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Agenda

for

84th PCCM

Govt. of India

Ministry of Power

North Eastern Regional Power Committee

Shillong

North Eastern Regional Power Committee

Agenda for

84th Protection Coordination Sub-Committee Meeting

Date: 09/10/2025 (Thursday)

Time: 11:00 hrs.

Venue: Bongaigaon Thermal Power Plant, NTPC

A. CONFIRMATION OF MINUTES

1. CONFIRMATION OF MINUTES OF THE 83rd PROTECTION SUB-COMMITTEE MEETING OF NERPC.

Minutes of the 83rd PCC Meeting held on 18th September, 2025 at NERPC Conference Hall, Shillong was circulated vide letter No.: NERPC/SE (O)/PCC/2025/2481-2522 dated 3rd October 2025.

No comments were received from the constituents

Sub-committee may confirm the minutes of the 83rd PCCM

B. ITEMS FOR DISCUSSION

B.1 Protection Audit of NER:

As per the protection code of IEGC 2023 following roles and responsibilities, related to the subject mentioned, of constituents have been defined–

Description		Constituent	Responsibility	Timeline
Audit	Internal Audit	All users (132kV and above)	Shall conduct internal audit of protection system	Annually
			Audit report to be shared with RPC	Within 30 days of Audit
			Action plan for rectification of deficiencies to be shared with RPC	Within 30 days of Audit
	Third party Audit	All users (132kV and above)	Shall conduct audit for each SS	Once in five years
			Shall conduct audit on advice of RPC	Within three months of advice of RPC
			Audit report* to be submitted to RPC and NERLDC/SLDC	Within a month of submission of third-party audit report
			Action plan for rectification of deficiencies	Same as above
		RPC	Compliance to audit reports to be followed up regularly	Not specified
		RPC	After analysis of any event, shall identify substations where audit is required to be carried out	Conditional responsibility

	Annual audit plan	All users	Annual audit plan to be submitted to RPC by ***31st October***	Annual

Background: In 60th PCCM the following points were discussed-

Member Secretary NERPC informed that third party protection audit has to be generally conducted by the utilities on their own. However, the 3rd party audit will be carried out by team constituted by NERPC at selected substations based on the criticality, analysis and requirement. In this regard, NERPC has already circulated an audit calendar and audit formats for reference of the constituents.

The nodal officers of respective State/Power Utilities have to fill the audit formats and submit to the NERPC secretariat within 1 week. The forum decided that compliance to audit reports will be followed up regularly in PCC meeting of NERPC.

Information regarding substations that have already been audited will be provided by States to NERPC & NERLDC. **Forum agreed that all users (132 kV and above) have to conduct Internal Audit annually and submit audit report to RPC with action plan for rectification of deficiencies within 30 days of Audit.**

Regarding audit plan of utilities, the forum requested the utilities to furnish the list of substations and audit (internal as well as third party) schedule for FY 2024-25. A google spreadsheet has been circulated to the constituents by NERLDC to provide the schedule of protection audit as well as date of last audit. The forum requested the constituents to update the spreadsheet.

Status of Internal/External audit (83rd PCCM)

Sr No	Utility/ Constituents	Internal Audit		External audit	
		Latest Status	**report**	**Latest Status**	**report**
1.	Ar. Pradesh	As per plan, in August'25		Planning and Tendering will be	NA

		(Total Substation: 09) (No further update as the utility was absent)		done for audit of all 9 SS. Bid document being prepared. Forum requested to provide the tentative schedule of audit. Audit of Along and Pashighat done by NERPC in July'25.	
2.	Assam	Process initiated for 5 substations, will complete all the substations by Oct'25 (Total Substation: 82)		Bid Document under preparation. Meeting next with AERC for tariff adjustment of the cost of audit.	
3.	Manipur	Audit of 8 SS done, rest to done by end of September'25 (Total Substation: 17)	Report for 8 SS submitted to SLDC, to be submitted to NERPC and NERLDC.	8 SS to be done, Schedule to be decided, subject to law and Order situation. Audit of Yurembam ss, Ningthounkong ss and Imphal (PG) done by NERPC in Aug'25	NA
4.	Meghalaya	Audit of Umiam and Sohra done in July'25, rest to be done later. (Total Substation: 22)		Audit of 8 substations done by CPRI, remaining to be done in second phase in October'25	Report to be submitted.

5.	Mizoram	Audit of Zuangtui done, others to be done in Oct-Nov'25 (Total Substation: 13)		List of external agencies awaited. Searching for parties to conduct audit. Audit of Kolasib, Aizawl, Melriat (PG), Zuangtui and Luangmual may be done in mid October'25 by NERPC.	
6.	Nagaland	Audit of Sanis, Wokha, Chiepouzou and Kohima done in July'25 (Total 11 S/s). No further update as utility was absent in the meeting	Report to be shared	Audit of 5 SS to be done in Sept'25 by NERPC. For rest, to be planned later.	
7.	Tripura	Will start audit from Nov.25 (Total Substation: 18) No further update as utility was absent in the meeting		Requisition sent to CPRI,offer yet to be received MS NERPC stated that audit of Udaipur, Rokhia and Agartala may be conducted in Sept'25 by NERPC.	
8.	Powergrid (NERTS)	22 Substations. Schedule give	Report shared	Budgetary offer will be taken after SAS	

		to NERLDC. Audit of 8 SS done		upgradation of Misa and Balipara. Audit of 5 substations done by NERPC so far.	
9.	NTL	Audit of P K Bari and S M Nagar to be done in Oct'25. No further update as utility was absent in the meeting		Feb, March'26	
10	KMTL	Audit of New Kohima SS will be done by Sep'. No further update as utility was absent in the meeting	Report to be shared next month	Finalizing the auditing party. Will be done by Oct'25.	
11	MUML/NBTL	No representative		No representative	
12	NEEPCO (Total Substation: 10)	Internal audit plan for FY 2025-26 has been shared. To be started from Nov'25. Audit of Kopili underway.	Audit report of Kopili to be shared next month	Tendering underway for Kameng and Turial. For AGBPP, offer received from CBIP.	

13.	OTPC (Palatana)	For FY 2025-26, to be done in Sept25		Done during 2024	shared
14.	NTPC (BgTPP)	For FY 2025-26, to be in Nov.25		Done (by CPRI) during 2024	Complete Report shared. Action plan shared.
15.	NHPC (Loktak)	To be done in Sep-oct'25		Done	Report to be shared shortly
16.	APGCL	No representative			
17.	TPGCL				
18.	MEPGCL	Schedule submitted to NERLDC. Audit of Umtru, New Umtru done in July'25. Internal audit of Umiam Stg-I&II done	Report of Umtru, New Umtru will be shared shortly. Report of Umiam Stg I and II submitted	Budgetary offer received from CPRI and PRDC. Offer from one more party is awaited to prepare the bid document. MS NERPC suggested to communicate with CBIP for the offer	
19	Dikshi HEP (IPP)	Audit to be done in Oct'25. No further update as utility was absent in the meeting		DoP Ar. Pradesh transmission division has written a letter to the plant, reply still awaited.	

Utilities may further update

B.2 <u>Analysis and Discussion on Grid Disturbances which occurred in NER grid in September'25 in compliance with IEGC 2023:</u>

TABLE 8 : REPORT SUBMISSION TIMELINE

Sr. No.	Grid Event^ (Classification)	Flash report submission deadline (users/ SLDC)	Disturbance record and station event log submission deadline (users/ SLDC)	Detailed report and data submission deadline (users/ SLDC)	Draft report submission deadline (RLDC/ NLDC)	Discussion in protection committee meeting and final report submission deadline (RPC)
1	GI-1/GI-2	8 hours	24 hours	+7 days	+7 days	+60 days
2	Near miss **event**	8 hours	24 hours	+7 days	+7 days	+60 days
3	GD-1	8 hours	24 hours	+7 days	+7 days	+60 days
4	GD-2/GD-3	8 hours	24 hours	+7 days	+21 days	+60 days
5	GD-4/GD-5	8 hours	24 hours	+7 days	+30 days	+60 days

^*The classification of Grid Disturbance (GD)/Grid Incident (GI) shall be as per the* CEA Grid Standards.

The forum may deliberate upon the GD/GI/near miss events that occurred in September 2025 based on the draft report prepared by NERLDC.

B.3 Status of submission of FIR, DR & EL outputs for the Grid Events for the month of Sept'2025:

In line with regulation 12 (1) of CEA Grid Standards Regulations and IEGC-23 provision under clause 37.2 (c), 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 & EL outputs of tripping of transmission elements in Tripping Monitoring Portal for events from 01-09-2025 to 30-09-2025 as on **03-10-2025** is given below:

Owner Name	Total No of FIR/DR/EL/TR to be submitted(SEND+REND)	FIR			DR			EL		
		Total Furnished in 24hrs %	Total Furnished after 24hrs %	Total furnished %	Total Furnished in 24hrs %	Total Furnished after 24hrs %	Total furnished %	Total Furnished after 24hrs %	Total Furnished in 24hrs %	Total furnished %
AEGCL TRANSMISSION	80	0.00%	43.75%	43.75%	2.50%	63.75%	66.25%	2.50%	63.75%	66.25%
APGCL TRANSMISSION	3	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
DoP, Arunachal Pradesh TRANSMISSION	11	54.55%	18.18%	72.73%	54.55%	27.27%	81.82%	63.64%	18.18%	81.82%
DoP, Nagaland TRANSMISSION	23	60.87%	8.70%	69.57%	34.78%	17.39%	52.17%	43.48%	17.39%	60.87%
MePGCL GENERATION	1	100.00%	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%	100.00%	100.00%
MePGCL TRANSMISSION	5	0.00%	40.00%	40.00%	0.00%	40.00%	40.00%	0.00%	40.00%	40.00%
MePTCL TRANSMISSION	36	88.89%	5.56%	94.44%	94.44%	0.00%	94.44%	88.89%	5.56%	94.44%
MSPCL TRANSMISSION	22	18.18%	45.45%	63.64%	22.73%	40.91%	63.64%	45.45%	13.64%	59.09%
MUML TRANSMISSION	1	100.00%	0.00%	100.00%	100.00%	0.00%	100.00%	100.00%	0.00%	100.00%
NEEPCO GENERATION	32	28.13%	68.75%	96.88%	78.13%	18.75%	96.88%	78.13%	18.75%	96.88%
NEEPCO TRANSMISSION	36	80.56%	13.89%	94.44%	88.89%	8.33%	97.22%	66.67%	27.78%	94.44%
NHPC GENERATION	1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
NHPC TRANSMISSION	10	10.00%	50.00%	60.00%	30.00%	30.00%	60.00%	30.00%	30.00%	60.00%
NTL TRANSMISSION	2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
P&ED, Mizoram TRANSMISSION	14	35.71%	57.14%	92.86%	35.71%	57.14%	92.86%	35.71%	57.14%	92.86%
POWERGRID TRANSMISSION	39	48.72%	43.59%	92.31%	61.54%	30.77%	92.31%	66.67%	25.64%	92.31%
TSECL TRANSMISSION	24	87.50%	12.50%	100.00%	54.17%	25.00%	79.17%	75.00%	16.67%	91.67%

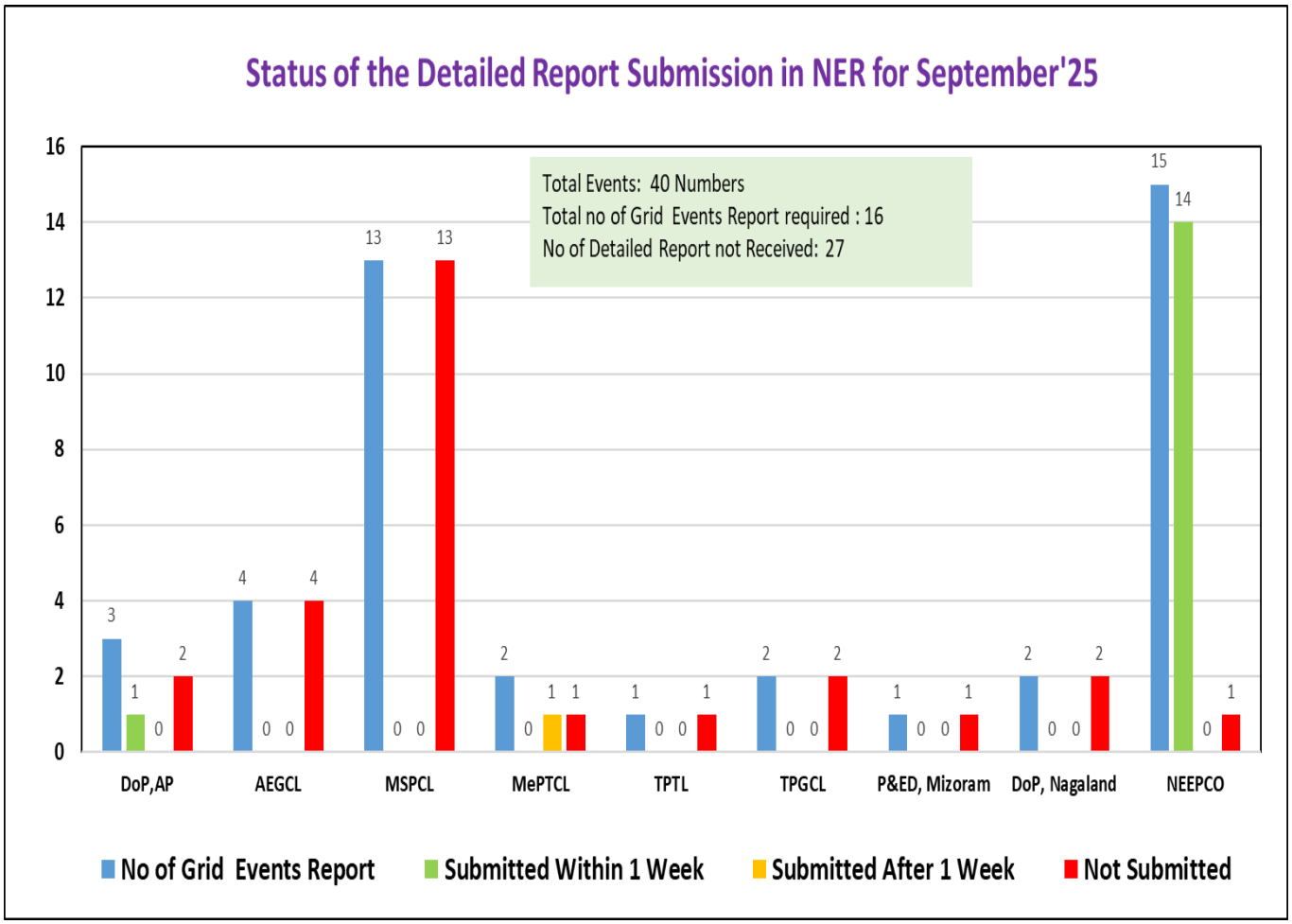
Concerned Utilities are requested to upload Disturbance Recorder (DR), Event Logger (EL) outputs for grid events along with a First Information Report (FIR) in Tripping Monitoring Portal (https://tripping.nerldc.in/Default.aspx) for analysis purpose. In light of the cybersecurity measures implemented by Grid India to safeguard sensitive information, NERLDC has created the email address nerldcso3@gmail.com . This new account has been specifically set up to facilitate the secure exchange of DR and EL files that have previously faced blockage when sent to nerldcprotection@grid-india.in.

Also, all utilities are requested to nominate a nodal officer responsible for the submission of FIR, DR & EL in Tripping Monitoring Portal (https://tripping.nerldc.in/Default.aspx)

Members may discuss.

B.4 Submission of Detailed Report by User/SLDC as per IEGC-2023:

As per IEGC-2023, all User/SLDCs are requested to prepare and share **Flash Report** and **Detailed Report** with **NERLDC** and **NERPC** following any Grid Events as per the timeline mentioned in the cl 37.2(f). Status of submission of the Detailed Report for the month of **Sept, 2025** as on **03-10-2025** is shown below:



NERLDC has received 15 number of reports within one week of time and 1 number of report after one week.

AEGCL, MSPCL, TPTL, TPGCL, P&ED Mizoram & DoP Nagaland has not submitted any detailed report of grid event occurred during September'25.

All the utilities are requested to promptly share all the necessary information such as FIR, DR, EL and Reports (Flash Report & Detailed Report) as per the specified timeline mention in the Grid Code-2023.

Members may discuss.

B.5 Submission of Protection Performance Indices by Transmission Utilities:

As per Regulation No. 15(6), Protection Code - Users shall submit the following protection performance indices of previous month to their respective RPC and RLDC on monthly basis for 220 kV and above (132 kV and above in NER) system by 12th of every month for previous month indices, which shall be reviewed by the RPC.

As on 03-10-2025, no user has submitted protection performance indices for the month of September, 2025.

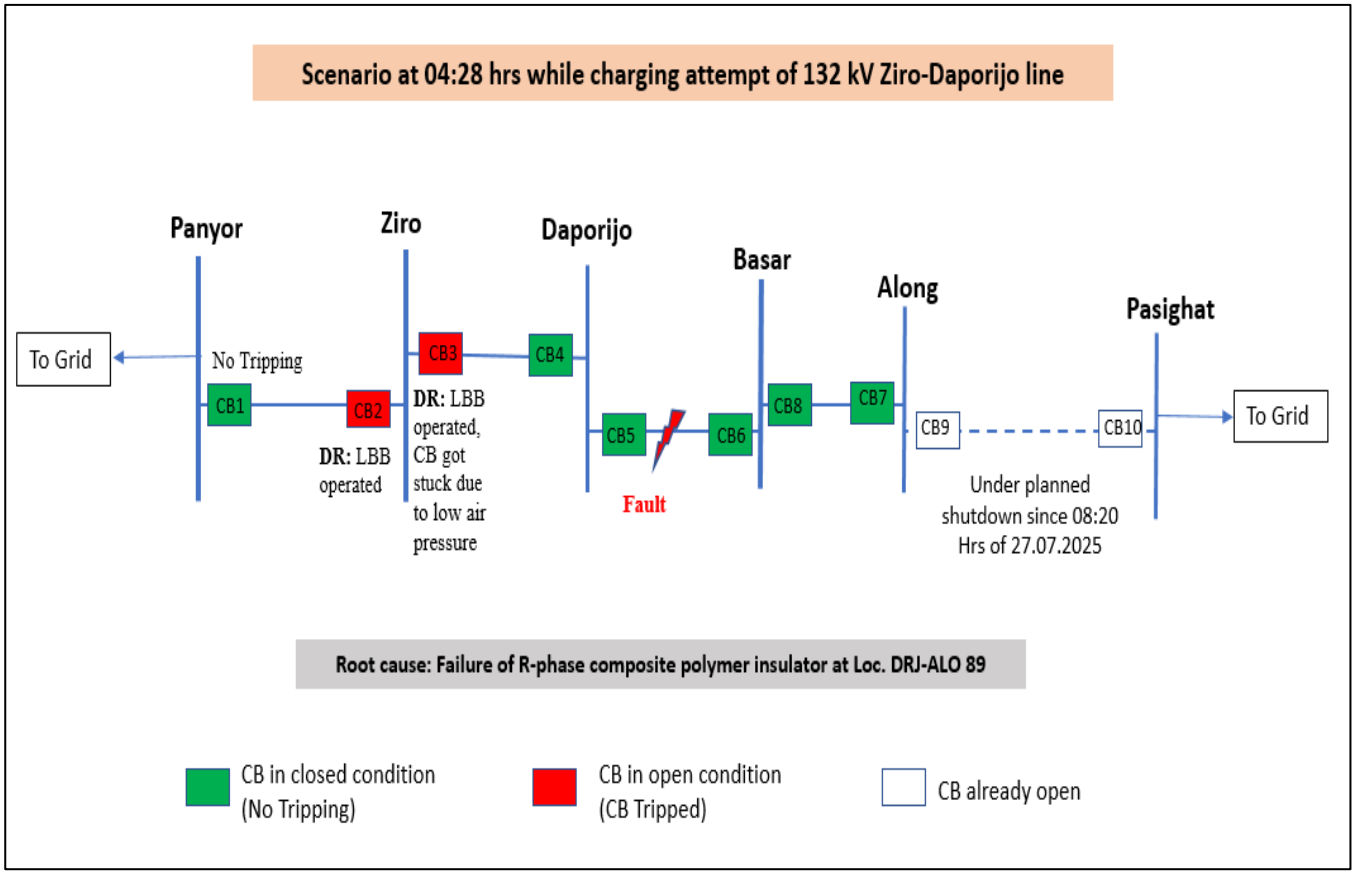
Therefore, all Users are requested to furnish and ensure performance indices (Dependability-D, Security-S, Reliability-R) with regards to the tripping of elements to NERPC & NERLDC positively by **12th** of every month for previous month indices in compliance with IEGC.

B.6 Grid Disturbance in Ziro, Daporijo, Basar and Along area of Arunachal Pradesh Power System on 13th Aug'25:

Ziro, Daporijo, Basar and Along areas of Arunachal Pradesh Power System are connected to the rest of NER grid through 132 kV Panyor-Ziro and 132 kV Along-Pasighat lines. Prior to the event, 132 kV Along-Pasighat line was under planned shutdown since 08:20 Hrs of 27.07.2025.

At 03:33 Hrs of 13-08-2025, 132 kV Ziro-Daporijo line tripped which resulted into blackout in Daporijo,Basar and Along areas of Arunachal Pradesh.

At 04:27 Hrs of 13-08-2025, 132 kV Panyor-Ziro line also got tripped while charging attempt of 132 kV Ziro-Daporijo line due to fault in 132 kV Daporijo-Basar line. Due to this tripping, Ziro area was blackout along with Daporijo, Basar & Along substations due to no source available in these areas.



Event Analysis:

- At 03:31:02.182 hrs, High resistive B-N fault (Ib-189 A, In-146 A, Vb-74 kV) in 132 kV Ziro-Daporijo line cleared on operation of E/F protection from Ziro end. No tripping from Daporjo end (radial)
- While charging attempt of 132 kV Ziro-Daporijo line at 04:24 Hrs, line was charged from Ziro end and at 04:28 hrs during closing of CB at Daporijo end, fault occurred in 132 kV Daporijo–Basar line due to the failure of the R-phase composite polymer insulator at Loc. DRJ-ALO 89.
- Protection system of 132 kV Daporijo-Basar line failed to isolate the fault. CB at Ziro for 132 kV Daporijo line failed to open due to low air pressure, LBB protection operated at Ziro leading to tripping of 132 kV Panyor-Ziro line.

Similar incident of insulator failure of 132 kV Daporijo-Basar line occurred on 19th Sept'25.

DoP Arunachal Pradesh to take the following actions:

- Share the reason of non-operation of protection system of 132 kV Daporijo-Basar line.

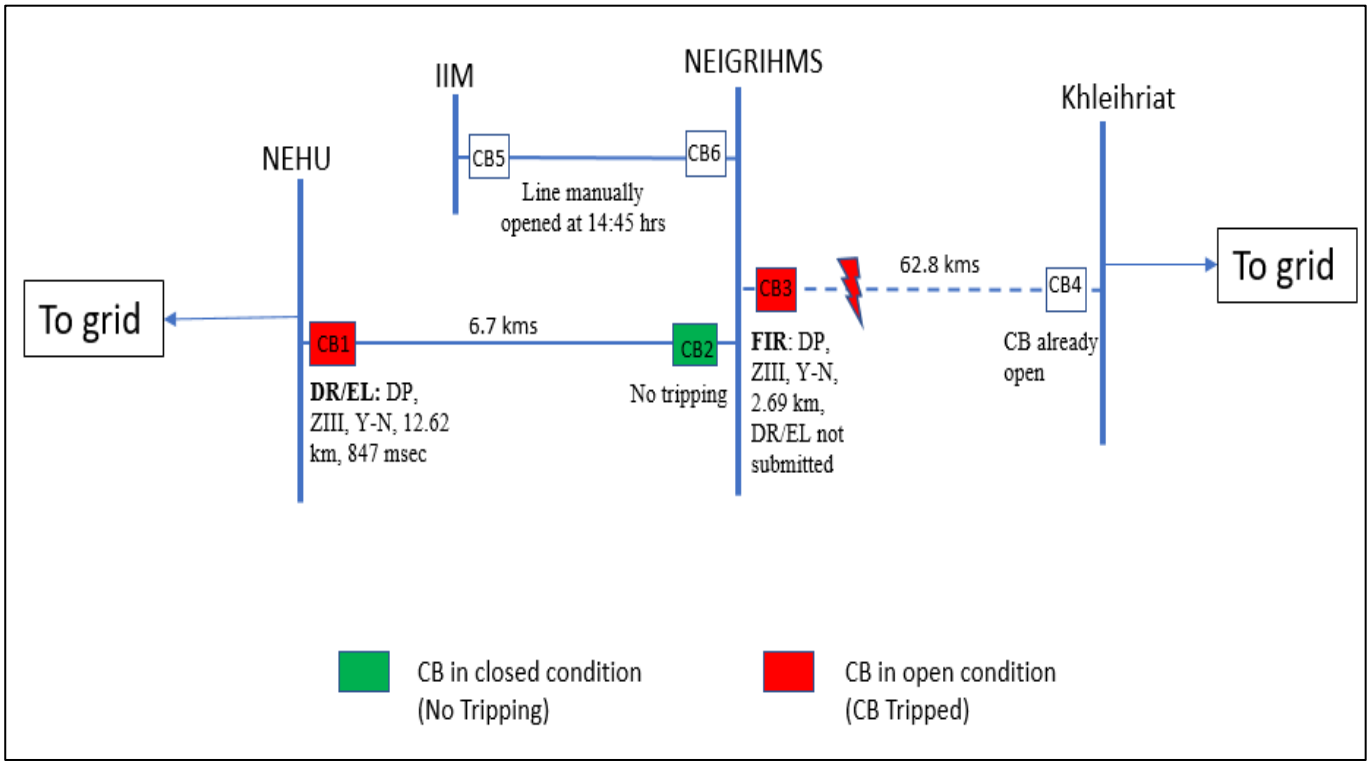
- DR time drift of 2 min observed at Ziro end for 132 kV Daporijo line which needs to be rectified. Availability/healthiness of GPS needs to be ensured and time to be adjusted as per grid code.
- Frequent damage to insulators occurred between Tower Nos. DRJ-ALO 89 and 90 which likely due to area being lightning-prone. Installation of lightning arresters (LA) at this location, along with improvements to the tower earthing, to mitigate future occurrences.

Forum may discuss

B.7 <u>Grid Disturbance in NEIGRIHMS & IIM areas of Meghalaya Power System on 6th Sept'25:</u>

NEIGRIHMS and IIM areas of Meghalaya Power System are connected with rest of NER Grid via 132 kV NEIGRIHMS-Khliehriat line and 132 kV NEIGRIHMS-NEHU line. Prior to the event, 132 kV NEIGRIHMS-Khliehriat line was under tripped condition since 14:29 Hrs of 06-09-2025.

At 14:41 Hrs of 06-09-2025, while charging attempt of 132 kV NEIGRIHMS-Khleihriat Line, 132 kV NEIGRIHMS-NEHU line tripped resulting in grid disturbance of NEIGRIHMS and IIM areas of Meghalaya Power System. Load loss of MW occurred.



As per DR analysis, at 14:27:26.076 Hrs, R-Y-B fault started in 132 kV NEIGRIHMS-Khleihriat line which was cleared within 582 msec from Khleihriat end on operation of DP, ZII. Fault cleared within 65 msec from NEIGRIHMS end on operation of DP, ZI. Ir-3.9 kA, Iy-4.07 kA, Ib-4.16 kA.

At 14:41 hrs, charging of 132 kV NEIGRIHMS-Khleihriat line was attempted and tripped in DP, ZIII, Y-N, FD: 2.69 Km from NEIGRIHMS end (DR/EL not submitted)

At 14:37:06.334 hrs, Y-N fault initiated and cleared within 847 msec from NEHU end on operation of DP, ZIII. No tripping from NEIGRIHMS end.

Root cause: Conductor snapped at T-Loc 42.

MePTCL to take the following actions:

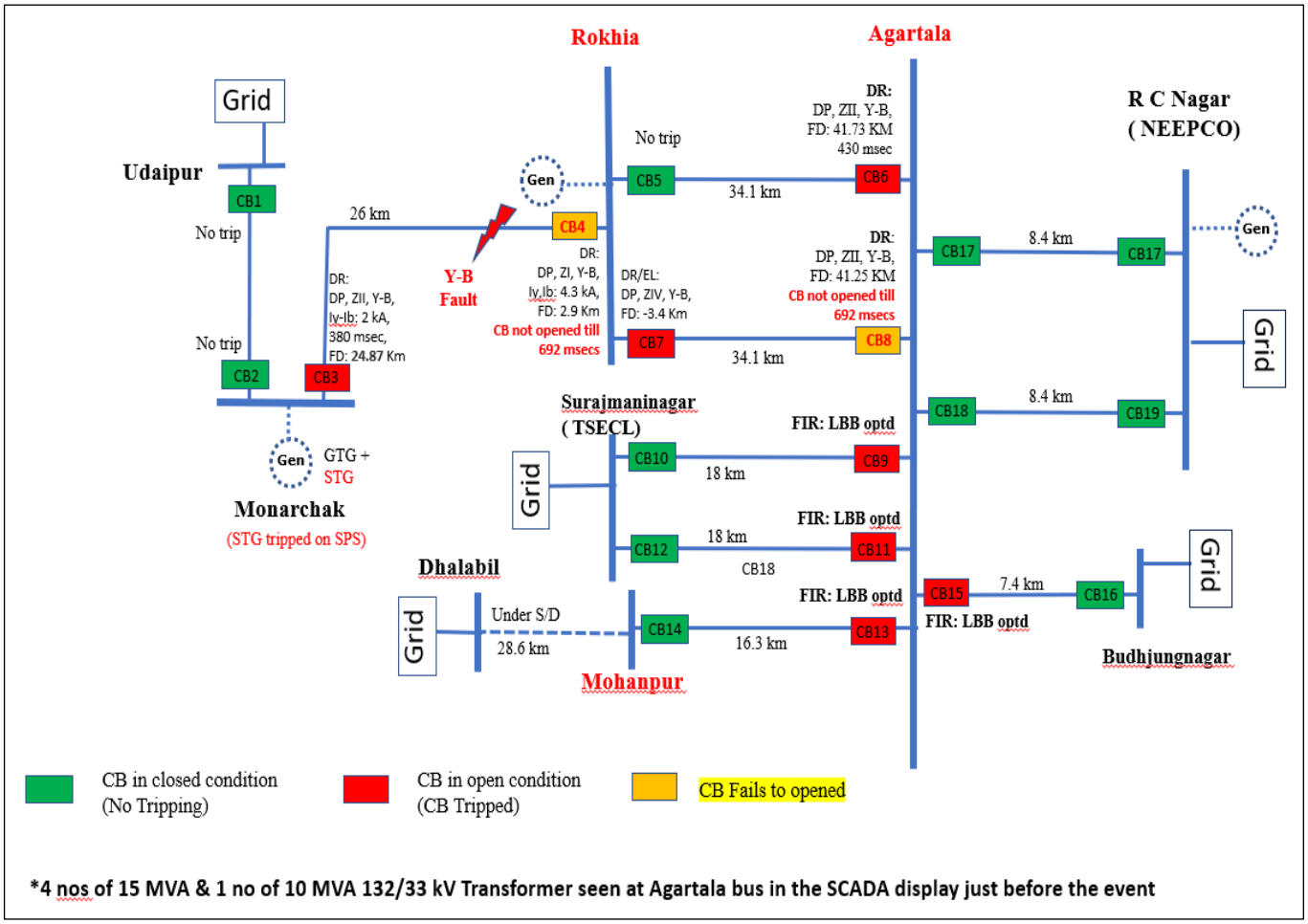
- Review ZII time delay of CB4 and set as per protection philosophy.
- Share the reason why CB3 did not detect the fault in ZI and waited for ZIII time delay despite having fault at a distance of 2.69 km from NEIGRIHMS.
- Tripping of New Umtru Unit-1 seems unwanted. The same needs to be thoroughly investigated.
- Time drift observed: 2 min at Khleihriat end for 132 kV NEIGRIHMS line; 4 min at NEHU for NEIGRIHMS line. Availability/healthiness of GPS needs to be ensured and time to be adjusted as per grid code.

Forum may discuss

B.8 Grid Disturbance in Rokhia and Mohanpur S/S of Tripura Power system on 18th Sept'25:

Rokhia Substation of Tripura is connected with rest of the grid via 132 kV Rokhia – Agartala 1 & 2 line and 132 kV Rokhia - Monarchak Line. Mohanpur S/S of Tripura System is connected with rest of the grid via 132 kV Agartala – Mohanpur only (132 kV Mohanpur - Dhalabil under S/D)

At 10:35 Hrs of 18-09-2025, all the connected circuits to Rokhia and Mohanpur S/S got tripped simultaneously resulted into the blackout of the Rokhia and Mohanpur S/S of Tripura. Load loss of 17 MW and Generation loss of 39 MW occurred.



*4 nos of 15 MVA & 1 no of 10 MVA 132/33 kV Transformer seen at Agartala bus in the SCADA display just before the event

Event Analysis:

- At 10:35 Hrs, Y-B fault of solid nature appeared in the 132 kV Monarchak – Rokhia line which cleared from Monarchak end correctly. The fault detected at Rokhia end in ZI & issued trip command immediately however the CB fails to opened at Rokhia end resulted into the tripping of 132 kV Rokhia – Agartala 1 after 430 msecs.
- 132 kV Rokhia – Agartala 2-line CB fails to open after trip command issued by the DP relay in ZII. The same line tripped from Rokhia end on operation of Z IV (reverse) in 692 msecs from the initiation of the fault resulted into the GD at Rokhia SS.
- LBB operated at Agartala bus during CB stuck of Rokhia II line caused tripping of 4 lines, however, 132 kV AGTCCPP – Agartala 1 & 2 line not tripped. LBB operation at Agartala SS caused the GD at radially fed Mohanpur area of Tripura.

TPTL to take following actions:

- Share the reason of non-opening of CB at **Rokhia** for 132 kV Rokhia - Monarchak Line.
- Share the reason of non-opening of CB at **Agartala** for 132 kV Agartala – Rokhia 2 Line.
- LBB healthiness as well as connectivity to all the element connected at Agartala need to be ensured. Actual LBB initiation & operation time not concluded.
- Disturbance Recorder (DR) lack proper recording of CB OPEN & CLOSE status as well as LBB operation in each of the connected element at Agartala and Rokhia which needs to be ensured.
- Status of CB & ISO at Agartala could be collected from the SCADA system during the event. The remedial action should be taken for proper monitoring & event analysis.

Similar stuck breaker condition also observed at Rokhia during the similar Y-B fault in 132 kV Rokhia – Monarchak line at 11:25 Hrs of 24.09.2025.

Forum may discuss

B.9 <u>Receipt of DT at Rangia for 220 kV BTPS-Rangia D/C lines on 12th Aug'25 & 13th Sept'25:</u>

At 21:25 Hrs of 12-08-2025 & 02:19 Hrs of 13-09-2025, 220 kV BTPS-Rangia D/C tripped and SPS at Rangia operated successfully.

Event Analysis:

Event 1: At 21:25 Hrs of 12-08-2025

Solid fault in 220 kV BTPS-Rangia D/C lines cleared within 100 msec from BTPS end on operation of DP, ZI. At Rangia end, carrier aided tripping occurred, ZII start and Carrier received. At 21:24:37.881 Hrs, DT received at Rangia end.

Event 2: At 02:19 Hrs of 13-09-2025

Solid fault in 220 kV BTPS-Rangia D/C lines cleared within 57 msec from BTPS end on operation of DP, ZI. At Rangia end, carrier aided tripping occurred, ZII start and Carrier received. At 02:19:47.515 Hrs, DT received at Rangia end.

It has been observed that in both the instances, DT signal was received at Rangia end for 220 kV BTPS D/C lines. However, no DT sent from BTPS end.

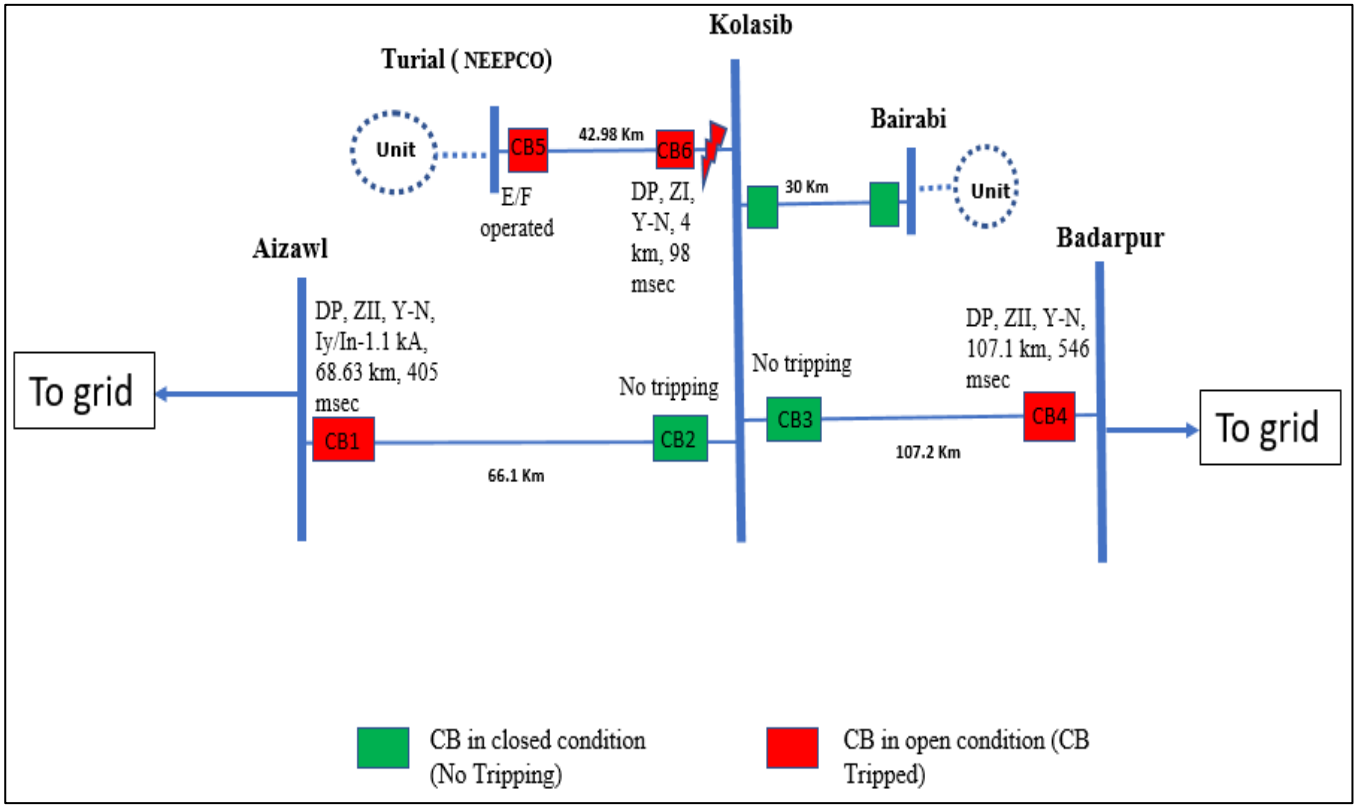
AEGCL is requested to share the reason of DT receipt at Rangia end for 220 kV BTPS D/C lines.

Forum may discuss

B.10 <u>Grid Disturbance in Kolasib, Tuirial & Bairabi HEP of Mizoram Power System on 15th Sept'25:</u>

Kolasib, Tuirial HEP & Bairabi HEP of Mizoram Power System is connected to the rest of the NER grid through 132 kV Kolasib-Badarpur and 132 kV Kolasib -Aizawl lines.

At 15:51 Hrs of 15-09-2025, 132 kV Kolasib-Badarpur and 132 kV Kolasib – Aizawl lines tripped resulting in grid disturbance in Kolasib, Tuirial & Bairabi HEP of Mizoram Power System. Generation loss of 58 MW occurred & load loss of 10 MW occurred.



As per DR analysis, Y-N fault (Iy-1.1 kA, In-1.1 kA) initiated at 15:51:25.738 Hrs which was cleared within 405 msec from Aizawl end on operation of DP, ZII and within 546 msec from Badarpur end on operation of DP, ZII. There was no tripping from Kolasib end.

For 132 kV Tuirial - Kolasib line, Y-N fault (Iy-0.83 kA, In-1.2 kA) cleared within 98 msec from Kolasib end on operation of DP, ZI.

At Tuirial end, ZII initiated at 15:51:31.370 hrs for 93 msecs. However, any trip signal observed caused likely due to operation of backup E/F.

As informed by P&ED Mizoram, Y-ph conductor connecting Isolator & CB broken.

P&ED Mizoram & NEEPCO to take the following actions:

- Likely High set E/F enabled at Tuirial end of 132 kV Kolasib line which need to be disabled.
- E/F setting needs to be reviewed at Tuirial & Kolasib end along with its directionality.
- P&ED Mizoram to review relay setting of all elements at Kolasib S/S.
- As informed by P&ED Mizoram, in 132 kV Kolasib-Tuirial line, Line CVT not present at Kolasib end which needs to be looked into by P&ED Mizoram.
- Non-submission of Detailed analysis report of the event by P&ED Mizoram which is a violation of Clause 37.2 (e) of IEGC regulation 2023.

It is to be noted that during the month of September'25, there were 15 instances of tripping of 132 kV Tuirial-Kolasib line causing frequent generation loss of Tuirial HEP (2x30 MW) machine due to loss of evacuation path which is a matter of serious concern.

Members may discuss.

B.11 <u>Frequent tripping of 132 kV Loktak - Rengpang line during September'2025:</u>

Rengpang area of Manipur power system is connected to Loktak (NHPC) through 132 kV Loktak – Rengpang line due to the long outage of 132 kV Rengpang – Jiribam (MA) line.

Tripping of 132 kV Loktak – Rengpang line observed in 9 instances during September'25.

As per DR & EL data, most of the tripping caused due to high resistive fault in B-phase across the line length likely due to vegetation causing the frequent Grid Disturbance at Manipur which causing stress to machines at Loktak (NHPC) power station.

Hence, MSPCL is requested to exercise periodic maintenance to reduce the tripping of the line. MSPCL to expedite the restoration of 132 kV Jiribam (MA)-Rengpang line.

B.12 Mock Testing of System Protection Scheme (SPS):

As per Clause 16.2 of IEGC-23, for the operational SPS, RLDC or NLDC, as the case may be, in consultation with the concerned RPC(s) shall perform mock testing for reviewing SPS parameters & functions, at least once in a year. RLDC or NLDC shall share the report of such studies and mock testing including any short comings to respective RPC(s).

The list of the remaining ISTS scheme need to be tested are listed below:

Sl. No.	Name of SPS	Operation in FY 2025-26	Tentative date of performing mock testing
1	SPS related to reliable power supply to Arunachal Pradesh & Assam through the 132 kV Roing-Chapakhowa D/C line	-	SPS to be kept OFF
2	Overloading of any one of the 400/132kV, 2x360 MVA ICTs at Panyor LowerHydro Power Station	-	Nov'25
3	Related to the safe evacuation of power from BgTPP(NTPC) generation	-	Oct'25
4	Outage/tripping of 400 kV New Kohima – Imphal D/C Line	-	Tentative date to be intimated after discussion by NERTS

5	Outage/ tripping of both circuits of 400 kV SM Nagar(NTL) -PK Bari(NTL) D/C Line	-	Sep'25 (meeting held with Indigrid, mock testing date to be finalized)
6	Outage/ tripping of both circuits of 400kV PK Bari (NTL) – Silchar(PG) D/C Lines	-	Sep'25 (meeting held with Indigrid, mock testing date to be finalized)
7	Outage/tripping of both 400/132 kV, 2x125 MVA ICTs at Palatana	-	Tentative date to be intimated after discussion by NERTS
8	Outage/tripping of 400kV Palatana-Silchar D/C Line when both modules of Palatana are in service	-	After the commissioning of the 400 kV Palatana–Surajmaninagar(NTL) I Line, the SPS is deactivated. However, the SPS at Palatana must remain active during the shutdown of the 400 kV Palatana–Surajmaninagar (ISTS) Line-1

The list of the remaining state scheme needs to be tested are listed below:

Sl. No.	**Name of SPS**	**Actual Operation**	**Tentative date of performing mock testing**
1	Overloading of 220 kV BTPS - Salakati D/C Line	-	As per 82nd PCC, AEGCL is not

2	Outage/tripping of 220 kV Azara-Sarusajai D/C Line	-	agreeing to test without actual load shedding, as this may require disconnection of multiple hard wirings. Forum agreed with the proposal and requested AEGCL to prepare SOP for mock testing. In 83rd PCC, AEGCL informed that SOP for mock testing will be shared shortly.
3	SPS related to tripping of 220 kV Misa- Samaguri DC Line	-	
4	SPS at BTPS(Assam) substation related to overloading of any of the 2x160 MVA ICTs at BTPS(Assam)	-	
5	SPS related to Outage/tripping of any one circuit of the 132 kV Khliehriat (PG)- Khliehriat D/C line	-	Oct'25
6	SPS related to Outage/tripping of any one circuit of 132 kV Leshka – Mynkre- Khliehriat D/C Line	-	Oct'25

All the respective utilities are requested to provide the tentative dates for mock testing of SPS to be conducted in FY 2025-26.

Utilities are requested to share the draft SOP's for the mock testing of SPS scheme scheduled during Oct'25.

B.13 <u>Mapping of SPS in the SCADA Display for real time monitoring of all SPS:</u>

NLDC has submitted the Guidelines on "Interfacing Requirements" after stakeholder consultation for approval of the Commission as mentioned in the Regulation 7.4, read with Regulation 14.2 of the Communication System for inter-State

transmission of electricity) Regulations,2017. On dated 19-Jan-2024, CERC approved the guideline on "Interfacing Requirements" prepared by NLDC in consultation with the stakeholder. As per the Guideline, real time telemetered is SPS Signal need to be monitored. The digital status shall be as per IEC standard. Digital Status for circuit breaker must be double point while isolator status can be either single point or double point as per end device. All users shall comply with interface requirements as specified and shall share interface details with respective Control Centre.

Sl. No.	**Description**	**Analog Points**	**Digital Points**	**Protection Signal**
1	SPS Signal		DIGITAL STATUS: Enable/Disable, Operated/No Operated (Condition/Logic Wise)	

Present Status of SPS mapping in SCADA Display

Sl. No.	SPS under operation	SPS mapping status in SCADA (YES/No) as per 80th PCCM
1	SPS related to outage of 220 Misa-Samaguri D/C lines	By June'25
2	Related to outage of any one circuit of 220 kV Balipara-Sonabil D/C lines	By June'25
3	Related to the outage of any one circuit of the 132 KV Khliehriat (PG)- Khliehriat D/C line	
4	Related to outage of any one circuit of 132 kV Leshka – Mynkre-Khliehriat D/C	

5	Related to 132kV SM Nagar(ISTS) - SM Nagar line to prevent Overloading	
6	SPS related to overloading of 2x160 MVA 220/132 kV ICTs at BTPS	
7	SPS related to overloading 2X315MVA 400/220kV ICTs at Mirza	
8	SPS related to generation evacuation from Loktak HEP	

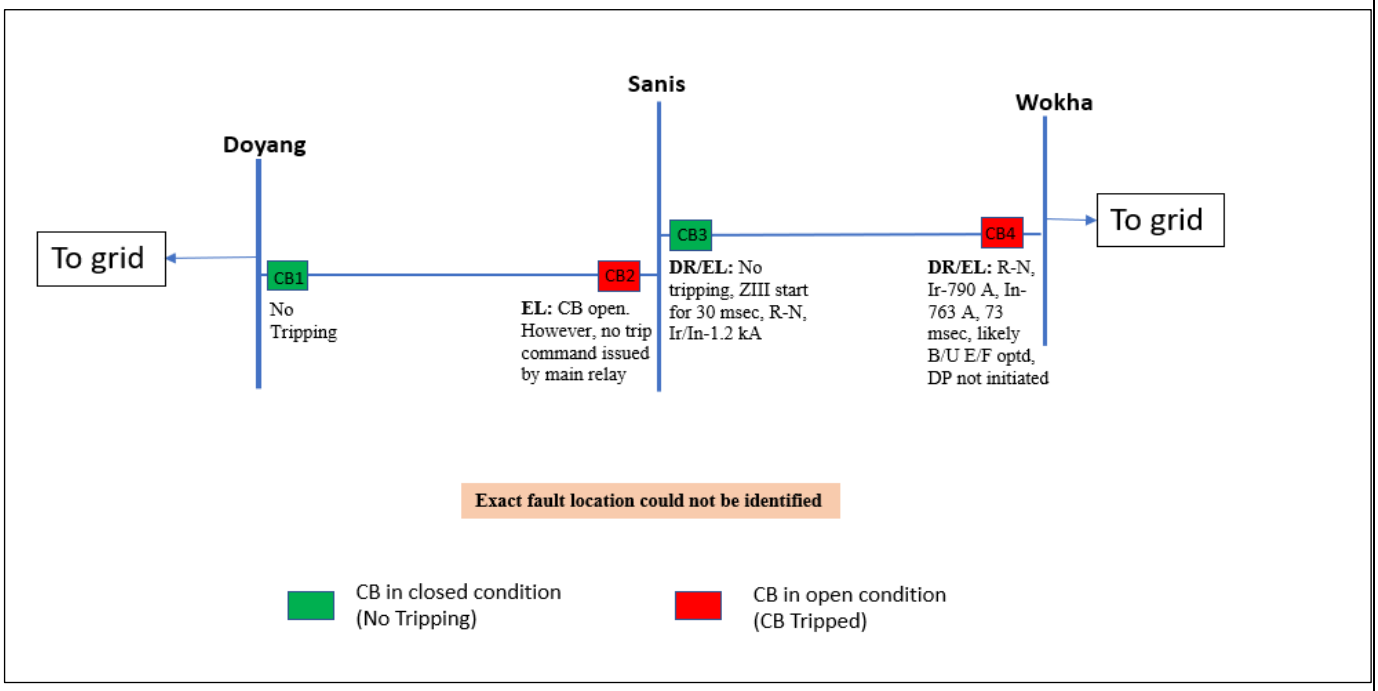
All utilities are requested to update the status of Mapping of SPS in the SCADA Display.

C. FOLLOW–UP AGENDA ITEMS

C.1 Grid Event at Sanis 30th Aug'25 and 3rd Sep'25:

Sanis area of Nagaland Power System is connected with rest of NER Grid through 132kV Sanis-Wokha and 132kV Doyang-Sanis lines.

At 12:20 Hrs of 30-08-2025, 132 kV Doyang-Sanis and 132 kV Sanis-Wokha lines tripped.



As per DR analysis for Wokha end (Main relay), R-N fault (Ir-790 A, In-763 A) initiated at 12:20:24.888 Hrs which was cleared 73 msecs from Wokha end likely on operation of B/U E/F protection (DR & EL not submitted for backup relay). Also, initiation of backup OC (I>) & EF (In>1) protection observed in the main relay. Also, main relay not initiated at Wokha end indicates no fault in the 132 kV Wokha – Sanis line.

From Sanis end (main relay), ZIII initiated for R-N fault (Ir-1280 A, In-1250 A) fault current disappeared within 30 msecs likely after the CB opening at Sanis end of 132 kV Doyang- Sanis line. However, CB was closed as per submitted DR.

At 12:21:24.143 hrs, 132 kV Doyang-Sanis line tripped from Sanis end. As per the submitted EL (main relay) for Sanis end, no tripping command issued by the main protection. DR&EL for backup relay not shared by DoP, Nagaland.

Exact fault location could not be identified. However, the suspected fault seems beyond the Wokha substation as indicated by the ZIII initiation at Sanis end for 132 kV Sanis – Wokha Line.

The similar event also occurred at 17:48 Hrs of 03-Sep-2025.

Additionally, 132 kV Sanis-Wokha Line tripped 9 number of times during July'25 which is highlighted in the 82nd PCC Meeting.

DoP, Nagaland to take the following actions:

I. Share the exact fault location & root cause for the tripping.
II. Share the reason for tripping of 132 kV Doyang-Sanis line from Sanis end for fault beyond the line (reverse direction) seems unwanted (newly commissioned on 20th Aug 2025).
III. Share the reason for tripping of 132 kV Wokha-Sanis line from Wokha end for fault beyond the line (reverse direction) in 73 msecs seems unwanted.
IV. Healthiness of the backup relay need to be tested at Sanis & Wokha.
V. DR downloading facility need to be implemented at Siemens relay at Sanis & Avana make relay at Wokha (otherwise relay replacement to be done).

In 83rd PCCM, Forum requested DoP Nagaland to take above action points and rectify the directionality issue for CB2 by checking the CT polarity.

DoP Nagaland may update

C.2 Tripping of multiple elements at 220 kV Agia substation of Assam on 14-08-2025:

At 11:03 Hrs of 14th Aug'25, the tripping of multiple elements observed.

The tripping of ICT-3, 220 kV Agia–Azara Line, 220 kV Agia–BTPS II Line, and the 220 kV Bus Coupler resulted in a blackout of the 220 kV Agia **Main Bus II**.

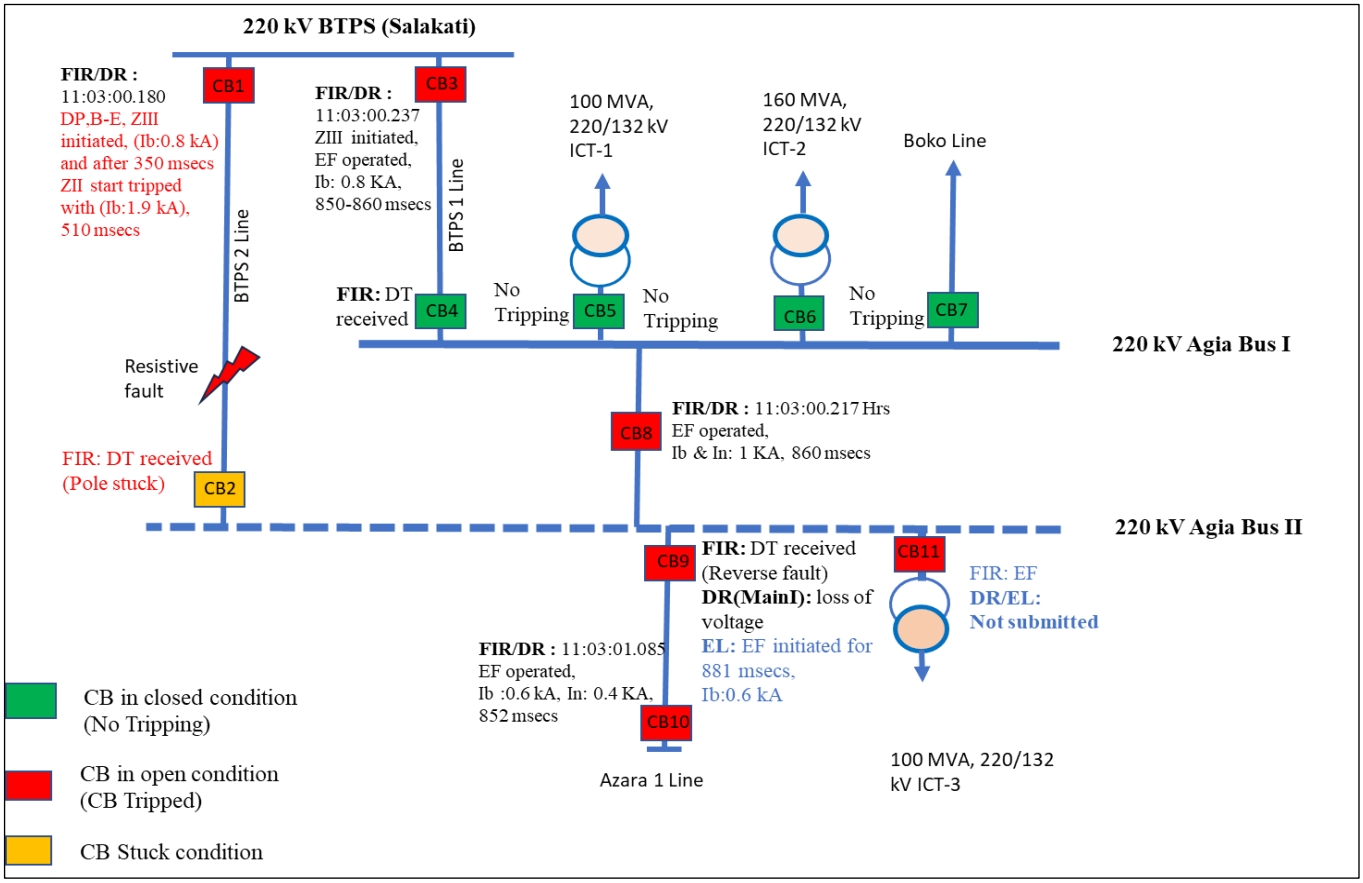
Event Analysis:

High resistive fault observed in the 220 kV Agia – BTPS II line, cleared from BTPS end by the DP, ZII protection within 510 msecs. Also send DT signal to Agia end. However, the CB got stuck at Agia for the same line.

LBB relay not initiated during the fault at Agia Bus II.

The fault was cleared from the system by tripping of 220 kV Agia – BTPS I line, Bus Coupler & 220 kV Agia–Azara Line in 850-860 msecs.

Also, the fault persisted in the system for 1670 msecs and finally cleared by tripping of ICT-3 which causes the blackout of Bus II at Agia SS.



AEGCL requested to take the following action-

1. Share the reason for non-operation of LBB relay for Agia Bus II.
2. Share the reason for EF pickup at Agia end for 220 kV Agia - Azara Line & ICT-3.
3. Share the reason for DT sent (as informed verbally) from BTPS end for ZII tripping.
4. DT received & DT sent need to incorporated at in the DR for each element.

Deliberation of 83rd PCCM

AEGCL informed that DT was sent from the BTPC end as per the philosophy set by the OEM. Further he informed that the pole issue has been resolved.

Forum instructed AEGCL to –

1. Rectify the directionality issues of CB11 and CB9
2. Rectify the LBB issues for Agia Bus II
3. Set the DT sending philosophy only as per the NERPC protection protocol.
4. Coordinate the timing of the EF protection of the Bus coupler at Agia with the ZII of the CB3.
5. DT received & DT sent need to incorporated at in the DR for each element.

AEGCL to update

C.3 Grid event at multiple areas of the Manipur on 5th Sep'25:

400kV Imphal-Thoubal New I line and 132 kV Ningthoukhong-Churachandpur 1 under long outage. Also, 132kV Imphal-Yiangangpokpi 2 is under outage since 30th Aug'25.

400kV Imphal-Thoubal New II tripped at 14:59 Hrs of 05-09-2025 (LG fault, tripped on reclaim).

At 17:58 Hrs of 05-09-2025, 132 kV Ningthoukhong-Churachandpur 2 line and 132 kV Imphal-Yiangangpokpi I line tripped simultaneously resulted into the Grid Disturbance at Churachandpur, Kakching, Elankangpokpi, Chandel, Thanlon, Thoubal Old, Thoubal new, Kongba & Yiangangpokpi substation of Manipur Power System.

Details of Backup relay settings:

- 132 kV Imphal-Yiangangpokpi I line:
  Imphal (Yurembam): CTR: 400/1, OC pickup: 300 A, TMS: 0.04
- 132 kV Ningthoukhong-Churachandpur 2 line:
  Ningthoukhong: CTR: 600/1, IDMT, NI, OC pickup: 150% of CTR (900 A), TMS: 0.1 (JVC electronics & JPN 098)

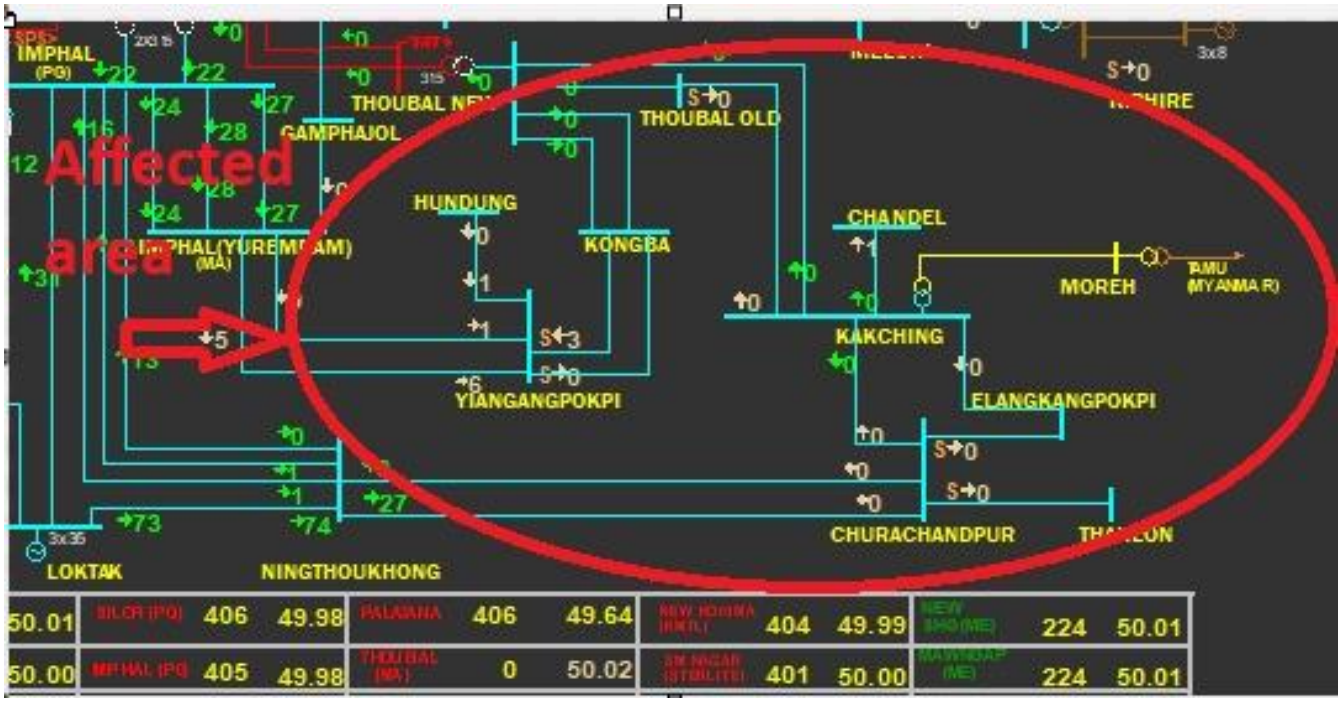
Event Analysis:

Multiple areas of Manipur were feeding through Imphal & Ningthoukhong substation with 132 kV Ningthoukhong-Churachandpur 2 line and 132 kV Imphal-Yiangangpokpi I line only.

The exact sequence of event could not be identified due to lack to numerical relay for backup protection at Ningthoukhong.

However, as per the DR snapshot for the Imphal end of 132 kV Imphal-Yiangangpokpi I line, balance current observed which indicated no fault present in the system.

Also, fault current in each phase of 220 -225 A (approx. 50 MW) suddenly increases to 445-450 A (approx. 100 MW) probably due to the tripping of 132 kV Ningthoukhong-Churachandpur 2 line.



MSPCL is requested to take following corrective action as listed below:

I. Requirement of the testing of the static relay at Ningthoukhong to check the healthiness (as per setting relay should not have operated due such loading). Also, static relays to be replaced with numerical type as early as possible.

II. Backup setting need to be incorporated in the main to cross verify the performance of the backup OC, EF relay (static relay) at Ningthoukhong.

III. Overloading setting need to be revised for 132 kV Imphal – Yiangangpokpi 1 line (currently pickup current: 300 A only).

IV. Time drift of 1 hr observed in the DR of Yurembam (Imphal). The same need to be matched.

V. Time synchronizer need to installed at Imphal & Ningthoukhong as early as possible.

Deliberation of 83rd PCCM

MSPCL informed, regarding tripping of Ningthounkong-Churachandpur II line, that tripping occurred on B/U protection which is static relay.

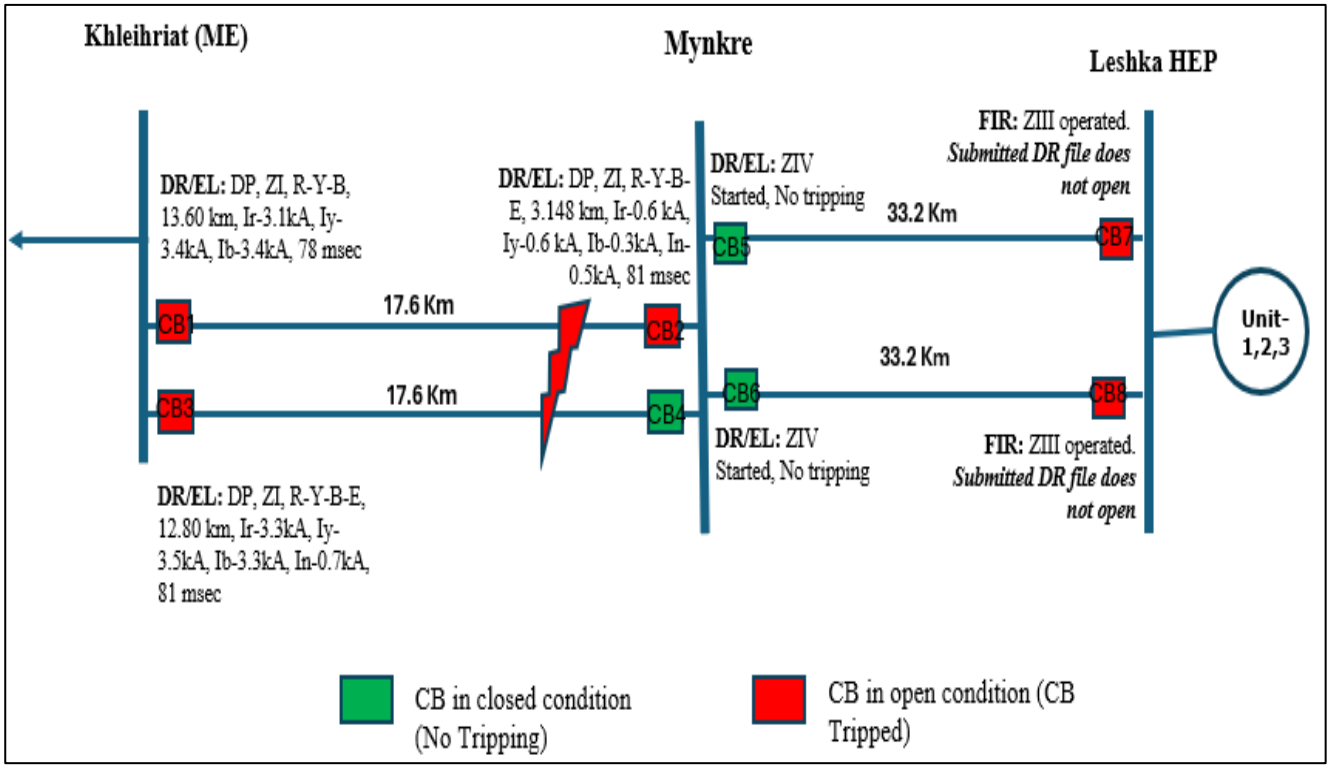
Forum instructed MSPCL to –

1. Revised the O/C pickup current setting at Yurembam for the Yiangangpokpi line to 450 Amps.
2. Replace all the static and electromagnetic relays with the numeric relay in their system
3. Put the B/U protection settings in the Main relay at Ninghtounkong for the Churachandpur line.
4. Perform testing of the static relay at Ningthoukhong to check the healthiness (as per setting relay should not have operated due such loading).
5. Time synchronizer need to installed at Imphal & Ningthoukhong as early as possible.

MSPCL to update

C.4 Grid Disturbance in Mynkre area and Leshka HEP of Meghalaya Power System on 1st June'25:

At 05:37 Hrs of 01-06-2025, 132kV Mynkre (ME)- Khliehriat(ME) D/C lines and 132kV Mynkre-Leshka D/C lines tripped resulting in grid disturbance in Mynkre area and Leshka HEP of Meghalaya Power System. Generation loss of 84 MW occurred.



As per DR analysis of 132 kV Mynkre (ME)-Khliehriat(ME) 1 line, solid R-Y-B fault (Ir-3.1 kA, Iy-3.4 kA, Ib-3.4 kA) initiated at 05:37:08.630 Hrs which was cleared within 81 msec on operation of DP, ZI.

For 132 kV Mynkre(ME)-Khliehriat(ME) 2 line, R-Y-B-E fault (Ir-3.3 kA, Iy-3.5 kA, Ib-3.3 kA, In-0.7 kA) was cleared from Khliehriat end on DP, ZI, R-Y-B-E, 12.80 km in 81 msec. There was no tripping from Mynkre end due to which fault was feeding from Leshka end of 132kV Leshka-Mynkre D/C lines which was cleared on operation of ZIII from Leshka end (DR file not opening)

Likely fault due to lightning in 132kV Mynkre (ME)-Khliehriat(ME) D/C lines.

Following observation:

- Protection system of Mynkre (ME) of 132kV Mynkre (ME)-Khliehriat(ME)-2 line failed to isolate the fault which led to clearing of the same fault by tripping of healthy 132 kV Mynkre-Leshka D/C lines from Leshka end on ZIII operation.
- Time drift of 7 mins (lag) in submitted DRs from Mynkre end for 132kV Mynkre (ME)-Khliehriat(ME) 1 line & 13 mins (lag) in submitted DRs from Mynkre end for 132kV Mynkre-Leshka D/C lines which needs to be rectified.

MePGCL may update the actions taken on the above-mentioned issues.

As per 81st PCC minutes, MePTCL informed that fault was due to lightning. Regarding non-opening of CB at Mynkre end for 132 kV Khleihriat-II-line, relay

testing to be done by MePTCL. Also, MePTCL informed that GPS was rectified on 16th July'25.

Deliberation

Meghalaya updated that the relay testing (at Mynkre) to be done during lean hydro season

C.5 (Agenda B7, 82nd PCC) Grid Disturbance in grid event in Khupi, Tenga, Seppa and Dikshi HEP area of Arunachal Pradesh Power System on 4th July'25

Khupi, Tenga, Seppa areas and Dikshi HEP of Arunachal Pradesh Power System were connected with rest of NER Grid through 132 kV Tenga-Balipara line and 132 kV Kameng-Khupi line.

At 22:34 Hrs of 04-07-2025, 132kV Balipara-Tenga line and 132 kV Bus Coupler at Kameng tripped resulting in grid disturbance in Khupi, Tenga, Seppa and Dikshi HEP area of Arunachal Pradesh. Load loss of 25 MW & generation loss of 17 MW occurred.

In 82nd PCCM, Regarding the issue with CB2 (at Tenga end for Balipra line), DoP AR. Pradesh informed that the Dikshi HEP will take corrective actions in September'25.

DoP Ar. Pradesh may update

C.6 (Agenda B8, 82nd PCC) Frequent tripping of 132 kV Sanis-Wokha Line during July'25:

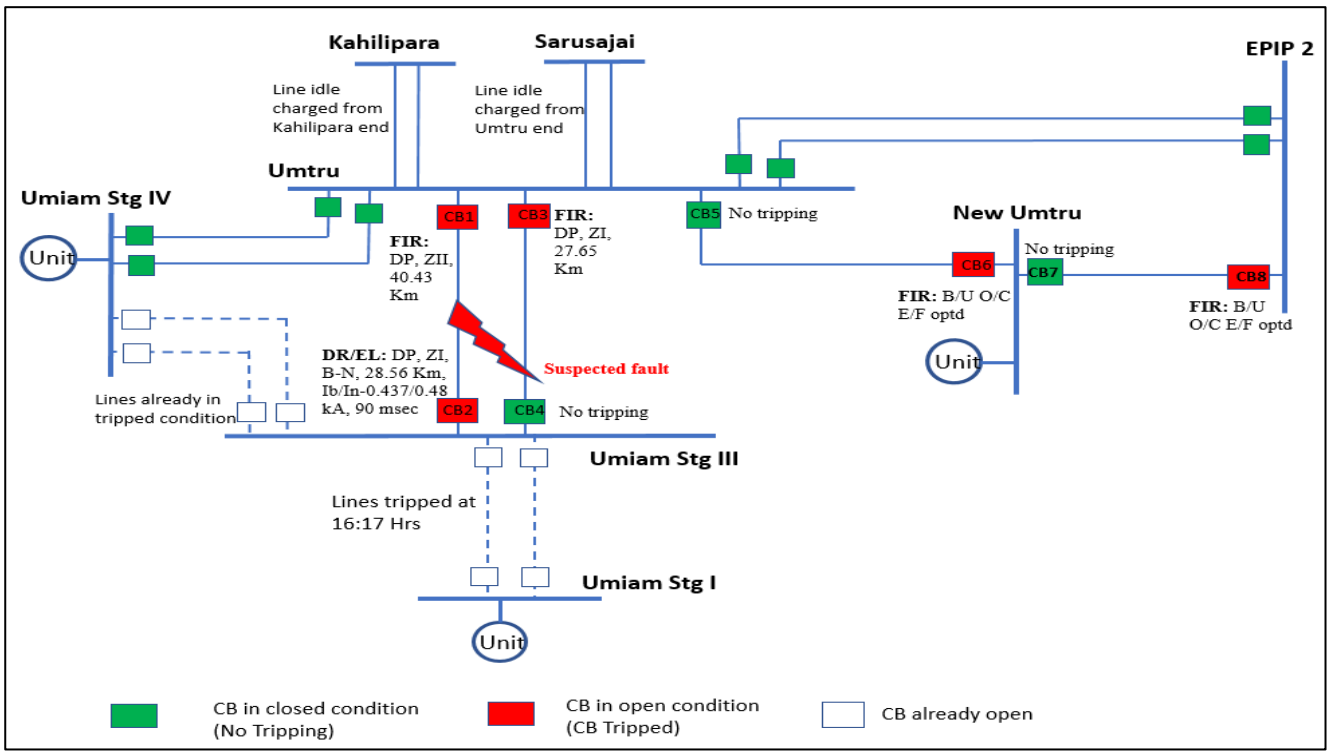
132 kV Sanis-Wokha Line tripped 9 number of times during July'25 which is a matter of concern.

In 82nd PCCM, forum noted that most of the tripping were spurious in nature and some tripping may be due to settings issue. Forum urged DoP, Nagaland to analyze the root cause of such trippings and provide a report to NERPC and NERLDC.

DoP Nagaland may update

C.7 (Agenda B10, 82nd PCC) Grid disturbance in Umiam Stg III and New Umtru areas of Meghalaya power system on 21st July'25:

Umiam Stg III and New Umtru areas of Meghalaya Power System were connected with rest of NER Grid through 132 kV Umtru – Umiam Stg III D/C lines, 132 kV New Umtru – Umtru and 132 kV EPIP 2 – Umtru line. Prior to the event, 132 kV Umiam Stg I – Umiam Stg III line D/C lines tripped at 16:17 Hrs and 132 kV Umiam Stg IV – Umiam Stg III 1 & 2 lines tripped at 16:39 Hrs and 16:17 Hrs respectively. At 16:44 Hrs of 21-07-2025, 132 kV Umtru – Umiam Stg III D/C lines, 132 kV New Umtru – Umtru, and 132 kV EPIP 2 – Umtru II and New Umtru HEP Unit-1 tripped resulting in blackout of Umiam Stg III & New Umtru S/S of Meghalaya power system. Generation loss of 20 MW.



As per DR analysis of 132 kV Umtru-Umiam Stg III Line-1, B-N fault (Ib-437 A, In-480 A) initiated at 16:44:00.235 Hrs which was cleared within 90 msec from Umiam Stg III end on operation of DP, ZI. ZII operated from Umtru end (as per FIR, DR/EL file not opening)

132 kV Umtru-Umiam Stg III Line-2 tripped on DP, ZI from Umtru end (as per FIR, DR/EL not opening). No tripping from Umiam Stg III end.

Following observations:

- Suspected fault in 132 kV Umtru-Umiam Stg III D/C lines.
- Tripping of 132 kV New Umtru-Umtru line on operation of B/U O/C E/F from New Umtru end seems unwanted. Backup protection setting needs to be reviewed.

- Tripping of 132 kV EPIP 2-Umtru line on operation of O/C E/F from EPIP 2 end seems unwanted. Backup protection setting needs to be reviewed.
- DR/EL file at Umtru end for 132 kV Umiam Stg III lines is not opening.
- Non-submission of DR/EL file for 132 kV New Umtru-Umtru line & 132 kV EPIP 2-New Umtru Line which is a violation of Clause 37.2 (c) IEGC-23.
- Non-submission of detailed report of the event which is a violation of Clause 37.2(e) of IEGC-23.

MePGCL may update the action taken on the above-mentioned issues.

Deliberation in 82nd PCC

MePGCL informed that EPIP 2-Umtru line tripped not N. Umtru-Umtru and N. Umtru-EPIP II. Further he informed that tripping analysis for the tripping is underway and will be informed to NERPC and NERLDC shortly.

Forum also noted that tripping of Umtru-Umiam stg II (CB3) on Z1 is unwanted and it should have tripped on Zone 2. Forum requested MePGCL review the reach of zones for CB3.

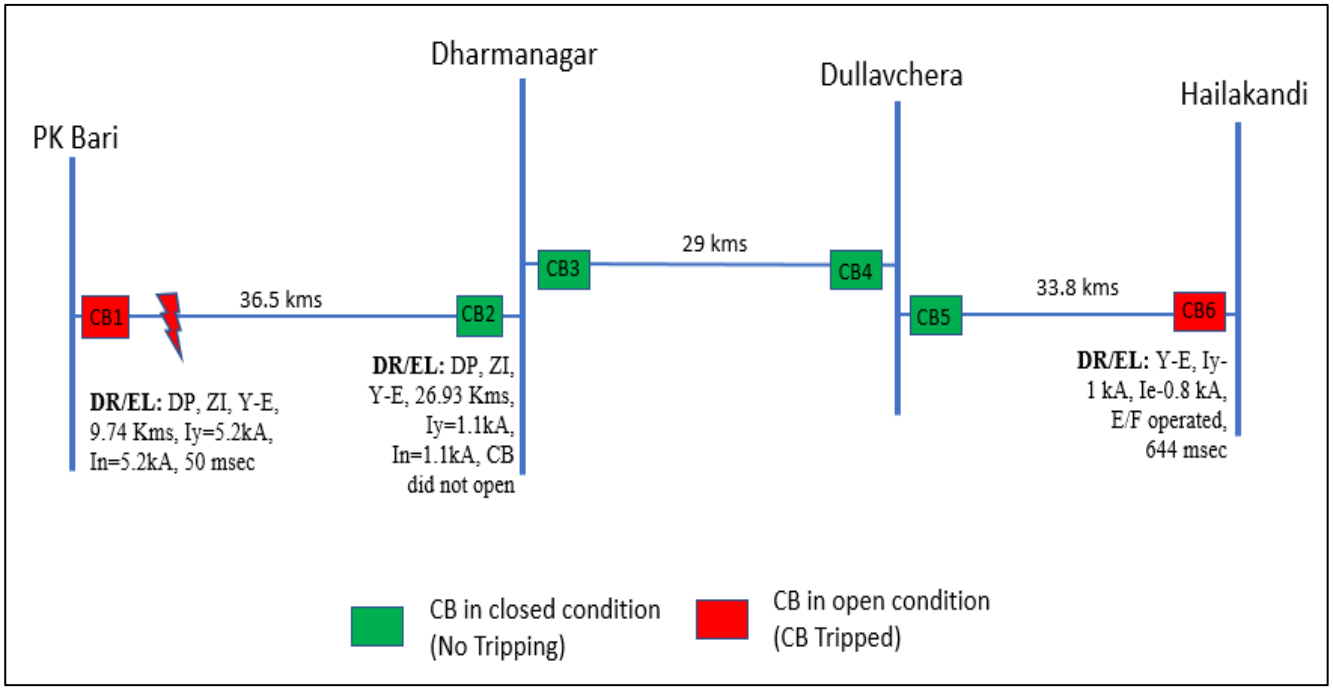
In 83rd PCCM, MePGCL updated that the analysis report will be provided in Oct-Nov'25.

MePGCL may update

C.8 (Agenda B11, 81st PCC) Grid Disturbance in Dharmanagar area of Tripura Power System and Dullavchera area of Assam Power System on 10th June'25:

Dharmanagar area of Tripura Power System and Dullavchera area of Assam Power System were connected with rest of NER Grid via 132 kV Dharmanagar-PK Bari line & 132 kV Hailakandi-Dullavchhhera line.

At 18:45 Hrs of 10-06-2025, 132 kV Dharmanagar-PK Bari line & 132 kV Hailakandi-DUllavchhera line tripped resulting in grid disturbance in Dharmanagar & Dullavchhera areas. Load loss of 35 MW occurred.



As per DR analysis, Y-N fault (Ib-5.2 kA, In-5.2 kA) initiated at 18:40:57.118 Hrs which was cleared within 50 msec from PK Bari on operation of DP, ZI. At Dharmanagar end, ZI trip command issued at 18:25:30.360 Hrs. However, CB did not open at Dharmanagar due to which fault was continuously feeding from Dullavchhera & Hailakandi end. Fault cleared by tripping of healthy 132 kV Hailakandi-Dullavchhera line within 644 msec from Hailakandi end on operation of E/F (DT send).

Following observations:

- Non-opening of CB at Dharmanagar end despite issuance of ZI trip command. Reason of non-opening of CB at Dharmanagar needs to be thoroughly investigated.
- Dullavchhera CB (CB4) failed to clear the fault resulting in clearing of fault by tripping of 132 kV Hailakandi-Dullavchhera line.
- Time drift of 5 mins (lag) observed at PK Bari end & 20 mins (lag) observed at Dharmanagar end for 132 kV PK Bari-Dharmanagar Line. Time drift of 4 min at Hailakandi end for 132 kV Dullavchhera Line which needs to be rectified.
- "CB status" not present in DR digital channel. DR digital channels need to be standardized as per recommendation in FOLD working group-3.

TSECL may update the root cause and actions taken on the above-mentioned issues.

Deliberation (81st PCC):

Tripura informed that a high resistive fault occurred in the 132 kV P K Bari Dharmangar line and CB2 did not clear the fault as Y Pole of the CB got stuck which will be checked shortly. DCRM testing to be conducted by TSECL. Forum also noted that EF operation at Hailakandi is aggressive and the settings have to be coordinated with EF of Dharamanagar and Dullavchera substations. E/F setting at Hailakandi end for 132 kV Dullavchera line needs to be reviewed & coordinated with ZIII time delay. TMS to be changed.

In 82nd PCCM, AEGCL informed the forum that no relay coordination issue observed at Hailakandi.

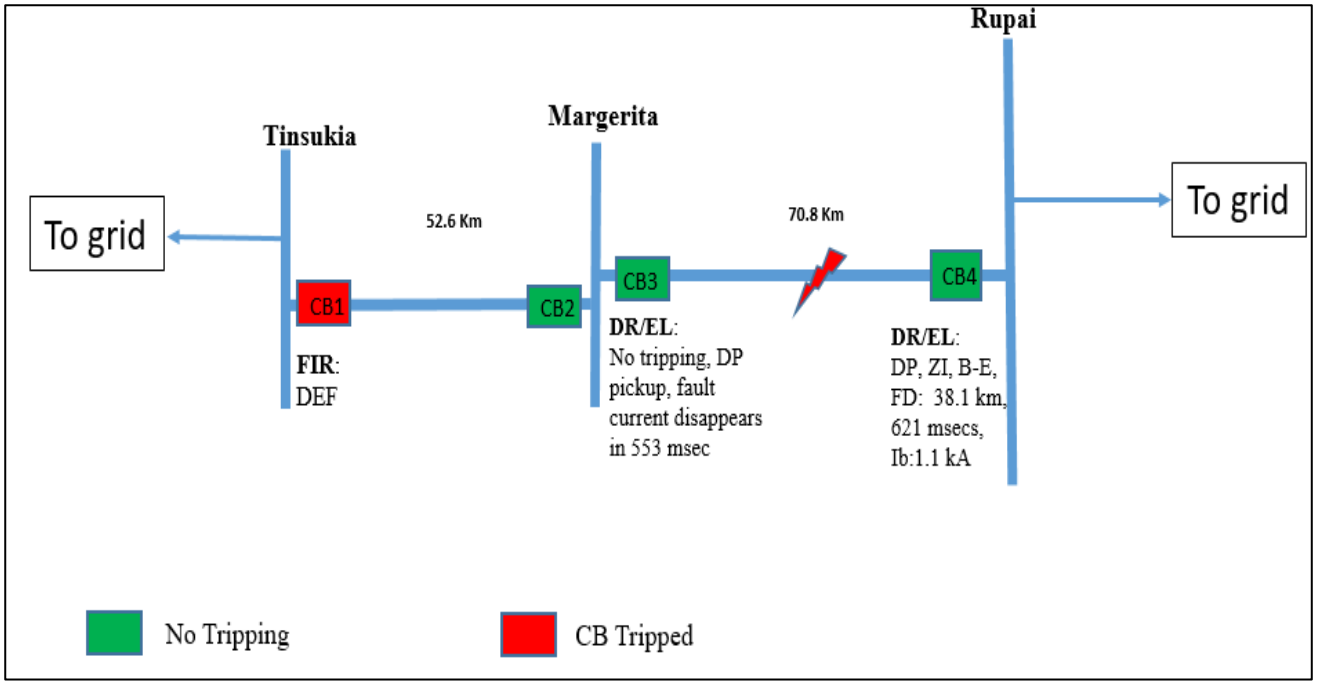
Also, requested Tripura to resolve the CB issue at Dharmanagar end of 132 kV Dharmanagar – P K Bari line.

Tripura may update

C.9 (Agenda B14, 81st PCC) Grid Disturbance in Margherita area of Assam Power System:

Event 1:

At 10:53 Hrs of 17-06-2025, 132 kV Tinsukia – Margherita & 132 kV Rupai-Margherita line tripped leading to blackout of Margherita area of Assam. Load loss of 21 MW occurred.



As per DR analysis, at 10:50:26.946 Hrs, high resistive B-E fault (Ib-1.1 kA, Vbe-51 kV) appears in 132 kV Rupai-Margherita line at a distance of 38.1 Km which was cleared from Rupai end within 621 msec on operation of DP, ZI. No tripping observed at Margerita end (DP pickup, fault current disappears within 553 msec).

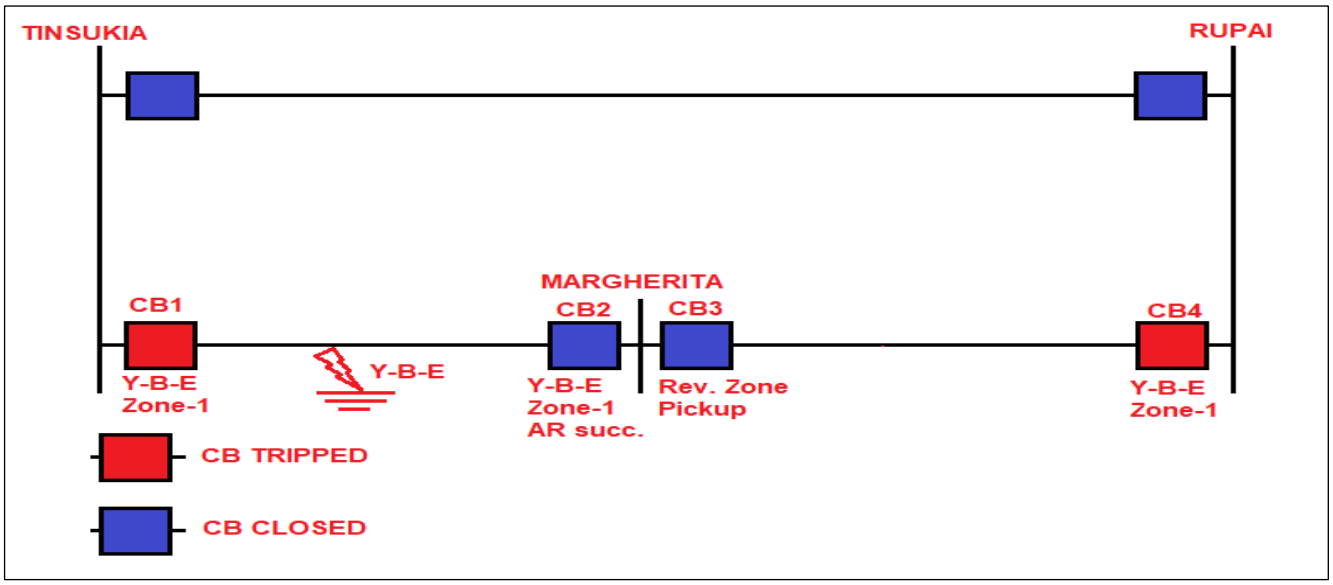
Fault cleared from Tinsukia end on operation of DEF (as per FIR, DR/EL not submitted)

Following observations:

- Protection system at Margherita end for 132 kV Rupai Line failed to isolate the fault leading to clearing of fault by tripping of healthy 132 kV Margherita-Tinsukia line from remote end.
- Time drift of 3 min observed at Rupai end for 132 kV Margherita Line.

Event 2:

At 22:59 Hrs of 22-06-2025, 132 kV Tinsukia – Margherita & 132 kV Rupai-Margherita line tripped leading to blackout of Margherita area of Assam. Load loss of 4 MW occurred.



As per DR analysis, Y-B-E fault in 132 kV Tinsukia – Margherita line cleared from Tinsukia and Margherita end in 90 msecs on operation of DP, ZI. Margherita end (CB2) successfully auto-reclosed.

However, the fault detected by the relay at Rupai end (CB4) of 132 kV Margherita – Rupai line on Zone-1 and led to tripping within 66 msecs leading to the blackout of

Margherita GSS. Zone-4 picked up at (CB3) confirming the fault was in 132 kV Tinsukia – Margherita Line.

Following observations:

- Tripping of 132 kV Rupai-Margherita Line on ZI from Rupai end is unwanted. ZI setting at Rupai needs to be reviewed.
- Non-operation of Autorecloser at Tinsukia end for 132 kV Margherita line.
- Time drift of 4 min observed at Margherita end for both the lines.

AEGCL may share the root cause and action taken on the above-mentioned issues.

Deliberation (81st PCC):

Event 1: Forum noted that tripping at Tinsukia on DEF is a maloperation and asked AEGCL to rectify the issue. Further, the forum requested AEGCL coordinate the EF and OC protection settings between Margarita and Tinsukia.

Event 2: Forum noted that zone 1 at Rupai for 132 kV Margherita line is overreaching and requested AEGCL to revise the reach of Zone1 protection. AEGCL informed S/D will be taken for tesing of relay.

Deliberation of 83rd PCCM

AEGCL updated that the setting coordination (between Margarita and Tinsukia) will be done in next shutdown. Forum instructed to do the coordination without taking shutdown.

Regarding Relay at Rupai, AEGCL updated that the relay testing will be done in next shutdown.

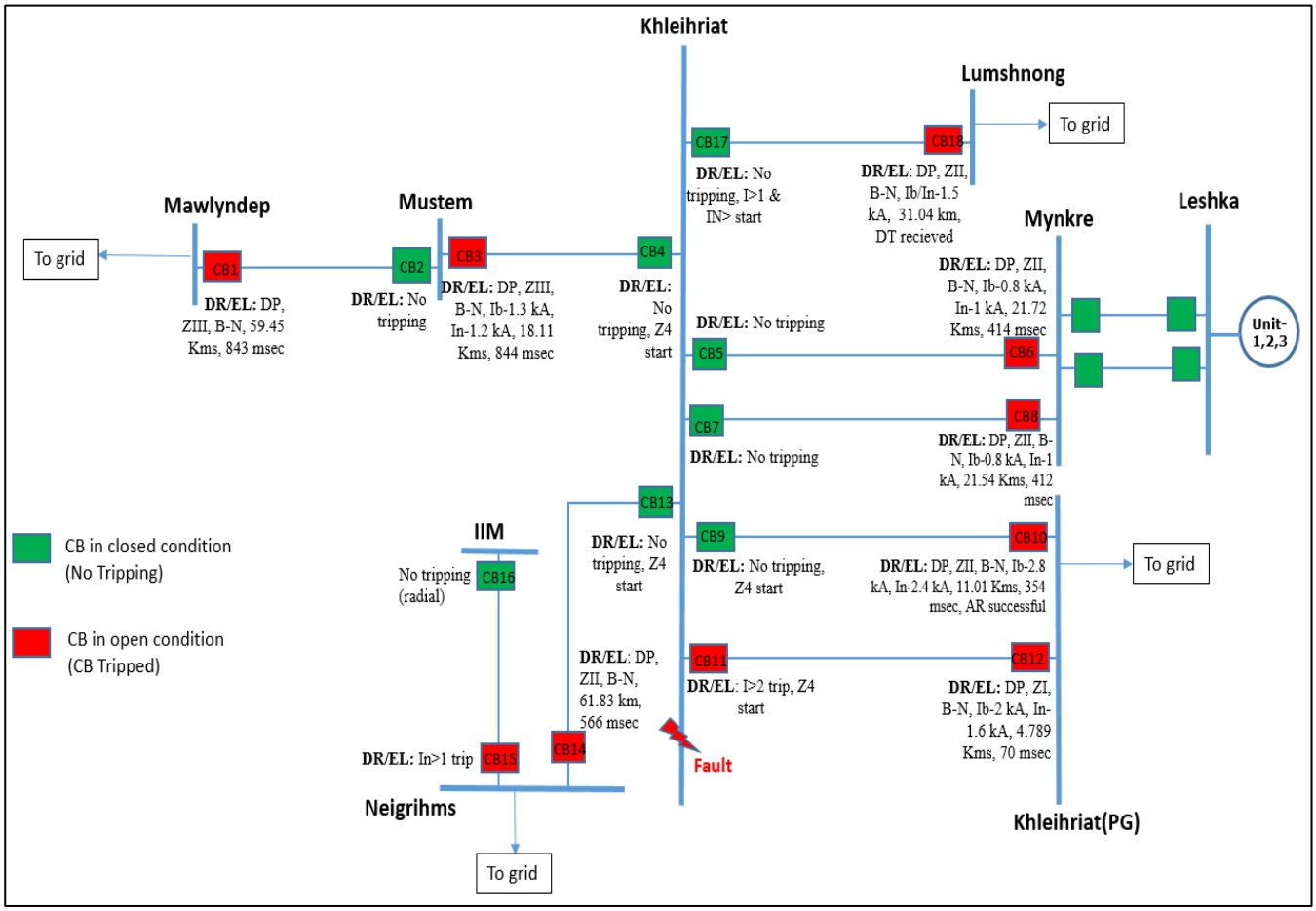
AEGCL may update

C.10 (Agenda B15, 81st PCC) Grid Disturbance in Leshka, Mynkre, Mustem and IIM areas of Meghalaya Power System on 19th June'25:

Leshka, Mynkre, Mustem and IIM areas of Meghalaya Power System were connected with rest of NER grid via 132 kV Leshka-Mynkre D/C, 132 kV Khleihriat-Mynkre D/C, 132 kV Khleihriat-Mustem, 132 kV Mawlyndep-Mustem & 132 kV Neigrihms-IIM Lines.

At 14:00 Hrs of 19-06-2025, all the lines connected to 132 kV Khleihriat Bus except 132 kV Khleihriat-Khleihriat (PG) I line, 132 kV Mawlyndep-Mustem & 132 kV Neigrihms-IIM lines tripped. Due to these tripping, Leshka, Mynkre, Mustem and

IIM areas of Meghalaya Power System got isolated from NER Grid and collapsed due to no source available in these areas.



Root cause:

Fault was in 132 kV Khleihriat Bus. As informed by MePTCL, there was accidental contact of one cable laid by M/S Manav Energy Pvt. Ltd. (who were carrying out works related to earthing in the substation) to the bus isolator of 132 kV Khleihriat(PG)-II line. Since there is no Bus bar protection, fault was cleared by tripping of healthy lines connected to Khleihriat S/S from remote ends on Z2/Z3. There was no tripping from Khleihriat end.

Following observations:

- 132 kV Khleihriat-Khleihriat(PG) II line tripped on ZI from Khl(PG) end. ZI protection seems to have overreached from Khl(PG) end as fault was in Khleihriat Bus. From Khl(ME) end, I>2 trip observed which is inferred unwanted. Highset O/C setting needs to be disabled at Khl(ME) end to avoid any further reoccurrences.

- 132 kV Khleihriat-Khleihriat(PG) I line tripped from Khl(PG) end on operation of DP, ZII. After 3 sec, AR operated successfully which is undesirable. The same needs to be checked by NERTS.
- Tripping of 132 kV Mustem-Khleihriat line on Z3 from Mustem end is inferred unwanted. Z3 reach setting needs to be reviewed and revised as per NER protection philosophy.
- 132 kV Khleihriat-Lumshnong line tripped on ZII from Lumshnong end and no tripping from Khleihriat end (IN>1 start). However, DT received at 13:58:17.814 Hrs which is inferred unwanted. Also, at Lumshnong end, "CB status" showing CB closed which needs to be checked.
- Tripping of 132 kV Neigrihms-IIM line on E/F from Neigrihms end for fault in reverse direction is unwanted. Directionality of E/F relay needs to be enabled and forward direction to be ensured.
- Tripping of Umiam Stg-II Unit-2 for fault in 132 kV Khleihriat Bus is unwanted. The same needs to be thoroughly investigated.
- As 132 kV Khleihriat S/S serves as a crucial S/S in Meghalaya power system, it is advisable to consider upgrading the existing single bus scheme to a Double Main Cum Transfer scheme. This enhancement is essential for ensuring reliability and preventing outage in the event of a bus fault.
- Commissioning of bus bar protection in 132 kV Khleihriat S/S needs to be looked into by MePTCL. Z4 time delay at Khliehriat to be kept at 200 msec till bus bar protection is implemented.
- Time drift of 9 min observed at Mynkre end for Khleihriat line -1&2 lines which needs to be rectified.

MePTCL may update the actions taken on the above-mentioned issues.

Deliberation (81st PCC):

1. MePTCL informed that the Bus fault occurred at Khliehriat (ME) due to accidental contact of cables near the bus.
2. <u>Protection Issues:</u>

Sl. No.	**Issues**	**Remarks**

1	132 kV Khleihriat-Khleihriat(PG) II line tripped on ZI from Khl(PG) end for fault in 132 kV Khleihriat Bus	ZI overreaching issue. ZI reach setting to be reviewed.
2	132 kV Khleihriat-Khleihriat(PG) II line tripped on I>2 from Khl(ME) end	Highset O/C setting to be disabled at Khl(ME)
3	AR operated successfully at Khleihriat(PG) end for 132 kV Khleihriat-Khleihriat(PG) I Line	AR successful due to incorrect mapping which has been rectified.
4	Tripping of 132 kV Mustem-Khleihriat line on Z3 from Mustem end	LFL of the feeder was carried out to ascertain the exact line length and line length indicated was 16.9 Km. Earlier setting was kept as per 12.69 Km. The setting of 132 kV Mustem-Khleihriat line has been revised as per new line length of 16.9 Km on 25th June'25.
5	DT received at Lumshnong end for 132 kV Khleihriat Line	To be checked by MePTCL
6	Tripping of 132 kV Neigrihms-IIM line on E/F from Neigrihms end for fault in reverse direction is unwanted	Rectified
7	Tripping of Umiam Stg-II Unit-2 for fault in 132 kV Khleihriat Bus	GT O/C protection operated. To be checked by MePGCL
8	Time drift of 9 min observed at Mynkre end for Khleihriat line -1&2 lines	GPS rectified on 16th July'25

Deliberation of 83rd PCCM

Regarding tripping of khliehriat-Khliehriat II line, PowerGrid informed that since the line is of short length distance protection overreaching is a practical problem. He also informed that the LDP is installed on the line. NERPC stated that as the NERPC protection protocol, in case of LDP as main protection, Zone 1 of the distance

protection has to be enabled only in case of carrier fail, so he recommended that Zone 1 be disable in the case, Meghalaya informed that since Distance protection is installed in a different relay (from the relay in which LDP is installed), ensuring the provision is not practically feasible. NERPC recommended that then there should be 100 msec delay in the zone1 in the present case in order to avoid overlapping of Main protection and B/U protection.

Regarding the Bus Bar protection at Khliehriat SS, MePTCL informed that the matter will be put up to higher authorities.

MePTCL may update

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