North Eastern Regional Power Committee

Agenda
for

Protection Sub-Group Meeting

Date : 04/05/2023 (Thursday)

Time : 10:30 hrs

Venue : Online mode.

I T E M S F O R D I S C U S S I O N

1 AGENDA FROM NERPC:

1.1 Analysis and Discussion on Grid Disturbances which occurred in NER grid during March 2023:

Items related to Arunachal Pradesh

SL NO.	DESCRIPTION OF EVENT	DISCUSSION POINTS	DELIBERATION OF SUB COMMITTEE
March-2023			
1	Tripping of 132 kv Along-Daporijo line on 05/03/2023	No DR available. As per FIR accidental tripping while carrying out maintenance works. Affected areas: Along,Pasighat,Roing,Tezu and Namsai.	

Items related to Assam

SL NO.	DESCRIPTION OF EVENT	DISCUSSION POINTS	DELIBERATION OF SUB COMMITTEE
March-2023			
1	Tripping of 220 kv NRPP-NTPS line on 16/03/2023	As per DR analysis, suspected LG fault at phase B. Ib=962A,angle=-81.55 degrees. Fault clearing time not clear in DR. Relay: Relay Indication	

		Main1- No Tripping	
2	Tripping of 132 kv Gohpur-Pavoi line 1 on 24/03/2023	No DR available	
	Tripping of 132 kv Gohpur-Pavoi line 2 on 24/03/2023	As per DR analysis, suspected L-L fault between phases A & B. Ia=3449A, Ib=3782A. Cleared in 562ms. Autorecloser Status : NA, CARRIER SENT : No, Carrier Received : No DT Sent : No, DT Received : No	

Items related to Meghalaya

SL NO.	**DESCRIPTION OF EVENT**	**DISCUSSION POINTS**	**DELIBERATION OF SUB COMMITTEE**
March-2023			
1. (15/03/2023)	Tripping of 132 Umtru-New Umtru line on	As per DR analysis, suspected LLG fault between phases B & C. Ib=896A,Ic=700.75A. In=147.064A. Cleared in 84.3 ms. : Relay Indication from New Umtru end:Main1- I>2 Trip. Autorecloser Status : NA, CARRIER SENT : No, Carrier Received : No, DT Sent : No, DT Received : No	
	Tripping of 132 kv New Umtru-EPIP II line	As per DR analysis, suspected LLG fault between phases B & C. Ib=579.762A, Ic=467.139A,In=129.627A Cleared in 120 ms. Relay Indication from New Umtru end :Main1- Over Current.	

		Autorecloser Status : NA, CARRIER SENT : No, Carrier Received : No, DT Sent : No, DT Received : No	
3	Tripping of 132 kv Umiam stg 3-stg 4 line 2 on 17/03/2023	As per DR analysis, suspected LG fault at phase B. Ib=782 A,angle=-121.63 degrees. DR needs to be standardized.	
4	Tripping of 132 kv Umtru-Umiam stg IV 2 line on 19/03/2023	As per DR analysis, suspected L-L fault between phases A & B. Ia=1242.294 A, Ib=1228.064 A. Zone 3 picked up. Cleared in 597.14 ms. Relay Indication from Umtru end: Main1- DP, ZIII. , Autorecloser Status : NA, CARRIER SENT : No, Carrier Received : No DT Sent : No, DT Received : No	

Items related to Manipur

SL NO.	**DESCRIPTION OF EVENT**	**DISCUSSION POINTS**	**DELIBERATION OF SUB COMMITTEE**
March-2023			
1	Tripping of 132 kv New Thoubal-Kongba 2 line on 15/03/2023.	No DR and no FIR available. Affected areas are Yiangangpokpi,HUndung & Kongba areas.	
2 (27/03/2023)	Tripping of 132 kv Kakching-Thoubal line on	No DR available.	
	Tripping of 132 kv Ningthoukong-Churachandpur 1 line on 27/03/2023.	No DR available.	
	Tripping of 132 kv Ningthoukong-	No DR available.	

	Churachandpur 2 line on 27/03/2023.		

Members may please discuss.

1.2 Relay coordination for changes or upgradations in the grid

Addition or upgradation of elements requiring relay coordination at local and remote ends

Sl no	Elements	Relay setting coordination/updation required at substations
1	Addition of Ls-BNC line 1	Ranganadi, Balipara
2	HTLS reconductoring of Loktak-Jiribam	Loktak, Imphal, Ningthounkong
3	HTLS reconductoring of 220kV Salakati-Alipurduar DC	BTPS

Members may please discuss

1.3 Protection system for Solar Power Plants

General protection system may not work effectively for converter/inverter-based substations as the same can only provide positive sequence current and weak-infeed issue leads to non-picking up of faults by the relays. Hence there is need to develop protection philosophy particular to such inverter-based stations (Solar stations).

Members may please discuss

1.4 Agenda PSCT and PDMS training program by M/s PRDC

M/s PRDC has prepared the training schedule as follow. Each state has to provide the suitable dates (for two slots, preferably with a gap of two months or more) as per their convenience. Also, each utility has to provide contact details for nodal officers assigned for PDMS and PSCT.

Members may please discuss

PRDC TENTATIVE TRAINING PROGRAMME OF MiP-PSCT AND MiP-PDMS FOR THE YEAR OF 2023-2024				
SL. NO.	**Date of Training**	**Content of Training**	**Name of The State**	**Remarks**
1	08 May 2023	MiP-PSCT		Online
	09 May 2023	MiP-PDMS & MiP-DMNS		
2	23 May 2023	MiP-PSCT		Online
	24 May 2023	MiP-PDMS & MiP-DMNS		
3	05 June 2023	MiP-PSCT		Online
	06 June 2023	MiP-PDMS & MiP-DMNS		
4	15 June 2023	MiP-PSCT	ALL SEVEN STATES AND CENTRAL UTILITY	Central Training
	16 June 2023	MiP-PDMS & MiP-DMNS		
5	03 July 2023	MiP-PSCT		Online
	04 July 2023	MiP-PDMS & MiP-DMNS		
6	24 July 2023	MiP-PSCT		Online
	25 July 2023	MiP-PDMS & MiP-DMNS		
7	07 August 2023	MiP-PSCT		Online
	08 August 2023	MiP-PDMS & MiP-DMNS		
8	21 August 2023	MiP-PSCT		Online
	22 August 2023	MiP-PDMS & MiP-DMNS		
9	11 September 2023	MiP-PSCT		Online
	12 September 2023	MiP-PDMS & MiP-DMNS		
10	25 September 2023	MiP-PSCT		Online
	26 September 2023	MiP-PDMS & MiP-DMNS		
11	04 October 2023	MiP-PSCT		Online
	05 October 2023	MiP-PDMS & MiP-DMNS		
12	30 October 2023	MiP-PSCT		Online
	31 October 2023	MiP-PDMS & MiP-DMNS		
13	06 November 2023	MiP-PSCT		Online
	07 November 2023	MiP-PDMS & MiP-DMNS		
14	04 December 2023	MiP-PSCT		Online
	05 December 2023	MiP-PDMS & MiP-DMNS		
15	18 December 2023	MiP-PSCT		Online
	19 December 2023	MiP-PDMS & MiP-DMNS		

2. AGENDA ITEMS FROM NERLDC

2.1 Status of submission of FIR and DR & EL outputs for the Grid Events:

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

Status of uploading of FIR, DR and EL outputs in Tripping Monitoring Portal for events in Mar'23- April'23 as on 01.05.23 is given below:

Name of Utility	Total FIR/ DR/EL	Total FIR, DR & EL submitted			Total FIR, DR & EL submitted as NA (Not Applicable)			Total FIR, DR & EL submitted as NU (Not Available)			Total FIR, DR & EL not submitted		
		FIR	DR	EL	FIR	DR	EL	FIR	DR	EL	FIR	DR	EL
DoP, Arunachal Pradesh	26	17	14	17	0	2	1	0	2	0	9	8	8
AEGCL	108	39	67	49	0	13	23	0	2	10	69	26	26
MSPCL	71	49	24	26	0	12	12	0	10	8	22	25	25
MePTCL	42	42	33	35	0	6	3	0	0	0	0	3	4
MePGCL	64	1	31	30	0	19	13	0	8	0	63	6	21
P&ED, Mizoram	4	2	1	2	0	0	0	0	1	0	2	2	2
DoP, Nagaland	33	30	23	24	0	1	1	0	2	1	3	7	7
TSECL	45	31	22	24	0	2	2	0	3	1	14	18	18
POWERGRID	108	76	75	43	0	9	8	0	3	7	32	21	50
NEEPCO	67	23	26	25	0	27	27	0	0	0	44	14	15
NHPC	10	0	6	6	0	3	2	0	1	0	10	0	2
NTPC	2	0	0	0	0	2	2	0	0	0	2	0	0
OTPC	10	7	7	3	0	1	1	0	0	0	3	2	6
Sterlite Power	16	9	13	13	0	0	0	0	0	0	7	3	3
KMTL	1	1	1	1	0	0	0	0	0	0	0	0	0

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

Members may please discuss

2.2 Non-operation of auto recloser in Important Grid Elements for transient faults w.e.f. Mar 2023:

Sl. No	Name of the Line	A/R Not Operated	Date and Time
1	400 kV Palatana - Silchar 1 Line	Both Ends (OTPC & POWERGRID)	02-03-2023 11:19
2	220 kV Balipara - Sonabil 1 Line	Both Ends(AEGCL & POWERGRID)	13-03-2023 11:18
3	220 kV Byrnihat - Misa 1 Line	Byrnihat (MePTCL)	14-03-2023 20:41
4	400 kV P K Bari - Silchar 1 Line	Silchar (POWERGRID)	17-03-2023 06:18
5	220 kV Agia - BTPS 2 Line	Agia (AEGCL)	20-03-2023 00:24
6	220 kV Agia - BTPS 2 Line	BTPS (AEGCL)	22-03-2023 16:32
7	220 kV Agia - Boko Line	Agia (AEGCL); Boko -No DR Submitted	26-03-2023 19:59

Concerned Utilities are requested to intimate the reason for non-operation of AR & details of corrective actions implemented.

Members may please discuss

2.3 Status Update of Third Party Protection Audit:

First phase of Third-Party protection Audit (2013-14) was completed in 2015 and in Second Stage of Protection Audit (2017-18) numerous stations were covered. However, few stations are yet to be audited. Status for second phase of Protection Audit:

Name of the state/utility	**Name of the station(s)/Status**
Arunachal Pradesh	132/33kV Along, 132/33kV Pasighat, 220/132/33kV Deomali, 132/33kV Daporizo, 132/33kV Lekhi, 132/33kV Tippi, 132/33kV Chimpu, 132/33kV Khupi.
Assam	Completed in Nov'21.
Manipur	Yet to be intimated, i.r.o some Substations

Meghalaya	400/220/132kV Byrnihat,132kV Mawphlang, 132KV Mustem, 132kV Umiam
Mizoram	Yet to be intimated, i.r.o some Substations
Nagaland	132kV Wokha, 132kV Sanis,132kV Kiphire
Tripura	Yet to be intimated, i.r.o some Substations

The following substations were selected in the 58th PCCM to be audited at the earliest:

Manipur: Jiribam, Rengpang, Karong, New Thoubal, Churachandpur, Kakching and Tipaimukh.

Nagaland: Old Kohima substation.

States are requested to schedule the dates for the upcoming Third Party Protection Audit.

Members may please discuss

2.4 Status of the Implementation of Third Party Protection Audit recommendation in NER held in 2017-18 :

Name of the Utility	No. of Stations covered	% of Recommendation completed as on 55th PCC meeting 11-11-2020	Current Status
Ar. Pradesh	3	0	
Assam	16	38	
Manipur	4	40	
Meghalaya	10	11	
Mizoram	3	8	
Nagaland	3	81	
Tripura	11	0	

As per the minutes of 58th PCCM, forum requested all States to update the current status of implementation against recommendation of Third-Party Protection Audit.

Members may please discuss

2.5 Status update of Agenda Item of 58th PCCM, implementation of Auto-Reclosure on Z-I operation: In the discussions of the Sub-group on 12-04-2021 the following points were noted:

1. Auto-Reclosure is very much required for maintaining system stability, reliability and uninterrupted power supply.
2. Presently it will take some time for the state utilities to implement the PLCC and establish carrier communication between stations.
3. The operation of Auto-Reclosure on Z-I operation at the local end independent of carrier healthiness is required.

In the 57th and 56th PCC meeting the forum approved the implementation of AutoReclosure on Z-1 without carrier check for all lines except the lines with generating stations at both the ends and requested the utilities to implement the AR scheme at the earliest.

In 58th PCC meeting, NERLDC representative informed that in the absence of PLCC, auto reclosure can be configured in the numerical relay so that its operation can be ensured independent of carrier healthiness. ALL the utilities were requested to implement the same on the lines where PLCC is absent so that AR on Z-I tripping can be ensured.

The forum enumerated the lines where AR is to be enabled at the earliest

Nagaland: 132kV Dimapur-Kohima line (from Kohima end)

Mizoram: 132kV Turial-Kolasib line

Manipur: 132kV Imphal-Ningthoukong

Tripura: 132kV Agartala-S M Nagar (TSECL), 132kV Agartal-Rokhia DC, 132kV Agartala-R C Nagar DC, 132kV Agartala-Budhjungnagar

Arunachal Pradesh: 132kV Balipra-Tenga, 132kV Ziro-Daporijo-Along-Pashighat link

AeGCL has updated in 58th PCCM that two 220KV substations (Jawaharnagar and Sonapur) and the 220 KV bay at Kathalguri has no auto reclosure but is expected to come up soon. Almost 60% of 132 KV substations has auto reclosure scheme and by June'23 the coverage will increase upto 90%.

Meghalaya stated in the same meeting that the petition to implement auto reclosure in all lines has been placed at MERC as the lines are very old and may snap on auto reclosing mechanism if persistent fault occurs. They stated that AR scheme has been put in place for 5 lines, but approval is required. (**Annexure 2.5)**

Members may please discuss

2.6 Tripping of transmission elements owned by DoP ,Arunachal Pradesh w.e.f Mar'2023 resulting in Grid Disturbance :

1. 132 kV Along – Pasighat line tripped : 2 times
2. 132 kV Along – Daporizo line tripped: 4 times
3. 132 kV Ziro – Daporizo line tripped: 2 times
4. 132 kV Balipara- Tenga Line tripped: 4 times

As per DR Analysis, most of the tripping are of Single Phase and transient in nature. Therefore, DoP, AP is requested to ensure proper O&M of the transmission element.

Also, DoP, AP is requested to implement A/R scheme in these lines to avoid repeated blackout and maintain continuity of supply as most of the faults are transient type.

Members may please discuss

2.7 Frequent Tripping of 132 kV Dimapur (PG) - Kohima Line:

132 kV Dimapur (PG) - Kohima Line tripped consecutively eleven (11) times from 1st March to 30th April'23.

As per DR Analysis, most of the faults are B-Ph to E fault (vegetation) at a distance of around 35 Kms from Dimapur(PG). Repeated tripping of above-mentioned lines reduces the reliability of Kohima (Capital) area of Nagaland Power system and it also reduces the life of CB mechanism due to frequent stress which in turn possess a treat to the security and reliability of NER Grid.

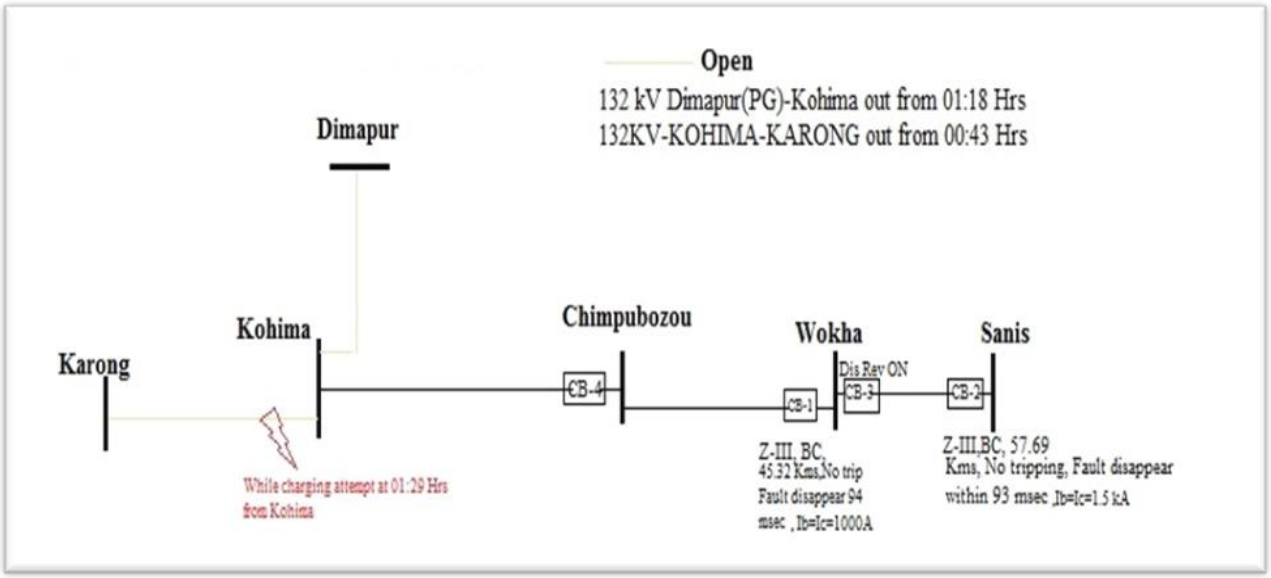
DoP, Nagaland is requested to intimate the measures that has been taken to reduce the frequent tripping of the said line. DoP, Nagaland is also requested to implement A/R scheme in these lines to avoid repeated

blackout and maintain continuity of supply as most of the faults are transient type.

Members may please discuss

2.8 Grid Disturbance at Kohima/Wokha area of Nagaland System on 20-04-23:

At 01:29 Hrs of 20-04-23, 132KV Sanis-Wokha & 132KV Wokha-Chiepebozou Line tripped while taking charging attempt in 132kV Karong-Kohima at Kohima, leading to blackout of 132 kV Kohima (Capital) area of Nagaland System.



As per DR Analysis,

1. Protection system at Kohima for 132 kV Karong Line fails to clear fault which led to detection of Z-III from Wokha & Sanis S/s.
2. Distance relay of Wokha (for Sanis line) detects Reverse zone, however tripped on Backup Overcurrent.

As fault in Reverse side, B/U relay should not trip at Wokha. B/U relay setting/directionality may be checked.

DoP, Nagaland is requested to intimate the root cause of the event and remedial measures that has been taken to prevent re-occurrence of the same.

Members may please discuss

2.9 Grid Disturbance at Wokha area of Nagaland System on 05-04-23:

At 13:09 Hrs of 05-04-2023, 132 kV Doyang- Mokokchung(NA) & 132 kV Sanis – Wokha tripped at Mokokchung(Backup EF) and Wokha (Backup OC) for the fault in 132 kV Kohima- Chiempobozou line.

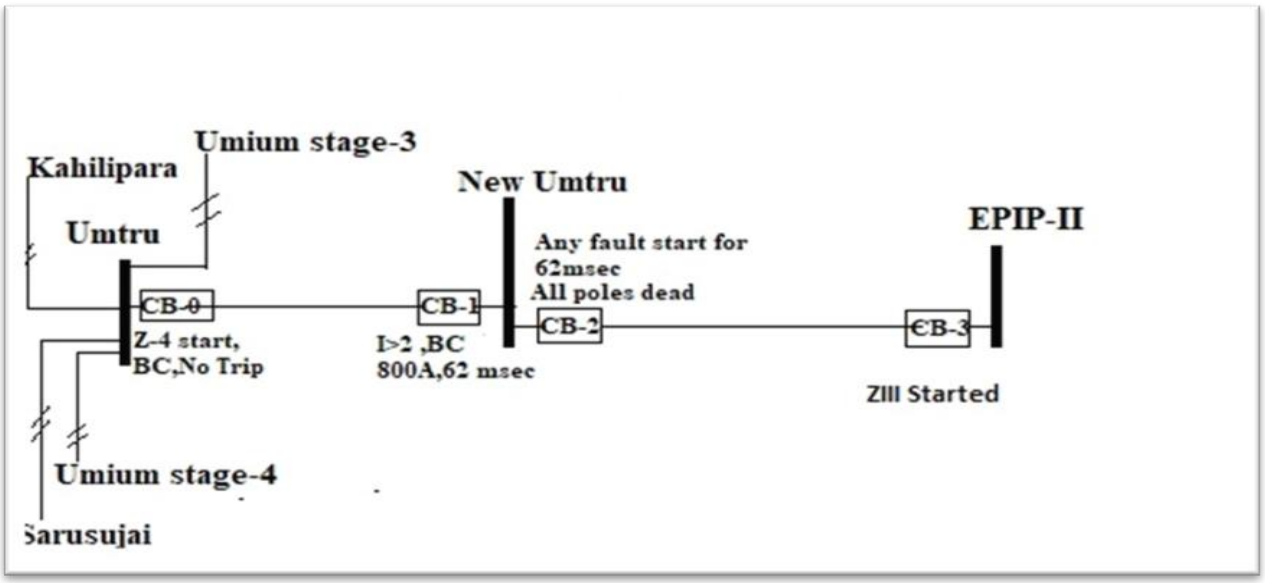
DoP, Nagaland is requested to check the followings and accordingly coordinate: -

1. Directionality of Backup Setting at Wokha for Sanis line.
2. Backup setting at Mokokchung for Doyang line.

Members may please discuss

2.10 Grid Disturbance at New Umtru area of Meghalaya System on 15-03-23:

At 21:07 Hrs on 15/03/2023, 132 kV New Umtru – Umtru and 132 kV New Umtru- EPIP II line tripped resulting Grid disturbance of category GD-1 at New Umtru(Gen Loss :18 MW) area of Meghalaya system.



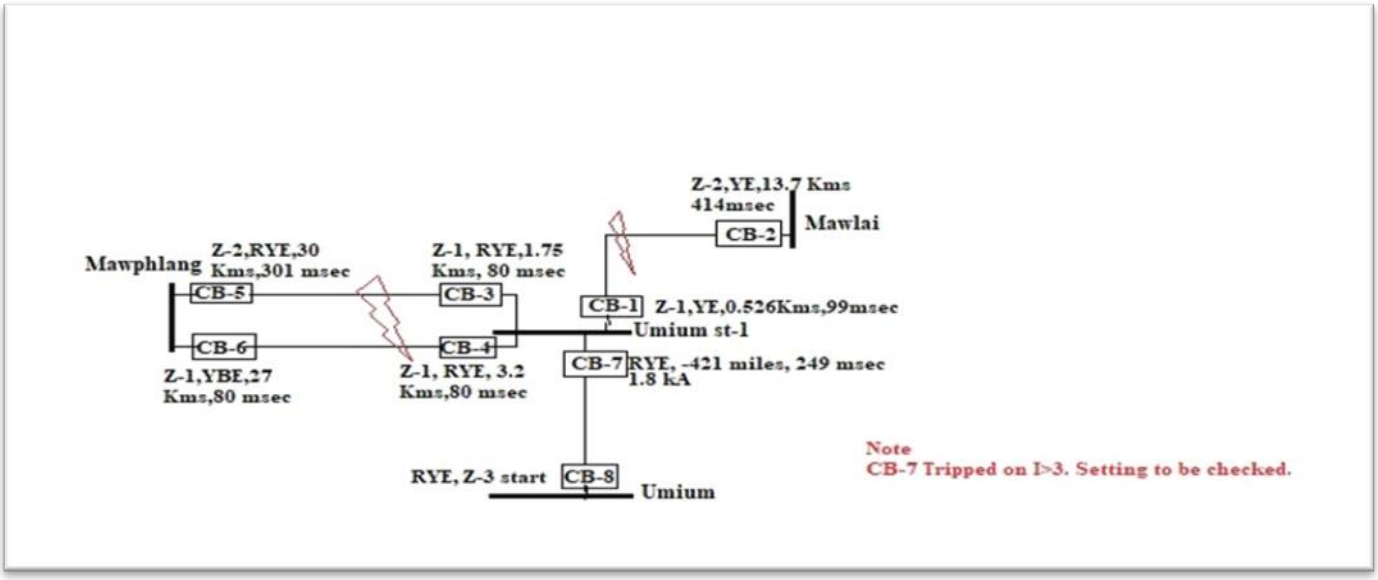
As per DR Analysis,

1. Ph to Ph fault was detected at Umtru in reverse direction of 132 kV Umtru -New Umtru Line and fault was cleared from New Umtru on I>2 within 62 msecs. I>2 setting needs to be checked/reviewed by MePGCL

2. Only ZIII Starts signal appears in the DR output of EPIP end for 132 kV New Umtru line. Which protection issued the trip signal after 700 msecs need to be check and proper action may be taken by MePTCL.

Members may please discuss

2.11 Tripping of 132 kV Umium Stage-1- Umium Line along with 132 kV Mawphlang - Umiam Stg I D/C Line and 132 kV Mawlai - Umiam Stage I Line at 10:23 Hrs of 24/4/23 :



As per DR Analysis, Double phase to earth fault was in 132 kV Mawphlang - Umiam Stg I D/C Line and 132 kV Mawlai - Umiam Stage I Line at 10:23 Hrs of 24/4/23 and faults cleared from Umium stage-1 within 99 msec on Z-1 operation. At the same time, healthy 132 kV Umium Line tripped only from Umium stage-1 on I>3 (Ib:1.8 kA).

Observation -

1. There was no fault on 132 kV Umium Stage-1 to Umium Line as only Z-III, RY-E detection was recorded from Umium end DR data. The directionality of backup relay (CT inputs to the relay after star point towards line side) and setting from Umium stag-1 end needs to be checked/reviewed at earliest to prevent further tripping of healthy line.
2. Time drift of about 1 hrs observed in all DR/EL data from Umium stage-1/Mawphlang/Mawlai/Umium which needs to be time sync with GPS in line with various CERC/CEA regulation to get the actual

time during multiple tripping for fruitful analysis purpose by protection engineers.

Therefore, MePTCL/MePGCL is requested to intimate the root cause and remedial measures taken.

Members may please discuss

2.12 Blackout at Kolasib Substation on 23rd March 2023:

132 kV Aizawl - Kolasib Line tripped at 13:30 Hrs and 132 kV Badarpur - Kolasib Line tripped at 13:31 Hrs of 23-03-2023, leading to blackout at Kolasib substation.

As per DR Analysis,

1. At 13:30 Hrs, R-E fault occured in 132 kV Aizawl-Kolasib line and the same was cleared in ZI from Kolasib end & ZII from Aizawl end.
2. At 13:31 Hrs, 132 kV Badarpur- Kolasib line tripped at Badarpur on B-E, ZII leading to the blackout of radially fed Kolasib S/S. Z-IV started at Kolasib end.

Observations: -

1. No carrier aided tripping was observed from Aizawl end for 132 kV Aizawl-Kolasib line. The reason for same may be intimated by PGCIL.
2. Time drift issues (2 minutes) observed at the DR output of Kolasib end of 132 kV Badarpur-Kolasib line. The reason for same may be intimated by PGCIL.

No DR& EL received for downstream of Kolasib from P&ED, Mizoram.

Members may please discuss

2.13 Blackout at Kolasib Substation on 22nd April 2023:

132 kV Aizawl - Kolasib and 132 kV Badarpur - Kolasib Line tripped at 18:24 Hrs of 22-04-2023, leading to blackout at Kolasib substation.

As per DR analysis,

1. R-E fault occurred in 132 kV Badarpur - Kolasib Line and tripped on ZII(carrier aided) at Badarpur and ZI (as per Relay details) at Kolasib end. No DR received for Kolasib end.

2. No tripping at Aizawl end for 132 kV Aizawl – Kolasib Line. However, line tripped at Kolasib end on EF(as per Relay details). No DR received for Kolasib end.

Therefore, PGCIL is requested to intimate the root cause for tripping of 132 kV Aizawl - Kolasib at Kolasib end.

Members may please discuss

2.14 Blackout at Manipur Power System at 13:56 Hrs of 27th March'23 :

At 13:56 Hrs of 27/03/23 following multiple lines tripped which led to blackout of 132 kV Churachandrapur, Kakching, Elangkangpokpi, Chandel, Thanlon and Rengpang S/s of Manipur Power System.

1. 132kV Loktak - Ningthoukhong
2. 132 kV Ningthoukhong-Churchandpur D/C
3. 132kV Thoubal Old - Kakching,
4. 132kV Thoubal New - Kakching,
5. 132 kV Jiribam-Rengpang and 132 kV Loktak-Rengpang lines tripped

As per DR Analysis of Ningthoukhong end for 132 kV Churachandpur-Ningthoukhong line, Double Phase fault was beyond the Churachandpur S/S of Manipur system and the same was cleared from 132 kV Ningthoukong S/S on Z-III operation within 800 msec.

Observations: -

1. The tripping of healthy line from Loktak for fault beyond line seems to be setting coordination issue.
2. Therefore, Loktak NHPC is requested to check/review the B/U OC setting at Loktak for 132 kV Ningthoukong Line and accordingly coordinate with distance setting. Root Cause could not be concluded due to non-submission DR&EL from
   Churachandrapur, Kakching, Thoubal /Thoubal New SS of MSPCL.

Members may please discuss

2.15 Repeated Grid Disturbance at Kongba area of Manipur Power System:

Grid Disturbance of Category GD 1 occurred two (2) times at Kongba area of Manipur Power System on 27th March'23 (Load loss: 7.3 MW) and on 24th April'23 (Load loss: 8 MW) due to the tripping of following elements:-

1. 132 kV Kongba - Yaingangpokpi 1 & 2 Line
2. 132 kV New Thoubal - Kongba 1&2 Line

Root Cause could not be concluded due to non-submission DR&EL from Kongba, Yaingangpokpi and Thoubal New SS of MSPCL.

MSPCL is requested to intimate the root cause for GD at Kongba.

Members may please discuss

2.16 Blackout at Gohpur areas of Assam System on 24-03-23:

Grid-disturbance (Load Loss:54 MW) of category GD-1 occurred at Gohpur, North Lakhimpur, Dhemaji and Majuli areas of Assam Power System due to tripping of 132 kV Gohpur-BNC (Pavoi) D/C Lines.

As per DR analysis, 132 kV Gohpur-2 line tripped at Pavoi on R-Y, Z-II operation. Only Z-4 started at Gohpur which implies fault was behind the Gohpur station.

The tripping of healthy 132 kV Pavoi Line-1 at Gohpur seems to be mis-operation.

AEGCL is requested to intimate the root cause and remedial measures that has been taken at Gohpur SS.

Members may please discuss

2.17 Grid Disturbance at Ghoramari, Depota, Rowta and Dhekiajuli areas of Assam system:

At 19:36 Hrs of 18-04-23, Grid Disturbance of category GD-1(Load Loss:120 MW) occurred at Ghoramari, Depota, Rowta and Dhekiajuli areas of Assam system due to tripping of 132 kV Sonabil-Ghoramari and 132 kV Sonabil-Depota Line.

As per NERLDC record, such type of event occurred 02(Two) times in the year 2022 which is the matter of concern as N-1 criteria not complied.

Therefore, in order to maintain reliable power supply 24X7 at Ghoramari/Depota/Rowta/Dhekiajuli area of Assam

system, SPS may be explored by AEGCL for automatic demand reduction on tripping of either 132 kV Sonabil-Ghoramari Or 132 kV Sonabil-Depota Line to prevent tripping of healthy line on account of overloading.

Members may please discuss

2.18 Grid Disturbance at Dhaligaon area of Assam system:

At 01:50 Hrs of 19-04-23, 132 kV BTPS-Dhaligaon D/C Lines tripped leading to blackout of Dhaligaon area of Assam Power System (Load loss: 122 MW).

Similar types of Grid Disturbance of category GD-1 occurred eleven (11) times since 2021 which is the matter of concern.

Repeated tripping of the above-mentioned line reduces the reliability of Dhaligaon area of Assam System.

As per the DR analysis, majority of the lines tripped due to lightning.

AEGCL may implement 3-Ph A/R scheme in these lines to avoid repeated blackout and maintain continuity of supply as most of the faults are of transient type.

Members may please discuss

2.19 Repeated tripping of 400 kV Palatana - Silchar D/C Line:

At 18:36 Hrs on 09.03.2023, 400 kV Palatana - Silchar D/C along with Palatana ST#2 tripped causing threat to the security and reliability of the NER Grid. Similar kind of tripping occurred on 19:55 Hrs of 04.03.2023.

As per DR from Silchar end, there was no fault on the system. The line tripped from Silchar end on DT signal received.

OTPC is requested to intimate the reason of DT sent from Palatana end corrective action taken.

Members may please discuss

2.20 Tripping of 132 kV AGTCCPP-Agartala-2 Line on 23rd March 23:

132 kV AGTCCPP-Agartala-2 Line tripped from AGTCCPP end at 05:58 Hrs of 15/3/23.

As per DR Analysis, line tripped from AGTCCPP on B-E, ZI. There was no tripping at Agartala end (Z-4, BE fault start) which implies the fault was behind the Agartala SS.

Observation: -

As such Tripping from AGTCCPP end on Z-1 seems to be mis-operation.

NEEPCO is requested to review the existing zone reach setting at AGTCCPP and take necessary action to prevent repetition.

Members may please discuss

2.21 Requirement of the Protection Coordination:

1. Reconductoring work of 220 kV Salakati – Alipuduar D/C completed and charged on 30-03-2023. Action: Necessary protection coordination work at BTPS end by AEGCL.
2. Reconductoring work of 132 kV Loktak- Jiribam(PG) completed and charged on 31-03-2023. Action: Necessary protection coordination work at Loktak end by NHPC and Ningthoukhong, Rengpang by MSPCL.
3. Newly added 400 kV BNC – Lower Subansiri D/C completed and charged on 30-03-2023. Action: Necessary protection coordination work at Balipara end by PGCIL.
4. Newly added 25 MVA ICT-III at Luangmual charged on 26-03-2023. Action: Necessary protection coordination work at Aizawl end by PGCIL and Melriat(MZ) by P&ED, Mizoram.

Members may please discuss

2.22 Review of SPS at Monarchak:

At 01:11 Hrs dtd 31/3/23, 132 kV Monarchak-Udaipur Line reclosed successfully from both ends and SPS@ Monarchak operated which led to tripping of STG Unit.

Observation as per existing scheme:

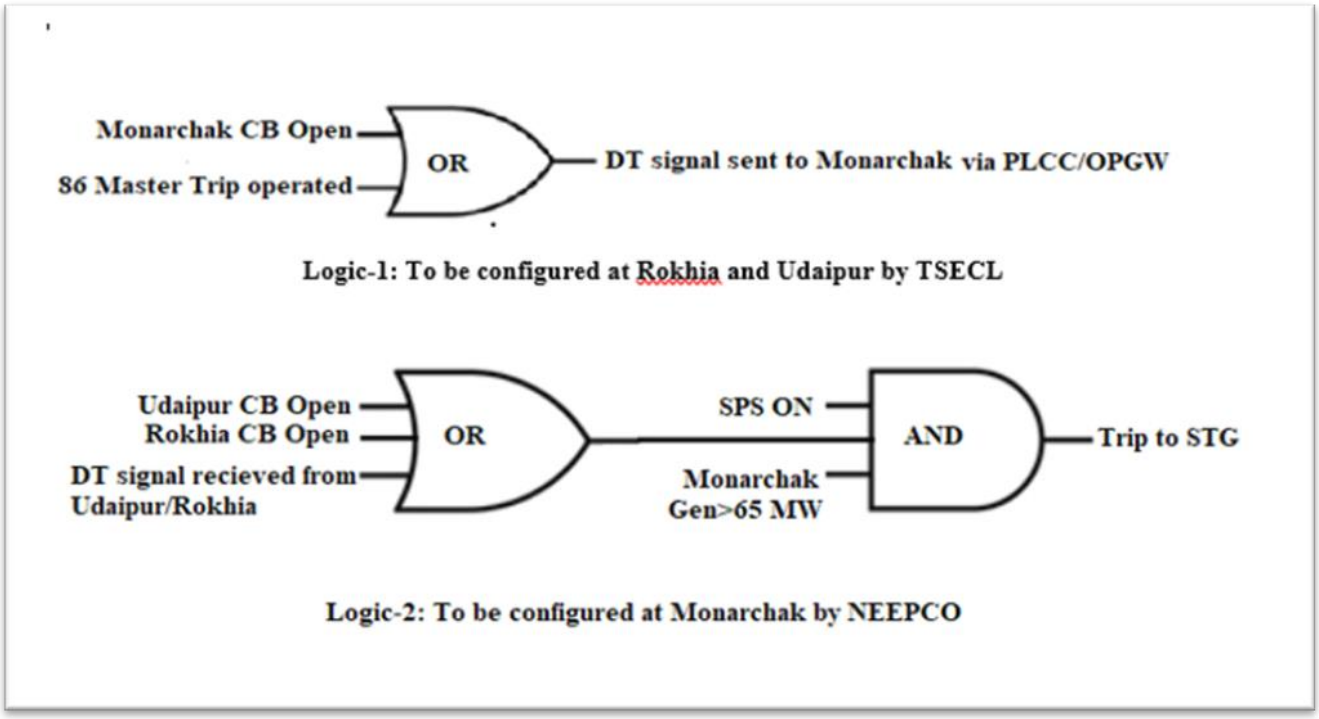
1. 1ϕ-Distance Trip inputs to SPS is not required as already we have CB open inputs. This will prevent SPS operation in case of Auto-reclose successful at both ends.

2. Following two events needs to be taken care for smooth functioning of SPS:

a) Any one CB of either 132 kV Udaipur and Rokhia tripped at Monarchak Station and Gen>65 MW

b) A/R successful at Monarchak but CB tripped at Rokhia/Udaipur and Gen>65 MW

To achieve above sl.No.2 the following new revised scheme proposed for review and further implementation.



Members may please discuss

3. ***Status against remedial actions for important grid events:***

Details of the events(outage)	**Remedial action suggested**	**Name of the utility**	**Latest status**
132 kV Balipara-Tenga line in May and June	Carrier aided inter-tripping to be implemented for 132kV Balipara-TengaKhupi at the earliest	DoP, Aruncahl Pradesh	
132 kV Kakching - Churachandpur, 132 kV Kakching - Elangkangpokpi, 400kV/132kV,	MSPCL to share B/U relay settings at New Thoubal SS to NERPC for better coordination of Kakching,	MSPCL	

315MVA ICT New Thoubal and 132 kV New Thoubal - Kongba D/C lines on 05.03.2022	Churachandpur, Ningthoukhong and Thoubal.		
132 kV Ningthoukhong-Churachandpur D/C and 132 kV New Thoubal - Kakching lines on 15.04.2022	DP settings to be reviewed for 132kV Kakching - Churachandpur	MSPCL	
132 kV Kohima Karong& 132 kV Imphal - Karong lines on 05.04.2022	TMS at Kohima for 132kV Karong to be set at 0.1	DoP Nagaland	Done
132 kV Imphal (MSPCL) - Karong& 132 kV Karong - Kohima lines on 06.05.2022 and 2nd july	> DP settings to be reviewed at Karong, Yurembam & Kohima	MSPCL, DoP NAGaland	
132 kV Haflong - Jiribam line on 15.04.2022	AEGCL stated that AR will be successfully implemented in Umransho by 15th Oct 2022	AEGCL	
132 kV Dimapur (PG) - Dimapur (DoP, Nagaland) D/C lines on 15th , 19thjune 1st , 2ndjul	At present Bus Bar protection(at 132kV Nagrajan) has been disabled and shall be put into service after OEM visit.	DoP Nagaland	Work in progress. To be completed in 1-2 months.
132 kV Doyang Mokokchung line 132 kV Mokokchung - Mokochung (DoP, Nagaland) D/C lines on 30th July	> DP non-operation at Mokokchung(NAG) to be investigated by DoP Nagaland ->Carrier inter-trip for 132kV DHEP-Mokokchung to be implemented by DoP Nagaland	DoP Nagaland	
Leshka-Khleihriat DC multi[le trippings in April to Septmeber	TLSA installation along the line to be done by MePTCL	MePTCL	DPR submitted
Loktak Unit-1, Loktak	CB overhauling to be	NHPC	

Unit-2, 132 kV Loktak Jiribam(PG) line, 132 kV Loktak-Ningthoukhong line and 132 kV Loktak-Imphal(PG) line on 30th March	done by NHPC		
132 kV Loktak-Jiribam line, 132 kV Loktak-Imphalline,132 kV Loktak-Ningthoukhong line, 132 kV Loktak-Rengpang line &Loktak Units 1,2 and 3 on 3rdAug	> 5MVA TRAFO (Aux. Transformer) to be repaired ->5MVA Auxiliary TRAFO panel to be repaired by NHPC	NHPC	
132 kV Aizwal Lungmual line on 2, 14, 16, 17 and18 June	P&ED Mizoram to revise the 132/33kV ICT at Luangmual settings to Pickup at 200% with IDMT TMS such that time delay =50ms	P&ED Mizoram	P&ED Mizoram to update.
multiple tripping of 132kV Lekhi-Pare and 132kV Pare-RHEP-2 on 23rd Aug'22	DoP Arunachal Pradesh is requested to checked/reviewed the Z-1 reach setting of relay at Lekhi for Pare line urgently based on actual line impedance/line length and accordingly rectify	DoP Arunachal. Pradesh	
Blackout of Amguri Solar Station on 20th Sep'22	NERLDC requested AeGCL to check the Zone reach setting at NTPS for Amguri line immediately	AEGCL	High Set has been disabled, Zone setting revised. Relay settings to be sent to NERPC. AEGCL intimated about issue of low-infeed from the solar station. Protection philosophy for the inverter-based substation to be finalized by NERPC.

Grid disturbance of category GD-1 (Load loss: 13MW) occurred at Karong areas of Manipur Power System at 07:41 Hrs on 4th August'22	MSPCL to check the following 1. Protection setting at Karong along with circuit wirings from DPR to CB mechanism 2. Z-III setting at Imphal and its healthiness of correct operation by relay testing.	MSPCL	
PLCC & protection related issues at 132kV Tipaimukh S/S	MSPCL to ensure uninterrupted service of PLCC system at 132kV Tipaimukh S/S.	MSPCL	
Grid Disturbance at Loktak HEP on 03rd Aug'22	NHPC-Loktak informed that LBB has been included under R&U scheme and the same shall be commissioned by Mar'23	NHPC	LBB to be commissioned by the end of March'23
Multiple tripping occurred at PK Bari-PK Bari and PK Bari-Kumarghat Line on 4th July 2022.	-> Healthiness of Carrier aided POTT scheme needs to be ensured by TSECL -> LDP needs to be implemented in 132 kV PK Bari-Kumarghat Transmission line. TSECL is requested to update the status of installation of LDP to this end -> Z-2 time delay of 132 kV PK bari(ISTS)-PK Bari line from PK Bari(ISTS) appears overlap with Z-2 time delay of short 132 kV PK Bari-Kumarghat Line at PK Bari. ->NTL is requested to check/review the Z-2 time setting at PK Bari(ISTS) and accordingly co-ordinate	TSECL, NTL	After installation of DTPC at PK Bari end and Kumaraghat end by PGCIL, Inter-trip will now be enabled between Kumaraghat and P K Bari after TSECL assists in connection of Relay to DTPC panel at P K Nbati end.

Tripping of 132 kV Kohima-Meluri line on 28/09/2022.	As per DR analysis, suspected LG fault at phase C. Fault current=165.618A, angle=-53.964 degrees. Cleared in 544ms. Relay Indication from Kohima end: Main1-Earth Fault. Directionality issues. Nagaland to update the current status.	Nagaland	
Tripping of 132 kV Kohima-Chiephobozou line on 07/10/2022.	(Directionality issue). Distance directionality issue rectified 3/11/22	Nagaland	

Annexure 2.5 (Agenda C.1 from 58th PCC)

STATUS OF AUTO-RECLOSURE FOR IMPORTANT STATE GRID LINES:

Status of MePTCL lines

Name of the line	Status as updated in 56/57th PCC meeting	Latest Status
132 kV Agia - Mendipathar	PLCC works completed. AR operation configuration to commence from March'22. Latest Status to be intimated.	
132 kV EPIP II - Byrnihat D/C		
132 kV EPIP II - Umtru D/C		
132 kV Kahilipara - Umtru D/C		
132 kV Khliehriat - Mustem		
132 kV Mustem - NEHU line		
132 kV Khliehriat (MePTCL) - Khliehriat (PG) Ckt#II		
132 kV Khliehriat- NEIGRIHMS		
132 kV NEHU - Mawlai		
132 kV Mawlai - Umiam Stage I		
132 kV Mawphlang - Nongstoin		
132 kV Mawphlang - Umiam Stg I D/C		
132 kV Mawphlang- Mawlai		
132 kV Mendipathar – Nangalbibra		
132 kV Myntdu Leshka - Khleihriat D/C		
132 kV Nangalbibra – Nongstoin		
132 kV NEHU – NEIGRIHMS		
132 kV NEHU – Umiam		
132 kV Sarusajai - Umtru D/C		
132 kV Umiam - Umiam St I		
132 kV Umiam St I - Umiam St II		
132 kV Umiam St I - Umiam St III D/C		
132 kV Umiam St III -Umiam St IV D/C		
132 kV Umiam St III - Umtru D/C		
132 kV Umtru - Umiam St IV D/C		