Agenda
for
121st PCC Meeting

Date:16/12/2022
Eastern Regional Power Committee
14, Golf Club Road, Tollygunge
Kolkata: 700 033

EASTERN REGIONAL POWER COMMITTEE

AGENDA FOR 121st PROTECTION COORDINATION SUB-COMMITTEE MEETING TO BE HELD ON 16.12.2022 AT 10:30 HOURS THROUGH MS TEAMS ONLINE MEETING PLATFORM

PART – A

ITEM NO. A.1: Confirmation of Minutes of 120th Protection Coordination sub-Committee Meeting held on 16th November 2022 through MS Teams online platform.

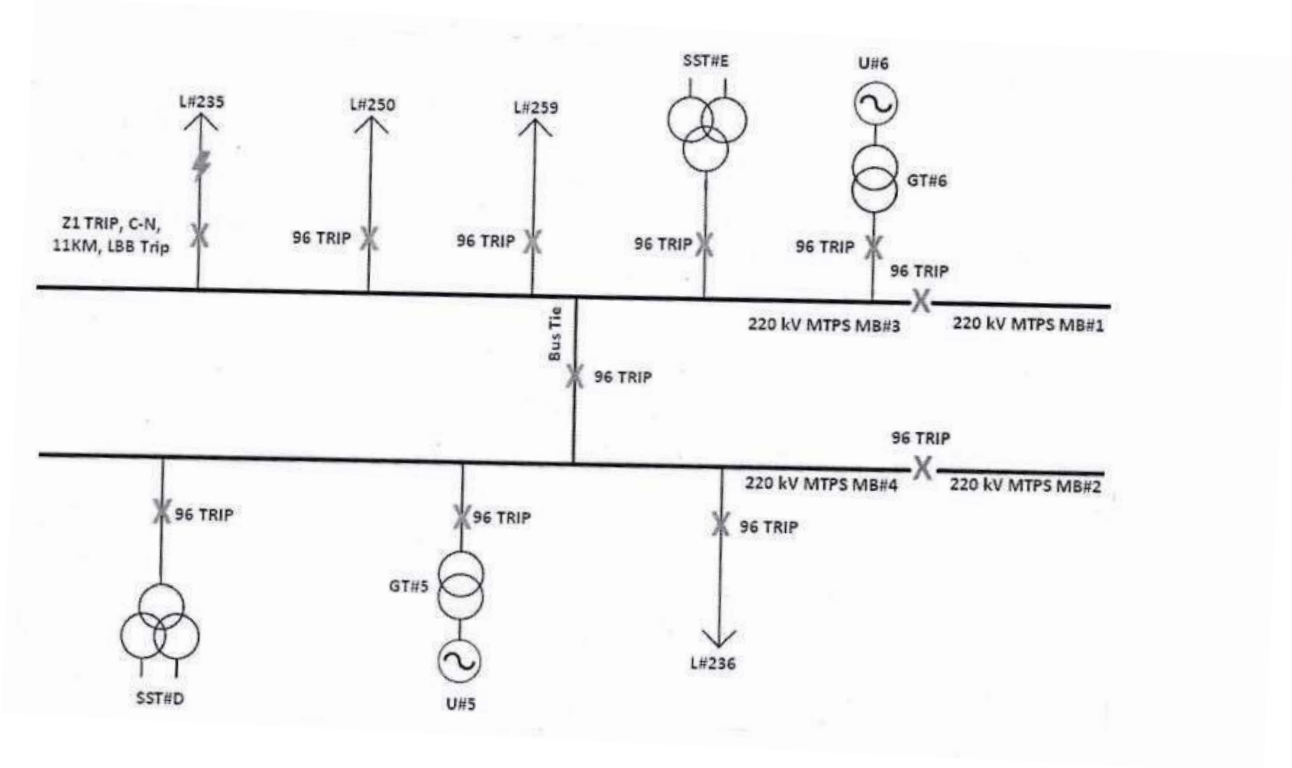
The minutes of 119th Protection Coordination sub-Committee meeting held on 16.11.2022 was circulated vide letter dated 02.12.2022.

Members may confirm.

PART – B

ITEM NO. B.1: Disturbance at 220 kV Mejia (DVC) S/s on 20.11.2022 at 10:40 Hrs

220 kV Mejia-Durgapur (DVC) tripped around 10:40 hrs. from both end due to B phase fault. At the same time due to maloperation of LBB relay of the above line bay at MTPS end, all elements connected to 220 kV Bus-3 also tripped. Further due to defective CT switching relay of SST #D bay, trip command was extended to the elements connected to 220 kV Bus-4 and tripped the connected elements.



Disturbance analysis report is attached at **Annexure B.1.**

Gen. Loss: 366 MW
Outage Duration: 00:35 Hrs

DVC may explain.

ITEM NO. B.2: Grid Disturbances at 220 kV Tashiding S/s

A. On 13.11.2022 at 16:34 Hrs

At 16:26 hrs, while desynchronizing Unit #1 at Tashiding, its breaker didn't open. At the same time, 220 kV Tashiding-New Melli-1 connected to same bus got tripped. At 16:34 Hrs, reverse power flow was observed in 220 kV Tashiding-New Melli-2 at Tashiding end and the line was hand-tripped from Tashiding to avoid any issue with generating units.

Load loss & gen loss: Nil
Outage Duration: 01:13 Hrs

B. On 28.11.2022 at 14:16 Hrs

During testing of bus bar protection scheme at Tashiding end, tripping command was extended to master trip relay of both outgoing feeders subsequently 220 kV Tashiding-New Melli d/c tripped from Tashding end.

Load loss & gen loss: Nil
Outage Duration: 00:29 Hrs

Detailed report from ERLDC is attached at **Annexure B.2.**

Tashiding HEP may explain.

ITEM NO. B.3: Total Power failure at 220 kV Chatra(JUSNL) S/s on 18.11.2022 at 01:23 Hrs

220 kV Daltonganj-Chatra-1 tripped due on B_N fault. Subsequently total power failed occurred at Chatra S/s as it is being fed radially through single circuit.

Relay Indications:

Name	End 1	End 2	PMU Observations
220 kV Daltonagnj-Chatra-1	Daltonganj: B_N, 143.5 km, 1.3 kA	Chatra: Didn't trip. 220 kV Bus-2 B_ph PT burst	2 kV dip in B_ph voltage at Biharsharif. Fault clearance time: 350 msec

Detailed report from ERLDC is attached at **Annexure B.3.**

Load Loss: 23 MW
Outage Duration: 01:28 Hrs

JUSNL may explain.

ITEM NO. B.4: Major grid events other than GD/GI

A. Bus tripping occurred in Eastern Region during November 2022

During November 2022, following incidents of bus bar tripping have been observed in Eastern Region.

Element Name	Tripping Date	Reason	Utility
220 kV Main Bus-2 at Alipurduar (PG)	18.11.22 at 16:17 Hrs	-	PG ER-2
400 kV Main Bus-1 at Indravati (PG)	23.11.22 at 18:53 Hrs	Bus bar protection operated	PG Odisha
220 kV Main Bus-1 Arambagh	11.11.22 at 13:37 Hrs	-	WBSETCL

Concerned utilities may explain.

ITEM NO. B.5: Implementation of Single-Phase Auto recloser feature in DEF Relays for the 400 kV transmission lines of TPTL-(Agenda by TPTL)

In 108th PCC meeting, the proposal of implementing auto reclosure with DEF protection was discussed and after discussion it was opined that the proposal needs elaborate technical discussion and confirmation from the relay manufacturers regarding provision of the single-phase auto reclosing functionality in DEF relay for which PCC had further advised TPTL to furnish relevant document / information for further discussion in this regard.

Subsequently TPTL had contacted with the relay suppliers of 400 kV D/C Teesta III HEP – Kishanganj transmission line at Teesta III end and Kishanganj end. The supplier of P442 relay at Teesta III HEP end, i.e., M/s GE Renewable Energy has confirmed that single phase tripping and auto reclose is possible in aided DEF protection function in the P442 relay. Further, as per the relay manual of MiCOM P127 relay, supplied by M/s Areva (formerly M/s Schneider) at Teesta III end, auto reclosure feature is available in DEF protection function of the relay. At Kishanganj end it was also confirmed by the relay supplier, i.e., M/s Hitachi Energy (formerly M/s ABB Power Systems India) that single phase auto reclose is available in DEF protection function of REL670 relay.

In view of above, it is proposed to implement Single Phase Auto recloser feature in DEF Relays for the 400 kV transmission lines of TPTL.

TPTL may elaborate. Members may discuss.

ITEM NO. B.6: Tripping Incidence in month of November-2022

Single line tripping incidents in the month of November-2022 which needs explanation from constituents of either end is attached at **Annexure B.6.**

Concerned utilities may explain.

PART- C :: OTHER ITEMS

ITEM NO. C.1: DEF protection setting review in Sikkim complex in view of LILO of 400 kV Teesta 3-Kishanganj at Rangpo

After LILO of 400 kV Teesta 3-Kishanganj at Rangpo, review of DEF settings for all lines emanating from Teesta-3, Dikchu, Rangpo was necessitated. In 111th PCC meeting, it was decided that PRDC would carry out the study for DEF relay setting coordination for Sikkim Complex with revised configuration of transmission network.

Subsequently the study was carried out and shared with ERLDC for verification of network configuration and fault level data.

In 117th PCC meeting ERLDC observed that the network configuration and fault level information are in order.

The DEF settings based on the revised study is enclosed at **Annexure C.1.**

In 118th PCC Meeting, PCC advised concerned utilities of Sikkim Complex to implement the revised settings of DEF relay as enumerated in the report at their respective end and confirmation of the same shall be intimated to ERPC/ERLDC.

In 119th PCC Meeting, it was informed that Tashiding had revised the DEF settings at their end.

PCC advised concerned utilities to implement the revised DEF settings at their end at the earliest.

Further, NHPC vide email dated 22nd November 2022, TUL vide email dated 01/12/2022, Jorethang vide email dated 01/12/2022 and Dikchu vide email dated 01/12/2022 had confirmed that the revised settings have been implemented at their respective end.

Powergrid and Rongnichu HEP may update.

ITEM NO. C.2: Follow-up of Decisions of the Previous Protection Sub-Committee Meeting(s)

The decisions of previous PCC meetings are attached at **Annexure C.2.**

Members may update the latest status.

ITEM NO. C.3: Issue in implementation of differential protection in 220kV Darbhanga (DMTCL) – Darbhanga (BSPTCL) D/C line-(Agenda by DMTCL)

As per deliberation in 45th TCC Meeting, TCC agreed with proposal that differential protection should be implemented for short lines having length < 10 km and cost sharing related to implementation of fiber based differential protection scheme at either end will be borne by bay owner of respective end. It was also clarified that in case different bay owners are present on either side then implementation may be done by single entity and cost can be shared by both utilities.

With reference to this deliberation, BSPTCL vide letter dated 21.07.2022 attached at **Annexure C.3.** had requested DMTCL to implement differential protection in 220kV Darbhanga - Darbhanga D/C as bays at DMTCL end are maintained by DMTCL.

DMTCL vide letter dated 05/12/2022 addressing to ERPC stated that DMTCL being a interstate transmission licensee implemented mentioned ISTS elements under TBCB route. For transmission

licensee who are operating under TBCB route, scope of project is considered final as per bid documents and accordingly tariff stream is finalized through regulatory process of tariff adoption by CERC hence any additional requirement imposed on account of change in scope cannot be carried out under existing provisions of transmission service agreement.

In such case DMTCL is unable to implement differential protection in 220kV Darbhanga - Darbhanga D/C however necessary support required can be provided by DMTCL at its bay end.

DMTCL may elaborate. Members may discuss.

ITEM NO. C.4: List of lines having OPGW for 220 kV and above level.

During analysis of protection performance of various utilities of eastern region during the previous PCC meetings, it was observed that one of the main reason for single line tripping is either due to non-availability of PLCC/autorecloser or spurious DT triggering.

Further, for many of the lines autorecloser scheme has been planned to be implemented after commissioning of OPGW/DTPC in the concerned lines.

In this regard, all the utilities are requested to provide the list of 220 kV and above lines where

I. OPGW based communication scheme have already been implemented
II. Upgradation to OPGW has been planned/OPGW work is under progress.

Further, wherever OPGW have been installed, PLCC may be replaced with DTPC.

Members may discuss.

ITEM NO. C.5: Compliance of Third-Party Protection Audit Observations

The compliance status of Third-Party Protection Audit observations is as follows:

Name of Constituent	Total observations	Compiled	% of compliance
Powergrid	7	-	-
NTPC Darlipalli	3	2	66.67
OPTCL	21	7	33.34
OPGC	17	-	-
JUSNL	46	16	34.78
DVC	7	-	-

Status of compliances as per 120th PCC Meeting is attached at **Annexure C.5.**

JUSNL vide email dated 13/12/2022 addressing to ERPC had sent updated status of compliance of protection audit observation which is attached at **Annexure C.5.1.**

Concerned utilities may update.

पावर सिस्टम ऑपरेशन करपोरेशन लिमिटेड
(भारत सरकार का उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Government of India Enterprise)
Eastern Regional Load Despatch Centre: 14, Golf Club Road, Tollygunge, Kolkata-700 033.
CIN: U40105DL2009GOI188682
फ़ोन: 033- 24235755, 24174049 फैक्स : 033-24235809/5029 Website:www.erldc.org, Email ID- erldc@posoco.in

घटना संख्या: **20-11-2022/1** दिनांक: **06-12-2022**

Report on the grid event in Eastern Region (पूर्वी क्षेत्र में ग्रिड घटना पर रिपोर्ट)

1. Summary of the event (घटना का सारांश):

At 10:40 Hrs on 20.11.2022, 220 kV Mejia-Durgapur (DVC) tripped due to B_N fault. At the same time, its LBB relay mal-operated and all elements connected to 220 kV Bus-3 at Mejia tripped. SST#D was connected to 220 kV Bus-4, however, its CT switching relay was defective and isolator status was showing that it was connected to both buses, hence 220 kV Bus-4 at Mejia also tripped. 250 MW U#5, U#6 tripped leading to 366 MW generation loss at Mejia.

- **Date / Time of disturbance:** 20-11-2022 at 10:40 hrs.
- **Event type:** GI- 1
- **Systems/ Subsystems affected:** 220 kV Mejia TPS
- **Load and Generation loss**.
  - 366 MW generation loss reported at Mejia during the event.
  - No load loss occurred during the event

2. Important Transmission Line/element if out (महत्वपूर्ण संचरण लाइने जो बंद है):

- NIL

3. Major elements tripped (प्रमुख ट्रिपिंग)

- 220 kV Mejia-Ranchi-1
- 220 kV Mejia-Ramgarh-1
- 220 kV Mejia-Durgapur D/c
- U#5, U#6 (250 MW each) at Mejia
- SST#D, SST#E

4. Network across the affected area (प्रभावित क्षेत्र का नक्शा)

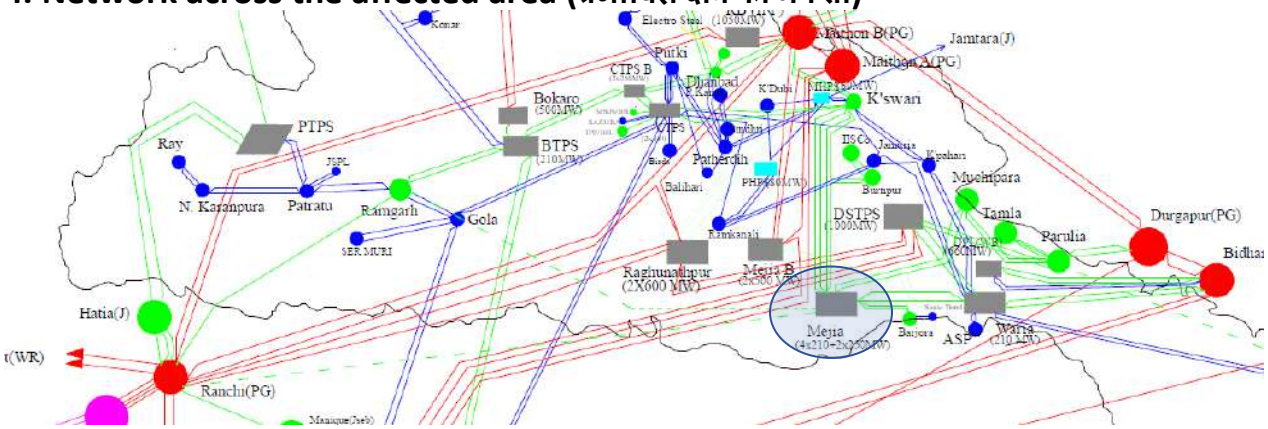


Figure 1: Network across the affected area

5. Relay indication and PMU observation (रिले संकेत और पीएमयू पर्यवेक्षण):

समय	नाम	उप केंद्र 1 रिले संकेत	उप केंद्र 2 रिले संकेत	पीएमयू पर्यवेक्षण
10:40	220 kV Mejia-Ranchi-1	LBB protection	-	20 kV dip in B_ph voltage at Mejia S/s. Fault clearance Time: 100 msec
	220 kV Mejia-Ramgarh-1		-	
	220 kV Mejia-Durgapur-1		-	
	220 kV Mejia-Durgapur-2	Mejia: B_N, Zone-1, 11 km	-	
	U#5, U#6 at Mejia	LBB protection	-	
	SST#D, SST#E		-	

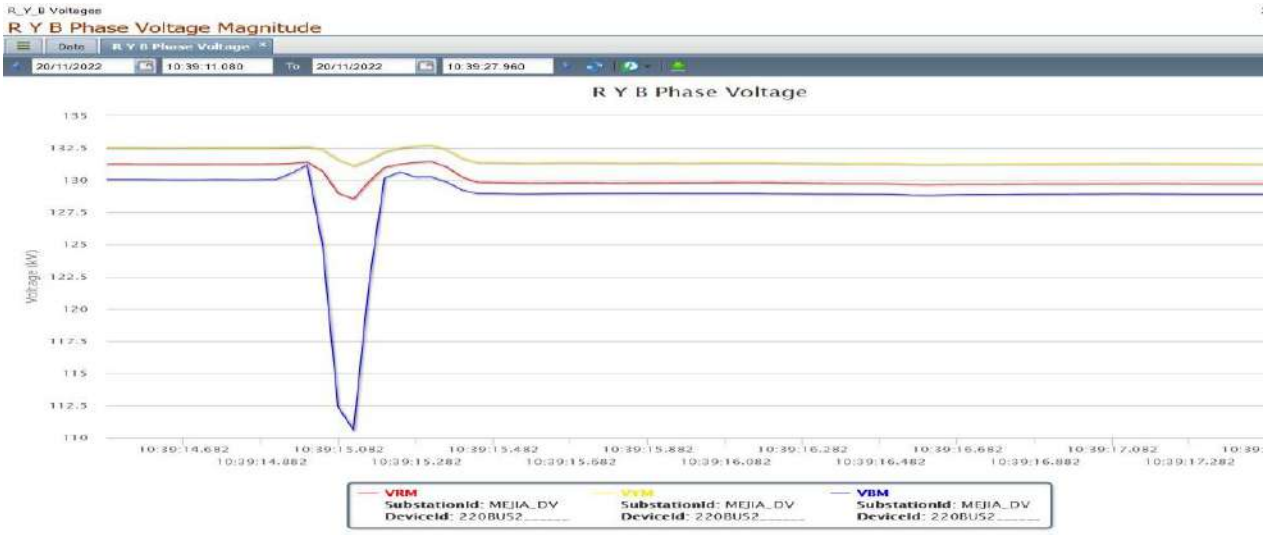


Figure 2: PMU voltage snapshot of 220 kV Mejia S/s

6. Restoration (पूर्वावस्था की प्रप्ति)

Transmission/Generation element name	Restoration time
220 kV Mejia-Ranchi-1	14:00
220 kV Mejia-Ramgarh-1	12:24
220 kV Mejia-Durgapur -1	18:56
220 kV Mejia-Durgapur -2	11:15
U#5, U#6 at Mejia	15:12/18:06
SST#D, SST#E	-

7. Analysis of the event & Protection issue (घटना का विश्लेषण और सुरक्षा समस्या):

- A single-phase fault (B-Earth) struck 220 kV Mejia-Durgapur-1 at 11 km from Mejia which was cleared within 100 msec. However, LBB of this CB operated immediately leading to tripping of all elements connected to 220 kV Bus-3. As reported, LBB relay was found faulty.
- 220 kV Bus-4 also tripped as SST#D which was connected to 220 kV Bus-4 but reset coil of its CT switching relay was faulty and when SST#D was transferred from Bus-3 to Bus-4, its status was not reset properly. Hence, it was showing connected to both buses. Thereby, LBB gave tripping command to all bay connected to 220 kV Bus-4 also.
- Incidents of tripping of both buses due to incorrect isolator status has increased recently. DVC may take necessary steps to avoid such unwanted tripping.
- As reported, CT switching relay of 220 kV Bus coupler was also found faulty.
- Detailed report received from DVC is attached at **Annexure-3.**

8. Non-compliance observed (विनियमन का गैर-अनुपालन):

Issues	Regulation Non-Compliance	Utility
DR/EL not provided within 24 Hours	1. IEGC 5.2 (r) 2. CEA grid Standard 15.3	**DVC**
Incorrect/ mis-operation / unwanted operation of Protection system	1. CEA Technical Standard for Construction of Electrical Plants and Electric Lines: 43.4.A. 2. CEA (Technical standards for connectivity to the Grid) Regulation, 2007: Schedule Part 1. (6.1, 6.2, 6.3)	**DVC**

9. Status of Reporting (रिपोर्टिंग की स्थिति):

DR/EL yet to be received from DVC.

Annexure 1: Sequence of events recorded at ERLDC SCADA data at the time of the event.

SoE data not recorded at the time of events.

Annexure 2: DR recorded

DR/EL yet to be received.

दामोदर घाटी निगम / DAMODAR VALLEY CORPORATION
अधीक्षण अभियंता कार्यालय / OFFICE OF S.E.(E)
केन्द्रीय रिले एवम् उपकरण परीक्षण प्रयोगशाला / CRITL
डाकघर- मैथन बांध / P.O. MAITHAN DAM,
जिला-धनबाद / DHANBAD, झारखंड / JHARKHAND -828207

पत्र सं° / Letter No.: CRID/MTPS/ 379

दिनांक / Date: 28.11.2022

सेवा में,

श्रीमान् अधीक्षण अभियंता / The Superintending Engineer, (E), MTPS OPH, DVC, MTPS

विषय / Sub: Investigation Report on Tripping of MTPS 220kV Bus # 3 & 4 due to LBB Operation of Line # 235 on 20/11/2022.

प्रिय महोदय / Dear Sir,

Please find the detailed investigation report of Tripping of MTPS 220kV Bus # 3 & 4 due to LBB Operation of Line # 235 on 20/11/2022.

सधन्यवाद / Thanking you,

भवदीय / Yours faithfully,

Dpatti 28/11/22

अधीक्षण अभियंता (वि) /
Superintending Engineer (E)
केन्द्रीय रिले एवम् उपकरण परीक्षण
प्रयोगशाला / CRITL
दाघानि, मैथन / DVC, Maithon

प्रतिलिपि / Copy To:

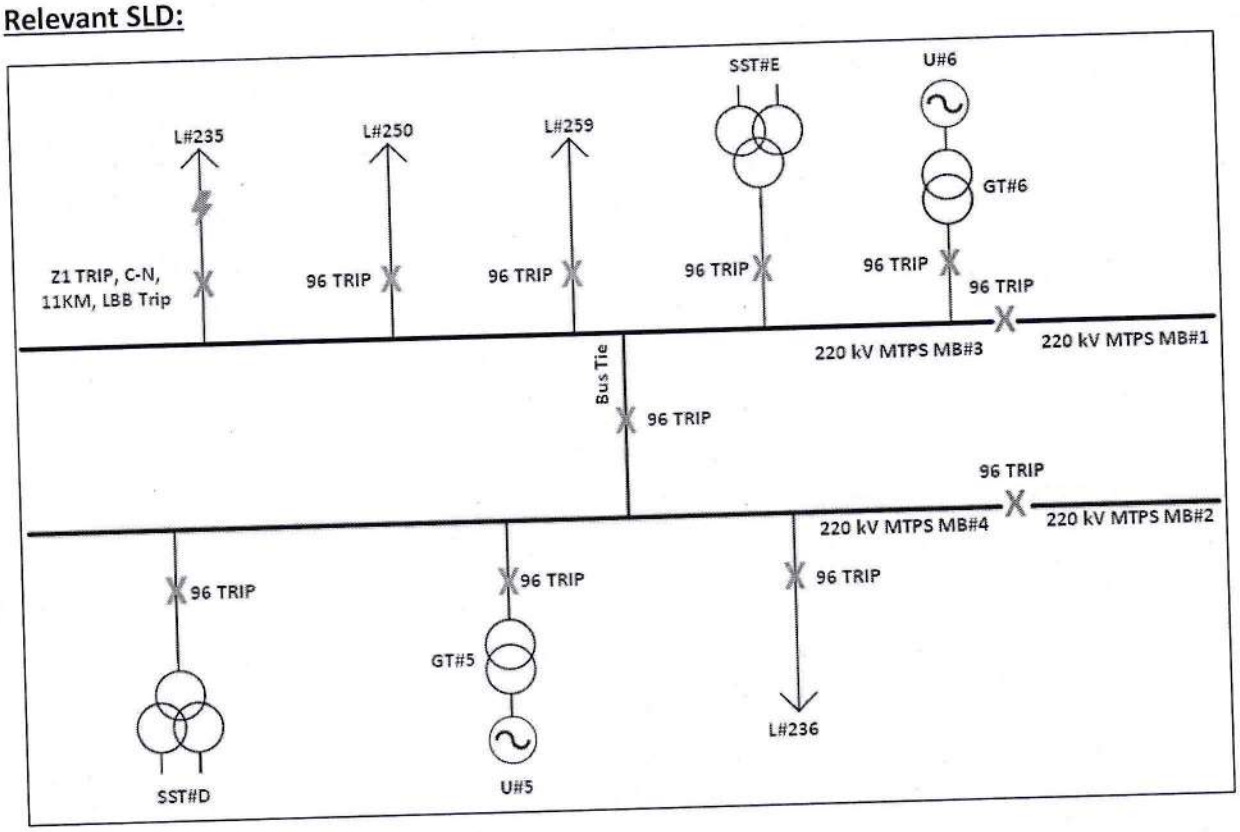
1. श्रीमान् मुख्य अभियंता , दाघानि, MTPS /The Chief Engineer-1 & Proj. Head , MTPS, DVC, MTPS
2. श्रीमान् मुख्य अभियंता- I (ओ°एस° & यू°) दाघानि, कोलकाता / The Chief Engineer-I (OS&U), DVC, Kolkata
3. श्रीमान् मुख्य अभियंता, सी° टी° सी, दाघानि, मैथन/ The Chief Engineer, CTC, DVC, Maithon
4. श्रीमान् एस° ई° एंड° टेक° पा, ईडी (सिस्टम), दाघानि, कोलकाता / The SE & Tech PA, ED (Sys), DVC, Kolkata
5. श्रीमान् अधीक्षक अभियंता (वि.), C.R.I.T.M, दाघानि, मैथन / The SE(E), C.R.I.T.M DVC, Maithon

Investigation Report on Tripping of MTPS 220kV Bus # 3 & 4 due to LBB Operation of Line # 235 on 20/11/2022

Brief History:

It was reported that at around 10:40 Hrs 220kV MTPS-Durgapur L#235 tripped through Z1 distance protection from both ends. The fault occurred in the said line at a distance 11 Km from MTPS end. But along with that LBB protection of the concerned bay operated and tripped all bays connected to 220 kV Main Bus # 3 & 4.

Relevant SLD:



Analysis of the Event:

CRITL team visited MTPS 220kV switchyard on the same day for detailed investigation of the said disturbance. Findings are tabulated as follows:

a) DR of L#235 was extracted and analyzed thoroughly. It was noticed that a L3-E fault occurred in the said line at around 10:40 Hrs on 20/11/2022 and both M1 LPRO and M2 SEL Distance relay issued Z1 trip command instantaneously. After the issuance of Z1 trip command, circuit breaker operated successfully and cleared the fault within 80ms. It may be noted here that L3 fault current was recorded to be around 8.8kA during this fault. DR is attached in Annexure A for reference.

b) Then last fault record of L#235 LBB Relay (ERL ARGUS-1) was noted down from the display panel as DR downloading provision is not available in this relay. It was observed that CB Fail trip command was issued and recorded current values were IA=0.33In, IB=0.45In & IC=10.7In. So, it is evident that, LBB relay logged fault current properly but as this fault current was cleared within 80ms, LBB relay should not have issued any CBF trip command.

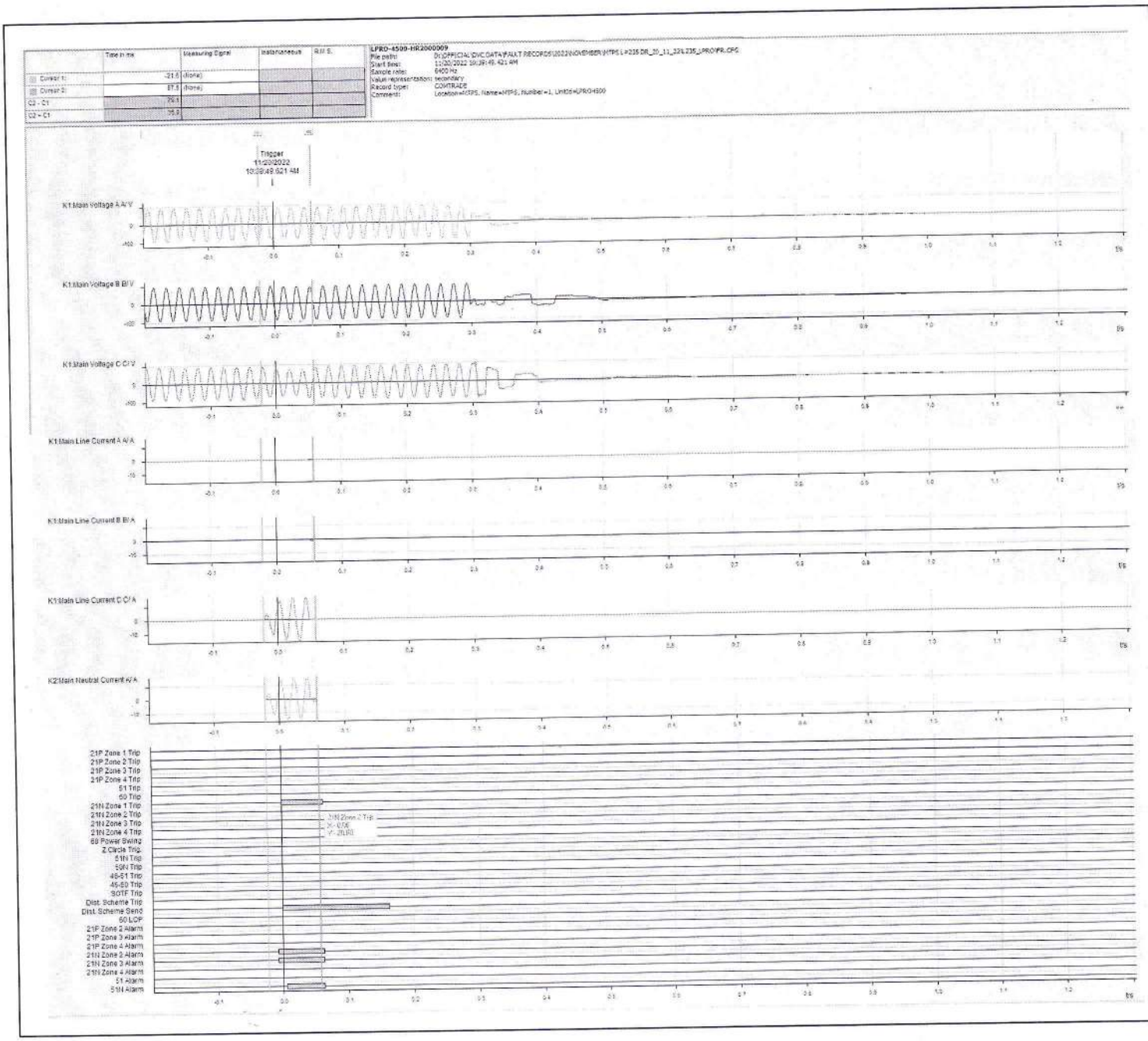
c) All settings of this LBB relay were checked thoroughly and were found to be in order.
d) Then this LBB relay (bearing Sl. No. BR0613291, Type: DCD414B, ARGUS 1) was racked out and tested by secondary injection method. It was found that whenever LBB initiation was given to the relay, relay issued CBF trip command instantaneously irrespective of any current in the relay.
e) Thereafter a healthy relay (bearing Sl. No. BR1601697, Type: DCD414B, ARGUS 1) was configured with the existing relay LBB settings and tested O.K. i.e. the relay was giving the LBB Trip command 200ms (LBB Timer) after LBB initiation only when the current in any phase was above 20% or 200mA (LBB Pick Up current). The faulty LBB relay was replaced by this healthy relay and the line was normalized.
f) So, it was clear that, faulty LBB relay had issued trip command although the circuit breaker of L # 235 fault had cleared the fault correctly. This explained the tripping of all bays connected to MB # 3 (to which L#235 was connected) via operation of 96 relays.
g) The reason of tripping of MB # 4 along with MB # 3 was improper operation of SST # D 89AX CT switching relay which had shorted the DC buses of MB # 3 & MB # 4. The concerned relay was drawn out and tested. On testing, it was found that the reset coil of the said relay was defective. During disturbance, SST # D was connected to MB # 4 and accordingly 89BX CT switching relay was in operated condition. But as 89AX relay did not reset properly due to its faulty resetting coil, both 89AX & 89BX remained in set condition. Thus, appearance of trip command in MB # 3 has resulted in operation of 96 relays of bays connected to MB # 4.
h) In addition to this, 89AX CT switching relay of BC # 4 was also found to be defective during testing.

Recommendations:

a) Malfunction of Easun Reyrolle(ER) make DCD414B relays used for LBB protection at CTPS New 220KV Switchyard had been observed previously too and there the LBB relays in all panels had been replaced by Siemens 7SJ relays. However, at MTPS this was the first occurrence of such mis-operation. Thus, keeping in view of history of malfunction of same make and model relays at CTPS and similar occurrence at MTPS today it has been decided that all existing LBB relays at MTPS Unit # 5 & 6 system are to be replaced by Siemens 7SJ relays in near future.
b) Manual checking of all contacts and flag of CT Switching relays (89AX, 89BX & 89CX) is to be done rigorously after bus side isolator operation and once in every shift. The status of CT switching relay must be recorded in shift book. In case of any anomaly, electrical maintenance should be informed immediately.
c) As a long term measure the existing High Impedance Bus bar & LBB protection scheme needs to be replaced with numerical Low Impedance busbar protection relay with Central & Peripheral unit concept for ensuring reliability.
d) In CU & PU Protection scheme the status of LEDs of Bus Side Isolators in PUs needs to be monitored after every bus side isolator operation and once in every shift and such information should be recorded in shift logbook too.

Patli 28/11/22 Adhikary 28/11/22

Annexure A


LPRO-4500-HR2000009
Trigger
11/20/2022
10:39:49.621 AM
K1:Main Voltage A A/V
K1:Main Voltage B B/V
K1:Main Voltage C C/V
K1:Main Line Current A A/A
K1:Main Line Current B B/A
K1:Main Line Current C C/A
K2:Main Neutral Current A/A
21P Zone 1 Trip
21P Zone 2 Trip
21P Zone 3 Trip
21P Zone 4 Trip
51 Trip
50 Trip
21N Zone 1 Trip
21N Zone 2 Trip
21N Zone 3 Trip
21N Zone 4 Trip
68 Power Swing
Z Circle Trig.
51N Trip
50N Trip
46-51 Trip
46-50 Trip
SOTF Trip
Dist. Scheme Trip
Dist. Scheme Send
50 LOP
21P Zone 2 Alarm
21P Zone 3 Alarm
21P Zone 4 Alarm
21N Zone 2 Alarm
21N Zone 3 Alarm
21N Zone 4 Alarm
51 Alarm
51N Alarm

पावर सिस्टम ऑपरेशन करपोरेशन लिमिटेड
(भारत सरकार का उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Government of India Enterprise)
Eastern Regional Load Despatch Centre: 14, Golf Club Road, Tollygunge, Kolkata-700 033.
CIN: U40105DL2009GOI188682
फ़ोन: 033- 24235755, 24174049 फैक्स : 033-24235809/5029 Website:www.erldc.org, Email ID- erldc@posoco.in

दिनांक: **06-12-2022**

Report on the grid event in Eastern Region (पूर्वी क्षेत्र में ग्रिड घटना पर रिपोर्ट)

Summary of the events (घटनाओं का सारांश):

Event 1: At 16:26 Hrs on 13.11.2022, while de-synchronizing U#1 at Tashiding, its breaker did not open. LBB operated and 220 kV Tashiding-New Melli-1 tripped. Tashiding has single bus with sectionalizer scheme. As breaker remained still stuck, reverse power flow started as unit want into motoring mode. At 16:34 Hrs, 220 kV Tashiding-New Melli-2 was manually hand-tripped from Tashiding. No generation loss or load loss occurred.

- **Date / Time of disturbance:** 13-11-2022 at 16:26 hrs.
- **Event type:** GD - 1
- **Systems/ Subsystems affected:** 220 kV Tashiding S/s
- **Load and Generation loss**.
  - No generation loss occurred during the event.
  - No load loss occurred during the event.

Important Transmission Line/element if out (महत्वपूर्ण संचरण लाइने जो बंद है):

- NIL

Major elements tripped (प्रमुख ट्रिपिंग)

- 220 kV Tashiding-New Melli D/c

Relay indication and PMU observation (रिले संकेत और पीएमयू पर्यवेक्षण):

समय	नाम	उप केंद्र 1 रिले संकेत	उप केंद्र 2 रिले संकेत	पीएमयू पर्यवेक्षण
16:26	220 kV Tashiding-New Melli-1	Tashiding: LBB operated	New Melli: Didn't trip	1 kV dip in each phase at Rangpo at 16:26 Hrs and 1 kV dip in each phase at 16:34 Hrs
16:34	220 kV Tashiding-New Melli-2	Handtripped from Tashiding	New Melli: Didn't trip	

Figure 1: PMU Voltage snapshot of 400/220 kV Rangpo S/s at 16:26 Hrs

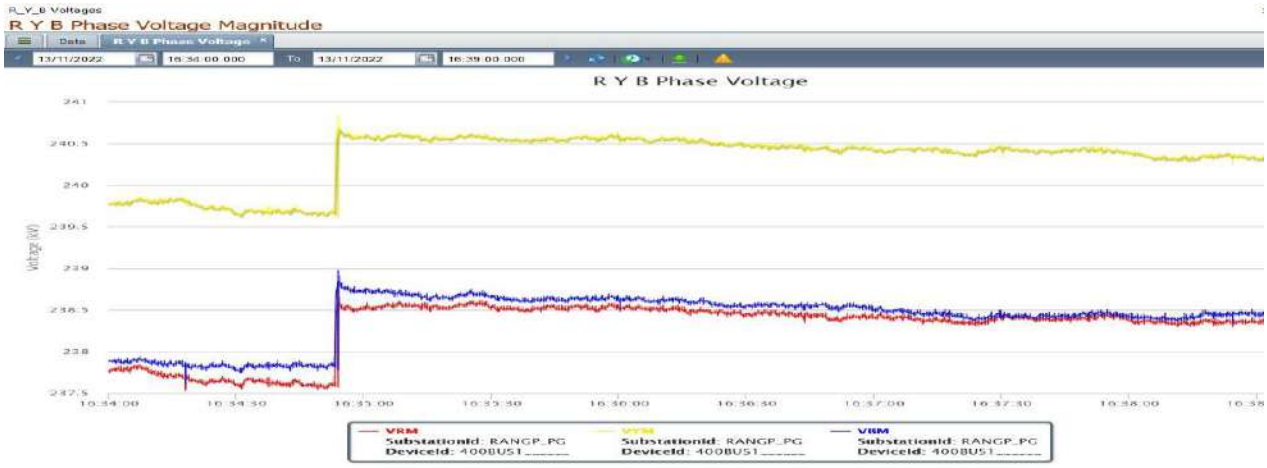


Figure 2: PMU Voltage snapshot of 400/220 kV Rangpo S/s at 16:34 Hrs

Restoration (पूर्वावस्था की प्रप्ति)

Transmission/Generation element name	Restoration time
220 kV Tashiding-New Melli-1	17:47
220 kV Tashiding-New Melli-2	17:47

Event 2: At 14:16 Hrs on 28.11.2022, while testing bus bar protection scheme at Tashiding, tripping command extended to 220 kV Tashiding-New Melli D/c and total power failure occurred at Tashiding. No generation loss or load loss occurred.

- **Date / Time of disturbance:** 28-11-2022 at 14:16 hrs.
- **Event type:** GD - 1
- **Systems/ Subsystems affected:** 220 kV Tashiding S/s
- **Load and Generation loss**.
  - No generation loss occurred during the event.
  - No load loss occurred during the event.

Important Transmission Line/element if out (महत्वपूर्ण संचरण लाइने जो बंद है):

- NIL

Major elements tripped (प्रमुख ट्रिपिंग)

- 220 kV Tashiding-New Melli D/c

Relay indication and PMU observation (रिले संकेत और पीएमयू पर्यवेक्षण):

समय	नाम	उप केंद्र 1 रिले संकेत	उप केंद्र 2 रिले संकेत	पीएमयू पर्यवेक्षण
14:16	220 kV Tashiding-New Melli-1	Tashiding: Master trip operated	New Melli: Didn't trip	No fault observed from PMU data
	220 kV Tashiding-New Melli-2		New Melli: Didn't trip	

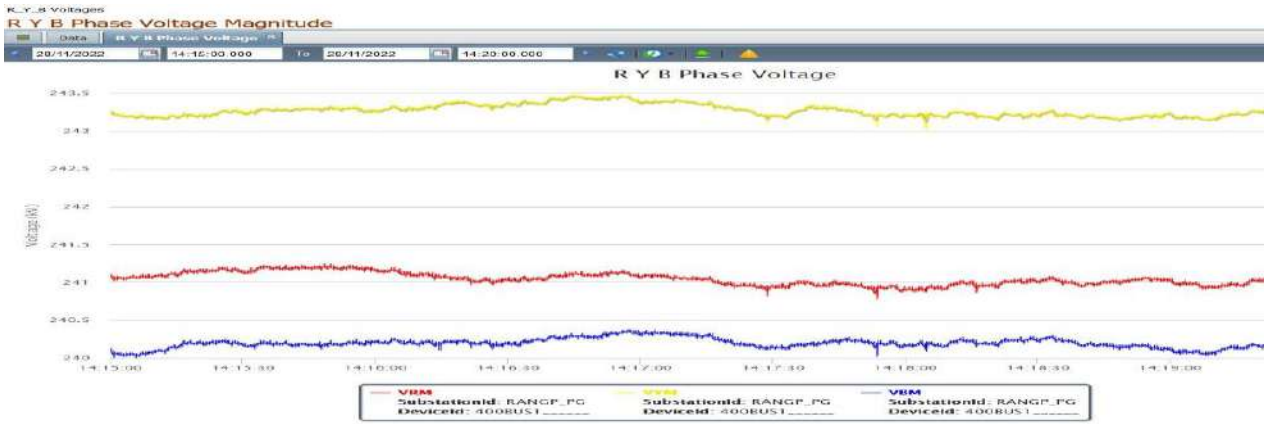


Figure 2: PMU Voltage snapshot of 400/220 kV Rangpo S/s

Restoration (पूर्वावस्था की प्राप्ति)

Transmission/Generation element name	Restoration time
220 kV Tashiding-New Melli-1	14:55
220 kV Tashiding-New Melli-2	14:45

Analysis of the events & Protection issue (घटनाओं का विश्लेषण और सुरक्षा समस्या):

Event 1:

- While de-synchronizing Tashiding U#1, its breaker did not open thereby, LBB operated, and 220 kV Tashiding-New Melli-1 tripped.
- Tashiding has single bus scheme with bus sectionalizer with one unit and one feeder on each side.
- LBB should have given tripping command to both feeders, but it was found that due to loose wiring, bus sectionalizer status was not available and it was considered equivalent to OPEN state.
- As Ckt-2 was still available and breaker of U#1 main bay was still stuck, Unit went into motoring mode and reverse power flow started.
- Generator protection sensed reverse power flow and again gave tripping command to its main bay, however, due to mechanical failure in CB, it did not open. Trip coils were also found to be in burnt condition later as continuous tripping command triggered for opening the breaker.
- At 16:34 Hrs, 220 kV Tashiding-New Melli-2 was manually hand-tripped from Tashiding to avoid any damage to U#1.
- Detailed report received from Tashiding is attached at Annexure-3.

Event 2:

- At 14:16 Hrs, while verifying wiring scheme for bus bar protection scheme, tripping simulation was tried. However, master trip circuits through bus bar protection were not isolated. ERLDC to be informed while doing any testing online or offline and proper precaution should be taken before any testing is done. **Tashiding may explain.**

In both events lines did not trip from New Melli.

Non-compliance observed (विनियमन का गैर-अनुपालन):

Issues	Regulation Non-Compliance	Utility
DR/EL not provided within 24 Hours	1. IEGC 5.2 (r) 2. CEA grid Standard 15.3	**Tashiding**

Status of Reporting (रिपोर्टिंग की स्थिति):

- DR/EL yet to be received from Tashiding.

Annexure 1: Sequence of events recorded at ERLDC SCADA data at the time of the event.

Sequence of Events not recorded at the time of event.

Annexure 2: DR recorded

DR not received yet.

SHIGA ENERGY PRIVATE LIMITED

2 X 48.5 TASHIDING HYDRO ELECTRIC PROJECT

Date: 30-11-22

Summary of the Events:

On 13th Nov-22 at 16:24 hrs; Unit-1 was in Generation at 42 MW while Unit-2 was at standstill (as per schedule) and all other components were in healthy condition. At about 16:26 hrs, normal shutdown (NSD) command was given to Unit-1from CCR (Central Control Room). But due to non-Opening of Unit-1 bay Circuit breaker; QSD (Quick Shutdown) sequence started and turbine wicket gate along with MIV got closed. Due to this, grid connected Unit-1(CB not opened) started to draw reverse power from Grid and continued to run in synchronous motoring mode. Power drawn in motoring mode was about 5.80 MW. On detection of reverse power by Generator protection relays (Micom P 343); trip commands were issued by these protection relays too, but due to non-opening of unit-1 bay Circuit Breaker, both the trip coil of Circuit breaker burnt.

Further Unit-1 bay CB failure causes BB protection relay to operate and issued trip command to Tashiding-New Melli CKT-I only; while no trip command was issued to Tashiding-New Melli CKT-II, hence TNM CKT-II did not trip and continued to feed unit-1. Therefore TNM CKT-II's CB was OPENED manually from CR-SCADA.

Date and time of the Incident: 13th November 2022 at 16:26 Hrs.

Antecedent Conditions (Just Prior to Event):

a. Frequency: 49.97 Hrs
b. Demand/Generation Met: 42.60 MW (Generation)
c. Lines/units/elements under shutdown: Unit 2 was under shutdown .
d. Major Elements Tripped: 220 KV TNM CKT-I & 220 KV TNM CKT-II(CB opening done manually)
e. Weather condition: Sunny weather & Clear Sky.

Load / Generation Loss: 0.0 MW at the time; Incidence took place during NSD of the machine (as per generation schedule). **However total generation loss till Unit-1 bay readiness was about 92.00 MWh.**

Restoration:

1. 220 KV Tashding-New Melli CKT-I & CKT-II Charged at 17:47 hrs
2. Unit-2 was ready to be synchronized with grid as per schedule.
3. Unit-1 bay became ready on 15th Nov-2022 by the evening.

Events Analysis:

1. SCADA Events:

From the SCADA events, it was found that Unit-1 NSD command was issued from CR-SCADA and NSD sequence execution started as per SFC (Sequential Flow Chart); generation from the unit was reduced gradually to a level required to OPEN GCB. But SEQ 5- STEP 3(dedicated to Unit Circuit Breaker Remote OPEN) was not "Validated"; because CB did not OPENED; although CB Open CMD was issued by the controller.

Further due to delay in sequence execution (NSD: SEQ 5- STEP 3); Sequence TLTE TRP detected and consequent to this machine went into QSD and Turbine wicket gate and MIV got closed; creating a situation of prime mover failure, while Unit was still connected to Grid due CB fail to open.

Since conditions required for synchronous motoring were fulfilled, it started to operate in motoring mode and started to draw power from the grid (about 5.80 MW). Generator protection relays detected reverse power (32R) and issued trip command to CB and initiation of CB fail to BB protection relay.

Unit-1 bay CB failure initiation causes BB protection relay to operate and issued trip command to Tashiding-New Melli CKT-I only; while no trip command was issued to Tashiding-New Melli CKT-II, hence TNM CKT-II did not trip and continued to feed unit-1. Therefore TNM CKT-II's CB was OPENED manually from CR-SCADA.

2. Non-Opening of Unit-1 Bay Circuit Breaker:

- Unit-1 bay CBs mechanism box was inspected. It was found that Closing Spring's roller bearing was damaged; causing improper spring charging and hindrance in the mechanical movement of the other parts. Consequent to this, on getting opening command from controller, CB could not open.
- Moreover during inspection, it was also found that both the Trip coil of the CB were damaged. On analysis of the tripping circuits; it was inferred that when Generator protection relays (Micom P343) detected reverse power (32R) and issued trip command

to Unit-1 Bay CB via master trip relay; due to non-opening of CB's auxiliary contact (52a), short time rated trip coils (on full voltage) were remained energized continuously and consequent to this, heavy heat generated in the coils and burnt both the trip coils.

3. Non-Issuance of Trip command by BB Protection Relay to Unit-2 bay CB & TNM CKT-II CB:

- Bus bar Protection relay's events, DR and PSL were analyzed. It was noticed in the events that B/C section ISO status to BB protection relay was always in OFF state.
- At Tashiding HEP, there is Single Bus bar arrangement with Sectionalizer (B/C Isolator). Unit-1 and TNM CKT-I is on section-1 and Unit-2 and TNM CKT-II is at section-2. Accordingly, there are two zones of Bus Bar Protection- Zone-1 & Zone-2. For tripping of all the CBs in both zones; B/C Isolator close status to BB protection relay was required.
- Since B/C Isolator's close status was not available to BB protection relay and it was equivalent to isolator open state; BB protection relay did not issued trip command to Zone-2 CBs (TNM CKT-II & Unit-2 Bay CB) and consequent to this TNM CKT-II CB did not tripped and bus bar was remained charged through TNM CKT-II. Hence Unit-1 connected to live bus (due to CB fail to Open), continued to run in synchronous motoring mode.

Remedial Action Taken:

- Unit-1's faulty Gang Operated CB operating mechanism box was replaced with new spare.
- Bus Bar Protection relay's wiring was cross checked (B/C Isolator's O/C status to BB protection relay- Micom P746) with the drawing. Loose connection found (of B/C isolators close status) to BB protection relay was tightened. Moreover operation of the BB protection relay with CB Fail I/P simulation was done and found working as per PSL of the BB protection scheme.

DEEPAK KUMAR SINGH
Contact No. 9609442862

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Eastern Regional Load Despatch Centre: 14, Golf Club Road, Tollygunge, Kolkata-700 033.
CIN: U40105DL2009GOI188682
फ़ोन: 033- 24235755, 24174049 फैक्स : 033-24235809/5029 Website:www.erldc.org, Email ID- erldc@posoco.in

घटना संख्या: **18-11-2022/1** दिनांक: **01-12-2022**

Report on the grid event in Eastern Region (पूर्वी क्षेत्र में ग्रिड घटना पर रिपोर्ट)

Summary of the event (घटना का सारांश):

At 01:23 Hrs on 18.11.2022, 220 kV Daltonganj-Chatra-1 tripped due to B_N fault. Total power failed at Chatra S/s as it is being fed radially through only one circuit. 220 kV Daltonganj-Chatra-2 is LILOed at Latehar, however, 220 kV Latehar-Chatra is not charged yet. 23 MW load loss reported at Chatra by Jharkhand SLDC.

- **Date / Time of disturbance:** 18-11-2022 at 01:23 hrs
- **Event type:** GD-1
- **Systems/ Subsystems affected:** 220/132 kV Chatra
- **Load and Generation loss**.
    - No generation loss was reported during the event.
    - Around 23 MW load loss reported during the event at Chatra by Jharkhand SLDC.

Important Transmission Line/element if out (महत्वपूर्ण संचरण लाइने जो बंद है):

- 220 kV Latehar-Chatra (part section of LILO of 220 kV Daltonganj-Chatra-2 at Latehar)

Major elements tripped (प्रमुख ट्रिपिंग):

- 220 kV Daltonganj-Chatra-1

Relay indication and PMU observation (रिले संकेत और पीएमयू पर्यवेक्षण):

समय	नाम	उप केंद्र 1 रिले संकेत	उप केंद्र 2 रिले संकेत	पीएमयू पर्यवेक्षण
01:23	220 kV Daltonagnj-Chatra-1	Daltonganj: B_N, 143.5 km, 1.3 kA	Chatra: Didn't trip. 220 kV Bus-2 B_ph PT burst	2 kV dip in B_ph voltage at Biharsharif. Fault clearance time: 350 msec

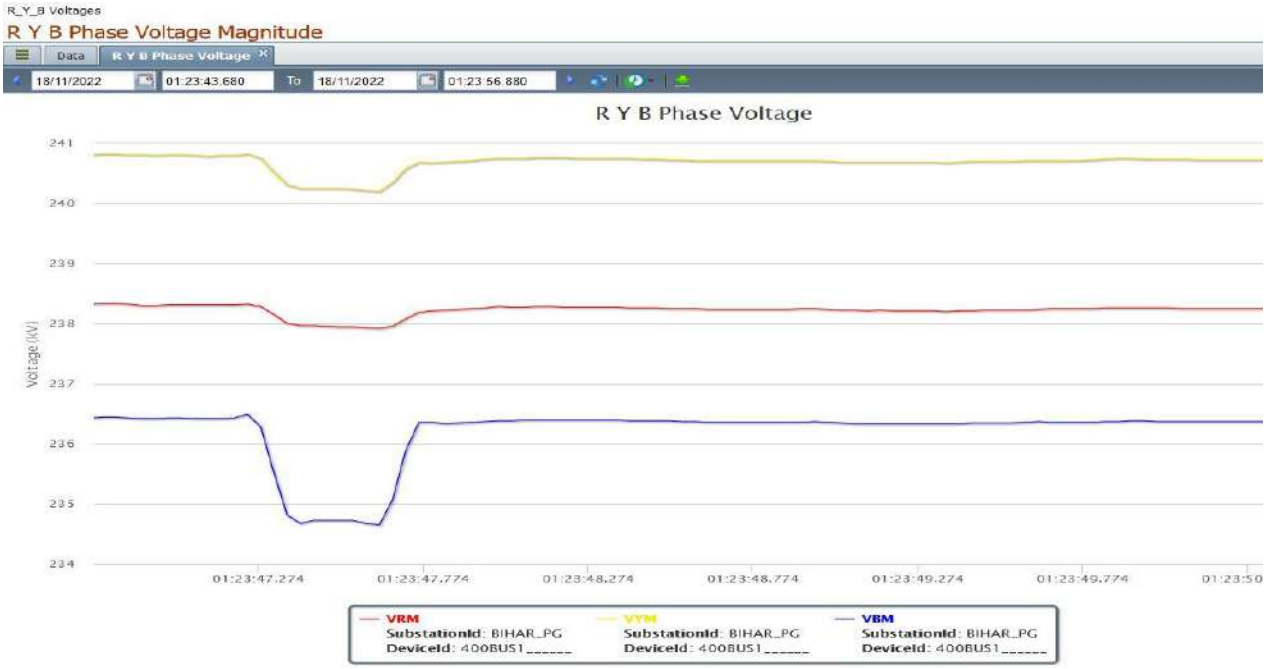


Figure 1: PMU snapshot of 400/220 kV Biharsharif S/s

Restoration (पूर्वावस्था की प्रप्ति)

Transmission/Generation element name	Restoration time
220 kV Daltonganj-Chatra-1	02:51

Network across the affected area (प्रभावित क्षेत्र का नक्शा)

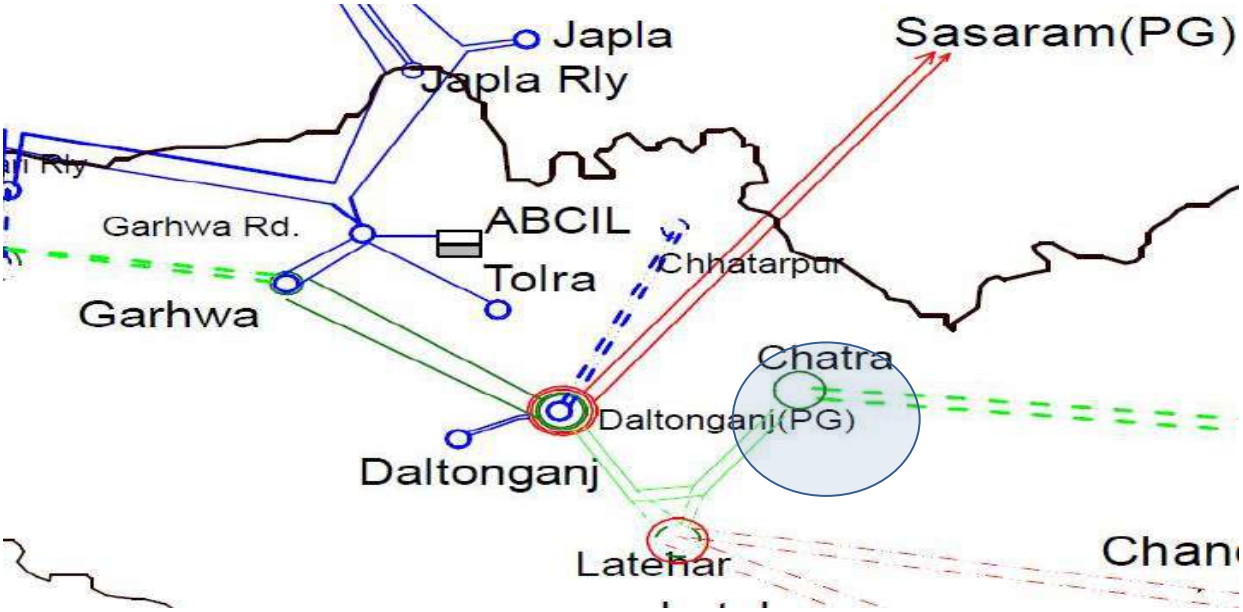


Figure 4: Network across the affected area

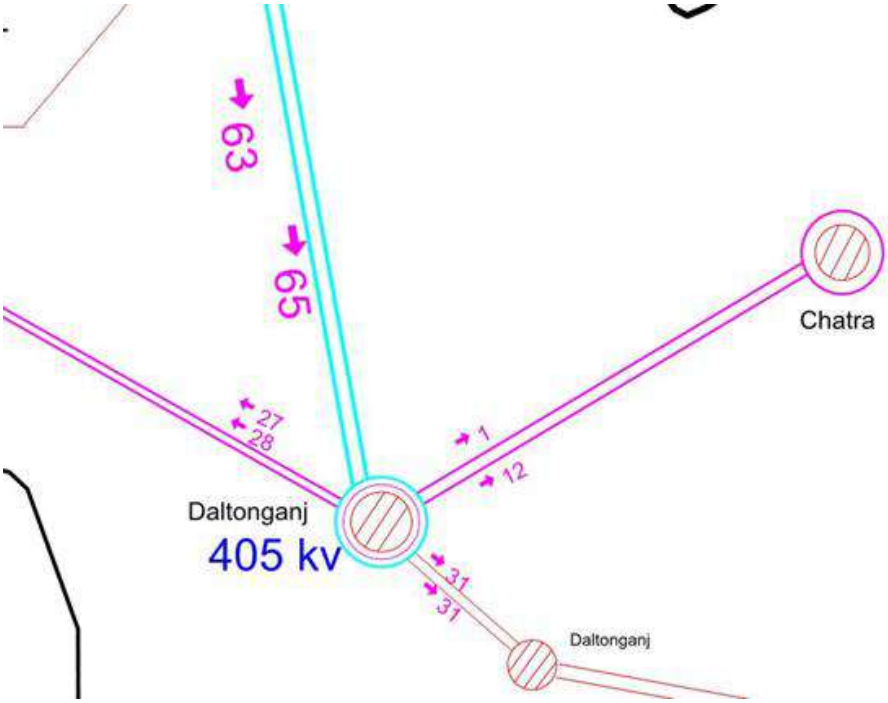


Figure 5: SCADA snapshot of the system

Analysis of the event (घटना का विश्लेषण) & Protection issue (सुरक्षा समस्या):

- B_ph PT of 220 kV Bus-2 at Chatra burst. This fault was seen in Zone-2 from Daltonganj and was cleared after 350 msec. Line did not trip from Chatra.

- LILO portions of 220 kV Daltonganj-Chatra-2 at Latehar has not been charged yet, hence affecting reliability of power supply at Chatra. **JUSNL to update status of the line.**

Non-compliance observed (विनियमन का गैर-अनुपालन):

Issues	Regulation Non-Compliance	Utility
DR/EL not provided within 24 Hours	1. IEGC 5.2 (r) 2. CEA grid Standard 15.3	**PG ER-1**

Status of Reporting (रिपोर्टिंग की स्थिति):

- DR yet to be received from PG ER-1.

Annexure 1: Sequence of events recorded at ERLDC SCADA data at the time of the event.

SoE data not recorded at the time of events.

Annexure 2: DR recorded

DR/EL yet to be received.

Annexure B.6

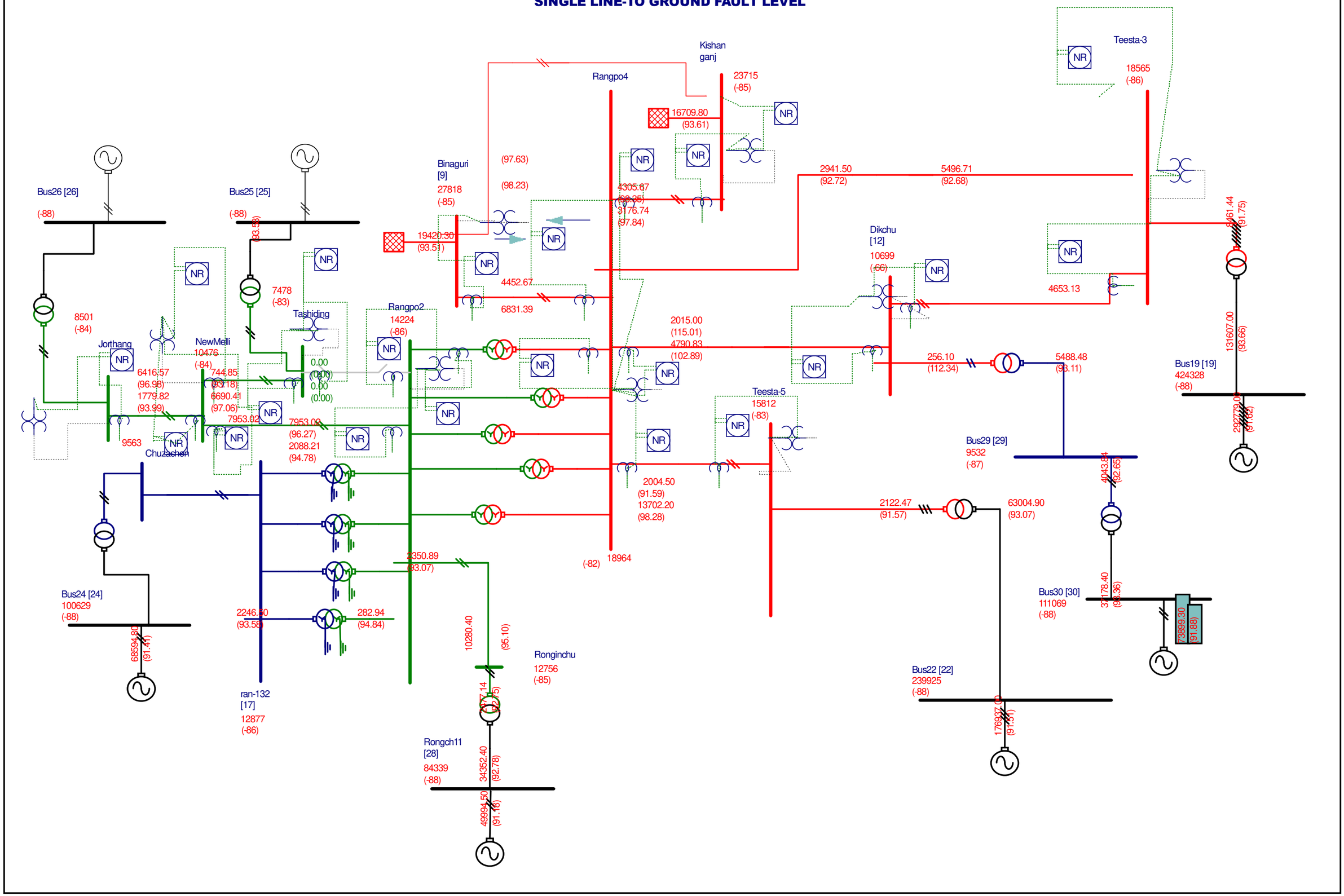
List of important transmission lines in ER which tripped in November-2022

Sl. No.	LINE NAME	TRIP DATE	TRIP TIME	Relay Indication LOCAL END	Relay Indication REMOTE END	Reason	Fault Clearance time in msec	Remarks	DR/EL RECEIVED FROM LOCAL END	DR/EL RECEIVED FROM REMOTE END	LOCAL END UTILITY	REMOTE END UTILITY
1	220 KV NEW PURNEA-MADHEPURA-1	02-11-2022	09:50	New Purnea: Didn't trip	Madhepura: Master trip operated	No fault	NA	BSPTCL may explain	NA	No	PG ER-1	BSPTCL
2	**220 KV CHAIBASA-CHAIBASA-1**	**03-11-2022**	**20:08**	Chaibasa (PG): Y_N, 0.8 km, 5.6 kA		No fault	NA	Y_ph CB of 220 kV Chaibasa(JUSNL)-Railway TSS-2 burst at TSS end. JUSNL may explain. Both lines tripped in Zone-3 after 1 sec	No	No	PG ER-1	JUSNL
3	**220 KV CHAIBASA-CHAIBASA-2**	**03-11-2022**	**20:08**	Chaibasa (PG): Y_N, 0.8 km, 3 kA		No fault	NA		No	No	PG ER-1	JUSNL
4	**400 KV MERAMUNDALI-LAPANGA-1**	**04-11-2022**	**08:28**	Meramundali: Didn't trip	Lapanga: Y_ph & B_ph CVT fuse failed. Zone-4 appeared and tripped after 500 msec	No fault	NA	Line shouldn't trip due to CVT fuse failure. OPTCL may explain	No	Yes	OPTCL	OPTCL
5	**220 KV TENUGHAT-BIHARSHARIF-1**	**05-11-2022**	**14:10**	Tenughat: B_N, 73 km, 0.8 kA	Biharsharif: B_N, 89 km, 1.5 kA	B-Earth	350	Highly resistive fault. Three phase tripping.	No	Yes	TVNL	BSPTCL
6	**220 KV JODA-JSPL-1**	**08-11-2022**	**18:43**	Joda: Y_N		Y-Earth	100	As per PMU, fault cleared within 100 msec	Yes	No	OPTCL	CPP
7	**220 KV JSPL-JAMSHEDPUR-1**	**08-11-2022**	**18:43**		Jamshedpur: Didn't trip	Y-Earth	450	As per PMU, fault cleared after 450 msec. JSPL/OPTCL may explain.	No	Yes	CPP	DVC
8	**220 KV BEGUSARAI-SAHARSA-1**	**09-11-2022**	**09:11**	Begusarai: B_N, 1.022 km, 13.04 kA	Saharsa: B_N, 125.6 km, 1.60 kA	B-Earth	100	A/r failed after 1 sec.	Yes	No	BSPTCL	PMTL
9	**400 KV TALA-BINAGURI-1**	**09-11-2022**	**09:20**	Tala: Y_B, 1.4 km, Iy: 6.48 kA, Ib: 5.70 kA	Binaguri: Y_B, 140.3 km	Y-B-Earth	100	Phase to phase fault	NA	Yes	BHUTAN	PG ER-2
10	**220 KV TENUGHAT-BIHARSHARIF-1**	**09-11-2022**	**12:36**	Tenughat: B_N, 46.15 km	Biharsharif: B_N, 126.9 km, 1.141 kA	B-Earth	100	Three phase tripping for single phase fault	No	Yes	TVNL	BSPTCL
11	**220 KV NEW PURNEA-MADHEPURA-2**	**09-11-2022**	**15:58**	New Purnea: Didn't trip	Madhepura: Master trip operated	No fault	NA	BSPTCL may explain	NA	No	PG ER-1	BSPTCL
12	**220 KV KARMNASHA-SAHUPURI-1**	**11-11-2022**	**15:11**	Karmnasha: R_Y_N		R-Y-Earth	100	Phase to phase fault	Yes	NA	BSPTCL	NR
13	**400 KV FARAKKA-RAJARHAT-1**	**15-11-2022**	**09:52**	FSTPP: DT received		No fault	NA	PG may explain	No	No	NTPC	PG ER-2
14	**220 KV CHAIBASA-CHAIBASA-1**	**16-11-2022**	**08:58**	Chaibasa(PG): Didn't trip	Chaibasa (JUSNL): Tripped due to B_ph CB gas pressure low	No fault	NA	JUSNL may explain	No	No	PG ER-1	JUSNL
15	**220 KV ALIPURDUAR-ALIPURDUAR(WB)-2**	**18-11-2022**	**16:17**	220 kV Bus-2 at Alipurduar (PG) tripped	Alipurduar (WB): DT received	No fault	NA	B_ph CB of 220 kV Salakati-BTPS-2 burst (line in NER adjacent to Alipurduar-Salakti). PG may explain the tripping event	No	Yes	PG ER-2	WBSETCL
16	**220 KV ALIPURDUAR-BIRPARA-2**	**18-11-2022**	**16:17**	221 kV Bus-2 at Alipurduar (PG) tripped		No fault	NA		No	No	PG ER-2	PG ER-2
17	**765 KV MEDINIPUR-NEW JEERAT-2**	**18-11-2022**	**19:30**	Medinipur: R_B, 106 km, Ir: 4.8 kA, Ib: 4.9 kA		R-B-Earth	100	Phase to phase fault	No	No	PMJTL	PMJTL
18	**220 KV PUSAULI-KARMNASHA-1**	**22-11-2022**	**14:56**		Karmnasha: Y_B, Iy: 5.8 kA, Ib: 5.47 kA	Y-B	100	Phase to phase fault	No	Yes	PG ER-1	BSPTCL
19	**220 KV DARBHANGA (DMTCL)-LAUKAHI-1**	**24-11-2022**	**11:20**	Darbhanga: R_Y, 15 km, Ir: 8.68 kA, Iy: 8.65 kA		R-Y	100	Phase to phase fault	Yes	Yes	DMTCL	BSPTCL

Sl. No.	LINE NAME	TRIP DATE	TRIP TIME	Relay Indication LOCAL END	Relay Indication REMOTE END	Reason	Fault Clearance time in msec	Remarks	DR/EL RECEIVED FROM LOCAL END	DR/EL RECEIVED FROM REMOTE END	LOCAL END UTILITY	REMOTE END UTILITY
20	**220 KV KARMNASHA-SAHUPURI-1**	**24-11-2022**	**15:25**	Karmnasha: R_Y fault		R-Y-Earth	100	Phase to phase fault	Yes	NA	BSPTCL	NR
21	**220 KV MAITHON-DHANBAD-2**	**26-11-2022**	**09:34**	Maithon: Didn't trip	Dhanbad: Line side isolator opened due to control circuit problem	No fault	NA	DVC may explain	NA	No	PG ER-2	DVC
22	**400 KV BARH-MOTIHARI-2**	**26-11-2022**	**13:15**	Barh: Didn't trip	Motihari: DT received	No fault	NA	Voltage in Barh around 414 kV only. NTPC may explain	No	Yes	NTPC	DMTCL
23	**220 KV RANCHI-CHANDIL-1**	**26-11-2022**	**19:19**	Ranchi: Didn' trip	Chandil: Master trip operated	No fault	NA	JUSNL may explain	NA	No	PG ER-1	JUSNL
24	**220 KV KARMNASHA-SAHUPURI-1**	**27-11-2022**	**14:59**	Karmnasha: Y_B fault		Y-B-Earth	100	Phase to phase fault	Yes	NA	BSPTCL	NR
25	**220 KV GAYA-DEHRI-1**	**30-11-2022**	**05:07**	Gaya: B_N, 62.6 km, 2.42 kA	Dehri: B_N, 2.5 km	B-Earth	100	A/r failed after 1 sec. Successful A/r occurred in Ckt-2 at the same time (Y_N fault).	No	No	PG ER-1	BSPTCL
26	**400 KV MEDINIPUR-NEW CHANDITALA-2**	**30-11-2022**	**16:17**	Medinipur: R_B, 71 km, Ir: 1.12 kA, Ib: 0.84 kA	New Chanditala: R_B, 22.79 km	R-B-Earth	100	Phase to phase fault	No	No	PMJTL	WBSETCL

SIKKIM NETWORK

SINGLE LINE-TO GROUND FAULT LEVEL



Line	Relay Connected at	CT Ratio in A	Fault Location	Fault Current seen by the Relay	Existing			Proposed			
					Ie> in A (Primary)	TMS	Top in sec	Ie> in A (Primary)	TMS	Top in sec	TMS (correct)
Binaguri-Rangpo	Rangpo end	2000/1	Binaguri	4453	200	0.568	1.241985	400	0.564	1.6	0.56
Binaguri-Rangpo	Binaguri end	2000/1	Rangpo	6831	200	0.638	1.220696	400	0.667	1.6	0.67
Kishangunj-Rangpo	Rangpo end	3000/1	Kishangunj	3177	1200	0.514	3.65964	600	0.387	1.6	0.39
Kishangunj-Rangpo	Kishangunj end	3000/1	Rangpo	4306	400	0.28	0.805367	600	0.459	1.6	0.46
Rangpo- Dikchu	Rangpo end	3000/1	Dikchu	4791	200	0.61	1.302136	600	0.333	1.1	0.33
Rangpo- Dikchu	Dikchu end	3000/1	Rangpo	2015	600	1.5 (DT)	1.5	600	0.21	1.2	0.21
Rangpo- TeesthaV	Rangpo end	2000/1	Teestha V	13702	200	0.6	0.952209	400	0.575	1.1	0.58
Rangpo- TeesthaV	TeesthaV end	2000/1	Rangpo	2005	-	-		400	0.281	1.2	0.28
Rangpo-Teestha III	Rangpo end	3000/1	Teestha III	5497	1200	0.28	1.268379	600	0.356	1.1	0.4
Rangpo-Teestha III	Teestha III end	2000/1	Rangpo	2942	-	-		400	0.349	1.2	0.35
Dikchu-Teestha III	Dickchu end	3000/1	Teestha III	4653	400	1.5 (DT)	1.5	600	0.358	1.2	0.36
Dikchu-Teestha III	Teestha III end	3000/1	Dikchu	5832	-	-		600	0.399	1.2	0.40
Rangpo 220Kv Bus											
Rangpo- Newmelli	Rangpo end	1600/1	Newmelli	7953	320	0.399	0.841655	320	0.427	0.9	0.43
Rangpo- Newmelli	Newmelli end	1600/1	Rangpo	2088	320	0.33	1.208623	320	0.246	0.9	0.25

Tasheding-Newmelli	Tasheding end	800/1	Newmelli	745	160	0.24	1.075464	160	0.223	1	0.22
Tasheding-Newmelli	Newmelli end	1600/1	Tasheding	6690	320	0.314	0.701258	320	0.403	0.9	0.40
Newmelli-Jorethang	Newmelli end	400/1	Jorethang	6417	-	0.473		80	0.589	0.9	0.59
Newmelli-Jorethang	Jorethang end	400/1	Newmelli	1780	300	0.09	0.347553	300	0.155	0.6	0.16
Rangpo - Ronginchu	Rangpo end	1600/1	Ronginchu	10280	208	0.52	0.897307	208	0.522	0.9	0.52
Rangpo - Ronginchu	Ronginchu end	400/1	Rangpo	2351	60	0.5 (DT)	0.5	80	0.500	1	0.50

This is the condition by taking peak generation at all individual substation

ANNEXURE-C.2

Sl No.	Name of the incidence	PCC Recommendation	Latest status
120th PCC Meeting			
1.	Tripping of 220 kV Bus-1 at Ramchandrapur on 04/10/2022 at 21:30 Hrs	PCC advised JUSNL that knee-point test may be carried out for the associated CTs in order to find out the CT saturation issue and the observation may be shared with ERPC/ERLDC.	
2.	Tripping of 220 kV Bus-2 at Rengali(PH) on 07/10/2022 at 13:42 Hrs	PCC advised OHPC/SLDC Odisha to submit the DR/EL of the event immediately and also submit a report w.r.t. the above disturbance.	
3.	Repeated Tripping of 132 kV Sonenagar-Nagaruntari	PCC advised JUSNL and BSPTCL to rectify all clearance issues present in line and replace all faulty insulators at the earliest.	
119th PCC Meeting			
4.	Disturbance at 220 kV Tenughat (TVNL) S/S on 09.09.2022 at 12:55 Hrs	PCC advised JUSNL to rectify all clearance related issues present in 220 kV Tenughat-Govindpur D/C line so that similar type of incidents can be avoided in future. PCC advised JUSNL to share PSL logic of relay to ERPC/ERLDC. It further advised JUSNL to communicate this matter to relay manufacturer for testing and updating firmware in the relay. PCC advised TVNL to review overcurrent settings of unit #2 considering the present transmission network & fault level data at Tenughat. The coordination study may be done considering when one unit in operation & there is a line fault in one of the outgoing feeders (worst case scenario). The revised setting may be implemented at Unit end & the same may be intimated to PCC.	In 120th PCC Meeting, JUSNL representative informed that testing of relay at Dumka end for 220 kV Dumka-Govindpur line will be completed within a week. Regarding updating firmware in relay, JUSNL representative informed that site visit of relay engineer has been scheduled in last week of Nov-22. TVNL representative informed that they are in communication with PRDC in order to review overcurrent settings of unit #2. He further added that as per M/s BHEL has also been communicated with regard to the review of the settings in Unit #2.

5.	Repeated Disturbances at 220 kV Ratu(JUSNL) S/s	PCC opined that all utilities may share the best practices adopted in their system to avoid such type of maloperation of Transformers/Reactors so that a common best practice may be compiled and shared for benefit of all.	MPL has shared the practices adopted by them in order to avoid spurious tripping of the transformers. The report is enclosed at **Annexure C.2.5.**
118th PCC Meeting			
6.	Disturbance at 400 kV Dikchu S/s on 10.08.2022 at 11:57 Hrs	PCC advised Dikchu HEP to expedite the visit of relay engineer and resolve the issue by Sep-22. PCC also raised serious concern about long outage of the main bus-2 of Dikchu HEP and advised DIkchu HEP to continuously take up with the vendor for supply of the breaker at the earliest. Further, Dikchu HEP was advised to submit a firm time-line for restoration of the main bus-2 which would be monitored in PCC meeting.	In 120th PCC meeting, Dikchu HEP representative informed that breaker will reach the site by end of Nov 2022. Regarding autorecloser issue, he informed that testing of wiring in relay is in progress and final report will be shared with ERPC/ERLDC.

MPL
MAITHON POWER LIMITED

TATA
TATA POWER

PREVENTION OF SPURIOUS TRIPS IN TRANSFORMER

SOMNATH CHATTERJEE

Lighting up Lives!

(1)THE BOX

TRIGGER

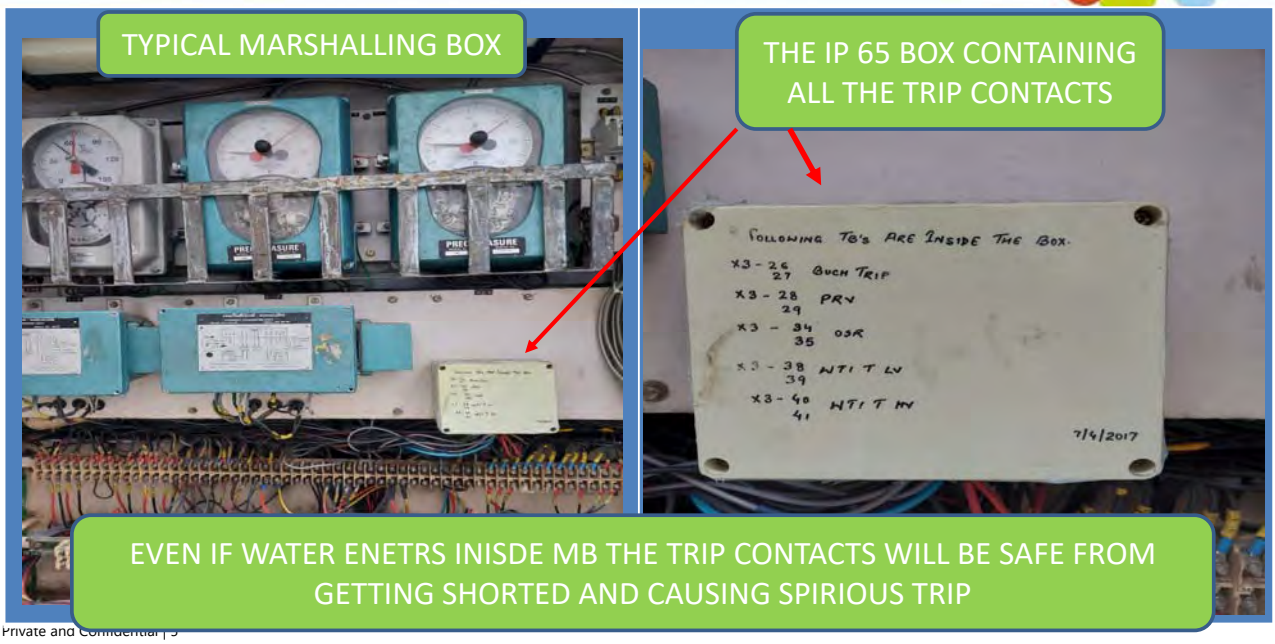
- Almost every substation has faced spurious trips of transformer due to moisture ingress in Marshalling Box.
- Most of the transformers have a single Marshalling box where OTI and WTI are present along with the alarm and trip terminal blocks of transformer mechanical devices.
- It's a general practice prior to monsoon to cover marshaling boxes with plastic.
- However, the marshalling boxes are needed to be opened periodically for noting Oil and Winding temperatures when OTI and WTI readings are not available in remote and are not clearly visible form outside the MB.
- Also due to negligence or gasket problem, the door's in MB doesn't close properly
- So always there remain a chance of moisture entering the marshalling box leading to spurious trip of transformer.

SOLUTION

THINK OUT OF THE BOX

BOX INSIDE BOX

SOLUTION: BOX INSIDE BOX



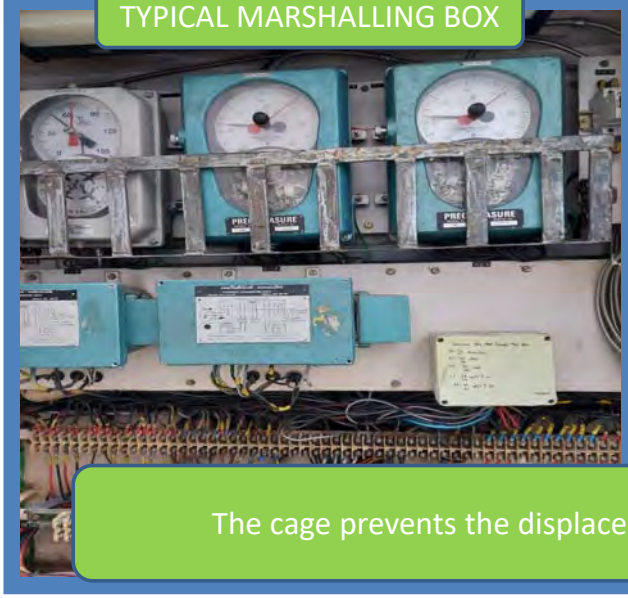
(2)THE CAGE

TRIGGER

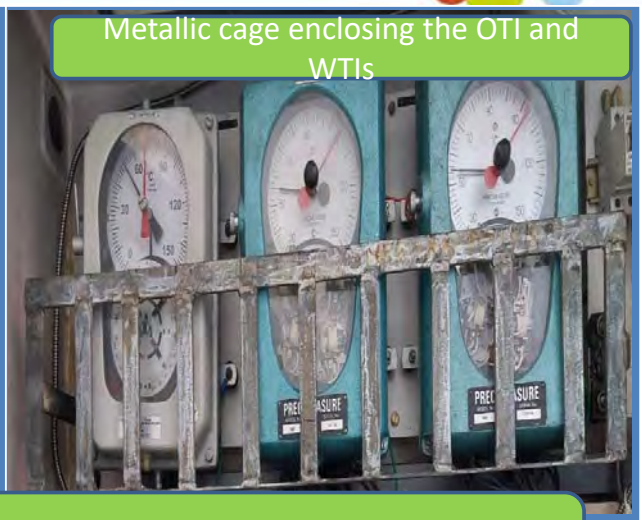
- In one of the generating station of TATA POWER there had been a bizarre instance of unit trip due to falling of WTI. The vibrating pads of the WTI gave away due to ageing and the WTI got dislocated leading to movement of mercury and making of trip contact.
- Apart from timely replacement of the vibrating pads one of the CAPA point of the trip was fixing of a cage around OTI/WTI. So there is no movement of the WTI/OTI even when vibrating pads are not supporting them.

SOLUTION: CAGE

TYPICAL MARSHALLING BOX



Metallic cage enclosing the OTI and WTIs



The cage prevents the displacement of mercury based OTI/WTIs

(3)THE CANOPY

TRIGGER

- The most vulnerable portion of moisture ingress are the terminal boxes of transformer mechanical devices. Exposed to the atmosphere, there always remains a chance of moisture/water ingress during rain or accidental operation of deluge system.

SOULTION: CANOPY

Light weight canopy made of FRP clamped over OSRs and Buchholz Relay

(4)THE RTXV

TRIGGER

- In recent past one of our UAT auxiliary transformer tripped on Buchholz trip protection leading to unit outage.
- No gas found in Buchholz, no other transformer protection relay operated.
- No moisture ingress in MB, also the trip contacts are safely located in trip box.
- DR showed no abnormality in current waveform at the time of Bz trigger.
- The DR showed that the Bz trip signal came for mere 25msec

The above observation lead us to conclude that it was a spurious trip.

The probable reason for the same are:

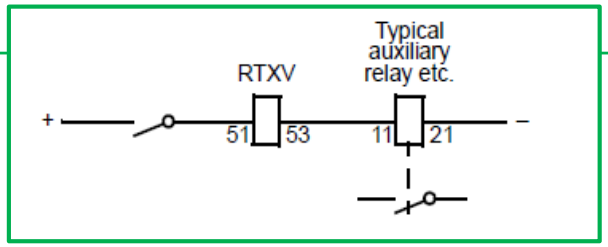
- Internal mechanism of Bz device itself has become faulty. Corrective Action: Bz relay replaced with spare one.
- The cable carrying the core of Bz trip has got punctured and momentarily the contact have got short. Corrective Action: Old cables from Relay panel to MB and from Devices to MB replaced with new cables.
- Due to induced voltage the auxiliary low impedance RSF relay had picked up momentarily: Corrective Action: Introduction of RTXV.

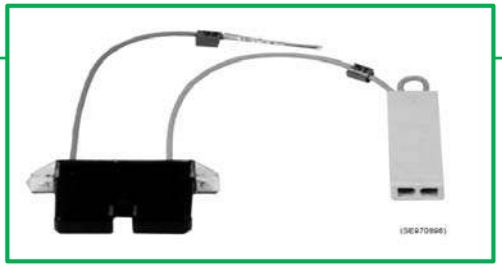
SOLUTION: THE RTXV

In place of replacing all low impedance auxiliary relay with high impedance relay a new device has been explored with ABB team which can avoid false pickup of auxiliary relay due to induced voltage, RTXV.

RTXV:

To avoid the risk of false pickup of auxiliary relays a control unit (RTXV) is to be used in series with the relay coil. The control unit connects the applied voltage to the relay only if the voltage is large than 60-80% of the rated voltage of the unit. The voltage drop in the control unit is about 2 V.





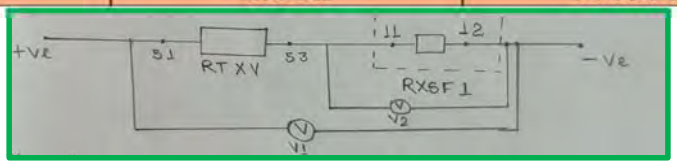
EXPERIMENT

MAITHON POWER

MPL

RTXV in Series with RXSF1 relay

V1 (Measured) (V DC) Total Voltage applied	V2 (Measured) (V DC) Voltage across Coil	Calculated V3 (V DC) Voltage across RTXV	Status of RXSF1
5.6	0.115	5.485	Not Picked-up
20.98	0.429	20.551	
80.6	1.645	78.955	
143.6	2.934	140.666	
168.1	5.843	162.257	
173.4	10.76	162.64	
176.6	13.86	162.74	
177.4	175.6	1.8	Pick-up
168.8	167.6	1.2	Picked up State
157.8	156.2	1.6	
107	105.6	1.4	
92	90.7	1.3	
79.5	1.632	77.868	Drop-up



CONCLUSION

MAITHON POWER

MPL

By putting RTXV in series with RXSF1 relay coil, the pick up voltage increase to 80% of rated voltage (220V DC) thus preventing and spurious pick up due to stray voltages.

	Without RTXV	With RTXV in Series	Remark
Pick up Voltage	116 V	**177 V**	Pick up increase by 28% to 80% of rated voltage of 220V DC

Actual connection photograph

Thank You!

Website: www.tatapower.com

Email Id: schatterjee@tatapower.com

Annexure C.3

BIHAR STATE POWER TRANSMISSION COMPANY LTD., PATNA

(A subsidiary company of Bihar State Power (Holding) Company Ltd., Patna)
CIN – U74110BR2012SGC018889
Head Office, Vidyut Bhawan, Bailey Road, Patna – 800021
E-mail address – cetransom1.bsptcl@gmail.com, Website– www.bsptcl.in

Letter No...../ Patna
CE./Trans.(O&M)/Misc- 38 /2022

Dated ...../

From,

S.N. Kumar,
Chief Engineer (O&M)

To,

CEO, DMTCL,
M/s Sekura Energy Limited
504 & 505, 5th Floor,Windsor,
Off CST Road, Kalina, Santacruz (East),
Mumbai - 400 098

Sub: Regarding implementation of line differential protection in short lines

Ref: 45th TCC Meeting, dated 25.03.2022 at Rajgir, Bihar

Sir,

With reference to above, please find enclosed herewith the Minutes of 45th TCC Meeting held on 25th March 2022 at Rajgir. In this meeting, it was directed to implement line differential protection in 220KV and above voltage level of short lines having length less than 10km.

Therefore, in compliance to 45th TCC meeting of ERPC, line differential protection is to be implemented in 220KV Darbhanga –Darbhanga (DMTCL) ckt-I&II T/L as the line bays at DMTCL end are being maintained by DMTCL.

Therefore, it is requested to please implement line differential protection in aforesaid line so that action plan may be communicated to ERPC in next meeting.

Encl: As above

Yours' faithfully,

sd/-
(S.N. Kumar)
Chief Engineer, Trans. (O&M)

Memo No ...../ **Dated...../**

Copy forwarded to Sri Nishant Kumar, M/s Darbhanga Motihari Transmission Co. Ltd., 400/220KV GIS Substation, near Kunwar Eit udyog, Dekuli, Chandan Patti,Darbhanga-846002 for kind information and necessary action.

sd/-
(S.N. Kumar)
Chief Engineer, Trans. (O&M)

Memo No ...../ **Dated...../**

Copy forwarded to Chief Engineer (System Operation)/CE (CRITL), BSPTCL, Patna for kind information.

sd/-
(S.N. Kumar)
Chief Engineer, Trans. (O&M)

P.T.O.

Memo No .....456...../ Dated.21/07/2022./

Copy forwarded to Director (Operation), BSPTCL, Patna for kind information.

(S.N. Kumar)
Chief Engineer, Trans. (O&M)

Protection audit recommendations for substations audited by protetcion audit team of ERPC

Annexure C.5

Sl No.	Name of Substation	Owner	Date of Audit	Remarks/Recommendation	Compliance Status
1	765/400 kV Sundergarh S/s	Power grid	25.04.2022	1.Switchyard equipments are in good and healthy condition. Switchyard area as well as overall station is well maintained.	
				2.Provision for nameplate with bay/line name may be done in front of SPR(Kiosk) in switchyard for easy identification.	
				1.Event logger is not available for 220 kV System. The same shall be provided.	220 KV EVENT LOGGING INTEGRATED WITH 400 KV SAS EVENT LOGGER .
				2.Time synchronising equipment is not available for 220 kV system.	TIME SYNCH TO BE DONE WITH EXISITNG 400 KV TIME SYNCH AS NO 220 KV TIME SYNCH IS AVAILABLE.
				3.Busbar/LBB protection is not available for 220 kV system . The same shall be commissioned at the earliest.	UNDER PROCESS.
				4.Autorecloser is implemented without PLCC for all the 220 kV feeders. It was informed that OPGW for these lines are under commissioning.	done

2	400/220/132 kV Lapanga(OPTCL) S/s	OPTCL	26.04.2022	5.OPGW/DTPC commissioning may be expedited and thereafter carrier based autorecloser as well as intertripping scheme may be implemented for 220 kV lines.	UNDER PROCESS.
				6.For 220 kV control room housing the relay panels, air conditioning shall be provided for proper functioning of protection system panels & to prevent failure of numerical protection systems.	TO BE DONE.
				7.Zone settings(zone-2, zone-3 & zone-4) in distance protection relay may be reviewed for all the 400 & 220 kV lines in line with the ERPC Protection philosophy.	ALL SETTINGS ARE UPDATED AS PER ERPC GUIDELINE.
				8.Group protection for 400 kV Lapanga-Meramundali line may be enabled and two group settings may be kept in the relay. One group considering 400 kV M'mundali-Bolangir in service and another group setting when 400 kV M'mundali-Bolangir is not in service. Group to be selected as per the actual configuration.	SETTING FILES PREPARED .WILL BE DONE ACCORDINGLY.

				9.Autorecloser in 400 kV Lapanga-Meramundali line is having some issue. The same may be rectified.	Intimated to OEM for corrections in BCU logic .
				10.Power swing blocking enabled for all zones. It may reviewed and blocking may be done all the zones except zone-1.	To be done.
				11.Grading in terms of time/voltage setting shall be done in Overvoltage settings of 400 kV lines.	Grading done and Implemented in relays.
				1. Time synchronising equipment in substation control room is not working. The same may be rectified & put into service.	It is presently working but synchronization with some of the Relays to be done.
				2.Main-I relay of 220 kV Budhipadar-Lapanga-I feeder and main-2 relay of 220 kV Budhipadar-SMC feeder was found to be defective and not in operation. Defective relay shall be changed with spare/new relay immediately.	New relay(Siemens, 7SA522) commissioned for Main-1 of Lapanga-1. Main-2 D.P Relay of SMC feeder to be replaced.

3.Main-1 relay of following fedders are of static type. 220 kV Budhipadar-IB TPS line, 220 kV Budhipadar-Tarkera D/c line, 220 kV Budhipadar-Raigarh PG. All Electro Static Relays may be replaced with latest version of Numerical relays for quick and accurate analysis of Trippings.	Budhipadar-Tarker-1 and 2 , Budhipadar-IBTPS-1 and 2 replaced by numerical relay.
4.DC earth leakage were found in both DC-I & II sources. The same may be attended. Continous monitoring of dc earth leakage measurements to be done.	Very old single strand cables are to be replaced. Checking is under progress.However, the D.C Fault will be rectified during Automation of the S/S which is under progress.
5.PLCC is not in service for most of the lines. Autorecloser w/o PLCC is implemented for some of the feeders like 220 kV Tarkara D/C, 220 kV Lapanga D/C feeder. For rest of the feeders auto recloser was not in service.	In addition to Tarkera & Lapanga, A/R scheme without PLCC implemented for 220KV Korba-1, Raigarh P.G & Lephripada feeder. OPGW available for IBTPS-3 & IBTPS-4.

3	220/132 kV Budhipadar(OPTCL) S/s	OPTCL	26.04.2022	It was informed that OPGW for these lines are under commissioning. OPGW/DTPC commissioning may be expedited and thereafter carrier based autorecloser as well as intertripping scheme shall be implemented for 220 kV lines.	
				6.For 220 kV Budhipadar-Korba-1 &2, the PLCC is not working and found to be out of service since long. Being inter-regional line, matter may be taken up with appropriate authority for restoring the PLCC communication in the line. Alternatively, It is suggested that carrier communication through OPGW network may be planned & implemented.	To be discussed with Korba.
				7.Zone settings for all 220 kV lines need to be reviewed in line ith ERPC Protection Philosophy & considering the present network configuration at the remote end substations.	Zone settings are updated as per ERPC Guideline

8.Busbar protection is available for a single bus only. For other bus, it is out of service due to defective bay units. It is advised to restore the busbar protection for the second bus at the earliest. Similarily zone-4 settings of feeders corresponding to the bus for which busbar is out of service may be reduced to 250 msec.	All defective BU s of 220 KV Bus bar Proction are rectified and presently Bus bar Proction is in Healthy and Active condition . Zone-4 setting revised to 500ms.
9. Oil leakages was observed in 220/132 kV Auto-I. Action may be taken to address the same.	Oil leakage through Breather arrested .
10.Vegetation shall be cleared & proper PCC and gravelling should be done in the switchyard.	Vegetation is being cleard from corridor during S/D of the feeder. Regarding PCC and gravelling matter to be discussed with higher Authority.
General:	
1. Uniform protection philosophy shall be adopted across OPTCL network in line with ERPC Protection philosophy.	

				2. Protection co-ordination to be done as and when there is change in network configuration or commissioning of new lines.	
				3. Voltage/time gradation to be done in overvoltage setting for S/s level.	
				4. Review of implemented protection settings need to be carried out periodically for OPTCL system..	
				1. Event logger is not available for 220 kV system. The same shall be provided.	
				2. Zone-2 tmer setting may be reviewed considering the shortest line at remote end(budhipadar) for all 220 kV lines	
				3. Zone-4 reach and time delay may be reviewed for all 220 kV lines	
				4. Zone-3 time delay may be reviewed as it is encroaching next voltage level (220 kV Lines)	

4	220 kV IB TPS	OPGC	27.04.2022	5. PLCC not operational for all four 220 kV feeders. It was informed that OPGW/DTPC based communication system will be commissioned in near future.	
				6. OPGW/DTPC commissioning may be expedited and thereafter carrier based autorecloser as well as intertripping scheme may be implemented for 220 kV lines.	
				7. Busbar relay is of static type. It was informed that renovation & upgradation of 220 kV switchyard is under proposal stage.	
				8. Overvoltage setting enabled for all the lines with same voltage & time setting. Grading in terms of time/voltage setting shall be done in Overvoltage settings of 220 kV lines	

5	400 kV OPGC S/s	OPGC	27.04.2022	1. At 400 kV level, it was found the both main-1 & main-2 relays of outgoing transmission lines are of same make & model employing different characteristic. It is recommended that different make & model for main-1 &2 relay is preferable and same may be implemented.	
				2. Overvoltage setting for the lines need to be reviewed. Time grading / voltage grading may be done in the overvoltage settings for different lines/for overall substation	
				3. DR time window may be increased. DR configuration may be done in line with guidelines approved in ERPC PCC meeting.	
				4. Overcurrent protection in 400 kV lines may be disabled.	
				5. Provision for sending DT signal to other end during operation of DEF protection may be implemented.	

				6. Line length for 400 kV OPGC-Lapanga line may be verfied in consultation with OPTCL.	
				7. Zone-2 & Zone-3 settings of all 400 kV lines need to be reviewed and set as per the ERPC Protection philosophy.	
				8. Adjacent shortest and longest line length maybe verified and zone settings maybe implemented accordingly	
				9. Power swing block enabled for all zones. May be reviewed	
6	765 kV Darlipali(NTPC) S/s	NTPC	28.04.2022	1. Time grading to be done in stage-I overvoltage settings for 765 kV Darlipalli-Jharsuguda D/c line.	completed.
				2. Power Swing blocking enabled for all zones. May be reviewed.	
				3. Relay setting data is not available in Protection database of ERPC. The same may be updated at the earliest.	completed.

Sl No.	Name of Substation	Owner	Date of Audit	Remarks/Recommendation	Status
1	400/220 kV Jamshedpur S/s	Powergrid	20.07.2022	1.Time synchronization for some of the relays are not as per the GPS clock. The same may be rectified.	
				2.Zone-2 timer setting for all 400 kV lines is set to 500 msec. The same may be reviewed in line with ERPC Protection guidelines.	
				3. TMS value of backup overcurrent IDMT relay is different for three ICTs whereas the pickup value is same for all the ICTs. Similarly TMS of backup earthfault relay for ICT-1 & ICT-2 is different than ICT-3. It is recommended to set TMS value for overcurrent relay as well as backup E/F relays uniform among all three ICTs.	
				1.Switchyard equipments are in good and healthy condition. Switchyard area as well as overall station is well maintained.	

2	400/220 kV Chaibasa S/s	Powergrid	21.07.2022	2.Though Overvoltage stage 1 settings are graded in time or voltage magnitude between the two ckts of Rourkella or Chaibasa or jamshedpur ,they are not so clearly graded as whole(Rourkella 1 and Jamshedpur 1 having identical settings).This part may be reviewed and the shorter line may be made to have higher magnitude or time value relative to the longer lines. No two 400 KV line should have exactly same settings in voltage triggering value or time delay.	
				General:	
				1. Uniform protection philosophy shall be adopted across JUSNL network in line with ERPC Protection philosophy.	
				2. Protection co-ordination to be done as and when there is change in network configuration or commissioning of new lines.	
				3. Review of implemented protection settings need to be carried out periodically for JUSNL system..	
				4.Measures shall be taken to ensure healthiness of busbar/LBB protection relay & PLCC system in the substation.	
				1. Time synchronising equipment in substation is not available.	

2.For 220 kV Ranchi Feeder, only main-I protection relay is present along with separate back-up overcurrent relay. Main-2 protection relay shall be installed for this line.	
3. Peak load served by the station is 240 MVA,however three out of four 100 MVA 220/132 KV ATR are functional. 4th ATR is out since 30.4.2020 and replacement status is not available.N-1 relibility criteria is being not satisfied during peak condition. Steps may be taken at the earliest to bring 4th ATR into service.	
4.Oil leakage found in ATR-1. However due to high demand, the shutdown is not being allowed and the issue can not be attended. The same may be looked into urgently.	
5.220 kV is having sing main & transfer bus scheme. As intimated by S/s incharge, proposal for bus sectionalizer in 220 kV bus is under consideration.	
6.Busbar/LBB protection is not available.	
7.Zone 4 delay time for all 220 kV lines is 300 ms.it may be made 250 ms as Bus bar protection is not commissioned.	done
8.Disturbance recorders shall be configured as per the DR standard guidelines of ERPC.	

3	220/132 kV Chandil(JUSNL) S/s	JUSNL	20.07.2022	9. For Santaldih ckt, zone 2 reach has been setting has been done as 18.97 Ω which seems to be on the higher as it is appearing to be 120% of line length + 50% of Shortest adjacent line. As per ERPC guideline, the same for 220 KV line should be either 120% of line length or (100% of length+ 50% of shortest adjacent line).	Revised
				10.For Ramchandrapur line, zone 3 value is 23.87 Ω. However, this value is encroaching the 2x150 MVA 220/132 KV ATR impedance in Ramchandrapur as seen from chandil,so the time delay of zone 3 may be suitably reviewed and coordinated with fault clearing time of the said ATR.	For Ramchandrapur line, Zone-3 time is coordinated with fault clearing time of ATR at Ramchndrapur. 23 time delay kept on 1 sec.
				11.Only one DC battery source is found in service while other is in spare and not in service simultaneously. For 220 KV, Two separate Dc sources are recommended feeding to main 1 and main 2 relays with separate trip coils as per CEA construction standards.	
				12.Power swing block is enabled for all the zones in 220 kV lines. It is recommended to block zone 2 and above with unblocking time of 2 seconds	done
				13.REF protection for ATRs is not available in all but one. For one ATR, though REF protection is avaialble, REF has been kept disabled after it maloperated during through faults. It is advised to implement REF protection for all the transformers.	

				14.DC earth leakage was found. Battery connectors were found to have oxidized etching marks. Action may be taken to rectify the above issue.	
				15.PLCC channels are not healthy for Ranchi line.For Sanataldih circuit, the autorecloser dead time setting may be checked and set to 1 sec.	At present PLCC channels are healthy for Ranchi line. AR setting is reviewed for 220 kV lines and set dead time- 10 sec and reclaim time- 25 s.
				16.Bus CVT is being used for distance protection relay of 220 kV feeders. Provision for line CVT in 220 kV Feeders may be envisaged and implemented.	
				17.PCC & Gravelling may be done for complete area of 220 kV Switchyard.	
				18.LA counter is missing in ATR-2. The same may be provided.	
				19.Zone settings for all 220 kV lines need to be reviewed in line ith ERPC Protection Philosophy & considering the present network configuration at the remote end substations.	done
				1. Bus 2 PT is not in service. Only bus 1 PT is present and it is being used in distance relay for covering short line section between the 220 KV side 400/220 KV Jamshedpur ICT terminals to 220 KV Ramchandrapur bus .Bus-2 PT may be replaced at the earliest.	

2.Requirement of distance protection on RCP end for the line section of 220 kV RCP-Jamshedpur(PG) may be reviewed. In case distance protection remain in operation, provision for line CVT may be envisaged where distance protection is in service.	
3.Only one DC battery source is found in service while other is in spare and not in service simultaneously. For 220 KV level, Two separate Dc sources are recommended feeding to main 1 and main 2 relays with separate trip coils as per CEA construction standards. Necessary action may be taken to operate two sources in parallel.	
4.DR is not GPS time synchronised. The same may be rectified.	
5. DR time window may be increased. DR configuration may be done in line with guidelines approved in ERPC PCC meeting.	DR time window has been increased for all elements. (DR length- 3.0 sec and pre-fault time-0.50 sec).
6.Busbar relay panel is placed in old control room without Air Conditioning.Action may be taken to place the busbar panel in a AC room.	
7.Zone settings for chandil line shall be reviewed in line with ERPC protection philosophy.	done.

4	220 kV Ramchandrapur	JUSNL	21.07.2022	8. Zone-2 & zone-3 reach setting may be reviewed for Chaibasa fedder	done.
				9.Zone-3 setting may be reviewed for 220 kV RCP-Joda feeder.	done.
				10. LBB relays are not for individual bay as a result LBB protection is not functional although busbar protection is in service. As per CEA grid connectivity regulation, LBB is mandatory for 220 kV S/s. Action may be taken to implement the same.	
				11.Power swing block is enabled for all the zones in 220 kV lines. It is recommended to block zone 2 and above with unblocking time of 2 seconds	Power swing is blocked for Z2 and Higher Zone.
				12.Autoreclose scheme is implemented without PLCC . Dead time is seen to be 1.2 sec ,while recommendation is 1 sec. Reclaim time is 3 seconds while recommendation is 25 seconds.Above settings may be reviewed.	AR setting is reviewed for 220 kV lines and set dead time-1.0 sec and reclaim time- 25s.
				13.PLCC is healthy only for 220 kV Chaibasa lines. For rest 220 kV feeders, steps may be taken to address the PLCC issue and put into service at the earliest.	

				14.N-1 relaibility criteria is not being satisfied for 200/132 kV ATRs in both peak & off-peak period.Out of 3 ATRs available, one is out of service due to bushing failure since long wheras another transformer is being operated in very critical condition having heavy oil leakge. As per the reports submitted in S/s, the parametes w.r.t. transformer oil and bushing is not as per the standard. It is recommended that complete overhauling/replacement of ATR-2 may be done at the earliest. SImilarly action may be taken for bushing replacement for ATR-1 which is out of service since long.	
				15.PCC & Gravelling may be done for transformer bays in 220 kV Switchyard.	
				16.REF protection is not in service for both the 220/132kV transformers. The same may be implemented.	
				1. Disturbance recorders are not time synchronised.	
				2. DR time window may be increased. DR configuration may be done in line with guidelines approved in ERPC PCC meeting.	DR time window has been increased for all elements. (DR length - 3.0 sec and pre-fault time-0.50 sec).
				3. Zone-2 reach setting & zone-3 timer setting for Ramchandrapur feeder shall be reviewed in line with ERPC protection philosophy.	done

				4. Overvoltage protection was seen to be enabled with stage 1 at 110%,5 sec delay. The same may be disabled or set to a higher value(greater than 112 %).	
				5.For Ramchandrapur feeders, autorecloser is not in service for both the circuits due to issue in BCU panel. The issue may be looked into at the earliest.	
				6. Zone-3 & Zone-4 reach setting to be reviewed for 220 kV Chaibasa-Chaibasa(PG) line.	done
5	220 kV Chaibasa S/s	JUSNL	21.07.2022	7. In 150 MVA 220/132 KV ATR, low set current pickup setting in backup O/C relay is 1048 A ,which is 260% of transformer rated current. This current pick up setting may be reviewed.	done.
				8.The bus bar protection relay is not functional due to fibre communication error as shown in relay display. Being a imporatant protection in the substation, immediate measure shall be taken to rectify the issue and bring the busbar relay into service.	
				9. Air conditioning is not working in the kiosks housing the relay panel for different bays. AC shall be provided for proper functioning of protection system panels & to prevent failure of numerical protection systems.	

				10.It is seen in the switchyard that both bus side isolators of 220 KV Chaibasa Chaibasa ckt 2 and 220 KV Chaibasa Ramchandrapur ckt 1 are in closed condition. This may be immediately changed to a single bus only as whenever there is a bus fault in either of 220 KV bus,both lines will trip during fault clearance. Necessary modification may be made in wiring of bus bar relay and Peripheral units.	
				11.DC earth leakage was observed in one of the DC sources. The same may be attended.	
6	220 kV Jamshedpur S/s	DVC	22.07.2022	1.PLCC is not working for 220 kV JSD-Jindal line. Therefore autorecloser scheme is kept disabled for the line. PLCC panel is present at Jamshedpur end however there is no information of PLCC at JSPL end. The matter may be taken up with appropriate authority for commissioning PLCC in the line.	
				2. Disturbance recorder configuration to be done as per DR standard guidelines by ERPC. CB close status(CB open shall be configured in DR instead of CB Close) to be rectified and DR window size to be increased in DR.	
				3. Time synchronising equipment in substation control room is not working. The same may be rectified & put into service.	
				4.DC earth leakage were found in both DC-I & II sources. The same may be attended. Continous monitoring of dc earth leakage measurements to be done.	

				5.For JSPL circuit, Zone 2 reach is encroaching half of next shortest adjacent line,so time delay is seen to be 500 ms. Alternatively,reach may be reduced from 120% of length to line length plus 50% of SAL ,while time delay can be maintained at 350 msec. To be reviewed.	
				6. Zone-2 reach setting for Bokaro line may be reviewed considering the shortest adjacent line as 220 kV BTPS-CTPS.	
				7.As informed by S/s Incharge, in the LBB protection there is no provision of sending DT signal to other end of the line. The scheme may be reviewed and transmitting DT signal to other end in LBB protection may be incorporated.	

Annexure C.5.1

Jharkhand Urja Sancharan Nigam Limited

(CIN: U40108JH2013SGC001704)
Office of the General Manager, Transmission Zone-III, Jamshedpur
132/33 kV Grid Campus Gamharia, P.O- Gamharia, Distt- Saraikella-Kharsawan, Pin- 832108
Email id: tz3jsr_jusnl@rediffmail.com

Letter No. 1651 /Jamshedpur, Dated, the 07.12.2022

From,

Er. Shailesh Kumar Choudhary,
General Manager
Transmission Zone-III, Jamshedpur.

To,

General Manager (CRITL/Ops. Efficiency),
JUSNL, Ranchi.

Sub:- Regarding compliance of Third Party Protection Audit Recommendation of ERPC.

Ref :- (i). Memo no. 587 dated 29.11.2022 of Sr. Manager/TD/CBSA
(ii). Letter no. 883 dated 30.11.2022 of DGM (Tr.Op.)/TC/JSR

Sir,

With reference to above subject, please find enclosed herewith the compliance of the audit observations as submitted by Sr. Manager/TD/CBSA & DGM (Tr.Op.)/TC/JSR vide letter under reference.

This is for your kind information and necessary action.

Encl :- As above

Yours faithfully

Choudhary 07/12/22

General Manager
Transmission Zone-III, Jamshedpur.

email
Kashi
29/11/22

Jharkhand Urja Sancharan Nigam Limited
(CIN: U40108JH2013SGC001704)
Office of the
Senior Manager, Transmission Division, Chaibasa
Email: tdcbsa.jusnl@gmail.com
Pin: 833201

Letter no……, Dated ……

From,
Senior Manager
Transmission Division, Chaibasa

To,
Dy. General Manager (Tr. Op.)
Transmission Circle, Chaibasa

Sub:- Regarding compliance of Third Party Protection Audit Recommendation of ERPC .

Ref:- (i)Letter No. ERPC/PCC/Protection Audit /2022/818 dated 19.09.2022
(ii)Your Office Letter No.1570/Jamshedpur dated 21.11.2022

Sir,

With reference to above mentioned subject, kindly find the attached compliance of the audit observations.

This is for your kind information and needful action.

Encl:- As above.

Yours faithfully

Sd/-
Senior Manager
Transmission Division, Chaibasa

Memo no.587**…… Sr. Manager, Trans., Division, CBSA, Dated, the.**29.11.2022**……**

Copy forwarded to the General Manager, Transmission Zone-III, Jamshedpur for kind information & necessary action.

29/11/22

Senior Manager
Transmission Division, Chaibasa

Sr. Manager (T)
Pl. pru. a draft ltr to GM, CRITL
Choudhary
05/12/22

TD/CBSA

Compliance of Third Party Protection Audit of ERPC

Sl. No.	Observation	Reply
1	Disturbance recorders are not time synchronised.	For rectification of this, estimate has been prepared & it will be rectified very soon.
2	DR time window may be increased. DR configuration may be done in line with guidelines approved in ERPCPCC meeting.	With the help of CRITL team it has been rectified on dated 25.11.2022.
3	Zone-2 reach setting & zone-3 timer setting for Ramchandrapur feeder shall be reviewed in line with ERPC protection philosophy.	With the help of CRITL team it has been rectified on dated 25.11.2022.
4	Overvoltage protection was seen to be enabled with stage 1 at 110%,5 sec delay. The same may be disabled or set to a higher value(greater than 112 %).	With the help of CRITL team it has been rectified on dated 25.11.2022.
5	For Ramchandrapur feeders, autorecloser is not in service for both the circuits due to issue in BCU panel.The issue may be looked into at the earliest.	BCU is not in service due to some faulty cards which after rectified very soon as estimate has been prepared .
6	Zone-3 & Zone-4 reach setting to be reviewed for 220 kV Chaibasa-Chaibasa(PG) line.	With the help of CRITL team it has been reviewed on dated 25.11.2022.
7	In 150 MVA 220/132 KV ATR, low set current pickup setting in backup O/C relay is 1048 A , which is 260% of transformer rated current. This current pick up setting may be reviewed.	With the help of CRITL team it has been rectified on dated 25.11.2022.
8	The bus bar protection relay is not functional due to fiber communication error as shown in relay display. Being a important protection in the substation, immediate measure shall be taken to rectify the issue and bring the busbar relay into service.	For rectification of this, estimate has been prepared & it will be rectified very soon.
9	Air conditioning is not working in the kiosks housing the relay panel for different bays. AC shall be providedfor proper functioning of protection system panels & to prevent failure of numerical protection systems.	It will be rectified very soon after issuing of work order for Grid AMC.
10	It is seen in the switchyard that both bus side isolators of 220 KV Chaibasa Chaibasa ckt 2 and 220 KV Chaibasa Ramchandrapur ckt 1 are in closed condition. This may be immediately changed to a single bus onlyas whenever there is a bus fault in either of 220 KV bus, both lines will trip during fault clearance. Necessary modification may be made in wiring of bus bar relay and Peripheral units.	After rectification of bus –bar protection it will be changed.
11	DC earth leakage was observed in one of the DC sources. The same may be attended.	It will be rectified very soon after issuing of work order for Grid AMC.

29/11/22
Manager
Transmission Sub-Division

29/11/22
Senior Manager
Transmission Division, Chaibasa

JHARKHAND URJA SANCHARAN NIGAM LIMITED
(CIN: U40108JH2013SGC001704)
Office of the Dy. General Manager (Transmission Operation/Project), Transmission Circle, Jamshedpur
Campus: - 132/33 Kv Grid Sub-Station, Gamharia, Dist :- Saraikela–Kharsawan, Pin - 832108.
Telephone No & Fax No: - 0657 – 201072, email id: - tcjsr_jusnl@rediffmail.com

Letter No.....883...../ TC, Jamshedpur, Dated the.....30/11/2022

From,

Er. M.P. Yadav,
DGM (Transmission Operation).

To,

General Manager,
Transmission Zone-III, Jamshedpur.

Sub: - **Regarding submission of status of compliance of third party protection audit recommendation of ERPC.**

Ref:- **1. Your letter no. 1570 dated 21.11.2022**
2. Letter no. 714 dated 26.11.2022 of Sr. Manager, TD, Adityapur.

Sir,

With reference to the above subject, kindly find enclosed herewith the status of compliance of third party protection audit recommendation of ERPC has been submitted by Sr. Manager, TD, Adityapur vide letter under reference.

Encl: As above.

Yours faithfully

Yadav 30/11/2022

(M. P. Yadav),
DGM (Transmission Operation)
Transmission Circle, Jamshedpur

Sr. Manager (T)
Pl. put a draft letter to GM, CRITL.
Choudhary
03/12/22

Office of the General Manager
Ref. .....
Date .....
Transmission Zone-III, JSR, JUSNL

JHARKHAND URJA SANCHARAN NIGAM LIMITED

(CIN: U40108JH2013SGC001704)

Office of the Senior Manager, Transmission Division, Adityapur

Campus: - 132/33 KV Grid Sub-Station, Gamharia, Dist: - Saraikela-Kharsawan, Pin - 832108.

Letter No. 714 /Adityapur, Dated 26 /11/2022

From,

Senior Manager
Transmission Division, Adityapur.

To,

Deputy General Manager (Tr. Op./Proj.),
Transmission Circle, Jamshedpur.

J.U.S.N.L. Transmission Circle Dairy No. 1277 Date: 29/11/22

Sub: - Regarding submission of status of compliance of Third Party Protection Audit recommendations of ERPC.

Ref: - (i) Your office Memo no. 871, dated 25.11.2022.
(ii) ERPC/PCC/Protection Audit/2022/818, dated 19.09.2022.
(iii) This office letter no. 649, dated 28.10.2022.
(iv) E-mail on dated 31.10.2022 of M/s JEPDEC.
(v) This office e-mail on dated 26.11.2022 to M/s JEPDEC.
(vi) MOM held between CRITL HQ, T&C, TC Jamshedpur & site official of TD, Adityapur on dated 24.11.2022.

Sir,

With respect to the above subject & reference the detail status of compliance of query raised by Third Party Protection Audit team held on dated 21.07.2022 at 220/132 KV Grid Substation Ramchandrapur are as under: -

Sl. No.	Query raised by ERPC Audit tream	Compliance
1.	Bus 2 PT is not in service. Only bus 1 PT is present and it is being used in distance relay for covering line section between the 220 KV side 400/220 KV Jamshedpur ICT terminals to 220 KV Ramchandrapur Bus-2 PT may be replaced at the earliest.	Bus PT erected at site & It will be commissioned soon.
2.	Requirement of distance protection on RCP end for the line section of 220 KV RCP-Jamshedpur(PG) line reviewed. In case distance protection remain in operation, provision for line CVT may be envisaged when distance protection is in service.	Provision for line CVT, a preparation of requirement is under progress.
3.	Only one DC battery source is found in service while other is in spare and not in service simultaneous 220KV Level, Two separate DC sources are recommended feeding to main 1 and main 2 relays with se trip coils as per CEA construction standards. Necessary action may be taken to operate two sources in.	It is under process.
4.	DR is not GPS time synchronized. The same may be rectified.	For rectification, M/s JEPDEC has been requested & he assure that it will be completed soon.
5.	DR time window may be increased. DR configuration may be done in line with guidelines approved PCC meeting.	Updated as per PCC meeting.

6.	Busbar relay panel is placed in old control room without Air Conditioning. Action may be taken to place busbar panel in a AC room.	O/H & servicing of Air Condition system is under progress.
7.	Zone settings for chandil line shall be reviewed in line with ERPC protection philosophy.	Updated in line with ERPC protection philosophy.
8.	Zone-2 & Zone-3 reach setting may be reviewed for Chaibasa feeder.	Updated in line with ERPC protection philosophy.
9.	Zone-3 setting may be reviewed for 220 KV RCP-Joda feeder.	Updated in line with ERPC protection philosophy.
10.	LBB relays are not for individual bay as a result LBB protection is not functional although busbar protection is in service. As per CEA grid connectivity regulation, LBB is mandatory for 220KV S/s. Action may be taken to implement the same.	For function of LBB relay, cabling work has been completed & it will be commissioned up to 20.12.2022.
11.	Power swing block is enabled for all the zones in 220 KV lines. It is recommended to block zone-2 above with unblocking time of 2 seconds.	Updated.
12.	Autoreclose scheme is implemented without PLCC. Dead time is seen to be 1.2 sec, while recommendation is 1 sec. Reclaim time is 3 seconds while recommendation is 25 seconds. Above setting will be reviewed.	Updated.
13.	PLCC is healthy only for 220 KV Chaibasa lines. For rest 220 KV feeders, steps may be taken to PLCC issue and put into service at the earliest.	Work completed.
14.	N-1 reliability criteria is not being satisfied for 220/132 KV ATRs in both peak & off-peak period. O ARTs available, one is out of service due to bushing failure since long whereas another transformer is being operated in very critical condition having heavy oil leakage. As per the reports submitted in S/s the p w.r.t. transformer oil and bushing is not as per the standard. It is recommended that complete overhauling/replacement of ART-2 may be done at the earliest. Similarly action may be taken for bushing of transformer for ATR-1 which is out of service since long.	We have requested vide this office Letter no. 647 dated 21.10.2022 & Memo no. 626 dated 18.10.2022 to avail shutdown for overhauling/servicing and also requested for replacement of Power Transformer for smooth function of Grid Sub-station.

Encl.: - (i) As Above.

Senior Manager
Transmission Division, Adityapur

Ramesh
26/11/2022
Manager
TSD/RCP

Jharkhand Urja Sancharan Nigam Limited

(CIN: U40108JH2013SGC001704)
Office of the General Manager, Transmission Zone-III, Jamshedpur
132/33 kV Grid Campus Gamharia, P.O- Gamharia, Distt- Saraikella-Kharsawan, Pin- 832108
Email id: tz3jsr_jusnl@rediffmail.com

Letter No. --1570---/Jamshedpur, Dated, the 21.11.2022

From,

Er. Shailesh Kumar Choudhary,
General Manager
Transmission Zone-III, Jamshedpur.

To,

DGM (Transmission Operation),
Transmission Circle, Jamshedpur.

DGM (Transmission Operation),
Transmission Circle, Chaibasa.

Sub:- Regarding compliance of Third Party Protection Audit recommendations of ERPC.

Ref :- (i). Letter no. 64 dated 16.11.2022 of GM, CRITL, JUSNL, Ranchi.
(ii). This office memo no. 1350 dated 15.10.2022
(iii). Letter No. 57 dated 13.10.2022 of GM, CRITL, JUSNL, Ranchi.

Sir,

Vide letter under reference (ii), it was requested to comply with the recommendation of Third Party Protection Audit of ERPC, which was carried out at all 220/132 kV Grid Sub-station under Transmission Zone-III, Jamshedpur during 20th July to 22nd July 2022.

In this regard, along with letter of GM, CRITL, the audit observation report was also enclosed for compliance of recommendations at the earliest.

Vide letter under reference (i), it has been again requested by GM, CRITL to comply with the audit recommendation and to submit its compliance report.

As such, it is requested to comply with protection audit recommendation of ERPC and submit post compliance report within 7 (seven) days from issue of this letter, so that it can be sent to ERPC at the earliest.

Encl :- As above

Memo 87 dt 25/11/22

Sr. Manager/Adityapur
Sr. Manager/Chaibasa

Yours faithfully

Choudhary 21/11/22
General Manager,
Transmission Zone-III, Jamshedpur.

24/11/22
Dy. General Manager (Transmission Operation)
Transmission Circle, Jamshedpur

Manager/TSD-ADA-II(RCD)
25/11

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
पूर्वी क्षेत्रीय विद्युत समिति
Eastern Regional Power Committee
14 गोल्फ क्लब रोड, टालीगंज, कलकत्ता-700033
Tel. No.: 033-24239651,24239659 FAX No.:033-24239652, 24239653 Web: www.erpc.gov.in

NO. ERPC/PCC/Protection Audit/2022/ 918 **DATE:** 19.09.2022

To

As per list enclosed.

Sub: Third Party Protection Audit observations by the Protection team of ERPC

Sir,

Third party protection audit of following substations in Jharkhand was conducted during 18th July 2022 to 22nd July 2022 by protection team of ERPC.

- 400 kV Jamshedpur S/s(Powergrid)
- 400/220 kV Chaibasa S/s (Powergrid)
- 220 kV Chaibasa New S/s (JUSNL)
- 220 kV Ramchandrapur S/s (JUSNL)
- 220 kV Chandil S/s (JUSNL)
- 220 kV Jamshedpur S/s (DVC)

The substation-wise observations are enclosed at **Annexure-A**.

You are therefore requested to take necessary action for compliance of the audit observations at the earliest.

Thanking You.

Yours faithfully,

(N.S. Mondal)
Member Secretary

A. Direct Addressee:

1. Chief General Manager (AM), ER-I, Power Grid Corporation of India Ltd., Alankar P... Boring Road, Patna-800001
2. Chief Engineer, (CRITL) Jharkhand Urja Sancharan Nigam Limited Kusai Colony, Doranda, Ranchi-834002
3. Chief Engineer (CTC), Damodar Valley Corporation, P.O. Maithon Dam, Dist. Dhanbad, Jharkhand-828207

B. Copy for Information:

1. Executive Director (ER-I), Power Grid Corporation of India Ltd. Board Colony, Shiv ... Patna-800023
2. Director (Project), Jharkhand Urja Sancharan Nigam Limited, Engineering Building, ... Dhurwa, Ranchi-834004
3. Executive Director(Commercial), DVC, DVC Tower, VIP Road, Kolkata-700054

4	220 kV Ramchandrapur	JUSNL	21.07.2022	1. Bus 2 PT is not in service. Only bus 1 PT is present and it is being used in distance relay for covering line section between the 220 KV side 400/220 KV Jamshedpur ICT terminals to 220 KV Ramchandrapu .Bus-2 PT may be replaced at the earliest. 2.Requirement of distance protection on RCP end for the line section of 220 kV RCP-Jamshedpur(PG) r reviewed. In case distance protection remain in operation, provision for line CVT may be envisaged w distance protection is in service. 3.Only one DC battery source is found in service while other is in spare and not in service simultaneou 220 KV level, Two separate Dc sources are recommended feeding to main 1 and main 2 relays with se trip coils as per CEA construction standards. Necessary action may be taken to operate two sources in 4.DR is not GPS time synchronised. The same may be rectified. 5. DR time window may be increased. DR configuration may be done in line with guidelines approved PCC meeting. 6.Busbar relay panel is placed in old control room without Air Conditioning.Action may be taken to pl busbar panel in a AC room. 7.Zone settings for chandil line shall be reviewed in line with ERPC protection philosophy. 8. Zone-2 & zone-3 reach setting may be reviewed for Chaibasa fedder 9.Zone-3 setting may be reviewed for 220 kV RCP-Joda feeder. 10. LBB relays are not for individual bay as a result LBB protection is not functional although busbar p is in service. As per CEA grid connectivity regulation, LBB is mandatory for 220 kV S/s. Action may be implement the same. 11.Power swing block is enabled for all the zones in 220 kV lines. It is recommended to block zone 2 above with unblocking time of 2 seconds 12.Autoreclose scheme is implemented without PLCC . Dead time is seen to be 1.2 sec ,while recommendation is 1 sec. Reclaim time is 3 seconds while recommendation is 25 seconds.Above set be reviewed. 13.PLCC is healthy only for 220 kV Chaibasa lines. For rest 220 kV feeders, steps may be taken to ad PLCC issue and put into service at the earliest. 14.N-1 relaibility criteria is not being satisfied for 200/132 kV ATRs in both peak & off-peak period.O ATRs available, one is out of service due to bushing failure since long wheras another transformer is operated in very critical condition having heavy oil leakge. As per the reports submitted in S/s, the p w.r.t. transformer oil and bushing is not as per the standard. It is recommended that complete overhauling/replacement of ATR-2 may be done at the earliest. Similarly action may be taken for bu [illegible] is out of service since long

JHARKHAND URJA SANCHARAN NIGAM LIMITED

(CIN: U40108JH2013SGC001704)

Office of the Senior Manager, Transmission Division, Adityapur

Campus: - 132/33 KV Grid Sub-Station, Gamharia, Dist: - Saraikela-Kharsawan, Pin - 832108.

Letter No.....649...../ Adityapur, Dated...28../..10../..202

From,

Senior Manager
Transmission Division, Adityapur.

To,

GEPDEC Infratech Ltd.
LGF tower B, B-9/A, Green Boulevard,
Sector-62, Noida-201307.

Sub: - **Regarding rectification of defects persisting in 220/132 KV GSS Adityapur-II (RCP).**

Ref:-

(i) Letter no. 126, dated 28.10.2022 of Manager, TSD Adityapur-II (RCP).
(ii) Letter no. 130, dated, 13.09.2021 of Manager, TSD Adityapur-II (RCP).
(iii) This office letter no. 282, dated 07.09.2021.
(iv) ERPC/PCC/Protection Audit/2022/818, dated 19.09.2022.
(v) Memo no. 350, dated 15.10.2022 of GM TZ-III Jamshedpur.
(vi) NIT no. 68/PR/JUSNL/2018-19 (Package-03).
(vii) LOA no. 08/C.E. (T)/JUSNL dated 28.09.2018.

Sir,

With reference to the above subject & reference it is requested to please look into matter & resolve the issues persisting from very earlier to till date at 220/132 KV GSS Adityapur-2 (RCP) after several reminders. Also for rectification of issues mentioned in ref. no.- (i). ERPC Protection Audit Team Kolkata raised very serious notes and intimated to rectify immediately.

Hence in view of above again it is requested to send the technical team at 220/132 KV GSS Adityapur-2 (RCP) as early as possible, so that problem rectified and compliance may be submitted to higher authority of JUSNL.

Encl.: - (i) As Above.

28/10/202

Senior Manager
Transmission Division, Adityapur

Copy :- (i) Manager/TSD- ADP-II(RCP) for kind information and necessary action.
(ii) DGM/TC Jamshedpur for kind information.

JHARKHAND URJA SANCHARAN NIGAM LIMITED

(CIN: U40108JH2013SGC001704)

Office of the Manager, Transmission Division, Adityapur

Campus: - 220/132 KV Grid Sub-Station, Gamharia, Dist: - Saraikela-Kharsawan, Pin - 832108.

Letter No.....126...../ Adityapur, **Dated.....28/10/2022...../**

From,

Manager
Transmission Sub-Division, Adityapur-2(RCP).

To,

Senior Manager,
Transmission Division Adityapur.

Sub: - **Regarding the complying's of issue raised by third party protection audit team of ERPC, Kolkata.**

Ref: - **(i) Letter no. 121 dated 04.09.2021 of Manager, TSD Adp-2(RCP).**
(ii) Letter no. 130 dated 13.09.2021 of Manager, TSD Adp-2(RCP).
(iii) Memo no. 350 dated 15.10.2022 of GM TZ-III Jamshedpur, forwaded by Sr. Manager TD, Adityapur.
(iv) NIT no. 68/PR/JUSNL/2018-19(Package-03).

Sir,

With reference to the above subject this is to inform that the following points need to be rectify as soon as possible which is also raised by ERPC protection audit team held on dated 20.07.2022 to 22.07.2022 : -

(i) Bus-2 PT (R-phase) was burst out on dated 03.09.2021 at 21:52 hrs which was installed by M/S GEPDEC, but till date commissioning of the same is not completed.

(ii) GPS clock which installed earlier at old control room panels was removed by M/S GEPDEC for installation in new control room. The same is not commissioned at new control room panels.

(iii) Till date LBB relays are not in service which was installed by M/S GEPDEC.

(iv) Till date PLCC of 220 KV RCP-Chandil installed by M/S GEPDEC is not in service.

Therefor it is requested you to kindly direct M/S GEPDEC to take necessary action regarding the same.

Encl.: - (i) As Above.

28/10/22

Manager
Transmission Sub-Division
Adityapur-2(RCP)

JHARKHAND URJA SANCHARAN NIGAM LIMITED

(CIN: U40108JH2013SGC001704)

Office of the Manager, Transmission Division, Adityapur

Campus: - 220/132 KV Grid Sub-Station, Gamharia, Dist: - Saraikela-Kharsawan, Pin - 832108.

Letter No.....126...../ Adityapur, Dated.....28/10/2022.....

From,

Manager
Transmission Sub-Division, Adityapur-2(RCP).

To,

Senior Manager,
Transmission Division Adityapur.

Sub: - **Regarding the complying's of issue raised by third party protection audit team of ERPC, Kolkata.**

Ref: -
(i) Letter no. 121 dated 04.09.2021 of Manager, TSD Adp-2(RCP).
(ii) Letter no. 130 dated 13.09.2021 of Manager, TSD Adp-2(RCP).
(iii) Memo no. 350 dated 15.10.2022 of GM TZ-III Jamshedpur, forwaded by Sr. Manager TD, Adityapur.
(iv) NIT no. 68/PR/JUSNL/2018-19(Package-03).

Sir,

With reference to the above subject this is to inform that the following points need to be rectify as soon as possible which is also raised by ERPC protection audit team held on dated 20.07.2022 to 22.07.2022 : -

(i) Bus-2 PT (R-phase) was burst out on dated 03.09.2021 at 21:52 hrs which was installed by M/S GEPDEC, but till date commissioning of the same is not completed.

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Therefor it is requested you to kindly direct M/S GEPDEC to take necessary action regarding the same.

Encl.: - (i) As Above.

28/10/22

Manager
Transmission Sub-Division
Adityapur-2(RCP)

GEPDEC INFRATECH LTD.
CIN : U70200DL2009PLC187657

Corporate Office : 7A Floor, Tower-B, Plot No. 8, Noida One, Sector-62, Noida - 201307
Phone : +91-120-4202349
E-mail : info@gepdec.com, Website : www.gepdec.com

GEPDEC
AN ISO 9001 : 2008 Certified Company

Ref No: GD/NIT 68/2022-23/023

Date: 31.10.2022

To,
Senior Manager
Transmission division, Adityapur
Jamshedpur Circle

Subject: Regarding rectification of defects persisting in 220/132 KV GSS Adityapur-II (RCP)

References:

- Letter no. 649/Adityapur, dated 28.10.2022

Dear Sir,

With reference to above subject and your office letter, we would like to draw your kind attention towards the balance work at Adityapur-II (RCP) from very earlier to till date.

1. **Bus -2 PT (R-Phase)**
   Will be commissioned by 07.11.2022.

2. **GPS clock**
   GPS Clock at new control room is currently installed & will be commissioned by 07.11.2022.

3. **LBB relay : ERPC Protection Audit Team Kolkata Point**
   Our relay engineer is currently present at GSS. Inter-panel wiring is completed. Now we request your kind office to provide us the shutdown (internal) so that LBB relay can be commissioned.

4. **PLCC testing and commissioning of 220 kV transmission line from Adityapur-II (RCP) to Chandil-I**
   Will be done on 02.11.2022. As we have already applied for shutdown for the same date. Request you to look into the shutdown as well.

We are working on the positive note & all works mentioned above will be competed by 10.11.2022. Once again requesting your kind support in providing us with timely shutdowns.

Thanking and assuring our best services always we remain.

For Gepdec Infratech Limited

GEPDEC INFRATECH LIMITED NOIDA 201301

Shriram Tomar
Authorized Signatory

CC:

1. Manager, TSD Adityapur-II (RCP)
2. DGM/ TC, Jamshedpur

Gmail

DIVISION ADITYAPUR <td.adtp@gmail.com>

Shutdown Request for LBB Works | Ramchandarpur

2 messages

Shubham Tomar <Civil.Team01@gepdec.in>
To: RCP EE Adityapur <td.adtp@gmail.com>
Cc: AE RCP <aeeetsdrcp@gmail.com>, Jharkhand <jharkhand@gepdec.in>, DGM Jamsehdpur <tcjsr_jusnl@rediffmail.com>, Vishal <vishal@gepdec.in>
Fri, Nov 25, 2022 at 5:38 PM

Dear Sir

In order to ensure the smooth functioning of LBB system of Ramchandarpur we request you to provide us with the shutdown of grid on the 16.12.2022 from 10am to 6pm.

We request your kind office in order to facilitate the same.

Thank you
Shubham Tomar
GEPDEC INFRATECH LIMITED

DIVISION ADITYAPUR <td.adtp@gmail.com>
To: Shubham Tomar <Civil.Team01@gepdec.in>
Sat, Nov 26, 2022 at 12:41 PM

Dear Sir,

Detail of programme for testing of LBB protection Feeder/Bay wise may please be submitted as early as possible, so that it may be communicated to SLDC official for taking prior permission from ERLDC accordingly.

This may be treated as most urgent & to take care to minimise the minimum shutdown period of existing Bay/Feeder.

Senior Manager
Transmission Division, Adityapur
[Quoted text hidden]

MINUTES OF MEETING HELD BETWEEN TSD ADP-2 (RCP) TEAM, TD ADITYAPUR ,T&C JAMSHEDPUR AND CRITL TEAM, JUSNL HQ AT 220/132KV GSS ADP-2 (RCP) ON DATED-24.11.2022

CRITL Team, JUSNL HQ visited 220/132kv GSS ADP 2 (RCP) on 24.11.2022 for compliance of protection related settings of all 220kv lines as per recommendation of third party protection audit of ERPC. Now the settings has been updated in line with ERPC Protection Philosophy after considering the present network configuration at the remote end sub-stations.

24/11/22
(Dharam Das Murmu)
Jr. Manager/CRITL

24.11.2022
(Prabhat Kumar)
Manager/CRITL

Ramesh
24.11.22
(Ramesh Rajak)
Manager/TSD/ADP-2(RCP)

24/11/2022
(Lalit Kumar Mishra)
Jr. Manager/T&C, JSR

24/11/2022.
(Lakhi Ram Murmu)
Sr. Manager/T&C, JSR

24/11/2022
(Raju Mahatha)
Sr. Manager/CRITL

24/11/2022
(Pravin Kam)
Sr. Manager/TD/ADP