



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/2023/ 3304-3345

March 1, 2024

To

As per list attached

Sub: Minutes of 64th Protection Coordination Sub-Committee (PCC) Meeting

Sir/Madam,

Please find enclosed herewith the minutes of the 64th PCC Meeting held at NERPC Conference Hall, Shillong on 15th February 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,

(एस. एम. आइमोल / S. M. Aimol)

निदेशक / 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. Head, Transmission, KMTL, 7th Floor, Fulcrum, Sahar Road, Andheri (E), Mumbai-400099
42. Director, NETC, 2C, 3rdFloor, D21Corporate Park, DMRC Building Sector 21, Dwarka, Delhi-77.



(एस. एम. आइमोल / S. M. Aimol)

निदेशक / Director

Minutes
of
64th Protection Coordination Sub-Committee Meeting

Date: 15/02/2024 (Thursday)

Time: 11:00 hrs

Venue: NERPC Conference Hall, Shillong

List of Participants is attached at **Annexure-I**.

Member Secretary NERPC welcomed all the participants. He stated that there has been significant improvement in protection system of NER because of action and cooperation of all stakeholders. He specifically stated that improvement in submission of DR/EL has been observed. He emphasized that all efforts should be made to reduce no. of tripping due to vegetation and metallic faults by following proper maintenance practices like patrolling etc on regular basis. He requested all Discoms to attend the PCC meetings regularly and put their protection system in place so that regional and national grid is not affected due to faults in their system.

He then requested Director, NERPC to take up the agenda items for discussion.

A. C O N F I R M A T I O N O F M I N U T E S

1. C O N F I R M A T I O N O F M I N U T E S O F T H E 63rd P R O T E C T I O N S U B - C O M M I T T E E M E E T I N G O F N E R P C .

Minutes of the 63rd PCC Meeting held on 18th January, 2024 (Thursday) at Guwahati was circulated vide No.: NERPC/SE (O)/PCC/2023/3683-3724 dated 7th February, 2024.

No comment(s)/observation(s) were received from the constituents.

The Sub-committee confirmed the minutes of 63rd PCCM of NERPC

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

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. NERLDC to submit a list of all 132 kV and above substations of the States to 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.

AEGCL requested for a uniform guideline for maintenance of bay elements. Member Secretary requested POWERGRID to share their maintenance guideline with the states so that Assam and other utilities may adopt it after customizing to suit local requirement.

In 63rd PCCM following points were discussed

1. Audit of substations of Assam (Sarusaiai, Kahilpara, BTPS) will be carried out from 29th to 31st January 2024.
2. Two different groups, each of four/five members will conduct the above audit. Group Members: NERPC, NERLDC, PGCIL & Nagaland/MeECL.
3. Boarding & Lodging arrangement at Bongaigaon and Guwahati would be provided by NTPC Limited and AEGCL respectively and local transport will be provided by Assam for both the teams.

Status of compliance of IEGC 2023 –

List of utilities that have submitted the audit plan for FY 2024-25

1. DoP Arunachal Pradesh
2. Indigrid
3. NEEPCO
4. Sterlite
5. Powergrid

MePTCL submitted a list of substations for third party protection audit. NERPC stated that protection audit at some substations of MePTCL may be conducted by NERPC team.

NERLDC stated that a google spreadsheet format for declaration of Internal/3rd party audit plan for FY24-25 has been prepared for submission of details of Audit

plan. Forum requested all remaining utilities to submit Audit plan for FY 2024-25 in the format as prepared by NERLDC.

Deliberation of the sub-committee

3rd Party Audit of Substations

NERPC informed that protection audit of Sarusajai, Kahilipara and BTPS substations of Assam (AEGCL) has been carried out on 31st January'24 by the NERPC audit team. Preliminary report has already been submitted and final report will be submitted within a month.

NERPC also stated that audit of substations of Nagaland (Dimapur, Kohima, Sanis, Wokha, Mokokchung) will be carried out shortly. NERTS requested the forum to carry out the audit at Dimapur (PG) and Mokokchung (PG) and nearby Substations. Forum agreed for the same.

List of Substation & 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.

Sub-committee noted as above

Agenda from MePTCL

B.2 Third Party Protection Audit of substations of MePTCL

It may be informed that third party protection audit in respect of MePTCL is urgently required and the matter may be discussed in the forum. List of substations where audit is requested is attached as **Annexure B.2**

Deliberation of the sub-committee

MePTCL representative stated that for R&U (2nd Phase) of 18 Substations as mentioned in the list, third party protection audit is required. He requested the forum to take measures to conduct the third-party protection audit under NERPC at the substations.

Member Secretary NERPC opined that conducting audit by NEPRC at all of these substations may not be feasible.

MeECL was advised to send list of priority Substations, out of which few Substations will be audited by NERPC team.

Agenda from NEEPCO

B.3 Third Party Protection Audit for ISGS

As discussed in the previous PCC meetings, 3rd Party Protection Audit for ISGS has to be carried out as per relevant clauses of IEGC-23. Accordingly, NEEPCO has submitted a plan for the same for 2024-25.

However, in the case of Generating Stations, NEEPCO feels that 3rd Party protection audit should be carried out by choosing an expert audit team through tendering route and not by engaging the protection engineers of generating stations of NER.

Our two plants viz. PLHPS & KaHPS will go for 3rd Party protection audit by choosing an expert audit team through a tendering route. However, Plant Authorities are not sure about the methodology of carrying out the audit as there will be financial involvement if the audit is carried out by an expert audit team.

Hence, it is requested that the matter may kindly be discussed in the ensuing PCC meeting and included in the MOM of the meeting so that NEEPCO can go ahead with 3rd Party protection audit at its O&M Plants in the aforementioned method.

Deliberation of the sub-committee

NEEPCO requested that, regarding third party protection audit, either NERPC may suggest entities to carry out the protection audit at generating stations or the generating utility may decide on its own about the auditing agency.

Member Secretary, NERPC informed that in 14th NPC meeting held at Bangalore, it has been decided that a sub-group of NPC (National Power Committee) will be formed to identify agencies to conduct the third party protection audit. He further stated that further decision on the matter will be taken after NPC takes decision on finalization of agencies for third party audit.

B.4 Analysis and Discussion on Grid Disturbances which occurred in NER grid in January'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 January 2023 based on the draft reports prepared by NERLDC.

Deliberation of the sub-committee

The following GD/GI were discussed

Sl. No	GD/GI/Near miss events	Elements tripped	Actions recommended in the meeting
1.	GD at Dharmanagar of Tripura and Dullavcherra of Assam (02.01.2024)	132 kV P K Bari (TPTL) - Dharmanagar (TPTL)	1. No issue with the protection system. However, TSECL was requested to provide root cause of tripping in the line 2. TSEL updated that tripping occurred due to tree cutting by miscreants. 3. TSECL to provide DR/EI and flash report after any tripping to NERLDC with stipulated timeline 4. 132 TSCEL was requested to appoint nodal officers in SLDC to look after

			protection systems and coordination with NELRDC in protection matters.
2.	GD at Kopili (02.01.2024, 03.01.2024, 05.01.2024, 08.01.2024)	132 Tripping of 220kV Buses at Kopili	1. Problem with the software of Bus Bar protection. Now resolved.
3.	GD at Grid Disturbance in Ningthoukhong, Churachandpur and Thanlon area of Manipur power system (13.01.2024)	132 kV Loktak – Ningthukhong & 132 kV Imphal – Ningthukhong lines	Refer to discussion in item B.9
5.	GD at Agartala S/S (15.01.2024)	All the lines connected to Agartala SS	<ol style="list-style-type: none"> 1. Issue NERLDC stated that no root cause and detailed report has been provided by TSEC: 2. TSECL informed that tripping at the 132kV bus occurred due to fault caused by Kite threads. 3. The forum stated that considering the criticality of Agartala Substation, TSECL is requested to implement Bus Bar protection at the Substation.

Agenda items from NERLDC

B.5 Status of submission of FIR, DR & EL outputs for the Grid Events for the month of January'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 01-01-2024 to 31-01-2024 as on 09-02-2023 is given below:

Name of Utility	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
DoP, Arunachal Pradesh	8	8	8	8	0	0	0	100	100	100
AEGCL	8	3	4	4	5	4	4	38	50	50
APGCL	2	0	0	0	2	2	2	0	0	0
MSPCL	7	7	3	4	0	0	1	100	100	83
MePTCL	2	1	1	1	1	1	1	50	50	50
MePGCL	5	0	3	3	5	0	2	0	100	60
TSECL	15	14	15	15	1	0	0	93	100	100
POWERGRID	13	13	13	10	0	0	0	100	100	100
NEEPCO	9	9	8	8	0	0	0	100	100	100
NHPC	1	1	1	1	0	0	0	100	100	100
IndiGrid	3	2	3	3	1	0	0	67	100	100

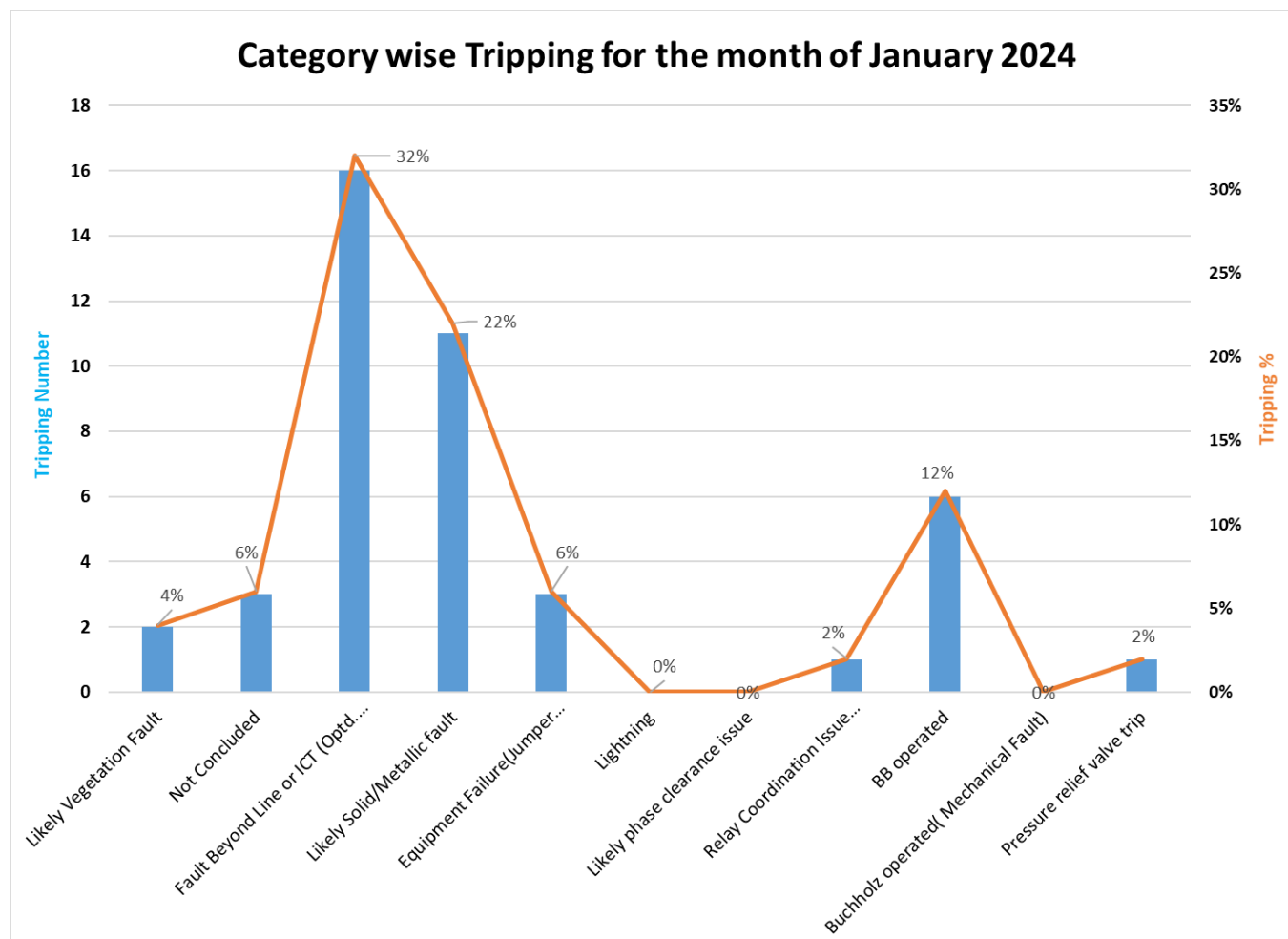
Concerned Utilities are requested to upload Disturbance Recorder (DR), Event Logger (EL) outputs for grid events along with a First Information Report (FIR) in Tripping Monitoring Portal (<https://tripping.nerldc.in/Default.aspx>) for analysis purpose. In light of the cybersecurity measures implemented 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

The forum noted and appreciated that there is significant improvement in submission of DR and EL by the utilities. However, some utilities have not submitted DR and EL timely. Member Secretary NERPC strongly urged the utilities to ensure timely submission of required data.

B.6 Category wise Tripping for the month of January 2024:

There were a total of 43 numbers of Line & ICT tripping during the month of January'24. A plot showing number of tripping and tripping percentage in each category such as Likely Vegetation, Solid/metallic fault and fault beyond the line etc. is shown below. It is observed that for around 32% of tripping were due to fault beyond the line and 22% of tripping were due to solid fault. The trippings due to vegetation fault and solid fault are listed below:



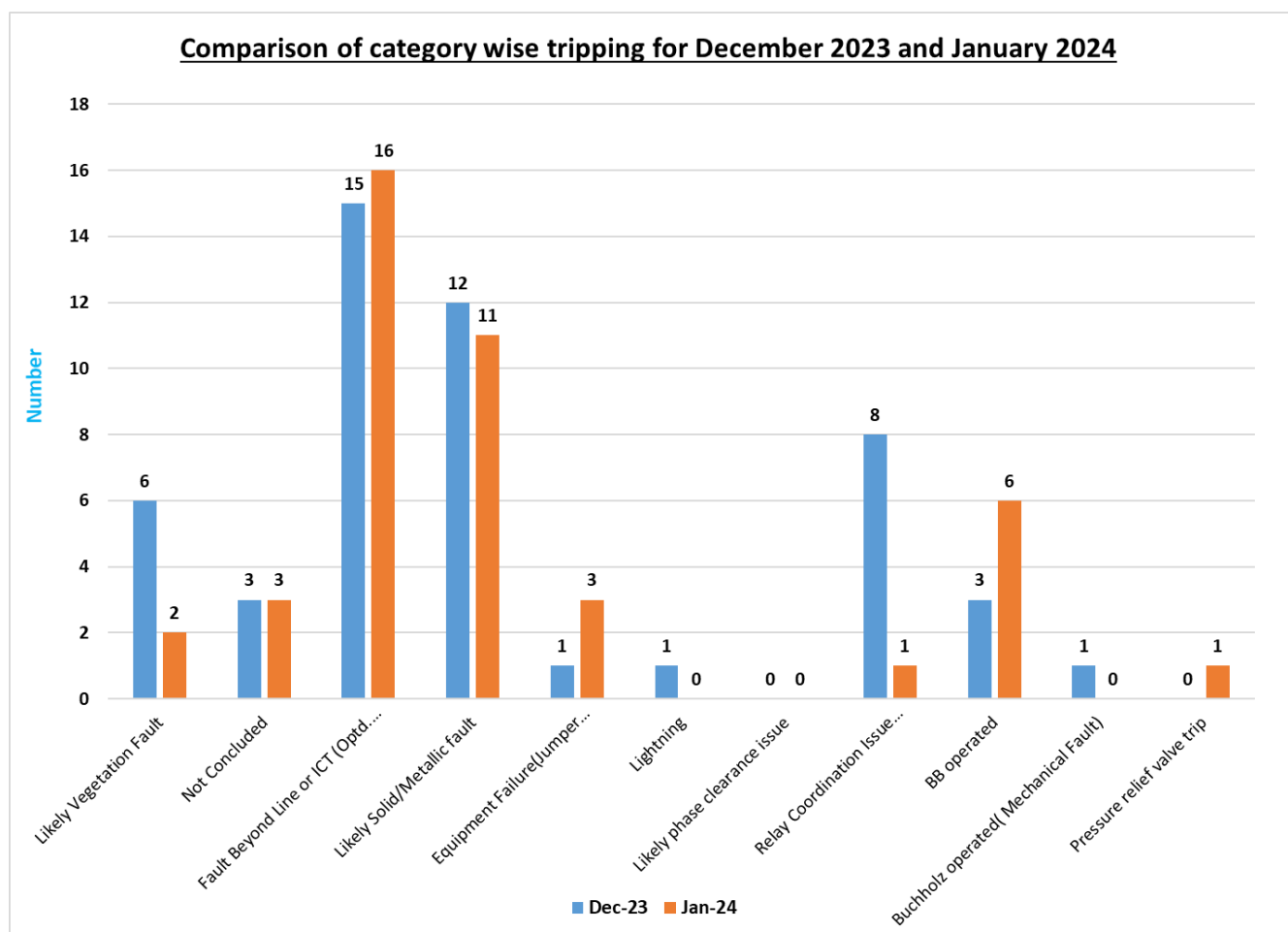
List of tripping due to Vegetation fault during January, 2024

Sl. No.	Element Name	Owner	Tripping Date & Time
1	132 kV Along - Pasighat Line	DoP, Arunachal Pradesh	01-01-2024 04:48
2	132 kV Jiribam - Tipaimukh Line	POWERGRID & MSPCL	20-01-2024 11:16

The patrolling report of AEGCL for the month of January, 2024 is attached in **Annexure B.6**

List of tripping due to Solid fault during January, 2024

Sl. No.	Element Name	Owner	Tripping Date & Time	End A	End B
1	220 kV Karbi Langpi - Sarusajai 2 Line	AEGCL	01-01-2024 11:41	No DR submitted	Fault current (in kA) B=4.6,N=4.6 Fault Voltage(in kV) : B=74,N=51 Angle between(in degrees) : -53
2	132 kV Dharmanagar - P K Bari Line	TSECL	02-01-2024 10:25	No tripping	Fault Current(in kA) : Y=5.9,B=5.8 Fault Voltage(in kV) : Y=50,B=46
3	132 kV Balipara - Tenga Line	DoP, Arunachal Pradesh	04-01-2024 22:51	Fault Current(in kA) : R=2.6,Y=2.6 Fault Voltage(in kV) : R=59,Y=54	Fault Current(in kA) : R=1.3,Y=1.3 Fault Voltage(in kV) : R=45,Y=42
4	132 kV Balipara - Tenga Line	DoP, Arunachal Pradesh	05-01-2024 00:35	Fault Current(in kA) : R=2.6,Y=2.5 Fault Voltage(in kV) : R=57,Y=52	Fault Current(in kA) : R=1.3,Y=1.3 Fault Voltage(in kV) : R=45,Y=42
5	132 kV P K Bari (Sterlite Power) - P K Bari (TSECL) Line	TSECL	08-01-2024 10:02	Fault Current(in kA) : R=5.4, B=5.6 Fault Voltage(in kV) : R=57,B=52	Fault Current(in kA) : R=4.2, B=4.1 Fault Voltage(in kV) : R=57,B=47
6	132 kV Umtru - Umiat St IV 2 Line	MePTCL	10-01-2024 05:12	Fault Current(in kA) : R=3.6,Y=3.6 Fault Voltage(in kV) : R=54,Y=53	Fault Current(in kA) : R=2.7,Y=2.7 Fault Voltage(in kV) : R=43,Y=42
7	132 kV Ningthoukhong - Churachandpur 1 Line	MSPCL	13-01-2024 13:16	Fault Current(in kA) : B=4.6,N=4.2 Fault Voltage(in kV) : B=19,N=70 Angle between(in degrees) : -50	No tripping
8	132 kV Dimapur - Doyang 1 Line	POWERGRID	15-01-2024 14:34	During post fault patrolling, few pieces of roof top material which was blown due to cyclonic wind was found in between tower no. 84 & 85	
9	132 kV Dimapur - Doyang 2 Line	POWERGRID	15-01-2024 14:34		
10	220 kV Karbi Langpi - Sarusajai 2 Line	AEGCL	29-01-2024 10:16	No DR submitted	Fault Current(in kA) : B=6.6,N=6.5 Fault Voltage(in kV) : B=31, N=75 Angle between(in degrees) : -69
11	132 kV Ningthoukhong - Churachandpur 2 Line	MSPCL	31-01-2024 05:40	Fault Current(in kA) : R=3,N=2.5 Fault Voltage(in kV) : R=34, N=52 Angle between(in degrees) : -69	No tripping



Deliberation of the sub-committee

NERTS stated that tripping of 132kV Jiribam-Tipaimukh line on 20.01.2024 occurred due to tree cutting by miscreants in unsafe manner.

AEGCL stated that regarding tripping of 220kV Karbi Langpi- Sarusajai 2 line on 1.01.2024, the line Auto reclosure was not configured at Karbi-Langpi end. AEGCL team will visit Langpi in the next month to configure the same.

DoP Ar. Pradesh stated that Jumper snapping caused the tripping of 132kV Balipara- Tenga line on 4th & 5th Jan'24. He further stated that shutdown has been scheduled on 3rd March, 2024 to replace the Jumpers.

Regarding tripping of PK Bari-P K bari line, TSECL updated that tree cutting by miscreants in unsafe manner caused tripping.

Sub-committee noted as above

B.7 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.

Status of submission of the same for the month of January, 2024 is shown below:

Sl. No.	GD/GI/Ne ar Miss	Affected Areas	Date & Time	Flash/Detailed report to be submitted by User/SLDC	Flash Report By User { IEGC section 37.2 (b)}	Detailed report by User within 7 Days { IEGC section 37.2 (e)}	Detailed Report submitted By NERLDC	Root Cause	Non Compliance observed
1	GD-I	Blackout of Dharmanagar & Dullavchhera	10:25 Hrs on 02-01-2024	Tripura	Yes	No	Yes	Y-B fault with fault current 6 kA	IEGC section 37.2 (e)- Detailed Report By User IEGC section 37.2 (c) & CEA grid Standard 15.3- DR/EL provided within 24 Hours?
2	GI-II	Blackout of 220 kV Bus I at Kopili	16:59 Hrs on 02-01-2024	NEEPCO	No	No	Yes	Maloperation of the Bus Bar Relay	IEGC section 37.2 (b)- Flash Report By User IEGC section 37.2 (e)- Detailed Report By User IEGC section 37.2 (c) and CEA grid Standard 15.3-DR/EL provided within 24 Hours?
3	GI-II	Blackout of 220 kV Bus I at Kopili	17:50 Hrs on 02-01-2024	NEEPCO	No	No	Yes	Maloperation of the Bus Bar Relay	IEGC section 37.2 (b)- Flash Report By User IEGC section 37.2 (e)- Detailed Report By User IEGC section 37.2 (c) and CEA grid Standard 15.3-DR/EL provided within 24 Hours?
4	GD-I	Blackout of 220 kV Bus II at Kopili	17:24 Hrs on 03-01-2024	NEEPCO	No	No	Yes	Maloperation of the Bus Bar Relay	IEGC section 37.2 (b)- Flash Report By User IEGC section 37.2 (e)- Detailed Report By User
5	GI-II	Blackout of 220 kV Bus I at Kopili	17:04 Hrs on 05-01-2024	NEEPCO	Yes	No	Yes	Maloperation of the Bus Bar Relay	IEGC section 37.2 (e)- Detailed Report By User
6	GI-II	Blackout of 220 kV Bus I at Kopili	18:03 Hrs on 08-01-2024	NEEPCO	Yes	No	Yes	Maloperation of the Bus Bar Relay	IEGC section 37.2 (b)- Flash Report By User IEGC section 37.2 (e)- Detailed Report By User
7	GD-I	Blackout of Ningthoukhong area	13:34 Hrs on 13-01-2024	Manipur	No	No	Yes	Whicle charging 132 kV Ningthoukhong - Churachandpur 2 line	IEGC section 37.2 (b)- Flash Report By User IEGC section 37.2 (e)- Detailed Report By User
8	GD-I	Blackout of Agartala area	16:26 Hrs on 15-01-2024	Tripura	Yes	No	Yes	All other elements connected to Agartala substation tripped from remote end on operation of ZII and ZIV initiated from Agartala end (no tripping)	IEGC section 37.2 (e)- Detailed Report By User & IEGC section 17.3-DR Time Synchronization Issues

Single Detailed Report submitted by Kopili on 5th Feb'24 for Grid Events at Kopili during the month of December 2023 and January 2024 (Annexure B.7)

Deliberation of the sub-committee

The forum noted the instances of non-compliance of Protection code of IEGC 2023 by utilities. Member Secretary, NERPC directed all the utilities to send DR/EL reports on time for timely analysis of Grid events.

Sub-committee noted as above.

B.8 Submission of Protection Performance Indices by Transmission Utilities:

As per Regulation No. 15(6), Protection Code - Users shall submit the following protection performance indices of previous month to their respective RPC and RLDC on monthly basis for 220 kV and above (132 kV and above in NER) system by 10th of every month for previous month indices, which shall be reviewed by the RPC:

- The Dependability Index defined as $D = N_c / (N_c + N_f)$
- The Security Index defined as $S = N_c / (N_c + N_u)$

- The Reliability Index defined as $R = \frac{N_c}{N_c + N_i}$

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

NERTS, NTL, NETC & MePGCL submitted the Protection Performance Indices for the month of January, 2024 as follows:

SN	Name of Transmission Licencee	D= (Nc/Nc+Nf)	S= (Nc/Nc+Nu)	R= (Nc/Nc+Ni)	Remakrs
1	NERTS	1	1	1	-
2	NETC	-	-	-	No bays owned by NETC
3	NTL	1	1	1	-
4	MePGCL	1	0.5	0.5	-

It has been observed that Protection Performance Indices are not being submitted by all the users. Therefore, all Users are requested to furnish performance indices (Dependability-D, Security-S, Reliability-R) with regards to the tripping of elements to NERPC & NERLDC positively by 10th of every month for previous month indices.

Deliberation of the sub-committee

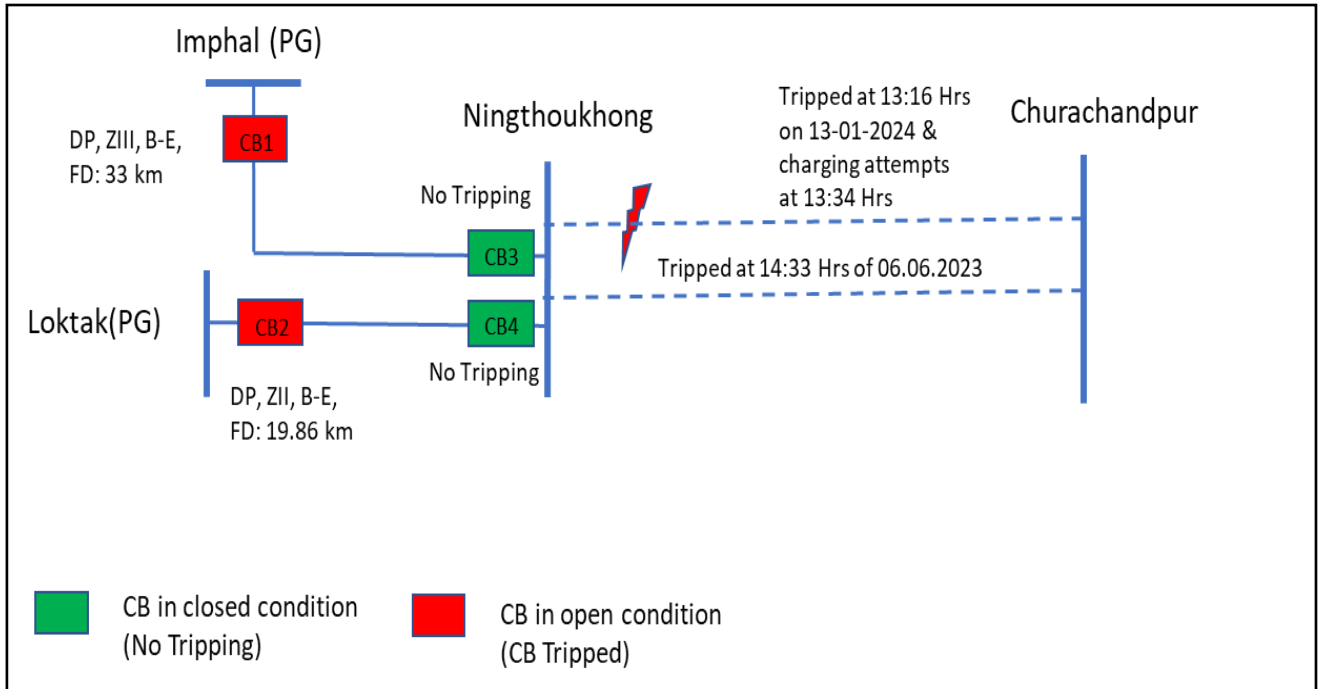
Member Secretary appreciated the above mentioned utilities for submission performance indices and directed other utilities to provide the indices before 10th of every month for previous month grid element operation.

Sub-committee noted as above.

B.9 Repeated Grid Disturbance in Ningthoukhong and radially connected Churachandpur & Thanlon area of Manipur power system on January & February 2024:

Blackout of Ningthoukhong area:

At 13:34 Hrs of 13.01.2024, 132 kV Loktak – Ningthoukhong & 132 kV Imphal – Ningthoukhong lines tripped which led to blackout of Ningthoukhong area of Manipur power system.



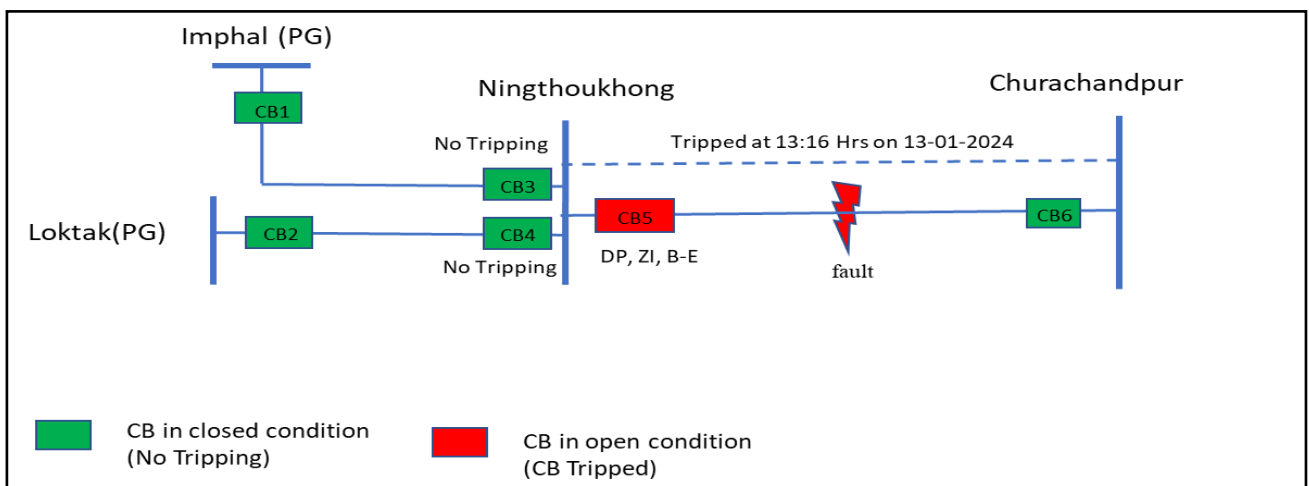
Remarks: Healthy lines tripped while taking charging attempts of the 132 kV Ningthoukhong-Churachandpur 1 line at 13:34 Hrs.

Blackout of Churachandpur & Thanlon area:

Event 1: 01.02.2024, 22:47 Hrs: Load Loss: 8 MW

Event 2: 02.02.2024, 01:37 Hrs : Load Loss: 5 MW

132 kV Ningthoukhong-Churachandpur 2 line tripped which led to blackout of Churachandpur and Thanlon area of Manipur power system.



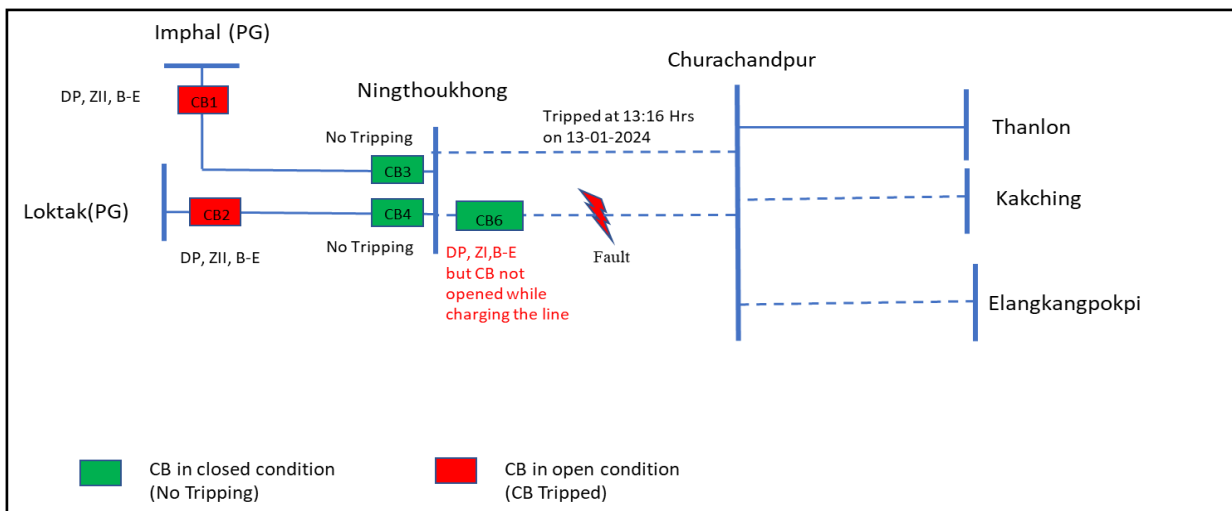
Remarks: Line tripped correctly due to Solid/metallic fault.

Blackout of Ningthoukhong and radially connected Churachandpur & Thanlon area:

Event 1: 02.02.2024,10:05 Hrs: Loss: 18 MW

Event 2: 02.02.2024,18:44 Hrs: Load Loss: 19 MW

132 kV Loktak – Ningthoukhong & 132 kV Imphal – Ningthoukhong lines tripped which led to blackout of Ningthoukhong area of Manipur power system.



Remarks: Healthy lines tripped while taking charging attempts of the 132 kV Ningthoukhong-Churachandpur 2 line at 10:05 Hrs and 18:44 Hrs.

MSPCL is requested to share the root cause for repeated fault in the 132 kV Ningthoukhong-Churachandpur 2 line and remedial action taken to avoid such blackouts in the future.

Deliberation of the sub-committee

MSPCL stated that, regarding blackout on 13.01.2024, protection system at Ningthoukhong end for Churachandpur line 1 did not operate due to trip coil issue in the breaker which has now been resolved.

NERLDC stated that no flash report was received from MSPCL. MSPCL assured to look into the matter.

The forum requested Manipur to ensure simultaneous operation of both lines of Ningthoukhong-Churachandpur D/C line. Also, the forum urged Manipur to restore Elangkangpokpi- Churachandpur and Kakching-Churachandpur lines at the earliest for stable and reliable operation of the Manipur system.

Manipur representative stated that due to the law-and-order situation in the State, maintenance activities has been affected. He however assured that suggested actions will be taken at the earliest.

Sub-committee noted as above.

B.10 Non-operation of auto recloser in Important Grid Elements for transient faults in January 2024:

Sl No	Element Name	Time	Relay End1	Relay End2	A/R not Operated	Remarks from Utility
1	132 kV Along-Pasighat Line	01-01-2024 04:48	DP, ZI, R-E, FD: 47.52 Km	DP, ZI, R-E, FD: 19.57 Km	Both ends	
2	220 kV Karbi Langpi - Sarusajai 2 Line	01-01-2024 11:41	DP, ZI, B-E, FD: 36.33 Km, No DR submitted	DP, ZI, B-E, FD: 21.3 Km	Both ends	
3	132 kV Balipara - Tenga Line	04-01-2024 22:51	DP, ZI, R-Y, FD: 40.36 Km	DP, ZI, R-Y, FD: 37.30 Km	Both ends	
4	132 kV Balipara - Tenga Line	05-01-2024 00:35	DP, ZI, R-Y, FD: 40.16 Km	DP, ZI, R-Y, FD: 37.3 Km	Both ends	
5	220 kV Samaguri - Sonapur Line	08-01-2024 10:07	DP, ZI, B-E, FD: 0.2 km, AR unsuccessful	DP, ZI, B-E, FD: 127.9 km	Sonapur	
6	220 kV AGBPP-Mariani(PG) Line	12-12-2023 12:29	DP,ZI,B-E,FD: 44.9 Km, (No DR submitted)	DP,ZI,B-E,FD: 110.9 KM, A/R successful	AGBPP	

7	132 kV Along - Pasighat Line	23-01-2024 05:58	DP, ZI, R-E	DP, ZI, B-E, FD: 40 km	Both ends	
8	220 kV Karbi Langpi - Sarusajai 2 Line	29-01-2024 10:16	DP, ZI, Y-E, <i>(No DR submitted)</i>	DP, ZI, Y-E	Both ends	
9	220 kV Mariani (AEGCL) - Samaguri Line	25-01-2024 13:11	DP, ZI, B-E, FD: 27.8 KM <i>(No DR submitted)</i>	DP, ZII, FD: 132 KM <i>(No DR submitted)</i>	Both ends	

Deliberation of the sub-committee

Utilities updated as follow-

Sl No	Element Name	Time	Relay End1	Relay End2	A/R not Operated	Remarks from Utility
1	132 kV Along-Pasighat Line	01-01-2024 04:48	DP, ZI, R-E, FD: 47.52 Km	DP, ZI, R-E, FD: 19.57 Km	Both ends	CB spring charging motor issue at Along SS, to be rectified by March'24
2	220 kV Karbi Langpi - Sarusajai 2 Line	01-01-2024 11:41	DP, ZI, B-E, FD: 36.33 Km, No DR submitted	DP, ZI, B-E, FD: 21.3 Km	Both ends	AR not configure at Karbi langpi. Will visit next month and configure the same.

3	132 kV Balipara - Tenga Line	04-01- 2024 22:51	DP, ZI, R- Y, FD: 40.36 Km	DP, ZI, R- Y, FD: 37.30 Km	Both ends	Single phase AR enabled, but 3 phase fault occurred. Three phase AR to enabled by March'24
4	132 kV Balipara - Tenga Line	05-01- 2024 00:35	DP, ZI, R- Y, FD: 40.16 Km	DP, ZI, R- Y, FD: 37.3 Km	Both ends	Same as above
5	220 kV Samaguri - Sonapur Line	08-01- 2024 10:07	DP, ZI, B- E, FD: 0.2 km, AR unsuccessf ul	DP, ZI, B- E, FD: 127.9 km	Sonapur	AR functional at both ends. AR unsuccessful because of persistent fault
6	220 kV AGBPP- Mariani(PG) Line	12-12- 2023 12:29	DP,ZI,B- E,FD: 44.9 Km, (No DR submitted)	DP,ZI,B- E,FD: 110.9 KM, A/R successful	AGBPP	Insulator flashover. Burnt BPR was observed Will look into the issue of non-operation of AR
7	132 kV Along - Pasighat Line	23-01- 2024 05:58	DP, ZI, R-E	DP, ZI, B- E, FD: 40 km	Both ends	Same as point no 1
8	220 kV Karbi Langpi - Sarusbajai 2 Line	29-01- 2024 10:16	DP, ZI, Y- E, (No DR submitted)	DP, ZI, Y-E	Both ends	Same as point no. 2

9	220 kV Mariani (AEGCL) - Samaguri Line	25-01- 2024 13:11	DP, ZI, B- E, FD: 27.8 KM (No DR submitted)	DP, ZII, FD: 132 KM (No DR submitted)	Both ends	Panel replacement work underway
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B.11 UFR load profile of NER states for the period 1st Oct'23 – 31st Dec'23

NERLDC has prepared the quarterly report on UFR load profile of the NER states as mentioned in the Regulation 29.13(d) of IEGC-23 and shared with all the SLDC's & NERPC vide email dated 08-02-2024.

The quarterly report covers the stage wise UFR load profile of Assam, Meghalaya and Nagaland power system based on the SCADA data mapped for UFR load available at NERLDC.

Stage wise summary of UFR at Assam is tabulated below:

UFR Stage	Load shedding required (MW)	Maximum Load (MW)	Minimum Load (MW)	Average Load (MW)	Observations/Remarks
I	90	98	12	46	Load connected below the required quantum.
II	90	115	5	55	
III	90	126	18	55	Connected load reduces to the minimum level mostly during the morning Hours
IV	90	123	13	53	

Stage wise summary of UFR at Meghalaya is tabulated below:

UFR Stage	Load shedding required (MW)	Maximum Load (MW)	Minimum Load (MW)	Average Load (MW)	Observations/Remarks
I	25	16	0	10	Load connected below the required quantum.

II	25	5	0	3	
III	25	14	0	7	Load connected below the required quantum. Non availability of SCADA data for 33kV Dakopgre for whole quarter & Non availability of SCADA data for 33 kV Tura-I feeder at 132/33kV Rongkhon from 1st to 16th Oct'23
IV	25	6	0	3	Load connected below the required quantum. Non availability of SCADA data for 33 kV Tura-II feeder at 132/33kV Rongkhon from 1st to 16th Oct'23

Stage wise summary of UFR at Nagaland is tabulated below:

UFR Stage	Load shedding required (MW)	Maximum Load (MW)	Minimum Load (MW)	Average Load (MW)	Observations/Remarks
I	10	9	0	4	Load connected below the required quantum.
II	10	19	0	9	Adequate load connected for Stage II & III
III	10	13	2	6	
IV	10	8	0	2	Load connected below the required quantum.

Summary of the Stagewise actual load of UFR was below the Set Load in Percentage Wise as tabulated below:

	Cumulative Stage I	Cumulative Stage II	Cumulative Stage III	Cumulative Stage IV
Assam	99.9%	99.1%	96.4%	97.1%
Nagaland	100.0%	71.9%	98.2%	100.0%
Meghalaya	43.2%	100.0%	80.8%	100.0%

Deliberation of the sub-committee

Forum observed that average load on UFR feeders is significantly lower than the set load curtailment value. In some cases, it is lower than 50 % of the set values.

NERPC stated that the set value had been determined considering the peak load of the state for a whole year, without consideration of seasonality variation in load. NERPC further stated that comparison of set value with actual load value in off peak season is bound to give large deviations. And, if actual load shedding during an event, in a month of low demand, is close to set value which was determined based on Peak load for a whole year, the excessive load shedding may lead to problem of over frequency after overcoming the low frequency.

Therefore, NERPC stated that adequacy of load shedding on the identified feeders, incorporating seasonality factor, is best captured in the monthly exception report which is being monitored in OCC meetings.

The forum noted that UFR load feeders will be closely monitored in OCC meetings through the monthly exception reports.

Sub-committee noted as above

B.12 Mapping of telemetered UFR load point in the SCADA Display for Arunachal Pradesh, Mizoram, Manipur and Tripura power system:

As per the Regulation 29.13(d) of IEGC-23, SLDC shall ensure that telemetered data of feeders (MW power flow in real time and circuit breaker status) on which UFR and df/dt relays are installed is available at its control centre. SLDC shall monitor the combined load in MW of these feeders at all times. SLDC shall share the above data with the respective RLDC in real time and submit a monthly exception report to the respective RPC. RLDC shall inform SLDCs as well as the concerned RPC on a quarterly basis, durations during the quarter when the combined load in

MW of these feeders was below the level considered while designing the UFR scheme by the RPC. SLDC shall take corrective measures within a reasonable period and inform the respective RLDC and RPC, failing which suitable action may be initiated by the respective RPC.

Mapping of AUFLS feeders also discussed in the 14th Meeting of National Power Committee held on 03.02.2024, SLDCs in coordination with STU/Discoms, map the feeders for loading, breaker status etc. and create display for monitoring of all the stages. The SLDC would extend the mutually agreed displays to RLDC. SLDCs also develop the SCADA Displays Discom-wise/Sub SLDC wise as applicable as well as feeder wise for all the stages. Mapping verification between SLDC and Discom/STU to be carried out at least once in three (3) months and between RLDC and SLDCs at least once in six (6) months. SLDCs shall download the data and store it for two years. The Data should be made available to RPCs/RLDCs/CEA/CERC for further studies or analysis.

Hence, Arunachal Pradesh, Mizoram, Manipur and Tripura are requested to prioritize the UFR load mapping in the SCADA for real time UFR load monitoring.

Deliberation of the sub-committee

Forum directed all the state utilities to ensure mapping of UFR feeders at their SLDC control rooms at the earliest in compliance with IEGC regulations.

B.13 Mock testing of the System Protection Scheme (SPS) of the NER:

New IEGC highlighted the need for mock testing of the SPS for reviewing SPS parameters & functions, at least once in a year under the regulation 16 (2) of IEGC 2023.

As per the discussion in the 63rd PCCM, NERLDC has prepared draft procedure for testing of SPS at Samaguri substation at Assam attached in **Annexure B.13**.

All the utilities are requested to share Suggestions/comments on the draft procedure.

Deliberation of the sub-committee

NERLDC and AEGCL stated that mock SPS testing at Samaguri will be conducted on Sunday and shutdown of identified loads will be required for half an hour.

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 has 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.

All the respondents are requested to provide the progress report for Dec'23 and Jan'24.

Deliberation of the sub-committee

DoP Nagaland stated that the progress report for Jan'24 has been recently sent to NERPC and NERLDC.

Member Secretary, NERPC requested NELRDC and concerned states to provide following details and month wise report to NERPC so as quarterly report can be submitted to Commission –

State/Utility	Nomination of Nodal officers (at the level of SE & above)	Whether List of substations identified by NERLDC/State?	Whether Action plan with timeline for implementation submitted?	Monthly Work progress report submitted?
DoP Arunachal Pradesh	No	Yes	Yes	December 2023 1. DR/EL-100% 2. AR status-2024-25
DoP Nagaland	No	Yes	Not available	Not available
DoP Mizoram	No	Yes	Not available	Not available
TPTL/TSECL	No	Yes	Not available	Not available
MSPCL	No	Yes	Not available	Not available

Sub-committee noted as above

C.2 Diversion of PLCC panels allotted for Salakati-Gelephu feeder to 220kV Salakati-BTPS-II feeder:

POWERGRID has procured PLCC panels to install in Salakati-Gelephu feeder at both ends. But, Bhutan Power Dept had cancelled the shutdown planned in Jan 2023 to install PLCC panels by POWERGRID as they are planning for DTPC installation at both ends. Further, even after reminders from POWERGRID & NLDC no action plan has been shared by Bhutan for DTPC installation till date. POWERGRID has planned to install the above allocated PLCC panels in 220kV Salakati-BTPS #II feeder. and there shall be no further plan to install PLCC panels in Salakati-Gelephu feeder by POWERGRID.

In 63rd PCCM, POWERGRID informed that they have planned to install the PLCC panels allocated for Salakati-Gelephu feeder in 220kV Salakati-BTPS #II feeder. NERLDC informed that NLDC has already sent a letter to NLDC Bhutan about the procurement status and installation cum commissioning plan of DTPC at both Salakati and Gelephu.

The forum noted as above and decided to review in PCC meeting.

Deliberation of the sub-committee

NERLDC informed that Bhutan has requested for Optical fiber communication on the line. NERTS stated that Optical fiber is present on the line and E1 channel may be provided on the fiber for DTPC communication. He further stated that more clarity on the matter will be provided after communicating with the communication division.

Sub-committee noted as above

C.3 Non-Operation of A/R at Doyang HEP for 132 kV Dimapur- Doyang 1&2 line:

Sl. No.	Element Name	Time	Relay End1	Relay End2	Remarks
1	132 kV Dimapur - Doyang 1	19-09- 2023 14:53	DP, ZI, R-Y-E, FD: 86.192 Kms, AR Successful	DP, ZI, R-Y-E, AR Not Operated	Lightning

2	132 kV Dimapur - Doyang 2	07-08- 2023 19:35	DP, ZI, B-E, FD:23.84 kms, AR Successful	DP, ZI, B-E, AR Not Operated	Lightning
3	132 kV Dimapur - Doyang 2	19-08- 2023 02:19	DP, ZII, Y-E, FD: 91.14 Kms; carrier aided, AR Successful	DP, ZI, Y-E, AR Not Operated	Lightning

Numerous instances of tripping have been noted, primarily attributed to the transient nature of the fault. The Autorecloser at the Dimapur (PG) end has consistently performed successfully. Nevertheless, it is apparent that no Autorecloser operation was recorded in the submitted Disturbance Recorder (DR) from the Doyang end, indicating that there is need of checking of Autorecloser function at Doyang HEP.

In 60th PCCM NERLDC updated the forum that CBs at Doyang are spring closed and air operated (pneumatic type). As soon as breaker gets open, air pressure goes down below 15Kg/cm² and the breakers goes to non-operative mode. After running the compressor when air pressure is achieved to 15Kg/cm², that condition goes off, by that time AR time becomes over. They have called CGL, OEM of the breakers, to attend the problem. The OEM has assured that they will report within this month. In case, OEM is not able to resolve this matter, all the CBs of Doyang SY needs to be replaced (CBs were procured during commissioning of the Plant i.e., 2000).

In 61st PCCM NEEPCO intimated that the OEM will visit on 08th December, 2023 and suggest the resolution. If resolution not possible then NEEPCO will replace CB. The forum requested NEEPCO to resolve the issue at the earliest.

In 63rd PCCM, NEEPCO informed that the OEM visit is planned in the coming week and the same is expected to be rectified by end of January 2024.

Deliberation of the sub-committee

NEEPCO stated that OEM has recommended for replacement of the CB, so procurement process is underway and work to be completed within six months (ie., by August, 2024)

Sub-committee noted as above

C.4 Requirement of SPS for 132 KV Khliehriat (PG)-Khliehriat D/C line

With expected availability of at least two machines of Kopili and one machine of Khandong during peak hours of the coming winter months of 2023-24 and considering the anticipated increase in demand, it is expected that total power flow along 132 KV Khliehriat (PG)-Khliehriat D/C line would be between 90-110 MW under different conditions. Load flow studies had been carried out by SLDC and shared with NERLDC. The matter had also been discussed with DGM, NERTS since 132 KV Khliehriat (PG)-Khliehriat line 1 is under POWERGRID. The scheme envisages shedding of 20-25 MW load at 132 KV Mustem substation in the event of tripping of any circuit of 132 KV Khliehriat (PG)-Khliehriat D/C line.

The above requirement was agreed in principle during the 205th OCC meeting and NERLDC and MePTCL were requested to develop the tripping logic and to present it in the next PCC meeting. The schematics of the SPS is attached for reference.

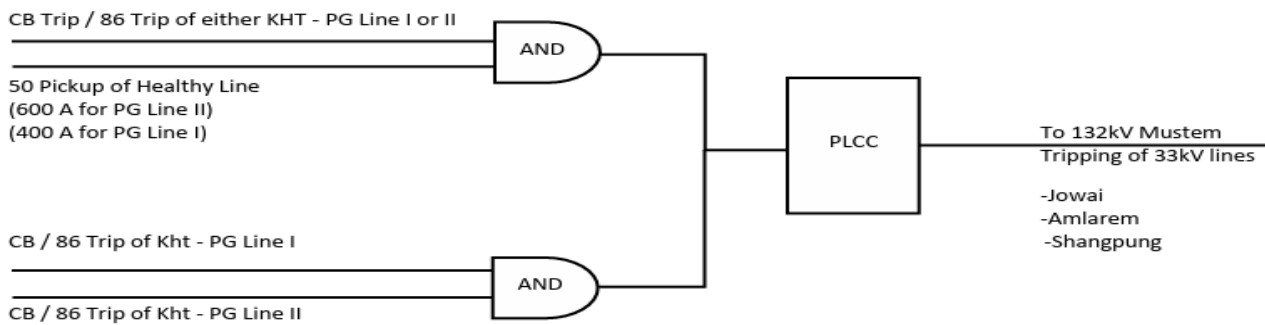
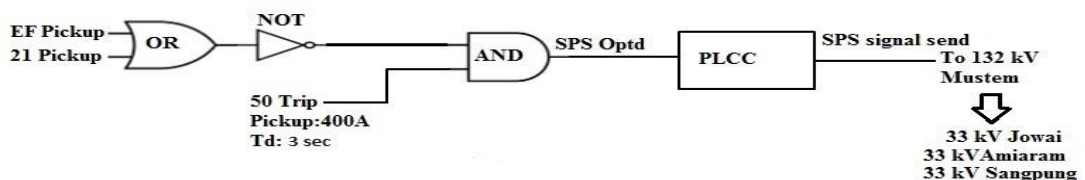


Fig: SPS Schematics at 132kV Khliehriat S/S for 132kV PG Line I & II

In 60th PCCM, NERLDC provided the modified logic (as below) and same need to be implemented by MePTCL. MePTCL agreed the same.

SPS Logic Diagram



In 61st PCCM SLDC, Meghalaya informed that the scheme has been put up for approval of higher authorities and the logic will tentatively be implemented by December'23 end.

In 62nd PCCM, MePTCL updated that the SPS is implemented at Mustem, while it will be implemented at Khliehriat S/S in Jan'24.

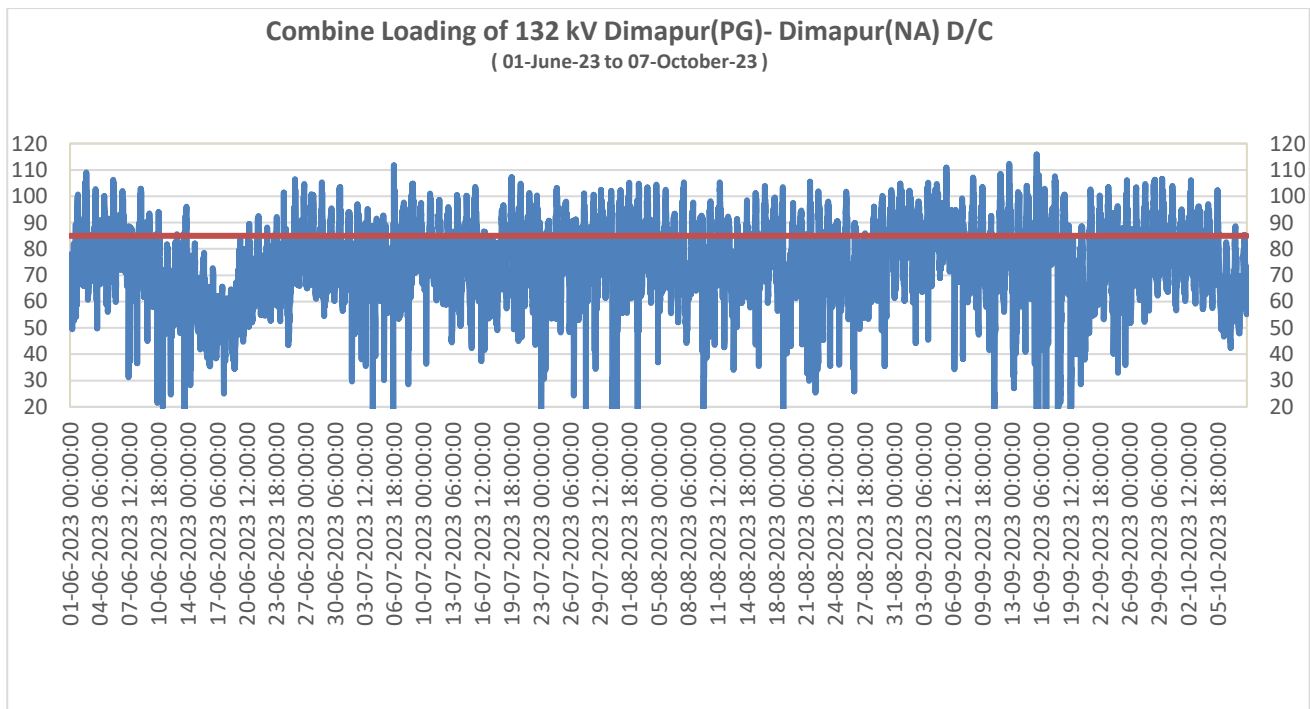
In 63rd PCCM, Meghalaya informed that the SPS will be implemented by 6th Feb'24.

Deliberation of the sub-committee

Meghalaya updated that the SPS has been fully implemented on 13th February'24.

Sub-committee noted as above

C.5 Requirement of SPS implementation at Dimapur to for ensuring reliable power in Dimapur area of Nagaland:



Loading profile of Dimapur shows N-1 contingency of any one circuit not satisfied most of the time as the combine loading was above 85 MW for 22% of times and above 80 MW for 35% of times.

Hence, to satisfy the N-1 contingency at Dimapur (NL) and to avoid load loss in the Dimapur area, DoP, Nagaland is requested to implement suitable System Protection Scheme (SPS) with following criteria-

If the loading of any one circuit current exceeds more than 415A, the SPS will trigger and it will shed 25-30 MW load at Nagarjan area, which will increase the reliability of Nagarjan area of Nagaland system.

In 60th PCCM, DoP Nagaland updated that reconductoring of the line is under process, DPR is in final stage.

Regarding the SPS, forum requested DoP Nagaland to identify 25-30 MW load at Nagarjan area for the implementation of the SPS scheme at the earliest.

In 61st PCCM, Nagaland stated that feeders have been identified to cut around 40MW in 66kV Power House and 33kV Metha Further he stated that internal approval for the same has also been taken.

In 62nd PCCM, NERLDC informed that DoP Nagaland has identified the load and NERLDC has prepared the draft SPS. NERLDC further informed that the draft SPS has been sent to NERPC for review.

NERPC stated that the scheme will be reviewed shortly.

In 63rd PCCM, DoP Nagaland stated that the SPS has been finalized and will be enabled shortly.

Deliberation of the sub-committee

DoP Nagaland stated that the SPS will be implemented before the next PCC meeting.

Sub-committee noted as above

C.6 Non-operation of auto recloser in Important Grid Elements for transient faults in October, November and December 2023:

As updated in 63rd PCCM

Sl No	Element Name	Time	Relay End1	Relay End2	A/R not Operated	Remarks from Utility
1	220 kV NTPS - Tinsukia 1 Line	26-10-2023 16:37	DP,Z1,Eart h fault,39km	B-Eph, Z-1, LA burst	No details provided	Planning completed will be implemented in Feb'24.

2	132 kV Jiribam - Pailapool Line	30-10- 2023 12:47	DP, ZI, R-Y, FD: 6.49 km, AR successful	DP, ZI, R-Y	Pailapool	Will be completed by 7 th Feb'24.
3	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	Surajman inagar	Will be implemented within 6 months, PowerGrid will help in implementation.
4	220 kV Mariani (AEGCL) - Samaguri Line	29-11- 2023 15:10	DP, ZI, B-E	DP, ZI, B-E, FD: 16 km	Samaguri	AR will be implemented by Feb'24 at Mariani (currently PSDF work is going on at Mariani so AR kept off at Samaguri)

Sl No	Element Name	Time	Relay End1	Relay End2	A/R not Operated	Remarks from Utility
5	220 kV AGBPP- Mariani (PG) Line	12-12- 2023 12:29	DP, ZI,B- E,FD: 44.9 Km, NO DR submitted	DP, ZI, B- E, FD: 110.9 KM, A/R successful	AGBPP	NEEPCO need to check the AR issue and submit DR/EL.
6	132 kV Along- Pasighat Line	24-12- 2023 03:07	DP, ZI, R-E	DP, ZI, R-E	Both ends	Along AR not ready due to issue with CB spring charging motor. Pasighat -CB ready status

						not coming in CRP/BCU
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Deliberation of the sub-committeeAs updated in 64th PCCM

Sl No	Element Name	Time	Relay End1	Relay End2	A/R not Operated	Remarks from Utility
1	220 kV NTPS - Tinsukia 1 Line	26-10-2023 16:37	DP,Z1,Earth fault,39km	B-Eph, Z-1, LA burst	No details provided	Planning completed, Implementation will take more time, w.r.t Feb'24
2	132 kV Jiribam - Pailapool Line	30-10-2023 12:47	DP, ZI, R-Y, FD: 6.49 km, AR successful	DP, ZI, R-Y	Pailapool	Will be completed by next week
3	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	Surajmani nagar	Will be implemented by May'24
4	220 kV Mariani (AEGCL) - Samaguri Line	29-11-2023 15:10	DP, ZI, B-E	DP, ZI, B-E, FD: 16 km	Samaguri	Shifting work underway due to PSDF work. AR will be enabled within 3 months

Sl No	Element Name	Time	Relay End1	Relay End2	A/R not Operated	Remarks from Utility
5	220 kV AGBPP-Mariani (PG) Line	12-12-2023 12:29	DP,ZI,B-E,FD: 44.9 Km, NO DR submitted	DP, ZI, B-E,FD: 110.9 KM,	AGBPP	NEEPCO need to check the AR issue and submit DR/EL.

				A/R successful		
6	132 kV Along-Pasighat Line	24-12-2023 03:07	DP, ZI, R-E	DP, ZI, R-E	Both ends	Along AR not ready due to issue with CB spring charging motor. To be done by March'24

Sub-committee noted as above

C.7 132kV Kumarghat - P.K. Bari issue

POWERGRID has commissioned Line Diff Relay for 132kV Kumarghat PK Bari feeder. During commissioning, following issues have been noted at PK Bari end: -

1. AR kept OFF at PK Bari end by Tripura, however, the same is in ON Position at Kumarghat end.
2. Due to previous experience of multiple tripping at Kumarghat because of fault in P.K. Bari-Dharmanagar feeder & non isolation of the fault by P.K. Bari end CB, previously it was decided that Zone Timer for 132kV Kumarghat-P.K. Bari feeder (at Kumarghat end) shall be kept as under: -
 - a. Z1 = 0 msec
 - b. Z2 = 200 msec
 - c. Z3 = 300 msec

Tripura may please confirm the healthiness of the CBs (PK Bari end CB for Kumarghat PK Bari & P.K. Bari end CB for P.K. Bari-Dharmanagar feeder) otherwise forum may allow continuing the above Time delay setting for respective Zones of Distance Protection in 132kV Kumarghat-P K Bari Line at Kumarghat end.

In 62nd PCCM, Forum approved above stated time delay setting till TSECL checks and confirms the healthiness of the CBs (PK Bari end CB for Kumarghat PK Bari & P.K. Bari end CB for P.K. Bari-Dharmanagar feeder).

TSECL assured the forum to check the healthiness at the earliest.

In 63rd PCCM, TSECL informed that there is some issue with CB at PK Bari for Dharmanagar. Testing equipment has been received and test will be done soon.

Forum requested TSECL to confirm CB healthiness status after testing within Feb24.

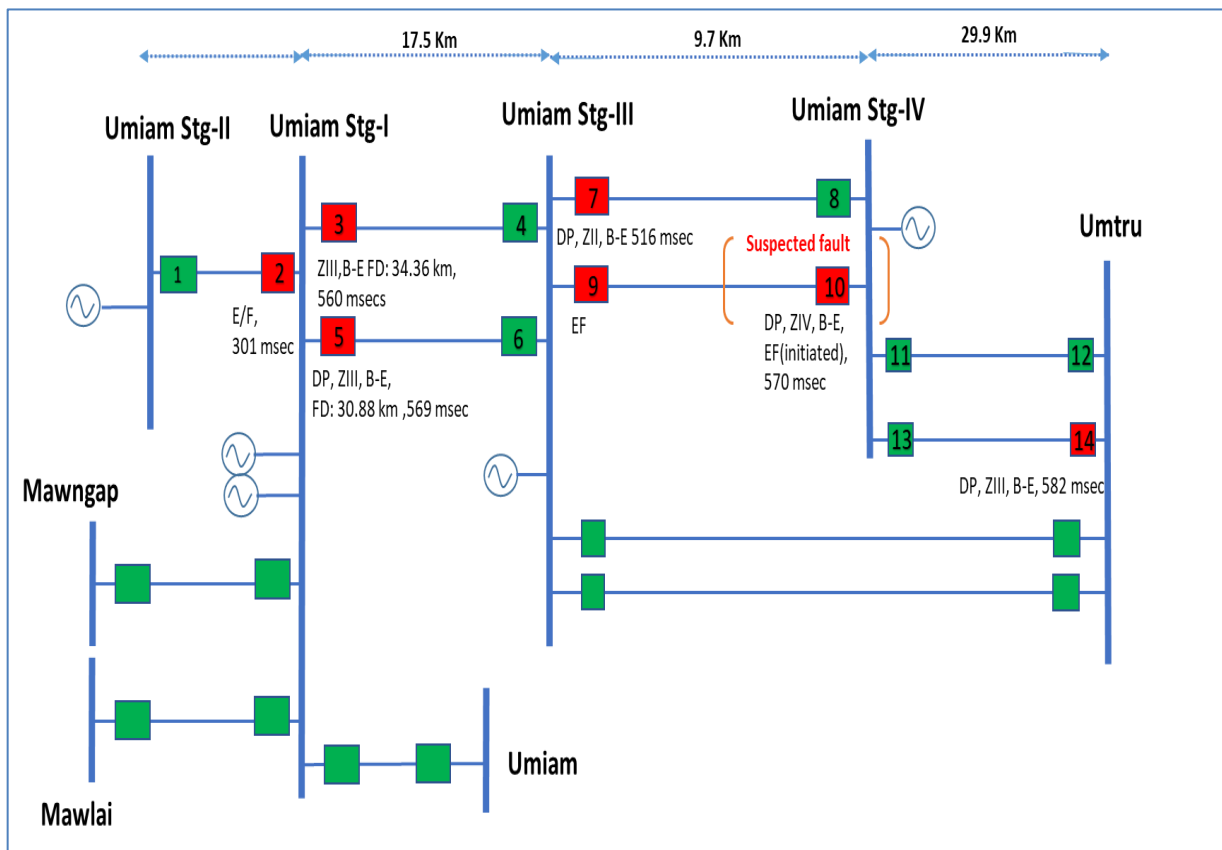
Deliberation of the sub-committee

TSECL stated that protection team will visit P K Bari substation in Feb'24 to inspect and rectify the issue.

Sub-committee noted as above

C.8 Blackout of 132 kV Umiam Stg-II on 09th Dec 2023:

At 12:12 Hrs of 09-Dec-2023, the following element tripped as shown below resulting in blackout of 132 kV Umiam Stg-II:-



As per DR analysis, 132 kV Umiam Stage 1- Umiam Stage 3 Line 1 & 2 tripped from Umiam Stage 1 end in 560 msec & 570 msec respectively on operation of DP, ZIII indicates that fault is beyond the line.

Tripping of 132 kV Umiam Stage 3- Umiam Stage 4 Line 1 on DP, ZII from Stage 3 end and no tripping from Stage 4 end indicates the fault is not in the line. Suspected

fault in 132 kV Umiam Stage 3- Umiam Stage 4 Line 2 and tripping of multiple elements occurred due to relay coordination Issues.

Following protection issues were observed:

- Tripping on DP, ZIII in 560-580 msec indicates less time delay setting incorporated at Umiam Stage 3.
- Tripping 132 kV Umiam Stage 1 – Umiam Stage 2 on Earth Fault from Stage 2 end indicates directionality issue in the backup relay.
- Tripping of Umiam I Unit-3 & 4 and Umtru Unit-1 seems unwanted.

Meghalaya is requested to share the root cause of these tripping and remedial measures taken.

In 63rd PCCM, following actions were recommended:

1. Directionality in EF protection for Umiam stg 2 line at Umiam stg 1 has to be ensured at the earliest. Highs set EF protection to be disabled.
2. Non operation of distance protection at stg 3 for stg 4-line 2 has to be looked into.
3. Time settings for Z 3 at Umiam stg 1 for stg 3 line has to be changed to 800 msec.

Deliberation of the sub-committee

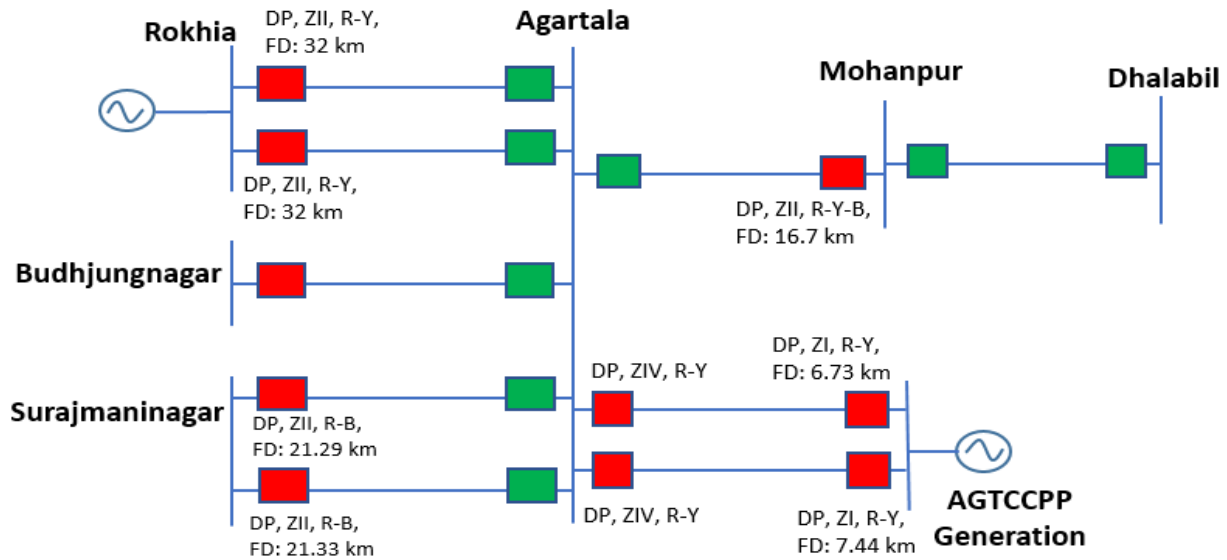
MePTCL informed the following:

- (i) Directionality issue in EF relay has been rectified.
- (ii) Approval for Distance protection settings has been obtained from NERPC and the same will be implemented by 20th February 2024.
- (iii) Revision of time setting for Z3 to 800 msec to be done shortly.

Sub-committee noted as above

C.9 Blackout of 132 kV Agartala S/S on 15th Jan 2024:

At 16:26 Hrs of 15.01.2024, all the lines connected to 132 kV Agartala substation tripped which led to blackout at Agartala Substation of Tripura Power system which is the matter of serious concern.



As per preliminary analysis, R-Y fault detected in 132 kV AGTCCPP-Agartala D/C which was cleared on operation of Z-I from AGTCCPP end. As per information from POWERGRID, ZIV was initiated at Agartala end for both the lines which indicates that the fault is in reverse direction of Agartala.

All other elements connected to Agartala substation tripped from remote end on operation of ZII and no tripping was observed from Agartala end. Total fault clearance time as per PMU: 440 msec.

Prima facie it appears that-

1. Downstream fault is suspected at Agartala which was not cleared leading to tripping of all the elements connected to Agartala from remote end on backup protection.
2. Tripping of 132 kV Agartala-AGTCCPP D/C lines on DP, ZI (Z-1 overreach) from AGTCCPP end for fault beyond the line seems to be mis-operation. ZI reach setting needs to be reviewed by AGTCCPP to prevent re-occurrence. Line length may be confirmed by offline fault locator measurement.

Proper analysis of the event could not be done due to non-availability of FIR, DR & EL outputs by TSECL, AGTCCPP, PGCIL which violates the IEGC section 37.2 (c).

Therefore, it is requested to share the root cause of the event and remedial measures taken.

In 63rd PCCM, NERLDC highlighted that double phase fault was within the switchyard of Agartala S/S as all the feeders from Agartala detected the fault in Z-IV, reverse side.

Forum requested TSECL to provide the root cause and submit the detailed report of the event as per grid code mandate.

Deliberation of the sub-committee

Refer to discussion in agenda B.4, point no 5

C.10 Pending Line Diff Relay issues in 132kV feeder:

- a. As discussed in 62nd PCCM, CT & PT wiring check is pending at Luangmual end for 132kV Aizwal - Luangmual feeder due to which Diff function cannot be activated at both ends.
- b. For 132kV Haflong - Haflong feeder, at Haflong AEGCL end CT wiring needs to be checked & rectified as Diff function cannot be activated until the wiring mismatch is rectified.

In 63rd PCCM it was updated that Mizoram will complete the CT/ PT wiring check in the next shutdown and Assam will complete the pending task by Feb'24.

Deliberation of the sub-committee

Regarding Aizawl-Lunagmual Line, Mizoram stated that CT PT wiring was checked but no problem was identified. He requested NERTS for assistance in next round of inspection. NERTS stated that Mizoram should timely intimate before taking the shutdown for required work. Mizoram will take shutdown in coordination with NERTS.

Regarding Haflong-Haflong feeder, AEGCL stated that shutdown has been planned for next week for required checking and rectification work.

Sub-committee noted as above

C.11 PLCC issues follow up:

- a. PLCC/DTPC needs to be implemented in below stated lines –
 1. 132kV Dimapur Kohima
 2. 132kV Nirjuli Lekhi

3. 132kV Melriat - Zemabwk

b. 400kV Mariani Kohima Ckt #2 - For 400kV Mariani-Kohima Ckt-2, ABB make PLCC Model no-ETL41 is installed at both ends. PLCC panels at both ends are owned by KMTL. At Mariani end, for PLCC Ch#1, alarm is persisting in P4LA card. KMTL had previously deputed service engineer for rectification of the issue in Oct 2022. The issue was resolved in Oct 2022. However, the same issue had resurfaced again from 24th August 2023. Repeated communication has been sent to KMTL to resolve the issue. However, rectification action is still pending.

c. 132 kV Roing - Pasighat – PLCC panels for 132kV Roing -Pasighat feeder are installed at both ends. Panels are in healthy condition at both ends. However, due to non-availability of healthy 48V dc supply at Pasighat end, PLCC panels at Pasighat are in OFF state. DoP AP is requested to arrange healthy 48V dc supply at Pasighat end.

In 63rd PCCM following points were discussed

a. 1. Dimapur-Kohima: DoP Nagaland informed that DPR for implementation of DTPC for tele-protection is under preparation.

a. 2. Nirjuli-Lekhi line: DoP Arunachal Pradesh stated that Wave trap and CVT will be provided by Ar. Pradesh and requested NERTS to provide any spare PLCC if available. Forum requested Ar. Pradesh to install DTPC if PLCC is not available. Ar. Pradesh will confirm in the next PCCM.

a. 3. Melriat – Zemabwk: Mizoram will provide WT, CVT at Zemabawk soon

b. 400kV Mariani Kohima Ckt #2: Issue could not be discussed as KMTL representative was not present.

c. Roing-Pashighat line: DoP Ar. Pradesh stated that there is no issue with the DC battery. It was decided that PGCIL will visit the substation and resolve the issue in coordination with DoP Ar.Pradesh.

Deliberation of the sub-committee

Utilities updated as follow-

Sl. No	Line	Utility	update
1	132kV Dimapur-Kohima	DoP Nagaland	DPR, for DTPC installation, to be prepared by March'24

2	132kV Nirhuli-Lekhi	DoP Ar. Pradesh	NERTS stated that one spare PLCC is available. Forum requested both utilities to implement the PLCC at the earliest
3	132kV Melriat-Zemabawk	Mizoram	NERTS updated that PLCC is available, Mizoram to check for spare WT and CVT
4	400kV Mariani-Kohima ckt 2		KMTL was not present for update
5	132kV roing-Pashighat	DoP Ar. Pradesh	48V DC at Pashighat is not working, proposal for new battery has been put up to higher authorities, to be procured by Dec'24.

Sub-committee noted as above

C.12 AR issues follow up:

- a. Enabling of AR & Carrier Aided Trip at Gohpur end for 132kV Nirjuli-Gohpur feeder by AEGCL
- b. 132kV Dimapur-Doyang 1&2 – At Doyang end, AR is not functional. NEEPCO may kindly look into it to enable it.
- c. 132kV Dimapur-Bokajan - Auto reclose for this line is not functional at Bokajan end. AEGCL is requested to enable it at the earliest.

In 63rd PCCM following points were discussed

- a. AEGCL informed that panel replacement work is going on at Gohpur. It will be enabled in new panel, tentatively by Jan'24.
- b. NEEPCO informed that AR will be functional at Doyang by end of Jan'24.
- c. AEGCL informed that AR has not been installed at Bokajan but they will plan to install it soon.

Forum requested all the states to send the list of lines, on which AR is working, not working, not available and also its commissioning dates to NERPC and NERLDC.

NERLDC was requested to prepare a list of lines in google spreadsheet so that utilities can update the same for smooth monitoring.

Deliberation of the sub-committee

Utilities updated as follow-

- a. AEGCL updated that Panel will be replaced by this month (ie., Feb'24)
- b. refer to item C.3

- c.** AEGCL intimated that at Bokajan, AR is working, but due to pneumatic breaker a time of 5 sec is required for building up of sufficient pressure for AR. AEGCL requested NERPC to allow for keeping AR dead time to be 5 sec in protection settings. NERPC agreed for the same but also stated that breaker needs to be replaced at the earliest for permanent solution.

Sub-committee noted as above

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 63rd PCCM

Sl no	State	Important Transmission lines where AR has to be enabled at the earliest	Last status	Latest status
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 Feb'24.	
2.	Assam	All 220kV and 132kV lines	For 220kV sub stations- At Sonapur, GIS work Completed. At Kathalguri, procurement of relays underway At Jawaharnagar, WIP	

			<p>All works at three substations to be completed by Feb'24</p> <p>For 132kV substations- 80% work completed, by Dec'23 90% to be completed</p> <p>Assam informed all work at three substations will be completed by Jan/Feb 2024.</p>	
3.	Manipur	132kV Imphal- Ningthoungkong	-	
4.	Meghalaya	Annexure (D.1)	<p>Financial Approval of BoD pending.</p> <p>Will take total six month to complete the task.</p>	
7.	Tripura	132kV Agartala-S M Nagar (TSECL), 132kV Agartala-Rokhia DC, 132kV, 132kV Agartala-Budhjungnagar	To be commissioned by Jan'24	

Deliberation of the sub-committee

Status as updated by utilities

Sl no	State	Important Transmission lines where AR has to be enabled at the earliest	Status (63rd PCCM)	Latest status (64th PCCm)
1.	Arunachal Pradesh	132kV Balipara-Tenga, 132kV Ziro-Daporijo-Along-Pashighat link	<p>PLCC implementation under PSDF underway. SPAR have been enabled on the lines without PLCC</p> <p>3-Ph AR will be enabled by Feb'24.</p>	3 ph AR to be enabled by March'24
2.	Assam	All 220kV and 132kV lines	For 220kV sub stations- At Sonapur, GIS work Completed.	Work completed at Sonapur.

			At Kathalguri, procurement of relays underway At Jawaharnagar, WIP All works at three substations to be completed by Feb'24 For 132kV substations- 80% work completed, by Dec'23 90% to be completed Assam informed all work at three substations will be completed by Jan/Feb 2024.	At Katalguri and Jawahanagar, work to be completed by April'24. At 132kV substations, works under progress.
3.	Manipur	132kV Imphal-Ningthoungkong	-	DPR preparation underway, to be prepared by March'24
4.	Meghalaya	Annexure (D.1)	Financial Approval of BoD pending. Will take total six month to complete the task.	AR configuration to be done by August'24
7.	Tripura	132kV Agartala-S M Nagar (TSECL), 132kV Agartal-Rokhia DC, 132kV, 132kV Agartala-Budhjungnagar	To be commissioned by Jan'24	By March'24

D.2. Installation of line differential protection for short lines:

As per sub-regulation 3 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 63rd PCCM

Name of utility	Last updated status (62nd and 63rd PCCM)	Latest status
AEGCL	DPR sent back by PSDF secretariat. Third party protection audit reports have to attached with the DPR. DPR being prepared as per new format and will be done by Jan'2024. Team is in Delhi to Discuss with PSDF secretariat.	
MSPCL	Revised DPR for 132kV Imphal-Imphal-III to be submitted. Revised DPR submitted for PSDF.	
MePTCL	Work completed Aug'21, but not commissioned yet. OPGW to be installed on some lines. LDP will be commissioned after OPGW link is established. 7 Feeder operational for rest OPGW work is pending	.
P&ED Mizoram	Lines identified viz. 132kV Aizawl - Luangmual and 132kV Khamzawl - Khawiva. DPR submitted. PSDF approval awaited. For Aizawl – Luangmual line Power grid will complete the task by Jan'23 and for other PSDF approval still awaited. DPR revised and same will be submitted soon.	
DoP Nagaland	LDP on Dimapur-Dimpaur lines completed. Regarding Doyang-Sanis line, NEEPCO to install LDR at Sanis end.	

	Regarding Doyang-Sanis line, NEEPCO to install LDR at Sanis end will be done by Jan'24. Relay Available installation will be completed by March'24.	
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.	

Deliberation of the sub-committee

Status as updated by utilities

Name of utility	Last updated status (62nd and 63rd PCCM)	Latest status
AEGCL	DPR sent back by PSDF secretariat. Third party protection audit reports have to attached with the DPR. DPR being prepared as per new format and will be done by Jan'2024. Team is in Delhi to Discuss with PSDF secretariat.	Revised DPR prepared, Price quotation received. DPR to be sent shortly.
MSPCL	Revised DPR for 132kV Imphal-Imphal-III to be submitted. Revised DPR submitted for PSDF.	DPR submitted to PSDF, approval waited.
MePTCL	Work completed Aug'21, but not commissioned yet. OPGW to be installed on some lines. LDP will be commissioned after OPGW link is established. 7 Feeder operational for rest OPGW work is pending	OPGW to be installed on 16 lines. LDP will be enabled after that.
P&ED Mizoram	Lines identified viz. 132kV Aizawl - Luangmual and 132kV Khamzawl - Khawiva. DPR submitted. PSDF approval awaited.	For Aizawl Lunagmual, LDP installed, CT wiring issue to be rectified. Regarding

	For Aizawl – Luangmual line Power grid will complete the task by Jan'23 and for other PSDF approval still awaited. DPR revised and same will be submitted soon.	132kV Khamzawl-Khawiva line, DPR being revised.
DoP Nagaland	LDP on Dimapur-Dimpaur lines completed. Regarding Doyang-Sanis line, NEEPCO to install LDR at Sanis end. Regarding Doyang-Sanis line, NEEPCO to install LDR at Sanis end will be done by Jan'24. Relay Available installation will be completed by March'24.	Regrading Doyang-Sanis line, LDR to be installed by NEEPCO by March'24. LDP available on Dimapur-Dimapur line
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.	TIDC approval still awaited.

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

Status as updated in the 64th PCCM:

Sl No	Details of the events(outage)	Remedial action suggested	Name of the utility & previous update	Latest status
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. As per previous updates, PLCC Work covered under PSDF. In progress	PLCC panels received. For further work PSDF payment issue. Matter to be taken up with PSDF

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.	Same status
3.	Leshka-Khleihriat DC multiple tripping in April to September	TLSA installation along the line to be done by MePTCL	MePTCL (DPR submitted, Approval pending.)	Same status. Matter to be taken up with PSDF
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 (Order will be placed by 31 st March. Will take 6months after placing the order)	Tender awarded, Order to be placed by March'24
5.	Grid disturbance of category GD-1 (Load loss: 13MW) occurred at Karong areas of Manipur Power System at 07:41 Hrs on 4th August'22	MSPCL to check the following 1. Protection setting at Karong along with circuit wirings from DPR to CB mechanism 2. Z-III setting at Imphal and its healthiness of correct operation by relay testing.	MSPCL	Completed
7.	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 and by the end of Jan'24) Forum requested NHPC to delink LBB from R& U scheme and implement the same at the earleist	Same status. Also law and order issue hampering the progress
10.	Review of SPS at Monarchak (item 2.22 of the sub-group held on 4th May 23)	NERLDC requested NEEPCO and Tripura to implement the revised logic at Monarchak (as provided by NERLDC)	NEEPCO, TSECL (SLDC TSECL intimated that logic 1(to be configured	No OPGW/PLCC in the LILO portion. Forum requested TSECL to take

		and Udaipur Rokhia ends respectively	at Udaipur and Rokhia to send DT to Monarchak) could not be implemented as there is no PLCC/OPGW connectivity in the LILO portion of Monarchak. NERLDC requested TSECL to explore installation of PLCC/FO for smooth functioning of SPS scheme for the reliability of Monarchak system)	up with PSDF under reliable communication scheme.
13.	132 kV Aizawl - Tipaimukh Line tripped at Aizawl end only on received of spurious DT signal on 16th and 26th Feb'23	rectification of PLCC issues at Tipaimukh end by MSPCL	MSPCL 48V DC battery issue. WIP Will be completed soon.	DC battery available. PLCC frequency issue. WIP
14.	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 Order given to ABB. To be completed in 3-4 months	By April'24
15.	Retrip configuration in LBB scheme in AEGCL Hailakandi station:	In previous sub group meeting the forum opined that the retrip scheme in the LBB protection will increase reliability of the protection system and will help in preventing mal operations in connecting feeders. AEGCL agreed to the	AEGCL Logic finalized, need to be tested. Whole work may be completed within Nov23	CMR installation next month.

		suggestion and assured that the Retrip scheme, with time delay of 100msec will be configured in the LBB scheme in Silchar-Hailakandi Ckt 1 & 2 at Hailakandi end.		
16	Non-operation of AR for various lines at Byrnihaat end on 25 th and 26 th June'23	Rectification of PLCC issues by MePTCL Consultation with OEM underway for resolution	MePTCL Order given to ABB.	By April'24
17	Non-operation of AR for various lines at Sonapur end in July and August	GIS related issues, coordination with OEM required	AEGCL GIS related issues, Coordination with OEM underway. WIP	Resolved
20	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 (will be done by April24) DPR is under preparation for PSDF.	CT under procurement as Reconductoring of Kahilipara-Sarusajai underway

DATE AND VENUE OF NEXT PROTECTION SUB- COMMITTEE MEETING

The next Protection Sub-Committee meeting will be held in the month of March, 2024. The date and venue will be intimated separately.

Annexure-I**List of Participants in the 64th PCC Meeting held on 15.02.2024**

SN	Name & Designation	Organization	Contact No.
1	Sh. Moli Kamki, AE (E), SLDC	Ar. Pradesh	09863703539
2	Sh. Abhishek Kalita, Dy.Mgr	Assam	08486213068
3	Sh. Bibek Baruti, Dy.Mgr	Assam	07002238466
4	Sh. Chesam Warish Khan, Mgr, MSPCL	Manipur	09615350963
5	Sh. R.Lalchawisanga, SDO (TC)	Mizoram	07640954240
6	Sh. V.Lalhmingliana, JE, SLDC	Mizoram	09612763052
7	Sh. A.G.Tham, AEE, MePTCL	Meghalaya	09774664034
8	Sh. B.Narry, EE (SP), MePTCL	Meghalaya	07005298338
9	Sh. A.Shullai, AEE, MePGCL	Meghalaya	07005379616
10	Sh. Pulovi Sumi, SDO (Trans)	Nagaland	08575748180
11	Sh. Aosanen Walling, JE	Nagaland	06009380715
12	Sh. P.Tiakaba Yinchunger, JE (SLDC)	Nagaland	08974020151
13	Sh. Anil Debbarma, DGM, SLDC, TPTL	Tripura	09612589250
14	Sh. Amaresh Mallick, ED	NERLDC	09436302720
15	Sh. Samar C.De, CGM	NERLDC	09436335369
16	Sh. Bimal Swargiary, Ch.Mgr	NERLDC	09435499779
17	Sh. Subhra Ghosh, Engineer	NERLDC	08415857079
18	Sh. Ankit Vaish, DGM	PGCIL	09409305725
19	Sh. R.Haribabu, DGM	PGCIL	09445021006
20	Sh. Manas Pratim Sharma, Sr.Mgr	NEEPCO	08729901871
21	Sh. Mitangshu Saha, Lead-STG	OTPC	07085310211
22	Sh. Anil R.Sah, DGM	NETC	09999055047
23	Sh. R.K.Tonzing, Mgr	NHPC	08732836775
24	Sh. Gopal Patodia, Sr.Mgr	NTPC	09437996779
25	Sh. K.B.Jagtap, Member Secretary	NERPC	-
26	Sh. S.M.Aimol, Director	NERPC	08974002106
27	Sh. Vikash Shankar, AD-I	NERPC	09455331756
28	Sh. Ashim Kr.Goswami, AD-II	NERPC	08638966481

Annexure B.2

Sl No	Name of Substation	Protection Audit Carried Out	Protection Audit Required	Remarks
1	132/33 kV Mawphlang	2013		
2	132/33 kV Cherra	2013		
3	132/33/11 kV Nongstion	2013		
4	132/33 kV Nangalbibra	2013		
5	132/33 kV Rongkhon	2013		
6	132/11 kV NEIGRIHM	2013		
7	132/33 kV Lumshnong	2013		
8	132/33 kV Umiam	2013		
9	132/33 kV EPIP-I	2013		
10	400/220/13 kV Killing	2013		
11	132/33 kV NEHU	2017		
12	132/33 kV Mawlai	2017		
13	132/33 kV Mendipathar	2017		
14	132/33 kV Khliehriat	2017		
15	132/33 kV EPIP-II	2017		
16	132/33 kV Ampati	Not Yet Done		
17	132/33 kV Phulbari	Not Yet Done		
18	132/33/11 kV IIM	Not Yet Done		
19	220/132/33 kV New Shilong	Not Yet Done		
20	132/33 kV Mawlyndep	Not Yet Done		
21	132/33 kV Mustem	Not Yet Done		

Annexure B.6

Line Patrolling of Transmission lines under Dhaligaon Maintenance Sub-Division

MONTHLY PATROLLING REPORT FORMAT

Annexure B.6

Date of Submission: 03.02.2024
Submission of Report for the Month: January-2024
Utility: 132kV Dhaligaon GSS

Sl No.	Name of the Transmission Line	Total no. of Locations	Section(s) Patrolled	Date(s) of Patrolling	Major Observations	Action Plan
1	132kV Dhaligaon-Gossaigaon S/C Line	211	01 to 145	10-01-2024 12-01-2024	Disc damaged, member rusted corridor to be cleared	Disc replacement work done , corridor cleaning work carried out
2	132kV Dhaligaon-BTPS D/C Line	75	01 to 75	13-01-2024	Stub damaged , member rusted/missing, leg damaged, corridor to be clean	Leg repairing and member replacement work in progress
3	220kV Rangia-Salakati D/C Line	125	85 to 107	25-01-2024	Corridor to be cleared	Corridor cleaning work carried out
4	132kV Gauripur-Gossaigaon Line	1 to 205	100 to 150	11.01.2024	Corridor Cleaning required	To be done
5	132kV Gauripur-Bilasipara Line	1 to 125	1 to 44	23.01.2024	Corridor Cleaning required	Corridor cleared

MONTHLY PATROLLING REPORT FORMAT

Annexure-D.8

Date of Submission:	02/02/2024
Submission of Report for the Month:	Jan, 2024
Utility:	220 kV Rangia GSS, AEGCL, Rangia

SL No.	Name of the Transmission Line	Total no. of Locations	Section(s) Patrolled	Date(s) of Patrolling	Major Observations	Action plan	Activities carried out
1	220 kV Rangia-Salakati ckt-1	203-508	508-427	17/01/2024	Corridor need to clean in Loc 500-499, 495-496, 487-486, 468-467, 444-443, 433-432	s/d availed on 25/01/24	
			427-350	20/01/2024	Corridor need to clean in Loc 412-413, 412-411, 405-406, 396-395, 391-390	s/d will be availed	
			508-427	25/01/2024		OCC approved s/d availed	Corridor cleaning activity carried out in Loc 500-499, 495-496, 487-486, 468-467, 444-443, 433-432
2	220 kV Rangia-Salakati ckt-2	203-508	508-427	17/01/2024	Corridor need to clean in Loc 506-505, 500-499, 497-496, 495-494, 490-489, 483-482, 468-467, 461-460, 433-432	s/d availed on 24/01/24	
			427-350	20/01/2024	Corridor need to clean in Loc 416-415, 405-406, 401-400, 395-394, 392-391, 384-382, 378-377	s/d will be availed	
			508-427	24/01/2024		OCC approved s/d availed	Corridor cleaning activity carried out in Loc 506-505, 500-499, 497-496, 495-494, 490-489, 483-482, 468-467
3	132 kV Rangia-Nathkuchi	01-129	96-100	01-03-2024		JCC and SLDC approved s/d availed	Corridor cleaning activity carried out 96-100
SL No.	Name of the Transmission Line	Total no. of Locations	Section(s) Patrolled	Date(s) of Patrolling	Major Observations	Action plan	Activities carried out
3	132 kV Nathkuchi-Barnagar	130-264	219-218	01-11-2024		JCC and SLDC approved s/d availed	Conductor repairing in Loc 219-218
			219-223	19/1/2024		JCC and SLDC approved s/d availed	Conductor repairing in 221-220 and corridor cleaning activity carried out from 219-223
4	132 kV Rangia-Sipajhar	01-129	20-51	01-02-2024		JCC and SLDC approved s/d availed	Corridor cleaning activity carried out in Loc 22-23, 26-27, 30-31, 38-39, 43-44, 50-51
			50-54	01-05-2024		JCC and SLDC approved s/d availed	Conductor repairing in 50-51 and corridor cleaning activity carried out from 50-54
			129-120	20/1/2024		JCC and SLDC approved s/d availed	Corridor cleaning activity carried out in Loc 128-129, 128-127, 127-126, 126-125, 123-124, 124-125, 122-121
5	132 kV Rangia-Tangla	64-1-72	25-42	01-04-2024	Corridor need to clean in Loc 41-40, 40-39, 39-38, 28-27, 27-26, 26-25	s/d availed on 9/1/2024	
			25-42	01-09-2024		JCC and SLDC approved s/d availed	Corridor cleaning activity carried out in Loc 41-40, 40-39, 39-38, 28-27, 27-26, 26-25
6	132 kV Sipajhar-Rowta	130-278	130-185	17/01/2024	Patrolling	s/d will be availed	
			185-239	30/1/2024	Patrolling	s/d will be availed	

MONTHLY PATROLLING REPORT FORMAT

Annexure-D.8

Date of Submission: 05/02/2024	
Submission of Report for the Month: January 2024	
Utility:ILMSD,KAHILIPARA	

SL No.	Name of the Transmission Line	Total no. of Locations	Section(s) Patrolled	Date(s) of Patrolling	Major Observations	Action Plan
1	132 kv Sarusajai-Kahilipara-Kamakya DC Transmission Line	36	14	9,10,11,12,17,18,19,20,22,23,24,27,28,29,30,31	1) HTLS reconductoring of Sarisajai-Kamakhya TL 2) tower realignment for ved vikash school at Mon Bikash Kendra. 3) Missing tower members replacement	1) HTLS reconductoring from Kahilipara to Kamakhya under progress. 2) Estimation approval progress with design. 3) Under progress
2	132 kv Kahilipara-Kamakhya-Sisugram-Kamalpur DC Transmission Line	106	45	4,5,6,7,12,18	1) HTLS reconductoring for 132kV Sarusajai-Kamakhya TL 2) Corridor cleaning and tower creeper cleaning. 3) AAHI project at IIT 4) tower height raising for 6-lane highway 6) NHAI bridge construction height raising row issue.	1) under progress 2) ongoing. 3) survey map prepared. 4) in progress, foundation of 4 towers completed. 6) under progress
3	132 kv Kamalpur-Rangia DC Transmission Line	45	NA	04,06,07	1) corridor cleaning and tower creeper cleaning. 2) Ring road guwahati survey work	1) Ongoing. 2) Ongoing.
4	132 kv Kahilipara-MeSEB DC Transmission Line	23	4	12,13,24	1) Monopole erection and conductor stringing monitoring at Basistha	1) Monopole erection completed OPGW pending
5	132 kv Kahilipara-Capital-Narengi-Chandrapur DC Transmission Line	98	20	02,03,05,21	1) corridor cleaning and tower creeper cleaning. 2) Tower Painting and tower leg grouting required at multiple locations. 3) Ring road guwahati survey work	1) Ongoing. 2) Leg protection completed, painting pending. 3) Under progress
6	132 kv Narengi-Chandrapur-Sonapur DC Transmission Line	55	20	5,21	1) erosion at Loc-11, Loc-12 2) corridor cleaning and tower creeper cleaning. 3) Ring road guwahati survey work	1) estimate preparation in progress. 2) Completed. 3) Under progress

NOTE:- Manpower engaged in ERS at site-

SL	TL Details	Dates of engaged
1	NA	NA

MONTHLY PATROLLING REPORT FORMAT

Annexure-D.8

Date of Submission:	01-02-2024
Submission of Report for the Month:	Jan-24
Utility:	220KV Salakati GSS, AEGCL

SL No.	Name of the Transmission Line	Total no. of Locations	Section(s) Patrolled	Date(s) of Patrolling	Major Observations	Action Plan
1	132KV Kokrajhar-Bilashipara I & II	79	75-69, 52-40, 37-24	03-01-2024	No Major issues	
2	132KV BTPS-Kokrajhar I & II	39	20-28	04-01-2024	No Major issues	
3	220KV BTPS-Rangia I & II	86	30-40 76-80	08-01-2024 24-01-2024	No Major issues	
4	220KV BTPS-Agia I & II	160	120-141 95-110	05-01-2024 19-01-2024	No Major issues	

MONTHLY PATROLLING REPORT FORMAT

Annexure-D.8

Date of Submission: 03/02/2024

Submission of Report for the Month: January, 2024

Utility: AEGCL

SL. No.	Name of the Transmission Line	Total no. of Locations	Section(s) Patrolled	Date(s) of Patrolling	Date(s) of Shutdown	Major Observations	Action Plan
1	220KV Agia -BTPS-I/ BTPS-II	52 (Agia Jurisdiction)	Loc. No. 169 to 154	01.01.2024	-	Vegetation found	
2	220KV AGIA-BTPS I	52 (Agia Jurisdiction)	-	-	02.01.2024	-	Cleared
3	220KV AGIA-BTPS II	52 (Agia Jurisdiction)	-	-	03.01.2024	-	Cleared
4	220KV Agia -Mirza/ Boko TL	106 (Agia Jurisdiction)	Loc no. 12 to 42	06.01.2024	-	Vegetation found	
5	220KV AGIA-BOKO	106 (Agia Jurisdiction)	-	-	08.01.2024	-	Cleared
6	220KV AGIA-MIRZA	106 (Agia Jurisdiction)	-	-	09.01.2024	-	Cleared
7	220KV Agia -BTPS-I/ BTPS-II	52 (Agia Jurisdiction)	Loc. No. 191 to 170	17.01.2024	-	Vegetation found	
8	220KV AGIA-BTPS II	52 (Agia Jurisdiction)	-	-	18.01.2024	-	Cleared
9	220KV AGIA-BTPS I	52 (Agia Jurisdiction)	-	-	19.01.2024	-	Cleared
10	220KV Agia -Mirza/ Boko TL	106 (Agia Jurisdiction)	Loc no. 51 to 83	24.01.2024	-	Vegetation found	
11	220KV AGIA-MIRZA	106 (Agia Jurisdiction)	-	-	25.01.2024	-	Cleared
12	220kv Agia-Boko Line	106 (Boko Jurisdiction)	Tower no. 205 to Tower no. 195	08-01-2024		Vegetation cleared	
13	220kv Agia-Mirza Line	106 (Boko Jurisdiction)	Tower no. 104 to Tower no. 115	09-01-2024		Vegetation cleared	
14	220KV Agia-Mirza & Agia-Boko Line	106 (Boko Jurisdiction)	Tower no. 116 to Tower no. 130	17-01-2024		Vegetation cleared	
15	220KV Agia-Mirza & Agia-Boko Line	106 (Boko Jurisdiction)	Tower no. 131 to Tower no. 143	24-01-2024		Vegetation cleared	
16	220kv Agia-Mirza Line	106 (Boko Jurisdiction)	Tower no. 150 to Tower no. 160	25-01-2024		Vegetation cleared	
17	220kv Agia-Boko Line	106 (Boko Jurisdiction)	Tower no. 170 to Tower no. 180	30-01-2024		Vegetation cleared	
18	132 kV Agia- Hatsingimari line	203 (Hatsingimari Jurisdiction)	Loc no. 387 to 288	16.01.2024		Clean	
19	132 kV Agia- Hatsingimari line	203 (Hatsingimari Jurisdiction)	Loc no. 288 to 186	17.01.2024		Clean	
20	132 kV Agia- Hatsingimari line	203 (Hatsingimari Jurisdiction)	Loc no. 387 to 288	30.01.2024		Clean	
21	132 kV Agia- Hatsingimari line	203 (Hatsingimari Jurisdiction)	Loc no. 288 to 186	31.01.2024		Clean	

MONTHLY PATROLLING REPORT FORMAT

Date of Submission:	02.02.2024
Submission of Report for the Month:	Jan-24
Utility:	AEGCL

SL No.	Name of the Transmission Line	Total no. of Locations	Section(s) Patrolled	Date(s) of Patrolling	Major Observations	Action Plan
1	400kV Mirza-Silchar Line	14	1,2,3,4,	05.01.2024		
			5,6,7,8,	11.01.2024		
2	400kV Mirza-Bongaigaon Line		9,10,11,	18.01.2024		
			12,13,14	24.01.2024		
3	132kV Mirza-Azara Line	29	1,2,3,4,5,6,7	05.12.2023	Routine Patrolling Done	
			8,9,10,11,12,13	14.12.2023		
			14,15,16,17,18,19,20,21,22	19.12.2023		
			23,24,25,26,27,28,29 & Gantry Tower	27.12.2023		

MONTHLY PATROLLING REPORT FORMAT

Annexure-D.8

Date of Submission: 03-2-2024

Submission of Report for the Month: Jan' 2024

Utility: AEGCL

SL No.	Name of the Transmission Line	Total no. of Locations	Section(s) Patrolled	Date(s) of Patrolling	Major Observations	Action Plan
1	132kV Chandrapur-Baghjap T.L.	129	Loc No. 19-25, 70-85	09-01-2024		
2	220 kV D/C Langpi-Sarusajai T.L.	290	Loc No. 279-285	02-01-2024	Trees & Bamboo trees	Cleared during Shutdown
			Loc No. 79,78,77,76,75	11-01-2024		
			Loc No. 233-234	30-01-2024		
			Loc No. 221,224,226,229,230	30-12-2023		
3	220 kV Samaguri-Jawaharnagar T.L.	127	Loc No. 51-47	03-01-2024	Trees & bamboo	Cleared
4	220 kV Sonapur-Sarusajai T.L.	141	Loc No. 42-45, 1-4	12-01-2024	Trees & bamboo	Cleared
5	220 kV Sonapur-Samaguri T.L.	73		12-01-2024	Trees & bamboo	Cleared

MONTHLY PATROLLING REPORT FORMAT

Annexure-D.8

Date of Submission:	03-02-2024
Submission of Report for the Month:	January
Utility:	Sarusajai Division, AEGCL

SL No.	Name of the Transmission Line	Total no. of Locations	Section(s) Patrolled	Date(s) of Patrolling	Major Observations	Action Plan
1	220kV Sarusajai - Khanapara 4ckt Tr line	40	loc no 1 (QC+6) to 13 (QB+0)	05-01-2024		
			loc no 27 (QA+0) to 35(QB+0)	08-01-2024		
			loc no 13 (QB+0) to 25(QC+0)	11-01-2024		
			loc no 1 (QC+6) to 35(QB+0)	24-01-2024		
2	220kV Sarusajai - Mirza D/C Tr line	81	loc no 352(B+3) to 368(B+0)	06-01-2024		
			loc no 404(B+0) to 398(B+0)	11-01-2024		
			loc no 368(B+0) to 384(B+0)	25-01-2024		
			loc no 313(B+0) to 284(B+3)	30-01-2024		
3	220kV Mirza -Boko and Mirza-Agia D/C Tr line section upto loc no 209	123	loc no 328(B+0) to 307(B+0)	06-01-2024		
			loc no 209(B+0) to 247(B+3)	09-01-2024		
			loc no 307(B+0) to 298(B+0)	25-01-2024		
			loc no 263(B+0) to 271(B+0)	30-01-2024		
4	220kV Sarusajai - Sonapur and GIS Jawaharnagar -Samaguri D/C CTPS section Tr line	74	loc no 74 to 66	02-01-2024		
			loc no 1 to 17	03-01-2024		
			loc no 40 to 35	05-01-2024		
			loc no 17 to 27	08-01-2024		
			loc no 42 to 52	12-01-2024		
			loc no 52 to 65	20-01-2024		

MONTHLY PATROLLING REPORT FORMAT						Annexure-D.8
Date of Submission: 06.02.2024						
Submission of Report for the Month: January'2024						
Utility: TL under PSSD, Panchgram, AEGCL						
SL No.	Name of the Transmission Line	Total no. of Locations	Section(s) Patrolled	Date(s) of Patrolling	Major Observations	Action Plan
1	132 kV Srikona-Pailapool Line	129	11 no's (Loc. No. 77-78, 133-137, 169-175)	05.01.2024 19.01.2024	Soil erosion near the tower base at Loc. No. 173.	As per the suggestion of AGM(i/c) Civil, vegetation done near the tower base to avoid further soil erosion.
2	132 kV Panchgram-Srikona Line	66	8 no's (Loc. No. 6-7, 10-17)	20.01.2024	Tower Loc. no. 03 collapsed and sank in Barak river in 2018.	Estimate prepared and submitted from this end for the restoration work.
3	132 kV Panchgram-Lumshnong Line	95	19 no's (Loc. no. 350-351, 355-358, 365-366, 371-377, 379-381, 383-384, 392-396, 403-404)	08.01.2024 27.01.2024 31.01.2024	No Major observations	NA
4	132 kV Panchgram-Hailakandi Line	82	6 no's (Loc. no. 19-22, 30-33)	11.01.2024	No Major observations	NA
5	132 kV Hailakandi-Dullavcherra line	107	10 no's (Loc. No. 140-144, 147-148, 152-154, 175-178)	02.01.2024	soil erosion near the tower base at Loc. no. 102, 104 & 109.	<p>1. Temporary tower base strengthening work using bamboo palisade with gunny bags filled with sand/red soil has been completed at tower loc. no. 102 on 26.07.2022.</p> <p>2. Vegetation has been done near the tower base of loc. no. 104 & 109 to avoid further soil erosion.</p> <p>3. Tower schedule along with other relevant documents in connection to the shifting of the tower 102, 104 & 109 has been forwarded.</p>
6	132 kV Panchgram-HPC	10	3 no's (Loc. 6-9)	22.01.2024	No Major observations	NA
7	132 KV DULLAVCHERRA-DHARMANAGAR (INTERSTATE) TL	100 nos. (LOC 189 TO 288 UNDER AEGCL)	loc 284 to 288 (5 nos span)	22-01-2024	Ground wire tear in between (284 to 285)	Estimate will be submitted soon
			loc 238 to 242 (5 nos span)	23-01-2024	4 Nos Leg RCC & PCC work required in tower no 241	
			loc 235 to 239 (5 nos span)	24-01-2024	No Major Observations	

Date Of Submission:	07.02.2024
Submission Of Report For The Month:	January
Utility:	132 kV Lines under Depota GSS

Sl No	Name Of The Transmission Line	Total No. Of Locations	Section(s) Patrolled	Date Of Patrolling	Major Obsevation	Action Plan
1	132kV Dhekaajuli-Rowta	24		09-01-2024	Trees, Bamboo & creapers	Cleared
2	132kV Tangla-Rowta	24	146-170	11-01-2024	Trees, Bamboo & creapers	Cleared
3	132kV Depota-Rowta		170-200	27-01-2024	Trees, Bamboo & creapers	Cleared
4	132kV Dhekaajuli-Rowta	26	200-226	30-01-2024	Trees, Bamboo & creapers	Cleared

MONTHLY PATROLLING REPORT

Annexure-D.8

Date of Submission:06.02.2024

Submission of Report for the Month: January 2024

Utility: Nagaon T&T Division , AEGCL, Samaguri

SL No.	Name of the Transmission Line	Total no. of Locations	Section(s) Patrolled	Date(s) of Patrolling	Major Observations	Action Plan
1	132kV Samaguri-Khaloigaon-D/C transmission line	1 to 75	Loc No:- 1 to 50	30.01.2024	Tree branches & Bamboo sagging observed in different Location across the line	Line checking and patrolling work
2	220KV Samaguri-Sonabil D/C transmission line	1 to 153	Loc No:-120 to 153	20.01.2024		
3	220KV Samaguri-Sonabil D/C transmission line		Loc No:-120 to 153	24.01.2024		
4	132kV Lanka-Diphu S/C transmission Line	1 to 128	Loc No:-70 to 128	02.01.2024		
5	132kV Lanka-Diphu S/C transmission Line		Loc No:-1 to 64	03.01.2024		
6	132kV Lanka-Diphu S/C transmission Line		Loc No:-1 to 128	17.01.2024		
7	220KV Samaguri-Moriani Ckt-2 transmission line	1 to 193	Loc No:-120 to 153	18.01.2024		
8	220KV Samaguri-Sonabil D/C transmission line		Loc No:-120 to 153	19.01.2024		

MONTHLY PATROLLING REPORT

Annexure-D.8

Date of Submission: 07.01.2024

Submission of Report for the Month: January 2024

Utility: 220 kV GSS , AEGCL, Samaguri

SL No.	Name of the Transmission Line	Total no. of Locations	Section(s) Patrolled	Date(s) of Patrolling	Major Observations	Action Plan
1	220kV Samaguri - Sonapur line & 220kV Samaguri - Jawaharnagar Line	(151 nos.) (162- 313)	313-162 174-313 162-309 313-170	03-01-2024 04-01-2024 11-01-2024 29-01-2024	*Missing minor members- 186,246,310	*minor tower members are required to attach
2	132kV Samaguri - Sankardevnagar D/C Line	(207 nos) 1-207	01-128 207-01 54-207 200-64 01-185	05-01-2024 10-01-2024 12-01-2024 17-01-2024 20-01-2024	*Leg Foundation Partially damaged-174 *Missing minor members-54,64,100	*PCC works required along with repairing of bracings and bituminous painting of towers *minor tower members are required to attach

MONTHLY PATROLLING REPORT						
Annexure-D.8						
Date of Submission:			06-02-2024			
Submission of Report for the Month:			January,2024			
Utility:			Upper Assam Region, AEGCL			
Dibrugarh T&T Circle						
SL No.	Name of the Transmission Line	Total no. of Locations	Section(s) Patrolled	Date(s) of Patrolling	Major Observations	Action Plan
1	132kV Dibrugarh-Tinsukia line(S/C)	183 (49.33km)	4	10-01-2024	Corridor cleaning at Loc.No.92 to Loc.No.102 and Loc.No.150 to Loc.No.155	Routine line inspection of 132 KV Dibrugarh-Tinsukia line without shut down.
2	132kV Dibrugarh-Behiating line(S/C)	40 (8.95km)				
3	132kV Behiating-Moran line(Up to Gammon Bridge)(S/C)	70 (23.4km)	3	06-01-2024	Creepers plants and tower footing cleaning at Loc.No. 67-75	Routine line inspection of 132 KV Behiating-Moran line without shut down.
			5	11-01-2024	Corridor cleaning at Loc.No.33 to Loc.No.36 and Loc.No.60 to Loc.No.65	Routine line inspection of 132 KV Behiating-Moran line without shut down.
4	132kV Behiating-BCPL 1 & 2 line(D/C)	29 (7.96km)	2			
5	132kV D/C Rly Dibrugarh TSS-Behiating Transmission line	37 (8.957 km)	1	04-01-2024	1st leg RCC casting at loc No.24/0 (D+0).	Supervision of newly civil constructed Rly Transmission line bay work at Behiating GSS.
			1	05-01-2024	2nd leg RCC casting at loc No.24/0 (D+0).	Supervision of newly civil constructed Rly Transmission line bay work at Behiating GSS.
			1	06-01-2024	column foundation work.	Supervision of newly constructed Rly bay at Behiating GSS.
			1	24-01-2024	1st & 2nd leg RCC casting at loc No.25/0 (D+0).	Supervision of newly constructed Rly Transmission line.
6	220 KV D/C Tinsukia-Behiating (Khanikar) Transmission line	203 (53 Km)	8	25-01-2024	Thoroughly line checking from Loc. No.15/0 to Loc.No.22/0	Line inspection of newly constructed line.
			9	29-01-2024	Thoroughly line checking from Loc. No.11/0 to Loc.No.15/0	Line inspection of newly constructed line.
			9	30-01-2024	Thoroughly line checking from Loc. No.6A/0 to Loc.No.11/0	Line inspection of newly constructed line.
7	132KV Moran Lakwa	L234-L169				
			LILO Point to L-212	25-01-2024		
			L-169 to L-104			
			L-169 to L-105			
			L-169 to L-106			
			L-169 to L-107			
8	132KV Moran Behiating	L169-L84				
9	220kV Tinsukia-Kathalguri D/C line	82				
			LOC 8- LOC 40	04-01-2024		Line patrolling and Corridor clearing done
			LOC 42- LOC 82	12-01-2024		Line patrolling and Corridor clearing done
			LOC 1- LOC 57	20-01-2024		Line patrolling and Corridor clearing done
			LOC 83- LOC 124	30-01-2024		Line patrolling and Corridor clearing done
			LOC 1- LOC 57	20-01-2024		Line patrolling and Corridor clearing done
10	220kV Tinsukia-NTPS	136				
			LOC 83- LOC 124	30-01-2024		Line patrolling and Corridor clearing done
11	220kV Tinsukia-NRPP	136				
			LOC 83- LOC 124	30-01-2024		Line patrolling and Corridor clearing done
12	132KV Tinsukia- Rupai Line	108 (From LILO Pt to Rupai)	Loc 105 to Loc 108	23-01-2024	During Shutdown of 132KV Tinsukia-Rupai line taken for corridor cleaning of big trees near the side of 132KV Tinsukia-Rupai line cutting done.	
		39 (From LILO Pt to Tinsukia)	Loc 1 to Loc 39	18-01-2024	Checking done and removed trees fallen under the corridor.	
			Loc 12 to Loc 20	23-01-2024	During Shutdown of 132KV Tinsukia-Rupai line taken for corridor cleaning of big trees/ bamboos near the side of 132KV Tinsukia-Rupai line cutting done.	During the month of Feb'24 to take a routine checking of the corridor .
13	132KV Rupai- Chapakhowa line	159	Loc 65 to Loc 82	02-01-2024	Checking done and removed trees fallen under the corridor.	
			Loc 01 to Loc 64	13-01-2024	Checking done and removed trees fallen under the corridor.	
			Loc 76 to Loc 79	20-01-2024	During Shutdown of 132KV Rupai-Chapakhowa line taken by T&C, Tinsukia for routing testing, corridor cleaning of bamboos near the side of 132KV Rupai-Chapakhowa line cutting done.	
14	132Kv Tinsukia-Margherita D/C Line	180	Loc no.26 to 33	03.01.24		Line patrolling and corridor cleaning work done
			Loc no.36 to 45	06.01.24		Line patrolling and corridor cleaning work done
			Loc no.48 to 53	19.01.24		Line patrolling and corridor cleaning work done
			Loc no.53 to 61	20.01.24		Line patrolling and corridor cleaning work done
			Loc no.175 to 177	21.01.24		Line patrolling and corridor cleaning work done, Tower cleaning work done at loc.No.176
			Loc no.96 to 104	29.01.24		Line patrolling and corridor cleaning work done

Jorhat T&T Circle

SL No.	Name of the Transmission Line	Total no. of Locations	Section(s) Patrolled	Date(s) of Patrolling	Major Observations	Action Plan
1	132kV Jorhat-Mariani Circuit No. I	77	Loc 1 to Loc 40	01-11-2024	Corridor cleaning done without taking shutdown and by maintaining safe working distance. All observation reports with estimates for the line	
2	132kV Jorhat-Mariani Circuit No. II	77				
3	132KV JORHAT - TEOK - NAZIRA FDR	114	Loc 33 to Loc 67	22/1/2024	Corridor cleaning done from Loc 33 to 67. No fresh major observation noticed.	
4	220KV Mariani-Samaguri-1	2	494-495	03.01.2024		Corridor cleaning
5	220KV Mariani-Samaguri-2	4	420-419, 401-400	18.01.2024		Corridor cleaning with S/D
6	220KV Amguri-NTPS	3	130-129-128	08.01.2024		Corridor cleaning with S/D
		2	110-109	09.01.2024		Corridor cleaning with S/D
7	220KV Amguri-Mariani	6	413-412, 354-353, 349-348	11.01.2024		Corridor cleaning with S/D
8	132KV Nazira-Teok Fdr	120	200 to 235	03.01.2024	1. Chimney required:- At Loc. No. 201, 206, 207, 229 & 230 2. Corridor Cleaning Required:- Between Loc No. 220 to 223	Repairing works is in progress
9	132KV LTPS-Mariani SC Fdr	122	282 to 236	04.01.2024	1. Chimney construction reqd.-:At Loc. No. 251 2. Beam Constructionreqd at Loc. No. 280,273,272,264,254, 248, 247, 238, 237A 3. Earthing of one leg reqd at LOC 237A, 280 4. Rusted Legs need to replaced at LOC 247, 253, 264 5. Tower Protection Works at LOC 270	Repairing works is in progress
10	132KV LTPS-Mariani SC Fdr	122	209 to 162	30.01.2024	1. Chimney construction reqd.-:At Loc. No. 196, 2. Beam Constructionreqd at Loc. No. 209 3. Earthing of one leg reqd at LOC 162, 163, 168, 175, 183	Repairing works is in progress
11	LILO of 132KV Jorhat - Nazira Ckt at Teok GSS	7	LOC 001-007;	09.01.2024	NIL	-
12	132kV Jorhat(West)-Bokakhat Line	194 (LOC No. 109-LOC No. 302)	LOC No.285 - LOC No.294	04-01-2024	NIL	NIL
			LOC No.264 - LOC No.285	05-01-2024	NIL	NIL
			LOC No.152 - LOC No.199	06-01-2024	Some bamboos and tree branches were found to be approaching the line.	A line shutdown was taken on 19.01.2024 & those bamboos & tree branches in the line corridor were cleared.
			LOC No.115 - LOC No.167	19-01-2024	NIL	NIL
13	132 kV Lanka - Diphu line	128-248	152-160	03-01-2024	Bamboos, Big trees & wild vegetation spotted.	Cleared on the same day
			160-173	09-01-2024	Wild vegetation spotted.	Cleared on the same day
			173-178	24-01-2024	Wild vegetation spotted.	Cleared on the same day
14	66 kV Bokajan - Diphu line	01-158	70-75	06-01-2024	Bamboos & wild vegetation spotted.	Cleared on the same day
			35-40	12-01-2024	Bamboos & wild vegetation spotted.	Cleared on the same day
15	132 KV Bokajan-Dimapur Line	73	Loc. no. 367 to Loc.406	09.01.2024 & 22.01.2024	a) Encroachment within the ROW of 132 KV Bokajan-Dimapur Line. b) 1 no. cross arm bend at loc. no.390 c) Ground clearance bet loc. 370(B)-371(B) is low which was measured only 4.3 mtrs. d) Found rusting of tower legs due to water logging & soil deposit at loc. no. 378, 392, 394, 395, 396 & 401 e) Some trees & bamboos were growing within the corridor.	Regarding encroachment information given to the DC of Dimapur District, Nagaland vide letter No.RE/BKJ/AEGCL/T-56/2021/113, Dt.21/06/2021 given & a public notice had been served by DC office Dimapur vide letter No. REV-11/2009-D/4291-93, Dt. 04/10/2021 Matter informed to Division vide letter No.RE/BKJ/AEGCL/T-56/2016/278, Dt.20/08/2016 & work was passed in ZPC but no one contractor was interested to do the work at Dimapur, Nagaland due to encroachment under the line. Survey done for tower height extension purpose with the help of surveyor from Trans N Techno Associate, Kolkata on Dt. 19.12.2023. Tower leg stub repairing, mufflering & painting works done on emergency basis. All growing trees & bamboes were cutting done on same day.
16	132 KV Bokajan-Dimapur Line	73	Loc. no. 01 to 14 & 348 to 366	02.01.2024 & 22.01.2024	a) Encroachment within the ROW of 132 KV Bokajan-Dimapur Line. b) Found rusting of tower legs due to water logging & soil deposit at loc. no. 351 c) Some trees & bamboos were growing within the corridor.	Regarding encroachment information given to the SDO (Civil) of Bokajan Sub-Division, K/A vide letter No.RE/BKJ/AEGCL/T-56/2021/135, Dt.13/07/2021 . Tower leg stub repairing, mufflering & painting works done on emergency basis. All growing trees & bamboes were cutting done on same day.
17	132 KV Bokajan-Sarupathar Line	100	Loc. no. 1 to 14 & 263 to Loc.348	11.01.2024 & 24.01.2024	a)Encroachment within the ROW of 132 KV Bokajan-Sarupathar Line. b) Found rusting of tower legs due to water logging & soil deposit at loc. 271, 293, 309, 310, 315, 327 & 329. c) Some trees & bamboos were growing within the corridor.	Regarding encroachment information given to the SDO (Civil) of Bokajan Sub-Division, K/A vide letter No.RE/BKJ/AEGCL/T-56/2021/135, Dt.13/07/2021 . Tower leg stub repairing, mufflering & painting works done on emergency basis on 06.07.2023, 07.07.23, 08.07.23, 10.07.23 & 26.07.2023 All growing trees & bamboes were cutting done on same day.
18	132KV GARMUR-JORHAT(WEST)	108 + 9 LILO TOWERS	LOC NO.1 - LOC NO. 64	03-01-2024	Few bamboos, climbers and trees need to be cut on very next S/D	Without shut down corridor cleaning drives were performed to clear the proximity of the line corridor and remaining vegetations will be cleared on very next s/d.
19	132KV GARMUR-JORHAT(WEST)	108 + 9 LILO TOWERS	LOC NO.65 - LOC NO. 108	12-01-2024	Few bamboos, climbers and trees need to be cut on very next S/D	
20	132kV Golaghat-Mariani	173	Loc No. 01---152	05-01-2024		Line Inspection and Corridor cleaning works
21	132kV Golaghat-Mariani	173	Loc No. 01---152	11-01-2024		Thermal Inspection of line done
22	132kV Golaghat-Sarupathar	134	Loc. No. 235---153	10-01-2024		Line Inspection and Corridor cleaning works
23	132kV Golaghat-Sarupathar	134	Loc. No. 262---153	19-01-2024		Thermal Inspection of line done

Lakhimpur T&T Circle

SL No.	Name of the Transmission Line	Total no. of Locations	Section(s) Patrolled	Date(s) of Patrolling	Major Observations	Action Plan
1	132KV Gohpur-Nalkata D/C Transmission Line	Total LOC=249; Maintenance of LOC by Nalkata GSS Maintenance Team= 149 nos (LOC 100-249) Maintenance of LOC by Gohpur GSS Maintenance Team= 100 nos (LOC 1-100)	Along the line (Nalkata GSS to Gohpur GSS)	03.01.2024 04.01.2024 05.01.2024 10.01.2024 11.01.2024	1. Corridor need to be cleaned. 2. Broken insulator disc replacement required.	Shutdown of Ckt- I taken on 04.01.2024, 05.01.2024 for broken insulator disc replacement work at LOC 51, 57, 60, 110, 118 & 139 and work completed successfully & Ckt- II taken on 10.01.2024 & 11.01.2024 for broken insulator disc replacement work at LOC 57, 118, 139, 142, 150, 156 & 188 and completed successfully.
2	132KV Nalkata-Dhemaji S/C Transmission Line	Total LOC=198; Maintenance of LOC by Nalkata GSS Maintenance Team= 102 nos (LOC 01-102)	Along the line upto Subansiri. (LOC 01 to 102)	12.01.2024 13.01.2024	Corridor need to be cleared.	Opportunity Shutdown of Dhemaji Line taken on 13.01.2024 for line maintenance work.
3	132KV Nalkata-Majuli S/C Transmission Line	Total LOC=150; Maintenance of LOC by Nalkata GSS Maintenance Team= 117 nos (LOC 01-117)	Along the line upto Subansiri. (LOC 01 to 117)	08.01.2024	Corridor need to be cleared.	Opportunity S/d of Majuli Line taken on 08.01.2024 for Corridor cleaning purpose.
4	132KV North Lakhimpur-Dhemaji Transmission line	Total no. of locations= 198 (60.7 KM) Total no. of locations under 132KV Dhemaji GSS= LOC 103- LOC 198 (29.88 KM)	LOC 1-198	11-01-2024, 12-01-2024, 17-01-2024, 18-01-2024, 24-01-2024, 30-01-2024	1) 6 no. of discs has been damaged at LOC 4 2) Corridor need to be cleared at required LOCs 3-4, 11-12, 44-45, 48, 69-70, 83. 3) Rusting observed due to waterlogging condition at LOCs 94, 77, 74, 35, 34, 33, 32, 30, 28, 24, 18, 14, 8. 4) Member pieces found missing at LOCs 12, 11, 4	1) Corridor cleaning done at required locations on 13-01-2024. 2) Work order has been issued for replacement of missing tower members. 3) Estimates to be submitted for tower leg repairing and replacement of damaged discs.
5	132 KV Nalkata- Majuli S/C line.	Total No. of locations: 150 (Total KM=44.709) Total no of locations under 132KV Majuli GSS=118-150 (9.5KM)	LOC 118-150	03-01-2024 17-01-2024, 24-01-2024.	Ok	Corridor cleaned at required locations during Shutdown period on 08-01-2024.
6	132KV Dhemaji-Silapathar D/C line	Total No. of locations: 123 (Total KM=35.86 KM)	LOC 1-123	NIL	Ok	NIL

Annexure B.7

Detailed Report of grid event in < Kopili Power Station > of NER
(To be submitted by User/SLDC during Grid Disturbances/Grid Incidents/Near Miss Event as per IEGC section 37.2 (e))

Date: 05-02-2024

- 1. Event Summary:** Busbar Protection (LBB) operated leading to tripping to multiple elements
- 2. Time and Date of the Event:** Dec 2023 and Jan 2024
- 3. Event Category:** Grid Disturbance Category 1
- 4. Location/Control Area:** Kopili HEP
- 5. Antecedent Conditions:**

	Frequency	State Generation (MW)	State Demand (MW)	ISGS Generation (MW)	ISTS Licensee (Voltage in kV)
Pre-Event					
Post Event					

**Pre and post data of 1 minute before and after the event*

Important Transmission Line/Unit if under outage (before the event)	Not Applicable
Weather Condition	Fair

- 6. Load and Generation loss (in MW and MU):**
- 7. Duration of interruption:**
- 8. Network across the affected area:**
- 9. Details of Equipment Failure (if any during the event):** Not Applicable
- 10. Major Elements Tripped:** Bus I, II, Bus-Coupler, Unit 2, Misa 1,2,3 and ICT I and II

Sl no	Name	Trip time (hh:mm:ss)	Restoration time (hh:mm:ss)	Relay End 1	Relay End 2
1	Unit II				
2	Misa 1				
3	Misa II				
4	Misa III				
5	Bus Coupler				

6	Unit IV				
7	ICT I				
8	ICT II				

11. Event Analysis (Based on PMU, SCADA & DR): In the month of Dec 2023, Busbar protection was due to operation of end fault protection caused by faulty 'Y' Phase pole of Unit #3 GCB. The same had been replaced by a healthy pole on Dec 20th 2023.

In the month of Jan 2024, the Main II operated the Bus 2 in LBB Back Trip leading to the tripping of all the elements connected to the Bus. In addition to this, Unit 2 connected to Bus A also got tripped due to EFP initiated by Unit 3.

12. Protection/Operational issues observed: After detailed analysis jointly done with GE engineer, protection issues in Flexlogic or configurational issues of the logic were found in Main II. The LBB operated on Backtrip as Re-trip was assigned to individual elements in the logic. High differential current was observed only in Main II which was due to faulty CT polarity configuration in Bus-Coupler logic. EPF initiated by Unit 3 led to tripping of Unit 2 and vice-versa was due to reversed wiring connection.

13. Action Taken/Remedial Measures: Due to the frequent tripping of Busbar protection, the Main II Busbar Multilin B90 Relay was disabled after taking due permission from NERPC/NERLDC. After preliminary identification of the fault, a detailed investigation was required for which shutdown was imperative as thorough checks were possible through simulation and capturing the DR/EL. Therefore, PSD was taken on 21st and 23rd and ESD was taken on 24th, 25th and 26th 2024 and all the anomalies in the configuration were resolved one by one.

The DR and EL has already been uploaded in the tripping portal as and when such spurious tripping occurred.

All the observed faulty conditions in wiring and configuration of logics were rectified and the system has been on service since 26.01.2024.

14. Key Lessons Learnt: All the tripping were spurious except for the month of Dec 2023 and is attributable to contact output configurational issues in the logic of Enervista UR Setup and hard wiring of LBB initiation in Main II only.

Manas Pratim Sharma
Sr Manager (E/M)
Kopili Power Station

Copy to:

- 1. NERLDC**
- 2. Affected utilities / user**
- 3. MS, NERPC**

Annexure 1: Sequence of Events as per SCADA

Annexure 2: SLD of the affected Sub-station/Connectivity Diagram

Annexure 3: Disturbance recorder snips showing faults and digital signals

MOCK TEST PROCEDURE FOR SPS OPERATION SIMULATION FOR 220kV SAMAGURI – MISA CKT I & II

SPS LOGIC DEFINITION:

On event of loss of double circuits of 220kV Samaguri – Misa I & II, the power import to Samaguri will be shifted to substations in Guwahati Capital Area. To ensure stability of the network, the following elements are to be tripped at Samaguri substation:

- i) 132kV Samaguri – SD Nagar Line I
- ii) 132kV Samaguri – SD Nagar Line II

An average of 70MW load will be curtailed and stability of the grid will be ensured.

As per the SPS logic designed, the loss of the circuit will be recorded in the relay when all the three poles of the Circuit Breaker are found open. As such two cases are established for initiation of SPS:

CASE A: When both CBs are tripped at Samaguri end

CASE B: When both CBs are tripped at Misa end while AR is successful at Samaguri end

SPS SIMULATION:

- a. A shutdown of 220kV Samaguri – Misa Line I & II and 132kV Samaguri – SD Nagar Line I & II will be availed by the respective utility in discussion with SLDC and NERLDC
- b. The isolators of all the above four lines will be kept open at Samaguri, Misa and SD Nagar and thereafter, the CBs will be closed manually. The GPS time synch at the local SCADA and concerned IEDs are to be verified
- c. CB of Samaguri – Misa I will be opened at Samaguri end. There will not be any SPS operation at this step (AND LOGIC verified)
- d. Thereafter, CB of Samaguri – Misa II will be opened at Samaguri end. SPS would instantaneously operate and the CBs of Samaguri – SD Nagar Line I & II will be tripped at Samaguri end.
- e. The event log/trip log created in the SAS and relays will be verified and instantaneous operation will be ensured.

- f. Following the successful verification of 1st Case, the CBs of all the four concerned lines will be closed, with the isolators kept open at Samaguri end.
- g. The healthiness of the PLCC Panel of Misa Line will be ensured. (The PLCC panel which is included in the SPS implementation)
- h. The CB of Misa – Samaguri ckt I will be tripped at Misa end. No SPS operation will be ensured
- i. Following this, the CB of Misa – Samaguri ckt II will be tripped at Misa. SPS would operate instantaneously and a “Direct Trip” command will be received at Samaguri. On receipt of the DT, the CBs of Samaguri – SD Nagar ckt I & II will be opened at Samaguri
- j. The Sequence of events will be verified at Samaguri and Misa end (From SAS and relays)
- k. On verification of the above two cases successfully, all the CBs of the lines at concerned substation will be opened and the shutdown will be returned.
- l. Any discrepancy found during simulation of SPS will be recorded and rectification will be made during next scheduled shutdown.

SI No.	CHECKLIST	YES/NO	REMARKS
1	Shutdown of Samaguri – Misa I at both ends		
2	Shutdown of Samaguri – Misa II at both ends		
3	Shutdown of Samaguri – SD Nagar I at both ends		
4	Shutdown of Samaguri – SD Nagar II at both ends		
5	Isolators of all concerned lines kept open at respective ends		
6	GPS Synch ensured at for all concerned substations at SAS and relays		
7	SPS (CASE A) VERIFICATION START		
7.1	CBs of all lines closed locally at all concerned substations		
7.2	CB of Samaguri – Misa I opened at Samaguri end and no SPS operation or spurious signals noticed		
7.3	CB of Samaguri – Misa II opened at Samaguri end and tripping of CBs of Samaguri – SD Nagar Line I & II observed at Samaguri end		
7.4	Verification of SOE/EL/Trip log/DR at Samaguri end		

7.5	Instantaneous operation hence verified successfully and no mal-operations observed		
8	SPS (CASE B) VERIFICATION START		
8.1	All CBs for the concerned lines are closed locally at the substations		
8.2	Healthiness of PLCC of Misa Line (including SPS DT logic) verified at Samaguri and Misa		
8.3	CB of Misa – Samaguri Line I opened at Misa end and no SPS operation observed		
8.4	CB of Misa – Samaguri Line II opened at Misa and instantaneous SPS operation observed		
8.5	CBs of Samaguri – SD Nagar Line I and II are tripped at Samaguri end as per SPS logic		
8.6	Verification of SOE/EL/Trip log/DR at Samaguri end		
8.7	Instantaneous operation observed and hence verified successfully and no mal-operations observed		
9	All the CBs are tripped manually after verification of the SPS scheme		
10	Shutdown of the concerned lines are returned successfully by the utility		
REMARKS (if any):			

Signatures of Members Present:

Annexure D.1
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 - Khliehriat 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		