

North Eastern Regional Power Committee

Agenda

For

43rd PCC Sub-Committee Meeting

Time of meeting : 10:00 Hrs.

Date of meeting : 13th July, 2016 (Wednesday)

Venue : “Hotel Nandan”, Guwahati.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 42nd MEETING OF PROTECTION SUB-COMMITTEE OF NERPC.

The minutes of 42nd meeting of Protection Sub-committee held on 6th May, 2016 at Guwahati were circulated vide letter No. NERPC/SE (O)/PCC/2015/4520-4555 dated 20th May, 2016.

No comments/observations were received from the constituents, the Sub-committee may kindly confirm the minutes of 42nd PCCM of NERPC.

ITEMS FOR DISCUSSION

A.1 Implementation of 3-Phase Auto Reclosure Scheme of Radially fed 132kV Lines connected to Ranganadi HEP:

At present, the power flows to Nirjuli, Gohpur and Ziro radially from Ranganadi HEP and any transient fault in line causes undesirable outages. Hence, to avoid outages during transient fault it is essential to implement 3- Phase Dead Line charging of following 132kV Lines.

- a) 132kV Ranganadi – Nirjuli Line (Dead Line Charging at RHEP)
- b) 132kV Nirjuli – Gohpur Line (Dead Line Charging at Nirjuli)
- c) 132kV Ranganadi – Ziro Line (Dead Line Charging at RHEP)

During 41st PCC meeting, it was agreed that shutdown of 132 kV Ranganadi – Lekhi Line and 132 kV Ranganadi - Ziro Line would be accorded on suitable date(s) as decided by 117th OCC with the consent of DoP, AP. Further Assam will support to meet the loads of Arunachal Pradesh during Shut Down through 132kV Gohpur – Nirjuli Line.

NEEPCO/Ar. Pradesh/NERTS may kindly intimate the status.

A.2 Implementation of 3-phase Auto 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 - Haflong
- 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.

NEEPCO, NERTS & Assam may kindly intimate the status.

A.3 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:

<i>Status of submission of data related to Third Party Protection Audit</i>			
<i>Name of Constituent</i>	<i>As per format of Task Force</i>	<i>As per format of NERPC</i>	<i>Remarks</i>
<i>DoP, Ar. Pradesh</i>	<i>Not submitted</i>	<i>Submitted</i>	<i>Data as per format of Task Force to be submitted by 30.05.2016</i>
<i>AEGCL</i>	<i>Partly submitted (Details as per Annexure-1)</i>	<i>Partly Submitted (Details as per Annexure-1)</i>	
<i>TSECL</i>	<i>Not submitted</i>	<i>Submitted</i>	<i>Data as per format of NERPC for Surajmaninagar &</i>

			<i>Rabindranagar and Data as per Task Force Format for all sub-stations by 30.05.2016</i>
<i>NEEPCO</i>	<i>AGTPP Not submitted as per format</i>	<i>Not Submitted as per format</i>	<i>Data for AGTPP as per Task Force format by 30.05.2016</i>

Constituents/NERLDC may kindly intimate the status.

A.4 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.

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.

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.

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 January, 2016 to 30th June, 2016 :-**

Sl No	Control Area	Grid Incidents	Grid Disturbance	Grid Incidents	Grid Disturbance
		Jan'16 to Jun'16	Jan'16 to Jun'16	During 2016	During 2016
1	Palatana	10	1	10	1
2	AGBPP	12	2	12	2
3	AGTPP	18	1	18	1
4	Ranganadi	1	1	1	1
5	Kopili	0	1	0	1
6	Khandong	0	1	0	1
7	Doyang	0	3	0	3
8	Loktak	2	2	2	2
9	BgTPP	2	2	2	2
10	Arunachal	0	14	0	14

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	Pradesh				
11	Assam	0	28	0	28
12	Manipur	0	36	0	36
13	Meghalaya	0	41	0	41
14	Mizoram	0	15	0	15
15	Nagaland	0	24	0	24
16	Tripura	0	2	0	2

Sl . No.	Category of GD/GI	Grid Disturbance in nos	
		Jan'16 to Jun'16	During 2016
1	GI-I	26	26
2	GI-II	28	28
3	GD I	197	197
4	GD II	4	4
5	GD III	0	0
6	GD IV	0	0
7	GD V	1	1
8	Total GI	54	54
9	Total GD	202	202

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

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

A major disturbance of category GD-V occurred in NER Grid on 16.04.16 at 1203 Hrs. Concerned persons of all constituents of NER are requested to participate in the meeting alongwith available data for fruitful discussion of the following disturbance.

NER Grid was in synchronism with ER Grid through 220 kV Birpara - Salakati I & II, 400kV Bongaigaon - New Siliguri I, II, III & IV lines and was connected with NR Grid through +/- 800 kV HVDC Biswanath Chariali - Agra Pole-I.

At around 12:00:35.739 Hrs, 400 kV Bongaigaon - BgTPP line I tripped from Bongaigaon end on DP, B-phase, Zone II.

At 12:01:03.001 Hrs, 400 kV Bongaigaon - Balipara line IV tripped on DP, B-phase, Zone II and fault cleared from Balipara end in 325 msec (as per DR data).

Around 12:03:07.272 Hrs, 400 kV Bongaigaon - New Siliguri line III tripped on Zone IV at Bongaigaon. 400 kV Bongaigaon - BgTPP line II tripped from both ends at 12:03:30.091 Hrs and 400 kV Bongaigaon - Azara line tripped at 12:03:30.464 Hrs on DP, B-phase, Zone II at Azara end.

After that, 400/220kV 315 MVA ICT at Bongaigaon tripped on Back Up Over Current Protection on HV Side at around 12:03:36.784 Hrs. 400 kV Bongaigaon - New Siliguri line I tripped at 12:03:36.827 Hrs, 400 kV Bongaigaon - New Siliguri line II tripped at 12:03:37.964 Hrs from Bongaigaon end on over voltage. 400 kV Bongaigaon- New Siliguri line IV also tripped.

Due to these trippings, NER grid desynchronized from rest of India grid and at 12:03:40.960 Hrs. AGTPP along with part of Tripura system separated from isolated NER Grid (from PMU). Sarusajai bus blacked out at 12:03:43.360 Hrs and at 12:03:45 Hrs, +/- HVDC BNC - Agra Pole I blocked. Subsequently major part NER grid collapsed due to load generation mismatch. 220 kV Salakati S/S remained connected with Birpara and Gelephu S/S. AGBPP, LTPS and NTPS stations survived with generation of 150 MW, 90 MW and 60 MW respectively with upper Assam load due to successful operation of islanding scheme at around 12:05 Hrs (information taken from SLDC). The island was synchronized with main grid at Misa at 1406 Hrs. Tripura system initially survived along with AGTPP generation with demand of around 60 MW. Subsequently this island collapsed at due to load generation mismatch.

Details of Restoration attached at **Annexure-1**

Load Loss: 973 MW

Generation Loss: 1125 MW

Category as per CEA Standards: GD-V

Root Cause Analysis:

Remedial Measures:

All utilities of NER are requested to furnish the details for fruitful discussion as mentioned below:

- a. Disturbance Recorders (In COMTRADE format), Relay Flags, Pickup distance of DP relays, Event Loggers, and SOE from all 400 kV and 220 kV Substations for all feeders
- b. Details of Operation of SPS during the disturbance on 16th April 2016
- c. Details of Operation of UFR during the disturbance on 16th April 2016 along with feeder-wise quantum of load relief.
- d. Detailed bus schemes indicating feeders connected in Main I and Main II at 400 kV Bongaigaon, 400 kV BgTPP (NTPC), 400 kV Balipara, 400 kV Silchar, 400 kV Azara, prior to the disturbance
- e. Observations from your end regarding the disturbance.
- f. Reason for pick-up of Backup O/C relays at HV side of ICT at Bongaigaon, even though fault was on HV side
- g. Relay flags for all Units and Lines tripping along with time of tripping and restoration.

- h. Loktak, AGBPP, AGTPP and Palatana may provide the bus frequency data at the time of disturbance (from 1200 Hrs to 1300 Hrs, on 16-04-2016).
- i. Time of formation of AGBPP island along with details of tripping of lines.
- j. Review of Relay Setting
- k. Operation of HVDC Frequency controller during the disturbance.
- l. Time synchronisation of DR & EL
- m. Issues with timely submission of data
- n. Dynamic response of Machines.
- o. Second infeed point of NER.

As per discussion in the Sub-Group meeting preceding 42nd PCC meeting, the preliminary investigation revealed the following:

- 1) Line differential protection for 400 kV BgTPP (NTPC)-Bongaigaon (PG) I & II lines was not commissioned (as on 16.04.2016) by NTPC & POWERGRID at their ends.
- 2) DEF operated (at Bongaigaon end) with time delay 440 ms to clear the fault.
- 3) However before DEF could trip the line, all circuits of 400 kV Binaguri-Bongaigaon tripped on Zone-2 from 400 kV New-Siliguri end with time delay 350ms.

After detailed deliberation the forum felt that line differential protection for 400 kV BTPS-Bongaigaon should have been commissioned and time delay for zone-2 at Binaguri should have been around 600ms as is the standard for long lines followed by a short line.

The non-clearance of fault by relays at Bongaigaon end on 400 kV Bongaigaon – BgTPP (NTPC) I line, and lower settings of Zone-2 as compared to that recommended by CEA's V. Ramakrishna Task Force seems to be the primary cause of the disturbance.

Members also suggested that a special Enquiry Committee be formed for detailed and thorough investigation for the GD. SE(O), NERPC suggested that a committee be formed with DGM(SO-II), NERLDC as the Chairman and members from NERLDC, NLDC, NERTS, NTPC, AEGCL, MePTCL, NEEPCO and NERPC. Enquiry Committees for analysis of Grid Disturbance on 30th & 31st Jul12 were constituted by members of independent bodies. It is proposed to constitute Enquiry Committees for analysis of Grid Disturbance on 16th Apr16 with independent members. The forum unanimously agreed and set the deadline of 30.05.2016 for submission of report by the committee.

After detailed deliberation the forum felt that there are many pre and post disturbance events those need to be analyzed for correction, if any, of various scheme viz. Relay Setting, SPS Operation, Islanding Scheme, UFR Load Shedding Scheme functioning etc. Accordingly, SE (O), NERPC suggested that a committee be formed with DGM (SO-II), NERLDC as the Chairman and members from NERLDC, NERTS, NTPC AEGCL and NERPC to analyze the disturbance jointly conclude the same and submit report containing findings and recommendation thereof for corrective measures within 30.05.2016. The forum unanimously agreed to the suggestion.

NERLDC/NERPC may please intimate the status.

A.8 Review of remedial actions pertaining to Grid Disturbances w.e.f. 01.01.2016 to 31.03.2016:

Name of Control Area	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) (AGBPP (NEEPCO) - Direct Trip received and Mariani(PG) - Over Voltage (O/V)) line tripped.	The 42 nd 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.	
	At 1817 Hrs 16.03.16, 400/220/33 kV, 315 MVA ICT at Bongaigaon (PG) (Bongaigaon(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 (AEGCL) (Boko (AEGCL) - Over Current & Azara (AEGCL) - No Tripping) lines tripped.		
Manipur	Multiple tripping of 132 kV Imphal(PG)-Imphal(MSPCL) I&II on 04.01.16,05.01.16,12.01.16,14.01.16,21.01.16,24.01.16,09.02.16,07.03.16,14.03.16,19.03.16 & 26.03.16	DGM(AM), NERTS informed that for Imphal(PG)-Imphal(Man) line, settings for DP, EF/OC have been reduced to isolate from severe faults in Manipur system. He also suggested that R&M works need to be expedited. After detailed deliberation the Sub-Committee suggested the following: 1) Yurembam & Ningthoukong S/S R&M works to be checked and status reported by Expert Committee (NERLDC/NERTS/NERPC). 2) Expert Committee to draw up action plan for completion of balance activities. 3) After submission of report,	
	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.	
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.	
Nagaland	Tripping of 132 kV Dimapur(PG)-Dimapur(NG) I&II on 11.01.16, 21.02.16.	The 42 nd PCC forum decided no proper analysis 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.	
	Multiple tripping of 132kV Dimapur(PG)-Kohima(NG) on 12.01.16, 22.01.16, 21.02.16 & 31.03.16.		
	Tripping of 132 kV Doyang(NEEPCO)-Mokokchung(NG) on 08.02.16, 18.02.16, 21.02.16.		
Mizoram	At 1420 Hrs 09.01.16, 132 kV Aizwal - Kolasib (Aizwal (PG) - Earth Fault and Kolasib - No Tripping) line and 132 kV Badarpur - Kolasib (Badarpur (PG)- DP, ZIII, R-E and Kolasib - No Tripping) line tripped.	The 42 nd 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 over non-representation of P&E Dept., Mizoram to the sub-committee. The forum requested NERPC to write a letter to Engineer in Chief,	
	Tripping of 132kV Aizawl-Zuangtui on 24.02.16, 14.03.16, 28.03.16.		
	At 1621 Hrs 31.03.16, 132 kV Aizwal - Kumarghat (Aizwal (PG) - Not Furnished and Kumarghat- DP, ZII, Y-E), 132 kV Aizwal - Kolasib (Aizwal (PG) - DP, ZI, B-E and Kolasib - Not Furnished) and 132 kV Aizwal - Jiribam (Aizwal (PG) - DP, ZII,		

	B-E and Jiribam- Not Furnished) line tripped.	P&E Dept., Mizoram for this issue.	
Meghalaya	Multiple tripping of 132 kV Khliehriat(PG)-Khliehriat(ME) I&II on 27.02.16,28.02.16, 19.03.16, 28.03.16, 31.03.16.	In the Sub-Group meeting preceding 42 nd PCCM, after analysis of all tripping, it was emphasized that R&M works (mainly earthing) is of utmost importance. SE, MePTCL informed that:- 1) Earthing at Khliehriat S/S will be completed within one week. 2) Within one month numerical relay will be installed in all feeders emanating from Khliehriat S/Stn. 3) Earthing of Towers of all transmission lines of MePTCL will be checked. DGM(AM), NERTS clarified that POWERGRID would review relay settings at Khliehriat(PG) once line 1&2 are completed. He also informed that POWERGRID is in the process of installing Line LAs for 132kV Aizawl-Kumarghat, 132kV Badarpur-Kolasib, 132kV Khliehriat-Khandong and 132 kV Khandong- Haflong. S.E.(O), NERPC proposed that for all the state lines (Meghalaya in particular) for lightning prone zones; line LAs may be installed with funding from PSDF. All members agreed.	
	At 1830 Hrs 29.01.16, 132 kV Agia (AEGCL) – Medipathar (MePTCL) (Agia (AEGCL) – Not Furnished and Medipathar (MePTCL) -Not Furnished) line tripped.		
	At 0804 Hrs 04.03.16, 132 kV Lumshong- Panchgram (Lumshong – Earth Fault and Panchgram- Earth Fault) line tripped.		
	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.		
BNC	Tripping of 400kV Ranganadi- BNC I (Overvoltage) on 12.01.16 & 13.01.16.	The 42 nd 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.	
	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.	

	<p>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 Balipara (Balipara – Over Current) tripped.</p> <p>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 and Pavoi (AEGCL) – Earth Fault) line tripped .</p>		
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DoP Ar.Pradesh, AEGCL, MSPCL, MeECL, DoP Mizoram, DoP Nagaland, TSECL, NERLDC may please inform the status.

A.9 Disturbance in Bongaigaon Thermal Power Plant

At 1242 Hrs 02.03.16, 400 kV BgTPP- Bongaigaon I & II (BgTPP- Bus Bar Differential Protection and Bongaigaon- Direct Trip) lines tripped. BgTPP Unit I also tripped due to operation of Busbar differential protection. Due to tripping of these elements Bongaigaon Thermal Power Plant blackout.

The 42nd PCC forum requested NTPC to ensure that there is proper sharing of load and outgoing feeders between Main-I and Main-II buses (DMT bus scheme at 400 kV BgTPP). From this incident, it appears that both the feeders of 400 kV BgTPP (NTPC) – Bongaigaon I & II were on same bus, which got tripped due to operation of Bus-bar differential protection on one bus. NTPC was asked to check what was the bus-bar configuration at the time of disturbance.

NTPC representative agreed to revert back to the forum with details of fault (due to which bus bar differential operated).

NTPC may please intimate the details.

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

- a. At 1153 Hrs on 06.01.2016**, Units # 2, 5, 9 of AGBPP tripped due to tripping of Gas Compressor-IV (**Generation Loss = 73 MW**)
- b. At 0434 Hrs on 11.01.2016**, Units # 5 of AGBPP tripped due to tripping of Gas Compressor-II (**Generation Loss = 45 MW**)
- c. At 0508 Hrs on 12.01.2016**, Units # 2&4 of AGBPP tripped due to tripping of Gas Compressor-II (**Generation Loss = 89 MW**)
- d. At 0635 Hrs on 13.01.2016**, Units # 2,3,4&8 of AGBPP tripped due to tripping of Gas Compressor-II (**Generation Loss = 144 MW**)

- e. **At 0544 Hrs on 08.02.2016**, Unit # 4 of AGBPP tripped due to tripping of Gas Compressor-II (**Generation Loss = 31 MW**)
- f. **At 1052 Hrs on 11.02.2016**, GTG I & STG I of AGBPP tripped due to Tripping of Gas Booster Compressor (**Generation Loss = 250 MW**)
- g. **At 0155 Hrs on 26.02.2016**, Units # 1,2,3,7&8 of AGBPP tripped due to Tripping of Gas Compressor II (**Generation Loss = 111 MW**)
- h. **At 0050 Hrs on 06.03.2016**, Units # 7&8 of AGBPP tripped due to tripping of Gas Compressor II (**Generation Loss = 33 MW**)

During 42nd PCCM, NEEPCO informed that reasons of GC tripping(s) would be furnished by them at the earliest.

NEEPCO may please intimate the details.

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 reason for these disturbances

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.

NEEPCO/NERPC may please intimate the status.

A.9 Tripping of generating units at Loktak HEP-NHPC:

- a. **At 1720 Hrs on 17.01.2016**, Units # 3 of Loktak tripped due to high Air temperature (**Generation Loss = 35 MW**)
- b. **At 1715 Hrs on 08.03.2016**, Unit # 1 of Loktak tripped due to GBOC pump failure (**Generation Loss = 35 MW**)

The 42nd PCC forum viewed very seriously the absence of representative of NHPC and requested NHPC to kindly submit details of above trippings and remedial actions undertaken in this regard.

NHPC 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.

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.

Concerned utilities may please intimate the status.

A.13 Frequent voltage dips/tripping on 132 kV line to Umrangshu Plant of Calcom Cement :

During the months of Feb-April'2016 frequent voltage dips/tripping (**Annx. II**) were recorded leading to production losses of client. Such voltage dips/tripping were not recorded until January, 2016.

In 42nd PCC meeting, it was suggested that the exact reasons for voltage dip can be ascertained only after physical inspection at site. It was decided that joint team of NERTS/AEGCL would visit the plant at a suitable date and submit report to the forum for further action.

Members may like to discuss.

A.14 Submission of Grid Disturbance Report on monthly basis:

As per communication from NPC *vide. 5/GDR/NPC/CEA/2016 dtd. 25.01.2016* henceforward GD report in given proforma(**Annx. III**) is required to be submitted on a monthly basis. All the constituents are requested to provide necessary data likewise in a timely manner.

This is for information & necessary action please.

A.15 Protection System in Tripura and its ramifications in NER grid:

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.

 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.

NERPC/TSECL may please deliberate.

A.15 Multiple trippings in 400 kV Bongaigaon– Balipara corridor during 400 kV Bus-I shutdown at Balipara on 29.04.16:

During 400 kV Bus-I shutdown at Balipara on 29.04.16 the following trippings took place putting the grid in very vulnerable condition on two occasions. Only 400 kV Bongaigaon – Balipara Ckt-II remained in service. Restoration of these lines also took considerable time.

400 kV Bongaigaon – Balipara- III was under outage due to O/V

400 kV Bongaigaon – Balipara- I tripped at 09:23 Hrs and restored at 11:29 Hrs

400 kV Bongaigaon – Balipara- IV tripped at 09:41 Hrs and restored at 09:51 Hrs

400 kV Bongaigaon – Balipara- I tripped at 11:40 Hrs and could not be charged

400 kV Bongaigaon – Balipara- III taken in service at 1146 Hrs

400 kV Bongaigaon – Balipara- IV tripped at 11:40 Hrs and restored at 12:04 Hrs

Similar situation may happen at any time during major shutdown when system remains in depleted condition. In view of above it is requested to all concerned for taking extra care during critical shutdown and also ensures that Senior Executives remain in control room for managing contingent situations.

During the meeting of sub-group(preceding 42nd PCC meeting) consisting of representatives from NERTS, NERLDC, NERPC, MePTCL & NEEPCO on 03.05.2015, DGM(AM), NERTS indicated that multiple tripping of 400 kV Bongaigaon – Balipara lines occurred due to fault in DC system at 400 kV Balipara end, which led to mal-operation of protective system. However, exact location of DC fault could not be verified indicating the system could be prone to more such disturbances. The PCC sub-committee members requested NERTS to act on it to get the fault rectified, and take appropriate care to prevent such disturbances in future, which endanger security of whole of NER Grid.

NERTS may please intimate the status.

A.16 Analysis & Discussion on Events, Grid Incidences, Grid Disturbances which occurred in NER Grid w.e.f January'16 to June'16:

A. Disturbances in Arunachal Pradesh System:

Total **21 Nos** Disturbances have occurred in Arunachal Pradesh system during the month of January'16 to June'16. **(Sl No. 4 to 24 of Disturbance Report of NER Grid attached in Annexure-I)**

3 Nos disturbances occurred due to tripping of 400 kV Ranagandi-Biswanath Chariali I line, while 400 kV Ranagandi- Biswanath Chariali II line was opened on Over Voltage **(Sl No. 4, 5 & 6 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of this element, Ziro, Lekhi & Capital area of Arunachal Pradesh and Gohpur area 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. 4 & 5:***

The element tripped on operation of Over Voltage Relay at Ranganadi. Further investigations shall be done after getting DR outputs from Ranganadi and Biswanath Chariali.

For Sl. No. 6:

R-Ph CT of Sub Bank-3 of Main Bank Z-1 at BNC failed. Due to un-wanted operation of Distance Protection Relay (DPR) (PD-571) in Zone-1 at Ranganadi, 400 kV Ranganadi - BNC - I line tripped and un wanted operation of Distance Protection in Zone-4 at Balipara resulted in tripping of 400 kV Balipara - BNC III & IV lines. (REL relay setting for Zone-4 for 400 kV Balipara - BNC lines was set instantaneous. For REL relay, Zone-4 is extra and is not required. However, for MICOM relays Zone-4 is reverse zone). Events occurred due to mal-operation of Numerical relays. It has been corrected by NERTS. The PD-571 relay setting details has been given by POWERGRID to NEEPCO. NEEPCO is to check.

Remedial Measure to be taken:

For Sl. No. 4 & 5:

Ranganadi is to check overvoltage relay settings further overvoltage relay operation at Ranganadi to be checked by injecting voltage. Reactor at Ranganadi end to be expedited.

For Sl. No. 6:

The Zone-4 for the Distance Protection of 400 kV Balipara-BNC - III & IV lines at Balipara have been corrected (disabled). At Biswanath-Chariali end, Tie-breaker was not in service. For operational reliability, Main and Tie both should always be in service. Ranganadi Zone-1 should not have operated. Ranganadi to check and review the setting of the Distance Protection Relay Reason for CT blast occurred to be checked by POWERGRID and intimated to sub-committee / RPC as the event happened in a newly commissioned substation.

Khupi Area :

9 Nos disturbances occurred due to tripping of 132 kV Balipara- Khupi line, **(Sl No. 7 to 15 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:

Most of the cases are due to soil erosion resulting in bamboo touching the line and resulting in earth fault.

Remedial Measure to be taken:

Vegetation clearance is to be done by NEEPCO.

Capital Area:

5 Nos disturbances occurred due to tripping of 132 kV Ranganadi- Lekhi line, **(Sl No. 16 & 20 of Disturbance Report of NER Grid attached in Annexure-I).**

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

Root Cause Analysis:

The O/C and E/F relays are found to operate indiscriminately for downstream faults. Due to vegetation problem in downstream of Lekhi, 132 kV Ranganadi - Lekhi line tripped.

Remedial Measure to be taken:

Vegetation clearance is to be done. Directionality function associated with Earth Fault Relay is to be enabled at Lekhi. Regular patrolling to be done. Lekhi end relay settings to be co-ordinated with downstream relays.

Nirjuli Area:

3 Nos disturbances occurred due to tripping of 132 kV Lekhi- Nirjuli line, **(Sl No. 21 & 23 of Disturbance Report of NER Grid attached in Annexure-I).**

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

Root Cause Analysis:

Fault could be in the line section due to vegetation problem. NERTS may check.

Remedial Measure to be taken:

PG to maintain healthiness of the line. Lekhi end relay settings to be co-ordinated with downstream relays.

Deomali Area:

1 No disturbance occurred due to tripping of 220 kV AGBPP- Deomali line, **(Sl No. 24 of Disturbance Report of NER Grid attached in Annexure-I).**

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

Root Cause Analysis:

Due to vegetation problem, the line tripped. Arunachal to give further details regarding this tripping.

Remedial Measure to be taken:

Vegetation clearance is to be done by DoP AP.

B. Disturbances in Assam System:

Total **25 Nos** Disturbances have occurred in Assam system during the month of January'16 to June'16. **(Sl. No. 25 to 50 of Disturbance Report of NER Grid attached in Annexure-I).**

Dullavcherra Area:

2 Nos disturbances occurred due to tripping of 132 kV Silchar – Dullavcherra line and 132 kV Dullavcherra- Dharmanagar line, **(Sl No. 25 & 26 of Disturbance Report of NER Grid attached in Annexure-I).**

12 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. 27 to 38 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. It is also suspected that tripping might be due to improper relay co-ordination or its absence thereof at Dullavcherra. Sometimes due to jumper failure and lightning in the line, 132 kV Silchar - Dullavcherra line tripped.

Remedial Measure to be taken:

AEGCL to check Dullavcherra relay setting & timing, and matching with Silchar end. Also it is to be checked whether relays are in service or not at Dullavcherra end AEGCL to check relay settings at Dullavcherra and co-ordinate with downstream end relays. Vegetation problem in the downstream system is to be checked by AEGCL & TSECL. Proper maintenance and frequent patrolling are to be done by AEGCL & TSECL. Conditional as well as period maintenance of line accessories to be done by POWERGRID & AEGCL and patrolling also to be done. Tower footing as well as substation earth resistance is to be checked by POWERGRID & AEGCL.

Haflong Area & Umrangshu Area:

4 Nos disturbances occurred due to tripping of 132 kV Haflong (PG)-Haflong(S) line **(Sl No. 39 to 42 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 Nos disturbance occurred due to tripping of 132 kV Khandong – Umrangshu line and 132 kV Haflong- Jiribam (PG) line **(Sl No. 43 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of this element, Haflong and Umrangshu areas 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. 39 to 42

Phase to phase fault at downstream of Haflong (PG) cleared at Haflong(PG). Only phase-phase fault will likely cause overcurrent, if no earth fault relay operated.

For Sl No. 43

Improper relay setting co-ordination at Khandong end.

Remedial Measure to be taken:

For Sl No. 39 to 42

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

For Sl No. 43

NEEPCO to send adopted relays settings at Khandong end to sub-committee, and to be co-ordinate with settings of Umrangshoo and Haflong. Time grading needs to be checked.

Gohpur Area:

2 Nos disturbances occurred due to tripping of 132 kV Gohpur- Nirjuli line **(Sl No. 44 & 45 of Disturbance Report of NER Grid attached in Annexure-I).**

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

Root Cause Analysis:

POWERGRID had informed that there was problem of incoming power at Gohpur.

Remedial Measure to be taken:

AEGCL to inform about CT ratio at Gohpur end, and check overcurrent relay at Gohpur end. AEGCL is to furnish detailed report on this incident. If it is issue of overcurrent, then POWERGRID needs to check relay settings at Gohpur / Nirjuli in coordination with AEGCL.

South Assam Area:

1 No disturbance occurred due to tripping of 132 kV Silchar- Panchgram line, 132 kV Silchar – Dullavcherra line, 132 kV Srikona - Panchgram line & 132 kV Silchar - Srikona I & II lines **(Sl No. 46 of Disturbance Report of NER Grid attached in Annexure-I).**

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

Root Cause Analysis:

It was understood from relay flags that 132 kV Silchar - Panchgram line, 132 kV Silchar – Dullavcherra line tripped due to vegetation problem. Likely downstream fault at Dullavcherra end. But 2 unwanted operations at Panchgram end of E/F relay in 132kV Srikona-Panchgram and 132kV Silchar-Panchgram lines.

Remedial Measure to be taken:

AEGCL to check relays at Panchgram end. Directionality of the Earth Fault Relays at Panchgram for 132 kV Silchar – Panchgram line is to be checked. Protection at Srikona for 132 kV Panchgram – Srikona line is to be verified. Vegetation clearance is to be done by AEGCL.

Pavoi and Depota Area:

3 No disturbance occurred due to tripping of 132 kV Biswanath Charali (PG) -Pavoi I & II lines **(Sl No. 47 to 49 of Disturbance Report of NER Grid attached in Annexure-I).**

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

Root Cause Analysis:

There was jumper failure in 132 kV BNC – Pavoï I line. 132 kV BNC – Pavoï II line tripped on overloading subsequently. 132 kV BNC - Pavoï I & II lines are highly loaded during peak hours. Some more incidents of jumper failure have occurred in these lines.

Remedial Measure to be taken:

Alternate connectivity between Balipara (PG) and Pavoï is to be explored. Meanwhile, POWERGRID has carried out jumper tightening in all locations of the 132 kV BNC-Pavoï I & II lines. If such tripping still repeated, POWERGRID have to do Jumper Strengthening for this section.

Dhaligaon Area:

1 No disturbance occurred due to tripping of 132 kV BTPS- Dhaligaon I & II lines **(Sl No. 50 of Disturbance Report of NER Grid attached in Annexure-I).**

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

Root Cause Analysis:

Likely fault in line. A/R to be installed at both end. AEGCL to give relay indications at BTPS end.

Remedial Measure to be taken:

Since the lines are mostly overloaded, upgradation to HTLS to be expedited. The matter may be referred to OCC forum of NERPC.

C. Disturbances in Manipur System:

Total **40 Nos.** Disturbances have occurred in Manipur system during the month of January'16 to June'16. **(Sl No. 51 to 90 of Disturbance Report of NER Grid attached in Annexure-I).**

Capital & Karong Areas:

25 Nos disturbances occurred due to tripping of 132 kV Imphal (PG)-Imphal (S) I & II lines, **(Sl No. 51 to 75 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 Manipur system and cleared at Imphal (PG). Tripping of incoming feeders occurred due to non-clearance of fault within Manipur system.

Remedial Measure to be taken:

Relay coordination has to be done by MSPCL in consultation with POWERGRID. PG/Manipur to do relay co-ordination in downstream level. But existing problem in Breaker at Imphal end of Karong – Imphal line. MSPCL to rectify. **MSPCL should not change relay settings without intimation to forum, after it has been co-ordinated with POWERGRID.** Directional feature of each protection at Imphal (Manipur) is to be checked. Vegetation clearance is to be done by MSPCL.

Ningthoukhong Area:

1 No. disturbance occurred due to tripping of 132 kV Loktak-Ningthoukhong line & 132 kV Loktak- Imphal lines, **(Sl No. 76 of Disturbance Report of NER Grid attached in Annexure-I).**

8 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. 77 to 84 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 fault in line section, since relay indication at Loktak end is Zone-1. But, Ningthoukhong end E/F relay should not have operated since it is radial line. Due to vegetation problem, 132 kV Loktak - Ningthoukhong line tripped. For further analysis, SLDC, MSPCL shall furnish relay indication pertaining to their end.

Remedial Measure to be taken:

Vegetation clearance and tower footing resistance are to be checked by MSPCL. POWERGRID is requested to visit Ningthoukhong and check relay co-ordination after renovation has been done by MSPCL. MSPCL to check and Ningthoukhong S/s upgradation to be expedited

Rengpang Area:

6 Nos. disturbances occurred due to tripping of 132 kV Loktak – Rengpang line, **(Sl No. 85 to 90 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of this element, Rengpang area of Manipur 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 Loktak - Rengpang line tripped.

Remedial Measure to be taken:

Vegetation clearance is to be done by MSPCL.

D. Disturbances in Meghalaya System:

Total **53 Nos.** Disturbances have occurred in Meghalaya system during the month of January'16 to June'16. **(Sl No. 91 to 143 of Disturbance Report of NER Grid attached in Annexure-I).**

Khliehriat Area:

48 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 were 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 due to vegetation or lightning.

Remedial Measure to be taken:

Earthing work related to Khliehriat (ME) substations is to be completed as the earliest. Tower footing resistance is also to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL. Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.

Action taken by MePTCL:

Earthing work at Khliehriat under jurisdiction of MePTCL vizz. 132 kV switchyard, is completed (Resistance is about 0.7 ohms). But, distribution side work is not completed. MePTCL is going for procurement of new relays. MePTCL to install Numerical relays on Leshka feeder on test basis, by 14th July (S/D at Leshka is not possible till Dam is full. Date to be finalized by SLDC). Distribution side viz. 33 kV switchyard work to be taken up urgently. NERPC to write to Director, MePDCL.

Byrnihat Area:

2 No. disturbances occurred due to tripping of 132 kV EPIP II - Byrnihat I & II lines, **(Sl No. 139 & 140 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of these elements, Meghalaya system except Khliehriat area, Lumnsnong area and Mendipathar area were separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.

Root Cause Analysis:

The 12th June tripping was due to conductor snapping in B-phase at Gantry point. Indicates hardware failure. The tripping reasons for 16th June is to be intimated by MePTCL.

Remedial Measure to be taken:

S/Sn hardware at gantry & bays to be strengthened.

The Sub-Group viewed seriously the non-restoration of reactor at Byrnihat and referred the matter to OCC.

Mendipathar & Nangalbibra Area:

2 Nos. disturbances occurred due to tripping of 132 kV Agia- Mendipathar or 132 kV Mendipathar- Nangalbibra lines, **(Sl No. 141 & 142 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to tripping of this element, Mendipathar & Nangalbibra areas 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, the lines were tripped. Relay flags and DR outputs to be submitted by Agia (AEGCL), Nangalbibra (MePTCL) & Medipathar (MePTCL) for analysis. Relay flags at Agia to be given by Assam and at Mendipathar to be given by MePTCL

Remedial Measure to be taken:

Vegetation clearance is to be done by MePTCL.

Lumshnong Area:

1 No. disturbances occurred due to tripping of 132 kV Panchgram - Lumshnong line, while 132 kV Lumshnong - Khliehriat line kept open for system requirement. **(Sl No. 143 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. Clearance may be taken up by MePTCL and AEGCL.

E. Disturbances in Mizoram System:

Total **18 Nos.** Disturbances have occurred in Mizoram system during the month of January'16 to June'16. **(Sl No. 144 to 161 of Disturbance Report of NER Grid attached in Annexure-I).**

3 Nos disturbances occurred due to tripping of 132 kV Aizwal - Jiribam line, 132 kV Aizwal - Kolasib line and 132 kV Aizwal - Kumarghat lines, **(Sl No. 144 to 146 of Disturbance Report of NER Grid attached in Annexure-I).**

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

Root Cause Analysis:

POWERGRID informed that the lines tripped due to multiple strokes of lighting. On 31st March 2016 multiple lightning stroke resulting in simultaneous tripping of all 3 lines at both ends.

On 27th June flashover in B-phase Substation bus insulator, but insulator did not fail. Issue still under investigation by NERTS.

Remedial Measure to be taken:

Tower footing as well as substation earth resistance is to be checked by POWERGRID & P&ED, Mizoram. In case of lightning prone area, line arrester has to be installed. PID scanning at Aizawl S/Sn to be done by NERTS

Kolasib Area:

1 Nos disturbance occurred due to tripping of 132 kV Kolasib - Badarpur line & 132 kV Kolasib - Aizawl lines, **(Sl No. 147 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:

Could be Kolasib downstream fault. NERTS/ Mizoram to further check

Remedial Measure to be taken:

Vegetation clearance has to be done by P&E Deptt, Mizoram and POWERGRID. Relay settings of Kolasib as well as Mizoram downstream stations has to be investigated by P&E Dept, Mizoram and POWERGRID.

Zuangtui Area:

14 No. disturbances occurred due to tripping of 132 kV Aizawl - Zuangtui line, **(Sl No. 148 & 161 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:

The over current and earth fault relay settings for the outgoing feeders at Zuangtui were verified and their operating times were found to be on higher side. Since line passes mostly through town (vegetation is not issue), likely fault is in downstream due to vegetation and is getting cleared at Aizawl (PG).

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. The co-ordinated relay settings for Zuangtui S/Sn calculated by NERTS was given to DoP Mizoram but it seems that it was not implemented. DoP Mizoram may please elaborate.

F. Disturbances in Nagaland System:

Total **32 Nos.** Disturbances have occurred in Nagaland system during the month of January'16 to June'16. **(Sl No. 162 to 193 of Disturbance Report of NER Grid attached in Annexure-I).**

Mokokchung Area:

4 Nos disturbances occurred due to tripping of 132 kV Doyang - Mokokchung (NA) line, **(Sl No. 162 to 165 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 vegetation problem, 132 kV Doyang - Mokokchung (NA) line tripped.

Remedial Measure to be taken:

Vegetation clearance is to be done by DoP, Nagaland.

Dimapur Area:

2 No. disturbances occurred due to tripping of 132 kV Dimapur (PG) - Dimapur (NA) I & II lines, **(Sl No. 166 & 167 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:

This is case of phase to phase fault and fault was cleared at Dimapur (PG). Phase - phase fault seems the only possibility in case of non-operation of earth fault. Can be phase-phase fault. DoP, Nagaland to confirm further

Remedial Measure to be taken:

Relay settings of downstream stations of Nagaland is to be checked by DoP, Nagaland in consultation with POWERGRID. POWERGRID is to elaborate on General trip relay indication.

Capital Area:

26 No. disturbances occurred due to tripping of 132 kV Dimapur (PG) - Kohima line, **(Sl No. 168 to 193 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. Fault may be also in Kohima – Karong line which remains idle charged. Protections at Kohima end of the line to be kept properly.

G. Disturbances in Tripura System:

Total **2 Nos.** Disturbances have occurred in Tripura system during the month of January'16 to June'16. **(Sl No. 194 & 195 of Disturbance Report of NER Grid attached in Annexure-I).**

2 Nos disturbances occurred due to tripping of multiple trippings of lines in Tripura system as mention in the disturbance report

Due to tripping of multiple elements, part of Tripura system, part of Bangladesh system (Comilla area) and AGTPP system were separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.

Root Cause Analysis:

Due to non-clearance of downstream fault in the Tripura System, 132 kV AGTPP - Agartala I & II line tripped at AGTPP end and 132 kV AGTPP - Kumarghat line tripped at Kumarghat end.

Remedial Measure to be taken:

Zone-III time delay of 132 kV AGTPP - Kumarghat line to be increased by POWERGRID so that 132 kV Kumarghat - AGTPP line does not trip along with 132 kV AGTPP - Agartala I & II lines, to keep integrated operation of AGTPP system. NEEPCO is to furnish DR of the event at the earliest for further analysis. Agartala relay setting is to be checked by TSECL in co-ordination with POWERGRID. POWERGRID, NEEPCO, AEGCL & OTPC are requested to conduct protection audit in substations of TSECL.

H. Power Station Blackout:

Loktak Power Plant:

1 No disturbances occurred due to tripping of 132 kV Loktak - Imphal(PG) line, 132 kV Loktak - Jiribam line & 132 Loktak - Ningthoukhong line, **(Sl No. 197 of Disturbance Report of NER Grid attached in Annexure-I).**

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

Root Cause Analysis:

Due to non-operation of any protective relay at Loktak it could not be ascertained whether the fault was in 132 kV Jiribam - Loktak line or 132 kV Loktak - Ningthoukhong line. Fault was in Jbm-Loktak line. This further caused O/C in Imphal-loktak end. Loktak may furnish DRs for all the lines. DR from Loktak end shows overcurrent ($I > 1$).

Remedial Measure to be taken:

Loktak is to furnish detailed report explaining non clearance of fault at Loktak end. Loktak & Imphal(PG) shall submit DR output pertaining to the event. Standardisation of DR to be taken up by Loktak-NHPC

A. AGTPP Power Plant:

1 No disturbances occurred due to tripping of 132 kV AGTPP - Agartala I & II lines & 132 kV AGTPP - Kumarghat line, **(Sl No. 198 of Disturbance Report of NER Grid attached in Annexure-I).**

Due to evacuation problem, all running units of AGTPP tripped.

Root Cause Analysis:

Due to non-clearance of downstream fault in the Tripura System at Agartala, 132 kV AGTPP - Agartala I & II line tripped at AGTPP and 132 kV AGTPP - Kumarghat line tripped at Kumarghat end. At AGTPP, Zone-III indicates fault was in Tripura system.

Remedial Measure to be taken:

Zone-III time delay of 132 kV AGTPP - Kumarghat line to be increased by POWERGRID so that 132 kV Kumarghat - AGTPP line does not trip along with 132 kV AGTPP - Agartala I & II lines, keep integrated operation of AGTPP. NEEPCO is to furnish DR of the event at the earliest for further analysis. Agartala relay setting is to be checked by TSECL in coordination with POWERGRID. POWERGRID, NEEPCO, AEGCL & OTPC are requested to conduct protection audit in substations of TSECL. Relay co-ordination b/w AGTPP and Tripura system to be done. K'ghat end time setting to be co-ordinated with AGTPP end

B. Doyang Power Plant:

1 No disturbance occurred due to tripping of 132 kV Dimapur - Doyang II line & 132 kV Doyang - Mokokchung line while 132 kV Dimapur - Doyang I line is under Shutdown . **(Sl No. 199 of Disturbance Report of NER Grid attached in Annexure-I).**

1 No disturbance occurred due to tripping of 132 kV Dimapur - Doyang II line while 132 kV Dimapur - Doyang I line is under Shutdown & 132 kV Doyang- Mokokchung line was not restored after tripping. **(Sl No. 200 of Disturbance Report of NER Grid attached in Annexure-I).**

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

Root Cause Analysis: NEEPCO to check and inform with further details

Remedial Measure to be taken:

N.B. All DRs / Tripping details to be given to NERLDC / NERPC within 24 hours of the events.

A.17 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.

This is for information please.

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.

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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1	132 kV Bokajan - Golaghat	AEGCL	2/25/2016 10:20	Bokajan	No tripping	Not Furnished	No	No	Loss of Load: 0& Loss of Generation: 124	GD-II	2/25/2016 10:55	No SPS	0.035	
				Golaghat	DP, ZI, R-E	Not Furnished	No	No						
	220 kV Misa - Mariani(AS)	POWERGRID		Misa	Not Furnished	Not Furnished	No	No				2/25/2016 10:35		No SPS
				Mariani (AS)	Tripped	Lockout	No	No						
	220 kV Samaguri - Mariani	AEGCL		Samaguri	DP, ZI, R-E	Not Furnished	No	No				2/26/2016 13:50		No SPS
				Mariani	DP, ZI, R-E	Not Furnished	No	No						
	220 kV AGBPP - Mariani(PG)	POWERGRID	2/25/2016 10:22	AGBPP	Direct Trip received	Not Furnished	No	No				2/25/2016 18:13		No SPS
				Mariani (PG)	Over Voltage	Not Furnished	No	No						
	AGBPP U 3	NEEPCO	2/25/2016 10:20	AGBPP	Tripped on High frequency in	Not applicable	No	No				2/25/2016 10:37		No SPS
	AGBPP U 4	NEEPCO	2/25/2016 10:20	AGBPP		Not applicable	No	No				2/25/2016 11:15		No SPS
	AGBPP U 8	NEEPCO	2/25/2016 10:20	AGBPP		Not applicable	No	No				2/25/2016 12:03		No SPS
	FIR by the constituent	No												
Brief Description of the Incident	Upper Assam area and AGBPP system were connected with NER Grid through 220 kV Samaguri-Mariani(AS) ,220 Misa-Mariani(AS), 132 kV Bokajan - Golaghat and 220 kV AGBPP - Mariani(PG) lines(220 KV Misa -Mariani(PG) was under planned SD from 0650 hrs and 132 kV Mariani - Mokochchung line was under long outage). At 1020 Hrs on 25.02.16,220 kV Samaguri-Mariani(AS), 220 Misa-Mariani(AS), 132 kV Bokajan - Golaghat lines tripped. 220 kV AGBPP-Mariani(PG) line tripped on O/V subsequently at 1022 hrs. Due to the tripping these elements, Upper Assam area and AGBPP system got isolated from rest of NER grid. The isolated grid frequency shoots up to 51.99 Hz and AGBPP Unit 3, Unit 4 and Unit 8 tripped on high frequency.													
Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1029 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1335 MW)													
Restoration Details	Upper Assam area was synchronized to rest of the NER grid at Mariani(AS) at around 10:35 Hrs on 25.02.16 through 220 kV Misa - Mariani(AS) line.AGBPP unit-3 restored at 10:37 Hrs on 25.02.16.													
Root Cause	Due to vegetation problem in the line, 220 kV Samaguri - Mariani line tripped.At the same time, 220 kV Misa - Mariani(AS) line tripped due to mal operation at Misa(PG) during the replacement of OTI WTI of line reactor.Auto reclose lockout relay at Mariani acts as master trip relay for all auxillary relays.													
Remedial Measures	Vegetation clearance to be done by AEGCL.													

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	400/220/33 kV , 315 MVA ICT at Bongaigaon	POWERGRID	3/16/2016 18:17	Bongaigaon	R-Ph , Over Current	Not applicable	Yes	No	Loss of Load: 259	GD-II	3/16/2016 18:43	No SPS	0.112	
	220 kV Agia -Azara	AEGCL		Agia	Over current	Not applicable	No	No			3/16/2016 18:53	No SPS		
	220 kV Boko -Azara	AEGCL		Azara	No tripping	Not applicable	No	No			3/16/2016 19:05	No SPS		
				Boko	Over current	Not applicable	No	No						
				Azara	No tripping	Not applicable	No	No						
	FIR by the constituent	Yes												
	Brief Description of the Incident	Part of NER Grid (Dhaligaon, Agia and Boko areas of Assam and Nangalbibra area of Meghalaya), North Bengal system, Sikkim system and Bhutan Grid(except Motonga load) were connected with rest of Indian Grid through 400/220/33 kV,315 MVA Bongaigaon ICT, 400/220 kV,315 MVA ICT I&II at Binaguri , 220 kV Bus coupler at Dalkhola ,220 kV Azara – Agia line and 220 kV Azara – Boko line(132 kV Nangalbibra-Nongstoin line,132 kV Rangia-Bornagar line & 132 kV Rangia-Nalbari line kept open for system requirement and 400/220 kV, 200 MVA ICT-I at Malbase was taken in shutdown at 16:27 hrs due to problem in R phase LA,400 kV Binaguri – Bongaigaon – III, 400 kV Balipara – Bongaigaon – III and 400 kV Balipara – Biswanath Chariali – III were open due to over-voltage, 400 KV Patna- Kishanganj I & II lines were under breakdown).At 17:57 hrs, Dakhola Bus coupler was opened to reduce loading of 220 kv Purnea - New Purnea D/C which was around 180 MW per circuit. With the opening of the bus coupler at Dalkhola, 220 kV Dalkhola - Dalkhola(WB)-D/C and 220 kV Dakhoila - Siliguri were on one bus while 220 kV Dalkhola - Purnea - D/C and Dalkhola - Malda - D/c were on the other bus. Immediately after opening of the ICT at Malbase(Bhutan), flow on Binaguri ICTs increased from around 200 MW to about 300 MW flow (per ICT). The ICT-I tripped at 18:09 hrs due to Back-up over current protection in B phase.At 18:15 Hr Dalkhola bus coupler was again closed to reduce loading of the Binaguri ICT - 2. But Dalkhola bus coupler tripped immediately after closing. ICT – II at Binaguri tripped at 18:17 hrs due to the resulting over-load.Due to the tripping of these two ICTs, the load being met by these ICTs shifted to the 400/220 kV ICT at Bongaigaon. The ICT which was already loaded to around 250 MW further over-loaded and tripped at 18:09 hrs. At 18:17 Hrs on 16.03.16 , 220 kV Azara – Agia line and 220 kV Azara – Boko line tripped. Due to tripping of these elements, part of NER Grid (Dhaligaon, Agia and Boko areas of Assam and Nangalbibra area of Meghalaya), North Bengal system, Sikkim system and Bhutan Grid(except Motonga load) separated from rest of Indian Grid and subsequently collapsed due to no source in this area.												
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1593 MW , पूर्ववृत्ता लोड/ Antecedent Load : 2040 MW)												
	Restoration Details	Power extended to Salakati(PG) through 400/220 kV , 315 MVA ICT at Bongaigaon at 18:43 Hrs on 16.03.16.Power extended to BTPS through 220 kV BTPS - Salakati line I at 18:56 Hrs on 16.03.16.Power extended to Agia through 220 kV Agia -Azara line at 18:53 Hrs on 16.03.16.Power extended to Boko through 220 kV Boko -Azara line at 19:05 Hrs on 16.03.16												
	Root Cause	Due to fault in Eastern Region system												
	Remedial Measures	ICTs at Bongaigaon,NTPC to be commissioned at the earliest to avoid overloading of Bongaigaon ICT.												
	400 kV BgTPP - Bongaigaon I	POWERGRID	16/04/2016 12:00:36.192	BgTPP	DP, ZII, B-E	Not Furnished	Yes	No			4/16/2016 15:01			
	400 kV Balipara - Bongaigaon IV	POWERGRID	16/04/2016 12:01:03.001	Bongaigaon	DP, ZI, B-E	Not Furnished	No	No			4/16/2016 14:00			
				Balipara	DP, ZII, B-E	Not applicable	Yes	No			4/16/2016 16:40			
				Bongaigaon	Not Furnished	Not applicable	No	No						
400 kV Bongaigaon - New	ENICL	16/04/2016	Bongaigaon	DP, Z-IV, B-E	Not applicable	Yes	No							

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3	Siliguri III	ENICL	12:03:06.878	New Siliguri	DP, ZII, B-E	Not applicable	No	No	Loss of Load: 973 (84%) & Loss of Generation: 1125 (93%)	GD-V	4/16/2016 10:40	SPS I & II operated successfully	3.82
	400 kV BgTPP - Bongaigaon II	POWERGRID	16/04/2016 12:03:30.091	BgTPP	DP, ZII, B-E	Not applicable	Yes	No			4/16/2016 14:18		
				Bongaigaon	Direct Trip received	Not applicable	Yes	No			4/16/2016 15:18		
	400 kV Bongaigaon - Azara	NETC & AEGCL	16/04/2016 12:03:30.464	Bongaigaon	No tripping	Not applicable	No	No			4/16/2016 12:31		
	400/220 kV 315MVA ICT at Bongaigaon	POWERGRID	16/04/2016 12:03:36.784	Azara	DP, ZII, B-E	Not applicable	Yes	No			4/16/2016 12:51		
				Bangaigaon	Back up O/C on HV side	Not applicable	Yes	No			4/18/2016 18:42		
	400 kV Bongaigaon - New Siliguri I	POWERGRID	16/04/2016 12:03:36.827	Bongaigaon	Direct Trip received	Not Furnished	Yes	No			4/16/2016 12:30		
	400 kV Bongaigaon - New Siliguri II	POWERGRID	16/04/2016 12:03:37.964	New Siliguri	DP, ZII, B-E	Not Furnished	No	No			4/17/2016 20:30		
				Bongaigaon	Tripped	Not Furnished	Yes	No			4/16/2016 13:35		
	400 kV Bongaigaon - New Siliguri IV	ENICL	16/04/2016 12:03:55.727	New Siliguri	DP, ZII, B-E	Not Furnished	No	No			4/16/2016 12:50		
				Bongaigaon	Tripped	Not Furnished	Yes	No					
	+/- 800 kV Biswanath Charali-Agra I	POWERGRID	16/04/2016 12:03:45.000	Biswanath Charali	Under Votage,DC Side	Not applicable	No	Yes					
				Agra		Not applicable	No	No					
	220 kV BTPS - Salakati I	POWERGRID	4/16/2016 12:03	BTPS	Not Furnished	Not Furnished	No	No					
	220 kV BTPS - Salakati II	POWERGRID	4/16/2016 12:03	Salakati	No tripping	Not Furnished	No	No					
				BTPS	Not Furnished	Not Furnished	No	No					
				Salakati	No tripping	Not Furnished	No	No					

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 (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	
3	400 kV Balipara - Bongaigaon I	POWERGRID	16/04/2016 12:03:00.000	Balipara	Not Furnished	Not Furnished	No	No	Loss of Load: 973 (84%) &	GD-V	4/16/2016 13:16	SPS I & II operated sucessfully	3.82	
		Bongaigaon		Not Furnished	Not Furnished	No	No	Loss of						
	400 kV Balipara - Bongaigaon II	POWERGRID		Balipara	Not Furnished	Not Furnished	No	No	Generation:					
		Bongaigaon		Not Furnished	Not Furnished	No	No							
	FIR by the constituent	Yes(Assam,Meghalaya,Tripura,AGTPP,Khandong&POWERGRID)												
	Brief Description of the Incident	NER Grid was in synchronism with ER Grid through 220 kV Birpara - Salakati I & II , 400kV Bongaigaon - New Siliguri I, II, III & IV lines and was connected with NR Grid through +/- 800 kV HVDC Biswanath Chariali-Agra pole-I.At around 12:00:35.739 Hrs, 400kV Bongaigaon-BgTTP line I tripped from Bongaigaon end on B-phase Zone II. At 12:01:03.001 Hrs, 400kV Bongaigaon-Balipara line IV tripped on B phase Zone II and fault cleared from Balipara end(fault cleared in 325msec from DR data). Around 12:03:07.272 Hrs, 400kV Bongaigaon-New Siliguri III line tripped on Zone-IV at Bongaigaon. 400 kV Bongaigaon-NTPC line II tripped from both ends at 12:03:30.091 Hrs and 400 kV Bongaigaon-Azara line tripped at 12:03:30.464 Hrs on B-phase zone II at Azara end.After that, 400/220kV 315MVA ICT at Bongaigaon tripped on Back Up Over Current Protection on HV Side at around 12:03:36.784 Hrs. 400kV Bongaigaon-New Siliguri I line tripped at 12:03:36.827 Hrs and 400kV Bongaigaon-New Siliguri II line tripped at 12:03:37.964 Hrs from Bongaigaon end on over voltage. Due to these trippings, NER grid separated from ER grid and at 12:03:40.960 Hrs AGTPP along with part of Tripura system separated from isolated NER grid(from PMU). Sarusajai bus blacked out at 12:03:43.360 Hrs and at 12:03:45 Hrs +/- HVDC BNC Agra pole –I blocked.Subsequently major part NER grid collapsed due to load generation mismatch.220kV Salakati S/S remained connected with Birpara and Gelephu S/S. AGBPP, LTPS and NTPS stations survived with generation of 150MW, 90MW and 60 MW respectively with upper Assam load due to successful operation of Islanding scheme at around 12:05 Hrs(information taken from SLDC). The island was synchronized with main grid at Misa at 1406 hrs.Tripura system initially survived along with AGTPP generation with demand of around 60MW. Subsequently this island collapsed at due to load												
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1206 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1153 MW)												
	Root Cause	A lightening fault occurred in 400 kV Bongaigaon-BgTTP - 1 was not sensed by the distance relay at Bongaigaon end. On analysis the fault impedance was found to fall in fourth quadrant and out side the distance relay operating characteristics. Didfferential protection for both the circuits of 400 kV Bongaigaon-BgTTP were not commissioned. The line												
Remedial Measures	The Line Differential Prtection for both the circuits of 400 kV Bongaigaon-BgTTP Line have been commissioned and put in to service.													

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4	400 kV Ranganadi-Biswanath Charali I	POWERGRID	1/12/2016 2:13	Ranganadi	Over Voltage	Not applicable	No	No	Loss of Load: 48	GD-I	1/12/2016 2:34	No SPS	0.063
			Biswanath Charali	Direct Trip received	Not applicable	No	No						
	FIR by the constituent	No											
	Brief Description of the Incident	Ziro area, Lekhi area & Capital area of Arunachal Pradesh and Gohpur Area of Assam were connected with rest of NER Grid through 400 kV Ranganadi-Biswanath Charali I line(400 kV Ranganadi-Biswanath Charali II was under shutdown from 22:01 Hrs on 11.01.2016). At 02:13 Hrs on 12.01.2016,400 kV Ranganadi-Biswanath Charali I line tripped. Due to tripping of this element, Ziro area, Lekhi area & Capital area and Gohpur area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1096 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1309 MW)											
	Restoration Details	Power extended to Ranganadi at 02:34 Hrs on 12.01.16 through 400 kV Ranganadi-Biswanath Charali 1 line.Power extended to Lekhi area & Capital area of Arunachal Pradesh at 02:43 Hrs on 12.01.16 through 132 kV Ranganadi-Lekhi line.Power extended to Ziro area of Arunachal Pradesh at 02:47 Hrs on 12.01.16 through 132 kV Ranganadi-Ziro line.											
	Root Cause	Over voltage at Ranganadi. Further investigations shall be done after getting DR outputs. Ranganadi and BNC to give DR outputs for investigation.											
Remedial Measures	Measures after identification of root cause of the event. Rangandi to check overvoltage relay settings.												
5	400 kV Ranganadi-Biswanath Charali I	POWERGRID	1/13/2016 14:40	Ranganadi	Over Voltage	Not applicable	No	No	Loss of Load: 36	GD-I	1/13/2016 15:12	No SPS	0.027
			Biswanath Charali	Direct Trip received	Not applicable	No	No						
	FIR by the constituent	No											
	Brief Description of the Incident	Ziro area, Lekhi area & Capital area of Arunachal Pradesh and Gohpur Area of Assam were connected with rest of NER Grid through 400 kV Ranganadi-Biswanath Charali I line(400 kV Ranganadi-Biswanath Charali II was under shutdown from 22:01 Hrs on 11.01.2016). At 02:13 Hrs on 12.01.2016,400 kV Ranganadi-Biswanath Charali I line tripped. Due to tripping of this element, Ziro area, Lekhi area & Capital area and Gohpur area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1099 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1474 MW)											
	Restoration Details	Power extended to Ranganadi at 15:12 Hrs on 13.01.16 through 400 kV Ranganadi-Biswanath Charali 1 line.Power extended to Lekhi area & Capital area of Arunachal Pradesh at 15:21 Hrs on 12.01.16 through 132 kV Ranganadi-Lekhi line.Power extended to Ziro area of Arunachal Pradesh at 02:47 Hrs on 12.01.16 through 132 kV Ranganadi-Ziro line.											
	Root Cause	Over voltage at Ranganadi.Further investigations shall be done after getting DR outputs. Ranganadi and BNC to give DR outputs for investigation.											
Remedial Measures	Measures after identification of root cause of the event. Rangandi to check overvoltage relay settings.												
	400 kV Ranganadi-Biswanath Charali I	POWERGRID		Ranganadi	DP, ZI, R-E	Not Furnished	No	No			5/9/2016 18:27	No SPS	
				Biswanath Charali	No tripping	Not Furnished	No	No					
	400 kV Balipara-Biswanath			Balipara	DP, ZII, R-E	Not applicable	No	No					

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16	132 kV Ranganadi - Lekhi	POWERGRID & DoP AP	1/19/2016 22:27	Ranganadi	No tripping	Not Furnished	No	No	Loss of Load: 48	GD-I	1/19/2016 22:51	No SPS	0.017
	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 22:27 Hrs on 19.01.2016 ,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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1410 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1739 MW)											
	Restoration Details	Power extended to Lekhi area & Capital area of Arunachal Pradesh and Gohpur Area of Assam at 22:51 Hrs on 19.01.16 through 132 kV Ranganadi - Lekhi line.											
	Root Cause	Due to vegetation problem in the downstream of Lekhi, 132 kV Ranganadi - Lekhi line tripped.											
	Remedial Measures	Vegetation clearance to be done. Directionality function associated with Earth Fault Relay to be enabled at Lekhi.											
17	132 kV Ranganadi - Lekhi	POWERGRID & DoP AP	1/21/2016 22:34	Ranganadi	DP, ZI, R-E	Not Furnished	No	No	Loss of Load: 41	GD-I	1/21/2016 23:13	No SPS	0.03
	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 22:34 Hrs on 21.01.2016 ,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.(Load loss in MU:0.030)											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1350 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1718 MW)											
	Restoration Details	Power extended to Lekhi area & Capital area of Arunachal Pradesh and Gohpur Area of Assam at 23:13 Hrs on 21.01.16 through 132 kV Ranganadi - Lekhi line.											
	Root Cause	Due to vegetation problem in the downstream of Lekhi, 132 kV Ranganadi - Lekhi line tripped.											
	Remedial Measures	Vegetation clearance to be done by POWERGRID & DoP AP.											
18	132 kV Ranganadi - Lekhi	POWERGRID & DoP AP	5/5/2016 10:27	Ranganadi	DC supply problem	Not applicable	No	No	Loss of Load: 38	GD-I	5/5/2016 10:34	No SPS	0.016
	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 10:27 Hrs on 05.05.16 ,132 kV Ranganadi-Nirjuli 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation :1358 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1459 MW)											

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25	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	3/21/2016 8:21	Silchar	No tripping	Not applicable	No	No	Loss of Load: 14	GD-I	3/21/2016 8:30	No SPS	0.014	
		Dullavcherra		Earth Fault, B-ph	Not applicable	No	No							
	132 kV Dullavcherra - Dharmanagar	AEGCL & TSECL		Dullavcherra	Loss of Voltage	Not applicable	No	No			3/21/2016 9:06	No SPS		
		Dharmanagar		Loss of Voltage	Not applicable	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 P.K Bari-Dharmanagar line kept open for system requirement). At 08:21 Hrs on 21.03.16 ,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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1094 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1963 MW)													
Restoration Details	Power extended to Dullavcherra area of Assam at 08:30 Hrs on 21.03.16 through 132 kV Silchar - Dullavcherra line.													
Root Cause	Fault was in 132 kV Dharmanagar - Dullavcherra line due to vegetation problem.as a result of non clearance of fault within that section ,132 kV Silchar - Dullavcherra line got tripped.													
Remedial Measures	Relay settings of Dullavcherra as well as Dharmanagar to be reviewed by AEGCL & TSECL in consultation with PG.Vegetation clearance to be done by AEGCL & TSECL.													
26	132 kV Dullavcherra - Dharmanagar	AEGCL & TSECL	4/16/2016 4:11	Dullavcherra	Over current	Not applicable	No	No	Loss of Load: 5	GD-I	4/16/2016 6:12	No SPS	0.013	
		Dharmanagar		No tripping	Not applicable	No	No							
	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL		Silchar	Over current	Not applicable	No	No			4/16/2016 4:40	No SPS		
		Dullavcherra		No tripping	Not applicable	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 Dullavcherra-Dharmanagar line & 132 kV Silchar- Dullavcherra line. At 04:11 Hrs on 16.04.16 , 132 kV Dullavcherra-Dharmanagar line & 132 kV Silchar- Dullavcherra line tripped. Due to tripping of these elements, Dullavcherra area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.												
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1359 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1750 MW)												
	Root Cause	Fault due to vegetation problem was in 132 kV Dullavcherra - Dharmanagar line.Non clearance of fault in this section at Dullavcherra resulted in tripping of 132 kV Silchar - Dullavcherra line.												
Remedial Measures	Over Current setting at Silchar for Dullavcherra to be co-ordinated with that for Dharmanagar feeder at Dullavcherra.Vegetation clearance to be done by TSECL.													
27	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	3/21/2016 3:35	Silchar	DP, ZIL, Y-E	Not Furnished	No	No	Loss of Load: 12	GD-I	3/21/2016 4:00	No SPS	0.008	
		Dullavcherra		Earth Fault	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 03:35 Hrs on 21.03.16 , 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1198 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1786 MW)												
	Restoration Details	Power extended to Dullavcherra area of Assam at 04:00 Hrs on 21.03.16 through 132 kV Silchar - Dullavcherra line.												
	Root Cause	Due to jumper failure in the line,132 kV Silchar - Dullavcherra line tripped.												
	Remedial Measures	Conditional as well as period maintenance of line accessories to be done by POWERGRID & AEGCL and petrolling also to be done.												

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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	एसपी संचालन विवरण / Details SP Operator
28	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	3/28/2016 9:45	Silchar	DP, ZIII, R-Y-E	Not Furnished	No	No	Loss of Load: 20	GD-I	3/28/2016 10:20	No S
				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 requirement). At 09:45 Hrs on 28.03.16 , 132 kV Silchar- Dullavcherra line tripped. Due to tripping of this element, Dullavcherra area of Assam was separated from rest of NER Grid and subsequently collapsed due to no source in this area.										
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1151 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1927 MW)										
	Restoration Details	Power extended to Dullavcherra area of Assam at 10:20 Hrs on 28.03.16 through 132 kV Silchar - Dullavcherra line.										
	Root Cause	Due to jumper failure in the line,132 kV Silchar - Dullavcherra line tripped.										
Remedial Measures	Conditional as well as period maintenance of line accessories to be done by POWERGRID & AEGCL and petrolling also to be done.											
29	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	4/4/2016 19:57	Silchar	DP, ZII, Y-E	Not Furnished	No	No	Loss of Load: 17	GD-I	4/4/2016 21:10	No S
				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 requirement). At 19:57 Hrs on 04.04.16 ,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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1291 MW , पूर्ववृत्ता लोड/ Antecedent Load : 2173 MW)										
	Root Cause	Transient lightening fault occurred in the AEGCL section of 132 kV Silchar - Dullavcherra line(Fault distance shown at Silchar 25 Km.).										
	Remedial Measures	Tower footing as well as substation earth resistance to be checked by POWERGRID & AEGCL. In case of frequent lightning, arrester has to be kept in place.										
30	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	4/15/2016 2:23	Silchar	DP, ZII, Y-E	Not Furnished	No	No	Loss of Load: 18	GD-I	4/15/2016 2:40	No S
				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 requirement). At 02:23 Hrs on 15.04.16 , 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1500 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1670 MW)										
	Root Cause	Due to vegetation problem in the line,132 kV Silchar - Dullavcherra line tripped.										
	Remedial Measures	Vegetation clearance to be done by POWERGRID & AEGCL.										
	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	4/16/2016 19:38	Silchar	DP, ZII, R-Y-B	Not Furnished	No	No	Loss of Load: 16	GD-I	4/16/2016 20:16	No S
				Dullavcherra	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	एसपी संचालन विवरण / Details SP Operator
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1067 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1573 MW)										
	Root Cause	Due to lightning in the line,132 kV 132 kV Silchar - Dullavcherra line tripped.										
	Remedial Measures	Tower footing as well as substation earth resistance to be checked by POWERGRID & AEGCL.										
	Remedial Measures	Vegetation clearance to be done by POWERGRID & AEGCL.										
32	132 kV Dullavcherra - Dharmanagar	AEGCL & TSECL	4/16/2016 4:11	Dullavcherra	Over current	Not applicable	No	No	Loss of Load: 5	GD-I	4/16/2016 6:12	No S
				Dharmanagar	No tripping	Not applicable	No	No				
	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL		Silchar	Over current	Not applicable	No	No			4/16/2016 4:40	No S
				Dullavcherra	No tripping	Not applicable	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 Dullavcherra-Dharmanagar line & 132 kV Silchar- Dullavcherra line. At 04:11 , 132 kV Dullavcherra-Dharmanagar line & 132 kV Silchar- Dullavcherra line tripped. Due to tripping of these elements, Dullavcherra area was separated from rest and subsequently collapsed due to no source in this area.										
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1359 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1750 MW)										
	Root Cause	Fault due to vegetation problem was in 132 kV Dullavcherra - Dharmanagar line.Non clearance of fault in this section at Dullavcherra resulted in tripping of 132 kV Dullavcherra line.										
	Remedial Measures	Over Current setting at Silchar for Dullavcherra to be co-ordinated with that for Dharmanager feeder at Dullavcherra.Vegetation clearance to be done by TSECL.										
33	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	4/24/2016 18:16	Silchar	DP, ZII, Y-E	Not Furnished	No	No	Loss of Load: 10	GD-I	4/25/2016 16:06	No S
				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 requirement). At 18:16 Hrs on 24.04.16, 132 kV Silchar- Dullavcherra line tripped. Due to tripping of this element, Dullavcherra area was separated from rest of N										
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1352 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1712 MW)										
	Root Cause	Due to vegetation problem in the line,132 kV Silchar - Dullavcherra line tripped.										
	Remedial Measures	Vegetation clearance to be done by POWERGRID & AEGCL.										
घटना का विवरण / Description of 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											
	(पूर्ववृत्त उत्पादन/ Antecedent Generation : 1352 MW , पूर्ववृत्त लोड/ Antecedent Load : 1712 MW)											
	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	4/4/2016 2:40	Silchar	DP, ZI, B-E	Not Furnished	No	No	Loss of Load: 3	GD-I	4/4/2016 3:29	No S
				Dullavcherra	Not Furnished	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	एसपी संचालन विवरण / Details of SP Operation
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1158 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1880 MW)										
	Root Cause	Transient lightening fault occured in the AEGCL section of 132 kV Silchar - Dullavcherra line(Fault distance shown at Silchar 25 Km.).										
	Remedial Measures	Tower footing as well as substation earth resistance to be checked by POWERGRID & AEGCL. In case of frequent lightning, arrester has to be kept in place.										
35	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	4/5/2016 11:57	Silchar	DP, ZI, Y-E	Not Furnished	No	No	Loss of Load:	GD-I	4/8/2016 17:38	No S
			Dullavcherra	Not Furnished	Not Furnished	No	No	7				
	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 requirement). At 11:57 Hrs on 05.04.16 ,132 kV Silchar- Dullavcherra line tripped. Due to tripping of this element, Dullavcherra area was separated from rest of N										
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1271 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1912 MW)										
	Root Cause	Due to jumper failure in the line(at AEGCL portion),132 kV Silchar - Dullavcherra line tripped.										
	Remedial Measures	Conditional as well as period maintenance of line accessories to be done by POWERGRID & AEGCL and petrolling also to be done.										
34	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	4/17/2016 9:19	Silchar	DP, ZII, Y-B-E	Not Furnished	No	No	Loss of Load:	GD-I	4/17/2016 9:33	No S
			Dullavcherra	No tripping	Not Furnished	No	No	4				
	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 requirement). At 09:19 Hrs on 17.04.16 , 132 kV Silchar- Dullavcherra line tripped. Due to tripping of this element, Dullavcherra area was separated from rest of N subsequently collapsed due to no source in this area.										
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1304 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1393 MW)										
	Root Cause	Due to lightning in the line,132 kV 132 kV Silchar - Dullavcherra line tripped.										
	Remedial Measures	Tower footing as well as substation earth resistance to be checked by POWERGRID & AEGCL.										
	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	4/22/2016 14:55	Silchar	DP, ZII, Y-E	Not Furnished	No	No	Loss of Load:	GD-I	4/22/2016 15:07	No S
			Dullavcherra	Earth Fault	Not Furnished	No	No	7				
	FIR by the constituent	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	एसपी संचालन विवरण / Details of SP Operation
35	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 requirement). At 14:55 Hrs on 22.04.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1664 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1332 MW)										
	Root Cause	Due to vegetation problem in the line,132 kV Silchar - Dullavcherra line tripped.										
	Remedial Measures	Vegetation clearance to be done by POWERGRID & AEGCL.										
36	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	5/17/2016 12:37	Silchar	DP, ZII, Y-E,56.59 Kms.	Not applicable	No	No	Loss of Load: 10	GD-I	5/17/2016 12:53	No source in this area
			Dullavcherra	No tripping	Not applicable	No	No					
	FIR by the constituent	No										
	Brief Description of the Incident	Dullavcherra area of Assam and Dharmanagar area of Tripura were connected with rest of NER Grid through 132 kV Silchar- Dullavcherra line(132 kV P.K Bari - Dharmanagar line kept open for system requirement). At 12:37 Hrs on 17.05.16 , 132 kV Silchar- Dullavcherra line tripped. Due to tripping of this element,Dullavcherra area of Assam and Dharmanagar area of Tripura were separated from rest of NER Grid and subsequently collapsed due to no source in this area.										
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1800 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1277 MW)										
	Root Cause	A transient fault occurred in the 132 kV Silchar-Dullavcherra Line beyond the jurisdiction of POWERGRID.										
	Remedial Measures	AEGCL / TSECL to check for the nature of fault occurred. After that, further analysis can be done;										
37	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	5/12/2016 16:02	Silchar	DP, ZII, B-E	Not applicable	No	No	Loss of Load: 9	GD-I	5/12/2016 16:38	No source in this area
			Dullavcherra	No tripping	Not applicable	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 requirement). At 16:02 Hrs on 12.05.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1757 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1693 MW)										
	Root Cause	Due to vegetation problem in 132 kV Dharmanagar - Dullavcherra line,132 kV Silchar - Dullavcherra line tripped.(Fault Distance shown at Silchar = 64 Km, which is beyond POWERGRID's jurisdiction (PG jurisdiction is around 12 kms))										
	Remedial Measures	Problem in the downstream system of be cheched by AEGCL & TSECL.Proper maintenace and frequent petrolling to be done by AEGCL & TSECL.										
38	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	5/12/2016 16:51	Silchar	DP, ZII, B-E	Not applicable	No	No	Loss of Load: 9	GD-I	5/12/2016 18:17	No source in this area
			Dullavcherra	No tripping	Not applicable	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 requirement). At 16:51 Hrs on 12.05.16,132 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.										

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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 गिड 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
42	Brief Description of the Incident	Haflong area of Assam was connected with rest of NER Grid through 132kV Haflong (AS)-Haflong(PG) line. At 13:31 Hrs on 15.06.16, 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 : 1498 MW , Antecedent Load : 1617 MW)											
	Root Cause												
	Remedial Measures												
43	132 kV Khandong - Umrangso	POWERGRID & AEGCL	6/28/2016 13:45	Khandong	Master Trip Relay Opearted	Lockout	No	No	Loss of Load: 2	GD-I	6/28/2016 14:08	No SPS	0.001
		Umrangso		Not Furnished	Not Furnished	No	No						
	132 kV Haflong(PG) - Jiribam	POWERGRID		Haflong(PG)	DP, ZI, B-E, 76.6 Kms.	Not Furnished	No	No					
				Jiribam	DP, ZI, B-E, 21.6 Kms.	Not Furnished	No	No					
	FIR by the constituent	No											
	Brief Description of the Incident	Umrangso & Haflong area of Assam were connected with rest of NER Grid through 132 kV Khandong-Umrangsho line & 132 kV Haflong-Jiribam line .At 13:45 Hrs on 28.06.16 , 132 kV Khandong-Umrangsho line & 132 kV Haflong-Jiribam line tripped. Due to tripping of these elements, Umrangso & Haflong area 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 : MW , Antecedent Load : MW)											
	Root Cause												
Remedial Measures													

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 बहाली / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एमयू में हानि/ Loss in MU
44	132 kV Gohpur - Nirjuli	POWERGRID	1/19/2016 11:35	Gohpur	No tripping	Not Furnished	No	No	Loss of Load: 15	GD-I	1/19/2016 11:46	No SPS	120
	FIR by the constituent	No											
	Brief Description of the Incident	Gohpur Area of Assam was connected with rest of NER Grid through 132 kV Gohpur - Nirjuli line (Bus Coupler CB of Gohpur kept open for system requirement). At 11:35 Hrs on 19.01.2016, 132 kV Gohpur - Nirjuli line tripped. Due to tripping of this element, Gohpur area was separated from rest of NER Grid and subsequently collapsed due to no source in this area. (Load loss in MU: 0.002)											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1063 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1472 MW)											
	Restoration Details	Power extended to Gohpur Area of Assam at 11:46 Hrs on 19.01.16 through 132 kV Gohpur - Nirjuli line.											
	Root Cause	Un-known miscreants had cut a big tree and fell on the line between Loc 106-107 at village Durpang, causing damage to the towers and conductors. FIR was filed in the nearest police station.											
	Remedial Measures	Vegetation clearance on up-hill side to be done.											
45	132 kV Gohpur - Nirjuli	POWERGRID	5/10/2016 12:30	Gohpur	Over current	Not applicable	No	No	Loss of Load: 26	GD-I	5/10/2016 12:55	No SPS	0.004
	FIR by the constituent	No											
	Brief Description of the Incident	Lekhi area & Capital area of Arunachal Pradesh were connected with rest of NER Grid through 132 kV Gohpur - Nirjuli line (132 kV Ranganadi - Lekhi was under emergency shutdown from 09:00 Hrs on 10.05.16). At 12:30 Hrs on 10.05.16, 132 kV Gohpur-Nirjuli line tripped. Due to tripping of this element, Lekhi area & Capital area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1378 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1570 MW)											
	Root Cause	As reported from Nirjuli sub station the incoming power at Gohpur failed. No problem in line, as recorded by CPCC, NERTS.											
	Remedial Measures	CT ratio at Gohpur to be checked by AEGCL. AEGCL to furnish detailed report on this incident. Accordingly if there is any problem in line, NERTS can take up for rectification. If it is really overcurrent, then NERTS needs to check relay settings at Gohpur / Nirjuli in coordination with AEGCL.											
	132 kV Silchar - Dullavcherra	POWERGRID & AEGCL	5/12/2016 16:51	Silchar	DP, ZIL, B-E	Not applicable	No	No	Loss of Load: 24	GD-I	5/12/2016 18:17	No SPS	0.004
				Dullavcherra	No tripping	Not applicable	No	No					
	132 kV Silchar - Panchgram	POWERGRID & AEGCL		Silchar	No tripping	Not applicable	No	No			5/12/2016 18:50	No SPS	
				Panchgram	Earth Fault	Not applicable	No	No					
	132 kV Srikona - Panchgram	AEGCL	5/12/2016 16:58	Srikona	No tripping	Not applicable	No	No			5/12/2016 17:38	No SPS	
				Panchgram	Earth Fault	Not applicable	No	No					
	132 kV Silchar - Srikona I	POWERGRID		Silchar	Over current	Not applicable	No	No			5/12/2016 17:36	No SPS	
				Srikona	No tripping	Not applicable	No	No					
	132 kV Silchar - Srikona II	POWERGRID		Silchar	Over current	Not applicable	No	No			5/12/2016 17:38	No SPS	

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

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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 विवे 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.एन. पेश किया (हां / नहीं) / EL output furnished within 24 hours	प्रभाव (मेगावाट में लोड और उत्पादन की हानि) / Effect (Loss of Load & Generation in MW)	श्रेणी सीईए बिड 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	रमयू में हानि/ Loss in MU
51	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	1/4/2016 4:37	Imphal (PG)	Earth Fault	Not Furnished	No	No	Loss of Load: 40	GD-I	1/4/2016 14:18	No SPS	0.04
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal	Not Furnished	Not Furnished	No	No			1/5/2016 14:45	No SPS	
		Imphal (PG)		Earth Fault	Not Furnished	No	No						
		Imphal		Not Furnished	Not Furnished	No	No						
	FIR by the constituent		No										
Brief Description of the Incident		Capital area & Karong Area of Manipur was 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 04:37 Hrs on 04.01.16, 132 kV Imphal-Imphal I & II lines tripped. Due to tripping of these elements, Capital area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
Antecedent Conditions of NER Grid		पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1321 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1541 MW)											
Restoration Details		Power extended to Capital area & Karong Area of Manipur at 14:18 Hrs on 04.01.16 through 132 kV Imphal (PG) - Imphal (MA) I line.											
Root Cause		Fault was in Manipur system and cleared at Imphal(PG). Tripping of incoming feeders occurred due to non clearance of fault within Manipur system. Earth quake of magnitude 6.7											
Remedial Measures		Relay coordination has to be done by MSPCL in consultation with PG.											
52	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	1/5/2016 14:54	Imphal (PG)	Earth Fault	Not Furnished	No	No	Loss of Load: 53	GD-I	1/5/2016 15:40	No SPS	0.038
		Imphal		Tripping due to Y-Phase Circuit II LA blast	Not Furnished	No	No	1/6/2016 7:58			No SPS		
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal (PG)	Earth Fault	Not Furnished	No					No	
		Imphal		Tripping due to Y-Phase Circuit II LA blast	Not Furnished	No	No						
	FIR by the constituent		No										
Brief Description of the Incident		Capital area & Karong Area of Manipur was 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 14:54 Hrs on 05.01.16, 132 kV Imphal-Imphal I & II lines tripped. Due to tripping of these elements, Capital area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.(Load loss in MU:0.038)											
Antecedent Conditions of NER Grid		पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1128 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1476 MW)											
Restoration Details		Power extended to Capital area & Karong Area of Manipur at 15:40 Hrs on 05.01.16 through 132 kV Imphal (PG) - Imphal (MA) I line.											
Root Cause		Tripping of incoming feeders occurred due to Y-Phase Circuit II LA blast .											
Remedial Measures		Residual life assessment to be conducted by MSPCL as per clause no 30 of CEA (Grid Standards),2010.MSPCL shall prepare Maintenance procedure for each equipments in line as per clause no 20 of CEA (Grid Standards),2010.MSPCL shall identify critical equipments and follow condition based maintenance in place of traditional time based maintenance as per clause no 24 of CEA (Grid Standards),2010.											
	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	1/12/2016 8:53	Imphal (PG)	Earth Fault	Not applicable	No	No	Loss of Load: 65	GD-I	1/12/2016 9:48	No SPS	0.048
		Imphal		Earth Fault	Not applicable	No	No	1/12/2016 9:49			No SPS		
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal (PG)	Earth Fault	Not applicable	No					No	
		Imphal		Earth Fault	Not applicable	No	No						
FIR by the constituent		No											

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	प्रभाव (मेगावाट लोड और उत्पादन हानि) / EL Load Generation in MW
53	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 line (Kohima line kept open for system requirement). At 08:53 Hrs on 12.01.2016, 132 kV Imphal-Imphal I & II lines tripped and Capital area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.							
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1188 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1685 MW)							
	Restoration Details	Power extended to Capital area & Karong area of Manipur at 09:48 Hrs on 12.01.16 through 132 kV Imphal (PG) - Imphal (MA) I							
	Root Cause	Fault was in Manipur system and cleared at Imphal(PG) tripping incoming feeders due to non clearance of fault within Manipur system							
	Remedial Measures	Relay coordination has to be done by Manipur in consultation with PG. Directional feature of each fault protection at Imphal (PG) to be done by MSPCL.							
54	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	1/14/2016 7:39	Imphal (PG)	Earth Fault	Not Furnished	Yes	No	Loss of Load : 54 MW
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal	Not Furnished	Not Furnished	No	No	
				Imphal (PG)	Earth Fault	Not Furnished	Yes	No	
				Imphal	Not Furnished	Not Furnished	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 line (Kohima line kept open for system requirement). At 07:39 Hrs on 14.01.2016, 132 kV Imphal-Imphal I & II lines tripped and Capital area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.							
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1401 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1924 MW)							
	Restoration Details	Power extended to Capital area & Karong area of Manipur at 07:56 Hrs on 14.01.16 through 132 kV Imphal (PG) - Imphal (MA) I							
Root Cause	Fault was in Manipur system and cleared at Imphal(PG) tripping incoming feeders due to non clearance of fault within Manipur system								
Remedial Measures	Relay coordination has to be done by Manipur in consultation with PG. Vegetation clearance to be done by MSPCL.								
55	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	1/21/2016 7:46	Imphal (PG)	Earth Fault	Not Furnished	No	No	Loss of Load : 64 MW
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal	Not Furnished	Not Furnished	No	No	
				Imphal (PG)	Earth Fault	Not Furnished	No	No	
				Imphal	Not Furnished	Not Furnished	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 line (Kohima line kept open for system requirement). At 07:46 Hrs on 21.01.2016, 132 kV Imphal-Imphal I & II lines tripped and Capital area were separated from rest of NER Grid and subsequently collapsed due to no source in this area. (Load loss in MU: 0.00 MW)							
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1170 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1790 MW)							
	Restoration Details	Power extended to Capital area & Karong area of Manipur at 07:51 Hrs on 21.01.16 through 132 kV Imphal (PG) - Imphal (MA) I							
Root Cause	Fault was in Manipur system and cleared at Imphal(PG). Tripping of incoming feeders occurred due to non clearance of fault within Manipur system								
Remedial Measures	Relay coordination has to be done by Manipur in consultation with PG. Vegetation clearance to be done by MSPCL.								

List of Grid Disturbances in North-Eastern Regional Grid during January 2011

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	प्रभाव (मेगावाट लोड और उत्पादन हानि) / Effect (Loss of Load & Generation in MW)	
56	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	1/21/2016 15:11	Imphal (PG)	Earth Fault	Not Furnished	No	No	Loss of L 61	
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal	Earth Fault	Not Furnished	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 line (Kohima line kept open for system requirement). At 15:11 Hrs on 21.01.2016,132 kV Imphal-Imphal I & II lines tripped. Capital area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.(Load loss in MU:0.01 MW)								
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1082 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1522 MW)								
	Restoration Details	Power extended to Capital area & Karong area of Manipur at 15:29 Hrs on 21.01.16 through 132 kV Imphal (PG) - Imphal (MA) I & II lines								
	Root Cause	Fault was in Manipur system and cleared at Imphal(PG). Tripping of incoming feeders occurred due to non clearance of fault by PG.								
	Remedial Measures	Relay coordination has to be done by Manipur in consultation with PG.Directionnal feature of eath fault protection at Imphal (PG) to be done by MSPCL.								
57	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	1/24/2016 19:05	Imphal (PG)	Earth Fault	Not Furnished	No	No	Loss of L 68	
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal	Not Furnished	Not Furnished	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 line (Kohima line kept open for system requirement). At 19:05 Hrs on 24.01.2016,132 kV Imphal-Imphal I & II lines tripped. Capital area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.(Load loss in MU:0.01 MW)								
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1598 MW , पूर्ववृत्ता लोड/ Antecedent Load : 2046 MW)								
	Restoration Details	Power extended to Capital area & Karong area of Manipur at 19:30 Hrs on 24.01.16 through 132 kV Imphal (PG) - Imphal (MA) I & II lines								
	Root Cause	Fault was in Manipur system and cleared at Imphal(PG). Tripping of incoming feeders occurred due to non clearance of fault by PG.								
	Remedial Measures	Relay coordination has to be done by Manipur in consultation with PG.Vegetation clearance to be done by MSPCL.								
58	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	2/9/2016 4:10	Imphal (PG)	Earth Fault	Not applicable	No	No	Loss of L 41	
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal	No tripping	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 line (Kohima line kept open for system requirement). At 04:10 Hrs on 09.02.2016 ,132 kV Imphal-Imphal I & II lines tripped. Capital area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.(Load loss in MU:0.01 MW)								
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1308 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1326 MW)								
	Restoration Details	Power extended to Capital area & Karong area of Manipur at 04:30 Hrs on 09.02.16 through 132 kV Imphal (PG) - Imphal (MA) I & II lines								

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 रिसे 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	प्रभाव (मेगावाट लोड और उत्पादन हानि) / Effect (Loss of Load & Generation in MW)
59	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	3/7/2016 15:23	Imphal (PG)	Earth Fault	Not applicable	No	No	Loss of L 28
				Imphal	Not Furnished	Not applicable	No	No	
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal (PG)	Earth Fault	Not applicable	No	No	
				Imphal	Not Furnished	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 line (Kohima line kept open for system requirement). At 15:23 Hrs on 07.03.16, 132 kV Imphal-Imphal I & II lines tripped. D area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.							
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1341 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1250 MW)							
Restoration Details	Power extended to Capital area & Karong area of Manipur at 15:45 Hrs on 07.03.16 through 132 kV Imphal (PG) - Imphal (MA) I & II lines								
Root Cause	Due to vegetation problem in the downstream of Imphal(Manipur), 132 kV Imphal (PG) - Imphal (MA) I&II lines tripped								
Remedial Measures	Relay coordination has to be done by Manipur in consultation with PG. Vegetation clearance to be done by MSPCL.								
60	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	3/14/2016 11:58	Imphal (PG)	Earth Fault	Not applicable	No	No	Loss of L 24
				Imphal	No tripping	Not applicable	No	No	
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal (PG)	Earth Fault	Not applicable	No	No	
				Imphal	No tripping	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 line (Kohima line kept open for system requirement). At 11:58 Hrs on 14.03.16 , 132 kV Imphal-Imphal I & II lines tripped. D area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.							
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1116 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1761 MW)							
Restoration Details	Power extended to Capital area & Karong area of Manipur at 12:09 Hrs on 14.03.16 through 132 kV Imphal (PG) - Imphal (MA) I & II lines								
Root Cause	Due to vegetation problem in the downstream of Imphal(Manipur), 132 kV Imphal (PG) - Imphal (MA) I&II lines tripped								
Remedial Measures	Relay coordination has to be done by Manipur in consultation with PG. Vegetation clearance to be done by MSPCL.								
61	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	3/19/2016 15:45	Imphal (PG)	Earth Fault	Not applicable	No	No	Loss of L 33
				Imphal	Earth Fault	Not applicable	No	No	
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal (PG)	Earth Fault	Not applicable	No	No	
				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 line (Kohima line kept open for system requirement). At 15:45 Hrs on 19.03.16 , 132 kV Imphal-Imphal I & II lines tripped. D area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.								
Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1116 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1761 MW)								

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 रिपोर्ट 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	प्रभाव (मेगावाट लोड और उत्पादन हानि) / Effect (Loss of Load & Generation in MW)	
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1241 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1922 MW)								
	Restoration Details	Power extended to Capital area & Karong area of Manipur at 05:58 Hrs on 26.03.16 through 132 kV Imphal (PG) - Imphal (MA) I & II lines (132 kV Karong kept open for system requirement). At 05:58 Hrs on 26.03.16, 132 kV Imphal-Imphal I & II lines tripped. Due to tripping, Capital area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.								
	Root Cause	Fault was in Manipur system and cleared at Imphal(PG) tripping incoming feeders due to non clearance of fault within Manipur system.								
	Remedial Measures	Relay coordination has to be done by Manipur in consultation with PG. Vegetation clearance to be done by MSPCL.								
63	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	3/26/2016 12:00	Imphal (PG)	Earth Fault	Not applicable	No	No	Loss of Load : 25 MW	
				Imphal	Not Furnished	Not applicable	No	No		
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal (PG)	Earth Fault	Not applicable	No	No		
				Imphal	Not Furnished	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 Karong kept open for system requirement). At 12:00 Hrs on 26.03.16, 132 kV Imphal-Imphal I & II lines tripped. Due to tripping, Capital area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.								
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1120 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1819 MW)								
	Restoration Details	Power extended to Capital area & Karong area of Manipur at 12:11 Hrs on 26.03.16 through 132 kV Imphal (PG) - Imphal (MA) I & II lines (132 kV Karong kept open for system requirement). At 12:11 Hrs on 26.03.16, 132 kV Imphal-Imphal I & II lines tripped. Due to tripping, Capital area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.								
	Root Cause	Fault was in Manipur system and cleared at Imphal(PG) tripping incoming feeders due to non clearance of fault within Manipur system.								
	Remedial Measures	Relay coordination has to be done by Manipur in consultation with PG. Vegetation clearance to be done by MSPCL.								
64	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	4/4/2016 13:59	Imphal (PG)	Earth Fault	Not applicable	No	No	Loss of Load : 14 MW	
				Imphal	Not Furnished	Not applicable	No	No		
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal (PG)	Earth Fault	Not applicable	No	No		
				Imphal	Not Furnished	Not applicable	No	No		
	FIR by the constituent	No								
	Brief Description of the Incident	Capital area of Manipur was connected with rest of NER Grid through 132 kV Imphal-Imphal I & II lines (132 kV Karong kept open for system requirement). At 13:59 Hrs on 04.04.16, 132 kV Imphal-Imphal I & II lines tripped. Due to tripping, Capital area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.								
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1260 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1961MW)								
	Root Cause	Fault was in Manipur system and cleared at Imphal(PG) tripping incoming feeders due to non clearance of fault within Manipur system.								
	Remedial Measures	Relay coordination has to be done by Manipur in consultation with PG. Directional feature of earth fault protection at Imphal (PG) to be set.								
		132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	4/8/2016 2:43	Imphal (PG)	Earth Fault	Not applicable	No	No	Loss of Load : 40 MW
			Imphal		Not Furnished	Not applicable	No	No		
132 kV Imphal (PG) - Imphal (MA) II		POWERGRID/ MSPCL	Imphal (PG)		Earth Fault	Not applicable	No	No		
			Imphal		Not Furnished	Not applicable	No	No		
FIR by the constituent		No								
	Capital area & Karong area of Manipur were connected with rest of NER Grid through 132 kV Imphal-Imphal I & II lines (132 kV Karong kept open for system requirement). At 02:43 Hrs on 04.04.16, 132 kV Imphal-Imphal I & II lines tripped. Due to tripping, Capital area were 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	प्रभाव (मेगावाट लोड और उत्पादन हानि) / Effect (Loss of Load & Generation in MW)
	FIR by the constituent	No							
67	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 (Kohima line kept open for system requirement). At 10:59 Hrs on 09.04.16, 132 kV Imphal-Imphal I & II lines tripped. In this area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.							
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1365 MW , पूर्ववृत्ता लोड/ Antecedent Load : 2022 MW)							
	Root Cause	Fault was in Manipur system and cleared at Imphal(PG). Tripping of incoming feeders occurred due to non clearance of fault.							
	Remedial Measures	Relay coordination has to be done by Manipur in consultation with PG.Vegetation clearance to be done by MSPCL.							
	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	4/10/2016 11:30	Imphal (PG)	Earth Fault	Not applicable	No	No	Loss of Load 49 MW
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal	Not Furnished	Not applicable	No	No	
				Imphal (PG)	Earth Fault	Not applicable	No	No	
	FIR by the constituent	No							
68	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 (Kohima line kept open for system requirement). At 11:30 Hrs on 10.04.16, 132 kV Imphal-Imphal I & II lines tripped. In this area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.							
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1533 MW , पूर्ववृत्ता लोड/ Antecedent Load : 2144 MW)							
	Restoration Details	Power extended to							
	Root Cause	Fault was in Manipur system and cleared at Imphal(PG). Tripping of incoming feeders occurred due to non clearance of fault.							
	Remedial Measures	Relay coordination has to be done by Manipur in consultation with PG.Vegetation clearance to be done by MSPCL.							
	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	4/10/2016 12:04	Imphal (PG)	Earth Fault	Not applicable	No	No	Loss of Load 48 MW
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal	Not Furnished	Not applicable	No	No	
				Imphal (PG)	Earth Fault	Not applicable	No	No	
	FIR by the constituent	No							
69	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 (Kohima line kept open for system requirement). At 12:04 Hrs on 10.04.16, 132 kV Imphal-Imphal I & II lines tripped. In this area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.							
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1530 MW , पूर्ववृत्ता लोड/ Antecedent Load : 2088 MW)							
	Root Cause	Fault was in Manipur system and cleared at Imphal(PG). Tripping of incoming feeders occurred due to non clearance of fault.							
	Remedial Measures	Relay coordination has to be done by Manipur in consultation with PG.Vegetation clearance to be done by MSPCL.							
	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	4/10/2016 12:31	Imphal (PG)	Earth Fault	Not applicable	No	No	Loss of Load 24 MW
				Imphal	Not Furnished	Not applicable	No	No	
	FIR by the constituent	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	प्रभाव (मेगावाट लोड और उत्पादन हानि) / Effect (Loss of Load & Generation in MW)
	Imphal (MA) I	POWERGRID	5/15/2016 21:28	Imphal	No tripping	Not applicable	No	No	Loss of Load 46 MW
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal (PG)	Earth Fault	Not applicable	No	No	
				Imphal	No tripping	Not applicable	No	No	
	FIR by the constituent	No							

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	प्रभाव (मेगावाट लोड और उत्पादन हानि) / Effect (Loss of Load & Generation in MW)
72	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 (Kohima line kept open for system requirement). At 21:28 Hrs on 15.05.16, 132 kV Imphal-Imphal I & II lines tripped. Capital area were separated from rest of NER Grid and subsequently collapsed due to no source in this area.							
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1837 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1640 MW)							
	Root Cause	Fault was in 132 kV Imphal(State) - Karong line and the same was not cleared at Imphal (State) because of problem in transmission line.							
	Remedial Measures	The CB for 132 kV Karong Line at Imphal (State) is to be attended attended by MSPCL at the earliest.							
73	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	5/31/2016 10:55	Imphal (PG)	Earth Fault	Not applicable	Yes	No	Loss of Load : 44 MW
				Imphal	Not Furnished	Not applicable	No	No	
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal (PG)	Earth Fault	Not applicable	Yes	No	
				Imphal	Not Furnished	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 (Kohima line kept open for system requirement). At 10:55 Hrs on 31.05.16 ,132 kV Imphal-Imphal I & II lines tripped. Capital 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 : 1634 MW , Antecedent Load : 1360 MW)							
	Root Cause	Fault was in 132 kV Imphal(State) - Karong line and the same was not cleared at Imphal (State) because of problem in transmission line.							
Remedial Measures	The CB for 132 kV Karong Line at Imphal (State) is to be attended attended by MSPCL at the earliest.								
74	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	6/28/2016 10:44	Imphal (PG)	Earth Fault	Not applicable	No	No	Loss of Load : 47 MW
				Imphal	Not Furnished	Not applicable	No	No	
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal (PG)	Earth Fault	Not applicable	No	No	
				Imphal	Not Furnished	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 (Kohima line kept open for system requirement). At 10:44 Hrs on 28.06.16, 132 kV Imphal-Imphal I & II lines tripped. Capital 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 : MW , Antecedent Load : MW)							
	Root Cause								
Remedial Measures									
	132 kV Imphal (PG) - Imphal (MA) I	POWERGRID	6/30/2016 4:11	Imphal (PG)	Earth Fault	Not applicable	No	No	Loss of Load : 35 MW
				Imphal	No tripping	Not applicable	No	No	
	132 kV Imphal (PG) - Imphal (MA) II	POWERGRID/ MSPCL		Imphal (PG)	Earth Fault	Not applicable	No	No	
				Imphal	No tripping	Not applicable	No	No	

List of Grid Disturbances in North-Eastern Regional Grid during January 2016													
क्रम संख्या SL No.	विकसित व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और घटना के समय सोलर ऑपरेटर द्वारा घदन की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सोलर ऑपरेटर द्वारा घदन की रिसे संकेत / Relay indications provided by CR operator	ऑटो रीक्लोजर का ऑपरेशन / Operation of Auto Reclose	24 घंटे के भीतर ऑपरेशन किया (हां / नहीं) / DR output furnished within 24 hours (Y/N)	24 घंटे के भीतर ई.एस.एस. पैक थ्रू आउटपुट (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 सीईएफ विट मानकों के अनुसार / Category as per CEA Grid Standards	सोलर ऑपरेटर द्वारा घदन की तिथि और समय / Date and time of restoration provided by CR operator	एसपीएस संचालन के विवरण / Details of SPS Operation	एसएम में हानि/ Loss in MU
	132 kV Loktak - Imphal (PG)	POWERGRID	21/06/2016 14:43	Loktak Imphal (PG)	DP, ZIL R-E Not Furnished	No	No	No	Loss of Load: 10	GD-I	2/1/2016 16:11	No SPS	0.00
	132 kV Loktak - Ningthoukhong	MSPCL		Loktak Ningthoukhong	No tripping Not Furnished	No	No	No			2/1/2016 15:25	No SPS	
FIR by the constituent		No											
76	Brief Description of the Incident	Ningthoukhong area of Manipur was connected with rest of NER Grid through 132 kV Loktak-Ningthoukhong line (132 kV Imphal/PG)-Ningthoukhong line & 132 kV kakching-Kongba line kept open for system constraint. At 14:43 Hrs on 01.02.16, 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.(Load loss in MU:0.007)											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1017 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1534 MW)											
	Restoration Details	Power extended to Ningthoukhong area of Manipur at 15:25 Hrs on 01.02.16 through 132 kV Loktak - Ningthoukhong line.											
	Root Cause	Due to vegetation problem in 132 kV Loktak - Imphal (PG) line, tripping occurred in 132 kV Loktak - Imphal (PG) & 132 kV Loktak - Ningthoukhong lines. 132 kV Loktak - Ningthoukhong line tripped due to m-a-operation of protective relay. Detailed analysis is to be done by MSPCL.											
	Remedial Measures	Relay settings at Ningthoukhong to be checked by MSPCL. Vegetation clearance to be done by POWERGRID.											
	132 kV Loktak - Ningthoukhong	MSPCL	3/19/2016 11:15	Loktak Ningthoukhong	DP, ZL Y-E Not Furnished	No	No	No	Loss of Load: 26	GD-I	3/19/2016 11:27	No SPS	0.008
FIR by the constituent		No											
77	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 11:15 Hrs on 19.03.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1130 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1846 MW)											
	Restoration Details	Power extended to Ningthoukhong area of Manipur at 11:27 Hrs on 19.03.16 through 132 kV Loktak - Ningthoukhong line.											
	Root Cause	Due to vegetation problem in the line, 132 kV Loktak - Ningthoukhong line tripped.											
	Remedial Measures	Vegetation clearance to be done by MSPCL.											
	132 kV Loktak - Ningthoukhong	MSPCL	3/31/2016 17:25	Loktak Ningthoukhong	Earth Fault Not Furnished	No	No	No	Loss of Load: 35	GD-I	3/31/2016 17:57	No SPS	0.02
FIR by the constituent		No											
78	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 17:25 Hrs on 31.03.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1213 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1927 MW)											
	Restoration Details	Power extended to Ningthoukhong area of Manipur at 17:57 Hrs on 31.03.16 through 132 kV Loktak - Ningthoukhong line.											
	Root Cause	Due to vegetation problem in the line or downstream of Ningthoukhong, 132 kV Loktak - Ningthoukhong line tripped.											
	Remedial Measures	Vegetation clearance to be done by MSPCL. Relay settings of Ningthoukhong and downstream substations of Manipur to be checked by MSPCL in consultation with											
	132 kV Loktak - Ningthoukhong	MSPCL	3/19/2016 11:35	Loktak Ningthoukhong	DP, ZIL Y-E Not Furnished	No	No	No	Loss of Load: 4	GD-I	3/19/2016 14:12	No SPS	0.002
FIR by the constituent		No											
79	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 11:35 Hrs on 19.03.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1135 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1824 MW)											
	Restoration Details	Power extended to Ningthoukhong area of Manipur at 12:19 Hrs on 19.03.16 through 132 kV Imphal/PG)-Ningthoukhong line.											
	Root Cause	Due to vegetation problem in the line, 132 kV Loktak - Ningthoukhong line tripped.											
	Remedial Measures	Vegetation clearance to be done by MSPCL.											
	132 kV Loktak - Ningthoukhong	MSPCL	4/7/2016 10:13	Loktak Ningthoukhong	DP, ZIL B-E Not Furnished	No	No	No	Loss of Load: 25	GD-I	4/7/2016 10:54	No SPS	0.024
FIR by the constituent		No											
80	Brief Description of the Incident	Ningthoukhong area of Manipur was connected with rest of NER Grid through 132 kV Loktak-Ningthoukhong line (132 kV Imphal/PG)-Ningthoukhong line & 132 kV kakching-Kongba line kept open for system constraint. At 10:13 Hrs on 07.04.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1285 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1987 MW)											
	Restoration Details	Due to vegetation problem in downstream of Ningthoukhong/Manipur, 132 kV Loktak - Ningthoukhong line got tripped.											
	Remedial Measures	Vegetation clearance to be done by MSPCL. Relay settings of Ningthoukhong and downstream substations of Manipur to be checked by MSPCL in consultation with											
	132 kV Loktak - Ningthoukhong	MSPCL	4/12/2016 11:57	Loktak Ningthoukhong	Earth Fault Not Furnished	No	No	No	Loss of Load: 14	GD-I	4/12/2016 12:40	No SPS	0.001
FIR by the constituent		No											

List of Grid Disturbances in North-E						
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	
81	Brief Description of the Incident	Ningthoukhong area of Manipur was connected with rest of NER Grid (Ningthoukhong line kept open for system constraint). At 11:57 Hrs of 4/24/2016, the line was separated from rest of NER Grid and subsequently collapsed due to fault.				
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1650 MW , पूर्ववृत्ता लोड : 1650 MW)				
	Root Cause	Fault was in line or downstream of Ningthoukhong(Manipur). For further details refer to the report.				
	Remedial Measures	Remedial measures after identification of root cause.				
82	132 kV Loktak - Ningthoukhong	MSPCL	4/24/2016 3:04	Loktak	DP, ZI, R-E	N
				Ningthoukhong	Not Furnished	N
	FIR by the constituent	No				
	Brief Description of the Incident	Ningthoukhong area of Manipur was connected with rest of NER Grid (Ningthoukhong line kept open for system constraint). At 03:04 Hrs of 4/24/2016, the line was separated from rest of NER Grid and subsequently collapsed due to fault.				
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1316 MW , पूर्ववृत्ता लोड : 1316 MW)				
	Root Cause	Due to vegetation problem in the line, 132 kV Loktak - Ningthoukhong line collapsed.				
83	Remedial Measures	Vegetation clearance to be done by MSPCL.				
	132 kV Loktak - Ningthoukhong	MSPCL	5/13/2016 16:55	Loktak	DP, ZI, B-E	N
				Ningthoukhong	Earth Fault	N
	FIR by the constituent	No				
	Brief Description of the Incident	Ningthoukhong area of Manipur was connected with rest of NER Grid (Ningthoukhong line kept open for system constraint). At 16:55 Hrs of 5/13/2016, the line was separated from rest of NER Grid and subsequently collapsed due to fault.				
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1750 MW , पूर्ववृत्ता लोड : 1750 MW)				
84	Root Cause	Fault within line since relay tripped from both end. Likely due to lightning strike.				
	Remedial Measures	Vegetation and tower footing resistance to be checked by MSPCL.				
	132 kV Loktak - Ningthoukhong	MSPCL	5/15/2016 12:01	Loktak	DP, ZII, B-E	N
				Ningthoukhong	No tripping	N
84	FIR by the constituent	No				
	Brief Description of the Incident	Ningthoukhong area of Manipur was connected with rest of NER Grid (Ningthoukhong line kept open for system constraint). At 12:01 Hrs of 5/15/2016, the line was separated from rest of NER Grid and subsequently collapsed due to fault.				

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

क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / 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 घंटों 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
85	132 kV Loktak - Rengpang	MSPCL	1/9/2016 10:58	Loktak	DP, ZI, Y-B-E	Not Furnished	No	No	Loss of Load: 2	GD-I	1/9/2016 14:56	No SPS	0.008
	FIR by the constituent	No											
	Brief Description of the Incident	Rengpang area of Manipur was connected with rest of NER Grid through 132 kV Loktak-Rengpang line (132 kV Rengpang-Jiribam(MA) line is under long outage). At 10:58 Hrs on 09.01.16, 132 kV Loktak-Rengpang line tripped. Due to tripping of this element,Rengpang area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1232 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1445 MW)											
	Restoration Details	Power extended to Rengpang area of Manipur at 14:56 Hrs on 09.01.16 through 132 kV Loktak - Rengpang line.											
	Root Cause	Tripping due to Vegetation problem											
	Remedial Measures	Vegetation clearance to be done by MSPCL.											
86	132 kV Loktak - Rengpang	MSPCL	1/13/2016 12:03	Loktak	DP, ZI, B-E	Not Furnished	No	No	Loss of Load: 2	GD-I	1/14/2016 15:08	No SPS	0.054
	FIR by the constituent	No											
	Brief Description of the Incident	Rengpang area of Manipur was connected with rest of NER Grid through 132 kV Loktak-Rengpang line (132 kV Rengpang-Jiribam(MA) line is under long outage). At 12:03 Hrs on 13.01.2016,132 kV Loktak-Rengpang line tripped. Due to tripping of this element,Rengpang area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1117 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1522 MW)											
	Restoration Details	Power extended to Rengpang area of Manipur at 15:08 Hrs on 14.01.16 through 132 kV Loktak - Rengpang line.											
	Root Cause	Tripping due to Vegetation problem											
	Remedial Measures	Vegetation clearance to be done by MSPCL.											
87	132 kV Loktak - Rengpang	MSPCL	2/6/2016 14:21	Loktak	DP, ZI, B-E	Not Furnished	No	No	Loss of Load: 2	GD-I	2/7/2016 15:34	No SPS	0.051
	FIR by the constituent	No											
	Brief Description of the Incident	Rengpang area of Manipur was connected with rest of NER Grid through 132 kV Loktak-Rengpang line (132 kV Rengpang-Jiribam(MA) line is under long outage). At 14:21 Hrs on 06.02.16,132 kV Loktak-Rengpang line tripped. Due to tripping of this element,Rengpang area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.(Load loss in MU:0.05)											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1216 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1503 MW)											

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

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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 गिड 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	
91	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	2/27/2016 14:14	Khliehriat (PG)	DP, ZIII, Y-E	Not Furnished	Yes	Yes	Loss of Load: 51& Loss of Generation: 0	GD-I	2/27/2016 14:42	No SPS	0.001	
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (ME)	No tripping	Not Furnished	No	No			2/27/2016 14:43	No SPS		
				Khliehriat (PG)	DP, ZIII, Y-E	Not Furnished	Yes	Yes						
				Khliehriat (ME)	No tripping	Not Furnished	No	No						
	FIR by the constituent		Yes											
	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 Panchgram-Lumnsnong line, 132 kV NEHU-Umiam line & 132 kV NEHU-Mawlai line were kept open for system requirement). At 14:14 Hrs on 27.02.16 ,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 subsequent collapsed due to no source in this area.(Load loss in MU:0.001)											
	Antecedent Conditions of NER Grid		(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 979 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1364 MW)											
	Restoration Details		Power extended to NEHU area at 14:16 Hrs on 27.02.16 through 132 kV NEHU-Umiam line.											
	Root Cause		Due to fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).											
	Remedial Measures		Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.											
92	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	2/28/2016 12:54	Khliehriat (PG)	DP, ZI, B-E	Not Furnished	Yes	No	Loss of Load: 31& Loss of Generation: 0	GD-I	2/28/2016 13:18	No SPS	0.003	
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (ME)	No tripping	Not Furnished	No	No			2/28/2016 13:19	No SPS		
				Khliehriat (PG)	DP, ZI, B-E	Not Furnished	Yes	No						
				Khliehriat (ME)	No tripping	Not Furnished	No	No						
	FIR by the constituent		Yes											
	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 Panchgram-Lumnsnong line, 132 kV NEHU-Umiam line & 132 kV NEHU-Mawlai line were kept open for system requirement). At 12:54 Hrs on 28.02.16 ,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 subsequent collapsed due to no source in this area.(Load loss in MU:0.003)											
	Antecedent Conditions of NER Grid		(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1019 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1226 MW)											
	Restoration Details		Power extended to NEHU area at 12:58 Hrs on 28.02.16 through 132 kV NEHU-Umiam line.											
	Root Cause		Due to fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).											
	Remedial Measures		Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.											
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID		Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	Yes	No	Loss of Load:		2/28/2016 15:59	No SPS		
				Khliehriat (ME)	DP, ZII, R-Y-B	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 रिसे 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
93	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL	2/28/2016 15:14	Khliehriat (PG)	DP, ZII, R-Y-B	Not Furnished	Yes	No	43	GD-I	2/28/2016 15:53	No SPS	0.017
				Khliehriat (ME)	DP, ZII, R-Y-B	Not Furnished	No	No					
	Leshka U 1	MePGCL		Leshka	Tripped due to tripping of Lock out Relay	Not applicable	No	No	Loss of Generation: 5		2/28/2016 17:30	No SPS	
	FIR by the constituent		Yes										
	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 Panchgram-Lumnsnong line, 132 kV NEHU-Umiam line & 132 kV NEHU-Mawlai line were kept open for system requirement). At 15:14 Hrs on 28.02.16, 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequent collapsed due to load generation mismatch.(Load loss in MU:0.007)										
	Antecedent Conditions of NER Grid		(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1019 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1160 MW)										
	Restoration Details		Power extended to NEHU area at 15:21 Hrs on 28.02.16 through 132 kV NEHU-Umiam line.										
94	Root Cause		The distance shown for the Line - 1 at Khliehriat(PG) end was 17.51 Km, which is beyond the line length (7.801 Km). The line tripped due to fault in the MeECL system.										
	Remedial Measures		All main protections (Distance Relays) at MeECL end are lying in-operative, which are to be made functional after completing the Earthing of the switchyard.										
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	2/28/2016 16:00	Khliehriat (PG)	DP, ZIII, Y-E	Not Furnished	Yes	No	Loss of Load: 23	GD-I	2/28/2016 17:14	No SPS	0.005
				Khliehriat (ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZIII, Y-E	Not Furnished	Yes	No			2/28/2016 16:13	No SPS	
				Khliehriat (ME)	No tripping	Not Furnished	No	No					
	FIR by the constituent		Yes										
	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 Panchgram-Lumnsnong line, 132 kV NEHU-Umiam line & 132 kV NEHU-Mawlai line were kept open for system requirement). At 16:00 Hrs on 28.02.16, 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequent collapsed due to no source in this area.(Load loss in MU:0.005)										
94	Antecedent Conditions of NER Grid		(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1021 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1203 MW)										
	Restoration Details		Power extended to NEHU area at 16:05 Hrs on 28.02.16 through 132 kV NEHU-Umiam line.										
	Root Cause		Due to fault in Meghalaya system, 132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).										
	Remedial Measures		Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL. Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.										
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	3/19/2016 11:49	Khliehriat (PG)	DP, ZIII, Y-E	Not Furnished	Yes	No	Loss of Load: 45	GD-I	3/19/2016 12:07	No SPS	0.002
				Khliehriat (ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) -	MePTCL		Khliehriat (PG)	DP, ZIII, Y-E	Not Furnished	Yes	No			3/19/2016 12:10	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
95	Khliehriat (ME) II	MePTCL		Khliehriat(ME)	No tripping	Not Furnished	No	No			3/19/2016 12:10	No SPS	
	FIR by the constituent	Yes											
	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 Panchgram-Lumnsnong line, 132 kV NEHU-Umiam line & 132 kV NEHU-Mawlai line were kept open for system requirement). At 11:49 Hrs on 19.03.16,132 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 subsequent collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1129 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1828 MW)											
	Restoration Details	Power extended to NEHU area at 11:53 Hrs on 19.03.16 through 132 kV NEHU-Mawlai line.											
	Root Cause	Due to fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).											
Remedial Measures	Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.												
96	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	3/19/2016 12:29	Khliehriat (PG)	DP, ZIII, R-Y-B	Not Furnished	Yes	No	Loss of Load: 13	GD-I	3/19/2016 12:50	No SPS	0.005
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL	3/19/2016 12:30	Khliehriat (PG)	DP, ZIII, R-Y-B	Not Furnished	Yes	No			3/19/2016 13:05	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	FIR by the constituent	Yes											
	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 Panchgram-Lumnsnong line, 132 kV NEHU-Umiam line & 132 kV NEHU-Mawlai line were kept open for system requirement). At 12:30 Hrs on 19.03.16 ,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 subsequent collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1126 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1800 MW)											
	Restoration Details	Power extended to NEIGRIMS at 12:57 Hrs on 19.03.16 through 132 kV NEHU-NEIGRIMS line.											
	Root Cause	Due to fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).											
	Remedial Measures	Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.											
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	3/28/2016 2:24	Khliehriat (PG)	DP, ZI, R-Y-E	Not Furnished	No	No	Loss of Load: 18	GD-I	3/28/2016 3:10	No SPS	0.002
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) -	MePTCL		Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No			3/28/2016 3:11	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 रिसे 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
97	Khliehriat (ME) II	MePTCL		Khliehriat(ME)	No tripping	Not Furnished	No	No			3/26/2016 3:11	No SPS	
	FIR by the constituent	Yes											
	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 Panchgram-Lumnsnong line, 132 kV NEHU-Umiam line & 132 kV NEHU-Mawlai line were kept open for system requirement). At 02:24 Hrs on 28.03.16,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequent collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1149 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1671 MW)											
	Restoration Details	Power extended to NEHU at 02:33 Hrs on 28.03.16 and to NEIGRIHMS through 132kV Umiam-NEHU-NEIGRIMS. 132kV Khliehriat (PG)-Khliehriat line I and II at 03:12hrs.											
	Root Cause	Due to fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).											
	Remedial Measures	Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.											
98	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	3/31/2016 0:40	Khliehriat (PG)	DP, ZI, Y-B-E	Not Furnished	No	No	Loss of Load: 12	GD-I	3/31/2016 2:22	No SPS	0.006
		Khliehriat(ME)		Not Furnished	Not Furnished	No	No						
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, Y-B-E	Not Furnished	No	No			3/31/2016 2:26	No SPS	
		Khliehriat(ME)		Not Furnished	Not Furnished	No	No						
	FIR by the constituent	Yes											
	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 Panchgram-Lumnsnong line, 132 kV NEHU-Umiam line & 132 kV NEHU-Mawlai line were kept open for system requirement). At 00:40 Hrs on ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1254 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1864 MW)											
	Restoration Details	Power extended to Mustem at 01:11 Hrs on 31.03.16 and to Khliehriat through 132kV Mustem-NEHU and 132kV Mustem-Khliehriat lines .											
	Root Cause	Due to fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).											
		Remedial Measures	Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.										
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID		Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No	Loss of Load: 40		4/14/2016 20:44	No SPS	
		Khliehriat(ME)		No tripping	Not Furnished	No	No						
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No			4/14/2016 20:45	No SPS	
		Khliehriat(ME)		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	
	Root Cause	Due to lighning fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).R-Y-B fault seems because of lightning.												
	Remedial Measures	Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.												
101	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	4/16/2016 9:59	Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No	Loss of Load: 20	GD-I	4/16/2016 10:17	No SPS	0.007	
				Khliehriat(ME)	DP, ZI, R-Y-B	Not Furnished	No	No						
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No			4/16/2016 10:22	No SPS		
				Khliehriat(ME)	DP, ZI, R-Y-B	Not Furnished	No	No						
	Leshka U 1	MePGCL		Leshka	Tripped due to Tripping of 132 kV Khl(PG)-Khl I&II lines	Not applicable	No	No	Loss of Generation: 70		4/16/2016 10:33	No SPS		
	Leshka U 2	MePGCL	Leshka		Not applicable	No	No		4/16/2016 10:33	No SPS				
	FIR by the constituent	Yes												
	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 Panchgram-Lumnsnong line, 132 kV NEHU-Umiam line & 132 kV NEHU-Mawlai line were kept open for system requirement). At 09:59 Hrs on 16.04.16 ,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 load generation mismatch.												
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1550 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1495 MW)												
	Root Cause	Due to lighning fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).R-Y-B fault seems because of lightning.												
	Remedial Measures	Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.												
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	4/17/2016 20:55	Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No	Loss of Load: 24	GD-I	4/17/2016 21:13	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	Not Furnished	No	No			4/17/2016 21:17	No SPS		
				Khliehriat(ME)	No tripping	Not Furnished	No	No	Loss of Generation:					
	Leshka U 1	MePGCL		Leshka	Tripped due to tripping of 132	Not applicable	No	No			4/17/2016 21:13	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
	Root Cause	Due to lighning fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).R-Y-B fault seems because of lightning.											
	Remedial Measures	Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.											
104	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	4/19/2016 3:42	Khliehriat (PG)	DP, ZII, Y-B-E	Not Furnished	No	No	Loss of Load: 59	GD-I	4/19/2016 3:55	No SPS	0.003
		Khliehriat(ME)		No tripping	Not Furnished	No	No						
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZII, Y-B-E	Not Furnished	No	No			4/19/2016 4:08	No SPS	
		Khliehriat(ME)		No tripping	Not Furnished	No	No						
	Leshka U 1	MePGCL		Leshka	Trippe due to tripping of 132 kV Khliehriat (PG) - Khliehriat (ME) I & II lines	Not applicable	No	No	Loss of Generation: 126		4/19/2016 4:23	No SPS	
	Leshka U 2	MePGCL		Leshka	Not applicable	No	No	4/19/2016 4:33			No SPS		
	Leshka U 3	MePGCL	Leshka	Not applicable	No	No	4/19/2016 4:46	No SPS					
	FIR by the constituent	Yes											
	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 Panchgram-Lumnsnong line, 132 kV NEHU-Umiam line & 132 kV NEHU-Mawlai line kept open for system requirement). At 03:42 Hrs on 19.04.16 ,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 load generation mismatch.											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1386 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1260 MW)											
Root Cause	Due to fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).												
Remedial Measures	Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.												
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID		Khliehriat (PG)	DP, ZIII, R-Y-B	Not Furnished	No	No	Loss of Load: 20		4/19/2016 9:20	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) -	MePTCL		Khliehriat (PG)	DP, ZII, R-Y-B	Not Furnished	No	No			4/19/2016 9:43	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	
105	Khliehriat (ME) II	MePTCL	4/19/2016 8:47	Khliehriat(ME)	No tripping	Not Furnished	No	No		GD-I	4/19/2016 9:45	No SPS	0.001	
	Leshka U 2	MePGCL		Leshka	Tripped due to tripping of 132 kV Khliehriat (PG) - Khliehriat (ME) I & II lines	Not applicable	No	No	Loss of Generation: 42		4/19/2016 8:59	No SPS		
	FIR by the constituent		Yes											
	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 Panchgram-Lumnsnong line, 132 kV Umiam-Umiam Stage-I line & 132 kV NEHU-Mawlai line were kept open for system requirement). At 08:47 Hrs on 19.04.16, 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid		(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1269 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1434 MW)											
	Root Cause		Due to lightning fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).R-Y-B fault seems because of lightning.											
Remedial Measures		Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.												
106	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	4/21/2016 22:01	Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No	Loss of Load: 31	GD-I	4/21/2016 22:48	No SPS	0.009	
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat(ME)	No tripping	Not Furnished	No	No						
				Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No						
				Khliehriat(ME)	No tripping	Not Furnished	No	No						
	Leshka U 1	MePGCL		Leshka	Over Frequency	Not applicable	No	No	Loss of Generation: 124		4/21/2016 22:10	No SPS		
	Leshka U 2	MePGCL		Leshka	Voltage control Over Current	Not applicable	No	No			4/21/2016 22:29	No SPS		
	Leshka U 3	MePGCL	Leshka	Over Frequency	Not applicable	No	No	Shutdown taken		No SPS				
	FIR by the constituent		Yes											
	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 Panchgram-Lumnsnong line kept open for system requirement). At 22:01 Hrs on 21.04.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											

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

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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 रिपोर्ट 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	Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL. Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.											
108	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	4/23/2016 15:03	Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No	Loss of Load: 23	GD-I	4/23/2016 15:33	No SPS	0.005
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No			4/23/2016 15:34	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV NEHU - NEIGRIHMS	MePTCL		NEHU	Earth Fault	Not applicable	No	No			4/23/2016 15:10	No SPS	
				NEIGRIHMS	Not Furnished	Not applicable	No	No					
	132 kV Mustem-NEHU	MePTCL		Mustem	Not Furnished	Not Furnished	No	No			4/23/2016 15:06	No SPS	
				NEHU	Tripped	Not Furnished	No	No					
	Leshka U 2	MePGCL		Leshka	Over Frequency	Not applicable	No	No	Loss of Generation: 42		4/23/2016 15:41	No SPS	
	FIR by the constituent	Yes											
	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 and 2 x 160 MVA, 220/132 kV ICT I&II at Byrnihat (132 kV Panchgram-Lumnsong line kept open for system requirement). At 15:03 Hrs on 23.04.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines,132 kV NEHU - NEIGRIHMS & 132 kV Mustem-NEHU line tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1319 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1427 MW)											
	Root Cause	Due to lightning fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).R-Y-B fault seems because of lightning.											
	Remedial Measures	Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL. Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.											
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	4/23/2016 22:05	Khliehriat (PG)	DP, ZI, B-E	Not Furnished	No	No	Loss of Load: 20	GD-I	4/23/2016 23:06	No SPS	0.001
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, B-E	Not Furnished	No	No			4/23/2016 23:07	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	Leshka U 1	MePGCL		Leshka	Over Frequency	Not applicable	No	No	Loss of		4/23/2016 23:25	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 गिड 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
109	Leshka U 2	MePGCL		Leshka	Over Frequency	Not applicable	No	No	Generation:		4/23/2016 22:44	No SPS	
	FIR by the constituent	Yes											
	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 Panchgram-Lumnsnong line, 132 kV NEHU- NEIGRIHMS line & 132 kV NEHU-Mustem line kept open for system requirement). At 22:05 Hrs on 23.04.16, 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 load generation mismatch.											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1335 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1497 MW)											
	Root Cause	Due to fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).											
	Remedial Measures	Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.											
110	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	4/24/2016 0:07	Khliehriat (PG)	DP, ZI, B-E	Not Furnished	No	No	Loss of Load: 22	GD-I	4/24/2016 9:17	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	Not Furnished	No	No					
		Khliehriat(ME)		No tripping	Not Furnished	No	No						
	Leshka U 2	MePGCL		Leshka	Over Frequency	Not applicable	No	No	Loss of Generation: 42		4/24/2016 1:04	No SPS	
	FIR by the constituent	Yes											
	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 Panchgram-Lumnsnong line, 132 kV NEHU- NEIGRIHMS line & 132 kV NEHU-Mustem line kept open for system requirement). At 00:07 Hrs on 24.04.16, 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 load generation mismatch.											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1700 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1486 MW)											
Root Cause	Due to fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).												

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क्रम संख्या/Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और 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 रिपोर्ट 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	Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.											
111	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	4/24/2016 17:23	Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No	Loss of Load: 59	GD-I	4/24/2016 17:32	No SPS	0.004
		Khliehriat(ME)		No tripping	Not Furnished	No	No						
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No			4/24/2016 17:33	No SPS	
		Khliehriat(ME)		No tripping	Not Furnished	No	No						
	Leshka U 1	MePGCL		Leshka	Over Frequency	Not applicable	No	No	4/24/2016 17:47		No SPS		
	Leshka U 2	MePGCL		Leshka	Over Frequency	Not applicable	No	No	4/24/2016 17:48		No SPS		
	FIR by the constituent	Yes											
	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 Panchgram-Lumnsnong line, 132 kV NEHU- NEIGRIHMS line & 132 kV NEHU-Mustem line kept open for system requirement). At 17:23 Hrs on 24.04.16, 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1292 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1574 MW)											
	Root Cause	Due to fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).											
Remedial Measures	Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.												
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	4/25/2016 2:31	Khliehriat (PG)	DP, ZI, B-E	Not Furnished	No	No	Loss of Load: 11	GD-I	4/25/2016 2:51	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	Not Furnished	No	No			4/25/2016 2:51	No SPS	
		Khliehriat(ME)		No tripping	Not Furnished	No	No						
	132 kV NEHU - NEIGRIHMS	MePTCL		NEHU	Earth Fault	Not applicable	No	No			4/25/2016 2:46	No SPS	
		NEIGRIHMS		Not Furnished	Not applicable	No	No						
	132 kV Mustem-NEHU	MePTCL		Mustem	Not Furnished	Not Furnished	No	No	4/25/2016 2:40		No SPS		
		NEHU		Earth Fault	Not Furnished	No	No						
	Leshka U 1	MePGCL	Leshka	Tripped due to tripping of 132 kV Khliehriat (PG)	Not applicable	No	No	Loss of Generation:	4/25/2016 3:39	No SPS			

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

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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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1396 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1867 MW)											
	Root Cause	Due to fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).											
	Remedial Measures	Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.											
115	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	4/28/2016 0:02	Khliehriat (PG)	DP, ZI, R-B-E	Not Furnished	No	No	Loss of Load: 38		4/28/2016 0:27	No SPS	0.002
		Khliehriat(ME)		No tripping	Not Furnished	No	No						
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, R-B-E	Not Furnished	No	No			4/28/2016 0:28	No SPS	
		Khliehriat(ME)		No tripping	Not Furnished	No	No						
	132 kV NEHU - NEIGRIHMS	MePTCL		NEHU	General Trip	Not applicable	No	No			4/28/2016 0:06	No SPS	
		NEIGRIHMS		No tripping	Not applicable	No	No						
	132 kV Mustem-NEHU	MePTCL		Mustem	No tripping	Not Furnished	No	No	4/28/2016 0:08	No SPS			
		NEHU		General Trip	Not Furnished	No	No						
	Leshka U 2	MePGCL		Leshka	Over Frequency	Not applicable	No	No	Loss of Generation: 42		4/28/2016 0:32	No SPS	
	FIR by the constituent	Yes											
	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 and 2 x 160 MVA, 220/132 kV ICT I&II at Byrnihat (132 kV Panchgram-Lumnsnong line kept open for system requirement). At 00:02 Hrs on 28.04.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines,132 kV NEHU - NEIGRIHMS & 132 kV Mustem-NEHU line tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 978 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1214 MW)											
	Root Cause	Due to fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).											
	Remedial Measures	Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.											
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID		Khliehriat (PG)	DP, ZI, Y-B-E	Not Furnished	No	No			4/28/2016 22:09	No SPS	

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और समय सीआर ऑपरेटर द्वारा घटना के प्रदान की / Date & Time of Event provided by CR operator	नोड के नाम / Name of Node	सीआर ऑपरेटर द्वारा प्रदान की रिपोर्ट 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	
116	Khliehriat (ME) I	MePTCL	4/28/2016 21:36	Khliehriat(ME)	No tripping	Not Furnished	No	No	Loss of Load: 12	GD-I			0.001	
	132 kV Khliehriat (PG) - Khliehriat (ME) II			DP, ZI, Y-B-E	Not Furnished	No	No	4/28/2016 22:10			No SPS			
	132 kV NEIGRIHMS - Khliehriat (ME)			Over current	Not applicable	No	No	4/28/2016 21:45			No SPS			
	Khliehriat	No tripping		Not applicable	No	No	4/28/2016 21:40	No SPS						
	Mustem	Not Furnished		Not Furnished	No	No								
	NEHU	General Trip		Not Furnished	No	No								
	132 kV Mustem-NEHU	MePTCL		Leshka	Over Frequency	Not applicable	No	No	Loss of Generation: 42		4/28/2016 22:25	No SPS		
	Leshka U 2	MePGCL												
	FIR by the constituent	Yes												
	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 and 2 x 160 MVA, 220/132 kV ICT I&II at Byrnihat (132 kV Panchgram-Lumnsong line kept open for system requirement). At 21:36 Hrs on 28.04.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines,132 kV Khliehriat (MePTCL) - NEIGRIHMS & 132 kV Mustem-NEHU line tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.												
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1228 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1469 MW)												
	Root Cause	Due to fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).												
	Remedial Measures	Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.												
		132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	4/30/2016 22:07	Khliehriat (PG)	DP, ZI, R-E	Not Furnished	No	No	Loss of Load: 52	GD-I	4/30/2016 23:13	No SPS	0.009
		132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat(ME)	No tripping	Not Furnished	No	No			4/30/2016 23:13	No SPS	
		132 kV NEIGRIHMS - Khliehriat (ME)	MePTCL		Khliehriat (PG)	DP, ZI, R-E	Not Furnished	No	No			4/30/2016 22:13	No SPS	
			Khliehriat(ME)		No tripping	Not Furnished	No	No						
			NEIGRIHMS		DP, ZI, R-Y-B	Not Furnished	No	No						
			Khliehriat		DP, ZI, R-Y-B	Not Furnished	No	No						
132 kV Mustem-Khliehriat		MePTCL	Mustem		DP, ZI, R-Y-B	Not Furnished	No	No					4/30/2016 22:15	
			Khliehriat	DP, ZI, R-Y-B	Not Furnished	No	No							

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

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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 समय सीआर ऑपरेटर द्वारा घटना के 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 गिड 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
119	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	4/23/2016 17:07	Khliehriat (PG)	DP, ZI, R-B-E	Not Furnished	No	No	Loss of Load: 9	GD-I	4/23/2016 18:21	No SPS	0.009
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	FIR by the constituent	Yes											
	Brief Description of the Incident	Khliehriat area of Meghalaya was connected with rest of NER Grid through 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I line. (132 kV Panchgram-Lumnsong line, 132 kV NEHU-NEIGRIHMS line & 132 kV NEHU-Mustem line were kept open for system requirement,132 kV Khliehriat (PG) - Khliehriat (ME) II line was not restored after tripping at 16:19 Hrs on 23.04.16). At 17:07 Hrs on 23.04.16, 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I line tripped. Due to tripping of this element, Khleihriat area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1278 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1569 MW)											
	Root Cause	Due to fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).											
		Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing earthing to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.											
120	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	4/24/2016 13:28	Khliehriat (PG)	DP, ZI, B-E	Not Furnished	No	No	Loss of Load: 9	GD-I	4/24/2016 9:17	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	Not Furnished	No	No			4/24/2016 9:22	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	FIR by the constituent	Yes											
	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 and 2 x 160 MVA, 220/132 kV ICT I&II at Byrnihat (132 kV Panchgram-Lumnsong line kept open for system requirement). At 13:28 Hrs on 23.04.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines,132 kV Khliehriat - NEIGRIHMS & 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1208 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1355 MW)												
Root Cause	Due to fault in Meghalaya system,132 kV Khliehriat (PG) - Khliehriat (ME) I&II lines tripped due to non clearance of fault at downstream of Khliehriat (ME).												

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	Earthing work related to Meghalaya substations to be completed as soon as possible. After completion of S/S earthing, tower footing resistance to be checked and in case of more than 10 ohms, proper earthing has to be done by MePTCL.Relay settings of Meghalaya substations are to be checked by MePTCL in coordination with POWERGRID after the completion of earthing works.												
121	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	5/1/2016 21:42	Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No	Loss of Load: 12	GD-I	5/1/2016 22:15	No SPS	0.002	
		Khliehriat(ME)		No tripping	Not Furnished	No	No				5/1/2016 22:27	No SPS		
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No				5/1/2016 21:51		No SPS
		Khliehriat(ME)		No tripping	Not Furnished	No	No				5/1/2016 21:51	No SPS		
	132 kV NEHU - NEIGRIHMS	MePTCL		NEHU	General Trip	Not applicable	No	No						
		NEIGRIHMS		Not Furnished	Not applicable	No	No							
		Mustem		Not Furnished	Not Furnished	No	No							
	132 kV Mustem-NEHU	MePTCL		NEHU	General Trip	Not Furnished	No	No						
	Leshka U 2	MePGCL		Leshka	Over Frequency	Not applicable	No	No	Loss of Generation: 42		5/1/2016 22:17	No SPS		
	FIR by the constituent	Yes												
	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 and 2 x 160 MVA, 220/132 kV ICT I&II at Byrnihat (132 kV Panchgram-Lumnsnong line kept open for system requirement). At 21:42 Hrs on 01.05.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines,132 kV NEHU - NEIGRIHMS & 132 kV Mustem-NEHU line tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.												
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1164 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1842 MW)												
Root Cause	Non availability of Main protection for all the connected elements at 132 kV Khliehriat (MeECL) sub station													
Remedial Measures	Station earthing at Khliehriat (MeECL) sub station to be rectified and all Main Protective relays to be put into service.													
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	5/1/2016 22:48	Khliehriat (PG)	DP, ZI, Y-E	Not Furnished	No	No	Loss of Load: 20	GD-I	5/1/2016 23:21	No SPS	0.0006	
		Khliehriat(ME)		No tripping	Not Furnished	No	No				5/1/2016 23:21	No SPS		
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	Earth Fault	Not applicable	No	No				5/1/2016 23:15		No SPS
		Khliehriat(ME)		No tripping	Not applicable	No	No				5/1/2016 22:50	No SPS		
	132 kV NEIGRIHMS - Khliehriat (ME)	MePTCL		NEIGRIHMS	Not Furnished	Not Furnished	No	No						
		Khliehriat		General Trip	Not Furnished	No	No							
		Mustem		Not Furnished	Not Furnished	No	No							
132 kV Mustem-Khliehriat	MePTCL		Khliehriat	Earth Fault	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 रिसे 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
122	Leshka U 2	MePGCL		Leshka	Overcurrent	Not applicable	No	No	Loss of Generation: 42		5/1/2016 23:35	No SPS	
	FIR by the constituent	Yes											
	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 and 2 x 160 MVA, 220/132 kV ICT I&II at Byrnihat (132 kV Panchgram-Lumnsnong line kept open for system requirement). At 22:48 Hrs on 01.05.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines,132 kV Khliehriat (MePTCL) - NEIGRIHMS & 132 kV Mustem-Khliehriat line tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1232 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1757 MW)											
	Root Cause	Non availability of Main protection for all the connected elements at 132 kV Khliehriat (MeECL) sub station											
	Remedial Measures	Station earthing at Khliehriat (MeECL) sub station to be rectified and all Main Protective relays to be put into service.											
123	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	5/2/2016 13:07	Khliehriat (PG)	DP, ZI, Y-B-E	Not Furnished	No	No	Loss of Load: 21	GD-I	5/2/2016 13:19	No SPS	0.001
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, Y-B-E	Not Furnished	No	No			5/2/2016 13:22	No SPS	
				Khliehriat(ME)	No tripping	Not Furnished	No	No					
	Leshka U 2	MePGCL		Leshka	Over Frequency	Not applicable	No	No	Loss of Generation: 42		5/2/2016 13:18	No SPS	
	FIR by the constituent	Yes											
	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 Panchgram-Lumnsnong line, 132 kV Khliehriat-NEIGRIHMS line & 132 kV Khliehriat -Mustem line were kept open for system requirement). At 13:07 Hrs on 02.05.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1277 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1193 MW)											
	Root Cause	Non availability of Main protection for all the connected elements at 132 kV Khliehriat (MeECL) sub station											
	Remedial Measures	Station earthing at Khliehriat (MeECL) sub station to be rectified and all Main Protective relays to be put into service. After that, tower footing resistance to be checked and if greater than 10 ohm, proper earthing to be done for tower footing also.											
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID		Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No	Loss of Load:		5/5/2016 10:11	No SPS	
				Khliehriat(ME)	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 गिड 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	
124	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL	5/5/2016 10:00	Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No	31	GD-I	5/5/2016 10:13	No SPS	0.004	
	Leshka U 1	MePGCL		Khliehriat(ME)	No tripping	Not Furnished	No	No			5/5/2016 12:30	No SPS		
	Leshka U 2	MePGCL		Leshka	Tripped due to evacuation	Not applicable	No	No	Loss of Generation:		5/5/2016 10:42	No SPS		
	FIR by the constituent										Yes			
	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 Panchgram-Lumnsnong line, 132 kV Umiam Stg I-Umiam line & 132 kV NEHU-Mawlai line were kept open for system requirement). At 10:00 Hrs on 05.05.16,132 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 load generation mismatch.												
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1380 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1430 MW)												
	Restoration Details													
	Root Cause	Non availability of Main protection for all the connected elements at 132 kV Khliehriat (MeECL) sub station												
	Remedial Measures	Station earthing at Khliehriat (MeECL) sub station to be rectified and all Main Protective relays to be put into service. After that, tower footing resistance to be checked and if greater than 10 ohm, proper earthing to be done for tower footing also.												
	125	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	5/10/2016 18:20	Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No	Loss of Load: 42	GD-I	5/10/2016 18:35	No SPS	0.005
			Khliehriat(ME)		No tripping	Not Furnished	No	No						
132 kV Khliehriat (PG) - Khliehriat (ME) II		MePTCL	Khliehriat (PG)		DP, ZI, R-Y-B	Not Furnished	No	No				5/10/2016 18:37	No SPS	
			Khliehriat(ME)		No tripping	Not Furnished	No	No				5/10/2016 18:24	No SPS	
132 kV Mustem-NEHU		MePTCL	5/10/2016 18:20	Mustem	No tripping	Not Furnished	No	No	Loss of	Generation:	5/10/2016 18:27	No SPS	0.079	
				NEHU	General Trip	Not Furnished	No	No						
132 kV NEHU - NEIGRIHMS		MePTCL		NEHU	Distance Backup protection	Not Furnished	No	No						
				NEIGRIHMS	No tripping	Not Furnished	No	No						
Leshka U 1		MePGCL	5/10/2016 18:20	Leshka	Tripped due to evacuation	Not applicable	No	No	Loss of Generation:		5/10/2016 18:43	No SPS		
Leshka U 2		MePGCL		Leshka		Not applicable	No	No			5/10/2016 19:19	No SPS		
FIR by the constituent		Yes												
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 and 2 x 160 MVA, 220/132 kV ICT I&II at Byrnihat (132 kV Panchgram-Lumnsnong line,132 kV Sarusajai-Umtaru I&II lines and 132 kV Kahilipara-Umtaru I&II lines kept open for system requirement). At 18:20 Hrs on 10.05.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines,132 kV NEHU - NEIGRIHMS & 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.												

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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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1619 MW , पूर्ववृत्ता लोड/ Antecedent Load : 2162 MW)															
	Restoration Details																
	Root Cause	Non availability of Main protection for all the connected elements at 132 kV Khliehriat (MeECL) sub station															
	Remedial Measures	Station earthing at Khliehriat (MeECL) sub station to be rectified and all Main Protective relays to be put into service. After that, tower footing resistance to be checked and if greater than 10 ohm, proper earthing to be done for tower footing also.															
126	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	5/11/2016 9:53	Khliehriat (PG)	DP, ZI, R-Y-B	Not applicable	No	No	Loss of Load: 65	GD-I	5/11/2016 10:13	No SPS	0.007				
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (ME)	No tripping	Not applicable	Yes	Yes			5/11/2016 10:14	No SPS					
	132 kV Mustem-NEHU	MePTCL		Khliehriat (PG)	DP, ZI, R-Y-B	Not applicable	No	No			5/11/2016 13:50	No SPS					
				Khliehriat (ME)	No tripping	Not applicable	No	No									
	132 kV NEHU - NEIGRIHMS	MePTCL		Mustem	No tripping	Not Furnished	No	No			5/11/2016 10:10	No SPS					
				NEHU	Distance Backup protection	Not Furnished	No	No									
				NEHU	General Trip	Not Furnished	No	No									
	NEIGRIHMS	No tripping		Not Furnished	No	No											
	FIR by the constituent	Yes															
	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 and 2 x 160 MVA, 220/132 kV ICT I&II at Byrnihat (132 kV Khliehriat-Lumnsnong line,132 kV Sarusajai-Umtru I&II lines and 132 kV Kahlipara-Umtru I&II lines kept open for system requirement). At 09:53 Hrs on 11.05.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines,132 kV NEHU - NEIGRIHMS & 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1441 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1591 MW)															
	Restoration Details																
	Root Cause	Non availability of Main protection for all the connected elements at 132 kV Khliehriat (MeECL) sub station															
	Remedial Measures	Station earthing at Khliehriat (MeECL) sub station to be rectified and all Main Protective relays to be put into service. After that, tower footing resistance to be checked and if greater than 10 ohm, proper earthing to be done for tower footing also.															
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID		Khliehriat (PG)	DP, ZI, Y-B-E	Not Furnished	No	No	Loss of Load:		5/11/2016 12:05		0.005				
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (ME)	No tripping	Not Furnished	No	No			5/11/2016 12:06						
				Khliehriat (PG)	DP, ZI, Y-B-E	Not Furnished	No	No									
				Khliehriat (ME)	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 गिड 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	
127	132 kV NEIGRIHMS - Khliehriat (ME)	MePTCL	5/11/2016 11:48	NEIGRIHMS	Distance Backup protection	Not Furnished	No	No	61	GD-I	5/11/2016 11:55	No SPS	0.018	
	Khliehriat	No tripping		Not Furnished	No	No								
	Umiam Stg III U 2	MePGCL		Umiam Stg III	Over Frequency	Not applicable	No	No	Loss of Generation:	5/11/2016 12:14	No SPS			
	Umiam Stg IV U 1	MePGCL		Umiam Stg IV	Over Frequency	Not applicable	No	No		5/11/2016 12:10	No SPS			
	FIR by the constituent	Yes												
	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 and 2 x 160 MVA, 220/132 kV ICT I&II at Byrnihat (132 kV Khliehriat-Lumnsnong line,132 kV Sarusajai-Umtru I&II lines and 132 kV Kahilipara-Umtru I&II lines kept open for system requirement & 132 kV Mustem-NEHU line was under emergency shutdown from 10:00 Hrs on 11.05.16). At 11:48 Hrs on 11.05.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines & 132 kV Khliehriat - NEIGRIHMS tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.												
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1447 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1646 MW)												
	Restoration Details													
	Root Cause	Non availability of Main protection for all the connected elements at 132 kV Khliehriat (MeECL) sub station												
	Remedial Measures	Station earthing at Khliehriat (MeECL) sub station to be rectified and all Main Protective relays to be put into service. After that, tower footing resistance to be checked and if greater than 10 ohm, proper earthing to be done for tower footing also.												
128	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	5/12/2016 14:56	Khliehriat (PG)	DP, ZI, R-Y-B	Not applicable	No	No	Loss of Load: 42	GD-I	5/12/2016 17:48	No SPS	0.003	
	Khliehriat(ME)	No tripping		Not applicable	No	No								
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL	5/12/2016 14:53	Khliehriat (PG)	DP, ZI, R-Y-B	Not applicable	No	No			5/12/2016 17:49	No SPS		
	Khliehriat(ME)	No tripping		Not applicable	No	No								
	132 kV NEHU - NEIGRIHMS	MePTCL	5/12/2016 14:56	NEHU	Distance Backup protection	Not Furnished	No	No	5/12/2016 15:02	No SPS				
	NEIGRIHMS	No tripping		Not Furnished	No	No								
	FIR by the constituent	Yes												
	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 and 2 x 160 MVA, 220/132 kV ICT I&II at Byrnihat (132 kV Khliehriat-Lumnsnong line,132 kV Sarusajai-Umtru I&II lines and 132 kV Kahilipara-Umtru I&II lines kept open for system requirement & 132 kV Mustem-NEHU line was under emergency shutdown from 10:00 Hrs on 11.05.16). At 14:56 Hrs on 12.05.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines & 132 kV NEHU - NEIGRIHMS tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.												
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1559 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1763 MW)												
	Restoration Details													

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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 गिड 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	Non availability of Main protection for all the connected elements at 132 kV Khliehriat (MeECL) sub station											
	Remedial Measures	Station earthing at Khliehriat (MeECL) sub station to be rectified and all Main Protective relays to be put into service. After that, tower footing resistance to be checked and if greater than 10 ohm, proper earthing to be done for tower footing also.											
129	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	5/15/2016 20:38	Khliehriat (PG)	DP, ZI, R-E	Not Furnished	No	No	Loss of Load: 32	GD-I	5/15/2016 21:00	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-E	Not Furnished	No	No			5/15/2016 21:01	No SPS	
		Khliehriat(ME)		No tripping	Not Furnished	No	No						
	132 kV Mustem-Khliehriat	MePTCL		Mustem	No tripping	Not Furnished	No	No			5/15/2016 21:40	No SPS	
		Khliehriat		General Trip	Not Furnished	No	No						
	132 kV NEIGRIHMS - Khliehriat (ME)	MePTCL		NEIGRIHMS	Earth Fault	Not Furnished	No	No			5/15/2016 20:40	No SPS	
		Khliehriat		No tripping	Not Furnished	No	No						
	Leshka U 1	MePGCL		Leshka	Over Frequency	Not applicable	No	No	Loss of Generation:		5/15/2016 21:01	No SPS	0.038
	Leshka U 2	MePGCL		Leshka		Not applicable	No	No			5/15/2016 21:01	No SPS	
	FIR by the constituent	Yes											
	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 and 2 x 160 MVA, 220/132 kV ICT I&II at Byrnihat (132 kV Khliehriat-Lumnsnong line,132 kV Sarusajai-Umtru I&II lines and 132 kV Kahilipara-Umtru I&II lines kept open for system requirement). At 20:38 Hrs on 15.05.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines132 kV Mustem-Khliehriat & 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1836 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1859 MW)											
	Restoration Details												
	Root Cause	Non availability of Main protection for all the connected elements at 132 kV Khliehriat (MeECL) sub station											
	Remedial Measures	Station earthing at Khliehriat (MeECL) sub station to be rectified and all Main Protective relays to be put into service. After that, tower footing resistance to be checked and if greater than 10 ohm, proper earthing to be done for tower footing also.											
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	5/16/2016 3:50	Khliehriat (PG)	DP, ZI, R-Y- E,16 Kms.	Not Furnished	No	No	Loss of Load: 22	GD-I	5/16/2016 5:14	No SPS	0.002
		Khliehriat(ME)		No tripping	Not Furnished	No	No						
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, R-Y-B- E,9.6 Kms.	Not Furnished	No	No			5/16/2016 5:14	No SPS	
		Khliehriat(ME)		No tripping	Not Furnished	No	No						
	132 kV Mustem-NEHU	MePTCL		Mustem	N Phase, Master trip relay operated	Not Furnished	No	No			5/16/2016 3:55	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	
130				NEHU	No tripping	Not Furnished	No	No						
	132 kV NEIGRIHMS - Khliehriat (ME)	MePTCL		NEIGRIHMS	Earth Fault	Not Furnished	No	No			5/16/2016 3:55	No SPS		
	Leshka U 1	MePGCL		Khliehriat	No tripping	Not Furnished	No	No			5/16/2016 5:56	No SPS		
	AGBPP U 3	NEEPCO		AGBPP	Tripped due to evacuation	Not applicable	No	No	Loss of Generation: 84		5/19/2016 18:08		0.176	
	Leshka U 2	MePGCL		Leshka	problem(Relay	Not applicable	No	No			5/16/2016 6:47	No SPS		
	FIR by the constituent													Yes
	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 and 2 x 160 MVA, 220/132 kV ICT I&II at Byrnihat (132 kV Panchgram-Lumnsnong line,132 kV Sarusajai-Umtru I&II lines and 132 kV Kahilipara-Umtru I&II lines kept open for system requirement). At 03:50 Hrs on 16.05.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines,132 kV Mustem-NEHU & 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		(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1661 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1001 MW)											
	Restoration Details													
	Root Cause		Non availability of Main protection for all the connected elements at 132 kV Khliehriat (MeECL) sub station											
Remedial Measures		Station earthing at Khliehriat (MeECL) sub station to be rectified and all Main Protective relays to be put into service. After that, tower footing resistance to be checked and if greater than 10 ohm, proper earthing to be done for tower footing also.												
131	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL	5/16/2016 15:28	Khliehriat (PG)	DP, ZI, R-Y-E,11.43 Kms.	Not Furnished	Yes	No	Loss of Load: 8 & Loss of Generation: 41	GD-I	5/16/2016 16:19	No SPS	0.006	
			Khliehriat(ME)	No tripping	Not Furnished	No	No							
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	5/16/2016 15:31	Khliehriat (PG)	DP, ZI, R-Y-E,15.95 Kms.	Not Furnished	Yes	No					5/16/2016 16:18	No SPS
				Khliehriat(ME)	No tripping	Not Furnished	No	No						
	Leshka U 2	MePGCL		Leshka	Tripped due to evacuation problem(86A, 86B, 86FT operated)	Not applicable	No	No			5/16/2016 15:40	No SPS	0.006	
	FIR by the constituent		Yes											
	Brief Description of the Incident		Khliehriat area of Meghalaya was connected with rest of NER Grid through 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I line (132 kV Khliehriat (PG)-Khliehriat (MePTCL) II line tripped at 15:28 Hrs on 16.05.16, 132 kV Panchgram-Lumnsnong line & 132kV Khliehriat-Mustem line and 132kV NEIGRIHMS-Khliehriat line were under emergency shutdown). At 15:31 Hrs on 16.05.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I line tripped. Due to tripping of this element, Khleihriat 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 रिपोर्ट 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1855 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1331 MW)												
	Restoration Details													
	Root Cause	Non availability of Main protection for all the connected elements at 132 kV Khliehriat (MeECL) sub station												
	Remedial Measures	Station earthing at Khliehriat (MeECL) sub station to be rectified and all Main Protective relays to be put into service. After that, tower footing resistance to be checked and if greater than 10 ohm, proper earthing to be done for tower footing also.												
132	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL	5/16/2016 17:37	Khliehriat (PG)	DP, ZI, B-E,36.97 Kms.	Not Furnished	Yes	No	Loss of Load: 16	GD-I	5/16/2016 21:35	No SPS	0.003	
	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	5/16/2016 17:38	Khliehriat (ME)	No tripping	Not Furnished	No	No			5/16/2016 21:25	No SPS		
				Khliehriat (PG)	DP, ZI, B-E,23.48 Kms.	Not Furnished	Yes	No						5/16/2016 17:42
	Khliehriat (ME)	No tripping	Not Furnished	No	No	5/16/2016 17:42	No SPS							
	132 kV Leshka - Khliehriat (ME) I	MePTCL	5/16/2016 17:38	Leshka	DP, ZI, B-E			Not Furnished	No	No	5/16/2016 17:48	No SPS		
	132 kV Leshka - Khliehriat (ME) II	MePTCL		Khliehriat (ME)	No tripping			Not Furnished	No	No			5/19/2016 0:00	
				Leshka	DP, ZI, B-E			Not Furnished	No	No				
	Leshka (ME)	No tripping		Not Furnished	No	No	Loss of Generation: 84	5/16/2016 17:48	No SPS					
	Leshka U 1	MePGCL	Leshka	Tripped due to evacuation	Not applicable	No				No				
	AGBPP U 3	NEEPCO	AGBPP		Not applicable									
	Leshka U 2	MePGCL	Leshka	problem(86A,	Not applicable	No	No							
	FIR by the constituent	Yes												
	Brief Description of the Incident	Khliehriat area of Meghalaya was connected with rest of NER Grid through 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I line (132 kV Khliehriat (PG)-Khliehriat (MePTCL) II line tripped at 17:37 Hrs on 16.05.16, 132 kV Panchgram-Lumnsnong line & 132kV Khliehriat-Mustem line and 132kV NEIGRIHMS-Khliehriat line were under emergency shutdown). At 17:38 Hrs on 16.05.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I line,132 kV Leshka - Khliehriat (ME) I&II lines tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch and Leshka blacked out.												
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1863 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1574 MW)												
	Restoration Details													
	Root Cause	Non availability of Main protection for all the connected elements at 132 kV Khliehriat (MeECL) sub station												
	Remedial Measures	Station earthing at Khliehriat (MeECL) sub station to be rectified and all Main Protective relays to be put into service. After that, tower footing resistance to be checked and if greater than 10 ohm, proper earthing to be done for tower footing also.												
132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	5/16/2016 22:02	Khliehriat (PG)	DP, ZI, B-E,21 Kms.	Not Furnished	No	No			5/16/2016 23:17	No SPS			
			Khliehriat (ME)	No tripping	Not Furnished	No	No							

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

134	FIR by the constituent	Yes
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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 रिपोर्ट 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 Panchgram-Lumnsnong line, 132 kV Sarusajai-Umtru I&II lines, 132 kV Kahlipara-Umtru I&II lines, 132 kV Khliehriat-NEIGRIHMS line & 132 kV Khliehriat-Mustem line were kept open for system requirement). At 02:32 Hrs on 17.05.16, 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1519 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1186 MW)											
	Root Cause	Non availability of Main protection for all the connected elements at 132 kV Khliehriat (MeECL) sub station											
	Remedial Measures	Station earthing at Khliehriat (MeECL) sub station to be rectified and all Main Protective relays to be put into service. After that, tower footing resistance to be checked and if greater than 10 ohm, proper earthing to be done for tower footing also.											
135	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	6/6/2016 11:36	Khliehriat (PG)	DP, ZI, Y-B-E, 82.5 Kms.	Not Furnished	No	No	Loss of Load: 26	GD-I	6/6/2016 12:04	No SPS	0.003
				Khliehriat (ME)	No tripping	Not Furnished	No	No					
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	DP, ZI, Y-B-E, 103.3 Kms.	Not Furnished	No	No			6/6/2016 12:05	No SPS	
				Khliehriat (ME)	No tripping	Not Furnished	No	No					
	132 kV NEHU - NEIGRIHMS	MePTCL		NEHU	No tripping	Not Furnished	No	No			6/6/2016 11:42	No SPS	
				NEIGRIHMS	Earth Fault	Not Furnished	No	No					
	132 kV NEIGRIHMS - Khliehriat (ME)	MePTCL		NEIGRIHMS	No tripping	Not Furnished	No	No			6/6/2016 11:42	No SPS	
				Khliehriat	Earth Fault	Not Furnished	No	No					
	Leshka U 2	MePGCL		Leshka	86C, 86FT, No other indication available	Not applicable	No	No	Loss of Generation: 35		6/6/2016 11:49	No SPS	0.008
	FIR by the constituent	Yes											
	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 and 2 x 160 MVA, 220/132 kV ICT I&II at Byrnihat (132 kV Khliehriat-Lumnsnong line, 132 kV Nangalbibra-Nongstoin line, 132 kV Sarusajai-Umtru I&II lines and 132 kV Kahlipara-Umtru I&II lines kept open for system requirement). At 11:36 Hrs on 06.06.16, 132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV NEIGRIHMS - NEHU line & 132 kV NEIGRIHMS - Khliehriat (ME) line tripped. Due to tripping of these elements, Khliehriat area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid	(Antecedent Generation : 1627 MW , Antecedent Load : 1584 MW)											
	Root Cause												
	Remedial Measures												
	132 kV Khliehriat (PG)			Khliehriat (PG)	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 रिसे 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	
136	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	6/9/2016 0:45	Khliehriat(ME)	Master Trip Relay operated	Not applicable	No	No	Loss of Load: 12	GD-I	6/9/2016 1:05	No SPS	0.039	
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (PG)	No tripping	Not applicable	No	No			6/9/2016 1:10	No SPS		
				Khliehriat(ME)	Over Current,R-Ph	Not applicable	No	No						6/9/2016 1:50
	132 kV Mustem-Khliehriat	MePTCL		Mustem	Tripped	Not applicable	No	No			6/9/2016 2:00	No SPS		
				Khliehriat	No tripping	Not applicable	No	No						
	132 kV NEIGRIHMS - Khliehriat (ME)	MePTCL		NEIGRIHMS	Tripped	Not applicable	No	No			Loss of Generation: 126			6/9/2016 3:53
			Khliehriat	No tripping	Not applicable	No	No	6/9/2016 2:01	No SPS					
	Leshka U 1	MePGCL	Leshka	Over Frequency	Not applicable	No	No	6/9/2016 2:01	No SPS					
	Leshka U 2	MePGCL	Leshka	Over Frequency	Not applicable	No	No							
	Leshka U 3	MePGCL	Leshka	Over Frequency	Not applicable	No	No							
	FIR by the constituent	Yes												
	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 and 2 x 160 MVA, 220/132 kV ICT I&II at Byrnihat (132 kV Khliehriat-Lumnsnong line,132 kV Nangalbibra-Nongstoin line,132 kV Sarusajai-Umtru I&II lines and 132 kV Kahilipara-Umtru I&II lines kept open for system requirement). At 00:45 Hrs on 09.06.16 ,132 kV Khliehriat (PG)-Khliehriat (MePTCL) I & II lines, 132 kV Mustem-Khliehriat & 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 : 1969 MW , Antecedent Load : 1997 MW)												
Root Cause														
Remedial Measures														
137	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	6/12/2016 12:20	Khliehriat (PG)	No tripping	Not Furnished	No	No	Loss of Load: 59	GD-I	6/12/2016 12:32	No SPS	0.002	
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat(ME)	No Indication	Not Furnished	No	No			6/12/2016 12:35	No SPS		
				Khliehriat (PG)	No tripping	Not Furnished	No	No						
				Khliehriat(ME)	Earth Fault	Not Furnished	No	No						
	Leshka U 1	MePGCL	Leshka	86ABC, 86FT	Not applicable	No	No	Loss of Generation: 126		6/12/2016 13:39	No SPS	0.046		
	Leshka U 2	MePGCL	Leshka		Not applicable	No	No			6/12/2016 12:42	No SPS			
	Leshka U 3	MePGCL	Leshka		Not applicable	No	No			6/12/2016 13:09	No SPS			
	FIR by the constituent	Yes												
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 Khliehriat-Lumnsnong line ,132 kV Umiam-Umiam Stg I line & 132 kV NEHU-Mawlai line were kept open for system requirement). At 12:20 Hrs on 12.06.16 ,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 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 रिपोर्ट 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 : 1819 MW , Antecedent Load : 1577 MW)											
	Root Cause												
	Remedial Measures												
138	132 kV Khliehriat (PG) - Khliehriat (ME) I	POWERGRID	6/26/2016 16:52	Khliehriat (PG)	DP, ZI, R-Y-B	Not Furnished	No	No	Loss of Load: 113	GD-I	6/26/2016 17:15	No SPS	0.011
	132 kV Khliehriat (PG) - Khliehriat (ME) II	MePTCL		Khliehriat (ME)	No tripping	Not Furnished	No	No			6/26/2016 17:23	No SPS	
	132 kV Umiam St I - Umiam St III I	MePTCL		Umiam St I	DP, Z-I, Y-E, 13.70 Kms.	Not Furnished	No	No			6/26/2016 16:59	No SPS	
	132 kV Umiam St I - Umiam St III II	MePTCL		Umiam St III	Not Furnished	Not Furnished	No	No			6/27/2016 16:00	No SPS	
	132 kV Mustem-Khliehriat	MePTCL		Mustem	Not Furnished	Not Furnished	No	No			6/26/2016 17:06	No SPS	
	132 kV NEIGRIHMS - Khliehriat	MePTCL		Khliehriat	DP, Z-III, R-Y-B-E, 84.34 Kms.	Not Furnished	No	No			6/26/2016 17:10	No SPS	
	Umiam Stg I U 2	MePGCL		Umiam Stg I	Generator O/C, Under Voltage 86C.	Not applicable	No	No			6/26/2016 17:10	No SPS	
	Umiam Stg I U 3	MePGCL		Umiam Stg I	Generator O/C, Under Voltage 86C.	Not applicable	No	No			6/26/2016 17:06	No SPS	
	Umiam Stg I U 4	MePGCL		Umiam Stg I	Generator O/C, Under Voltage 86C.	Not applicable	No	No			6/26/2016 17:15	No SPS	
	Umiam Stg II U 1	MePGCL	6/26/2016 16:52	Umiam Stg II	MTR, OCR, 51T.	Not applicable	No	No	Loss of Generation: 145	GD-I	6/26/2016 17:09	No SPS	0.034
	Umiam Stg II U 2	MePGCL		Umiam Stg II	MTR, OCR, 51T.	Not applicable	No	No			6/26/2016 17:16	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	
	Leshka U 1	MePGCL		Leshka	86A, 86B, 86FT.	Not applicable	No	No			6/26/2016 18:44	No SPS		
	Leshka U 2	MePGCL		Leshka	86A, 86B, 86FT.	Not applicable	No	No			6/26/2016 17:31	No SPS		
	Leshka U 3	MePGCL		Leshka	86A, 86B, 86FT.	Not applicable	No	No			6/26/2016 18:28	No SPS		
	FIR by the constituent		Yes											
	Brief Description of the Incident		Meghalaya system except Lumnsnong load, EPIP I&II loads and Mendipathar area was connected with rest of NER Grid through 132 kV Khliehriat (PG) - Khliehriat (ME) I & II lines,132 kV Khliehriat (ME) - Mustem, 132 kV NEIGRIHMS - Khliehriat (ME) line and 132 kV Umiam St I - Umiam St III I & II lines (132 kV Khliehriat-Lumnsnong line & 132 kV Nangalbibra-Nongstoin lines kept open for system requirement). At 16:52 Hrs on 26.06.16,132 kV Khliehriat (PG) - Khliehriat (ME) I & II lines,132 kV Khliehriat (ME) - Mustem, 132 kV NEIGRIHMS - Khliehriat (ME) line and 132 kV Umiam St I - Umiam St III I & II lines tripped. Due to tripping of these elements, Meghalaya system except Lumnsnong load, EPIP I&II loads and Mendipathar area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid		(Antecedent Generation : 1915 MW , Antecedent Load : 1763 MW)											
	Root Cause													
	Remedial Measures													

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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 रिपोर्ट 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		
139	132 kV EPIP II - Byrnihat I	MePTCL	6/12/2016 14:19	EPIP II	Not Furnished	Not Furnished	No	No	Loss of Load: 112	GD-I	6/12/2016 20:46	No SPS	0.011		
	132 kV EPIP II - Byrnihat II	MePTCL		Byrnihat	DP, ZI, B-E	Not Furnished	No	No			6/12/2016 20:46	No SPS			
	132 kV NEIGRIHMS - Khliehriat (ME)	MePTCL		EPIP II	Not Furnished	Not Furnished	No	No			6/12/2016 14:24	No SPS			
				Byrnihat	DP, ZI, Y-B-E	Not Furnished	No	No							
				NEIGRIHMS	Not Furnished	Not applicable	No	No							
	132 kV Mustem-Khliehriat	MePTCL		Khliehriat	Earth Fault	Not applicable	No	No			6/12/2016 14:24	No SPS			
				Mustem	Not Furnished	Not applicable	No	No							
				Khliehriat	Over current	Not applicable	No	No							
	Umiam Stg I U 2	MePGCL		Umiam Stg I	Generation Over Current	Not applicable	No	No	Loss of Generation: 57		6/12/2016 14:45	No SPS	0.023		
	Umiam Stg I U 3	MePGCL		Umiam Stg I	Generation Over Current	Not applicable	No	No			6/12/2016 14:46	No SPS			
	Umiam Stg II U 1	MePGCL		Umiam Stg II	MTR, OCR, 51T	Not applicable	No	No			6/12/2016 14:45	No SPS			
	Umiam Stg IV U 2	MePGCL		Umiam Stg IV	ELO, NELO, Negative phase sequence	Not applicable	No	No			6/12/2016 14:43	No SPS			
	FIR by the constituent			Yes											
	Brief Description of the Incident			Meghalaya system except Khliehriat area,Lumnsnong area and Mendipathar area was connected with rest of NER Grid through 132 kV NEIGRIHMS - Khliehriat (ME) line,132 kV Mustem-Khliehriat line and 132 kV EPIP II - Byrnihat I&II lines (132 kV Khliehriat-Lumnsnong line,132 kV Nangalbibra-Nongstoin line,132 kV Sarusajai-Umtru I&II lines and 132 kV Kahilipara-Umtru I&II lines kept open for system requirement). At 14:19 Hrs on 12.06.16 ,132 kV NEIGRIHMS - Khliehriat (ME) line,132 kV Mustem-Khliehriat line and 132 kV EPIP II - Byrnihat I&II lines tripped. Due to tripping of these elements, Meghalaya system except Khliehriat area,Lumnsnong area and Mendipathar area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
	Antecedent Conditions of NER Grid			(Antecedent Generation : 1891 MW , Antecedent Load : 1478 MW)											
	Root Cause														
	Remedial Measures														
	132 kV Mustem-NEHU	MePTCL		Mustem	Master Trip Relay Operated	Not Furnished	No	No			6/16/2016 23:06	No SPS			
				NEHU	No tripping	Not Furnished	No	No							
	132 kV NEIGRIHMS - Khliehriat	MePTCL		NEIGRIHMS	No tripping	Not Furnished	No	No						6/16/2016 23:06	No SPS
				Khliehriat	Earth Fault	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
140	132 kV EPIP II - Byrnihat I	MePTCL	6/16/2016 23:04	EPIP II	Backup Overcurrent Relay Operated	Not Furnished	No	No	Loss of Load: 118	GD-I	6/16/2016 23:08	No SPS	0.004
		Byrnihat		Not Furnished	Not Furnished	No	No						
	132 kV EPIP II - Byrnihat II	MePTCL		EPIP II	Backup Overcurrent Relay Operated	Not Furnished	No	No			6/16/2016 23:08	No SPS	
		Byrnihat		Not Furnished	Not Furnished	No	No						
	Umiam Stg IV U 1	MePGCL		Umiam Stg IV	O/C, in excitation system, 86FT.	Not applicable	No	No	Loss of Generation: 84	GD-I	6/16/2016 23:34	No SPS	0.034
	Umiam Stg IV U 2	MePGCL		Umiam Stg IV	O/C, in excitation system, 86FT.	Not applicable	No	No			6/16/2016 23:28	No SPS	
	Umiam Stg I U 2	MePGCL		Umiam Stg I	Generator O/C, 86ABC.	Not applicable	No	No			6/16/2016 23:30	No SPS	
	Umiam Stg I U 3	MePGCL		Umiam Stg I	Generator O/C, 86ABC.	Not applicable	No	No			6/16/2016 23:35	No SPS	
	Umiam Stg II U 1	MePGCL	6/16/2016 23:04	Umiam Stg II	MTR, OCR	Not applicable	No	No			6/16/2016 23:32	No SPS	
	FIR by the constituent		Yes										
Brief Description of the Incident		Meghalaya system except Khliehriat and Mendipathar area was connected with rest of NER Grid through 132 kV NEHU- Mustem, 132 kV NEIGRIHMS - Khliehriat (ME) line and 132 kV EPIP II - Byrnihat I & II lines (132 kV Khliehriat-Lumnsnong line,132 kV Nangalbibra-Nongstoin line, 132 kV Sarusajai-Umtru I & II lines and 132 kV Kahlipara-Umtru I & II lines kept open for system requirement). At 23:04 Hrs on 16.06.16, 132 kV NEIGRIHMS - Khliehriat (ME) line, 132 kV Mustem-NEHU line and 132 kV EPIP II - Byrnihat I&II lines tripped. Due to tripping of these elements, Meghalaya system except Khliehriat and Mendipathar area was separated from rest of NER Grid and subsequently collapsed due to load generation mismatch.											
Antecedent Conditions of NER Grid		(Antecedent Generation : 2120 MW , Antecedent Load : 1884 MW)											
Root Cause													
Remedial Measures													

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / 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
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List of Grid Disturbances in North-Eastern Regional Grid during January 2016

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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 गिड 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
151	132 kV Aizwal - Zuangtui	POWERGRID	4/5/2016 20:27	Aizawl	DP, ZII, B-E	Not Furnished	No	No	Loss of Load: 34	GD-I	4/5/2016 20:43	No SPS	0.006
	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 20:27 Hrs on 05.04.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1699 MW , पूर्ववृत्ता लोड/ Antecedent Load : 2271 MW)											
	Root Cause	Transient lightening fault occurred in downstream Mizoram system.As a result of non clearance of fault within Mizoram system, 132 kV Aizwal - Zuangtui line tripped.											
	Remedial Measures	Tower footing as well as substation earth resistance to be checked by POWERGRID & P&ED, Mizoram. In case of frequent lightning, arrester has to be kept in place.Relay settings of downstream substations of Mizoram to be checked by P&ED, Mizoram in consultation with PG.											
152	132 kV Aizwal - Zuangtui	POWERGRID	4/5/2016 21:24	Aizawl	DP, ZII, Y-E	Not Furnished	No	No	Loss of Load: 24	GD-I	4/5/2016 22:03	No SPS	0.019
	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 21:24 Hrs on 05.04.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1736 MW , पूर्ववृत्ता लोड/ Antecedent Load : 2194 MW)											
	Root Cause	Transient lightening fault occurred in downstream Mizoram system.As a result of non clearance of fault within Mizoram system, 132 kV Aizwal - Zuangtui line tripped.											
	Remedial Measures	Tower footing as well as substation earth resistance to be checked by POWERGRID & P&ED, Mizoram. In case of frequent lightning, arrester has to be kept in place.Relay settings of downstream substations of Mizoram to be checked by P&ED, Mizoram in consultation with PG.											
153	132 kV Aizwal - Zuangtui	POWERGRID	4/5/2016 22:26	Aizawl	DP, ZII, B-E	Not Furnished	No	No	Loss of Load: 13	GD-I	4/5/2016 23:02	No SPS	0.015
	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 22:26 Hrs on 05.04.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1470 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1917 MW)											
	Root Cause	132 kV Aizwal - Zuangtui tripped to clear a fault in 33 kV cable at state end.											
	Remedial Measures	Relay settings of downstream substations of Mizoram to be checked by P&ED, Mizoram in consultation with PG.											
	132 kV Aizwal - Zuangtui	POWERGRID	4/12/2016 21:54	Aizawl	DP, ZIII, B-E	Not Furnished	No	No	Loss of Load:	GD-I	4/12/2016 22:17	No SPS	0.007

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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
157	Brief Description of the Incident	Zuangtui area of Mizoram was connected with rest of NER Grid through 132 kV Aizawl- Zuangtui line. At 20:27 Hrs on 01.05.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1161 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1962 MW)											
	Root Cause	The over current and earth fault relay settings for the out going feeders at Zuangtui were verified and their operating times were found to be on higher side. Since line passess mostly through town (viz. No vegetation), likely fault is in downstream due to vegetation and is getting cleared at Aizwal(PG).											
	Remedial Measures	The over current and earth fault relay settings for the out going feeders at Zuangtui have been reviewed and communicated to P&ED, Mizoram for implementation. Status to be informed by P&ED, Mizoram. Vegetation clearance to be done by P&ED, Mizoram.											
158	132 kV Aizwal - Zuangtui	POWERGRID	5/2/2016 12:08	Aizawl	DP, ZII, Y-E	Not applicable	No	No	Loss of Load: 16	GD-I	5/2/2016 14:04	No SPS	0.031
				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 12:08 Hrs on 02.05.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1313 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1137 MW)											
	Root Cause	The over current and earth fault relay settings for the out going feeders at Zuangtui were verified and their operating times were found to be on higher side. Since line passess mostly through town (viz. No vegetation), likely fault is in downstream due to vegetation and is getting cleared at Aizwal(PG).											
	Remedial Measures	The over current and earth fault relay settings for the out going feeders at Zuangtui have been reviewed and communicated to P&ED, Mizoram for implementation. Status to be informed by P&ED, Mizoram. Vegetation clearance to be done by P&ED, Mizoram.											
159	132 kV Aizwal - Zuangtui	POWERGRID	5/10/2016 8:40	Aizawl	DP, ZII, B-E	Not applicable	No	No	Loss of Load: 32	GD-I	5/10/2016 9:02	No SPS	0.017
				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 08:40 Hrs on 10.05.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1489 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1579 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 गिड 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					
162	132 kV Doyang - Mokokchung (NA)	DoP Nagaland	1/29/2016 18:28	Doyang	Over current	Not applicable	No	No	Loss of Load: 7	GD-I	1/29/2016 19:05	No SPS	0.002					
			Mokokchung (NA)	Not Furnished	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). (132 kV Mokokchung(NA)-Marianai(AS) is under long outage,132 kV Mokokchung (NA)-Mokokchung (PG) I & II lines were not restored after tripping & 66 kV Tuengsang-Likimro line kept open for system requirement). At 18:28 Hrs on 29.01.2016,132 kV Doyang-Mokokchung (NA) 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1686 MW , पूर्ववृत्ता लोड/ Antecedent Load : 2171 MW)																
	Restoration Details	Power extended to Mokokchung area of Nagaland at 19:05 Hrs on 29.01.16 through 132 kV Doyang - Mokokchung (NA) line.																
	Root Cause	Downstream phase to phase fault in Nagaland system cleared at Doyang. Phase - phase fault seems the only possibility if no earth fault relay operated.																
Remedial Measures	Relay coordination to be done by Nagaland in consultation with POWERGRID & NEEPCO.																	
163	132 kV Doyang - Mokokchung (NA)	DoP Nagaland	2/8/2016 20:21	Doyang	DP, ZI, B-E	Not Furnished	No	No	Loss of Load: 29	GD-I	2/8/2016 20:52	No SPS	0.02					
			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) . (132 kV Mokokchung (NA)-Mokokchung (PG) I & II lines were under planned shutdown,132 kV Mokokchung (NA)-Marianai(AS) is under long outage & 66 kV Tuengsang-Likimro line kept open for system requirement). At 20:21 Hrs on 08.02.16 ,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.(Load loss in MU:0.02)																
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1835 MW , पूर्ववृत्ता लोड/ Antecedent Load : 2274 MW)																
	Restoration Details	Power extended to Mokokchung area of Nagaland at 20:52 Hrs on 08.02.16 through 132 kV Doyang - Mokokchung (NA) line.																
	Root Cause	Due to vegetation problem in the line, 132 kV Doyang - Mokokchung (NA) line tripped.																
Remedial Measures	Vegetation clearance to be done by DoP Nagaland.																	
	132 kV Doyang - Mokokchung (NA)		2/18/2016	Doyang	Over current	Not applicable	No	No	Loss of Load:									

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

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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 रिसेट / 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	
166	132 kV Dimapur (PG) - Dimapur (Nagaland) I	DoP Nagaland	1/11/2016 10:19	Dimapur (PG)	Over current	-	No	No	Loss of Load: 21	GD-I	1/11/2016 10:38	No SPS	0.008	
		Dimapur		Over current	-	No	No							
	132 kV Dimapur (PG) - Dimapur (Nagaland) II	POWERGRID & DoP Nagaland		Dimapur (PG)	General Trip	Not Furnished	No	No						
		Dimapur		Not Furnished	Not Furnished	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 & II lines. At 10:19 Hrs on 11.01.2016,132 kV Dimapur (PG)-Dimapur (NA) I & II lines tripped. Due to tripping of these elements, Dimapur area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.(Load loss in MU:0.008)												
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1156 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1619 MW)												
	Restoration Details	Power extended to Dimapur area of Nagaland at 10:38 Hrs on 11.01.16 through 132 kV Dimapur (PG) - Dimapur (Nagaland) I line.												
Root Cause	Downstream phase to phase fault in Nagaland system cleared at Dimapur(PG). Only phase-phase fault will likely cause overcurrent, if no earth fault relay operated.													
Remedial Measures	Relay settings of downstream stations of Nagaland to be checked by DoP Nagaland in consultation with POWERGRID. CPCC to elaborate on General trip relay indication.													
167	132 kV Dimapur (PG) - Dimapur (Nagaland) I	DoP Nagaland	2/21/2016 11:20	Dimapur (PG)	Over current	Not applicable	No	No	Loss of Load: 36	GD-I	2/21/2016 11:33	No SPS	0.009	
		Dimapur		Not Furnished	Not Furnished	No	No							
	132 kV Dimapur (PG) - Dimapur (Nagaland) II	POWERGRID & DoP Nagaland		Dimapur (PG)	General Trip	Not Furnished	No	No						
		Dimapur		Not Furnished	Not Furnished	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 & II lines. At 11:20 Hrs on 21.02.16 ,132 kV Dimapur (PG)-Dimapur (NA) I & II lines tripped. Due to tripping of these elements, Dimapur area was separated from rest of NER Grid and subsequently collapsed due to no source in this area.(Load loss in MU:0.009)												

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क्रम सं ख्या/ 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
168	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	1/12/2016 22:55	Dimapur (PG) Kohima	Earth Fault Not Furnished	Not Furnished Not Furnished	No No	No No	Loss of Load: 26& Loss of Generation:	GD-I	1/12/2016 23:05	No SPS	0.006
	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 22:55 Hrs on 12.01.2016,132 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1479 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1684 MW)											
	Restoration Details	Power extended to Capital area of Nagaland at 23:05 Hrs on 12.01.16 through 132 kV Dimapur (PG) - Kohima line.											
	Root Cause	Vegetation problem in Nagaland system.											
	Remedial Measures	Vegetation clearance and frequent petrolling to be done.For further investigation and analysis, DR outputs to be submitted by Dimapur (PG).											
169	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	1/12/2016 23:20	Dimapur (PG) Kohima	Earth Fault Not Furnished	Not Furnished Not Furnished	No No	No No	Loss of Load: 21& Loss of Generation:	GD-I	1/12/2016 23:30	No SPS	0.006
	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 23:20 Hr on 12.01.2016,132 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.(Load loss in MU:0.006)											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1443 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1623 MW)											
	Restoration Details	Power extended to Capital area of Nagaland at 23:30 Hrs on 12.01.16 through 132 kV Dimapur (PG) - Kohima line.											
	Root Cause	Vegetation problem in Nagaland system.											
	Remedial Measures	Vegetation clearance and frequent petrolling to be done by DoP Nagaland.For further investigation and analysis, DR outputs to be submitted by POWERGRID for Dimapur(PG)											
	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	1/22/2016 12:43	Dimapur (PG) Kohima	General Trip Not Furnished	Not Furnished Not Furnished	No No	No No	Loss of Load: 24 & Loss of Generation: 8	GD-I	1/22/2016 13:00	No SPS	0.017
	FIR by the constituent	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
170	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 12:43 Hrs on 22.01.2016 ,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..loss in MU:0.017)											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1138 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1477 MW)											
	Restoration Details	Power extended to Capital area of Nagaland at 13:00 Hrs on 22.01.16 through 132 kV Dimapur (PG) - Kohima line.											
	Root Cause	Due to Vegetation problem in Nagaland system.											
	Remedial Measures	Vegetation clearance and frequent petrolling to be done DoP,Nagaland .For further investigation and analysis,general trip to be elaborated and DR outputs to be submitted by PG for Diomapur(PG) end.											
171	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	2/21/2016 5:15	Dimapur (PG) Kohima	DP, ZI, Y-E Not Furnished	Not Furnished	No	No	Loss of Load: 14	GD-I	2/21/2016 5:27	No SPS	0.004
	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 05:15 Hrs on 21.02.16 , 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.(Load loss in MU:0.004)											
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1195 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1376 MW)											
	Restoration Details	Power extended to Capital area of Nagaland at 05:27 Hrs on 21.02.16 through 132 kV Dimapur (PG) - Kohima line.											
	Root Cause	Due to vegetation problem in the line , 132 kV Dimapur (PG) - Kohima line tripped.											
	Remedial Measures	Vegetation clearance to be done by DoP Nagaland.											
172	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	2/21/2016 10:08	Dimapur (PG) Kohima	DP, ZI, B-E Not Furnished	Not Furnished	No	No	Loss of Load: 22& Loss of Generation: 8	GD-I	2/21/2016 10:51	No SPS	0.24
	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 10:08 Hrs on 21.02.16 ,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.(Load loss in MU:0.010)											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1199 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1644 MW)											
	Restoration Details	Power extended to Capital area of Nagaland at 10:51 Hrs on 21.02.16 through 132 kV Dimapur (PG) - Kohima line.											
	Root Cause	Due to vegetation problem in the line , 132 kV Dimapur (PG) - Kohima line tripped.											
	Remedial Measures	Vegetation clearance to be done by DoP Nagaland.											
	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	2/21/2016 17:10	Dimapur (PG) Kohima	Not Furnished No tripping	Not Furnished Not applicable	No No	No No	Loss of Load: 20	GD-I	2/21/2016 17:36	No SPS	0.009
	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 17:10 Hrs on 21.02.16 ,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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1438 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1418 MW)											
	Restoration Details	Power extended to Capital area of Nagaland at 17:36 Hrs on 21.02.16 through 132 kV Dimapur (PG) - Kohima line.											
	Root Cause	Dimapur(PG) and SLDC Nagaland have to submit Relay Indication pertaining to their end for further investigation											
	Remedial Measures	Remedial measures after identification of root cause											
	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	3/31/2016 5:37	Dimapur (PG) Kohima	General Trip Not Furnished	Not Furnished Not Furnished	No No	No No	Loss of Load: 11	GD-I	3/31/2016 5:43	No SPS	0.002
	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 05:37 Hrs on 31.03.16 ,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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1253 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1953 MW)											
	Restoration Details	Power extended to Capital area of Nagaland at 05:43 Hrs on 31.03.16 through 132 kV Dimapur (PG) - Kohima line.											
	Root Cause	SLDC Nagaland has to submit Relay Indication pertaining to their end for further investigation											
	Remedial Measures	Remedial measures after identification of root cause.Dimapur(PG) shall elaborate on General trip indication.											

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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	
175	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	3/31/2016 9:24	Dimapur (PG)	General Trip	Not Furnished	No	No	Loss of Load: 14	GD-I	3/31/2016 9:58	No SPS	0.008	
				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 09:58 Hrs on 31.03.16 ,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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1164 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1879 MW)												
	Restoration Details	Power extended to Capital area of Nagaland at 09:58 Hrs on 31.03.16 through 132 kV Dimapur (PG) - Kohima line.												
	Root Cause	SLDC Nagaland has to submit Relay Indication pertaining to their end for further investigation												
	Remedial Measures	Remedial measures after identification of root cause.Dimapur(PG) shall elaborate on General trip indication.												
176	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	3/31/2016 5:00	Dimapur (PG)	DP, ZI, R-E	Not Furnished	No	No	Loss of Load: 5	GD-I	3/31/2016 5:10	No SPS	0.001	
				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 05:00 Hrs on 31.03.16 ,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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1253 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1909 MW)												
	Restoration Details	Power extended to Capital area of Nagaland at 05:10 Hrs on 31.03.16 through 132 kV Dimapur (PG) - Kohima line.												
	Root Cause	Due to vegetation problem in the line, 132 kV Dimapur (PG) - Kohima line tripped.												
	Remedial Measures	Vegetation clearance to be done by DoP Nagaland.												
	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	4/13/2016 13:31	Dimapur (PG)	General Trip	Not Furnished	No	No	Loss of Load: 10	GD-I	4/13/2016 13:42	No SPS	0.002	
				Kohima	Not Furnished	Not Furnished	No	No						
	FIR by the constituent	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
177	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 13:31 Hrs on 13.04.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1289 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1482 MW)											
	Root Cause	Due to vegetation problem in the line or in downstream of Kohima (NA), 132 kV Dimapur (PG) - Kohima line tripped.											
	Remedial Measures	Vegetation clearance to be done by DoP Nagaland.SLDC Nagaland shall report downstream fault also to NERLDC.Dimapur(PG) shall elaborate on General trip indication.Relay settings of downstream stations to be checked by DoP Nagaland in consultation with POWERGRID.											
178	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP	4/9/2016 10:50	Dimapur (PG) Kohima	General Trip No tripping	Not Furnished Not Furnished	No No	No No	Loss of Load: 6	GD-I	4/9/2016 11:20	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 10:50 Hrs on 09.04.16 ,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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1359 MW , पूर्ववृत्ता लोड/ Antecedent Load : 2023 MW)											
	Root Cause	Due to vegetation problem in the line or in downstream of Kohima (NA), 132 kV Dimapur (PG) - Kohima line tripped.											
	Remedial Measures	Vegetation clearance to be done by DoP Nagaland.SLDC Nagaland shall report downstream fault also to NERLDC.Dimapur(PG) shall elaborate on General trip indication.Relay settings of downstream stations to be checked by DoP Nagaland in consultation with POWERGRID.											
179	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	4/12/2016 10:27	Dimapur (PG) Kohima	Earth Fault Not	Not applicable Not applicable	No No	No No	Loss of Load: 7	GD-I	4/12/2016 10:37	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 10:27 Hrs on 12.04.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1713 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1587 MW)											

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क्रम संख्या/ Sl. No.	बिजली व्यवस्था तत्व / विवरण / Name of tripping element/ Description	मालिक / Owner	दिनांक और 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 in the line or in downstream of Kohima (NA), 132 kV Dimapur (PG) - Kohima line tripped.											
	Remedial Measures	Vegetation clearance to be done by DoP Nagaland.SLDC Nagaland shall report downstream fault also to NERLDC.Relay settings of downstream stations to be checked by DoP Nagaland in consultation with POWERGRID.											
180	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	4/15/2016 0:35	Dimapur (PG) Kohima	General Trip Not Furnished	Not Furnished	No No	No No	Loss of Load: 3	GD-I	4/15/2016 0:53	No SPS	0.001
	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 00:35 Hrs on 15.04.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1518 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1678 MW)											
	Root Cause	Due to vegetation problem in the line or in downstream of Kohima (NA), 132 kV Dimapur (PG) - Kohima line tripped.											
	Remedial Measures	Vegetation clearance to be done by DoP Nagaland.SLDC Nagaland shall report downstream fault also to NERLDC.Dimapur(PG) shall elaborate on General trip indication.Relay settings of downstream stations to be checked by DoP Nagaland in consultation with POWERGRID.											
181	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	5/1/2016 0:58	Dimapur (PG) Kohima	Earth Fault Not Furnished	Not applicable	No No	No No	Loss of Load: 24	GD-I	5/1/2016 1:49	No SPS	0.019
	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 00:58 Hrs on 01.05.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 957 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1388 MW)											
	Root Cause	Due to vegetation problem in the line or in downstream of Kohima (NA), 132 kV Dimapur (PG) - Kohima line tripped.											
	Remedial Measures	Vegetation clearance to be done by DoP Nagaland.SLDC Nagaland shall report downstream fault also to NERLDC.Relay settings of downstream stations to be checked by DoP Nagaland in consultation with POWERGRID.											
	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	5/1/2016 21:55	Dimapur (PG) Kohima	Earth Fault Not Furnished	Not applicable	No No	No No	Loss of Load: 13	GD-I	5/1/2016 22:53	No SPS	0.013

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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
182	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 21:55 Hrs on 01.05.16 ,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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1171 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1783 MW)											
	Root Cause	Due to vegetation problem in the line or in downstream of Kohima (NA), 132 kV Dimapur (PG) - Kohima line tripped.											
	Remedial Measures	Vegetation clearance to be done by DoP Nagaland.SLDC Nagaland shall report downstream fault also to NERLDC.Relay settings of downstream stations to be checked by DoP Nagaland in consultation with POWERGRID.											
183	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	5/5/2016 11:35	Dimapur (PG)	Over current	Not applicable	No	No	Loss of Load: 12	GD-I	5/5/2016 11:44	No SPS	0.003
				Kohima	No tripping	Not applicable	No	No					
	FIR by the constituent	Yes											
	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 11:35 Hrs on 05.05.16, 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												
	Root Cause	Due to vegetation problem in the line or in downstream of Kohima (NA), 132 kV Dimapur (PG) - Kohima line tripped.											
	Remedial Measures	Vegetation clearance to be done by DoP Nagaland.SLDC Nagaland shall report downstream fault also to NERLDC.Relay settings of downstream stations to be checked by DoP Nagaland in consultation with POWERGRID.											
	132 kV Dimapur (PG) -	POWERGRID & DoP	5/11/2016 14:35	Dimapur (PG)	Earth Fault	Not applicable	No	No	Loss of Load:	GD-I	5/11/2016 14:50	No SPS	0.012

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

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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 ग्रीड 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 in the line , 132 kV Dimapur (PG) - Kohima line tripped.											
	Remedial Measures	Vegetation clearance to be done by DoP Nagaland&POWERGRID. Directionality function of Earth fault/Over current relay at Kohima to be checked. Built in E/F and O/C feature of Numerical relay at Dimapur-PG to be enabled along with triggering of DR at the earliest by POWERGRID, so that nature of fault can be known from DR.											
186	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	5/12/2016 14:03	Dimapur (PG)	Earth Fault	Not applicable	No	No	Loss of Load: 12	GD-I	5/12/2016 14:24	No SPS	0.004
		Kohima	Over current	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 14:03 Hrs on 12.05.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1557 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1706 MW)											
	Root Cause	Due to vegetation problem in the line , 132 kV Dimapur (PG) - Kohima line tripped.											
	Remedial Measures	Vegetation clearance to be done by DoP Nagaland&POWERGRID. Directionality function of Earth fault/Over current relay at Kohima to be checked. Built in E/F and O/C feature of Numerical relay at Dimapur-PG to be enabled along with triggering of DR at the earliest by POWERGRID, so that nature of fault can be known from DR.											
	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	5/16/2016 13:52	Dimapur (PG)	Back Up Earth Fault	Not applicable	No	No	Loss of Load: 21	GD-I	5/16/2016 19:18	No SPS	0.123
		Kohima	Earth Fault	Not applicable	No	No							
	FIR by the constituent	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
187	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 13:52 Hrs on 16.05.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1696 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1156 MW)											
	Root Cause	Due to vegetation problem in the line , 132 kV Dimapur (PG) - Kohima line tripped.											
	Remedial Measures	Vegetation clearance to be done by DoP Nagaland&POWERGRID. Directionality function of Earth fault/Over current relay at Kohima to be checked. Built in E/F and O/C feature of Numerical relay at Dimapur-PG to be enabled along with triggering of DR at the earliest by POWERGRID, so that nature of fault can be known from DR.											
188	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	5/18/2016 13:29	Dimapur (PG)	Over Current,Earth Fault	Not applicable	No	No	Loss of Load: 15	GD-I	5/18/2016 13:50	No SPS	0.006
	Kohima	Y-Ph, Over Current	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 13:29 Hrs on 18.05.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1873 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1964 MW)											
	Root Cause	Due to vegetation problem in the line , 132 kV Dimapur (PG) - Kohima line tripped.											

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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
190	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 18:45 Hrs on 19.05.16, 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	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1887 MW , पूर्ववृत्ता लोड/ Antecedent Load : 2064 MW)											
	Root Cause	Due to vegetation problem in the line or in downstream of Kohima (NA), 132 kV Dimapur (PG) - Kohima line tripped.											
	Remedial Measures	Vegetation clearance to be done by DoP Nagaland.SLDC Nagaland shall report downstream fault also to NERLDC.Relay settings of downstream stations to be checked by DoP Nagaland in consultation with POWERGRID.											
191	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	6/11/2016 11:40	Dimapur (PG)	Over Current,Earth Fault	Not applicable	No	No	Loss of Load: 16& Loss of Generation: 16	GD-I	6/11/2016 11:55	No SPS	0.004
				Kohima	Earth Fault	Not applicable	No	No					
	FIR by the constituent	Yes											
	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 11:40 Hrs on 11.06.16,132 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 : 1754 MW , Antecedent Load : 1479 MW)											
	Root Cause												

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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												
192	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	6/29/2016 18:40	Dimapur (PG)	Over current	Not applicable	No	No	Loss of Load: 22	GD-I	6/29/2016 18:53	No SPS	0.007
				Kohima	Not Furnished	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 18:40 Hrs on 29.06.16, 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 : MW , Antecedent Load : MW)											
	Root Cause												
	Remedial Measures												
	132 kV Dimapur (PG) - Kohima	POWERGRID & DoP Nagaland	6/5/2016 0:00	Dimapur (PG)	Over current, Earth fault	Not applicable	No	No	Loss of Load: 9& Loss of Generation: 8	GD-I	6/5/2016 0:14	No SPS	0.003
				Kohima	Earth Fault (in 132 kV Kiphire line)	Not applicable	No	No					
	FIR by the constituent	Yes											

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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
193	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 00:00 Hr on 05.06.16, 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 : 1972 MW)											
	Root Cause												
	Remedial Measures												

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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
194	132 kV Surjamaninagar-Palatana I	POWERGRID	4/4/2016 21:06	Surjamaninagar	Not Furnished	Not Furnished	No	No	Loss of Load: 76	GD-I	4/4/2016 21:40	No SPS	0.081
	132 kV Agartala - Bodhjungle	TSECL		Palatana	Not Furnished	Not Furnished	No	No			4/4/2016 21:34	No SPS	
	132 kV Surjamaninagar-Agarthala I	TSECL		Agartala	Not Furnished	Not applicable	No	No			4/4/2016 21:57	No SPS	
	132 kV Surjamaninagar-Agarthala II	TSECL		Bodhjungle	Over current	Not applicable	No	No			4/4/2016 21:57	No SPS	
	132 kV Agartala - Rokhia I	TSECL		Surjamaninagar	Earth Fault	Not applicable	No	No			4/4/2016 21:20	No SPS	
	132 kV Agartala - Rokhia II	TSECL		Agarthala	Not Furnished	Not applicable	No	No			4/4/2016 21:20	No SPS	
	132 kV AGTPP - Agartala I	POWERGRID		Surjamaninagar	Earth Fault	Not applicable	No	No			4/4/2016 21:55	No SPS	
	132 kV AGTPP - Agartala II	POWERGRID		Agarthala	Not Furnished	Not applicable	No	No			4/4/2016 21:30	No SPS	
				Agartala	Over current	Not applicable	No	No					
				Agartala	Not Furnished	Not applicable	No	No					
				Rokhia	Over current	Not applicable	No	No					
				AGTPP	DP, ZIII, Y-B-E	Not Furnished	No	No					
				Agartala	Not Furnished	Not Furnished	No	No					
				AGTPP	DP, ZII, Y-B-E	Not Furnished	No	No					
				Agartala	Not Furnished	Not Furnished	No	No					
FIR by the constituent		No											
Brief Description of the Incident		Agarthala area of Tripura and Comilla area of Bangladesh system were connected with rest of NER Grid through 132 kV Surjamaninagar-Palatana I line, 132 kV Agartala - Bodhjungle line,132 kV Surjamaninagar-Agarthala I & II lines,132 kV Agartala - Rokhia I&II lines, 132 kV AGTPP - Agartala I & II lines (132 kV Udaipur-Monarchak line was not restored after tripping). At 21:06 Hrs on 04.04.16,132 kV Surjamaninagar-Palatana I line, 132 kV Agartala - Bodhjungle line,132 kV Surjamaninagar-Agarthala I & II lines,132 kV Agartala - Rokhia I&II lines, 132 kV AGTPP - Agartala I & II lines tripped. Due to tripping of these elements,Agarthala area of Tripura and Comilla area of Bangladesh system were separated from rest of NER Grid and subsequently collapsed due to no source in this area.											
Antecedent Conditions of NER Grid		(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1310 MW , पूर्ववृत्ता लोड/ Antecedent Load : 2219 MW)											
Root Cause		Due to vegetation problem, fault occured in Tripura system.											
Remedial Measures		Detailed report to be submitted by SLDC Tripura. Vegetation clearance to be done by TSECL.Electro mechanical relays in Tripura system to be replaced by Numerical relays at the earliest by TSECL.											
	132 kV Agartala - Dhalabil (Khowai)	TSECL	10-57-00	Agartala	Earth Fault	Not applicable	No	No			5/1/2016 20:25	No SPS	
				Dhalabil	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
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196	400 kV BgTPP - Bongaigaon I	POWERGRID	3/2/2016 12:42	BgTPP	Busbar differential protection	Not applicable	No	No	Loss of Generation: 151	GD-II	3/2/2016 14:00	No SPS	1.935		
				Bongaigaon	Direct Trip received	Not applicable	Yes	No							
	400 kV BgTPP - Bongaigaon II	POWERGRID		BgTPP	Busbar differential protection	Not applicable	No	No						3/2/2016 15:02	No SPS
				Bongaigaon	Direct Trip received	Not applicable	Yes	No							
	BgTPP U 1	NTPC	3/2/2016 12:42	BgTPP	Tripped due to operation of Busbar differential protection	Not applicable	No	No			3/3/2016 1:23	No SPS			
	FIR by the constituent		No												
	Brief Description of the Incident		Bongaigaon Thermal Power Station was connected with rest of NER Grid through 400 kV Bongaigaon-BgTPP(NTPC) I & II lines. At 12:42 Hrs on 02.03.16 , 400 kV Bongaigaon-BgTPP(NTPC) I & II lines tripped. Due to evacuation problem, BgTPP was blacked out.												
	Antecedent Conditions of NER Grid		(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1123 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1370 MW)												
Restoration Details		Power extended to BgTPP at 14:00 Hrs on 02.03.16 through 400 kV BgTPP - Bongaigaon I line.													
Root Cause		During the testing at NTPC, busbar protection operated and both feeders were in same bus.													
Remedial Measures		NTPC shall look in to this matter as early as possible.													

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197	132 kV Loktak - Imphal (PG)	POWERGRID	4/25/2016 15:37	Loktak	Over current	Not applicable	Yes	No	Loss of Load: 14	GD-I	4/25/2016 15:56	No SPS	0.005		
	132 kV Loktak - Jiribam	POWERGRID		Imphal (PG)	No tripping	Not applicable	No	No			4/25/2016 16:13	No SPS			
				Loktak	Hand Tripped	Not applicable	Yes	No						4/25/2016 15:55	No SPS
				Jiribam (PG)	Back Up Earth Fault	Not applicable	No	No	4/25/2016 16:20						
	132 kV Loktak - Ningthoukhong	MSPCL		Loktak	Hand Tripped	Not applicable	Yes	No			Loss of Generation: 103	4/25/2016 16:06			
				Ningthoukhong	Over current	Not applicable	No	No						4/25/2016 15:59	No SPS
				Loktak	Tripped due to	Not applicable	No	No							
				Loktak	tripping of associated lines	Not applicable	No	No							
	Loktak U 1	NHPC													
	Loktak U 2	NHPC													
	Loktak U 3	NHPC													
	FIR by the constituent	No													
	Brief Description of the Incident	Loktak Power Station was connected with rest of NER Grid through 132 kV Loktak-Imphal(PG) line, 132 kV Loktak-Jiribam line & 132 Loktak-Ningthoukhong line(132 kV Rengpang - Jiribam(MA) is under long outage & 132 kV Imphal - Ningthoukhong line tripped at 10:30 Hrs on 25.04.16 and was not restored). At 15:37 Hrs on 25.04.16 , 132 kV Loktak-Imphal(PG) line tripped . Due to evacuation problem, Loktak Power Station was blacked out.													
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1096 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1370 MW)													
	Root Cause	Due to non operation of any protective relay at Loktak it could not be ascertained whether the fault was in Jiribam - Loktak line or Loktak - Ningthoukhong line.													
Remedial Measures	Loktak to furnish detailed report explaining non clearance of fault at Loktak end. Loktak&Imphal(PG) shall submit DR output pertaining to the event.														

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क्रम सं ख्या/ 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	
198	132 kV AGTPP - Kumarghat	POWERGRID	5/2/2016 15:43	AGTPP	No tripping	Not applicable	No	No	Loss of Load: 0	GD-I	5/2/2016 15:50	SPS 6 operated	0.009	
	Kumarghat	DP, ZIII, Y-B-E		Not applicable	Yes	No	5/2/2016 16:25							
	AGTPP	DP, ZIII, B-E		Not applicable	No	No		5/2/2016 19:54						
	Agartala	No tripping		Not applicable	No	No			5/4/2016 18:49					
	AGTPP	DP, ZIII, B-E		Not applicable	No	No	5/2/2016 17:23							
	Agartala	No tripping		Not applicable	No	No		5/2/2016 16:45						
	AGTPP U 2	NEEPCO		AGTPP	Tripped due to evacuation problem	Not applicable			No	No	Loss of Generation: 73			5/2/2016 21:19
	AGTPP U 3	NEEPCO		AGTPP	Not applicable	No	No							
	AGTPP U 4	NEEPCO	AGTPP	Not applicable	No	No								
	AGTPP STG II	NEEPCO	AGTPP											
	FIR by the constituent	No												
	Brief Description of the Incident	AGTPP Power Station was connected with rest of NER Grid through 132 kV AGTPP-Agartala I & II lines & 132 kV AGTPP-Kumarghat line.At 15:43 Hrs on 02.05.16 , 132 kV AGTPP-Agartala I & II lines & 132 kV AGTPP-Kumarghat line tripped. Due to evacuation problem, all running units of AGTPP tripped.												
	Antecedent Conditions of NER Grid	(पूर्ववृत्ता उत्पादन/ Antecedent Generation : 1277 MW , पूर्ववृत्ता लोड/ Antecedent Load : 1137 MW)												
	Root Cause	Likely due to non clearance of downstream fault in the Tripura System at Agarthala,132 kV AGTPP - Agartala I&II line tripped at AGTPP end and 132 kV AGTPP - Kumarghat line tripped at Kumarghat end.												
	Remedial Measures	Zone-III time delay of 132 kV AGTPP - Kumarghat line to be increased by POWERGRID so that 132 kV Kumarghat - AGTPP line does not trip along with 132 kV AGTPP - Agartala I&II lines, to save generation of AGTPP. NEEPCO to furnish DR of the event at the earliest for further analysis.Agarthala relay settings to be checked by TSECL in coordination with POWERGRID.POWERGRID and OTPC are requested to conduct protection audit in substations of TSECL.												

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