



Government of India

Ministry of Power
North Eastern Regional Power Committee

Meghalaya State Housing Finance Co-Operative Society Ltd.
Building
Nongrim Hills, Shillong – 793003.



ISO 9001:2008

Ph. No 0364 -2520050
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No. NERPC/OP/PCC/2012/696-708

Date: 18th January, 2012

To,

1. Managing Director, AEGCL, Bijuli Bhawan, Guwahati – 781 001
2. Director (Distribution), Me. ECL, Lumjingshai, Short Round Road, Shillong – 793 001
3. CGM, (LDC), SLDC Complex, AEGCL, Kahelipara, Guwahati-781 019
4. Chief Engineer (WE Zone), Department of Power, Govt. of Arunachal Pradesh, Itanagar- 11
5. Chief Engineer (EE Zone), Department of Power, Govt. of Arunachal Pradesh, Itanagar- 11
6. Engineer-in-Chief (P&E), Department of Power, Govt. of Mizoram, Aizawl – 796 001
7. Chief Engineer (P), Electricity Department, Govt. of Manipur, Keishampat, Imphal – 1
8. Chief Engineer (P), Department of Power, Govt. of Nagaland, Kohima – 797 001
9. General Manager, TSECL, Agartala – 799 001
10. ED (O&M), NERTS, PGCIL, Dongtiah-Lower Nongrah, Lapalang, Shillong -793 006
11. ED (O&M), NEEPCO Ltd., Brookland Compound, Lower New Colony, Shillong-793003
12. ED (O&M), NHPC, NHPC Office Complex, Sector-33, Faridabad, Haryana-121003
13. AGM, NERLDC, Dongtiah-Lower Nongrah, Lapalang, Shillong -793 006

Sub: Minutes of the 4th PCC Meeting held on 9th January, 2012 at Guwahati.

The Minutes of the 4th PCC Meeting of NERPC held on 09.01.2012 at “Hotel Grand Starline”, Guwahati is enclosed for favour of kind information and necessary action please.

The minutes is also available on the website of NERPC www.nerpc.nic.in

Yours faithfully,

(S.K. Ray Mohapatra)
Superintending Engineer

North Eastern Regional Power Committee

MINUTES OF THE 4th

PROTECTION COORDINATION SUB-COMMITTEE MEETING OF NERPC

Date: 09/01/2012 (Monday)

Time: 14:30 hrs

Venue: "Hotel Grand Starline," Guwahati.

The List of Participants in the 4th PCC Meeting is attached at **Annexure - I**

Shri P. Kanungo, Chief Manager, NERTS, POWERGRID welcomed all the participants to the 4th PCC meeting. He thanked NERPC for giving them the opportunity to host the 4th PCC meeting at Guwahati. He also mentioned that PCC Sub-committee meeting was held after a gap of more than one year. He expressed that PCC meeting is very important and this meeting should be held regularly. Further, he requested all members to actively participate in the meeting for fruitful outcome.

Shri P.D. Siwal, Member Secretary I/C, NERPC also welcomed all the participants to the 4th PCC and thanked POWERGRID for hosting the meeting at Guwahati. He also mentioned that the PCC meeting was held after a gap of one year as no agenda was received from constituents in spite of request from NERPC Secretariat. He requested constituents to send their agenda points relating to protection issues pertaining to their system in advance so that various issues can be discussed in the meeting for the benefit of the NE Region.

The meeting was started with introduction of the participating officers and Member Secretary (IC) also introduced and welcomed Shri S.K. Ray Mohapatra, SE who has joined recently in NERPC from CEA.

Thereafter, Member Secretary I/C requested Shri Mohapatra, SE, NERPC to take up the agenda items for discussion.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 3rd MEETING OF PROTECTION SUB-COMMITTEE OF NERPC.

SE, NERPC mentioned that the minutes of the 3rd meeting of the PCC held 7th May, 2010 at Shillong were circulated vide letter No. NERPC/OP/PCC/2011/589 - 600 dated 12th May, 2011.

No comments or observations were received from any of the constituents, the minutes of 4th PCC meeting was confirmed.

ITEMS FOR DISCUSSION

B. FOLLOW UP ACTION

B. 1 Submission of details of various Protection Scheme:

SE, NERPC informed that during the 3rd PCC meeting, Member Secretary had requested all constituents of NERPC to submit the protection details of their transmission system so that the protection scheme and relay setting (reach & time etc.) can be standardized for North-Eastern region. He mentioned that so many trippings of lines could be due to improper relay setting or co-ordination problem of relays owned by different agencies and standardization of protection system and relay settings will improve the situation. AEGCL, MeSEB, Mizoram, RHEP & AGBPP, Kathalguri of NEEPCO have already submitted their protection details to NERPC. The protection details in respect of NERTS, Ar. Pradesh, Manipur, Nagaland, TSECL, NEEPCO (except RHEP & AGBPP) are still awaited. MS requested them again to submit the details as early possible as per the performa enclosed at **Annexure B.1.**

SE, NERPC inform that CEA (Technical standards for construction of Electrical Plants & Electrical lines) regulations 2010 provides guidelines for protection schemes at different voltage levels. The document can be downloaded from CEA's website i.e. (www.cea.nic.in). Further, he cited that Northern Region has already

completed their protection standardizations process and NE region should also standardize their protection schemes etc. for the benefit of Constituents.

CM, POWERGRID enquired if the regulation strictly mentions that all numerical relays should be of IEC 61850 compliance. SE, NERPC informed that as per regulation all protections relay should be of numerical type complying to IEC – 61850 protocol and all Constituents should initiate action accordingly while replacing / procuring new relays for their system.

The representative of Tripura informed that they have already invited tenders to upgrade their protection system, but due to some technical problems implementation process got delayed. It was informed that in the next 6 months they would be able to upgrade their protection system.

The representative of NEEPCO informed that details of protection system for remaining stations would be sent to NERPC shortly.

Member Secretary (IC) had again requested all constituents of NERPC to submit the protection details of their transmission system including protection schemes & relay settings etc., so that the protection scheme can be standardized for North-Eastern region.

The Sub-committee noted as above.

B. 2 Undesired trippings of 132 kV RC Nagar-Agartala line I&II and R.C.Nagar-Kumarghat

During the 3rd PCC meeting, the tripping details of 132 KV R.C.Nagar- Agartala line I & II and R.C.Nagar-Kumarghat were discussed in the meeting. It was observed that 132 KV R.C.Nagar- Agartala line I & II were frequently tripping in Zone-3 because of faults at 132 kV lines (TSECL lines) originating from 79 tilla, Agartala S/S. TSECL representative stated that there is no distance protection schemes on these lines. Member Secretary had requested TSECL to install Numerical Distance protection relays on these lines as loss of generation at R.C. Nagar due to fault in TSECL lines affects other States also. TSECL had agreed for providing distance protection scheme on their lines.

The representative of Tripura informed that remedial measures have been taken and undesired trippings of 132 kV RC Nagar-Agartala line I & II and R.C.Nagar-Kumarghat have been resolved to a great extent

The Sub-committee noted as above.

C. NEW ITEMS

C. 1 Non Operation of Protective Switchgear of DOP, Manipur

Undesirable tripping of 132kV Imphal (PG) – Imphal (S) Line and 132kV Dimapur – Imphal Line during fault in Manipur system due to non-operation of protective switchgear of Manipur system is being observed since long. Refer list of mal trippings during 2011 enclosed in **Annexure – C.1**.

The issue was discussed in details during 9th TCC & NERPC Meeting held on 11th & 12th August 2010. During the meeting, Manipur informed that most of old and outdated equipments need replacement and this process would take some time. Necessary action is being taken. (Refer MOM Item No. 8.10 of 9th TCC & NERPC Meeting).

Since no representative from Manipur was present the matter was referred for discussion in OCC Sub-committee meeting on (10-1-2012).

C. 2 Frequent Tripping Of 33kv System of DOP, AP at Nirjuli and Ziro

During 9th TCC & NERPC Meeting, the issue was discussed in details and Arunachal Pradesh had informed that they have already initiated various measures to reduce no. of faults on 33 KV lines owned by Dept. of Power, Govt. of Arunachal Pradesh.

During 10th TCC & NERPC Meeting POWERGRID had again expressed concern for non-reduction of no. of faults in 33kV Feeders. Arunachal Pradesh again assured to take necessary action urgently to reduce no. of faults in their 33kV lines.

During 11th & 12th TCC and NERPC Meeting, POWERGRID again raised the issue of increase in trippings. But, the issue could not be discussed in absence of representatives from Arunachal Pradesh.

The status of tripping of various 33kV Feeders, submitted by PGCIL as on 26.12.2011 were as follows.

A. 132/33kV Ziro Sub Station (Tripping of 33kV Feeders)

Sl. No	33 KV feeder	Jan' 10 to Mar' 11		Apr' 11 to Dec' 11	
		Nos.	Tripping/month	Nos.	Tripping/month
1	Kurung- Kamey	525	21.67	171	19.00
2	Old Ziro	232	14.47	85	04.44
3	Kimin	511	34.07	343	38.11

B. 132/33kV Nirjuli Sub Station (Tripping of 33kV Feeders)

Sl. No	33 KV feeder	Jan' 10 to Mar' 11		Apr' 11 to Dec' 11	
		Nos.	Tripping/month	Nos.	Tripping/month
1	AP #1	64	4.27	55	6.11
2	AP #2	155	10.33	121	13.44
3	AP #3	44	2.93	35	3.88

CM, POWERGRID requested Arunachal Pradesh to take necessary action on priority basis to reduce no. of faults in 33kV feeders owned by DoP, Govt. of Arunachal Pradesh to avoid further failure of transformers at Nirjuli and Ziro Sub Stations.

SE, Ar. Pradesh informed that line patrolling is being done regularly and since November, 2011 the trippings have reduced. The details of trippings since November, 2011 were furnished by AP during the meeting and the same is enclosed at **Annexure C.2**.

The Sub-committee requested POWERGRID to monitor the status of trippings for one more month and the same would be reviewed again in the next PCC meeting.

C. 3 T- Connection of Lekhi Sub Station

CM, POWERGRID informed that 132kV Ranganadi-Nirjuli Line is being tapped (i.e. operating with T – connection) to feed Lekhi Sub Station instead of LILO since Aug/Sept 2008. He requested Dept. of Power, Ar. Pradesh to expedite the action for LILO of Ranganadi – Nirjuli line at at Lekhi sub-station.

SE, Ar. Pradesh informed that the LILO arrangement at Lekhi S/S would be completed by January, 2012.

The Sub-committee noted as above.

C. 4 Tripping of all Feeders Connected to Khliehriat (PG) Sub Station due to Fault in MeECL System

CM, POWERGRID informed that there were several instances of tripping of all feeders connected to 132kV Khliehriat (PG) Sub Station during fault in MeECL System. Refer **Annexure – C.4**. From such tripping it is evident that the protective switchgear of MeECL beyond Khliehriat (MeECL) Sub Station fails to clear fault which results reflection of fault at 132kV Khliehriat (PG) Sub Station. Hence, MeECL has to take immediate action to ensure proper functioning of their protective switchgear to avoid such multiple tripping at 132kV Khliehriat (PG) Sub Station which often causes Grid Disturbance.

The representative of Me. ECL informed that the earlier trippings in Khliehriat was due to PT failure, but the PT, cables etc. has been replaced in November, 2011 and such trippings should not occur again.

AGM, NERLDC stated that after Leshka power was injected to the grid, many trippings around Uiam Stages I to IV, which may be a coincidence, have been observed and once tripping occurred in these areas Khliehriat side also has been affected (whenever NEHU – Khliehriat is closed) and this has triggered further in the 132 KV pocket. Even though Meghalaya has been requesting to keep the 132 KV NEHU – Khliehriat line it in closed condition, but considering the vulnerability of the grid this line has not been allowed to be closed.

The representative of Me. ECL stated that Mawlai – Stage I (Uiam) is always overloaded due to above situation and if this line is allowed to remain closed they would get some relief from Khliehriat side.

The Sub-committee advised Meghalaya to check their protection schemes, ground clearances etc., before allowing the 132 KV NEHU – Khliehriat line to be in closed condition.

C. 5 Commissioning of Line CVTs of 132kv Khliehriat (PG) - Khliehriat (MeECL) Line # II

CM, POWERGRID informed that even though the CVTs of Khliehriat (MeECL) Bay # II at Khliehriat (PG) Sub Station have been erected but the same has not been commissioned till date. Presently the voltage input for Distance relay as well as for

Back up protection relay is being taken from Bus CVT installed in POWERGRID, Khliehriat Sub-station. The matter was informed to R.E (Me.ECL), Khliehriat for taking necessary action in this connection but no action has been taken till date.

The representative of Meghalaya informed that they will take up the matter and request the concern division to commission the CVTs of Khliehriat at the earliest. The status would be intimated in the next PCC meeting.

The Sub-committee noted as above.

C. 6 Installation of BMK at Khliehriat (MeECL) Bay # II at Khliehriat (PG) Station

CM, POWERGRID informed that during the commissioning of Khliehriat (MeECL) Bay # II at POWERGRID's Khliehriat Sub Station, Me.ECL had excavated pit for installation of BMK but till date the same has not been installed and the pit has become a safety hazard. Matter was referred to R.E (MeECL), Khliehriat for taking necessary action.

The representative of Meghalaya informed that they will take up the matter and request the concern division to look into the matter. The status would be intimated in the next PCC meeting.

The Sub-committee noted as above.

C. 7 Non-Functioning of 48V Battery System (PLCC) at Kopili HEP

POWERGRID stated that at present, all the PLCC Links of Kopili HEP is out of service due to non-functioning of 48V Battery System. Meanwhile, POWERGRID has already replaced all obsolete PLCC Link Type ETI by Type ETL of M/S ABB Make.

The representative of NEEPCO informed that the battery has been replaced but there was some problem with the charger. Further, he stated that he will take up the matter for restoration of the charger at the earliest.

The Sub-committee noted as above.

C. 8 Non-Functioning of 48V Battery Bank at Samaguri (AEGCL) Sub Station

POWERGRID informed that the 48V Battery Bank at 220/132kV Samaguri Sub Station of AEGCL is defective and at present, the load is being fed directly by the charger. Meanwhile, POWERGRID has already replaced obsolete PLCC (ETI) and CB (MOCB) and Auto Reclose Scheme will be put in service.

The representative of Assam informed that both the new battery and charger have been commissioned.

POWERGRID stated that they will verify the status as reported by Assam.

The Sub-committee noted as above.

C. 9 Installation of 2nd Distance Protection Relay for 220KV and above System

POWERGRID has already installed 2nd Distance Protection Relay (DPR) for all the lines at 220kV and above level as per the CEA regulation. The status of installation of 2nd DPR in respect of following lines was still awaited from concerned utility.

SN	Station	Line	Utility	Status
1	Kopili HEP	220 KV Misa #1	NEEPCO	
2	Kopili HEP	220 KV Misa #II	NEEPCO	
3	Kopili HEP	220 KV Misa #III	NEEPCO	
4	Kathalguri PH	220 KV Misa	NEEPCO	
5	Kathalguri PH	220 KV Mariani	NEEPCO	
6	Samaguri SS	220 KV Balipara	AEGCL	
7	BTPS SS	220 KV Salakati # I	AEGCL	
8	BTPS SS	220 KV Salakati # II	AEGCL	

The representative of NEEPCO informed that order have been placed for procurement of relays in respect of lines at Sl. No. 1 to 5 and the material is expected to be reach at site by 31.03.2012. Once the materials are received, they will install at the earliest.

Assam also informed that one Distance Protection Relay on Samaguri side has been installed.

Regarding Protection Scheme for transmission lines with one Distance Protection Relay and one back up Over Current earth fault relay, NERPC advised to refer CEA's (Technical Standards for Construction of Electrical plants & Electric lines) regulations 2010.

The Sub-committee recommended to replace obsolete relays with numeric relay for complying with IEC 61850 protocol in phased manner.

As per CEA regulation, where two distance protection has been provided, it is also required to be ensured that directional earth fault relay is activated to take care of high resistance faults.

C. 10 Earth Fault in 220V DC System

POWERGRID informed that during the visit of their representative; persisting earth fault was observed in 220V DC System of following stations. The 220 V DC supply circuits need to be checked and problem should be sorted out on priority basis to avoid mal-operation of switchgear.

1. 220/132kV Samaguri Sub Station (AEGCL)
2. 220/132kV Mariani Sub Station (AEGCL)
3. 220kV Kathalguri Sub Station (NEEPCO)

The representative of Assam informed that their sub-stations are very old (more than 40 years) and to locate the earth fault is very difficult. Moreover, it requires shut down of relevant feeders/ sub-stations.

The representative of NEEPCO also shared the same opinion with Assam and requested POWERGRID to suggest some solution to this problem. Further, NEEPCO informed that they have identified the problem and the same would be corrected.

POWERGRID suggested that sometime earth fault occurs due to leakage of electrolyte and in such case cleaning of battery bank eliminates the earth fault. Further, in case of fault in cable, it can be localized by switching off various DC circuits which may require shut down of feeders. POWERGRID was requested to enquire about the availability of diagnostic tool for locating earth faults.

NERPC suggested that since the substations are very old replacement of equipment, protection system, cabling etc. should be taken up in phased manner.

The Sub-committee requested NEEPCO & Assam to resolve the problem as discussed above and intimate the status in the next PCC meeting.

C. 11 Major Grid disturbances during the last one year.

NERLDC gave a presentation on the major grid disturbances during the last one year. The same is enclosed at **Annexure C.11.**

The Sub-committee noted as above.

C. 12 Any other item

i) Tripura informed that the relay at 79 Tilla of 132 KV R.C. Nagar – Agartala was faulty and requested POWERGRID to look into the matter.

POWERGRID requested Tripura to write in detail about the problem with the relay problem and the same would be sorted out at the earliest.

The Sub-committee noted as above.

ii) Member Secretary (IC) requested POWERGRID to give the presentation on major grid disturbances and their protection practices in the next PCC meeting for the benefit of the constituents. POWERGRID agreed.

The Sub-committee noted as above.

C. 13 Date and Venue of next OCC

It is proposed to hold the 5th PCC meeting of NERPC on 10th April, 2012 (Friday). As per roaster, Assam will be the host for 5th PCC meeting. The exact venue will be intimated in due course.

The meeting ended with thanks to the Chair.

List of Participants in the 4th PCC meeting held on 09/01/2012

Sl. No	Name & Designation	Organization	Contact No.
1.	Sh. W. Rehman, EE, SLDC	Ar. Pradesh	09436050735
2.	Sh. B.C. Bordoloi, DGM, (MRT)	Assam	09435045625
3.	Sh. P.K. Medhi AGM, Protection	Assam	09954060887
4.	Sh. F. Langstieh, AEE, (MRT)	Meghalaya	
5.	Sh. H.R.F. Hadem, AE, SLDC	Meghalaya	
6.	Sh. B. Kharkamni, AE, SLDC	Meghalaya	
7.	No Representative	Mizoram	
8.	No Representative	Manipur	
9.	No Representative	Nagaland	
10.	Sh. B. Debbarma, DGM (SO)	Tripura	09436450501
11.	Smt. Sampa Sen, Sr. Manager	Tripura	09436120263
12.	Sh. T.S. Singh, AGM	NERLDC	09436302717
13.	Sh. Rahul Chakrabarti, Engineer	NERLDC	09402507543
14.	Sh. P. Kanungo, CM.	NERTS	09436302823
15.	Sh.Prasenjit Sen, Manager	NEEPCO	09436167999
16.	Sh. P.D. Siwal, MS IC	NERPC	09436998378
17.	Sh. A.K. Mishra, SE	NERPC	
18.	Sh. S.K. Ray Mohapatra, SE	NERPC	09818527857
19.	Sh.B. Lyngkhoi, AS	NERPC	09436163419
21.	Sh. D.K. Bauri, EE	NERPC	09863317236

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