kV Palatana – Udaipur and 132 kV Silchar – PK Bari I & II lines (132 kV P K Bari – Kumarghat and 132 kV P K Bari – Dharmanagar line kept open for system requirement).At 13:19 Hrs on 09.07.16, 132 kV AGTPP – Kumarghat tripped (AGTPP: UFR & 86A, 186A/B ; Kumarghat : Power swing). At 13:20 Hrs on 09.07.16, 132 kV Palatana – Surjamaninagar line, 132 kV Palatana – Udaipur and 132 kV Silchar – PK Bari I & II lines tripped.Due to tripping of these lines, Tripura systems along with AGTPP & radial load of Bangladesh were separated from rest of the isolated southern part of NER Grid and subsequently collapsed due to load generation mismatch. Palatana GTG 1 & 2 Tripped at 13:19 Hrs and STG 1 tripped at 13:20 Hrs. At 13:28 Hrs, STG 2 tripped due to under frequency. After tripping of STG-2 at Palatana, the SPS-I related to load reduction in South Assam of 100 MW operated and the frequency shot up to 54.09 Hz from 46.71 MW (change of 7.38 Hz).The rest of the island survived with Manipur and Mizoram load (Manipur – 55 MW & Mizoram – 29 MW) with Loktak generation (82 MW). The Southern part of NER Grid was synchronized with rest of NER Grid through 132 kV Imphal – Dimapur line at 13:52:01.960 Hrs. NER grid was progressively restored at 14:14 Hrs.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2114 MW , Antecedent Load : 1856 MW)**											
	Root Cause	Due to lightning strike at loc. 466 in R-phase on Silchar - Azara line & at loc. No. 467 in B-phase on Silchar - Byrnihat line , flashover occurred in bottom insulator as informed by POWERGRID. Flashover occurred in 2 consecutive towers.DR shows lightning strike - flashover. Surface burn occurred in the insulators as informed ny POWERGRID.											
	Remedial Measures	POWERGRID measured tower footing resistance in these 2 locations. In loc. 466, it was found to be 9.6 ohms and in other,resistance found to be 92 ohms (very high as 10 ohm is the norminal value). Earthing to be done by POWERGRID by 1. Counterpoise earthing 2. direct earthing of shield wire to ground if necessary 3. If any difficulty in the already suggested remedies, POWERGRID to install Tower Lightning Arresters.											
	400 kV Balipara - Bongaigaon I	POWERGRID	**7/21/2016 10:16**	Balipara	DP, Z V, R-E,Over Voltage	Not applicable	No	No			7/24/2016 19:56	No SPS	

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	Bongaigaon I			Bongaigaon	DP, ZII, R-E,370.1 Kms.	Not applicable	Yes	Yes					
	400 kV Balipara - Bongaigaon II	POWERGRID	**7/21/2016 10:16**	Balipara	DP, Z V, R-E,Over Voltage	Not applicable	No	No			7/21/2016 10:42	No SPS	
				Bongaigaon	DP, ZII, R-E,348.1 Kms.	Not applicable	Yes	Yes		GD-II			
	400 kV Balipara - Bongaigaon IV	POWERGRID	**7/21/2016 10:16**	Balipara	DP, ZIV, R-E,19.31 Kms.	Not applicable	No	No			7/21/2016 11:20	No SPS	
				Bongaigaon	DP, ZII, R-E,332 Kms.	Not applicable	Yes	Yes					
	400 kV Balipara-Biswanath Charali I	POWERGRID	**7/21/2016 10:16**	Balipara	No tripping	Not applicable	No	No			7/21/2016 11:32	No SPS	
				Biswanath Charali	DP, ZII, R-E,60 Kms.	Not applicable	Yes	No					
	400 kV Balipara-Biswanath Charali II	POWERGRID	**7/21/2016 10:16**	Balipara	No tripping	Not applicable	No	No			7/21/2016 11:24	No SPS	
				Biswanath Charali	DP, ZII, R-E,60 Kms.	Not applicable	Yes	No					
	400 kV Balipara-Biswanath Charali III	POWERGRID	**7/21/2016 10:16**	Balipara	No tripping	Not applicable	No	No			7/21/2016 11:10	No SPS	
				Biswanath Charali	DP, ZII, R-E,57 Kms.	Not applicable	Yes	No					
	400 kV Balipara-[illegible]	POWERGRID	**7/21/2016 10:16**	Balipara	No tripping	Not applicable	No	No			7/21/2016 11:34	No SPS	

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2	Biswanath Charali 1V			Biswanath Charali	DP, ZII, R-E,57 Kms.	Not applicable	Yes	No	Loss of Load: 114	GD-II			0.12
	400 kV Ranganadi-Biswanath Charali 1	POWERGRID	**7/21/2016 10:16**	Ranganadi	DP, ZII, R-E,220 Kms.	Not applicable	No	No			7/21/2016 11:19	No SPS	
				Biswanath Charali	No tripping	Not applicable	No	No					
	400 kV Ranganadi-Biswanath Charali 1I	POWERGRID	**7/21/2016 10:16**	Ranganadi	DP, ZII, R-E,219 Kms.	Not applicable	No	No			7/21/2016 11:33	No SPS	
				Biswanath Charali	No tripping	Not applicable	No	No					
	400 kV Misa - Balipara I	POWERGRID	**7/21/2016 10:16**	Misa	DP, ZII, R-E,120 Kms.	Not applicable	Yes	No			7/21/2016 10:53	No SPS	
				Balipara	DP, ZIV, R-E	Not applicable	No	No					
	400 kV Misa -Balipara II	POWERGRID	**7/21/2016 10:16**	Misa	DP, ZII, R-E,120.5 Kms.	Not applicable	Yes	No			7/21/2016 11:05	No SPS	
				Balipara	DP, ZIV, R-E	Not applicable	No	No					
	Ranganadi U 1	NEEPCO	**7/21/2016 10:16**	Ranganadi	Tripped due to loss of evacuation path	Not applicable	No	No	Loss of Generation: 330		7/21/2016 11:15	No SPS	0.324
	Ranganadi U 2	NEEPCO		Ranganadi		Not applicable	No	No			7/21/2016 12:19	No SPS	
	Ranganadi U 3	NEEPCO		Ranganadi		Not applicable	No	No			7/21/2016 12:41	No SPS	
	FIR by the constituent	Yes(POWERGRID)											

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	Brief Description of the Incident	Khupi area,Ziro area, Lekhi area & Capital area of Arunachal Pradesh and Pavoi, Gohpur & Depota area of Assam were connected with rest of NER Grid through 400 kV Balipara - Bongaigaon I,II & IV lines, 400 kV Balipara-Misa I & II and +/- 800 kV Biswanath Charali-Agra pole I (Bus Coupler CB of Gohpur,132 kV Rangia-Sipajhar line & 132 kV Rangia-Rowta line kept open for system requirement and 400 kV Balipara - Bongaigaon III kept open to contain over voltage since 05:55 Hrs on 21.07.16). At 10:16 Hrs on 21.07.16, 400 kV Balipara - Bongaigaon I,II & IV lines, 400 kV Balipara-Biswanath Charali I,II,III&IV lines, 400 kV Balipara-Misa I&II lines and 400 kV Ranganadi-Biswanath Charali I&II lines tripped. Due to tripping of these elements, Khupi area, Ziro area, Lekhi area & Capital area of Arunachal Pradesh and Pavoi, Gohpur & Depota area of Assam were separated from rest of NER Grid and subsequently collapsed due to load generation mismatch in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2056 MW , Antecedent Load : 1652 MW)**											
	Root Cause	No trace of reason for Bus-fault found by inspection at Balipara by POWERGRID. Suspected reasons are due to short circuit caused by Monkey (found to be climbing in Gantry in CCTV footage) , or due to the earth fault caused by construction work. But, fault in one bus should not have caused tripping of both buses. Problems rectified by PG in co-ordination with CC, POWERGRID.											
	Remedial Measures	Balipara end bus-fault was seen by Ranganadi, which should not happen. Ranganadi end Distance Protection relay time delay setting to be modified from 350 msec to 500 msec, since Rangandi -Biswanath Charali length is more than Biswanath Charali - Balipara line.											

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3	132 kV Lekhi - Nirjuli	DoP AP & POWERGRID	**7/28/2016 11:20**	Lekhi	Earth Fault	Not applicable	No	No	Loss of Load: 26	GD-I	7/28/2016 11:39	No SPS	0.011
				Nirjuli	No tripping	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Nirjuli area of Arunachal Pradesh and Gohpur Area(Gohpur Load) of Assam were connected with rest of NER Grid through 132 kV Lekhi - Nirjuli line (Bus Coupler CB of Gohpur kept open for system requirement). At 11:20 Hrs on 28.07.16, 132 kV Ranganadi-Lekhi line tripped. Due to tripping of this element, Nirjuli area of Arunachal Pradesh and Gohpur Area(Gohpur Load) of Assam were separated from rest of NER Grid and subsequently collapsed due to no source in this area.										
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2186 MW , Antecedent Load : 1553 MW)**											
	Root Cause	On Tower no. 1,2,3,4, near the LILO section of 132 kV Ranganadi-Nirjuli line at Lekhi, vegetation problem is there due to large trees. Some trees were also found to be burnt due to fault. But, cutting of the trees could not be done since owners need to be compensated.Due to fault in downstream of Nirjuli											
	Remedial Measures	Presently PSM on Lekhi-Nirjuli is 0.6 with CT ratio 600/1. After tripping of Ranganadi - Lekhi, actual overcurrent (>360 A) occurs as total load are around 85 MW (35 MW-Chimpu, 50 MW - Nirjuli). PSM will be modified by POWERGRID after seeing available margin in conductor as per Tx Planning Criteria.											

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4	132 kV Balipara - Khupi	NEEPCO	**7/1/2016 12:24**	Balipara	DP, ZI, Y-E, 49.19 KM	Not Furnished	No	No	Loss of Load: 14	GD-I	7/1/2016 12:46	No SPS	0.013
				Khupi	No tripping	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Khupi area of Arunachal Pradesh was connected with rest of NER Grid through 132 kV Balipara- Khupi line. At 12:24 Hrs on 01.07.16 , 132 kV Balipara- Khupi line tripped. Due to tripping of this element, Khupi area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1922 MW , Antecedent Load : 1603 MW)**											
	Root Cause	Due to vegetation problem											
	Remedial Measures	NEEPCO applied for shutdown to clear vegetation problem.											
5	132 kV Balipara - Khupi	NEEPCO	**7/2/2016 21:41**	Balipara	DP, ZI, Y-E, 63 KM	Not Furnished	No	No	Loss of Load: 21	GD-I	7/2/2016 22:02	No SPS	0.018
				Khupi	Not Furnished	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Khupi area of Arunachal Pradesh was connected with rest of NER Grid through 132 kV Balipara- Khupi line. At 21:41 Hrs on 02.07.16 , 132 kV Balipara- Khupi line tripped. Due to tripping of this element, Khupi area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1883 MW , Antecedent Load : 2035 MW)**											

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16

क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Root Cause	Due to vegetation problem											
	Remedial Measures	NEEPCO applied for shutdown to clear vegetation problem.											
6	132 kV Balipara - Khupi	NEEPCO	**7/5/2016 22:04**	Balipara	Not Furnished	Not Furnished	No	No	Loss of Load: 21	GD-I	7/5/2016 22:34	No SPS	0.016
				Khupi	Not Furnished	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Khupi area of Arunachal Pradesh was connected with rest of NER Grid through 132 kV Balipara- Khupi line. At 22:04 Hrs on 05.07.16, 132 kV Balipara- Khupi line tripped. Due to tripping of this element, Khupi area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2163 MW , Antecedent Load : 1948 MW)**											
	Root Cause	Due to vegetation problem											
	Remedial Measures	NEEPCO applied for shutdown to clear vegetation problem.											
7	132 kV Balipara - Khupi	NEEPCO	**7/6/2016 10:30**	Balipara	DP, ZII, B-E, 56.39 KM	Not Furnished	No	No	Loss of Load: 21	GD-I	7/6/2016 11:11	No SPS	0.02
				Khupi	No Indication	Not Furnished	No	No					
	FIR by the constituent	No											

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16

क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Brief Description of the Incident	Khupi area of Arunachal Pradesh was connected with rest of NER Grid through 132 kV Balipara- Khupi line. At 10:30 Hrs on 06.07.16, 132 kV Balipara- Khupi line tripped. Due to tripping of this element, Khupi area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2157 MW , Antecedent Load : 1657 MW)**											
	Root Cause	Due to vegetation problem											
	Remedial Measures	NEEPCO applied for shutdown to clear vegetation problem.											
8	132 kV Balipara - Khupi	NEEPCO	**7/8/2016 9:24**	Balipara	DP, ZI, R-Y-E,34.8 Kms.	Not Furnished	No	No	Loss of Load: 22	GD-I	7/8/2016 20:19	No SPS	0.262
				Khupi	Not Furnished	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Khupi area of Arunachal Pradesh was connected with rest of NER Grid through 132 kV Balipara- Khupi line. At 09:24 Hrs on 08.07.16, 132 kV Balipara- Khupi line tripped. Due to tripping of this element, Khupi area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2041 MW , Antecedent Load : 1736 MW)**											
	Root Cause	Due to vegetation problem											
	Remedial Measures	NEEPCO applied for shutdown to clear vegetation problem.											

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16

क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
9	132 kV Balipara - Khupi	NEEPCO	**7/18/2016 12:22**	Balipara	DP, ZI, R-Y-E, 40 Kms.	Not Furnished	No	No	Loss of Load: 20	GD-I	7/18/2016 12:53	No SPS	0.048
				Khupi	Not Furnished	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Khupi area of Arunachal Pradesh was connected with rest of NER Grid through 132 kV Balipara- Khupi line. At 12:22 Hrs on 18.07.16, 132 kV Balipara- Khupi line tripped. Due to tripping of this element, Khupi area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2099 MW , Antecedent Load : 1657 MW)**											
	Root Cause	Due to vegetation problem											
	Remedial Measures	NEEPCO applied for shutdown to clear vegetation problem.											
10	132 kV Balipara - Khupi	NEEPCO	**7/22/2016 13:05**	Balipara	DP, ZI, Y-E, 38.8 Kms.	Not Furnished	No	No	Loss of Load: 21	GD-I	7/23/2016 15:58	No SPS	0.454
				Khupi	Not Furnished	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Khupi area of Arunachal Pradesh was connected with rest of NER Grid through 132 kV Balipara- Khupi line. At 13:05 Hrs on 22.07.16, 132 kV Balipara- Khupi line tripped. Due to tripping of this element, Khupi area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1963 MW , Antecedent Load : 1538 MW)**											

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16

क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Root Cause	Due to vegetation problem											
	Remedial Measures	NEEPCO applied for shutdown to clear vegetation problem.											
11	132 kV Balipara - Khupi	NEEPCO	**7/31/2016 12:59**	Balipara	Back Up Earth Fault	Not applicable	No	No	Loss of Load: 20	GD-I	7/31/2016 13:26	No SPS	0.023
				Khupi	Not Furnished	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Khupi area of Arunachal Pradesh was connected with rest of NER Grid through 132 kV Balipara- Khupi line. At 12:59 Hrs on 31.07.16, 132 kV Balipara- Khupi line tripped. Due to tripping of this element, Khupi area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2223 MW , Antecedent Load : 1734 MW)**											
	Root Cause	Due to vegetation problem											
	Remedial Measures	NEEPCO applied for shutdown to clear vegetation problem.											
12	132 kV Balipara - Khupi	NEEPCO	**8/12/2016 1:27**	Balipara	DP, ZI, Y-B-E, 19.4 Kms.	Not Furnished	No	No	Loss of Load: 20	GD-I	8/12/2016 2:01	No SPS	0.017
				Khupi	Not Furnished	Not Furnished	No	No					
	FIR by the constituent	No											

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16

क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Brief Description of the Incident	Khupi area of Arunachal Pradesh was connected with rest of NER Grid through 132 kV Balipara- Khupi line. At 01:27 Hrs on 12.08.16 , 132 kV Balipara- Khupi line tripped. Due to tripping of this element, Khupi area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1883 MW , Antecedent Load : 1932 MW)**											
	Root Cause	Due to vegetation problem											
	Remedial Measures	NEEPCO applied for shutdown to clear vegetation problem.											
13	132 kV Balipara - Khupi	NEEPCO	**8/21/2016 14:36**	Balipara	Directional Over Current	Not applicable	No	No	Loss of Load: 21	GD-I	8/21/2016 15:48	No SPS	0.031
				Khupi	No tripping	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Khupi area of Arunachal Pradesh was connected with rest of NER Grid through 132 kV Balipara- Khupi line. At 14:36 Hrs on 21.08.16 , 132 kV Balipara- Khupi line tripped. Due to tripping of this element, Khupi area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1940 MW , Antecedent Load : 1692 MW)**											
	Root Cause	Due to vegetation problem											
	Remedial Measures	NEEPCO applied for shutdown to clear vegetation problem.											

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16

क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
14	132 kV Balipara - Khupi	NEEPCO	**8/21/2016 20:56**	Balipara	DP, ZI, Y-B-E, 53 Kms.	Not Furnished	No	No	Loss of Load: 16	GD-I	8/21/2016 21:06	No SPS	0.006
				Khupi	No tripping	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Khupi area of Arunachal Pradesh was connected with rest of NER Grid through 132 kV Balipara- Khupi line. At 20:56 Hrs on 21.08.16 , 132 kV Balipara- Khupi line tripped. Due to tripping of this element, Khupi area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2269 MW , Antecedent Load : 2028 MW)**											
	Root Cause	Due to vegetation problem											
	Remedial Measures	NEEPCO applied for shutdown to clear vegetation problem.											
15	132 kV Balipara - Khupi	NEEPCO	**8/21/2016 16:12**	Balipara	Directional Over Current	Not applicable	No	No	Loss of Load: 10	GD-I	8/21/2016 17:09	No SPS	0.011
				Khupi	No tripping	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Khupi area of Arunachal Pradesh was connected with rest of NER Grid through 132 kV Balipara- Khupi line. At 16:12 Hrs on 21.08.16 , 132 kV Balipara- Khupi line tripped. Due to tripping of this element, Khupi area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16

क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1943 MW , Antecedent Load : 1715 MW)**											
	Root Cause	Due to vegetation problem											
	Remedial Measures	NEEPCO applied for shutdown to clear vegetation problem.											
16	132 kV Balipara - Khupi	NEEPCO	**8/22/2016 1:23**	Balipara	DP, ZI, R-Y-B, 31.56 Kms.	Not Furnished	No	No	Loss of Load: 18	GD-I	8/22/2016 1:35	No SPS	0.007
				Khupi	Not Furnished	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Khupi area of Arunachal Pradesh was connected with rest of NER Grid through 132 kV Balipara- Khupi line. At 01:23 Hrs on 22.08.16, 132 kV Balipara- Khupi line tripped. Due to tripping of this element, Khupi area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1778 MW , Antecedent Load : 1724 MW)**											
	Root Cause	Due to vegetation problem											
	Remedial Measures	NEEPCO applied for shutdown to clear vegetation problem.											

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16

क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
17	132 kV Ranganadi - Lekhi	POWERGRID & DoP AP	**8/4/2016 13:07**	Ranganadi	Over current	Not applicable	No	No	Loss of Load: 40	GD-I	8/4/2016 13:34	No SPS	0.02
				Lekhi	No tripping	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Lekhi area & Capital area of Arunachal Pradesh and Gohpur Area of Assam were connected with rest of NER Grid through 132 kV Ranganadi-Lekhi line (Bus Coupler CB of Gohpur kept open for system requirement). At 13:07 Hrs on 04.08.16, 132 kV Ranganadi-Lekhi line tripped. Due to tripping of this element, Lekhi area & Capital area & Gohpur area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1910 MW , Antecedent Load : 1774 MW)**											
	Root Cause	As informed by POWERGRID, relay flags are as follows: Lekhi - Over current,Ranganadi - No tripping.											
	Remedial Measures	DR outputs of Lekhi end to be submitted by POWERGRID to conclude the root cause. Lekhi & Ranganadi over current settings to be reviewed. Committee suggested to implement settings as PSM-1 with CT ratio 600/1.Directional feature of Over Current as well as Earth fault relay to be enabled at Lekhi.											

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16

क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
18	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	**8/4/2016 23:09**	Silchar	DP, ZI, Y-E, 25.85 Kms.	Not Furnished	No	No	Loss of Load: 34	GD-I	8/4/2016 23:23	No SPS	0.009
				Dullavcherra	No tripping	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Dullavcherra area of Assam was connected with rest of NER Grid through 132 kV Silchar- Dullavcherra line(132 kV Dullavcherra-Dharmanagar line kept open for system requirement). At 23:09 Hrs on 04.08.16, 132 kV Silchar- Dullavcherra line tripped. Due to tripping of this element, Dullavcherra area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1950 MW , Antecedent Load : 2157 MW)**											
	Root Cause	Fault was beyond jurisdiction of POWERGRID(POWERGRID portion up to 17 Kms).Root cause could not be concluded due to DR unavailability.											
	Remedial Measures	AEGCL to furnish patrolling report. POWERGRID to submit DR output of Silchar end.											
19	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	**8/31/2016 0:51**	Silchar	DP, ZI, Y-E, 19.52 Kms.	Not Furnished	No	No	Loss of Load: 27	GD-I	8/31/2016 1:05	No SPS	0.009
				Dullavcherra	Not Furnished	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Dullavcherra area of Assam was connected with rest of NER Grid through 132 kV Silchar- Dullavcherra line(132 kV Dullavcherra-Dharmanagar line kept open for system requirement). At 00:51 Hrs on 31.08.16,132 kV Silchar- Dullavcherra line tripped. Due to tripping of this element, Dullavcherra area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16													
क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Antecedent Conditions of NER Grid	**(Antecedent Generation : MW , Antecedent Load : MW)**											
	Root Cause	Fault was beyond jurisdiction of POWERGRID(POWERGRID portion up to 17 Kms).Root cause could not be concluded due to DR unavailability.											
	Remedial Measures	AEGCL to furnish patrolling report. POWERGRID to submit DR output of Silchar end.											

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16													
क्रम संख्या/ Sl. No.	**बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description**	**मालिक / Owner**	**दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator**	**नोड के नाम / Name of Node**	**सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator**	**ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose**	**24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)**	**24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)**	**प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)**	**श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards**	**सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator**	**एसपीएस संचालन के विवरण / Details of SPS Operation**	**एमयू में हानि/ Loss in MU**
20	132 kV Haflong(PG) - Haflong	AEGCL	**8/24/2016 5:15**	Haflong(PG)	Earth Fault	Not applicable	No	No	Loss of Load: 1	GD-I	8/24/2016 6:14	No SPS	0.001
				Haflong	Over current	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Haflong area of Assam was connected with rest of NER Grid through 132kV Haflong (AS)-Haflong(PG) line. At 05:15Hr on 24.08.16,132kV Haflong (AS)-Haflong(PG) line tripped. Due to tripping of this element, Haflong area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1805 MW , Antecedent Load : 1958 MW)**											
	Root Cause	Downstream fault											
	Remedial Measures	To be discussed in PCCM											
21	132 kV Khandong - Umrangso	POWERGRID & AEGCL	**8/28/2016 12:06**	Khandong	Earth Fault	Not applicable	No	No	Loss of Load: 5	GD-I	8/28/2016 12:57	No SPS	0.003
				Umrangso	Loss of Voltage	Not applicable	No	No					
	132 kV Haflong- Umrangso	POWERGRID & AEGCL		Haflong	Loss of Voltage	Not applicable	No	No			8/28/2016 12:45	No SPS	
				Umrangso	Loss of Voltage	Not applicable	No	No					
	FIR by the constituent	No											

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16													
क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Brief Description of the Incident	Umrangso area of Assam was connected with rest of NER Grid through 132 kV Khandong-Umrangsho line & 132 kV Haflong-Umrangsho line .At 12:06 Hrs on 28.08.16, 132 kV Khandong-Umrangsho line & 132 kV Haflong-Umrangsho line tripped. Due to tripping of these elements, Umrangsho area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1889 MW , Antecedent Load : 1819 MW)**											
	Root Cause	Fault due to vegetation problem.											
	Remedial Measures	Vegetation clearance to be done by POWERGRID & AEGCL.Patrolling report to be submitted and Status of vegetation clearance to be reported by POWERGRID & AEGCL.											

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16													
क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16													
क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
22	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	7/30/2016 12:39	Imphal (PG)	No tripping	Not applicable	No	No	Loss of Load: 26	GD-I	7/30/2016 12:59	No SPS	0.013
				Imphal	Earth Fault	Not applicable	No	No					
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID		Imphal (PG)	No tripping	Not applicable	No	No			7/30/2016 12:59	No SPS	
				Imphal	Earth Fault	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Capital area & Karong area of Manipur were connected with rest of NER Grid through 132 kV Imphal-Imphal I & II lines (132 kV Kakching-Kongba line & 132 kV Karong-Kohima line kept open for system requirement). At 12:39 Hrs on 30.07.16, 132 kV Imphal-Imphal I & II lines tripped. Due to tripping of these elements, Capital area & Karong area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2190 MW , Antecedent Load : 1804 MW)**											
	Root Cause	There was no tripping of 132 kV Imphal (PG) - Imphal (MA) I&II lines as informed by PG.											
	Remedial Measures	Karong CB has been attended by PG.Reason for tripping of Transformer at Imphal(MA) to be furnished by MePTCL.Relay coordination has to be done by MSPCL in consultation with POWERGRID											

List of Grid Disturbances in North-Eastern Regional Grid during July'16-August'16														
क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU

List of Grid Disturbances in North-Eastern Regional Grid during January 2016

क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
23	132 kV Loktak - Ningthoukhong	MSPCL	**8/9/2016 6:12**	Loktak	DP, ZIII, R-E, 38.28 Kms.	Not applicable	Yes	No	Loss of Load: 30	GD-I	8/9/2016 7:32	No SPS	0.044
				Ningthoukhong	No Indication	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Ningthoukhong area of Manipur was connected with rest of NER Grid through 132 kV Loktak-Ningthoukhong line (132 kV kakching-Kongba line & 132 kV Imphal(PG)-Ningthoukhong line kept open for system constraint). At 06:12 Hrs on 09.08.16, 132 kV Loktak-Ningthoukhong line tripped. Due to tripping of this element, Ningthoukhong area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1849 MW , Antecedent Load : 1337 MW)**											
	Root Cause	Likely due to downstream fault in Manipur system.											
	Remedial Measures	To be discussed in PCCM											
24	132 kV Loktak - Ningthoukhong	MSPCL	**8/12/2016 9:35**	Loktak	DP, ZII, B-E, 23.96 Kms.	Not applicable	Yes	No	Loss of Load: 22	GD-I	8/12/2016 11:24	No SPS	0.04
				Ningthoukhong	No tripping	Not applicable	NA	NA					
	FIR by the constituent	No											
	Brief Description of the Incident	Ningthoukhong area of Manipur was connected with rest of NER Grid through 132 kV Loktak-Ningthoukhong line (132 kV kakching-Kongba line & 132 kV Imphal(PG)-Ningthoukhong line kept open for system constraint). At 09:35 Hrs on 12.08.16, 132 kV Loktak-Ningthoukhong line tripped. Due to tripping of this element, Ningthoukhong area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											

List of Grid Disturbances in North-Eastern Regional Grid during January 2016

क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1751 MW , Antecedent Load : 1688 MW)**											
	Root Cause	Likely due to downstream fault in Manipur system.											
	Remedial Measures	To be discussed in PCCM											
25	132 kV Loktak - Ningthoukhong	MSPCL	**8/21/2016 0:28**	Loktak	Over current,R-Y-B phase	Not applicable	No	No	Loss of Load: 8	GD-I	8/21/2016 7:10	No SPS	0.057
				Ningthoukhong	Not Furnished	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Ningthoukhong area of Manipur was connected with rest of NER Grid through 132 kV Loktak-Ningthoukhong line (132 kV kakching-Kongba line & 132 kV Imphal(PG)-Ningthoukhong line kept open for system requirement). At 00:28 Hrs on 21.08.16, 132 kV Loktak-Ningthoukhong line tripped. Due to tripping of this element, Ningthoukhong area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1768 MW , Antecedent Load : 1777 MW)**											
	Root Cause	Likely due to Phase to Phase fault in the the line or downstream of Ningthoukhong.											
	Remedial Measures	To be discussed in PCCM											

List of Grid Disturbances in North-Eastern Regional Grid during January 2016														
क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	7/5/2016 13:21	Khliehriat (PG)	DP, ZI, R-Y-B, 79.2 km	Not Furnished	No	No	Loss of Load: 88	GD-I	7/5/2016 13:47	No SPS	0.006
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, R-Y-B, 68 km	Not Furnished	No	No			7/5/2016 13:49	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV NEIGRIHMS - Khliehriat (ME)	MePTCL		NEIGRIHMS	No tripping	Not Furnished	No	No			7/5/2016 13:25	No SPS	
				Khliehriat	Earth Fault	Not Furnished	No	No					
	132 kV Mustem-Khliehriat	MePTCL		Mustem	No tripping	Not Furnished	No	No			7/5/2016 13:31	No SPS	
				Khliehriat	DP, ZII, R-Y-B, 16.53 Kms	Not Furnished	No	No					
	132 kV NEHU - NEIGRIHMS	MePTCL		NEHU	Earth Fault	Not Furnished	No	No			7/5/2016 13:38	No SPS	
				NEIGRIHMS	No tripping	Not Furnished	No	No					
	Umiam Stg I U 2	MePGCL		Umiam Stg I	Generator O/C, under Volatge 86C.	Not applicable	No	No			7/5/2016 13:30	No SPS	
	Umiam Stg I U 3	MePGCL		Umiam Stg I	Generator O/C, 86C.	Not applicable	No	No			7/5/2016 13:35	No SPS	
	Umiam Stg I U 4	MePGCL		Umiam Stg I	Generator O/C, 86C.	Not applicable	No	No			7/5/2016 13:40	No SPS	

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
26	Umiam Stg II U 1	MePGCL	**7/5/2016 13:21**	Umiam Stg II	Generator under voltage.	Not applicable	No	No	Loss of Generation: 145	GD-I	7/5/2016 13:32	No SPS	0.027
	Umiam Stg II U 2	MePGCL		Umiam Stg II	Generator under voltage.	Not applicable	No	No			7/5/2016 13:40	No SPS	
	Leshka U 1	MePGCL		Leshka	86A, 86B, 86FT.	Not applicable	No	No			7/5/2016 15:25	No SPS	
	Leshka U 2	MePGCL		Leshka	86A, 86B, 86FT.	Not applicable	No	No			7/5/2016 14:32	No SPS	
	Leshka U 3	MePGCL		Leshka	86A, 86B, 86FT.	Not applicable	No	No			7/5/2016 14:34	No SPS	
	FIR by the constituent	Yes (Meghalaya)											
	Brief Description of the Incident	Khliehriat area (includes Khliehriat, Mustem, NEIGRIHMS, NEHU, Umiam, Mawlai, Mawphlang and Nongstoin loads) of Meghalaya was connected with rest of NER Grid through 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines (132 kV Khliehriat-Lumnsnong line, Nongstoin - Nangalbibra line and 132 kV Umium Stg I - Umium Stg III I&II lines kept open for system requirement). At 13:21 Hrs on 05.07.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines,132 kV NEIGRIHMS - Khliehriat (ME) line,132 kV Mustem-Khliehriat line and 132 kV NEHU - NEIGRIHMS line tripped. Due to tripping of these elements, Khleihriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2131 MW , Antecedent Load : 1554 MW)**											
	Root Cause	Fault likely due to bampoo touching in 132 kV NEHU - NEIGRIHMS line as informed by MePTCL.											

List of Grid Disturbances in North-Eastern Regional Grid during January 2016

क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Remedial Measures	MePTCL to confirm whether Meghalaya has installed Numerical relays on their feeders in next PCC meeting. Installation of Numerical relays on 132 kV Khliehriat (PG) - Leshka (ME) I&II feeders could not be completed due to non-availability of shutdown of these feeders as Leshka generation is full at this time. Matter referred to PCC meeting.											
27	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	**7/30/2016 13:42**	Khliehriat (PG)	DP, ZI, B-E, 16.58 Kms.	Not Furnished	No	No	Loss of Load: 24	GD-I	7/30/2016 14:17	No SPS	0.004
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) - Khliehriat (MePTCL) II	MePTCL		Khliehriat (PG)	DP, ZI, B-E, 10.76 Kms.	Not Furnished	No	No			7/30/2016 14:18	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Mustem-NEHU	MePTCL	**7/30/2016 13:42**	Mustem	Back Up Over Current	Not applicable	No	No	Loss of Load: 24	GD-I	7/30/2016 14:05	No SPS	0.004
				NEHU	No tripping	Not applicable	No	No					
	132 kV NEHU - NEIGRIHMS	MePTCL		NEHU	Over current	Not applicable	No	No			7/30/2016 13:52	No SPS	
				NEIGRIHMS	No tripping	Not applicable	No	No					
	Leshka U 1	MePGCL		Leshka	Over Frequency	Not applicable	No	No	Loss of Generation: 126		7/30/2016 15:29	No SPS	0.181
	Leshka U 2	MePGCL		Leshka	Over Frequency	Not applicable	No	No			7/30/2016 15:09	No SPS	
	Leshka U 3	MePGCL		Leshka	Over Frequency	Not applicable	No	No			7/30/2016 15:15	No SPS	
	FIR by the constituent	Yes(Meghalaya)											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Brief Description of the Incident	Khliehriat area of Meghalaya was connected with rest of NER Grid through 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines ,132 kV Mustem-NEHU line & 132 kV NEIGRIHMS - NEHU line (132 kV Khliehriat-Lumnsnong line kept open for system requirement). At 13:42 Hrs on 30.07.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV Mustem-NEHU line & 132 kV NEIGRIHMS - NEHU line tripped. Due to tripping of these elements, Khleihriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.												
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2182 MW , Antecedent Load : 1797 MW)**											
	Root Cause	Fault likely on account of lightning.											
	Remedial Measures	MePTCL to inform the status of substation earthing.After completing S/S earthing,tower footing resistance to be measured.MePTCL to install Tower LA as these lines tripped many times due to lightning fault.											
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	**7/31/2016 12:00**	Khliehriat (PG)	DP, ZI, R-Y-B-E, 46.2 Kms.	Not Furnished	No	No	Loss of Load: 22	GD-I	7/31/2016 12:23	No SPS	0.001
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) - Khliehriat (MePTCL) II	MePTCL		Khliehriat (PG)	DP, ZI, R-Y-B-E, 26.4 Kms.	Not Furnished	No	No			7/31/2016 12:24	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Leshka - Khleihriat (ME) I	MePTCL		Leshka	DP, ZI, R-E	Not Furnished	No	No			7/31/2016 12:20	No SPS	
				Khliehriat (ME)	No tripping	Not Furnished	No	No					
	132 kV Leshka - Khleihriat (ME) II	MePTCL		Leshka	DP, ZI, R-E	Not Furnished	No	No			7/31/2016 12:13	No SPS	
				Khliehriat (ME)	Over current	Not Furnished	No	No					

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
28	132 kV NEIGRIHMS - Khliehriat (ME)	MePTCL		NEIGRIHMS	Earth Fault	Not Furnished	No	No			7/31/2016 12:12	No SPS	
				Khliehriat (ME)	No tripping	Not Furnished	No	No					
	132 kV Mustem-NEHU	MePTCL		Mustem	Earth Fault	Not Furnished	No	No			7/31/2016 12:05	No SPS	
				NEHU	No tripping	Not Furnished	No	No					
	Leshka U 1	MePGCL	7/31/2016 12:00	Leshka	Over Frequency	Not applicable	No	No	Loss of Generation: 126	GD-I	7/31/2016 13:33	No SPS	0.092
	Leshka U 2	MePGCL		Leshka	Over Frequency	Not applicable	No	No			7/31/2016 12:52	No SPS	
	Leshka U 3	MePGCL		Leshka	Over Frequency	Not applicable	No	No			7/31/2016 13:09	No SPS	
	FIR by the constituent	Yes(Meghalaya)											
	Brief Description of the Incident	Khliehriat area of Meghalaya was connected with rest of NER Grid through 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines ,132 kV Mustem-NEHU line & 132 kV NEIGRIHMS - Khliehriat (ME) line (132 kV Khliehriat-Lumnsnong line kept open for system requirement). At 12:08 Hrs on 31.07.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines ,132 kV Mustem-NEHU line & 132 kV NEIGRIHMS - Khliehriat (ME) line tripped. Due to tripping of these elements, Khleihriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.										
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2226 MW , Antecedent Load : 1750 MW)**											
	Root Cause	Fault likely on account of lightning. Fault was in 132 kV Leshka - Khleihriat (ME) D/C lines. This fault picked up by Khllt (PG) end.											
	Remedial Measures	MePTCL to inform the status of substation earthing.After completing S/S earthing,tower footing resistance to be measured.MePTCL to install Tower LA as these lines tripped many times due to lightning fault.											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
29	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	8/5/2016 21:06	Khliehriat (PG)	DP, ZI, R-Y-B-E, 20 Kms.	Not Furnished	No	No	Loss of Load: 43	GD-I	8/5/2016 21:33	No SPS	0.003
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, R-Y-B-E, 15.64 Kms.	Not Furnished	No	No			8/5/2016 21:37	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Leshka - Khleihriat (ME) I	MePTCL		Leshka	DP, ZI, R-Y-B-E	Not Furnished	No	No			8/5/2016 21:18	No SPS	
				Khliehriat (ME)	No tripping	Not Furnished	No	No					
	132 kV Leshka - Khleihriat (ME) II	MePTCL		Leshka	DP, ZI, R-Y-B-E	Not Furnished	No	No			8/5/2016 21:38	No SPS	
				Khliehriat (ME)	Tripped,Indications not available	Not Furnished	No	No					
	132 kV NEHU - NEIGRIHMS	MePTCL		NEHU	No tripping	Not Furnished	No	No			8/5/2016 21:11	No SPS	
				NEIGRIHMS	Tripped,Indications not available	Not Furnished	No	No					
	132 kV Mustem-NEHU	MePTCL		Mustem	DP, ZI, R-Y-B-E, 42.8 Kms.	Not Furnished	No	No			8/5/2016 21:10	No SPS	
				NEHU	No tripping	Not Furnished	No	No					

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Leshka U 2	MePGCL	8/5/2016 21:06	Leshka	Over frequency	Not applicable	No	No	Loss of Generation: 84	GD-I	8/5/2016 22:34	No SPS	0.067
	Leshka U 3	MePGCL		Leshka	Over frequency	Not applicable	No	No			8/5/2016 21:50	No SPS	
	FIR by the constituent	Yes(Meghalaya)											
	Brief Description of the Incident	Khliehriat area of Meghalaya was connected with rest of NER Grid through 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEHU - NEIGRIHMS line and 132 kV Mustem-NEHU line (132 kV Khliehriat-Lumnsnong line kept open for system requirement). At 21:06 Hrs on 05.08.16, 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEHU - NEIGRIHMS line and 132 kV Mustem-NEHU line tripped. Due to tripping of these elements, Khleihriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1943 MW , Antecedent Load : 2454 MW)**											
	Root Cause	Most of the tripping are due to lightning as informed by MePTCL but could not be confirmed due to DR unavalability.											
	Remedial Measures	33 kV yard earthing yet to get completed as informed by MePTCL.Spare Numerical relay will be installed in 132 kV Khliehriat - NEIGRIHMS line before 21st September'16 as informed. Earthing status to be informed, Tower footing resistance to be measured and patrolling report to be furnished by MePTCL.POWERGID to furnish DR output of Khliehriat(PG).											
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID		Khliehriat (PG)	DP, ZI, R-Y-E, 8.524 Kms.	Not Furnished	No	No			8/8/2016 10:02	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	NA	NA					
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, R-Y-E, 5.485 Kms.	Not Furnished	No	No			8/8/2016 10:03	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	NA	NA					

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
30	132 kV Mustem-NEHU	MePTCL	**8/8/2016 9:25**	Mustem	DP, ZI, R-Y-B-E, 20.79 Kms.	Not Furnished	No	No	Loss of Load: 16	GD-I	8/8/2016 9:28	No SPS	0.001
				NEHU	No tripping	Not applicable	NA	NA					
	132 kV NEHU - NEIGRIHMS	MePTCL		NEHU	Trip Relay Operated	Lockout	No	No			8/8/2016 9:38	No SPS	
				NEIGRIHMS	No tripping	Not applicable	NA	NA					
	132 kV Khandong - Khliehriat(PG) I	POWERGRID		Khandong	No tripping	Not Furnished	No	No			8/8/2016 9:43	No SPS	
				Khliehriat(PG)	Earth Fault	Not Furnished	NA	NA					
	Leshka U 1	MePGCL	**8/8/2016 9:25**	Leshka	Over Frequency	Not applicable	No	No	Loss of Generation: 42		8/8/2016 10:01	No SPS	0.025
	FIR by the constituent	Yes(Meghalaya)											
	Brief Description of the Incident	Khliehriat area of Meghalaya was connected with rest of NER Grid through 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEHU - NEIGRIHMS line and 132 kV Mustem-NEHU line (132 kV Khliehriat-Lumnsnong line kept open for system requirement). At 09:25 Hrs on 08.08.16, 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEHU - NEIGRIHMS line and 132 kV Mustem-NEHU line tripped. Due to tripping of these elements, Khleihriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1850 MW , Antecedent Load : 1627 MW)**											
	Root Cause	Most of the tripping are due to lightning as informed by MePTCL but could not be confirmed due to DR unavalability.											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Remedial Measures	33 kV yard earthing yet to get completed as informed by MePTCL.Spare Numerical relay will be installed in 132 kV Khliehriat - NEIGRIHMS line before 21st September'16 as informed. Earthing status to be informed, Tower footing resistance to be measured and patrolling report to be furnished by MePTCL.POWERGID to furnish DR output of Khliehriat(PG).											
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	**8/15/2016 1:26**	Khliehriat (PG)	DP, ZII, R-Y-B-E, 45.3 Kms.	Not applicable	No	No	Loss of Load: 15	GD-I	8/15/2016 2:39	No SPS	0.004
				Khliehriat(ME)	No tripping	Not applicable	No	No					
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZII, R-Y-B-E, 38.79 Kms.	Not applicable	No	No			8/15/2016 2:35	No SPS	
				Khliehriat(ME)	No tripping	Not applicable	No	No					
	132 kV Leshka - Khleihriat (ME) I	MePTCL	**8/15/2016 1:26**	Leshka	Earth fault	Not applicable	No	No		GD-I	8/15/2016 1:50	No SPS	0.004
				Khliehriat (ME)	No tripping	Not applicable	No	No					
	132 kV Leshka - Khleihriat (ME) II	MePTCL		Leshka	Earth fault	Not applicable	No	No			8/15/2016 1:50	No SPS	
				Khliehriat (ME)	Earth fault	Not applicable	No	No					
	132 kV Mustem-NEHU	MePTCL		Mustem	DP, 36 Kms.,Other inf. Not furnished	Not applicable	No	No			8/15/2016 1:45	No SPS	
				NEHU	No tripping	Not applicable	No	No					

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
31	132 kV NEIGRIHMS - Khliehriat (ME)	MePTCL		NEIGRIHMS	Earth fault	Not applicable	No	No			8/15/2016 1:42	No SPS	
				Khliehriat	No tripping	Not applicable	No	No					
	Leshka U 1	MePGCL	**8/15/2016 1:26**	Leshka	86A, 86B, 86FT	Not applicable	No	No	Loss of Generation: 126	GD-I	8/15/2016 2:43	No SPS	0.162
	Leshka U 2	MePGCL		Leshka		Not applicable	No	No			8/15/2016 2:44	No SPS	
	Leshka U 3	MePGCL		Leshka		Not applicable	No	No			8/15/2016 2:52	No SPS	
	FIR by the constituent	Yes(Meghalaya)											
	Brief Description of the Incident	Khliehriat area of Meghalaya was connected with rest of NER Grid through 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEIGRIHMS - Khliehriat (ME) line and 132 kV Mustem-NEHU line (132 kV Khliehriat-Lumnsnong line kept open for system requirement). At 01:26 Hrs on 15.08.16, 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEIGRIHMS - Khliehriat (ME) line and 132 kV Mustem-NEHU line tripped. Due to tripping of these elements, Khleihriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1820 MW , Antecedent Load : 1829 MW)**											
	Root Cause	Most of the tripping are due to lightning as informed by MePTCL but could not be confirmed due to DR unavalability.											
	Remedial Measures	33 kV yard earthing yet to get completed as informed by MePTCL.Spare Numerical relay will be installed in 132 kV Khliehriat - NEIGRIHMS line before 21st September'16 as informed. Earthing status to be informed, Tower footing resistance to be measured and patrolling report to be furnished by MePTCL.POWERGID to furnish DR output of Khliehriat(PG).											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	8/15/2016 3:19	Khliehriat (PG)	DP, ZI, R-Y-B-E, 1.9 Kms.	Not Furnished	No	No	Loss of Load: 26	GD-I	8/15/2016 4:29	No SPS	0.003
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, R-Y-B-E, 16.85 Kms.	Not Furnished	No	No			8/15/2016 11:13	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khandong - Khliehriat(PG) I	POWERGRID		Khandong	DP, ZI, R-Y-B-E, 3.22 Kms.	Not Furnished	No	No			8/15/2016 4:20	No SPS	
				Khliehriat(PG)	DP, ZI, R-Y-B	Not Furnished	No	No					
	132 kV Leshka - Khleihriat (ME) I	MePTCL		Leshka	DP, ZI, R-Y-B	Not applicable	No	No			8/15/2016 4:10	No SPS	0.003
				Khliehriat (ME)	No tripping	Not applicable	No	No					
	132 kV Leshka - Khleihriat (ME) II	MePTCL		Leshka	DP, ZI, R-Y-B	Not applicable	No	No			8/15/2016 4:10	No SPS	
				Khliehriat (ME)	No tripping	Not applicable	No	No					
	132 kV Mustem-NEHU	MePTCL		Mustem	DP, 32 Kms.,Other Inf. Not furnished	Not applicable	No	No			8/15/2016 3:29	No SPS	

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
32			8/15/2016 3:19	NEHU	No tripping	Not applicable	No	No		GD-I			
	132 kV NEHU - NEIGRIHMS	MePTCL		NEHU	Over Current	Not applicable	No	No			8/15/2016 3:32	No SPS	
				NEIGRIHMS	No tripping	Not applicable	No	No					
	Leshka U 1	MePGCL		Leshka	86A, 86B, 86FT	Not applicable	No	No	Loss of Generation: 126		8/15/2016 4:38	No SPS	0.166
	Leshka U 2	MePGCL				Not applicable	No	No			8/15/2016 4:53	No SPS	
	Leshka U 3	MePGCL				Not applicable	No	No			8/15/2016 6:35	No SPS	
	FIR by the constituent	Yes(Meghalaya)											
	Brief Description of the Incident	Khliehriat area of Meghalaya was connected with rest of NER Grid through 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEHU - NEIGRIHMS line and 132 kV Mustem-NEHU line (132 kV Khliehriat-Lumnsnong line kept open for system requirement). At 03:19 Hrs on 15.08.16, 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEHU - NEIGRIHMS line and 132 kV Mustem-NEHU line tripped. Due to tripping of these elements, Khleihriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1813 MW , Antecedent Load : 1750 MW)**											
	Root Cause	Due to lightning as informed by MePTCL.DR also checked.											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Remedial Measures	33 kV yard earthing yet to get completed as informed by MePTCL.Spare Numerical relay will be installed in 132 kV Khliehriat - NEIGRIHMS line before 21st September'16 as informed. Earthing status to be informed, Tower footing resistance to be measured and patrolling report to be furnished by MePTCL.											
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	**8/15/2016 23:51**	Khliehriat (PG)	DP, ZI, R-Y-E, 27.14 Kms.	Not Furnished	No	No	Loss of Load: 19	GD-I	8/16/2016 0:21	No SPS	0.003
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, R-Y-E, 88.53 Kms.	Not Furnished	No	No			8/16/2016 0:30	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Mustem-Khliehriat	MePTCL	**8/15/2016 23:51**	Mustem	No tripping	Not applicable	No	No			8/16/2016 0:03	No SPS	
				Khliehriat	Over Current	Not applicable	No	No					
	132 kV NEIGRIHMS - Khliehriat (ME)	MePTCL		NEIGRIHMS	Over Current	Not applicable	No	No			8/16/2016 0:08	No SPS	
				Khliehriat	No tripping	Not applicable	No	No					
	Leshka U 1	MePGCL	**8/15/2016 23:51**	Leshka	86A, 86B, 86FT	Not applicable	No	No	Loss of Generation: 126		8/16/2016 3:15	No SPS	0.077
	Leshka U 2	MePGCL		Leshka		Not applicable	No	No			Not Yet Restored	No SPS	

List of Grid Disturbances in North-Eastern Regional Grid during January 2016

क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Leshka U 3	MePGCL		Leshka		Not applicable	No	No			8/16/2016 0:28	No SPS	
	FIR by the constituent	Yes(Meghalaya)											
	Brief Description of the Incident	Khliehriat area of Meghalaya was connected with rest of NER Grid through 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEIGRIHMS - Khliehriat (ME) line and 132 kV Mustem-Khliehriat line (132 kV Khliehriat-Lumnsnong line kept open for system requirement). At 23:51 Hrs on 15.08.16, 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEIGRIHMS - Khliehriat (ME) line and 132 kV Mustem-Khliehriat line tripped. Due to tripping of these elements, Khleihriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2261 MW , Antecedent Load : 1964 MW)**											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2013 MW , Antecedent Load : 1530 MW)**											
	Root Cause	Most of the tripping are due to lightning as informed by MePTCL but could not be confirmed due to DR unavalability.											
	Remedial Measures	33 kV yard earthing yet to get completed as informed by MePTCL.Spare Numerical relay will be installed in 132 kV Khliehriat - NEIGRIHMS line before 21st September'16 as informed. Earthing status to be informed, Tower footing resistance to be measured and patrolling report to be furnished by MePTCL.POWERGID to furnish DR output of Khliehriat(PG).											
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	**8/18/2016 23:39**	Khliehriat (PG)	DP, ZI, Y-E, 110.3 Kms.	Not Furnished	No	No	Loss of Load: 25	GD-I	8/19/2016 0:08	No SPS	0.002
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) - MePTCL			Khliehriat (PG)	DP, ZI, Y-E, 36 Kms.	Not Furnished	No	No			8/19/2016 0:09	No SPS	

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Khliehriat (ME) II	MePTCL		Khliehriat(ME)	No tripping	Not Furnished	No	No			8/19/2016 0:03	No SPS	
33	132 kV Leshka - Khleihriat (ME) I	MePTCL	8/18/2016 23:39	Leshka	Earth fault	Not applicable	No	No		GD-I	8/18/2016 23:48	No SPS	0.002
				Khliehriat (ME)	No tripping	Not applicable	No	No					
	132 kV Leshka - Khleihriat (ME) II	MePTCL		Leshka	Earth fault	Not applicable	No	No			8/18/2016 23:48	No SPS	
				Khliehriat (ME)	No tripping	Not applicable	No	No					
	132 kV Mustem-NEHU	MePTCL		Mustem	Earth fault	Not applicable	No	No			8/18/2016 23:43	No SPS	
				NEHU	No tripping	Not applicable	No	No					
	132 kV NEIGRIHMS - Khliehriat (ME)	MePTCL		NEIGRIHMS	Over Current	Not applicable	No	No			8/18/2016 23:48	No SPS	
				Khliehriat	No tripping	Not applicable	No	No					
	Leshka U 1	MePGCL		Leshka	86A, 86B, 86FT & Over Frequency	Not applicable	No	No	Loss of Generation: 70		8/19/2016 0:14		0.041
	Leshka U 2	MePGCL		Leshka		Not applicable	No	No			8/19/2016 0:15		

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	FIR by the constituent	Yes(Meghalaya)											
	Brief Description of the Incident	Khliehriat area of Meghalaya was connected with rest of NER Grid through 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEIGRIHMS - Khliehriat (ME) line and 132 kV Mustem-NEHU line (132 kV Khliehriat-Lumnsnong line kept open for system requirement). At 23:39 Hrs on 18.08.16, 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEIGRIHMS - Khliehriat (ME) line and 132 kV Mustem-NEHU line tripped. Due to tripping of these elements, Khleihriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1971 MW , Antecedent Load : 2010 MW)**											
	Root Cause	Most of the tripping are due to lightning as informed by MePTCL but could not be confirmed due to DR unavalability.											
	Remedial Measures	33 kV yard earthing yet to get completed as informed by MePTCL.Spare Numerical relay will be installed in 132 kV Khliehriat - NEIGRIHMS line before 21st September'16 as informed. Earthing status to be informed, Tower footing resistance to be measured and patrolling report to be furnished by MePTCL.POWERGID to furnish DR output of Khliehriat(PG).											
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	**8/25/2016 9:23**	Khliehriat (PG)	DP, ZI, R-Y-E, 40.17 Kms.	Not Furnished	No	No	Loss of Load: 24	GD-I	8/25/2016 9:51	No SPS	0.003
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, R-Y-E, 73 Kms.	Not Furnished	No	No			8/25/2016 9:51	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV NEHU - NEIGRIHMS	MePTCL	**8/25/2016 9:23**	NEHU	DP,Other info. Not furnished	Not applicable	No	No	Loss of Load: 24	GD-I	8/25/2016 9:37	No SPS	0.003
				NEIGRIHMS	No tripping	Not applicable	No	No					
	132 kV Mustem-NEHU	MePTCL		Mustem	Earth Fault	Not applicable	No	No			8/25/2016 9:29	No SPS	

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
34	132 kV Mustem-NEHU	MePTCL		NEHU	No tripping	Not applicable	No	No			8/25/2016 9:29	No SPS	
	FIR by the constituent	Yes(Meghalaya)											
	Brief Description of the Incident	Khliehriat area(Mustem,NEIGRIHMS & Khliehriat) of Meghalaya was connected with rest of NER Grid through 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEIGRIHMS - NEHU line and 132 kV Mustem-NEHU line (132kV Lumshnong- Panchgram line was under Shutdown from 10:00 Hrs on 24.08.16). At 09:23 Hrs on 25.08.16, 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEIGRIHMS - NEHU line and 132 kV Mustem-NEHU line tripped. Due to tripping of these elements, Khleihriat area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.										
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1882 MW , Antecedent Load : 1955 MW)**											
	Root Cause	Most of the tripping are due to lightning as informed by MePTCL but could not be confirmed due to DR unavalability.											
	Remedial Measures	33 kV yard earthing yet to get completed as informed by MePTCL.Spare Numerical relay will be installed in 132 kV Khliehriat - NEIGRIHMS line before 21st September'16 as informed. Earthing status to be informed, Tower footing resistance to be measured and patrolling report to be furnished by MePTCL.POWERGID to furnish DR output of Khliehriat(PG).											
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	**8/25/2016 13:16**	Khliehriat (PG)	DP, ZI, R-Y-E, 61 Kms.	Not Furnished	No	No	Loss of Load: 10	GD-I	8/25/2016 13:34	No SPS	0.001
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, R-Y-E, 38 Kms.	Not Furnished	No	No			8/25/2016 13:35	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Mustem-NEHU	MePTCL		Mustem	Over current	Not applicable	No	No			8/25/2016 13:18	No SPS	
				NEHU	No tripping	Not applicable	No	No					

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
35	**FIR by the constituent**	Yes(Meghalaya)											
	Brief Description of the Incident	Khliehriat area (Mustem & Khliehriat) of Meghalaya was connected with rest of NER Grid through 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEIGRIHMS - NEHU line and 132 kV Mustem-NEHU line (132kV Lumshnong- Panchgram line was under Shutdown from 10:00 Hrs on 24.08.16). At 09:23 Hrs on 25.08.16, 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEIGRIHMS - NEHU line and 132 kV Mustem-NEHU line tripped. Due to tripping of these elements, Khleihriat area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1878 MW , Antecedent Load : 1989 MW)**											
	Root Cause	Most of the tripping are due to lightning as informed by MePTCL but could not be confirmed due to DR unavalability.											
	Remedial Measures	33 kV yard earthing yet to get completed as informed by MePTCL.Spare Numerical relay will be installed in 132 kV Khliehriat - NEIGRIHMS line before 21st September'16 as informed. Earthing status to be informed, Tower footing resistance to be measured and patrolling report to be furnished by MePTCL.POWERGID to furnish DR output of Khliehriat(PG).											
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	**8/28/2016 10:08**	Khliehriat (PG)	DP, ZI, B-E, 30.46 Kms.	Not Furnished	No	No	Loss of Load: 23	GD-I	8/28/2016 11:58	No SPS	0.002
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, B-E, 36.47 Kms.	Not Furnished	No	No			8/28/2016 12:03	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV NEHU - NEIGRIHMS	MePTCL	**8/28/2016 10:08**	NEHU	DP,Other info. Not furnished	Not Furnished	No	No	Loss of Load: 23	GD-I	8/28/2016 10:11	No SPS	0.002
				NEIGRIHMS	No tripping	Not Furnished	No	No					
	132 kV Mustem-NEHU	MePTCL		Mustem	Earth Fault	Not Furnished	No	No			8/28/2016 10:15	No SPS	

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
36	132 kV Mustem-NEHU	MePTCL		NEHU	No tripping	Not Furnished	No	No			8/28/2016 10:15	No SPS	
	Leshka U 1	MePGCL		Leshka	Not Furnished	Not applicable	No	No	Loss of Generation: 35		8/28/2016 12:20	No SPS	0.071
	FIR by the constituent	Yes(Meghalaya)											
	Brief Description of the Incident	Khliehriat area (Mustem,NEIGRIHMS,Lumshnong & Khliehriat) of Meghalaya was connected with rest of NER Grid through 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEIGRIHMS - NEHU line and 132 kV Mustem-NEHU line (132kV Lumshnong- Khliehriat line kept open for system requirement). At 10:08 Hrs on 28.08.16, 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEIGRIHMS - NEHU line and 132 kV Mustem-NEHU line tripped. Due to tripping of these elements, Khleihriat area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.										
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1901 MW , Antecedent Load : 1688 MW)**											
	Root Cause	Most of the tripping are due to lightning as informed by MePTCL but could not be confirmed due to DR unavalability.											
	Remedial Measures	33 kV yard earthing yet to get completed as informed by MePTCL.Spare Numerical relay will be installed in 132 kV Khliehriat - NEIGRIHMS line before 21st September'16 as informed. Earthing status to be informed, Tower footing resistance to be measured and patrolling report to be furnished by MePTCL.POWERGID to furnish DR output of Khliehriat(PG).											
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	**8/24/2016 15:45**	Khliehriat (PG)	DP, ZI, R-E, 10.75 Kms.	Not Furnished	No	No	Loss of Load: 8	GD-I	8/24/2016 16:01	No SPS	0.006
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, R-E, 7.435 Kms.	Not Furnished	No	No			8/24/2016 16:02	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khandong -	POWERGRID		Khandong	Over current	Not Furnished	No	No			8/24/2016 16:06	No SPS	

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
37	Khliehriat(PG) I	POWERGRID		Khliehriat(PG)	No tripping	Not Furnished	Yes	No			8/24/2016 16:06	No SPS	
	FIR by the constituent	Yes(Meghalaya)											
	Brief Description of the Incident	Khliehriat area (Mustem & Khliehriat) of Meghalaya was connected with rest of NER Grid through 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines. (132 kV Khliehriat-Lumnsnong line & 132 kV NEHU-Mustem line were kept open for system requirement and 132kV Khliehriat- NEIGRIHMS line was faulty since 12:23 Hrs of 23.08.16). At 15:45 Hrs on 24.08.16,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines tripped. Due to tripping of these elements, Khleihriat area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.										
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1782 MW , Antecedent Load : 1836 MW)**											
	Root Cause	Most of the tripping are due to lightning as informed by MePTCL but could not be confirmed due to DR unavalability.											
	Remedial Measures	33 kV yard earthing yet to get completed as informed by MePTCL.Spare Numerical relay will be installed in 132 kV Khliehriat - NEIGRIHMS line before 21st September'16 as informed. Earthing status to be informed, Tower footing resistance to be measured and patrolling report to be furnished by MePTCL.POWERGID to furnish DR output of Khliehriat(PG).											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
38	132 kV Lumshnong - Panchgram	MePTCL & AEGCL	**8/30/2016 11:10**	Lumshnong	DP, ZI, B-E, 34.37 Kms.	Not Furnished	No	No	Loss of Load: 7	GD-I	8/30/2016 18:55	No SPS	0.003
				Panchgram	DP, ZI, B-E, 16.4 Kms.	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Lumshnong area of Meghalaya was connected with rest of NER Grid through 132 kV Lumshnong - Panchgram line (132 kV Khliehriat-Lumnsnong line kept open for system requirement) . At 11:10 Hrs on 30.08.16, 132 kV Aizawl- Luangmual line tripped. Due to tripping of this element, Lumshnong area was separated from rest of NER Grid and subsequent collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : MW , Antecedent Load : MW)**											
	Root Cause	Fault in the line due to vegetation.											
	Remedial Measures	Vegetation clearance to be done by MePTCL & AEGCL.Patrolling report to be submitted and Status of vegetation clearance to be reported by MePTCL & AEGCL.											

List of Grid Disturbances in North-Eastern Regional Grid during January 2016													
क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
39	132 kV Badarpur - Kolasib	POWERGRID	**8/15/2016 1:15**	Badarpur	DP, ZII, R-B-E, 129.9 Kms.	Not applicable	Yes	No	Loss of Load: 7	GD-I	8/15/2016 1:34	No SPS	0.004
				Kolasib	No tripping	Not applicable	No	No					
	132 kV Aizwal - Kolasib	POWERGRID	**8/15/2016 1:15**	Aizawl	DP, ZII, R-B-E, 75.8 Kms.	Not applicable	No	No	Loss of Generation: 6		8/15/2016 1:42	No SPS	0.003
				Kolasib	No tripping	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Kolasib area of Mizoram was connected with rest of NER Grid through 132 kV Kolasib-Badarpur line & 132 kV Kolasib-Aizwal line. At 01:15 Hrs on 15.08.16, 132 kV Kolasib-Badarpur line & 132 kV Kolasib-Aizwal line tripped. Due to tripping of these elements, Kolasib area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1822 MW , Antecedent Load : 1850 MW)**											
	Root Cause	Due to fault in Kolasib downstream											
	Remedial Measures	Relay settings of Downstream stations to be furnished to POWERGRID by P&ED Mizoram. POWERGRID to review settings and suggests new settings to avoid tripping of in feeds to Mizoram.											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
40	132 kV Aizwal - Zuangtui	POWERGRID	**7/31/2016 5:45**	Aizawl	Over current	Not applicable	No	No	Loss of Load: 28	GD-I	7/31/2016 6:21	No SPS	0.022
				Zuangtui	Not Furnished	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Zuangtui area of Mizoram was connected with rest of NER Grid through 132 kV Aizawl- Zuangtui line. At 05:45 Hrs on 31.07.16 , 132 kV Aizawl- Zuangtui line tripped. Due to tripping of this element, Zuangtui area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2186 MW , Antecedent Load : 1632 MW)**											
	Root Cause	Likely due to phase -phase fault in downstream of Zuangtui											
	Remedial Measures	POWERGRID has already given the updated relay settings to Mizoram, which Mizoram is yet to implement (as on 28-Aug-16). Mizoram to implement soon.											
41	132 kV Aizwal - Zuangtui	POWERGRID	**7/31/2016 13:37**	Aizawl	Over current	Not applicable	No	No	Loss of Load: 28	GD-I	7/31/2016 14:06	No SPS	0.014
				Zuangtui	No tripping	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Zuangtui area of Mizoram was connected with rest of NER Grid through 132 kV Aizawl- Zuangtui line. At 13:37 Hrs on 31.07.16 , 132 kV Aizawl- Zuangtui line tripped. Due to tripping of this element, Zuangtui area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											

List of Grid Disturbances in North-Eastern Regional Grid during January 2016													
क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2235 MW , Antecedent Load : 1713 MW)**											
	Root Cause	Likely due to phase -phase fault in downstream of Zuangtui											
	Remedial Measures	POWERGRID has already given the updated relay settings to Mizoram, which Mizoram is yet to implement (as on 28-Aug-16). Mizoram to implement soon.											
42	132 kV Aizwal - Zuangtui	POWERGRID	**8/3/2016 8:40**	Aizawl	Over current	Not applicable	No	No	Loss of Load: 27	GD-I	8/3/2016 9:04	No SPS	0.01
				Zuangtui	Not Furnished	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Zuangtui area of Mizoram was connected with rest of NER Grid through 132 kV Aizawl- Zuangtui line. At 08:40 Hrs on 03.08.16, 132 kV Aizawl- Zuangtui line tripped. Due to tripping of this element, Zuangtui area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1957 MW , Antecedent Load : 1802 MW)**											
	Root Cause	Phase to phase downstream fault like earlier events. Likely due to far way nature of fault, distance protection could not operate.											
	Remedial Measures	Mizoram to implement relay settings suggested by POWERGRID.POWERGRID to use built-in over current feature in the Main Numerical relay instead of Electro Mechanical over current relay.											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
43	132 kV Doyang - Mokokchung(NA)	DoP Nagaland	**7/12/2016 2:14**	Doyang	Over current	Not applicable	No	No	Loss of Load: 23	GD-I	7/12/2016 2:52	No SPS	0.014
				Mokokchung(NA)	Over current	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Mokokchung area of Nagaland was connected with rest of NER Grid through 132 kV Doyang-Mokokchung (NA) line. (220 kV Mariani (PG)-Mokokchung (PG) I & II lines were out due to tower collapse at around 01:11 Hrs on 12.07.16, 132 kV Mokokchung(NA)-Marianai(AS) is under long outage & 66 kV Tuengsang-Likimro line kept open for system requirement). At 02:14 Hrs on 12.07.16, 132 kV Doyang-Mokokchung (NA) line tripped. Due to tripping of this element, Mokokchung area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.										
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1997 MW , Antecedent Load : 1827 MW)**											
	Root Cause	Likely due to phase -phase fault in downstream of Mokokchung end.											
	Remedial Measures	DoP Nagaland to check if their O/C relay at Mokokchung is directional or not.											
44	132 kV Doyang - Mokokchung(NA)	DoP Nagaland	**8/2/2016 12:20**	Doyang	DP, ZI, R-Y-E, 36.1 Kms.	Not Furnished	No	No	Loss of Load: 15	GD-I	8/2/2016 12:30	No SPS	0.003
				Mokokchung(NA)	Not Furnished	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Mokokchung area of Nagaland was connected with rest of NER Grid through 132 kV Doyang-Mokokchung (NA) line(220 kV Mokokchung(PG)-Marianai(PG) I & II lines were not in service due to tower collapse since 01:11 Hrs on 12.07.16, 132 kV Mokokchung(NA)-Marianai(AS) line is under long outage & 66 kV Tuengsang-Likimro line kept open for system requirement). At 12:20 Hrs on 02.08.16, 132 kV Doyang-Mokokchung (NA) line tripped. Due to tripping of this element, Mokokchung area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.										

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1997 MW , Antecedent Load : 1596MW)**												
	Root Cause	Fault in the line. Nature of the fault could not be concluded due to DR unavailability.												
	Remedial Measures	NEEPCO to change static relay to Numerical relay or install separate DR in Doyang HEP so that proper analysis can be done for disturbances associated with Doyang HEP. Patrolling report associated to this event to be submitted by DoP Nagaland.												

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
45	132 kV Dimapur (PG) - Dimapur (Nagaland) I	DoP Nagaland	**8/1/2016 10:12**	Dimapur (PG)	Earth Fault	Not applicable	No	No	Loss of Load: 49	GD-I	8/1/2016 10:35	No SPS	0.023
				Dimapur	Not Furnished	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Dimapur area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur (PG)-Dimapur (NA) I line(132 kV Dimapur (PG)-Dimapur (NA) II line is out since 18.04.16). At 10:12 Hrs on 01.08.16,132 kV Dimapur (PG)-Dimapur (NA) I line tripped. Due to tripping of this element, Dimapur area was separated from rest of NER Grid and subsequently collapsed due to no source in this area											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2097 MW , Antecedent Load : 1719 MW)**											
	Root Cause	Likely due to downstream vegetation fault											
	Remedial Measures	Circuit Breaker problem of Kohima feeder at Dimapur(PG) has been rectified. Normalization of 132 kV Dimapur (PG) - Dimapur (Nagaland) II line could not be done due to pending consent from DoP Nagaland.This issue to be discussed in next PCC. Downstream relay coordination to be done by DoP Nagaland. Relay settings of downstream stations to be submitted to POWERGRID by DoP Nagaland.Patrolling report to be submitted and Status of vegetation clearance to be reported by DoP Nagaland.											
46	132 kV Dimapur (PG) - Dimapur (Nagaland) I	DoP Nagaland	**8/11/2016 18:32**	Dimapur (PG)	Directional Over Current	Not applicable	No	No	Loss of Load: 52	GD-I	8/11/2016 18:45	No SPS	0.024
				Dimapur	Not Furnished	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Dimapur area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur (PG)-Dimapur (NA) I line(132 kV Dimapur (PG)-Dimapur (NA) II line is out since 18.04.16). At 18:32 Hrs on 11.08.16,132 kV Dimapur (PG)-Dimapur (NA) I line tripped. Due to tripping of this element, Dimapur area was separated from rest of NER Grid and subsequently collapsed due to no source in this area											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2185 MW , Antecedent Load : 2249 MW)**											
	Root Cause	Likely due to downstream vegetation fault											
	Remedial Measures	Circuit Breaker problem of Kohima feeder at Dimapur(PG) has been rectified. Normalization of 132 kV Dimapur (PG) - Dimapur (Nagaland) II line could not be done due to pending consent from DoP Nagaland.This issue to be discussed in next PCC. Downstream relay coordination to be done by DoP Nagaland. Relay settings of downstream stations to be submitted to POWERGRID by DoP Nagaland.Patrolling report to be submitted and Status of vegetation clearance to be reported by DoP Nagaland.											
47	132 kV Dimapur (PG) - Dimapur (Nagaland) I	DoP Nagaland	**8/15/2016 12:36**	Dimapur (PG)	Earth fault	Not applicable	No	No	Loss of Load: 54	GD-I	8/15/2016 15:14	No SPS	0.148
				Dimapur	Not Furnished	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Dimapur area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur (PG)-Dimapur (NA) I line(132 kV Dimapur (PG)-Dimapur (NA) II line is out since 18.04.16). At 12:36 Hrs on 15.08.16,132 kV Dimapur (PG)-Dimapur (NA) I line tripped. Due to tripping of this element, Dimapur area was separated from rest of NER Grid and subsequently collapsed due to no source in this area											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1945 MW , Antecedent Load : 1552 MW)**											
	Root Cause	Likely due to downstream vegetation fault											
	Remedial Measures	Circuit Breaker problem of Kohima feeder at Dimapur(PG) has been rectified. Normalization of 132 kV Dimapur (PG) - Dimapur (Nagaland) II line could not be done due to pending consent from DoP Nagaland.This issue to be discussed in next PCC. Downstream relay coordination to be done by DoP Nagaland. Relay settings of downstream stations to be submitted to POWERGRID by DoP Nagaland.Patrolling report to be submitted and Status of vegetation clearance to be reported by DoP Nagaland.											
				Dimapur (PG)	Earth fault	Not applicable	No	No					

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
48	132 kV Dimapur (PG) - Dimapur (Nagaland) I	DoP Nagaland	**8/15/2016 15:29**	Dimapur	B-Phase jumper snapped,No indication	Not applicable	No	No	Loss of Load: 63	GD-I	8/15/2016 17:26	No SPS	0.129
	FIR by the constituent	No											
	Brief Description of the Incident	Dimapur area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur (PG)-Dimapur (NA) I line(132 kV Dimapur (PG)-Dimapur (NA) II line is out since 18.04.16). At 15:29 Hrs on 15.08.16, 132 kV Dimapur (PG)-Dimapur (NA) I line tripped. Due to tripping of this element, Dimapur area was separated from rest of NER Grid and subsequently collapsed due tono source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1883 MW , Antecedent Load : 1661 MW)**											
	Root Cause	Likely due to jumper snapping											
	Remedial Measures	Circuit Breaker problem of Kohima feeder at Dimapur(PG) has been rectified. Normalization of 132 kV Dimapur (PG) - Dimapur (Nagaland) II line could not be done due to pending consent from DoP Nagaland.This issue to be discussed in next PCC. Downstream relay coordination to be done by DoP Nagaland. Relay settings of downstream stations to be submitted to POWERGRID by DoP Nagaland.											
49	132 kV Dimapur (PG) - Dimapur (Nagaland) I	DoP Nagaland	**8/25/2016 15:50**	Dimapur (PG)	Earth Fault	Not applicable	No	No	Loss of Load: 46	GD-I	8/25/2016 16:00	No SPS	0.038
				Dimapur	No tripping	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Dimapur area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur (PG)-Dimapur (NA) I line(132 kV Dimapur (PG)-Dimapur (NA) II line is out since 18.04.16). At 15:50 Hrs on 25.08.16,132 kV Dimapur (PG)-Dimapur (NA) I line tripped. Due to tripping of this element, Dimapur area was separated from rest of NER Grid and subsequently collapsed due to no source in this area											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1786 MW , Antecedent Load : 1660 MW)**											
	Root Cause	Likely due to vegetation fault in the line or downstream of Kohima											
	Remedial Measures	POWERGRID to co-ordinate settings of 132 kV Dimapur with downstream level. Settings already exchanged with Nagaland as informed by POWERGRID. Vegetation clearance to be done by DoP Nagaland.											
50	132 kV Dimapur (PG) - Dimapur (Nagaland) I	DoP Nagaland	**8/31/2016 15:55**	Dimapur (PG)	Earth Fault	Not applicable	No	No	Loss of Load: 57	GD-I	8/31/2016 16:14	No SPS	0.025
				Dimapur	No tripping	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Dimapur area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur (PG)-Dimapur (NA) I line(132 kV Dimapur (PG)-Dimapur (NA) II line is out since 18.04.16). At 15:55 Hrs on 31.08.16,132 kV Dimapur (PG)-Dimapur (NA) I line tripped. Due to tripping of this element, Dimapur area was separated from rest of NER Grid and subsequently collapsed due to no source in this area											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : MW , Antecedent Load : MW)**											
	Root Cause	Likely due to vegetation fault in the line or downstream of Kohima											
	Remedial Measures	POWERGRID to co-ordinate settings of 132 kV Dimapur with downstream level. Settings already exchanged with Nagaland as informed by POWERGRID. Vegetation clearance to be done by DoP Nagaland.											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
51	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	**7/12/2016 12:17**	Dimapur (PG)	DP, ZI, B-E	Not Furnished	No	No	Loss of Load: 24 Generation Loss: 24	GD-I	7/12/2016 12:30	No SPS	0.018
				Kohima	No tripping	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Capital area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima line (132 kV Kohima-Karong line & 66 kV Tuensang-Likimro line kept open for system requirement). At 12:17 Hrs on 12.07.16, 132 kV Dimapur(PG)-Kohima line tripped. Due to tripping of this element, Capital area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1946 MW , Antecedent Load : 1801 MW)**											
	Root Cause	Likely due to vegetation problem in the line											
	Remedial Measures	POWERGRID to co-ordinate settings of 132 kV Dimapur with downstream level. Settings already exchanged with Nagaland as informed by POWERGRID. Vegetation clearance to be done by POWERGRID & DoP Nagaland.											
52	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	**7/13/2016 13:27**	Dimapur (PG)	General Trip	Not Furnished	No	No	Loss of Load: 18 Generation Loss: 24	GD-I	7/13/2016 14:22	No SPS	0.047
				Kohima	Not Furnished	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Capital area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima line (132 kV Kohima-Karong line & 66 kV Tuensang-Likimro line kept open for system requirement). At 13:27 Hrs on 13.07.16, 132 kV Dimapur(PG)-Kohima line tripped. Due to tripping of this element, Capital area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2006 MW , Antecedent Load : 1859 MW)**											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Root Cause	Relay indication from both end is required to analyze this event.											
	Remedial Measures	Relay indication from Dimapur end and Kohima end to be furnished by POWERGRID and DoP Nagaland respectively.POWERGRID to elaborate on General Trip.											
53	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	**7/26/2016 14:17**	Dimapur (PG)	DP, ZI, R-E	Not Furnished	No	No	Loss of Load: 18& Loss of Generation: 21	GD-I	7/26/2016 14:37	No SPS	0.006
				Kohima	Tripped	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Capital area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima line (132 kV Kohima-Karong line & 66 kV Tuensang-Likimro line kept open for system requirement). At 14:17 Hrs on 26.07.16, 132 kV Dimapur(PG)-Kohima line tripped. Due to tripping of this element, Capital area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2190 MW , Antecedent Load : 1488 MW)**											
	Root Cause	Likely due to vegetation problem in the line											
	Remedial Measures	POWERGRID to co-ordinate settings of 132 kV Dimapur with downstream level. Settings already exchanged with Nagaland as informed by POWERGRID. Vegetation clearance to be done by POWERGRID & DoP Nagaland.											
	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	**7/30/2016 14:45**	Dimapur (PG)	Over current	Not applicable	No	No	Loss of Load: 21& Loss of Generation: 8	GD-I	7/30/2016 14:55	No SPS	0.003
				Kohima	No tripping	Not applicable	No	No					

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
54	**FIR by the constituent**	No											
	Brief Description of the Incident	Capital area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima line (132 kV Kohima-Karong line & 66 kV Tuensang-Likimro line kept open for system requirement). At 14:45 Hrs on 30.07.16, 132 kV Dimapur(PG)-Kohima line tripped. Due to tripping of this element, Capital area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2185 MW , Antecedent Load : 1860 MW)**											
	Root Cause	Likely due to Phase to phase fault in the line or downstream of Kohima											
	Remedial Measures	POWERGRID to co-ordinate settings of 132 kV Dimapur with downstream level. Settings already exchanged with Nagaland as informed by POWERGRID.											
55	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	**8/3/2016 16:58**	Dimapur (PG)	Not Furnished	Not Furnished	No	No	Loss of Load: 20& Loss of Generation: 18	GD-I	8/3/2016 18:10	No SPS	0.024
				Kohima	Tripped	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Capital area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima line (132 kV Kohima-Karong line & 66 kV Tuensang-Likimro line kept open for system requirement). At 16:58 Hrs on 03.08.16,132 kV Dimapur(PG)-Kohima line tripped. Due to tripping of this element, Capital area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1976 MW , Antecedent Load : 1967 MW)**											
	Root Cause	Fault was in 132 kV Dimapur - Imphal line due to Y-phase insulator puncturing at location no. 522.Distance protection operated at Dimapur(PG) looking at reverse zone.											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Remedial Measures	Distance Relay mal operation at Dimapur(PG),to be checked by POWERGRID											
56	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	**8/8/2016 14:36**	Dimapur (PG)	DP, ZI, B-E, Distance not available	Not Furnished	No	No	Loss of Load: 20& Loss of Generation: 21	GD-I	8/8/2016 14:56	No SPS	0.01
				Kohima	No tripping	Not Furnished	NA	NA					
	FIR by the constituent	No											
	Brief Description of the Incident	Capital area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima line (132 kV Kohima-Karong line & 66 kV Tuensang-Likimro line kept open for system requirement). At 14:36 Hrs on 08.08.16, 132 kV Dimapur(PG)-Kohima line tripped. Due to tripping of this element, Capital area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1854 MW , Antecedent Load : 1906 MW)**											
	Root Cause	Likely due to vegetation problem in the line											
	Remedial Measures	POWERGRID to co-ordinate settings of 132 kV Dimapur with downstream level. Settings already exchanged with Nagaland as informed by POWERGRID. Vegetation clearance to be done by POWERGRID & DoP Nagaland.Patrolling report to be submitted and Status of vegetation clearance to be reported by DoP Nagaland.											
57	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	**8/11/2016 11:58**	Dimapur (PG)	Over Current	Not Furnished	No	No	Loss of Load: 16& Loss of Generation: 24	GD-I	8/11/2016 12:05	No SPS	0.005
				Kohima	No tripping	Not Furnished	NA	NA					

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	FIR by the constituent	No											
	Brief Description of the Incident	Capital area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima line (132 kV Kohima-Karong line & 66 kV Tuensang-Likimro line kept open for system requirement). At 11:58 Hrs on 11.08.16, 132 kV Dimapur(PG)-Kohima line tripped. Due to tripping of this element, Capital area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1939 MW , Antecedent Load : 1823 MW)**											
	Root Cause	Likely due to Phase to phase fault in the line or downstream of Kohima											
	Remedial Measures	POWERGRID to co-ordinate settings of 132 kV Dimapur with downstream level. Settings already exchanged with Nagaland as informed by POWERGRID.											
58	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	**8/15/2016 15:29**	Dimapur (PG)	General Trip	Not applicable	No	No	Loss of Load: 23 & Loss of Generation: 24		8/15/2016 15:41	No SPS	0.004
				Kohima	No tripping	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Capital area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima line (132 kV Kohima-Karong line & 66 kV Tuensang-Likimro line kept open for system requirement). At 15:29 Hrs on 15.08.16, 132 kV Dimapur(PG)-Kohima line tripped. Due to tripping of this element, Capital area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1883 MW , Antecedent Load : 1661 MW)**											

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क्रम संख्या/ Sl. No.	**बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description**	**मालिक / Owner**	**दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator**	**नोड के नाम / Name of Node**	**सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator**	**ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose**	**24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)**	**24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)**	**प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)**	**श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards**	**सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator**	**एसपीएस संचालन के विवरण / Details of SPS Operation**	**एमयू में हानि/ Loss in MU**
	Root Cause	Relay indication from Dimapur(PG) is required to analyze this event.											
	Remedial Measures	Relay indication from Dimapur end to be furnished by POWERGRID.POWERGRID to elaborate on General Trip.											
59	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	**8/16/2016 10:50**	Dimapur (PG)	Over current	Not applicable	No	No	Loss of Load: 15& Loss of Generation: 24	GD-I	8/16/2016 10:55	No SPS	0.001
				Kohima	No tripping	Not applicable	No	No					
	FIR by the constituent	Yes(Nagaland)											
	Brief Description of the Incident	Capital area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima line (132 kV Kohima-Karong line & 66 kV Tuensang-Likimro line kept open for system requirement). At 10:50 Hrs on 16.08.16, 132 kV Dimapur(PG)-Kohima line tripped. Due to tripping of this element, Capital area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2013 MW , Antecedent Load : 1530 MW)**											
	Root Cause	Likely due to Phase to phase fault in the line or downstream of Kohima											
	Remedial Measures	POWERGRID to co-ordinate settings of 132 kV Dimapur with downstream level. Settings already exchanged with Nagaland as informed by POWERGRID.											
60	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	**8/16/2016 14:19**	Dimapur (PG)	Over current	Not applicable	No	No	Loss of Load: 13	GD-I	8/16/2016 14:23	No SPS	0.002
				Kohima	No tripping	Not applicable	No	No					
	FIR by the constituent	Yes(Nagaland)											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Brief Description of the Incident	Capital area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima line (132 kV Kohima-Karong line & 66 kV Tuensang-Likimro line kept open for system requirement). At 14:19 Hrs on 16.08.16, 132 kV Dimapur(PG)-Kohima line tripped. Due to tripping of this element, Capital area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2014 MW , Antecedent Load : 1711 MW)**											
	Root Cause	Likely due to Phase to phase fault in the line or downstream of Kohima											
	Remedial Measures	POWERGRID to co-ordinate settings of 132 kV Dimapur with downstream level. Settings already exchanged with Nagaland as informed by POWERGRID.											
61	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	**8/16/2016 16:59**	Dimapur (PG)	Over current	Not applicable	No	No	Loss of Load: 21& Loss of Generation: 24	GD-I	8/16/2016 17:33	No SPS	0.013
				Kohima	No tripping	Not applicable	No	No					
	FIR by the constituent	Yes(Nagaland)											
	Brief Description of the Incident	Capital area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima line (132 kV Kohima-Karong line & 66 kV Tuensang-Likimro line kept open for system requirement). At 16:59 Hrs on 16.08.16, 132 kV Dimapur(PG)-Kohima line tripped. Due to tripping of this element, Capital area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2013 MW , Antecedent Load : 1839 MW)**											
	Root Cause	Likely due to Phase to phase fault in the line or downstream of Kohima											
	Remedial Measures	POWERGRID to co-ordinate settings of 132 kV Dimapur with downstream level. Settings already exchanged with Nagaland as informed by POWERGRID.											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
62	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	**8/17/2016 7:37**	Dimapur (PG)	Over current	Not applicable	No	No	Loss of Load: 20& Loss of Generation: 24	GD-I	8/17/2016 7:48	No SPS	0.005
				Kohima	No tripping	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Capital area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima line (132 kV Kohima-Karong line & 66 kV Tuensang-Likimro line kept open for system requirement). At 07:37 Hrs on 17.08.16, 132 kV Dimapur(PG)-Kohima line tripped. Due to tripping of this element, Capital area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2025 MW , Antecedent Load : 1909 MW)**											
	Root Cause	Likely due to Phase to phase fault in the line or downstream of Kohima											
	Remedial Measures	POWERGRID to co-ordinate settings of 132 kV Dimapur with downstream level. Settings already exchanged with Nagaland as informed by POWERGRID.											
63	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	**8/19/2016 9:55**	Dimapur (PG)	Earth fault	Not applicable	No	No	Loss of Load: 16& Loss of Generation: 24	GD-I	8/19/2016 10:02	No SPS	0.002
				Kohima	Earth fault	Not applicable	No	No					
	FIR by the constituent	Yes(Nagaland)											
	Brief Description of the Incident	Capital area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima line (132 kV Kohima-Karong line & 66 kV Tuensang-Likimro line kept open for system requirement). At 09:55 Hrs on 19.08.16, 132 kV Dimapur(PG)-Kohima line tripped. Due to tripping of this element, Capital area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1888 MW , Antecedent Load : 1731 MW)**											
	Root Cause	Likely due to vegetation fault in downstream of Kohima(fault in 132 kV Kohima-- Kiphire line)											
	Remedial Measures	POWERGRID to co-ordinate settings of 132 kV Dimapur with downstream level. Settings already exchanged with Nagaland as informed by POWERGRID. Patrolling report to be submitted and Status of vegetation clearance to be reported by DoP Nagaland.											
64	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	**8/21/2016 11:33**	Dimapur (PG)	Earth fault	Not applicable	No	No	Loss of Load: 14& Loss of Generation: 8	GD-I	8/21/2016 11:53	No SPS	0.006
				Kohima	Earth fault	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Capital area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima line (132 kV Kohima-Karong line & 66 kV Tuensang-Likimro line kept open for system requirement). At 11:33 Hrs on 21.08.16, 132 kV Dimapur(PG)-Kohima line tripped. Due to tripping of this element, Capital area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1945 MW , Antecedent Load : 1639 MW)**											
	Root Cause	Likely due to vegetation fault in downstream of Kohima											
	Remedial Measures	POWERGRID to co-ordinate settings of 132 kV Dimapur with downstream level. Settings already exchanged with Nagaland as informed by POWERGRID. Patrolling report to be submitted and Status of vegetation clearance to be reported by DoP Nagaland.											
65	132 kV Dimapur (PG) -	POWERGRID		Dimapur (PG)	Earth fault	Not applicable	No	No	Loss of Load:				

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
65	Kohima	& DoP Nagaland	**8/21/2016 12:25**	Kohima	Earth fault	Not applicable	No	No	13& Loss of Generation: 8	GD-I	8/21/2016 12:33	No SPS	0.003
	FIR by the constituent	No											
	Brief Description of the Incident	Capital area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima line (132 kV Kohima-Karong line & 66 kV Tuensang-Likimro line kept open for system requirement). At 12:25 Hrs on 21.08.16, 132 kV Dimapur(PG)-Kohima line tripped. Due to tripping of this element, Capital area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1939 MW , Antecedent Load : 1704 MW)**											
	Root Cause	Likely due to vegetation fault in downstream of Kohima											
	Remedial Measures	POWERGRID to co-ordinate settings of 132 kV Dimapur with downstream level. Settings already exchanged with Nagaland as informed by POWERGRID. Patrolling report to be submitted and Status of vegetation clearance to be reported by DoP Nagaland.											
66	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	**8/25/2016 14:40**	Dimapur (PG)	Earth Fault	Not applicable	Yes	No	Loss of Load: 17	GD-I	8/25/2016 14:55	No SPS	0.011
				Kohima	No tripping	Not applicable	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Capital area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima line (132 kV Kohima-Karong line & 66 kV Tuensang-Likimro line kept open for system requirement). At 14:40 Hrs on 25.08.16, 132 kV Dimapur(PG)-Kohima line tripped. Due to tripping of this element, Capital area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1884 MW , Antecedent Load : 2040 MW)**											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Root Cause	Likely due to vegetation fault in downstream of Kohima											
	Remedial Measures	POWERGRID to co-ordinate settings of 132 kV Dimapur with downstream level. Settings already exchanged with Nagaland as informed by POWERGRID. Patrolling report to be submitted and Status of vegetation clearance to be reported by DoP Nagaland.											
67	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	**8/25/2016 15:40**	Dimapur (PG)	DP, ZI, B-E	Not Furnished	No	No	Loss of Load: 12	GD-I	8/25/2016 16:05	No SPS	0.005
				Kohima	No tripping	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Capital area of Nagaland was connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima line (132 kV Kohima-Karong line & 66 kV Tuensang-Likimro line kept open for system requirement). At 15:40 Hrs on 25.08.16, 132 kV Dimapur(PG)-Kohima line tripped. Due to tripping of this element, Capital area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1909 MW , Antecedent Load : 1910 MW)**											
	Root Cause	Likely due to vegetation problem in the line											
	Remedial Measures	POWERGRID to co-ordinate settings of 132 kV Dimapur with downstream level. Settings already exchanged with Nagaland as informed by POWERGRID. Vegetation clearance to be done by POWERGRID & DoP Nagaland.											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
68	132 kV AGTPP - Kumarghat	POWERGRID	**8/31/2016 7:50**	AGTPP	DP, ZI, Y-B-E, 72.85 Kms.	Not Furnished	No	No	Loss of Load: 23& Loss of Generation: 20	GD-I	8/31/2016 14:46	SPS-6 operated	
				Kumarghat	DP, ZI, Y-B-E, 24.1 Kms.	Not Furnished	No	No					
	AGTPP U 3	NEEPCO	**8/31/2016 7:50**	AGTPP	SPS-6 operated	Not applicable	No	No			8/31/2016 9:02	SPS-6 operated	
	FIR by the constituent	Yes(Tripura,AGTPP)											
	Brief Description of the Incident	Tripura system along with AGTPP system was connected with rest of NER Grid through 132 kV AGTPP – Kumarghat line (132 KV PK Bari – Dharmanagar line, 132 P K Bari-Kumarghat line and 132 KV Agarthala- Dhalabil line kept open for system requirement and 132 KV Agartala- Budhjung Nagar I & II lines, 132 KV Palatana-Udaipur line, 132 KV Surjamani Nagar- Budhjung Nagar I & II lines, 132 KV Surjamani Nagar - Agartala I & II lines were out of service). At 07:51 Hrs on 31.08.16, 132 kV AGTPP – Kumarghat line tripped. Due to tripping of this element, Tripura system along with AGTPP system was separated from rest of NER Grid.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : MW , Antecedent Load : MW)**											
	Root Cause	Likely due to lightning fault but yet to conclude due to absence of DR output. Kumarghat(PG) could not submit DR output due to some software issue as informed by POWERGRID.											
	Remedial Measures	DR to be furnished by POWERGRID and NEEPCO for detailed analysis.											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
69	220 kV Kopili - Misa I	POWERGRID	7/7/2016 13:46	Kopili	DP, ZI, B-E,28.6 Kms.	Not Furnished	Yes	No	Loss of Load: 0	GD-II	7/7/2016 15:00	No SPS	-
				Misa	DP, ZI, R-Y-B-E,62 Kms.	Not Furnished	No	No					
	220 kV Kopili - Misa II	POWERGRID		Kopili	Directional Over current	Not Furnished	Yes	No			7/7/2016 14:02	No SPS	
				Misa	No tripping	Not Furnished	No	No					
	132 kV Khandong - Khliehriat(PG) I	POWERGRID		Khandong	Over current	Not applicable	Yes	No			7/7/2016 14:43	No SPS	
				Khliehriat(PG)	No tripping	Not applicable	No	No					
	132 kV Khandong - Khliehriat(PG) II	POWERGRID	7/7/2016 13:46	Khandong	Over current	Not applicable	Yes	No			7/7/2016 14:43	No SPS	
				Khliehriat(PG)	No tripping	Not applicable	No	No					
	132 kV Khandong - Umrangso	POWERGRID & AEGCL		Khandong	Over current	Not applicable	Yes	No			7/7/2016 14:44	No SPS	
				Umrangso	No tripping	Not applicable	No	No					
	Kopili U 1	NEEPCO		Kopili	Excitation failure	Not applicable	Yes	No	Loss of Generation: 257		7/7/2016 15:51	No SPS	0.248
	Kopili U 2	NEEPCO		Kopili	Excitation failure	Not applicable	Yes	No			7/7/2016 16:57	No SPS	
	Kopili U 3	NEEPCO		Kopili	Excitation failure	Not applicable	No	No			7/7/2016 14:47	No SPS	
	Kopili U 4	NEEPCO		Kopili	Excitation failure	Not applicable	No	No			7/7/2016 14:44	No SPS	
	Khandong U 1	NEEPCO		Khandong	Excitation failure	Not applicable	Yes	No			7/7/2016 15:02	No SPS	

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
	Khandong U 2	NEEPCO		Khandong	Excitation failure	Not applicable	Yes	No			7/7/2016 15:25	No SPS	
	Kopili Stg II	NEEPCO		Khandong	Excitation failure	Not applicable	Yes	No			7/7/2016 15:50	No SPS	
	FIR by the constituent	Yes (Khandong,Kopili)											
	Brief Description of the Incident	Kopili & Khandong Power Station were connected with rest of NER Grid through 220 kV Kopili - Misa I & II lines,132 kV Khandong - Khliehriat(PG) I&II lines and 132 kV Khandong - Umrangso line (220 kV Kopili - Misa III line was under shutdown since 00:15 Hrs of 27.05.2016 due to CB problem at Kopili) . At 13:46 Hrs on 07.07.16, 220 kV Kopili - Misa I&II lines,132 kV Khandong - Khliehriat(PG) I&II lines and 132 kV Khandong - Umrangso line tripped. Due to evacuation problem, Kopili & Khandong Power Station were blacked out.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2012 MW , Antecedent Load : 1730 MW)**											
	Root Cause	Fault due to vegetation was in Misa-Kopili Ckt-1. This fault was cleared, line even reclosed successfully and Normal power flow resumed (concluded after analyzing DR outputs) But, the Line-2 tripped on Overcurrent at Kopili end (though current was only 320 A) and this needs to be rectified. Fault current observed from DR was about 2.45 kA.											
	Remedial Measures	Over Current setting to be rectified till Main-II Distance Protection is installed. The Over Current feature is best to be replaced with Distance Protection relay.											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सीआर ऑपरेटर द्वारा प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिले संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर डी.आर. पेश किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एल. पेश किया (हां / नहीं) / EL output furnished within 24 hours (Y/N)	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए ग्रिड मानकों के अनुसार / Category as per CEA Grid Standards	सीआर ऑपरेटर द्वारा प्रदान की तिथि और समय या बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
70	132 kV Dimapur - Doyang I	POWERGRID	**7/27/2016 10:55**	Dimapur	DP, ZI, B-E, 27.08 Kms.	Not Furnished	Yes	Yes	Loss of Load: 12	GD-I	7/27/2016 11:33	No SPS	0.007
				Doyang	Not Furnished	Not Furnished	No	No					
	132 kV Dimapur - Doyang II	POWERGRID		Dimapur	Back Up Earth Fault	Not Furnished	No	No			7/27/2016 11:45	No SPS	
				Doyang	Not Furnished	Not Furnished	No	No					
	132 kV Doyang - Mokokchung(NA)	DoP Nagaland		Doyang	Not Furnished	Not Furnished	No	No			7/27/2016 11:41	No SPS	
				Mokokchung(NA)	Tripped	Not Furnished	No	No					
	Doyang U 1	NEEPCO	**7/27/2016 10:55**	Doyang	Due to tripping of evacuation lines	Not applicable	No	No	Loss of Generation: 68	GD-I	7/27/2016 11:55	No SPS	0.059
	Doyang U 2	NEEPCO	**7/27/2016 10:55**	Doyang		Not applicable	No	No			7/27/2016 11:47	No SPS	
	Doyang U 3	NEEPCO	**7/27/2016 10:55**	Doyang		Not applicable	No	No			7/27/2016 12:10	No SPS	
	FIR by the constituent	No											
	Brief Description of the Incident	Mokokchung area of Nagaland and Doyang System were connected with rest of NER Grid through 132 kV Doyang- Dimapur I & II lines & 132 kV Doyang-Mokokchung(NA) line. (220 kV Mokokchung(PG)-Marianai(PG) I & II lines were not in service due to tower collapse since 01:11 Hrs on 12.07.16, 132 kV Mokokchung(NA)-Marianai(AS) line is under long outage & 66 kV Tuengsang-Likimro line kept open for system requirement). At 10:55 Hrs on 27.07.16 , 132 kV Doyang- Dimapur I & II lines & 132 kV Doyang-Mokokchung(NA) line tripped.Due to tripping of these elements, Mokokchung area of Nagaland and Doyang System were separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 2224 MW , Antecedent Load : 1830 MW)**											

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	Root Cause	Vegetation problem caused fault on 132 kV Dimapur - Doyang I. Probably fault was not cleared or cleared after a delay from Doyang end, which caused tripping of circuit II from Dimapur end.											
	Remedial Measures	NEEPCO to intimate further details like whether CB tripped or not, if tripped reason for delayed clearance, characteristics of Earth fault relay - IDMT/Standard Inverse ect..											
71	132 kV Dimapur - Doyang I	POWERGRID	**8/15/2016 6:04**	Dimapur	DP, ZI, R-B-E, 52.9 Kms.	Not Furnished	No	No	Loss of Generation: 72	GD-I	8/15/2016 6:38	No SPS	0.055
				Doyang	DP, Other informations not furnished	Not Furnished	No	No					
	132 kV Dimapur - Doyang II	POWERGRID		Dimapur	DP, ZI, R-B-E, 46.25 Kms.	Not Furnished	No	No			8/15/2016 6:40	No SPS	
				Doyang	DP, Other informations not furnished	Not Furnished	No	No					
	132 kV Doyang - Mokokchung(NA)	DoP Nagaland	**8/15/2016 6:05**	Doyang	Over current	Not applicable	No	No			8/15/2016 6:39	No SPS	
				Mokokchung(NA)	Not Furnished	Not applicable	No	No					
	Doyang U 1	NEEPCO	**8/15/2016 6:05**	Doyang	Elect/ Non-Elect. Lockout 86 I	Not applicable	No	No			8/15/2016 6:51	No SPS	
	Doyang U 2	NEEPCO	**8/15/2016 6:05**	Doyang		Not applicable	No	No			8/15/2016 6:53	No SPS	
	Doyang U 3	NEEPCO	**8/15/2016 6:05**	Doyang	Over Speed	Not applicable	No	No			8/15/2016 6:53	No SPS	
	FIR by the constituent	No											

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	Brief Description of the Incident	Doyang Power Station was connected with rest of NER Grid through 132 kV Doyang- Dimapur I & II lines & 132 kV Doyang-Mokokchung(NA) line. At 06:05 Hrs on 15.08.16 , 132 kV Doyang-Mokokchung(NA) line tripped (132 kV Doyang- Dimapur I & II lines tripped at 06:04 Hrs on 15.08.16). Due to evacuation problem, Doyang Power Station was blacked out.											
	Antecedent Conditions of NER Grid	**(Antecedent Generation : 1951 MW , Antecedent Load : 1707 MW)**											
	Root Cause	Fault was in 132 kV Dimapur - Doyang II line due to B-N lightning fault as concluded from DR output.Reason for tripping of other lines to be investigated.											
	Remedial Measures	Distance Protection Relay time settings to be checked at Doyang end and complete relay flag details to be furnished by NEEPCO.											