सत्यमेव जयते

भारत सरकार Government of India
विद्युत मंत्रालय Ministry of Power
उत्तर पूर्वी क्षेत्रीय विद्युत समिति
North Eastern Regional Power Committee
एन ई आर पी सी कॉम्प्लेक्स, डोंग पारमाओ, लापालाङ, शिल्लोंग-७९३००६, मेघालय
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No.: No. NERPC/SE (O)/PCC/2024/1928-1969 August 20, 2024

To
As per list attached

Sub: Minutes of 70th Protection Coordination Sub-Committee (PCC) Meeting

Sir/Madam,

Please find enclosed herewith the minutes of the 70th PCC Meeting held at NERPC Conference Hall, Shillong on 8th August 2024 for your kind information and necessary action. The minutes is also available on the website of NERPC: www.nerpc.gov.in.

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

भवदीय / Yours faithfully,

(माया कुमारी / Maya Kumari)
For Director

Encl: As above

Distribution List:

1. Managing Director, AEGCL, Bijuli Bhawan, Guwahati – 781 001
2. Managing Director, APGCL, Bijuli Bhawan, Guwahati – 781 001
3. Managing Director, APDCL, Bijuli Bhawan, Guwahati – 781 001
4. Managing Director, MSPCL, Electricity Complex, Keishampat, Imphal – 795 001
5. Managing Director, MSPDCL, Secure Office Bldg. Complex, South Block, Imphal – 795 001
6. Director (Transmission), MePTCL, Lumjingshai, Short Round Road, Shillong – 793 001
7. Director (Generation), MePGCL, Lumjingshai, Short Round Road, Shillong – 793 001
8. Director (Distribution), MePDCL, Lumjingshai, Short Round Road, Shillong – 793 001
9. Director (Tech.), TSECL, Banamalipur, Agartala -799 001.
10. Director (Generation), TPGCL, Banamalipur, Agartala -799 001.
11. GM (Transmission), TPTL, Banamalipur, Agartala -799 001.
12. Chief Engineer (WE Zone), Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791111
13. Chief Engineer (TP&MZ), Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791111
14. Chief Engineer (Commercial) -cum- CEI, DoP, Govt. of Arunachal Pradesh, Itanagar- 791111
15. Engineer-in-Chief, P&E Department, Govt. of Mizoram, Aizawl – 796 001
16. Engineer-in-Chief, Department of Power, Govt. of Nagaland, Kohima – 797 001
17. ED (O&M), NEEPCO Ltd., Brookland Compound, Lower New Colony, Shillong-793003
18. ED (O&M), NHPC, NHPC Office Complex, Sector-33, Faridabad, Haryana-121003
19. Group GM, NTPC, Bongaigoan Thermal Power Project, P.O. Salakati, Kokrajhar- 783369
20. Vice President (Plant), OTPC, Badarghat Complex, Agartala, Tripura - 799014
21. ED, PGCIL/NERTS, Dongtieh-Lower Nongrah, Lapalang, Shillong -793 006
22. AGM (BD), NVVN, Core 5, 3rd floor, Scope Complex, 7 Institutional Area, Lodhi Rd., N. Delhi-3
23. Vice President, PTCIL, 2nd Floor, NBCC Tower, 15, Bhikaji Cama Place, New Delhi – 110066
24. Dy. COO, CTUIL, "Saudamini", 1st Floor, Plot No. 2, Sector-29, Gurugram, Haryana – 122001
25. Chief Engineer, GM Division, Central Electricity Authority, New Delhi – 110066
26. Chief Engineer, NPC Division, Central Electricity Authority, New Delhi – 110066
27. Head & VP, (R&C), ENICL, IndiGrid, Windsor Building, Kalina, Santacruz (East), Mumbai- 98
28. ED, NERLDC, Dongtieh, Lower Nongrah, Lapalang, Shillong -793 006
29. CGM, AEGCL, Bijuli Bhawan, Guwahati – 781001
30. CGM, APGCL, Bijuli Bhawan, Guwahati – 781001
31. CGM, DISCOM, Bijuli Bhawan, Guwahati – 781001
32. Head of SLDC, Dept. of Power, Govt. of Arunachal Pradesh, Itanagar – 791111
33. CGM, (LDC), SLDC Complex, AEGCL, Kahilipara, Guwahati-781 019
34. Head of SLDC, MSPCL, Imphal – 795001
35. Head of SLDC, MePTCL, Lumjingshai, Short Round Road, Shillong – 793 001
36. Head of SLDC, P&E Deptt. Govt. of Mizoram, Aizawl – 796 001
37. Head of SLDC, Dept. of Power, Govt. of Nagaland, Dimapur – 797103
38. Head of SLDC, TSECL, Agartala – 799001
39. Chief Engineer (Elect), Loktak HEP, Vidyut Vihar, Kom Keirap, Manipur- 795124
40. DGM (O&M), OTPC, Badarghat Complex, Agartala, Tripura – 799014
41. AGM Regulatory & Commercial, NER II TL, 10th Floor, Berger Tower, Noida sector 16B-201301
42. Director, NETC, 2C, 3rdFloor, D21Corporate Park, DMRC Building Sector 21, Dwarka, Delhi-77.

(माया कुमारी / Maya Kumari)
For Director

सत्यमेव जयते

Minutes

of

70th PCCM

Azadi Ka Amrit Mahotsav

Govt. of India

Ministry of Power

North Eastern Regional Power Committee

Shillong

North Eastern Regional Power Committee

Minutes of

70th Protection Coordination Sub-Committee Meeting

Date: 08/08/2024 (Thursday)

Time: 11:00 hrs.

Venue: NERPC conference Hall, Shillong

The list of Participants is attached as **annexure I**.

A. CONFIRMATION OF MINUTES

1. CONFIRMATION OF MINUTES OF THE 69th PROTECTION SUB-COMMITTEE MEETING OF NERPC.

Minutes of the 69th PCC Meeting held on 11th July, 2024 (Thursday) at NERPC Conference Hall, Shillong was circulated vide letter No.: NERPC/SE (O)/PCC/2024/1644-1688 dated 24th July, 2024.

No comments were received from constituents

The Sub-committee confirmed the minutes of 69th 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. NERLDC Stated that a google spreadsheet has been circulated to the constituents to provide the schedule of protection audit as well as date of last audit. The forum requested the constituents to update the spreadsheet.

In 69th and 68th PCCM, following points were discussed

1. Forum requested users to update the proposed date for Internal Audit & Third-party Audit in the spreadsheet shared by NERLDC as soon as possible.
2. AEGCL updated that the internal audit has been completed and would share the report shortly. He also updated that third party audit of most of the substations were carried out by NERPC in 2021 and in January'24 and May'24. For rest of the substations, which is 132 kV Karim Ganj, the audit is to be planned soon.
3. Mizoram stated that reports of internal audit had been shared with NERPC and schedule for external audit had been updated in the google sheet.
4. TSECL updated that internal audit of 11 substations have been done and rest to be done next month. Forum requested TSECL to plan for third party audit also.
5. Manipur updated in 68th PCCM that internal audit report had been shared with NERPC. Forum requested to plan for the external audit at the earliest subject to Law and Order situation in the State.
6. DoP Arunachal Pradesh updated that internal audit of Chimpu SS was underway and audit of Lekhi would be done by June'24. He also stated that the audit reports would be shared in due time to NERPC.
7. OTPC updated that internal and external audit reports have been shared to NERPC.
8. NTPC informed that 3rd party audit has been awarded and will be done within 3 months. NTPC asked whether the protection audit includes the audit of generator protection or not. Forum stated that generator protection audit is also included in the audit.

Regarding audit of substations of Nagaland and adjoining substations of NERTS, Forum decided that the audit of 132 kV Dimapur (DoPN) SS, 132 kV Kohima SS, 132 kV Chiepouvozou SS132 kV Zhadima SS and 220 kV Dimapur (PGCIL) will be conducted in 1st week of August'24. Further audit of rest of the 132 kV substations of Nagaland will be conducted after end of Monsoon season.

Deliberation of the sub-committee

Following points were discussed in the meeting

1. Forum requested users to update the proposed date for Internal Audit & Third-party Audit in the spreadsheet shared by NERLDC as soon as possible.
2. AEGCL updated that the internal audit of 61 substations has been completed and would share the report by this month.
3. TSECL absent
4. Manipur informed that Protection audit committee has been formed and the audit schedule, for external audit, will be decided shortly.
5. DoP Arunachal Pradesh updated that internal audit of Chimpu SS is done and report will be shared shortly to NERPC and NERLDC. He further informed that audit of Lekhi would be done by August'24. He also stated that the audit reports would be shared in due time to NERPC.
6. NTPC informed that 3rd party audit has been awarded and will be done in 3rd week of September.
7. NERTS updated that internal audit of its substations is being done in a phased manner and audit of 10 substations has been completed and reports shared with NERPC.
8. DoP Naglanad updated that internal audit of 4 substations has been completed and report shared with NERPC.
9. NEEPCO informed that internal audit of Pare and Kopili has been completed and audit of thermal substations will be done shortly.

Regarding audit of substations of Nagaland and adjoining substations of NERTS, it has been decided to conduct the audit of 132 kV Dimapur (DoPN) SS, 132 kV Kohima SS, 132 kV Chiepouvozou SS132 kV Zhadima SS and 220 kV Dimapur (PGCIL) in August'24. DoP Nagaland stated that the audit schedule will be provided shortly. Further, it has been decided that audit of rest of the 132 kV substations of Nagaland will be conducted after end of Monsoon season.

B.2 Urgent requirement of Third-Party Protection Audit of substations of MePTCL

In 64th PCCM, MePTCL had informed that third party protection audit is urgently required at 21 substations (list provided).

In 67th PCCM, MePTCL informed that six substations, viz; Killing, Mawphlang, Mawlai, NEHU, Khliehriat and Lumshnong have been shortlisted for carrying out urgent protection audit. NERPC informed that audit at these substations will be carried out shortly. Also, NERTS requested to carry out 3rd party protection audit at Khlieriat (PG) along with Khlieriat (Meghalaya) substation.

In 69th PCCM, the forum decided that audit would tentatively be conducted on 22nd and 23rd August'24.

Deliberation of the sub-committee

The forum decided that the audit of Killing, EPIP I, EPIP II, Mawphlang, Mawlai and NEHU substations will be conducted in August'24. The details of members of Audit are provided below –

Team 1

1.NERPC - Vikash Shankar, AD-I,

2.NERLDC – to be provided

3.NERTS – Vipul Anand

4.AEGCL – Jugantar Sonowal, DM (T&C Jorhat), 9957710783

Team 2

1.NERPC – Dinesh Kumar Singh, AD-I,

2.NERLDC – to be provided

3.NERTS – Niraj Kumar, RTAMC (may be changed)

4.AEGCL – Arindam Paul, DM (T&C Samaguri), 8876645623

B.3 Detailed system study to review the protection settings of NER grid as per IEGC 2023

As per regulation 14(1) of IEGC 2023, "RPCs shall undertake review of the protection settings, assess the requirement of revisions in protection settings and revise protection settings in consultation with the stakeholders of the respective region, from time to time and at least once in a year. The necessary studies in this regard shall be carried out by the respective RPCs. The data including base case (peak and off-peak cases) files for carrying out studies shall be provided by RLDC and CTU to the RPCs"

In this regard, each State has to carry out the detailed system of their grid, once a year, in order to holistically overview the protection settings in the State and present the study report to NERPC and NERLDC. States may use the PDMS and PSCT software platforms to carry out the studies.

In 66th PCCM, NERPC stated that the States may carry out the necessary studies by using the PSCT and PDMS software of M/s PRDC.

Assam stated that for training of the software is required to impart necessary skills to the personnel of the State.

PRDC representative assured that necessary training session will be conducted for all the States. He, further highlighted that before carrying out the studies Protection settings database of the software has to be updated.

MS, NERPC directed M/s PRDC to update the database in coordination with NERPC, NERLDC and concerned utilities.

NERLDC highlighted the need to update the database in PDMS software from time to time and also requested PRDC team to model the entire power system of NER in PSCT tool for setting calculation considering recent network changes.

States further requested that a user manual of the PSCT and PDMS software may be provided for easy reference during carrying out the studies. M/S PRDC assured to provide the same at the earliest.

In 69th PCCM, M/s PRDC updated that one training session on PSCT has been conducted on 20th June'24. Further he stated that next training session will be conducted on 18th and 19th July'24. The forum requested all the utilities to update the respective network database in the PDMS.

Deliberation of the sub-committee

The forum decided that a sub-group will be formed to undertake the necessary studies to review the protection setting as per IEGC. The sub-group will have members from NERPC, NERLDC, CTU, STU, SLDCs, Transmission licensees, NEEPCO and NTPC. The utilities will send nomination of members within a week to NERPC. NERPC will issue the order accordingly.

Further, M/s PRDC made a presentation on protection audits, IEGC compliance, relay settings coordination, Remote Access System (RAS) and Automatic Fault Analysis System (AFAS). The forum noted the importance of the RAS and AFAS and requested the utilities to deliberate internally and consider implementing the same

in their system. MS NERPC stated that PSDF funding may be considered for RAS and AFAS implementation in NER and the matter may be further discussed in upcoming RPC meeting.

M/s PRDC also highlighted that the utilities are not regularly updating the relay settings in DMNS portal of PDMS platform. The forum urged the utilities to actively use the DMNS portal and reap the benefits of it.

Sub-committee noted as above.

B.4 Analysis and Discussion on Grid Disturbances which occurred in NER grid in June'24 in compliance with IEGC 2023:

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 July 2024 based on the draft report prepared by NERLDC.

Deliberation of the sub-committee

The forum noted the GD events that occurred in July'24. NERLDC highlighted that many GDs have occurred due to the radial nature of the networks and those involving protection issues have been put up for discussion in further agenda items.

Agenda from NERLDC

B.5 Status of submission of FIR, DR & EL outputs for the Grid Events for the month of July'2024

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 in Tripping Monitoring Portal for events from 01-07-2024 to 30-07-2024 as on 30-07-2024 is given below:

Name of Utility	No of trippings	Total FIR, DR & EL to be submitted			Total FIR, DR & EL submitted			Total FIR, DR & EL not submitted			% Submission of		
		FIR	DR	EL	FIR	DR	EL	FIR	DR	EL	FIR	DR	EL
DoP, Arunachal Pradesh	18	35	31	34	28	26	29	7	4	4	80	87	88
AEGCL	44	85	73	73	15	21	21	70	52	52	18	29	29
APGCL	18	18	18	18	0	0	0	18	18	18	0	0	0
MSPCL	26	34	33	33	31	21	22	3	11	11	91	67	67
MePTCL	16	17	15	15	15	13	13	2	1	1	88	93	93
MePGCL	8	13	10	12	5	8	8	8	0	4	38	100	67
P&ED, Mizoram	1	1	1	1	0	0	0	1	1	1	0	0	0
DoP, Nagaland	20	25	20	20	11	3	3	14	14	13	44	30	35
TSECL	13	24	24	24	14	20	22	10	2	2	58	92	92
TPGCL	1	1	1	1	0	0	0	1	1	1	0	0	0
POWERGRID	32	47	45	45	41	35	36	6	5	5	87	89	89
NEEPCO	49	62	55	54	54	43	41	8	8	9	87	85	83
NHPC	12	12	11	11	2	11	10	10	0	0	17	100	100
NTPC	1	1	1	1	0	1	0	1	0	1	0	100	0
OTPC	4	4	4	4	4	4	1	0	0	0	100	100	100
IndiGrid	7	10	10	10	7	7	7	3	3	3	70	70	70
MUML	1	0	0	0	0	0	0	0	0	0	No event		
KMTL	0	0	0	0	0	0	0	0	0	0	No event		

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.

Deliberation of the sub-committee

1.Regarding low percentage of submission, AEGCL informed that many DR related to GD II event in upper Assam that occurred on 15th July have been submitted late. AEGCL assured that the DR/FIR/EL will be submitted timely henceforth

2.Regarding low percentage of submission, APGCL stated that the concerned personal at Stations are not yet familiar with the procedure of downloading the DR etc. APGCL assured that the DR/FIR/EL will be submitted timely henceforth

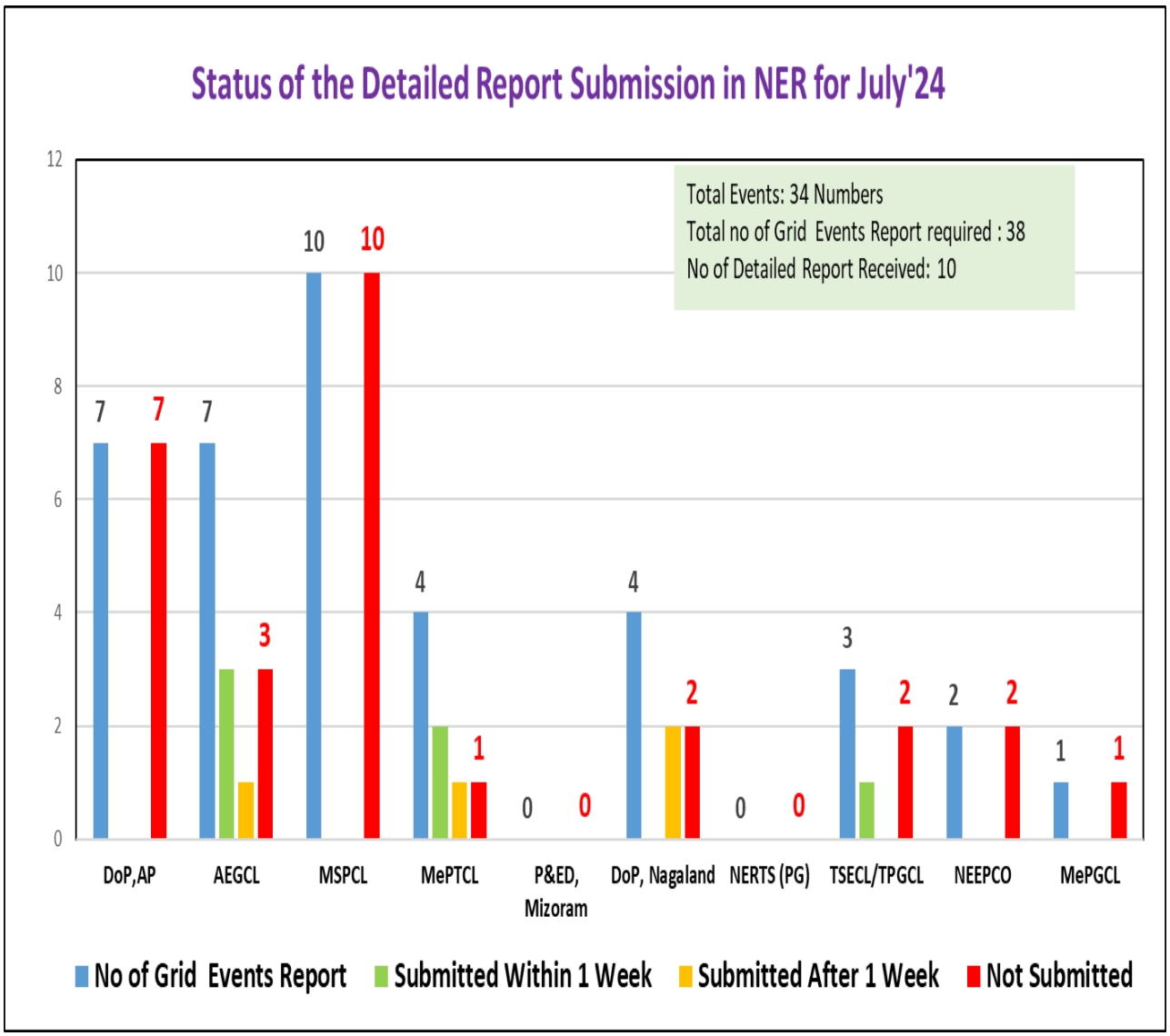
3.MSPCL informed that the substations are understaffed and lack laptops etc. MSPCL further informed that the laptops are under procurement.

After detailed deliberation the forum requested all the utilities to take urgent actions to ensure timely submission of the data in compliance with the IEGC 2023.

B.6 Submission of Flash Report and 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 same for the month of July, 2024 as on 30-07-2024 is shown below:



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.

Deliberation of the sub-committee

The forum noted the instances of non-submission and late submission of the reports. It strongly requested the utilities to submit the reports timely in compliance with the IEGC 2023

B.7 Non-operation of auto recloser in Important Grid Elements for transient faults in July 2024:

Utilities updated as follow -

S. No	Element Name	Tripping Date and Time	RELAY_A	RELAY_B	Auto-Recloser not Operated	Remarks from Utility
1	132 kV AGTCCPP-Kumarghat Line	05-07-2024 12:45	DP, ZI, Y-B, 70.17	DP, ZI, Y-B, 30.92 Km **(AR successful)**	AGTCCPP	NEEPCO to check during upcoming shutdown next week.
2	132 kV AGTCCPP-Kumarghat Line	07-07-2024 19:37	DP, ZII, B-E	DP, ZI, B-E, 1.21 Km **(AR successful)**	AGTCCPP	Same as 1.
3	132 kV BNC-Gohpur Line	09-07-2024 10:43	DP, ZI, R-E, 55.63 Km, **(AR operated and TOR)**	DP, ZI, R-E (DR not submitted)	Gohpur	DR for the bay is yet to be integrate with the local SCADA system. Coordination with M/s NTL is required.
4	220 kV Behiating-Tinsukia I Line	13-07-2024 15:10	DP (DR not submitted)	DP, ZI, 10.59 Km (DR not submitted)	Both ends	AEGCL informed that the bay is commissioned by NERPSIP, issue with the CB so no AR. Forum

						requested to resolve the issue in coordination with NERPSIP
5	132 kV Along-Pasighat Line	14-07-2024 09:33	DP, ZI, B-E, AR successful	DP, ZI, B-E(DR not submitted)	Pasighat	Ar. Pradesh updated that the CB healthy status was not coming in the relay, so no AR. Issue resolved now.
6	132 kV Gohpur-Nirjuli Line	20-07-2024 06:43	AR successful (DR not submitted)	DP, ZI, R-E	Nirjuli	PGCIL – BCU configuration issue, resolved now.
7	132 kV Dimapur (PG)-Kohima Line	21-07-2024 12:19	DP, ZI, R-E, 2.9 Km (DR not submitted)	DP, ZI, R-E	Both ends	PGCIL – dead time at Dimapur is kept more than that at Kohima, AR at Kohima did not operate so AR at Dimapur did not work. DoP Nagaland updated that

						AR at Kohima operated. NERLDC rechecked & found Successful AR at & CB Closing in the Digital Status at Kohima after 2 seconds. However, No voltage appear after the closing of CB.
8	400 kV Balipara-Bongaigaon IV Line	28-07-2024 11:34	DP, ZI, B-E, 77.9 Km (DR not submitted)	DP, ZI, B-E, 189 Km (DR not submitted)	Both ends	AR was disabled as PID scanning work was underway on the line.

Sub-committee noted as above

B.8 <u>Submission of Protection Performance Indices by Transmission Utilities:</u>

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 10th of every month for previous month indices, which shall be reviewed by the RPC:

- The Dependability Index defined as $D = Nc/\ Nc+Nf$
- The Security Index defined as $S = Nc\ /Nc+Nu$
- The Reliability Index defined as $R = Nc\ Nc+Ni$

Where,

Nc: number of correct operations at internal power system faults

Nf: Number of failures to operate at internal power system faults.

Nu: Number of unwanted operations.

Ni: Number of incorrect operations and is the sum of Nf and Nu

It has been observed that Protection Performance Indices are not being submitted by all the users.

As on 30.07.2024, no user has submitted protection performance indices for the month of July'24.

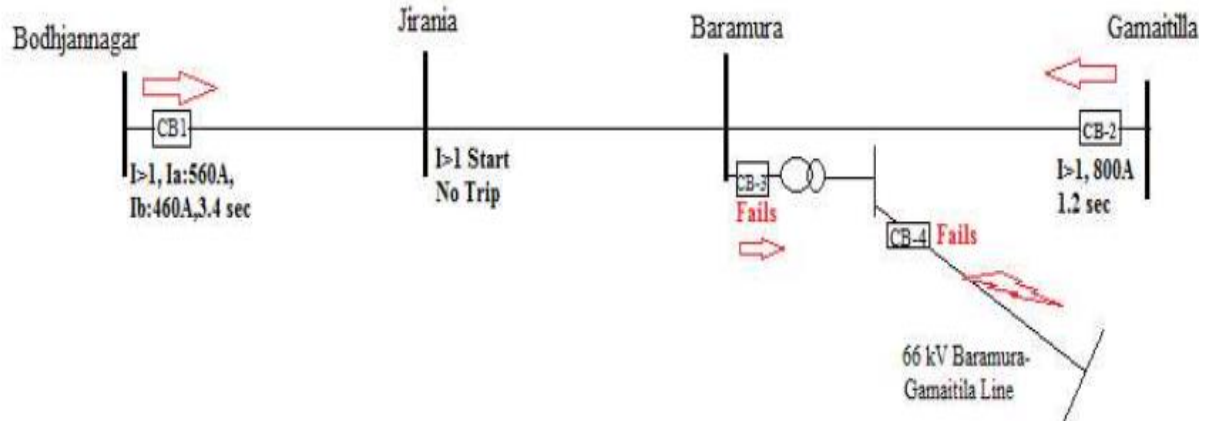
Deliberation of the sub-committee

NERLDC informed that Meghalaya and Nagaland have so far, provided the report. The forum requested other utilities to provide the report timely.

B.9 Grid disturbance in Jirania area of Tripura on 07.07.2024:

Jirania area of Tripura Power System is connected with rest of NER Grid through 132 kV Budhjundnagar-Jirania & 132 kV Jirania-Baramura-Gamaitilla link.

At 16:51 Hrs of 07.07.2024, 132 kV Budhjungnagar-Jirania & 132 kV Baramura-Gamitilla lines tripped leading to blackout of Jirania area of Tripura power system. Load loss of MW occurred.



Event Analysis based on DR:

- 132 kV Budhjannagar - Jirania Line tripped from Budhjannagar on B/U OC within 3.4 sec with Ir: 560 A, Iy: 460A. There was no tripping at Jirania end.
- O/C pickup at Jirania end for 132 kV Baramura - Jirania Line. However, there was no tripping.

- 132 kV Baramura - Gamaitilla Line tripped from Gamaitilla on B/U O/C protection within 1.2 sec for fault beyond the line.

Observations:

- Fault is suspected in downstream of Baramura substation. Protection system at Baramura for downstream feeder and transformer HV side at Baramura did not operate, which resulted in delayed clearance of fault from Gamaitilla and Bodhjannagar ends.
- O/C protection at Jirania for 132 kV Jirania-Baramura line should have operated prior to Budhjungnagar end. B/U setting needs to be coordinated at Jirania for 132 kV Baramura - Jirania Line as per NER protection philosophy.
- DR time drift of 3 min at Budhjungnagar end for 132 kV Budhjungnagar-Jirania line and 10 min at Jirania for 132 kV Jirania-Baramura line recorded which needs immediate correction.

TSECL is requested to update following-

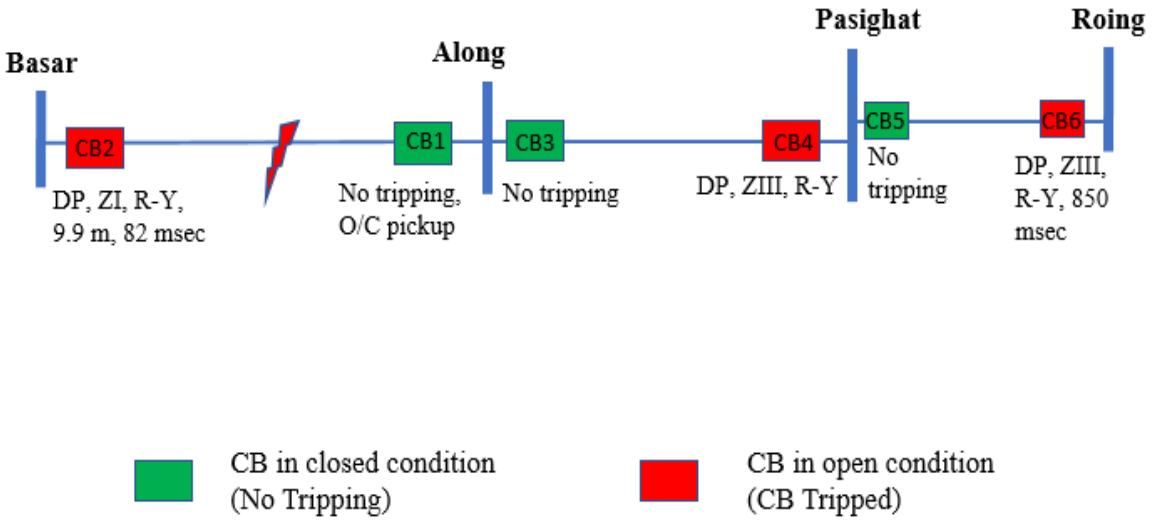
1. Root cause of tripping and remedial actions taken.
2. Reason of non-operation of protection system at Baramura for downstream feeder and transformer HV side.
3. Reason for non-tripping of Jirania CB for 132 kV Jirania-Baramura line.
4. Reason for non-submission of detailed report in compliance with IEGC 2023.

Deliberation of the sub-committee

TSECL was absent in the meeting. The matter is to be taken up separately.

B.10 Grid disturbance in Along & Pasighat areas of Arunachal Pradesh on 09.07.2024:

At 12:38 Hrs of 09.07.2024, 132 kV Along - Pasighat Line, 132 kV Roing-Pasighat Line & 132 kV Along-Basar Line tripped leading to blackout of Along & Pasighat areas of Arunachal Pradesh. Load loss of 10 MW occurred.



Event Analysis: As per DR of 132 kV Along-Basar line, R-Y fault (Ir-861 A, Iy-791 A) initiated at 12:38:03.595 Hrs and cleared within 82 msec from Basar end on operation of DP, ZI. There was no tripping from Along end (I>1 pickup).

As per DR of 132 kV Roing-Pasighat line, R-Y fault cleared within 850 msec on operation of DP, ZIII from Roing. There was no tripping from Pasighat end as fault in reverse side.

Fault was in 132 kV Along-Basar line due to fallen of big tree touching two phase conductor which was not cleared from Along, leading to clearing of fault by tripping of healthy 132 kV Roing-Pasighat line from ISTS substation.

DoP AP is requested to update:

1. Reason for non-operation of protection system at Along for 132 kV Along-Basar line and its measures taken.
2. Reason for non-clearance of fault by the protection system at Pasighat for 132 kV Along-Pasighat line on B/U protection.
3. Reason for DR time drift of 2 min at Pasighat for 132 kV Along-Pasighat line and its correction.
4. Reason for non-submission of Flash report/Detailed report in compliance with IEGC 2023.

Deliberation of the sub-committee

1.Regarding non-operation of protection at Along for Basar line (CB1), DoP Ar. Pradesh informed that during the fault zone 1 had picked up and trip command was also issued but breaker did not trip as the breaker is of pneumatic type and old. He

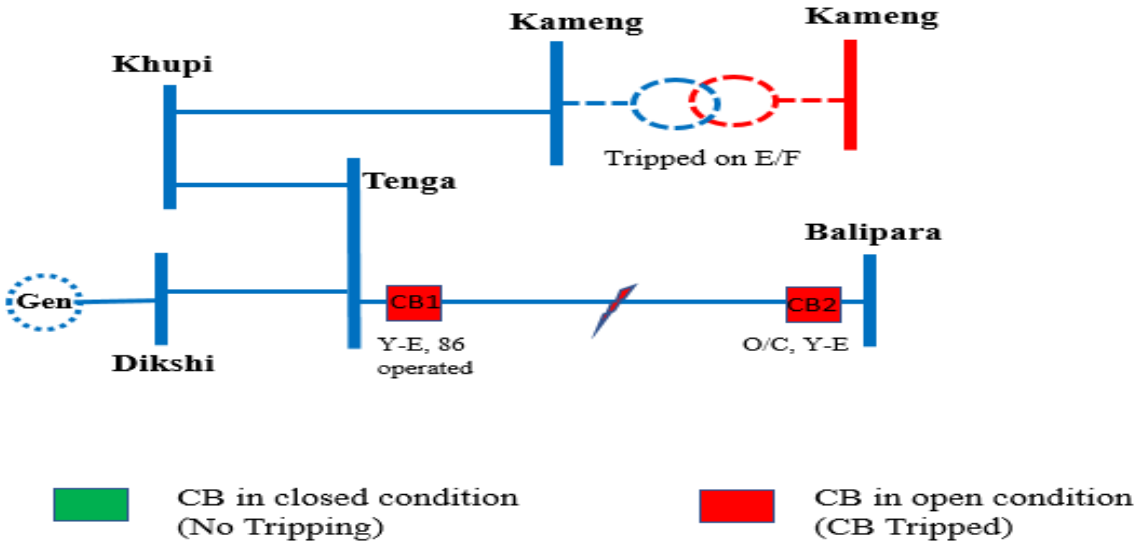
further stated that subsequently LBB operated at Along but was not successful as CB3 wiring connection with the LBB relay was defective which will be rectified shortly. Regarding the pneumatic type CBs, the forum requested DoP Ar. Pradesh to replace the same with spring type CBs within two months.

2.Regarding late operation of CB4 on zone III, Ar. Pradesh updated that the main relay has been replaced and timing issue has been rectified.

B.11 Grid Disturbance in Khupi, Tenga & Dikshi areas of Arunachal Pradesh Power System:

Event 1: 13:42 Hrs of 09.07.2024

At 13:42 Hrs of 09.07.2024, 132 kV Balipara-Tenga line and 400/132 kV, 3x40 MVA ICT at Kameng tripped leading to blackout of Khupi, Tenga and Dikshi areas of Arunachal Pradesh. Load loss of 8 MW and generation loss of 23 MW (Dikshi generation) was occurred.



Event Analysis: As per DR, resistive Y-E fault occurred in 132 kV Balipara - Tenga Line with Ib: 666A, Vbe: 75 kV, In: 598 A, fault cleared within 539 msec on B/U O/C protection from Balipara and from Tenga on 86 operation.

At the same time, 3x40 MVA, 400/132 kV ICT at Kameng tripped on E/F at 13:42:38.735 Hrs (Iy-193 A) which seems mis-operation.

Observations:

1. Which protection issued tripped command to CB at Tenga end is not clear from DR data. DoP, AP may update the actual protection operation.
2. Tripping of Kameng ICT on E/F for fault in 132 kV Balipara-Tenga line seems to be Unwanted. NEEPCO may update the reason for B/U EF protection operation and its corrective action (as per NERLDC observation/suggestion mail dated 15th July'24).
3. DR time needs to be standardized by NEEPCO & DoP AP:

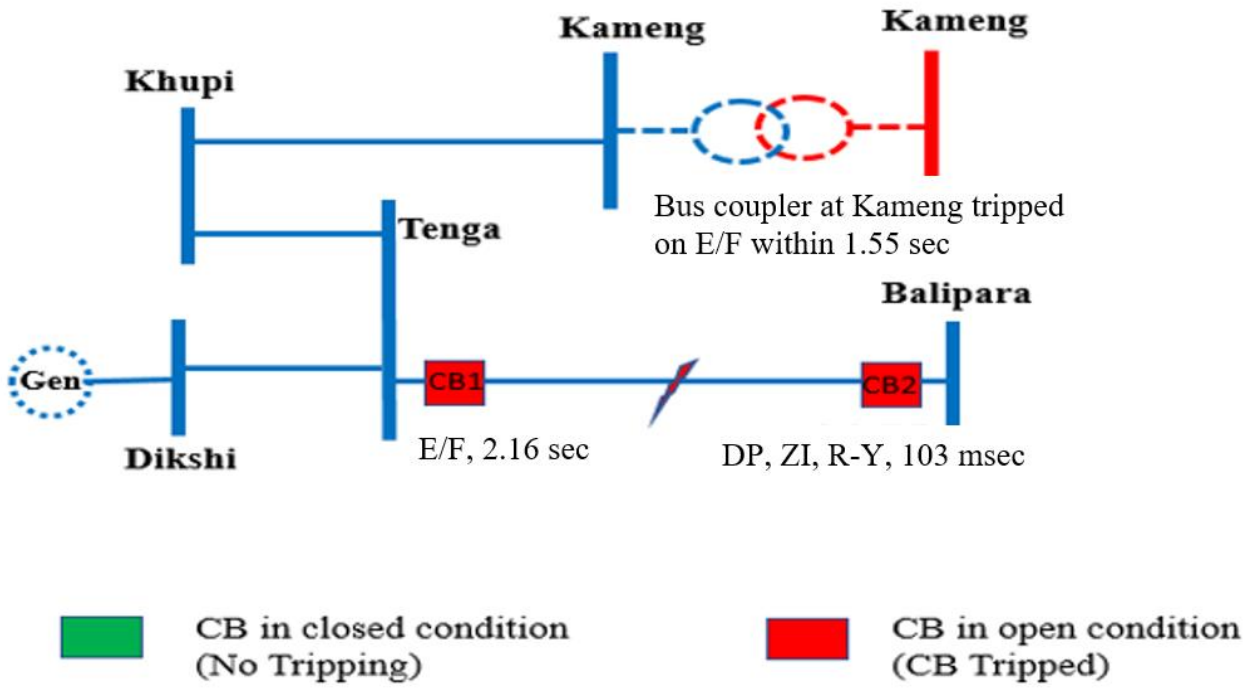
   i) DR time duration is insufficient. It needs to be increased to 3 sec with pre fault time of 500 msec and post fault time of 2500 msec.

   ii) **Any start** digital channel needs to be configured in DR.

4. Flash report and detailed report not submitted by DoP AP, which is the violation of IEGC 2023.Reason may be updated.

Event 2: 10:43 Hrs of 19.07.2024

At 10:43 Hrs of 19.07.2024, 132 kV Balipara-Tenga line tripped. Also, 132 kV Bus Coupler at Kameng tripped which resulted in blackout of Khupi, Tenga & Dikshi areas of Arunachal Pradesh Power system. Load loss of 1 MW and generation loss of 20 MW (Dikshi)



Event Analysis: As per DR, R-Y fault (Ir-2.3 kA, Iy-2.1 kA) initiated at 10:42:00.106 Hrs in 132 kV Balipara-Tenga line and fault was cleared from Balipara end on

operation of Z-1 within 103 msec. At Tenga end, In>1 start and In>1 tripped issued at 11:33:52.902 Hrs within 2.16 sec.

The same fault was also sensed by B/U relay of Kameng HEP bus coupler at 10:43:02.563 Hrs and tripped on Ie>1 within 1.55 sec which seems to be mis-operation.

Observations:

1. Tripping of Bus coupler at Kameng on operation of B/U E/F seems to be UNWANTED. The bus coupler setting needs to be reviewed and coordinated with B/U relay operating time of Line/ICT.
2. Neutral current of 0.249A recorded in the DR of Kameng Bus coupler which seems to be very low. The neutral current circuit needs to be checked.
3. Huge time drift of 51 minutes observed in DR of Tenga end for 132 kV Balipara-Tenga line.
4. DR needs to be standardized at Tenga.
    i) Analog neutral current needs to be configured.
    ii) Only two digital channels configured.
5. Protection setting from Khupi to Tenga to Balipara needs to be reviewed and coordinated as per NER protection philosophy.

NEEPCO & DoP AP is requested to update the root cause and remedial measures taken.

Deliberation of the sub-committee

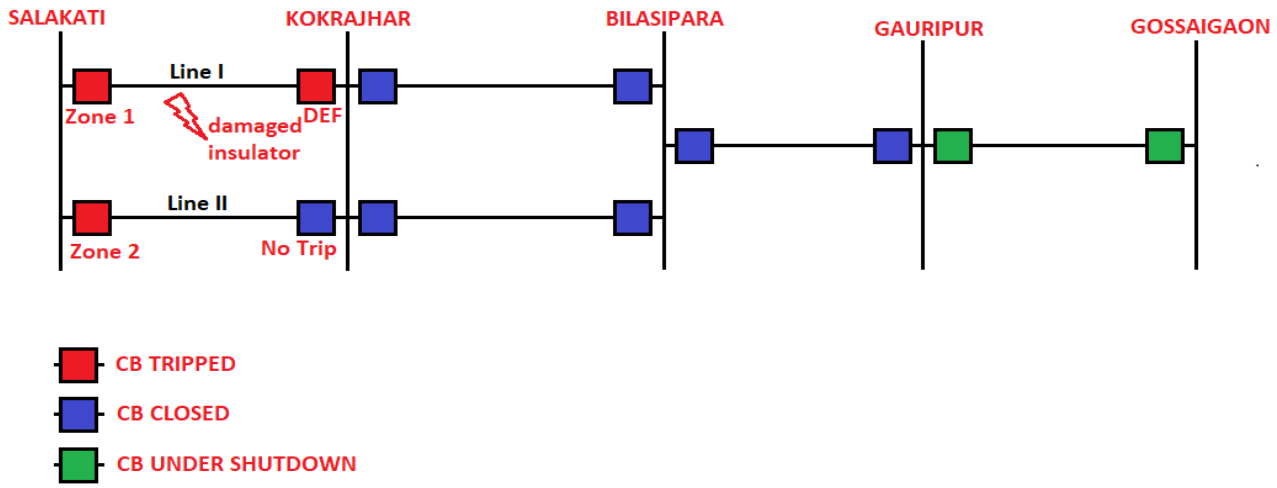
NEEPCO informed that the relay settings of ICT as well as the bus coupler have been checked and found to ok. He further stated that a protection audit may be planned to look into the issue. The forum stated that the relay settings and other protection issues may be looked into again by NEEPCO in coordination with NERPC, NERLDC and DoP Ar.Pradesh.

Subcommittee noted as above.

B.12 Grid Disturbance in Kokrajhar, Bilasipara and Gauripur areas of Assam Power System on 11.07.2024:

Kokrajhar, Bilasipara and Gauripur areas of Assam Power System were connected to NER Power system via 132 kV BTPS – Kokrajhar D/C lines. 132 kV Gauripur – Gosaigaon line was kept opened for load segregation purpose.

At 03:55 Hrs. of 11-07-2024, 132 kV BTPS – Kokrajhar I & II lines tripped leading to blackout of Kokrajhar, Bilasipara and Gauripur areas of Assam. Load loss of 25 MW occurred.



Event Analysis: As per DR, solid B-E fault occurred in 132 kV BTPS-Kokrajhar I line at 03:55:38.044 Hrs and cleared within 60 msec on DP, ZI from BTPS end. DEF operated at Kokrajhar end (no DR submitted).

Same fault was also sense by DPR at BTPS for 132 kV Kokrajhar II line and cleared within 408 msec on DP, ZII. There was no tripping from Kokrajhar end as reverse fault.

As informed by AEGCL, fault was due to failure of polymer insulator disc at Loc.26 in 132 kV BTPS-Kokrajhar I line.

AEGCL is requested to update the reason for non-operation of distance protection at Kokrajhar for 132 kV BTPS-Kokrajhar I line and review status of DEF setting.

Similar type of GD event occurred at 12:22 hrs on 16-07-2024.

Deliberation of the sub-committee

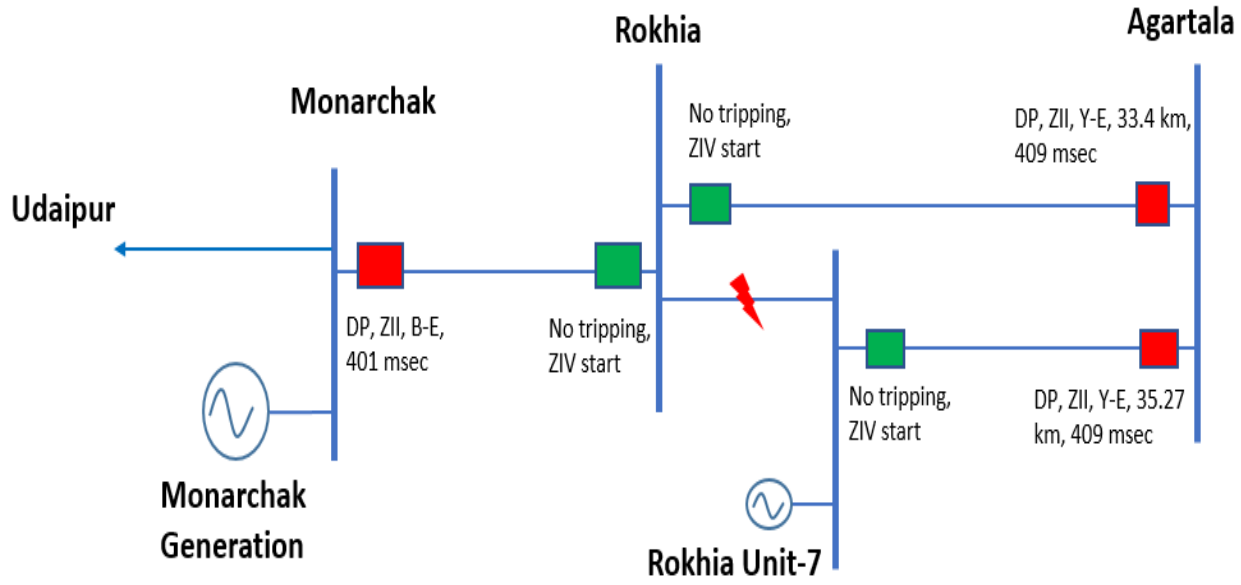
1.AEGCL informed that TMS of the EF relay is very low which caused early tripping on EF. The forum requested AEGCL to revise the TMS and modify the ROT in line with NERPC protection protocol.

2.The forum also urged AEGCL to ensure carrier aided tripping on the Salakati-Kokrajhar line.

B.13 Grid Disturbance in Rokhia generating station of Tripura on 13.07.2024:

Rokhia generating station of Tripura Power System is connected with rest of NER Grid through 132 kV Rokhia-Agartala I&II and 132 kV Rokhia-Monarchak lines.

At 00:27 Hrs of 13.07.2024, 132 kV Rokhia-Agartala I&II and 132 kV Rokhia-Monarchak lines tripped leading to blackout of Rokhia S/S of Tripura. Load loss of 13 MW & Generation loss of 17 MW occurred.



Event Analysis: As per DR of 132 kV Agartala-Rokhia D/C Lines, solid Y-E fault (Iy-2.1 kA, In-1.1 kA) initiated at 00:25:58.992 Hrs and cleared within 409 msec on operation of DP, ZII from Agartala. There was no tripping from Rokhia end (ZIV pickup).

At the same time, 132 kV Rokhia-Monarchak line tripped on operation of DP, ZII from Monarchak within 401 msec. ZIV pickup at Rokhia end (no tripping)

ZIV pickup at Rokhia end for all the lines clearly indicates that fault is in switchyard of Rokhia.

TSECL is requested to update:

1. The root cause of tripping and its remedial measures taken.
2. Update the status of installation of Line differential protection in 132 kV New Rokhia-Old Rokhia link feeder.
3. Reason for non-submission of Flash and detail report as per IEGC 2023.

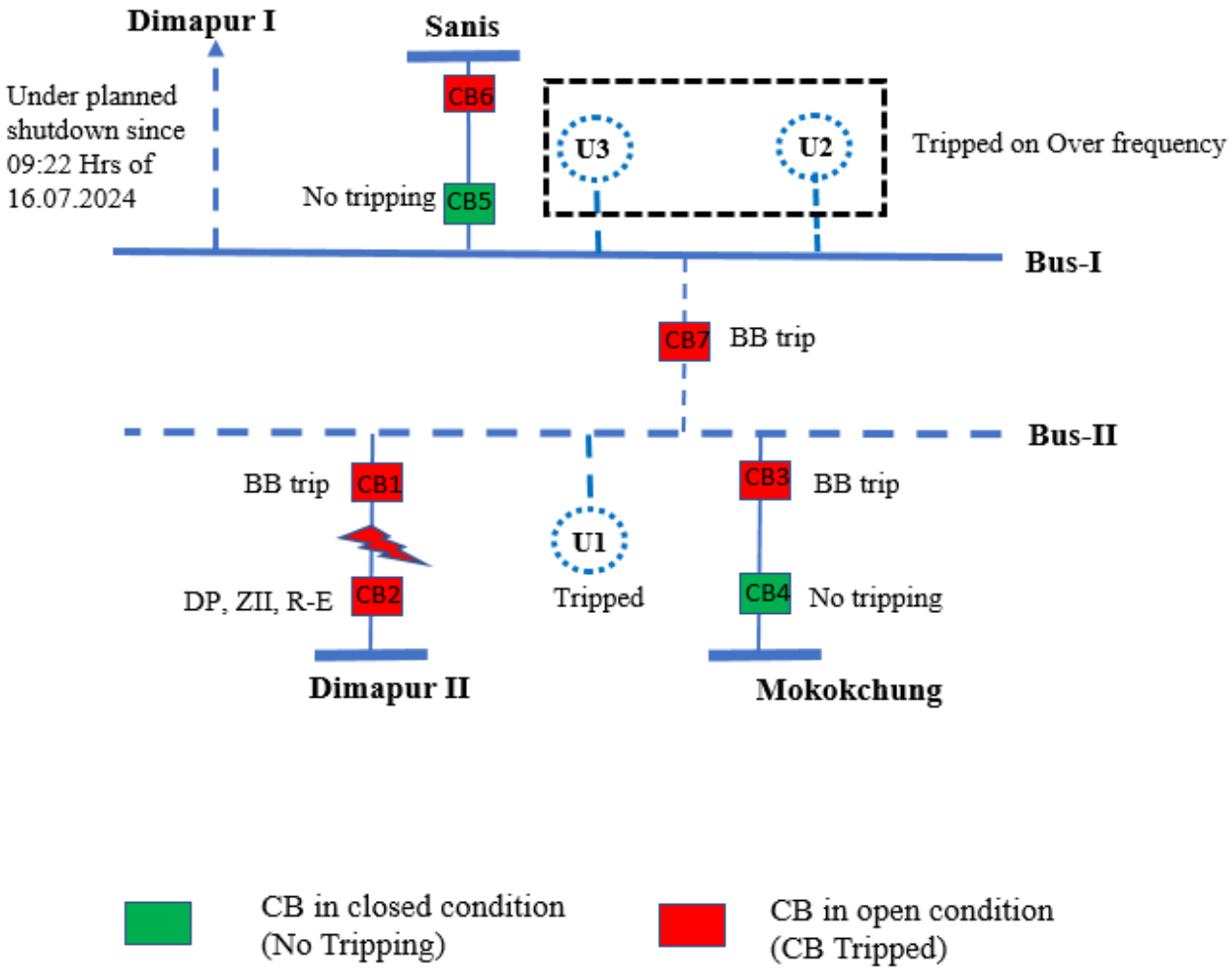
Similar event occurred on 17th Nov, 2023.

Deliberation of the sub-committee

TSECL absent in the meeting. MS NERPC stated that the issue will be taken up separately with Tripura through a meeting.

B.14 <u>Grid Disturbance in Doyang generating station of NEEPCO Power System on 16.07.2024:</u>

At 10:08 Hrs of 16-07-2024, 132 kV Dimapur-Doyang II (132 kV Dimapur-Doyang I was under shutdown), 132 kV Doyang-Mokokchung and 132 kV Doyang-Sanis lines tripped. Subsequently, all three units of Doyang tripped leading to blackout in Doyang generating station of NEEPCO power system. Generation loss of 73 MW occurred.



Event Analysis: As per DR, R-E fault (Ir-1.1 kA, In-1 kA) occurred in 132 kV Dimapur-Doyang II line at 10:08:36.655 Hrs and cleared within 233 msec on operation of DP, ZII (Carrier aided trip) from Dimapur. At Doyang, R-E fault detected and Bus bar trip signal issued instantly. Y & B-phase pole of CB tripped within 52

msec. However, fault current was persisting in R-phase pole and disappeared at 10:08:36.820 Hrs on operation of ZI.

Bus coupler and 132 kV Mokokchung line tripped at Doyang on Bus bar trip leading to blackout of 132 kV Doyang Bus-II.

At the same time, 132 kV Doyang-Sanis line also tripped. There was no tripping from Doyang end (ZIV pickup). Fault current disappears within 78 msec, which may be due to tripping from Sanis end (no DR submitted by DoP)

Doyang Unit-1 tripped at 10:08:36.744 Hrs and Unit-2 & 3 tripped on over frequency.

Observations:

1. Operation of Bus bar protection at Doyang for fault in 132 kV Dimapur-Doyang II line is unwanted. Bus bar relay configuration and wiring to be checked.
2. Non-opening of R-ph CB pole at Doyang for 132 kV Dimapur-Doyang II line after issuing of BB trip.
3. Delayed ZI start after 169 msec of fault initiation at Doyang end for 132 kV Dimapur-Doyang II Line. Distance protection setting needs to be reviewed.
4. Non-tripping of Doyang Unit-1 on BB trip needs to be checked by NEEPCO. From DR data, it is not clear which protection operated.
5. DR time duration is insufficient at Doyang for 132 kV Doyang-Sanis line. It has to be increased to 3 sec with pre fault of 500 msec and post fault of 2.5 sec.

NEEPCO is requested to update the root cause and remedial measures taken.

Deliberation of the sub-committee

NEEPCO informed the fault was in the Bus. Hence operation of Bus Bar protection was correct.

NERLDC pointed that after the initiation of bus bar trip command, Y&B phase pole opened at Doyang for 132 kV Dimapur-Doyang II line. R-phase fault then sensed by the Main at Doyang in DP, ZI.

2.NERPC also highlighted that Doyang-Sanis should not have tripped from Sanis end and consequently Unit 2 and Unit 3 should not have tripped as evacuation path would have been available

3.DoP Nagaland stated that the Doyang-Sanis line had not tripped.

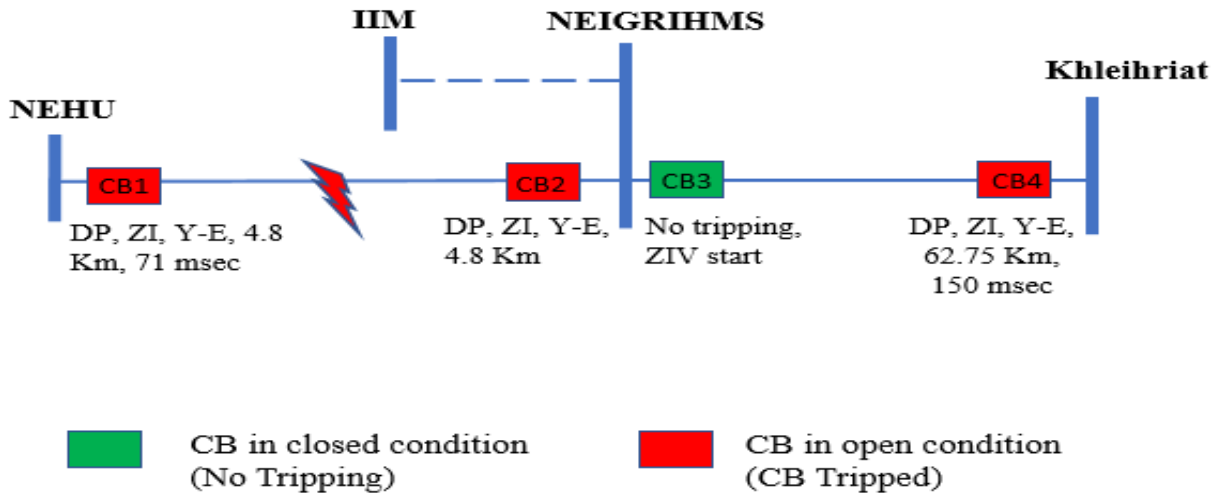
After due deliberation the forum decided to refer the matter to Protection system analysis Group (PSAG) constituted by NERPC vide order NERPC/SE/PCC/2023/3469-3512 dated 17.01.2024

B.15 Grid disturbance in NEIGRIHMS and IIM area of Meghalaya on 17.07.2024:

NEIGRIHMS & IIM areas of Meghalaya power system is connected to the rest of NER grid via 132 kV NEIGRIHMS-NEHU line & 132 kV Khleihriat-NEIGRIHMS line. IIM area is radially fed from NEIGRIHMS end.

At 14:50 Hrs of 17-07-2024, 132 kV NEIGRIHMS-IIM line tripped resulting in blackout of IIM area.

At 14:56 Hrs of 17-07-2024, 132 kV NEHU-NEIGRIHMS line & 132 kV Khleihriat-NEIGRIHMS line tripped leading to blackout of NEIGRIHMS area.



Event Analysis: As per DR, Y-E fault (Ib: 5.3 kA, Vbe: 21 kV) occurred at 14:55:33.570 Hrs in 132 kV NEHU - NEIGRIHMS line at a distance of 4.844 Km from NEHU and fault cleared within 71 msec on DP, Z-1 from NEHU end. At NEIGRIHMS end, ZI operated (as per FIR, **no DR submitted**). However, fault was feeding from Khleihriat end till 150 msec.

Distance protection relay at Khleihriat for 132 kV Khleihriat-NEIGRIHMS line detected Y-E fault (Ib: 1.3 kA, Vbe: 54 kV) in ZI and cleared within 150 msec.

MePTCL is requested to provide reason for the following:

1. Tripping of 132 kV Khleihriat-NEIGRIHMS line from Khleihriat end on ZI, as fault is in 132 kV NEHU-NEIGRIHMS line. The distance protection setting needs to be reviewed by MePTCL.
2. Delayed operation of distance protection at NEIGRIHMS for 132 kV NEHU-NEIGRIHMS line and its corrective action.
3. Delay in CB opening within 100 msec after issuance of Z-I trip at Khleihriat end for 132 kV Khleihriat-NEIGRIHMS line and its remedial measures.

Deliberation of the sub-committee

1.MePTCL updated the tripping of 132 kV Khleihriat-NEIGRIHMS line from Khleihriat occurred due to wrong ZI reach present during the event(100% reach) which is modified to 80% after the event.

2.Regarding CB2, MePTCL informed that DR from the main relay cannot be accessed, so analysis could not be done. He further informed that the relay will be replaced shortly.

B.16 Frequent tripping of Kopili units

At 01:20 Hrs of 10.07.2024, the following elements tripped:

Sl. No.	Transmission/Generation element name	Tripped Time	Relay Indication End A	Relay Indication End B
1	132 kV Khandong-Khleihriat line	01:20 Hrs	DP, Z-1, RE, 19.57 Km, AR successful	DP, ZI, R-E, FD: 19.6 Km, A/R successful
2	Kopili Unit-3	01:20 Hrs	Ground IOC Stage 1 Operated	

Event Analysis: As per DR, solid R-E fault occurred in 132 kV Khandong-Khleihriat line, cleared within 56 msec, and Autorecloser operated successfully at both ends. Simultaneously, Kopili Unit-3 tripped due to Ground IOC operation. As per DR data, at 01:20:17.837 Hrs, Gen unbalanced pick up high was recorded with Vae: 3 kV, Vbe: 3.5 kV, Vce: 4.2 kV and CB open within 73 msec. Voltage in all phases seems to be all right as such tripping is seems to be mis-operation.

Observations:

1. It is unclear which protection issued the trip signal to the circuit breaker from DR. DR need to be standardized.
2. The settings for Ground IOC and voltage unbalance require an urgent review to prevent re-occurrence.
3. DR time duration of 1.2 seconds appears insufficient. It should be extended to 3 seconds, with a pre-fault time of 500 milliseconds and a post-fault time of 2500 milliseconds.

Similar event occurred on 13th July, 2024 & 15th July, 2024 which is the matter of great concern.

NEEPCO is requested to update the root cause corrective actions taken.

Deliberation of the sub-committee

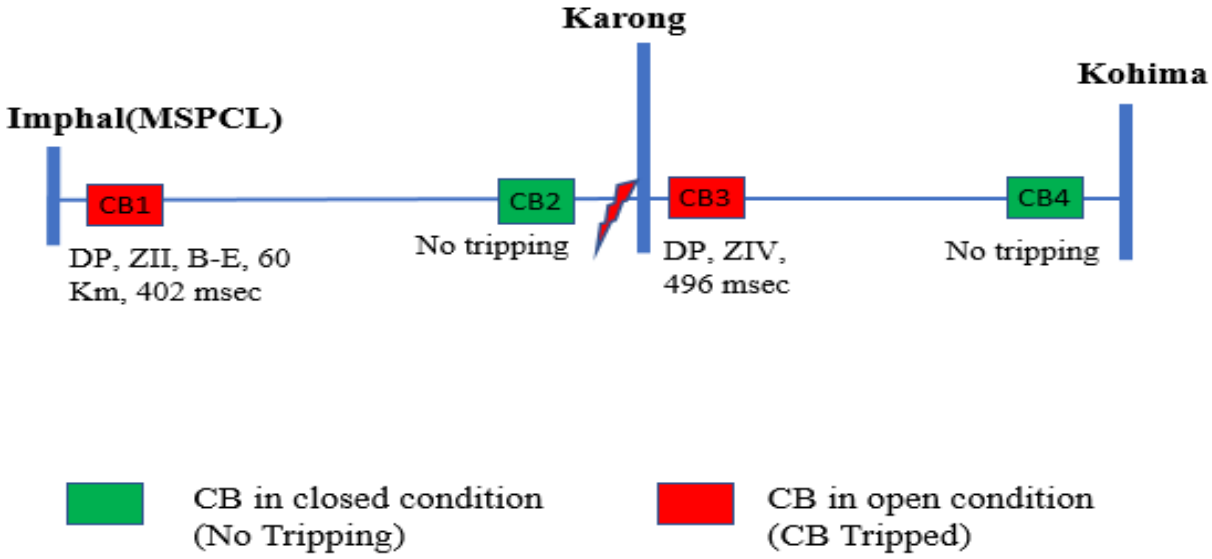
NEEPCO updated that the ground IOC settings of Kopili Unit 3 have been revised, time delay has been inserted in the setiings.

Regarding the tripping on 15th July'24, The forum stated that the GD will be analyzed in holistic manner by the PSAG.

B.17 Grid Disturbance in Karong area of Manipur power system on 21.07.2024:

Karong area of Manipur Power System is connected with rest of NER Grid through 132 kV Imphal (MSPCL)-Karong and 132 kV Karong-Kohima lines. Prior to the event, 132 kV Imphal(MSPCL)-Karong line was under idle charged condition since 17:05 Hrs of 20.07.2024.

At 10:15 Hrs of 21.07.2024, while closing the breaker at Karong end for 132 kV Imphal (MSPCL)-Karong line, 132 kV Karong-Kohima Line also tripped.



Event Analysis: B-phase fault in 132 kV Imphal (MSPCL)-Karong line cleared within 402 msec on DP, ZII from Imphal (MSPCL) end.

As per EL of Karong end for 132 kV Karong-Kohima line, B-E fault cleared on operation of DP, ZIV within 496 msec from Karong end. There was no tripping from Kohima end. This clearly indicates that fault is in reverse direction.

As per information from MSPCL, tripping occurred due to tree branches coming in contact with the Bus isolator of Karong for 132 kV Imphal (MSPCL)-Karong line.

MSPCL is requested to:

1. Furnish reason of delayed fault clearance from Karong end for 132 kV Imphal (MSPCL)-Karong line and its corrective measures.
2. Update the reason for non-submission of DR/EL of Karong end.
3. Update the reason for non-submission of Flash report/detailed report in compliance with IEGC 2023.

Deliberation of the sub-committee

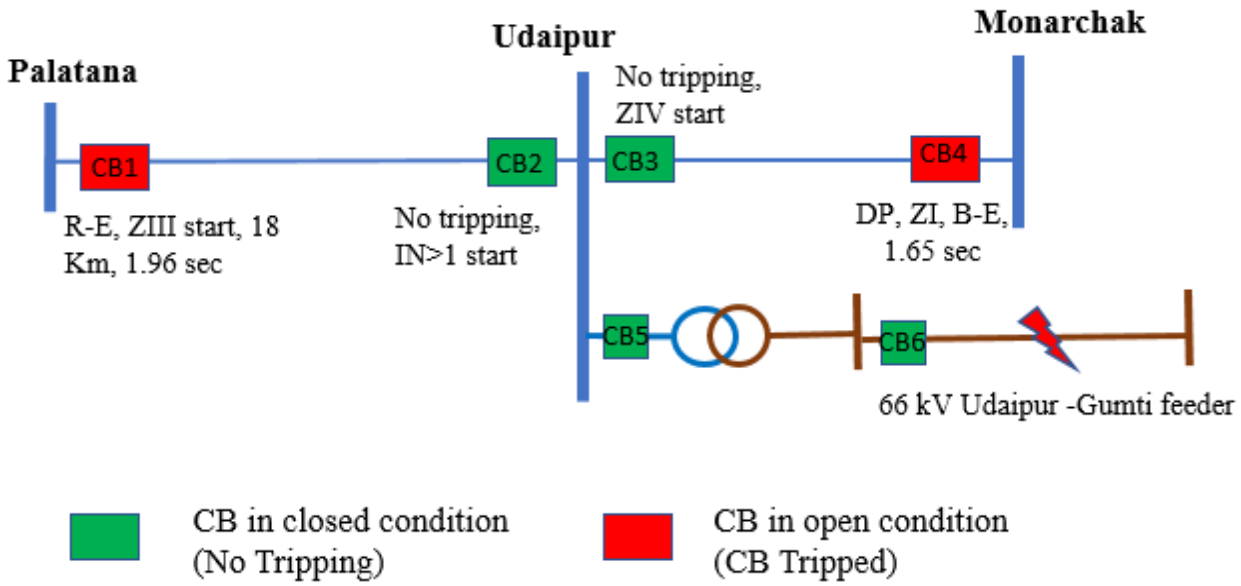
MSPCL informed the forum that flash report and detail report submitted for the event to NERLDC.

NERLDC requested to share the correct DR of Karong end for Imphal line (DR received dtd 20th July'24).

B.18 Grid Disturbance in Udaipur area of Tripura power system on 26.07.2024:

Udaipur area of Tripura Power System is connected with rest of NER Grid through 132 kV Palatana-Udaipur & 132 kV Monarchak-Udaipur lines.

At 11:25 Hrs of 26.07.2024, 132 kV Palatana-Udaipur & 132 kV Monarchak-Udaipur lines tripped leading to blackout of Udaipur area of Tripura. Load loss of 25 MW occurred.



Event Analysis: As per DR of 132 kV Palatana-Udaipur line, high resistive R-E fault initiated at 11:12:59.566 Hrs with Ir: 145 A, In-99 A. After 1.897 sec, ZIII pickup and all poles dead within 63 msec. It is not clear which protection issued trip signal at Palatana end. At Udaipur end, IN>1 started (Ib-298 A) and no tripping from Udaipur end.

As per DR of 132 kV Monarchak-Rokhia line, B-E fault initiated at 11:25:01.992 Hrs with Ib: 405 A, In: 318 A. After 1.59 sec, ZI started and tripped within 50 msec from Monarchak end. At Udaipur end, Z-II & ZIII pickup at 11:24:41.955 Hrs for 89 msec. Again at 11:24:42.142 Hrs, ZIV pickup at Udaipur end. However, there was no tripping from Udaipur end.

Suspected fault in downstream of Udaipur which was not cleared resulting in clearance of fault by tripping of healthy 132 kV Palatana-Udaipur & 132 kV Monarchak-Udaipur lines from remote ends.

TSECL/Palatana is requested to:

1. Update the feeder's name where fault occurred.
2. Furnish reason of non-operation of protection system at Udaipur for downstream feeder and transformer HV side, which led to isolation of fault from Palatana (ISGS) and Monarchak.
3. Update the Rectification status of DR time drift issue at Palatana (14 minutes time lag)

Similar downstream issue in Udaipur occurred on 31st March, 2024.

Deliberation of the sub-committee

Tripura absent in the meeting.

NERLDC informed that tripping at Palatana occurred on EF and B/U relay operation is not available in the received DR.

As per TSECL(email), Monarchak tripping in 1.65 sec in ZI and CB of 66 kV line & ICT tripping at Udaipur in mere 500 msecs.
Relay setting of downstream along with ICTs are already shared with NERLDC for further suggestion. However, it is to be noted that Gumti is a hydel plant might have fed the fault and resulting tripping of CB of 66 kV line & ICT tripping at Udaipur.

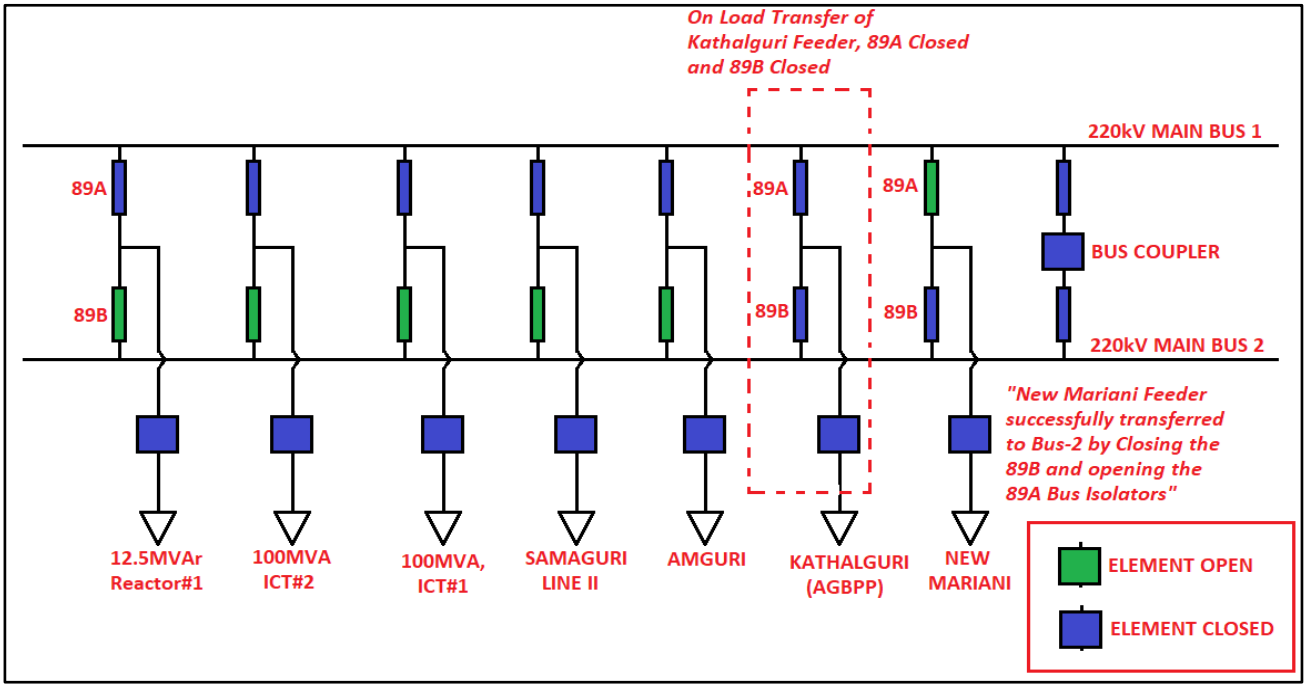
OTPC informed the tripping occurred on operation EF relay. Also, time drift issue resolved at their end.

The forum also decided that the delayed clearance of downstream fault at Udaipur will be taken up Tripura through a separate meeting.

B.19 Grid Disturbance (Category II) in Upper Assam on 15-07-2024:

At 19:45 Hrs, R-B fault occurred at 220 kV Mariani (AS) substation while opening 89A bus isolator of 220 kV AGBPP- Mariani (AS) line from the 220 kV Bus I (following the return of ESD of 220 kV Bus II) leading to heavy flashover. This incident caused the tripping of 220 kV Mariani (AS)-Samaguri line at Samaguri on ZII (400 msecs), 220 kV AGBPP- Mariani (AS) line & 220 kV AGBPP- Mariani (AS) line at AGBPP on ZII, 220 kV Mariani (AS)- Mariani (PG) line at Mariani (AS) on Z-IV operation within 520-560 msecs. As a result, the Upper Assam power system was disconnected from the 220 kV network. Also, tripping of the 132 kV Mariani (AS)-Golaghat at Golaghat

& 132 kV Along-Pasighat line at Pasighat on Overcurrent resulted in a complete blackout of Upper Assam power system.



Location/Control Area Affected: Upper Assam areas of Assam Power System and Deomali (radial from AGBPP), Pasighat, Roing, Tezu and Namsai areas of Arunachal Power System of NER.

Generation Loss: 423 MW (AGBPP:197 MW, LTPS: 55.7 MW, LRPP: 63 MW, NTPS: 17 MW, NRPP: 91 MW)

Load Loss: 324 MW (Assam: 300 MW & Arunachal-24 MW)

Protection/Operational issues observed:

- Non isolation of R-B bus fault at 220 kV Mariani (AS) Bus-I due to unavailability of Bus Bar protection, which is the non-compliance of SCHEDULE-V, Clause 4 of the CEA Technical Standards for Construction of Electrical Plants & Electrical Lines Regulation-2022. *The Bus Bar protection needs to be checked and commissioned at the earliest possible time.*
- Backup Earth fault trip for Bus Coupler at Mariani due to absence of B-Phase current. This absence may be attributed to issues in the primary B-phase path of the Bus Coupler Bay (such as hardware clamps, CB B-phase resistance etc.). *To determine the exact cause, the conductor clamps need to be inspected, and the CB static contact resistance/ DCRM test should be conducted immediately.*

- Zone-III picked up at Mariani (PG) end for the bus fault at Mariani (Assam). If Zone-II at Mariani (PG) had cleared the fault within 350msec, the upstream 220 kV Kathalguri-New Mariani Line would have remained operational and the large-scale blackout may have been restricted. *The Zone-II reach setting at Mariani (PG) for 220 kV Mariani (Assam) line needs to be reviewed. The reason for any discrepancies should be identified and corrected immediately.*
- 132 kV Pasighat-Along Line tripped from Pasighat on directional OC, resulted into blackout at Chapakhowa, Roing, Tezu, Namsai & Pasighat area of Arunachal Pradesh. *OC setting at Pasighat need to be reviewed and it is to be coordinated as per NER protection philosophy.*

  There is an urgent need for Backup setting coordination for the 132 kV Rupai-Chapakhowa-Roing-Pasighat-Along-Basar-Daporizo-Zero-Paynor link due to the network changes following the commissioning of 132 kV Roing-Chapakhowa D/C.
- *The tripping of 4X50 MW Kopili generation occurred with an F>2 that needs to be reviewed. Following the V dep OC pickup, the current instantly dropped to approx. zero (Ia: 54A, Ib: 55A, Ic: 7A). The cause of this drop needs to be identified*. According to NERLDC records, the maximum frequency during the event was 50.12 Hz. *The reasons for the relay sensing F>1 and F>2 trip should be checked and necessary correction should be made immediately.*
- One 500 MVA, ICT-I at Mariani (PG) tripped on overcurrent, with a tripping time that appears to be 516 milliseconds. *The overcurrent setting needs to be reviewed immediately, and corrective action should be taken.*
- SOE for Tripping of 132 kV Mariani (AS) - Golaghat & 132 kV Along-Pasighat not recorded in the SCADA*. The healthiness of CB auxiliary status with RTU needs to be checked and corrective action should be taken.*

AEGCL/DoP AP/POWERGRID may update

Deliberation of the sub-committee

1.AEGCL informed that the isolator of the bus-coupler will be replaced by 1st week of September and Bus Bar protection will be commissioned by next day.

2.NERTS updated that Zone II reach setttings at Mariani (PG) for Marinai (AS) line will be looked into shortly. However, tripping of ZIII at Mariani(PG) for Mariani(AS)

could not be avoided due to short line (1.5 KM approx.) & fault was within the boundary of ZII & ZIII.

3. DoP Ar Pradesh requested the forum to holistically review the B/U settings on 132 kV Rupai-Chapakhowa-Roing-Pasighat-Along-Basar-Daporizo-Zero-Paynor link

4.The forum refered the issue to PSAG for holistic analysis and suggesting remedial measures.

5.The forum also decided that a sub-group comprising of officers from NERPC, NERLDC, DoP Ar.Pradesh, NERTS and Assam will discuss the matter of reviewing the B/U protection settings on the 132 kV Rupai-Chapakhowa-Roing-Pasighat-Along-Basar-Daporizo-Zero-Paynor link.

B.20 Mock testing of System Protection Scheme (SPS) related to safe evacuation of power from BgTPP(NTPC) generation:

As per Clause 16.2 of IEGC 2023, mock testing of SPS for reviewing SPS parameters & functions should be conducted at least **once** in a year.

In order to compliance the above clause, NTPC is requested to provide the tentative dates for mock testing of SPS in August'24 related to safe evacuation of power from BgTPP (NTPC) generation.

Deliberation of the sub-committee

NTPC informed that the mock testing of the SPS has been scheduled for 26th August. He requested NERLDC for a meeting before the testing to finalize the testing procedure. The forum noted and agreed for the meeting

B.21 Tripping of all three ICTs at 400/220 kV Misa Substation on 29th July'24

All three 400/220 kV ICTs at Misa substation tripped at 06:11 Hrs on 29th July, which is the great concern from system reliability point of view.

Event Analysis:

Sl No	Name of Elements	DR Analysis	Observation
1	3X105 MVA ICT-I	At 06:10:28:985 Hrs, Differential protection operated with Ia-2:14.4kA, Ib-2:287A, Ic-2:16.3 kA and	Bus fault in 33 kV side of ICT-1 should be isolated by the 33 kV Incomer CB.

		Ia-diff: 0.026 A, Ib-diff: 0.747A, Ic-diff: 0.741A and tripped the CB.	
2	500 MVA ICT-II	06:10:25.210 Hrs, tripped on I>3 with Ia: 1.26 kA, Ib: 0.211 kA & Ic: 1.67 kA, Vae: 106kV, Vbe: 212 kV, Vce: 142 kV within 50 msec.	Tripping on I>3 with 1670 A fault current within 50 msec seems mis-operation.
3	500 MVA ICT-III	At 06:10:25.152 Hrs, Differential protection operated with Ia-diff: 5 kA, Ib-diff: 2.54kA, Ic-diff: 2.55 kA and tripped the CB.	As the bus fault is in 33 kV side of ICT-1, tripping of ICT-3 on differential protection need to be checked

As informed by PGCIL, the fault occurred due to a bus fault on the 33 kV side of ICT-I at Misa.

POWERGRID is requested to:

1. Update root cause of 33 kV bus fault and remedial measures taken.
2. Update the reason of non-clearance of fault by opening of 33 kV incomer CB.
3. Update the tripping of ICT-II instantly on O/C and its corrective action (Review of IDMT O/C and high set setting).
4. Elaborate the reason of tripping of ICT-III at Misa on differential protection, as bus fault is in 33 kV side of ICT-I.

Deliberation of the sub-committee

Powergrid informed the following points –

1. Tertiary is provided in ICT 1 only, so only ICT 1 is directly connected with the 33kV Bus

2.Trippings occurred due to bursting of BPI of 33kV Bus, ICT1 tripped on differential protection. 33kV breaker got stuck.

3.LV side conductor of ICT 3 passes directly above the 33kV Bus, so the ICT 2 also tripped on differential protection

4. ICT 2 tripped on OC protection. The time and current pickup settings have been kept aggressively low so it tripped within 50 msec

After detailed discussion, the forum strongly urged NERTS to –

1.ensure healthiness of 33kV protection system

2.revise the OC time settings of ICTs in coordination with NERPC and NERLDC to align it with NERPC protection protocol

Additional agenda item from NERTS

B.22 Gas Density (GD) Monitor Trip removal in GIS substations of NERTS

There have been several instances of mal-operation of Gas Density monitors (GD) installed in the outdoor Gas Insulated Bus ducts of GIS substations due to extension of instantaneous tripping on account of various reasons like moisture ingress in the GDs. The problem is systemic and not design issue and is frequent in vulnerable areas with high moisture presence and high rainfall.

Hence, to address the issue, logic modification has been done by removing the tripping from all the GD monitors and keeping only the alarms in SCADA from the tripping stages.

However, for the above modification purpose, shutdown have been taken in the past few months and will be taken in future. The shutdown is required for changing of wiring and implementation of the above logic and testing purpose.

Therefore, it is requested to the forum that outages for the GD trip removal maybe considered as a part of system improvement activities and considered as deemed available for the purpose of Transmission availability calculation.

Deliberation of the sub-committee

After due deliberation and considering the climatic conditions of NER, the forum approved for consideration of the outages for the GD trip modification works as a part of system improvement activities in reasonable time and to be considered deemed available for the purpose of Transmission availability calculation.

C. FOLLOW–UP AGENDA ITEMS

C.1 Submission of monthly and quarterly progress report by respondents of NERLDC's Petition:

As per the Direction of Hon'ble commission related to the Petition No 198/MP/2020, 259/MP/2020, 535/MP/2020, 539/MP/2020 and 540/MP/2020, respective respondents have to submit the **monthly/quarterly progress report** of the action plan prepared by the respective respondents in consultation with the Petitioner (i.e. NERLDC) to NERPC.

Order dated	Petition No	Respondent
08-Nov-2023	198/MP/2020	DoP, Arunachal Pradesh
	259/MP/2020	DoP, Nagaland
	539/MP/2020	MSPCL
27-Oct-2023	535/MP/2020	TPTL/TSECL
	540/MP/2020	P&ED, Mizoram

All the respondents are requested to share the monthly/Quarterly progress report for the month of Dec'23.

In 63rd PCCM, MS, NERPC stated that Hon'ble CERC (in above mentioned Petition) has directed the following:

NERPC shall monitor the work of the implementation of the Protection system by the Department of Power, Arunachal Pradesh; Department of Power, Nagaland, MSPCL, TPTL/TSECL, P&ED, Mizoram and shall submit a quarterly progress report to the Commission till the establishment of the Protection system at the substations identified by the NERLDC.

NERPC shall validate relay settings and conduct the Protection Audit of the associated transmission system at the substation and transmission lines, as and when required. Any issue faced during the implementation of Protection system or observed during the protection audit shall be discussed in the Protection Sub-

Committee meeting at the RPC forum and sorted out. Concerned Power department /State shall identify one person from their top management as a nodal officer, who shall submit a monthly progress report on the implementation of the protection system to the NERPC and NERLDC, till the establishment of the Protection system at the substations identified by the NERLDC.

In this regard, Member Secretary strongly urged the concerned States to appoint a nodal officer at SE and above level who shall submit a monthly progress report on the implementation of the protection system to NERPC and NERLDC. The monthly progress report will be monitored at PCC forum. He requested the States to send monthly progress report and action plan accordingly.

In 67th PCCM, AEGCL updated that Nodal officer for submission of work progress report has been nominated. Forum requested DoP Arunachal Pradesh to submit the nomination of Nodal officers to NERPC.

DoP Nagaland stated that work progress for the months of March'24 and April'24 have been submitted to NERPC.

NERPC stated that the quarterly work progress report has been prepared and will be sent to CERC shortly.

In 68th PCCM, MS, NERPC stated that the quarterly work progress report has already been sent to CERC.

DoP Ar. Pradesh updated that the nodal officer had been nominated and the details would be intimated to NERPC shortly.

In 69th PCCM, NERLDC highlighted the non-submission status of AP & Nagaland till date.

MS, NERPC stated that 2nd quarterly progress report (April-June'24) would be prepared shortly. He requested the concerned States and NERLDC to submit the monthly progress report, till June'24, to NERPC at the earliest.

Deliberation of the sub-committee

NERLDC informed that only Nagaland, Manipur and Mizoram are submitting the monthly progress report, while Arunachal Pradesh and Tripura have not yet shared any monthly report. The forum strongly urged Ar. Pradesh and Tripura to provide the reports within two working days.

MS NERPC stated that NERLDC will send quarterly report to NERPC and NERPC to prepare the quarterly progress report in this month and send to CERC accordingly.

Subcommittee noted as above.

C.2 Status on remedial measures actions on non-operation of auto recloser in Important Grid Elements for transient faults occurred in last few months:

As updated in 69th PCCM

Sl No	Element Name	Time	Relay End1	Relay End2	A/R not Operated	Remarks from Utility (69th PCCM)
1	132 kV Agartala - Surajmaninagar 2 Line	17-11-2023 15:10	DP,ZI,Y-B,FD:5.81 km, AR successful	DP,ZI,R-Y,FD:11.98 KM	Surajmaninagar	PLCC and funding issue. AR without carrier to be enabled shortly. The Relay Testing kit is sent for repairing. After rectification of the kit AR without carrier to be enabled.

SL No	Element Name	Tripping Date and Time	Relay Details_A	Relay Details_B	AR not Operated	Remarks from utility (69th PCCM)

2	220 kV Byrnihat - Misa 2 Line	23-02-2024 04:39	DP,ZI, Y-E, FD: 59.54 Km	DP,ZI, Y-E, FD: 81.019km (AR Successful)	Byrnihat	OEM arrived, work done. Testing for line 1 has been done and for line 2, testing to be done end of August'24

SL No	**Element Name**	**Tripping Date and Time**	**Restoration Date and Time**	**Relay_A**	**Relay_B**	**Auto-Recloser not Operated**	**Remarks as per 69th PCCM**
3	132 kV Tenga - Khupi	26-03-2024 07:35	26-03-2024 12:25	DP, ZI, R-B-E, FD: 30km	DP, ZI, R-B-E, FD:4.9km	Khupi	B/U relay disabled, to be replaced by 2nd September'24
4	220 kV Mawngap - New Shillong 1	26-03-2024 12:22	26-03-2024 19:31	DP, ZI, Y-E, FD: 27.82 Km	DP, ZI, Y-E	Mawngap	BB mal-operation issue. Coordination with NERPSIP underway.
5	132 kV Dimapur - Doyang 2	29-03-2024 13:10	29-03-2024 13:31	DP, Z1, R-Y, FD: 72.6km	DP, Z1, R-Y	Doyang	CB procurement underway. By March'25

S. No	Element Name	Tripping Date and Time	RELAY_A	RELAY_B	Auto-Recloser not Operated	Remarks from Utility
6	220 kV AGBPP - Mariani (PG) Line	01-05-2024 03:12	Z1, B-N, 24.97 Kms	DP, ZI, B-E, FD: 131.4 KM, Operated Sucessfully	AGBPP	Checking by OEM to be done. Communication with the OEM underway, offer awaited, then order will be placed for service.
7	132 kV Badarpur - Karimganj Line	05-05-2024 13:48	DP, ZII, Y-E, FD:27.25 KM, Carrier Aided tripping & AR Operated Successfully	DP, ZI, Y-E, FD: 0.2km	Karimganj	Relay to be replaced shortly.
8	132 kV Aizawl - Tipaimukh Line	05-05-2024 21:54	DP,ZI,B-E,FD:72.73KM	Details awaited	Aizawl	AR was blocked due to multiple carrier fail alarm, DC supply issue at Tipaimukh end. Manipur replaced the 48

S. No	Element Name	Tripping Date and Time	RELAY_A	RELAY_B	Auto-Recloser not Operated	Remarks from Utility
						Volt Dc battery at Tipaimukh. Regarding PLCC, 4 cards will be received by end of August'24

S. No	Element Name	Tripping Date and Time	RELAY_A	RELAY_B	Auto-Recloser not Operated	Remarks from Utility
9	132 kV Pare-North Lakhimpur 1 Line	13-06-2024 16:00	DP,ZI,R-E,FD: 7.46KM	DP,ZI,R-E,FD: 20km,1.6 kA	Pare HEP(NEEPCO) & North Lakhimpur	NEEPCO updated that the PLCC will be checked during upcoming shutdown next week. Also, SPAR has been enabled on all line at Pare end.
10	132 kV Badarpur - Karimganj Line	17-06-2024 08:01	DP,ZII,B-E, FD: 22.93Kms, Carrier aided	Z1, OC, 5.04Kma, 3 ph	Karimganj (AEGCL)	Same as point no 7

S. No	Element Name	Tripping Date and Time	RELAY_A	RELAY_B	Auto-Recloser not Operated	Remarks from Utility
			Tripping (**AR operated & ToR**)			
11	400 kV P K Bari - Silchar 1 Line	18-06-2024 12:21	DP,ZI,Y-E,FD:26.19KM	DP, ZI,B-E, FD:111.62 KM **(AR Successful)**	P K Bari (INDIGRID)	AR not attempted due to carrier failed and some issues in the PLCC. Issues resolved by Powergrid
12	220 kV AGBPP - Mariani (AEGCL) Line	26-06-2024 09:15	DP, ZI, R-E, FD:46.47 km	DP, ZI, R-E, FD:11.27 km (AR Successful)	AGBPP(NEEPCO)	Same as point 6

Sub-committee noted as above

C.3 PLCC issues follow up:

Update as provided by utilities in 69th PCCM

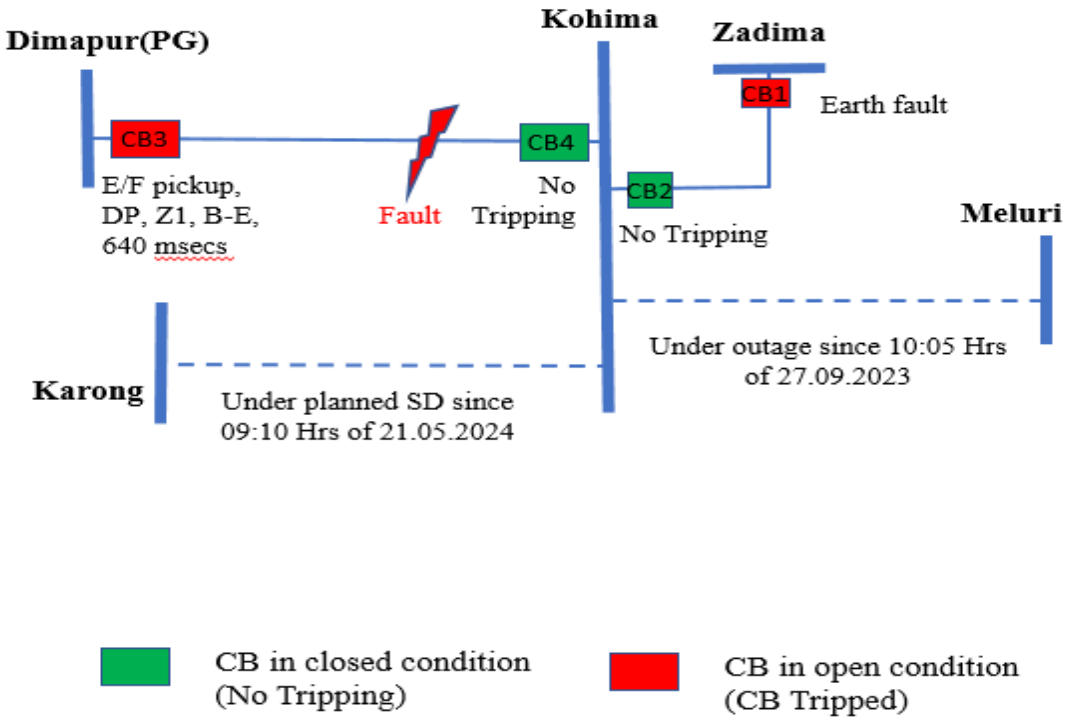
Sl. No	Line	Utility	Update
1	132 kV Dimapur-Kohima	DoP Nagaland	DPR is complete except for budgetary offer. Offer to be tentatively provided by Aug end.

2	132 kV Melriat-Zemabawk	Mizoram	NERTS had updated that PLCC is available, Mizoram had stated that CVT is available and WT had to be procured. Mizoram had also updated that DTPC was being planned instead of PLCC. Forum had suggested that both PLCC and DTPC has to be enabled. POWERGRID shall install only the PLCC. CVT installed & got approval for Wave Trap at Zemabwk end, Mizoram likely to buy in 1 month.
4	132 kV Roing-Pashighat	DoP Ar. Pradesh	DoP Ar. Pradesh updated that there was issue with 48 V battery which would be replaced by Oct'24.

Sub-committee noted as above

C.4 Grid disturbance in Kohima area of Nagaland on 21-May-24:

At **16:42 Hrs of 21.05.2024**, 132 kV Dimapur (PG) - Kohima line and 132 kV Kohima-Zadima Line tripped resulting in blackout of Kohima S/S. Load loss of 15 MW occurred.



As per DR analysis of 132 kV Dimapur-Kohima line, high resistive B-E fault occurred at 16:42:46.534 Hrs and cleared within 640 msec from Dimapur end. E/F relay pickup at Dimapur end and after around 600 msec, distance protection detected the fault and ZI operated in 40 msec. There was no tripping from Kohima end.

CB at Zadima tripped on Earth fault.

In 68th PCCM, DoP Nagland updated that the fault occurred in 132 kV Dimapur-Kohima line due to vegetation issue. Also, Forum requested DoP Nagaland to review the Backup E/F setting at Zadima for 132 kV Kohima-Zadima line and coordinate with ZIII as per NERPC protection philosophy.

In 69th PCCM, DoP Nagaland updated that 900 ms setting for Backup E/F setting at Zadima for 132 kV Kohima-Zadima will be done by next week.

Deliberation of the sub-committee

DoP Nagaland updated that 900 ms setting for Backup E/F setting at Zadima for 132 kV Kohima-Zadima has been done on 24th July'24.

Sub-committee noted as above

C.5 Frequent Grid disturbances in Myndtu Leshka HEP of Meghalaya Power System:

132 kV Myntdu Leshka - Khlieriat D/C lines play a crucial role in power evacuation from Leshka Generation. In the recent past, it has been observed that 132 kV Myntdu Leshka-Khleihriat 1 & 2 lines has tripped **four** times during May 2024.

The details of tripping are as follows:

Sl No.	Name of element	Date and Time of tripping	DR Analysis(End A)	DR Analysis(End B)
1	132 kV Myntdu Leshka - Khleihriat 1 Line	02-May-2024 00:45 Hrs	No tripping	Phase to E fault with Z-2, B-N, Ib: 2.3 kA, FD: 29.2 Kms and tripped within 209 msec.
	132 kV Myntdu Leshka - Khleihriat 2 Line			Phase to E fault with Z-2, B-N, Ib: 2.2 kA, FD: 36.2 Kms and tripped within 210 msec.
2	132 kV Myntdu Leshka - Khleihriat 1 Line	02-May-2024 04:10:00 Hrs	DP, ZI, R-N and tripped within 60 msec	Phase to E fault with Z-2, R-N, Ia: 2.3 kA, FD: 34.32 Kms and tripped within 198 msec.
	132 kV Myntdu Leshka - Khleihriat 2 Line	02-May-2024 04:11:00 Hrs	No tripping	Phase to E fault with Z-1, R-B-N, Ia: 2.2 kA,Ic:2.5 kA, In:1.6 kA, FD: 21.62 Kms and tripped within 65 msec.
3	132 kV Myntdu Leshka - Khleihriat 1 Line	05-May-2024 16:05:00 Hrs	DP, ZI, R-B-N and tripped within 56 msec	Phase to E fault with Z-1, R-B-N, Ia: 2.9 kA,Ic:1.8 kA, In:1.4 kA and tripped within 73 msec.
	132 kV Myntdu Leshka - Khleihriat 2 Line		DP, ZI, R-B-N and tripped within 56 msec	Phase to E fault with Z-1, R-B-N, Ia: 2.9 kA,Ic:4.2 kA, In:2.0 kA and tripped within 65 msec.
4	132 kV Myntdu Leshka - Khleihriat 1 Line	23-May-2024 14:05:00 Hrs	No tripping	Phase to E fault with Z-1, R-B-N, Ia: 2.8 kA,Ic:2.4 kA, In:1.8 kA and tripped within 66 msec.
	132 kV Myntdu Leshka - Khleihriat 2 Line			Phase to E fault with Z-1, R-B-N and tripped within 66 msec.

Following observations needs to be addressed:

1. There was no Auto reclose attempt observed. The auto-reclose (A/R) scheme should be inspected and activated to ensure the safe evacuation of Leshka generation by reclosing the line in case of single-phase fault.
2. ZII time delay need to be reviewed as per NERPC protection philosophy.
3. DR channels needs to be standardized both ends:

- DR time duration appears to be insufficient at Leshka. It should be extended to 3 seconds, with a pre-fault time of 500 milliseconds and a post-fault time of 2.5 seconds.
- DR time not synchronised, exhibiting time drift issue at Leshka & Khliehriat.
- CB status is currently not allocated in the DR digital channel. It's essential for MePTCL and MePGCL to include CB ON/OFF status in DR channels at both ends for fruitful analysis of events.

4. MePGCL is requested to ensure that patrolling related activities are undertaken as per CEA (Grid Standard) Regulation, 2010 on regular basis and measures may be identified and implemented at the earliest so as minimize tripping of these lines.

MePGCL informed in 68th PCCM, that a meeting will be held with State protection Committee regarding implementation of Auto recloser in 132 kV Leshka-Khliehriat D/C lines.

MePGCL informed in 69th PCCM that meeting of State protection Committee would be held before next PCCM.

Deliberation of the sub-committee

MePGCL representative updated that the meeting of State protection Committee has been conducted and the report will be available by end of August'24.

Sub-committee noted as above

C.6 Grid Disturbance in Lumshnong area of Meghalaya on 30-05-2024:

Lumshnong area of Meghalaya Power System is connected to the rest of NER Grid through 132 kV Lumshnong-Panchgram and 132 kV Lumshnong-Khliehriat lines.

Event 1:

Prior to the event, 132 kV Lumshnong-Khleihriat line tripped at 06:10 Hrs of 02.05.2024.

At 07:01 Hrs of 02.05.2024, 132 kV Lumshnong-Panchgram line tripped resulting in blackout of Lumshnong area of Meghalaya.

As per DR analysis, R-E fault (Ir-1.8 kA, In-1.4 kA) initiated at 07:00:11.821 Hrs in 132 kV Lumshnong-Panchgram line cleared within 151 msec on operation of DP, ZII

from Panchgram end only. ZIV start at Lumshnong end which inferred that fault is in reverse direction.

Fault is suspected in 132 kV Amrit or 132 kV Adhunik Cement line.

Event 2:

Prior to the event, 132 kV Lumshnong-Panchgram line tripped at 03:02 Hrs of 30.05.2024 from Panchgram end.

At 06:39 Hrs of 30.05.2024, 132 kV Lumshnong-Khliehriat line tripped resulting in blackout of Lumshnong area of Meghalaya.

As per DR analysis of Khliehriat end, solid R-Y-B fault (Ir-2.2 kA, Iy-2.4 kA, Ib-2,4 kA) initiated at 06:38:48.098 Hrs and fault current disappeared within 64 msec. Again, at 06:38:48.322 Hrs, Y-E fault (Iy-1.5 kA, In-1.3 kA) reappeared and fault current disappeared within 471 msec. **DP, ZIII** pickup at Khliehriat end. There was no tripping from Khleihriat end.

As per SOE, CB tripped at Lumshnong end. However, as per EL of Lumshnong end, **IN>1** started and **all pole dead ON** after 488 msec.

It is unclear as to which protection system operated and cleared the fault. MePTCL may update.

MePTCL is requested to –

i) Share the root cause and remedial measures taken.

ii) Protection setting coordination for 132 kV Amrit & 132 kV Adhunik Cement needs to be done by MePTCL.

In 69th PCCM, AEGCL updated that ZII time delay at Panchgram has been increased to 250 msec.

Also, MePTCL updated that –

1.High set for B/U protection for Amrit and Adhunik feeder will be enabled next week

2.that Y Pole CB at Lumshnong will be replaced shortly in the upcoming shutdown

3.LBB time delay will be modified shortly.

Deliberation of the sub-committee

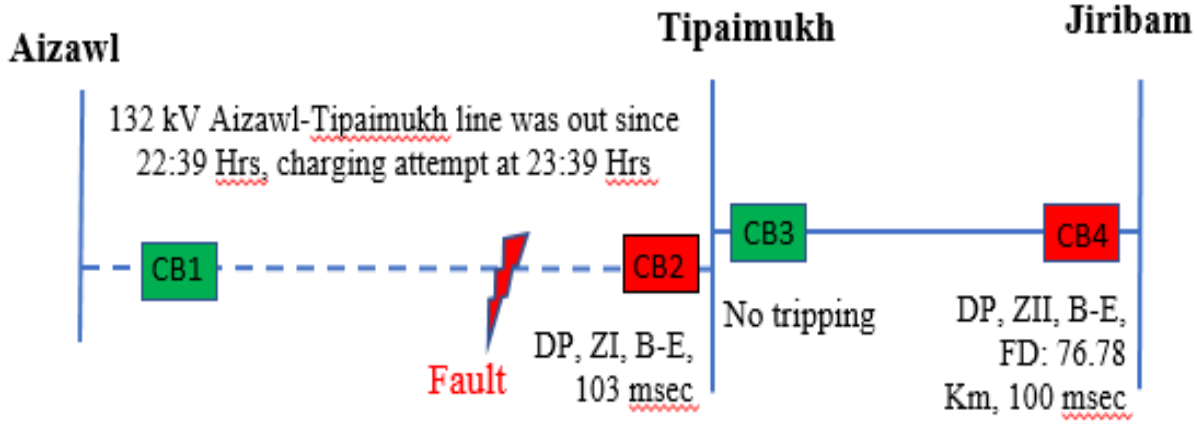
MePTCL updated that –

1.High set for B/U protection for Amrit and Adhunik feeder has been enabled with Pick up at 400% and time delay at 100msec.
2.that Y Pole CB at Lumshnong will be replaced in the upcoming shutdown on 14th August'24
3.LBB time delay will be modified shortly, delay to set at 200 msec.

Sub-committee noted as above

C.7 Grid Disturbance in Tipaimukh area of Manipur on 17-April-24:

Tipaimukh area of Manipur power system is connected to the rest of the grid via 132 kV Jiribam(PG)-Tipaimukh and 132 kV Aizawl-Tipaimukh lines. Prior to the event, 132 kV Aizawl-Tipaimukh line tripped twice at 21:54 Hrs & 22:39 Hrs of 05.05.2024. At 23:39 Hrs of 05-05-2024, while taking charging attempt of 132 kV Aizawl-Tipaimukh line, 132 kV Jiribam(PG)-Tipaimukh line tripped resulting in blackout of Tipaimukh S/S of Manipur.



As per DR analysis of 132 kV Jiribam(PG)-Tipaimukh line, solid B-E fault initiated at 23:41:33.831 Hrs and cleared on operation of DP, ZII within 100 msec from Jiribam end.
As per DR analysis of 132 kV Aizawl-Tipaimukh line, B phase fault cleared within 103 msec on operation of DP, ZI from Tipaimukh end.

Following observations:

i) Tripping of healthy 132 kV Jiribam(PG)-Tipaimukh line due to delayed fault clearing at Tipaimukh end (more than 100 msec) for 132 kV Aizawl-Tipaimukh line.

ii) 132 kV Jiribam-Tipaimukh line tripped from Jiribam end in 100 msec on operation of DP, ZII. ZII time delay setting needs to be reviewed and set as per NER Protection philosophy.

MSPCL is requested to rectify the following issues-

i) PLCC in 132 kV Jiribam(PG)-Tipaimukh line to be made healthy.

ii) Delayed fault clearing time by CB (more than 100 msec) at Tipaimukh for Aizwal-Tipaimukh line.

In 68th PCCM, MSPCL updated, regarding PLCC in 132kV Jiribam- Tipaimukh line, that PLCC card replacement is to be done this month.

After detailed deliberation the forum requested –

1. MSPCL to test the distance relay and conduct timing test of CB at Tipaimukh end for Aizawl line and address the issue of delayed clearance on Z1.
2. NERTS to increase the Zone II time delay to 130 msec for 132 kV Jiribam-Tipaimukh line considering Max fault clearance time of 132 kV level within 160 msec as per CEA.

Deliberation of the sub-committee

1.Regarding the PLCC on Jiribam-Tipaimukh line MSPCL updated that the PLCC card has been procured at Tipaimukh SS and the PLCC will be commissioned by 15th September'25.

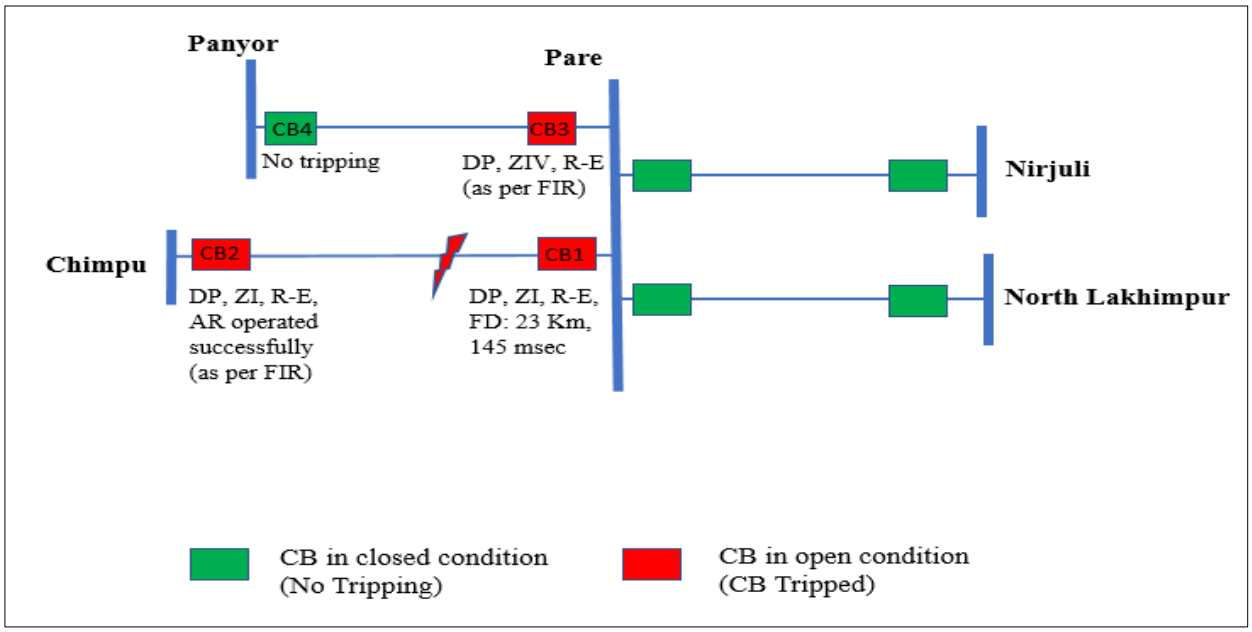
2.Regarding Z1 timing issue and time testing of CB at Tipaimukh SS for Aizawl line, MSPCL updated that they were not able to reach the Tipaimukh substation due to Law and Orde situation in the State.

3.NERTS informed that the Zone II time delay at Jiribam end for Tipaimukh line has been increased to 130 msec.

Sub-committee noted as above

C.8 Multiple tripping of 132 kV Panyor-Pare line & 132 kV Pare-Itanagar line on 09.05.2024

At 02:07 Hrs of 09.05.2024, 132 kV Pare-Itanagar & 132 kV Panyor-Pare lines tripped.



As per DR analysis of 132 kV Pare-Itanagar line, R-E fault initiated at 02:07:24.071 Hrs. After 74 msec, R-phase current increased to 2.9 kA. Fault cleared within 145 msec on operation of DP, ZI (initially ZII pickup) from Pare end.

For 132 kV Panyor-Pare line, there was no tripping from Panyor end. However, Pare CB tripped on DP, ZIV (as per FIR, no DR/EL submitted)

DoP AP & NEEPCO may update the following-

1. Reason for tripping of 132 kV Panyor-Pare on Z4 and its corrections.
2. Reason for Non operation of AR during Single phase fault at Pare end of 132 kV Pare-Itanagar line.

Deliberation of 69th PCCM-

NEEPCO updated that ZIV settings at Pare end for Panyor line will be checked and will be revised soon. Forum requested to share the protection settings of 132 kV Paynor Line with NERLDC & NERPC.

No conclusive reason shared by NEEPCO for Non operation of AR during Single phase fault at Pare HEP. Forum requested NEEPCO to enable AR function in all lines connected to Pare HEP as it's the mandate of IEGC.

Deliberation of the sub-committee

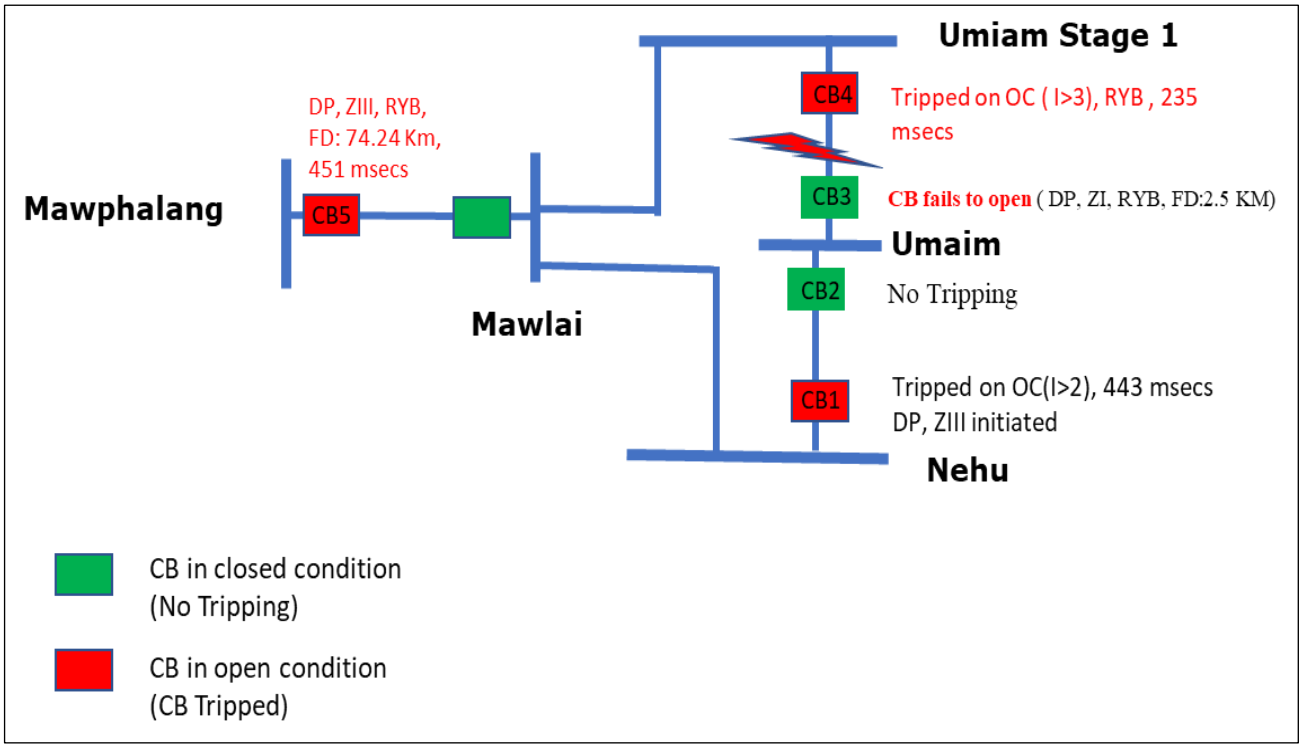
NEEPCO updated that the relay settings of Panyor line had been shared with NERLDC and some modifications have been suggested by NERLDC. He further stated that settings, along with the modifications, will be implemented shortly.

Regarding AR, NEEPCO updated that the SPAR has been enabled on all the lines at Pare end. PLCC checking will be done by next week.

C.9 Grid disturbances in Umiam of Meghalaya Power System on 24-06-2024:

Umiam S/S of Meghalaya Power System was connected with rest of NER Grid via 132kV Umiam Stage I - Umiam and 132 kV Nehu-Umiam lines.

At **13:38** Hrs of 24-06-2024, 132kV Umiam Stage I-Umiam and 132 kV Nehu-Umiam lines tripped. Due to tripping of these lines, Umiam S/S of Meghalaya Power System was isolated from NER Grid.



As per DR analysis of Umiam end of 132 KV Umiam Stage 1- Umiam, R-Y-B (Ir-Iy-Ib-2.5 kA) phase fault initiated at 13:35.32.800 Hrs. Distance Protection detected the fault in ZI and Trip command issued. However, CB fails to open at Umaim resulted in the opening of CB at Nehu for 132 KV NEHU – Umiam.

As per DR analysis of Umiam I end of 132 KV Umiam Stage I- Umiam, R-Y-B (Ir-5.4 kA Iy-7 kA & Ib-7 kA) phase fault initiated at 13:37.01.866 Hrs. However, tripping observed due to operation of Highset OC relay in 235 msecs.

Root Cause of the tripping of **132 KV Umiam Stage 1- Umiam**: snapping of conductor.

Following action taken by MePTCL (As per Detailed Report):

1. On inspection it was found that there was mechanical blockage in the tripping mechanism at Umiam (for Umiam Stage I) which halted the CB from opening. (The problem was then rectified).
2. The Zone III-time delay of 132kV Mawphlang- Mawlai feeder has been reset to 500 ms and also the high set, DEF of 132 kV NEHU-Umiam feeder changed to 400 ms.

MePTCL is requested to update:

1. Reason for non-operation of DP (Main Protection) at Umiam Stage I for 132 KV Umiam Stage 1- Umiam line.
2. The status of review of ZIII time delay (451 msec) setting and its coordination at Mawphlang as per NER protection philosophy.
3. Rectification of DR parameter standardization at Umiam, Umiam I & Mawphlang for proper analysis purpose as per Grid code.

In 69th PCCM, MePTCL stated that the 132 kV Umiam stg I-Umiam line is a very short line and there is no differential Protection (due to non-availability of OPGW on the line) Distance protection on the line and only B/U protection is present on the line. Forum exhorted MePTCL to install OPGW on the line and commission Differential Protection on the line.

Regarding ZIII settings at Mawphlang end for Mawlai line, Forum requested MePTCL to revise the time delay to 750 msec.

MePGCL assures that rectification of DR parameter standardization at Umiam, Umiam I & Mawphlang will be done within July24.

Also, the forum requested MePTCL to revise the settings of B/U OC protection at Nehu end for Umiam line so the it is coordinated with ZIII protection.

Deliberation of the sub-committee

MePTCL updated that –

1.Zone III time delay at Mawphlang end for Mawlai line has been revised to 500msec

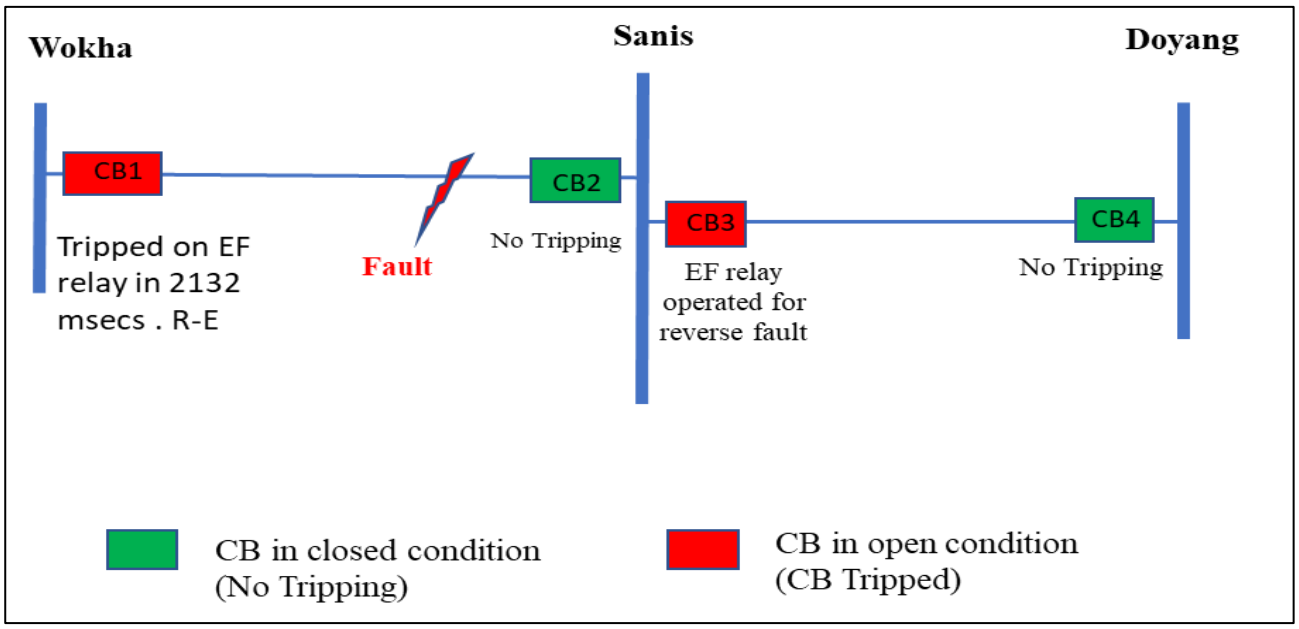
2.Time setting for high set Overcurrent protection at NEHU for Umiam line has bene revised to 700 msec.

NERPC stated that protection settings of Meghalaya grid are not in line with NER Protection protocol. After detailed deliberation the forum strongly urged MePTCL and MePGCL to revise the settings of Meghalya grid in compliance with the code.

C.10 Grid Disturbance in Sanis area of Nagaland on 27-June-24:

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

At **03:54 Hrs of 27.06.2024**, 132 kV Sanis-Wokha line and 132 kV Doyang-Sanis line tripped resulting in blackout of Sanis area of Nagaland.



DR of Wokha end of 132kV Sanis-Wokha Line, R-E fault of High resistive nature initiated at 03:54:13.213 Hrs and cleared by Backup EF relay in 2132 msecs at Wokha end. There was no tripping from Sanis end.

DR of Sanis end of 132kV Doyang-Sanis Line, Tripping observed on reverse fault. There was no tripping from Doyang end.

Observations:

1. Non operation of protection system at Sanis for 132 kV Wokha Line and
2. Mis-operation of B/U at Sanis for 132 kV Doyang Line.

In 69th PCCM, DoP Nagaland stated that the transmission wing will visit Sanis SS next week to look into the issues with protection system for Doyang line.

Deliberation of the sub-committee

DoP Nagaland updated that the visit is planned for this week.

C.11 Frequent tripping of Monarchak Generation during June'24:

On 16.06.2024 & 17.06.2024, Monarchak GT tripped on Rotor Earth Fault.
As per DR analysis, there were no fluctuations in voltage and current magnitudes during both tripping events. On 16th June'24, the recorded current and voltage at the time of the event were 2.3 kA (Ir=Iy=Ib) and 6.5 kV (Vre=Vye=Vbe), respectively. Similarly, on 17th June'24, the recorded values were 3.2 kA (Ir=Iy=Ib) and 6.5 kV (Vre=Vye=Vbe).
Therefore, tripping of Monarchak GT on operation of the Rotor E/F seems to be misoperation.
NEEPCO is requested to:

1. Update the root cause of such tripping and its remedial measures.
2. Review the Rotor E/F settings along with healthiness of Relay and check for any DC earth faults in the DC system.

In 69th PCCM, EF relay replaced with new one on 3rd June'24 as stated by NEEPCO. Also, NEEPCO informed that BHEL engineer will visit next week to look into the issue with the excitation system.

Deliberation of the sub-committee

NEEPCO updated that BHEL engineer has checked the excitation system and prima facie no issue was found. He further stated that the Monarchak plant is going under shutdown in August end for annual overhaul, the excitation system will be thoroughly checked during the shutdown.

C.12 Mock testing of System Protection Scheme (SPS) related to tripping of Bus reactors at 400 kV P K Bari (ISTS) & 400 kV S M Nagar (ISTS):

As per Clause 16.2 of IEGC 2023, mock testing of SPS for reviewing SPS parameters & functions should be conducted at least **once** in a year.
In order to compliance the above clause, IndiGrid is requested to provide the tentative dates for mock testing of SPS in July'24 related to tripping of Bus reactors at 400 kV P K Bari (ISTS) & 400 kV S M Nagar (ISTS).

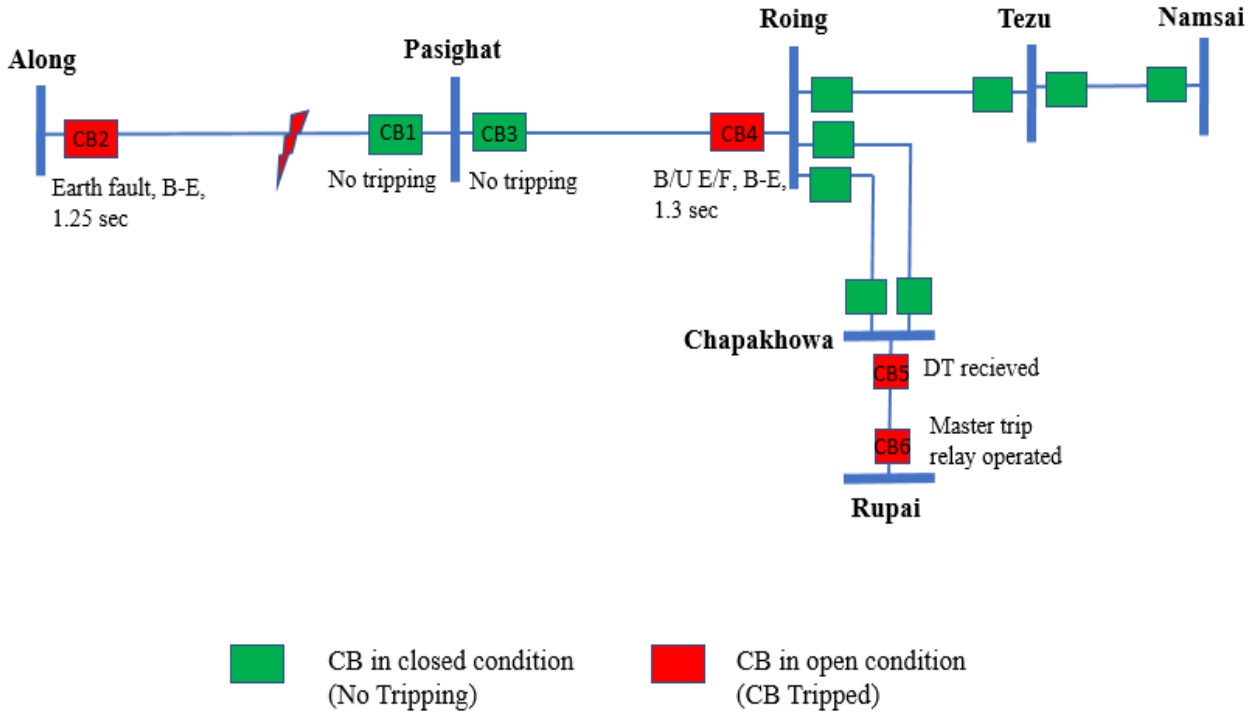
In 69th PCCM, M/s Indigrid informed that the mock testing is likely to be done in last week of July'24.

Deliberation of the sub-committee

NERLDC updated that the mock testing has been done on 5th and 6th August'24

C.13 Grid disturbance in Pasighat, Roing, Tezu, Namsai areas of Arunachal Pradesh and Chapakhowa area of Assam on 29.06.2024

At 09:25 Hrs of 29.06.2024, 132 kV Along-Pasighat, 132 kV Roing-Pasighat & 132 kV Rupai-Chapakhowa lines tripped leading to blackout of Pasighat, Roing, Tezu, Namsai areas of Arunachal Pradesh and Chapakhowa area of Assam. Load loss of 14 MW occurred.



As per DR analysis, resistive B-E fault (Ib-0.32 kA, In-0.26 kA) in 132 kV Along-Pasighat line initiated at 09:24:32.912 Hrs and cleared within 1.25 sec from Along end on operation of directional earth fault. There was no tripping from Pasighat end due to which fault was feeding from Roing end which was finally cleared by tripping of healthy 132 kV Roing-Pasighat line from Roing end (within 1.3 sec) on operation of backup E/F.

At the same time, 132 kV Rupai-Chapakhowa line also tripped with B/U EF operated at Rupai and DT received at Chapakhowa which seems to be unwanted.

Observations:

1. Protection system at Pasighat failed to isolate the fault in 132 kV Along-Pasighat line which is a matter of concern.
2. Unwanted tripping of 132 kV Rupai-Chapakhowa line on B/U protection.
3. FIR/DR/EL of tripping of 132 kV Rupai-Chapakhowa line not submitted by AEGCL due to which proper analysis could not be done.

DoP Arunachal Pradesh/AEGCL is requested to update –

1. Root cause of non-isolation of fault by protection system at Pasighat for 132 kV Along Line and its remedial measures.
2. Reason of B/U operation at Rupai for 132 kV Chapakhowa Line and its setting coordination.

Similar event occurred at 11:21 Hrs. of 03rd July.

Deliberation of the 69th PCCM

1.Regarding non-operation of protection at Pashighat end for Along line, DoP Ar. Pradesh stated that earlier there was issue in CT neutral wiring in B/U protection, which was rectified. However, the problem has recurred, so DoP Arunachal Pradesh will check the EF relay comprehensively along with that at Along and Roing.
2.Regarding Tripping at Rupai for Chapakhowa line, AEGCL updated that the DT EF protection was kept on. AEGCL disabled the Backup high set setting at Rupai end after the event.
NERLDC highlighted that similar type of events occurred on 9th July'24, where fault in 132 kV Along-Basar line was not clear from Along & Pasighat and it is clear from Roing on Z-III protection.
Forum requested DoP AP, to conduct relay testing using the same fault current and submit a detailed report thereafter. Due to the frequent protection failures at Along and Pasighat, NERLDC emphasized the urgent need for inspections/protection audit at these two substations without delay.

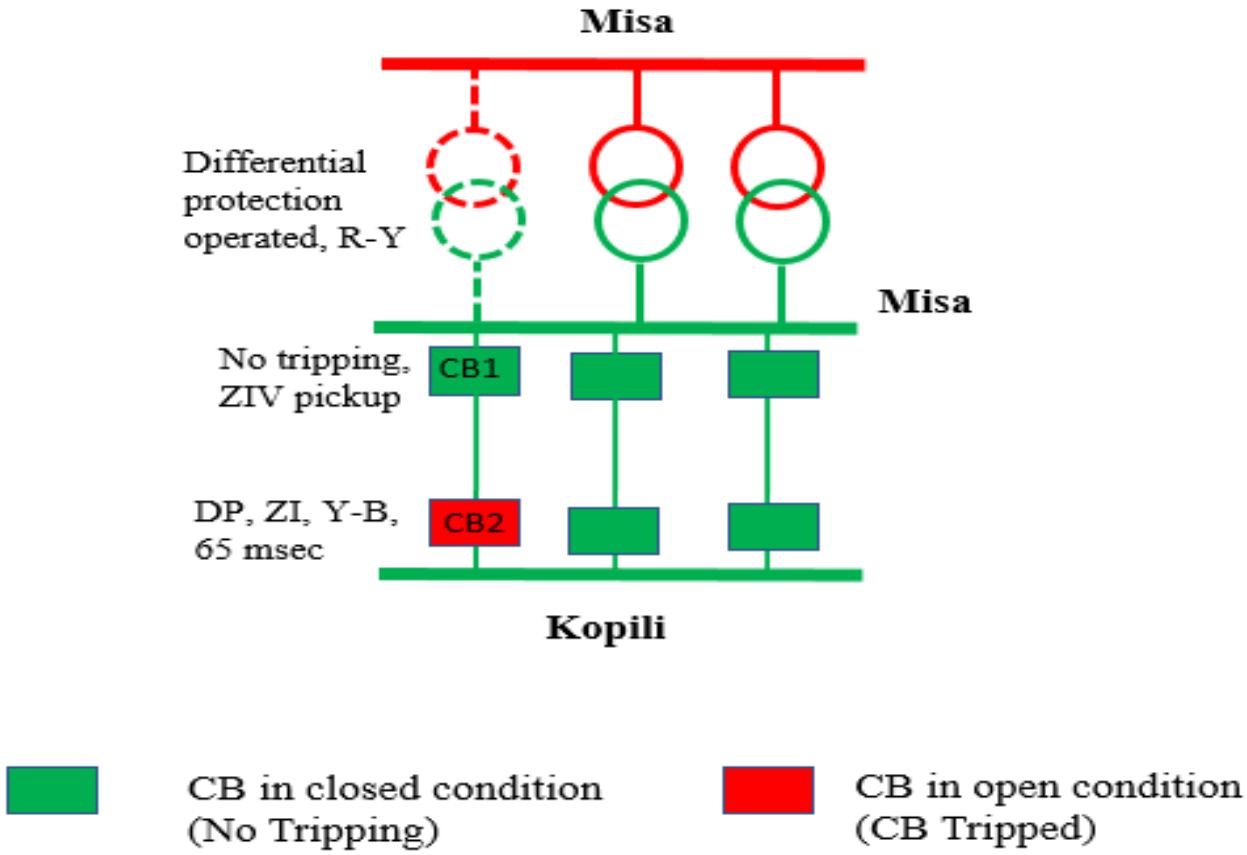
Deliberation of the sub-committee

DoP Ar. Pradesh updated that neutral wiring issue at Pashighat end for Along line has been rectified. He further informed that the VTS blocking function has been disabled in the relay at Pashighat.

Regarding tripping at Rupai end AEGCL updated that the operating time issue of B/U protection has been rectified in June. However, NERPC highlighted that the same mal-operation has recurred on 3rd July'24 which has caused GD in Ar.Pradesh. AEGCL replied that the timing will be rechecked shortly and will reply accordingly to NERPC and NERLDC.

C.14 Unwanted tripping of 220 kV Misa-Kopili I line on 28.05.2024

At 06:39 Hrs of 28.05.2024, 220 kV Misa-Kopili I line and 500 MVA, 400/220 kV ICT-I at Misa tripped.



400/220 kV ICT-I at Misa tripped on operation of differential protection.

As report by POWERGRID, a long branch of tree had fallen over middle and bottom conductor and touched tower cross arm of 220 kV side dead-end tower due to heavy storm which caused immediate tripping of ICT-I at Misa on diff. protection.

At the same time, 220 kV Misa-Kopili I line tripped from Kopili end on operation of DP, ZI (fault cleared within 65 msec). There was no tripping from Misa end.

ZIV was pickup from Misa end which clearly indicates that fault is in reverse direction.

NEEPCO is requested to update the reason of ZI tripping at Kopili end and its corrections for 220 kV Misa-Kopili I line to avoid any further reoccurrence.

In 69th PCCM, NEEPCO deliberated that the Main I relay Mal-operation of Misa-Kopili I at NEEPCO end.

NEEPCO stated that issue of ZI operation from Kopili end will be checked and resolved shortly.

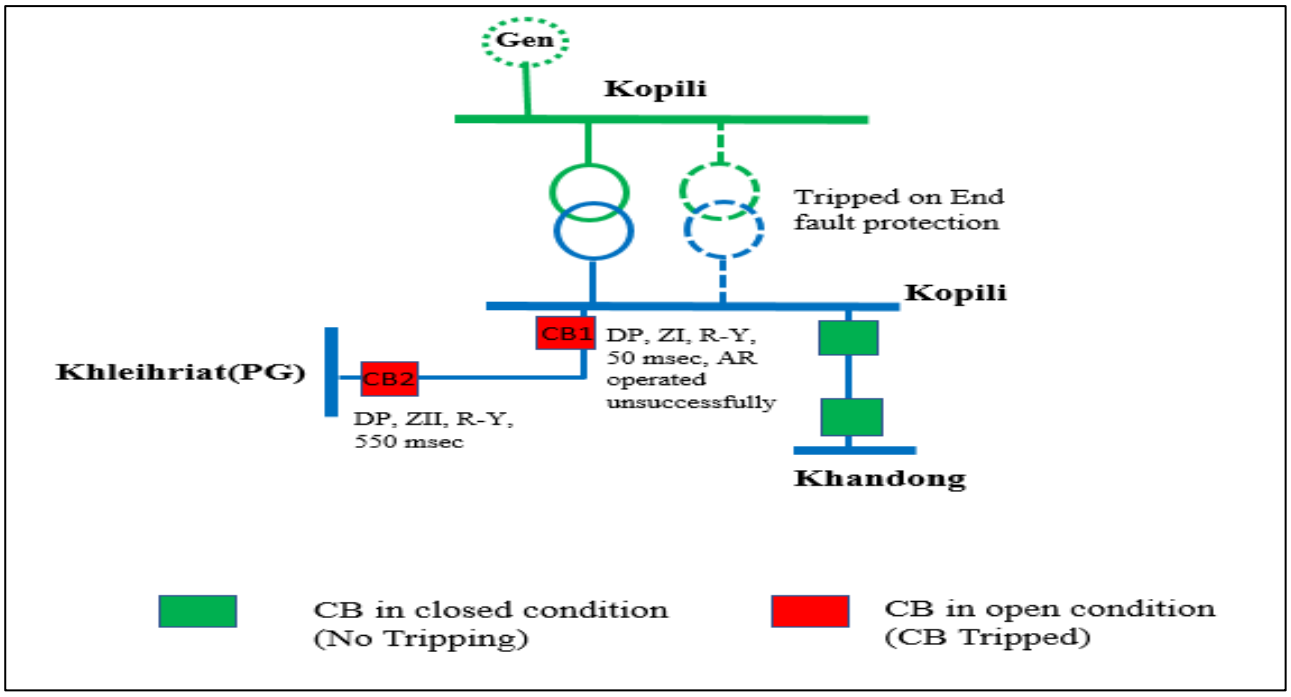
Forum requested to compare the relay settings at Kopili end with other two circuit as they have not tripped. Also, requested to furnish Main-1 setting (.set) file of all 3 lines to NERLDC and NERPC.

Deliberation of the sub-committee

NEEPCO updated that there is setting issue in the reach of Zone 1 at Kopili end for Misa line 1, the same will be revised and will be sent to NERPC for consent.

C.15 Tripping of 220/132 kV Kopili ICT-II on 28.05.2024

At 01:43 Hrs of 28.05.2024, 132 kV Kopili-Khleihriat line & 220/132 kV Kopili ICT-II tripped.



As per DR analysis of 132 kV Kopili - Khleihriat line, R-Y fault (Ir-6.5 kA, Iy-6.5 kA) cleared within 50 msecs on operation of DP, ZI from Kopili end and within 550 msec from Khleihriat end on operation of DP, ZII (As reported by POWERGRID, the line tripped due to falling of tree on line at span no. 21 to 22).

At the same time, 220/132 kV ICT-II at Kopili tripped on operation of end fault protection (EFP) as per information received from NEEPCO.

NEEPCO may update the reason for operation of end fault protection of Kopili ICT-II for fault beyond line and its corrective measures.

In 69th PCCM, NEEPCO informed that 220 kV side bay of the ICT II tripped on EFP, which is embedded in the Bus Bar protection of the 220 kV bus. He further updated that DR and EL of the tripping have been sent to the OEM for analysis and the report will be shared shortly to NERPC and NERLDC.

Forum requested NEEPCO to check the protection settings as well as configurations in the Bus Bar protection relay.

Deliberation of the sub-committee

NEEPCO informed that there is some issue with the Bus Bar relay, CB status was not coming in the relay. He further stated that the issue will be rectified shortly.

D. ITEMS FOR STATUS UPDATE

D.1. Status of auto-reclosure on z-1 operation for important lines:

In the discussions of the Sub-group on 12-04-2021 the following points were noted:

a. Auto-Reclosure is very much required for maintaining system stability, reliability and uninterrupted power supply.

b. Presently it will take some time for the state utilities to implement the PLCC and establish carrier communication between stations.

c. 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 Auto-Reclosure 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.

Status as updated in 70th PCCM

Sl no	**State**	**Important Transmission lines where AR has to be enabled at the earliest**	**Status (69th/68th PCCM)**	**status as per 70th PCCM**
1.	Arunachal Pradesh	132kV Balipara-Tenga, 132kV Ziro-Daporijo-Along-Pashighat link	PLCC implementation under PSDF underway. SPAR have been enabled on the lines without PLCC 3-Ph AR will be enabled by March'24.	3 Ph AR enabled on the lines
2.	Assam	All 220kV and 132kV lines	For 220kV	Process underway.

			Some bays at Tinsukia, NTPS and Kathalguri remaining, to be done soon For 132kV bays Testing and enabling of AR is being done gradually, to be completed by June'24.	220kV – Completed except for Kathalguri-tinsukia line which will be done within 2 months. 132kV – completed except for Dhemaji and Majuli Substations, to be done within 2 months
3.	Manipur	132kV Imphal-Ningthounkong	DPR preparation underway, to be prepared by March'24	Manipur updated that the AR on the line has been implemented at Ningthounkong end, without carrier, on 4.08.2024. DPR for PLCC under preparation. To be completed shortly.
4.	Meghalaya	**Annexure** (D.1)	August'24. Forum requested Meghalaya	Matter was thoroughly

			to provide monthly work progress report (around 25 number of 132kV line)	discussed in State protection committee. Report of the meeting will be available by Aug'24 end. It was further updated that AR on 132kV Lumshnong-khliehriat line and Lumshnong-Panchgram line, lines have been reconductored recently, AR will be enabled by this month
5.	Tripura	132kV Agartala-S M Nagar (TSECL), 132kV Agartal-Rokhia DC, 132kV, 132kV Agartala-Budhjungnagar	To be done during internal audit.	Aug'24

Sub-committee noted as above

D.2. <u>Installation of line differential protection for short lines:</u>

As per sub-regulation3 of Regulation 48 of Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022-

"For short line (less than 10 km) or cable or combination of overhead line and cable, line differential protection shall be used with built-in backup distance protection."

As per discussion in 61st PCC meeting the status for different STUs/ISTS licensees are as follows:

Status as updated in 70th PCCM -

Name of utility	**Last updated status (69th/68th PCCM)**	**status as per 70th PCCM**
AEGCL	AEGCL updated that PSDF monitoring group has suspended funding for LDP for 1 year. AEGCL requested MS, NERPC to take up with NPC, CEA to provide funding for the same considering the special case of NER	MS, NERPC stated that funding for the LDP considering the special case of NER will be taken up as resolution by RPC forum
MSPCL	DPR under preparation, to be submitted within one month.	Received first installment in last week of July.
MePTCL	LDP operation for 9 feeders. For Neighrims-NEHU line, waiting for dark fiber. For other lines, OPGW not available commissioned after OPGW link is established. (**Annexure D.2**) 7 Feeder operational for rest OPGW work is pending OPGW to be installed on 16 lines. LDP will be enabled after that.	Regarding OPGW installation, MePTCL updated that DPR is being prepared for inclusion in reliable communication scheme. For NEHU-NEighrims line, fiber has to be laid by PowerGrid NERPSIP.
P&ED Mizoram	Lines identified 132kV Khamzawl - Khawiva. DPR being revised.	Mizoram stated that DPR in final stage. Price offer has been received from

	Mizoram requested for assistance in preparation of DPR. Forum requested Assam to provide assistance to Mizoram in this regard.	one vendor and awaited form other vendors. The DPR will be prepared by end of August'24
DoP Nagaland	LDP Doyang-Sanis line, LDR to be installed by NEEPCO. NEEPCO stated that LDR is available with NEEPCO, however, healthiness of the OPGW link on the line has to be checked first. DoP Nagaland updated that FOTE is present. NEEPCO updated that GE engineers will visit on 15th July.	NEEPCO updated that GE engineers are on site and work in underway, to be completed in few days.
TSECL	132kV 79 Tilla-Budhjungnagar. DPR to be prepared. Cost estimate submitted to TIDC to arrange for ADB funding. TIDC approval is still awaited for fund.	Approved for ADB funding. E-tendering underway. Regarding Rokhia-N.Rokhia link, he updated that the breaker has been received. MS, NERPC suggested to apply under PSDF

Sub-committee noted as above

D.3. <u>Status against remedial actions for important grid events:</u>

Status as updated in the 70th PCCM:

Sl No	**Details of the events(outage)**	**Remedial action suggested**	**Name of the utility & previous update**	**status as per 70th PCCM**

1.	132 kV Balipara-Tenga line in May and June	Carrier aided inter-tripping to be implemented for 132kV Balipara-Tenga-Khupi at the earliest (PLCC has to be installed on the link. Under consideration of the higher authorities)	DoP, Arunachal Pradesh. PLCC panels received. For further work PSDF payment issue. Matter to be taken up with PSDF	DoP updated that PSDF funding will be short closed due to long pending payment issues and delays. He further stated that state is considering funding of the project through its own funding. PLCC work to be tentatively completed by end of this year.
2.	132 kV DoyangMokokchung line 132 kV Mokokchung - Mokokchung (DoP, Nagaland) D/C lines on 30th July	Carrier inter-trip for 132kV DHEP-Mokokchung to be implemented by DoP Nagaland (NO PLCC on the line. Matter under consideration of Higher authorities)	DoP Nagaland (DPR is under preparation for PLCC, by July'24	Offer by Hitachi by August end
3.	Leshka-Khleihriat DC multiple tripping in April to September	TLSA installation along the line to be done by MePTCL	MePTCL	DPR returned by PSDF.

			(DPR submitted, Approval pending.)	
4.	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 TX manufacturing underway. To be completed by Dec'24	To arrive at site shortly, planned to be commissioned by Aug end
5.	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 under R&U project) Renovation would start in Nov.'24 and to be completed by Oct.'25. Forum stressed to take LBB on priority.	R & M work to start in Nov'24
6.	Outage of 220 KV Bus Bar Protection Scheme at 400/220/132 KV Killing SS	Bus-Bar protection of 220kV bus at Killing SS	MePTCL BBR defective. Order placed in Oct'23, will arrive in around 7 months, i.e. by May or June'24	Card arrived in India, will reach at site shortly.

7.	Non-operation of AR for various lines at Byrnihaat end on 25th and 26th June'23	Rectification of PLCC issues by MePTCL Consultation with OEM underway for resolution	MePTCL Visit of OEM next week. To be completed by May'24	OEM visited, PLCC defective, will procure soon
8.	Tripping of 132kV Kahilipara- Sarusajai 1, 2 and 3 line, 132kV Kahilipara Main bus 1, 132kV Kahilipara transfer Bus 1 and 132kV Kahilipara-Kamalpur line on 2.08.2021	BB protection to be implemented at Kahilipara with procurement of 5 core CTs	AEGCL DPR is under preparation for PSDF. CT under procurement, to be completed by end of this year	New Byas have to be integrated to BB relay, so new cards have to be procured, commissioning may go beyond Dec'24
9.	AR issue at Gohpur end for 132kV Nirjuli-Gohpur line	Panel replacement underway	AEGCL - By April'24	Panel commissioned in June 2024.
10.	Non-operation of AR at Doyang HEP	Pneumatic CBs to be replaced	NEEPCO- August 2024	March'25
11.	Generation evacuation issue at Leshka due to tripping of any line of 132kV Leshka-Khliehriat DC line	SPS to be implemented	MePGCL to implement the SPS by May'24	Done
12	Multiple trippings fn the lines connected to Leshka station in April'24 have been observed due to	Differential protection on the link line to be implemented.	MePGCL To be discussed in internal OCC meeting first	DPR under preparation, to be prepared within one month

	delayed clearance of faults in the link line (GT to Switchyard, 550 meters)	Also, AR on the link line to be implemented		
13	Multiple tripping of 132 kV Panchgram-Lumshnonong line in April'24 has been observed due to delayed clearance of downstream fault in Lumshnong	B/U protection settings coordination for the 132kV downstream industrial feeders has to be done	MePTCL To be done shortly	Refer to agenda item C.6
14	Issue with CB at P K Bari end for Dharmangar line (agenda item C.5 of 69th PCCM.) Powergrid has reduced timing of zone settings at Kumaraghat end for P K Bari line. The settings will be reverted as soon as the breaker issues is resolved by TSECL	Pneumatic CB at P K Bari end to be replaced with spring charging type CB	TSECL	Work in progress

Sub-committee noted as above

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Annexure-I

List of Participants in the 70th PCC Meeting held on 08.08.2024

SN	Name & Designation	Organization	Contact No.
1	Sh. Komkar Taso, AE	Ar. Pradesh	07628840401
2	Sh. Moli Kamki, AE (E)	Ar. Pradesh	09863703539
3	Sh. Pranab J.Baishya, AGM, APGCL	Assam	09365673696
4	Sh. Kushal Chayengia, AGM, AEGCL	Assam	09706549007
5	Sh. Abhishek Kalita, Dy.Mgr, AEGCL	Assam	08486213068
6	Sh. Juganta Sonowal, Dy.Mgr, AEGCL	Assam	09957710783
7	Sh. Ajay Kr. Ladha, Dy.Mgr, AEGCL	Assam	08822081681
8	Ms. Somia yambem, DM, SLDC	Manipur	09774604636
9	Ms. Maismam Sarjubala Devi, CRA, MSPCL	Manipur	09774212904
10	Sh. C.Daniela, EE	Mizoram	09774692350
11	Sh. Lalawmpuia Chawngthu, AE	Mizoram	08730843706
12	Sh. A.Shullai, AEE, MePGCL	Meghalaya	07005379616
13	Sh. A.G.Tham, AEE (MRT), MePTCL	Meghalaya	09774664034
14	Sh. Paul Warjri, JE, MePTCL	Meghalaya	08014773964
15	Sh. Pulovi Sumi, SDO (T)	Nagaland	08575748180
16	Sh. Alex E.Ngullie, JE, SLDC	Nagaland	08837080321
	-	Tripura	-
17	Sh. Amaresh Mallick, ED	NERLDC	09436302720
18	Sh. Subhra Ghosh, AM	NERLDC	08415857079
19	Sh.Utpal Das, AM	NERLDC	09435850016
20	Sh. Manash Jyoti Baishya, Ch.Manager	PGCIL	09435555740
21	Sh. Manas Pratim Sharma, Sr.Mgr (E/M)	NEEPCO	08729901871
22	Sh. Suresh Kammila, Shift Incharge	OTPC	08259943312
23	Sh. M.Murali Mohan, DGM	NTPC	09440901781
24	Sh. Ashim De, DM (E)	NHPC	09800284587
25	Sh. Niranjan Rabha, Dy.Mgr (Projects)	NETC	07002022736
26	Smt. Debarati Basu, ED	PRDC	-
27	Sh. Rabi S.Choubey, Engg. (PSS)	PRDC	-
28	Sh. Basab Maity, Engg.(PSS)	PRDC	09732416233
29	Sh. K.B.Jagtap, Member Secretary	NERPC	-
30	Sh. Anil Kawrani, Director	NERPC	-
31	Sh. Alikpanth De, Dy.Director	NERPC	-
32	Sh. Vikash Shankar, AD-I	NERPC	09455331756
33	Sh. Dinesh Kr.Singh, AD-I	NERPC	-

Annexure C.1

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	By March'22	
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		

MePTCL

STATUS OF LINE DIFFERENTIAL PROTECTION PROJECT UNDER PSDF

Sl. No	Feeder Name	Installation		Commissioning	Remarks
		End A	End B		
1	EPIP-I - EPIP II Line I	Completed	Completed	Completed	
2	EPIP-I - EPIP II Line II	Completed	Completed	Completed	
3	EPIP -I - Killing Line I	Completed	Completed	Not Completed	Fiber Network Not Available
4	EPIP -I - Killing Line II	Completed	Completed	Not Completed	
5	EPIP -I - M/S Maithan Alloy	Completed	Completed	Not Completed	
6	EPIP -I - Shyam Century	Completed	Completed	Not Completed	
7	EPIP-II - Umtru Line I	Completed	Completed	Completed	
8	EPIP-II - Umtru Line II	Completed	Completed	Completed	
9	EPIP II - New Umtru	Completed	Completed	Completed	
10	EPIP II - Killing Line I	Completed	Completed	Not Completed	Fiber Network Not Available
11	EPIP II - Killing Line II	Completed	Completed	Not Completed	
12	Umtru- New Umtru	Completed	Completed	Completed	
13	LUMSHNONG- M/S MCL	Completed	Completed	Not Completed	Fiber Network Not Available
14	LumSHNONG- M/S ACL	Completed	Completed	Not Completed	
15	Lumshnong - M/S MPL	Completed	Completed	Not Completed	
16	UMIAM - Stage I	Completed	Completed	Not Completed	
17	Umiam - NEHU	Completed	Completed	Completed	
18	UMIAM STAGE-I - Umiam Stage II	Completed	Completed	Not Completed	Fiber Network Not Available
19	NEHU - NEIGHRIMS	Completed	Completed	Not Completed	Awaiting for Commissioning of fiber under NERFO
20	NEHU - MAWLAI	Completed	Completed	Completed	
21	KHLIEHRIAT (MePTCL)-KHLIEHRIAT(PG) line-II	Completed	Completed	Completed	
22	Stage-III - Stage IV Line I	Completed	Completed	Not Completed	Fiber Network Not Available
23	Stage-III - Stage IV Line II	Completed	Completed	Not Completed	