# Agenda
# for
# 133rd PCC Meeting

**Date:12/03/2024**
**Eastern Regional Power Committee**
**14, Golf Club Road, Tollygunge**
**Kolkata: 700 033**

# EASTERN REGIONAL POWER COMMITTEE

## AGENDA FOR 133rd PROTECTION COORDINATION SUB-COMMITTEE MEETING TO BE HELD ON 12th MARCH 2024 AT 10:30 HRS THROUGH MS TEAMS

## PART – A

**ITEM NO. A.1: Confirmation of Minutes of 132nd Protection Coordination sub-Committee Meeting held on 27th Feb 2024 at ERPC, Kolkata.**

The minutes of 132nd Protection Coordination sub-Committee meeting held on 27.02.2024 was circulated vide letter dated 08.03.2024.

**Members may confirm the Minutes of the Meeting.**

## PART – B

**ITEM NO. B.1: Total Power Failure at 220/132 kV Dhanbad S/s(DVC) on 16.02.2024 at 09:15 Hrs.**

It was reported that due to Shorting of B Phase MB#2 and Y-Phase MB#1 on account of some foreign element, busbar protection operated for both 220/132 kV Bus at Dhanbad S/s of DVC.

**Load Loss: 90 MW, Gen. Loss: Nil**
**Outage Duration: 02:37 Hrs**

The disturbance analysis report DVC is enclosed at **Annexure-B1.**

**DVC may explain.**

**ITEM NO. B.2: Submission of protection performance indices on monthly basis by users to RPC and RLDC for 220 kV and above lines**

**As per IEGC 2023 Clause 15 (6),**

Users shall submit the following protection performance indices of previous month to their respective RPC and RLDC on monthly basis for 220 kV and above (132 kV and above in NER) system, which shall be reviewed by the RPC:

(a) The Dependability Index defined as $D = \frac{Nc}{Nc+Nf}$

where,

$N_c$ is the number of correct operations at internal power system faults and

$N_f$ is the number of failures to operate at internal power system faults.

(b) The Security Index defined as $S = \frac{Nc}{Nc+Nu}$

Where,

$N_c$ is the number of correct operations at internal power system faults

$N_u$ is the number of unwanted operations.

(c) The Reliability Index defined as $R = \frac{Nc}{Nc+Ni}$

Where,

$N_c$ is the number of correct operations at internal power system faults

$N_i$ is the number of incorrect operations and is the sum of $N_f$ and $N_u$

Further, as per IEGC 2023 Clause 15 (7),

*"Each user shall also submit the reasons for performance indices less than unity of individual element wise protection system to the respective RPC and action plan for corrective measures. The action plan will be followed up regularly in the respective RPC."*

In 131st PCC meeting, all utilities were advised to submit mentioned protection preformation indices of 220 kV and above system (132 kV and above for Sikkim) to ERPC/ERLDC every month in compliance to the Grid Code.
NTPC NKSTPP and Powergrid Odisha submitted the same, which are attached as Annexure-B2.

**Other utilities are requested to submit the details every month for necessary compliance.**

**ITEM NO. B.3: Internal Protection Audit Plan of Sub stations for the Year 2024-25**

The Clause (5) of Regulation 15 of IEGC Regulations, 2023 envisages as below:

Quote
(1) *All users shall conduct internal audit of their protection systems annually, and any shortcomings identified shall be rectified and informed to their respective RPC. The audit report along with action plan for rectification of deficiencies detected, if any, shall be shared with respective RPC for users connected at 220 kV and above (132 kV and above in NER). .....*

*(5) Annual audit plan for the next financial year shall be submitted by the users to their respective RPC by 31st October. The users shall adhere to the annual audit plan and report compliance of the same to their respective RPC."*

Unquote

All utilities are requested to submit the annual audit plan for the substations 220kV and above voltage level for FY 2024-25 to ERPC by 31.10.2023. Annual audit plans for internal audit of their protection systems and third-party protection audit shall be furnished separately.

In 131st PCC Meeting, PCC advised all utilities to submit annual audit plan for the substations 220kV and above voltage level for FY 2024-25 to ERPC at earliest.

The audit plan was received from NHPC & JUSNL.

**Other utilities are requested to submit the audit plan at the earliest.**

**ITEM NO. B.4: Status of Busbar Protection at 220 kV Substations-reg**

In 46th TCC & ERPC Meeting, the status of implementation of busbar protection for 220 kV substations was discussed.

In the meeting, BSPTCL representative updated that out of twelve substations where busbar protection is not available, proposal for ten no of substations has been sent for funding through PSDF. Busbar protection of Fatuha S/s will be commissioned in August'22. For Biharsharif S/s, there is space constraint and the busbar protection can be implemented after construction of new control room building.

OPTCL representative informed that some of the substations where busbar is not operational are under SAS project and the commissioning of busbar is covered under the SAS project. For these substations, the tentative timeline for implementation would be one year.

**Concerned utilities are requested to submit the present status of the busbar protection at 220 kV substations.**

**ITEM NO. B.5: Preventive maintenance of Line Corridors to avoid repeated tripping of EHV lines**

With onset of summer, preventive maintenance of RoW corridors of all lines maybe taken up as a pre-emptive measure to avoid repeated tripping. A list of repeated tripping occurred during March'23-July'23 is as below:

| S.No. | Name of the element | No. of tripping | Utility |
|---|---|---|---|
| 1 | 220 KV Joda-Ramchandrapur-1 | 12 | JUSNL/OPTCL |
| 2 | 220 KV Daltonganj-Chatra-1 | 11 | JUSNL/OPTCL |
| 3 | 220 KV Ranchi-Mejia (mtps)-1 | 10 | DVC |
| 4 | 400 KV Binaguri-Malbase-1 | 9 | PG ER-2/Bhutan |
| 5 | 220 KV Begusarai-Saharsa-1 | 8 | BSPTCL/PMTL |
| 6 | 220 KV Begusarai-Saharsa-2 | 6 | BSPTCL/PMTL |
| 7 | 220 KV Chandil-Ranchi-1 | 7 | JUSNL |
| 8 | 400 KV Binaguri-Tala-1 | 7 | PG ER-2/Bhutan |
| 9 | 400 KV PPSP-Bidhannagar-1 | 7 | WBSETCL |
| 10 | 400 KV PPSP-Bidhannagar-2 | 6 | WBSETCL |
| 11 | 220 KV Chukha-Birpara-1 | 6 | PG ER-2/Bhutan |
| 12 | 400 KV Durgapur-Kahalgaon-1 | 6 | PG ER-1 |
| 13 | 400 KV Meramundali-Mendhasal-1 | 6 | OPTCL |
| 14 | 400 KV Meramundali-Mendhasal-2 | 5 | OPTCL |
| 15 | 400 KV Meramundali-Lapanga-2 | 6 | OPTCL |
| 16 | 220 KV Budhipadar-Raigarh-1 | 5 | OPTCL |

| | | | |
|---|---|---|---|
| 17 | 400 KV Arambagh-Bakreswar-1 | 5 | WBSETCL |
| 18 | 400 KV Medinipur-Kharagpur-2 | 5 | PMJTL |

**Members may discuss.**

**ITEM NO. B.6: Single Line Tripping Incidences in month of Feb 2024**

Single line tripping incidents in the month of Feb 2024 which needs explanation from constituents of either end is attached at **Annexure-B6.**

**Members may discuss.**

# PART- C: OTHER ITEMS

**ITEM NO. C.1: Disturbance at Kahalgaon S/s on 30.01.2024**

The disturbance occurred at NTPC Kahalgan on 30.01.2024 was discussed in 132nd PCC meeting and NTPC Kahalgaon was advised following:

I. To submit action taken report on the observations made by the technical committee in its disturbance analysis report as well as for discrepancies discussed in this meeting. The report shall include compliance for all the observations/discrepancies as discussed along with the timeline.
II. To submit last test report of failed circuit breakers and data regarding last successful operation of the breaker.
III. To submit data of relay functionality test last carried out for the relays where discrepancies were observed during this disturbance, and the periodicity of testing of the relays followed at site
IV. To carry out the testing of 400 kV busbar protection at the earliest
V. To carry out periodical protection audit of all substations as per the IEGC 2023 and compliance of the audit observations in time bound manner.
VI. To make the event logger of the station functional at the earliest
**VII.** To ensure time synchronization of all the relays with GPS clock and configuration DR with proper DR time length. After completion of the task, sample DR for all the relays shall be submitted for verification.

**NTPC Kahalgaon 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: Review of SPS at Sterlite(Vedanta)**

In 131st PCC meeting, ERLDC intimated that existing SPS scheme at Vedanta Ltd. has been modified. The import/export figure of 1600/800 MW has been chosen respectively for SPS to act irrespective of line flows of all four 400 kV lines at 400 kV Sterlite S/s (400 kV Sterlite-Lapanga D/c, 400 kV Sterlite-Jharsuguda D/c) as considered in earlier SPS scheme. He further informed that modified scheme has been implemented without discussion/concurrence of ERPC forum.

Vedanta representative replied that the review was necessitated considering the network changes in recent times. The SPS has been modified taking into consideration the commercial aspects also. However, they are ready to discuss the scheme with all concerned utilities.

PCC advised that a separate meeting may be convened among Vedanta, SLDC Odisha, OPTCL, ERLDC and ERPC to discuss the SPS scheme.

*In the special meeting the followings were agreed:*

- *Vedanta to implement the SPS scheme as discussed for quick relief in the line flow in case it crosses 800 MW in any of the four abovementioned lines.*

- *A meeting will be called by SLDC Odisha with members from GRIDCO, OPTCL and Vedanta to discuss the modalities of implementation of proposed SPS scheme.*

**SLDC Odisha may update.**

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# Investigation report on 220KV Total Power Failure at Dhanbad Sub-Station on 16-02-2024

**Brief History: -**

It was reported that 220KV Total Power Failure (TPF) occurred at Dhanbad substation at around 9:15 a.m. on 16-02-2024 due to tripping of both Main Bus#1 and Main Bus#2 through Bus-Differential protection.

**Bus Configuration on 16-02-2024: -**

| Bay/Feeder | Connected to Bus | Bay/Feeder | Connected to Bus |
|---|---|---|---|
| ATR#1 | MB#1 | L#247 | MB#2 |
| ATR#2 | MB#1 | L#248 | MB#2 diverted through Transfer Bus |
| L#201 | MB#1 | L#217 | MB#2 |
| L#202 | MB#1 | L#218 | MB#2 |
| L#241 | MB#1 | PTR#1 | MB#2 |
| L#242 | MB#1 | PTR#2 | MB#2 |

**Relay Indication and Fault Current: -**

| Bay/Feeder | Relay Indication | Fault Current |
|---|---|---|
| ATR#1 | 96 | $I_Y$ = 0.62 KA<br>$I_B$ = 0.75 KA |
| ATR#2 | 96 | $I_Y$ = 0.61 KA<br>$I_B$ = 0.74 KA |
| L#201 | 96 | $I_Y$ = 3.39 KA<br>$I_B$ = 3.34 KA |
| L#202 | 96 | $I_Y$ = 3.44 KA<br>$I_B$ = 3.40 KA |
| L#241 | 96 | $I_Y$ = 0.38 KA<br>$I_B$ = 0.49 KA |
| L#242 | 96 | $I_Y$ = 0.38 KA<br>$I_B$ = 0.48 KA |
| L#247 | 96 | $I_Y$ = 1.52 KA<br>$I_B$ = 1.65 KA |
| L#248 | 96 | $I_Y$ = 1.52 KA<br>$I_B$ = 1.71 KA |
| L#217 | 96 | $I_Y$ = 3.82 KA<br>$I_B$ = 3.46 KA |
| L#218 | 96 | $I_Y$ = 3.64 KA<br>$I_B$ = 3.29 KA |
| PTR#1 | 96 | NA |
| PTR#2 | 96 | NA |

**Analysis of the Disturbance Record: -**

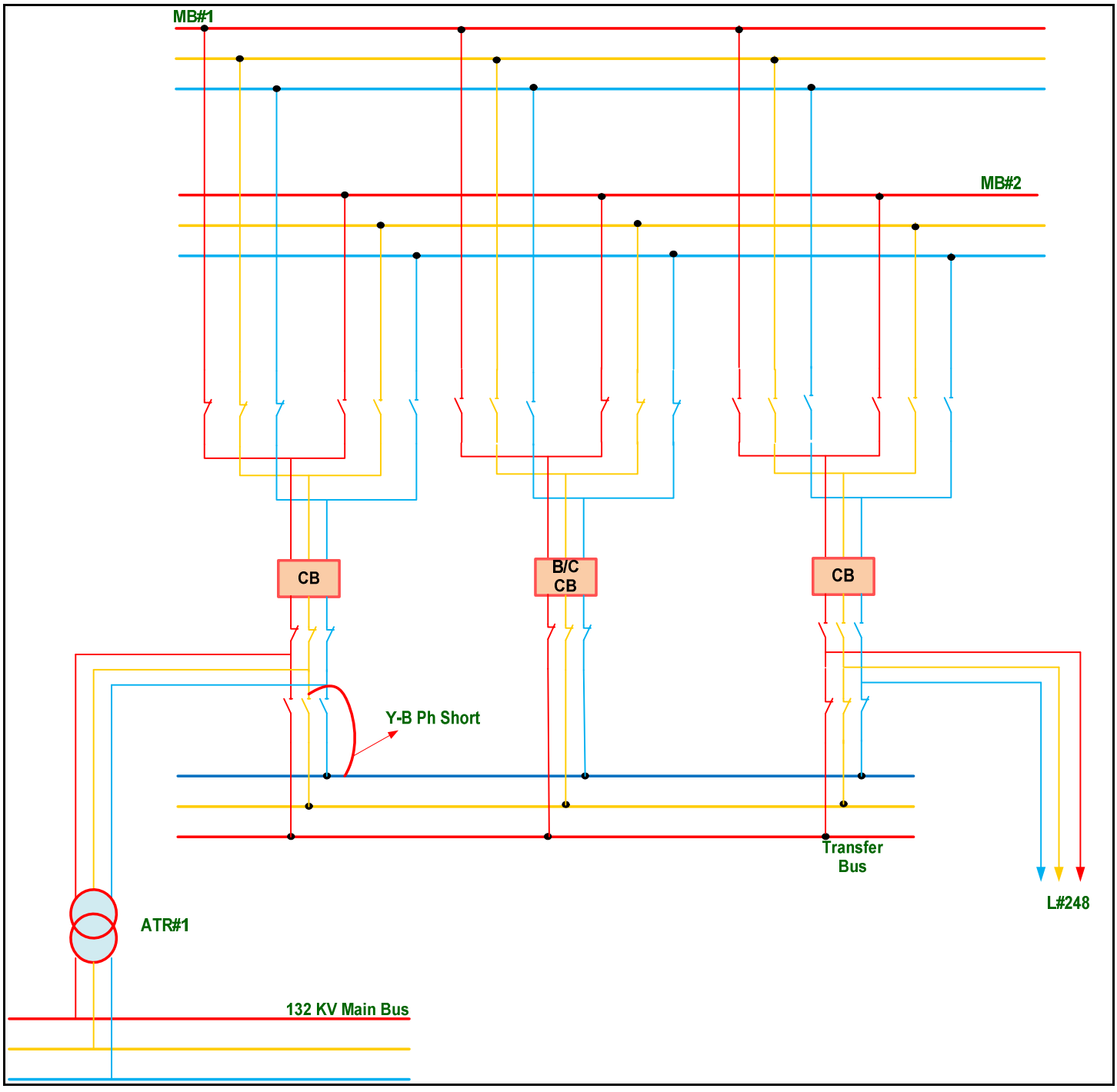
From the disturbance record of the Central Unit (CU relay which issued tripping command to all the 96 relays) it was observed that the relay had sensed YB phase to phase fault and both Zone#1 (for Main Bus#1) and Zone#2 (for Main Bus#2) differential protection had operated. Snapshot of the Disturbance record of the CU relay is mentioned in Annexure-II. Similarly, distance relay of all the lines had sensed a fault in zone#4 (reverse zone) in Y-B phase loop.

**Analysis of the event: -**

Dhanbad-Giridih line L#248 was diverted to Transfer Bus through Main Bus#2 thus the Transfer Bus was under charged condition. After all the tripping had taken place the 220KV switchyard was investigated, and some flashing was observed in the B-Phase of the Transfer Bus and Y-Phase of the pipe bus (which was connecting ATR#1 to the Main Bus#1) of ATR#1. Plant creeper was found hanging on the B-Phase of the Transfer Bus lying just above the pipe bus of ATR#1. One creeper was found lying on the ground under the pipe bus of ATR#1. Thus it is concluded that a plant creeper fell on the B-Phase of the Transfer Bus (connected to Main Bus#2) and touched the Y-Phase of the pipe bus of ATR#1 (Connected to Main Bus#1) thus creating a YB phase to phase fault between Main Bus#1 and Main Bus#2 causing the operation of Bus-Differential function and tripping all the bays connected to Main Bus#1 and Main Bus#2. SLD of incidence is shown in Annexure-I.

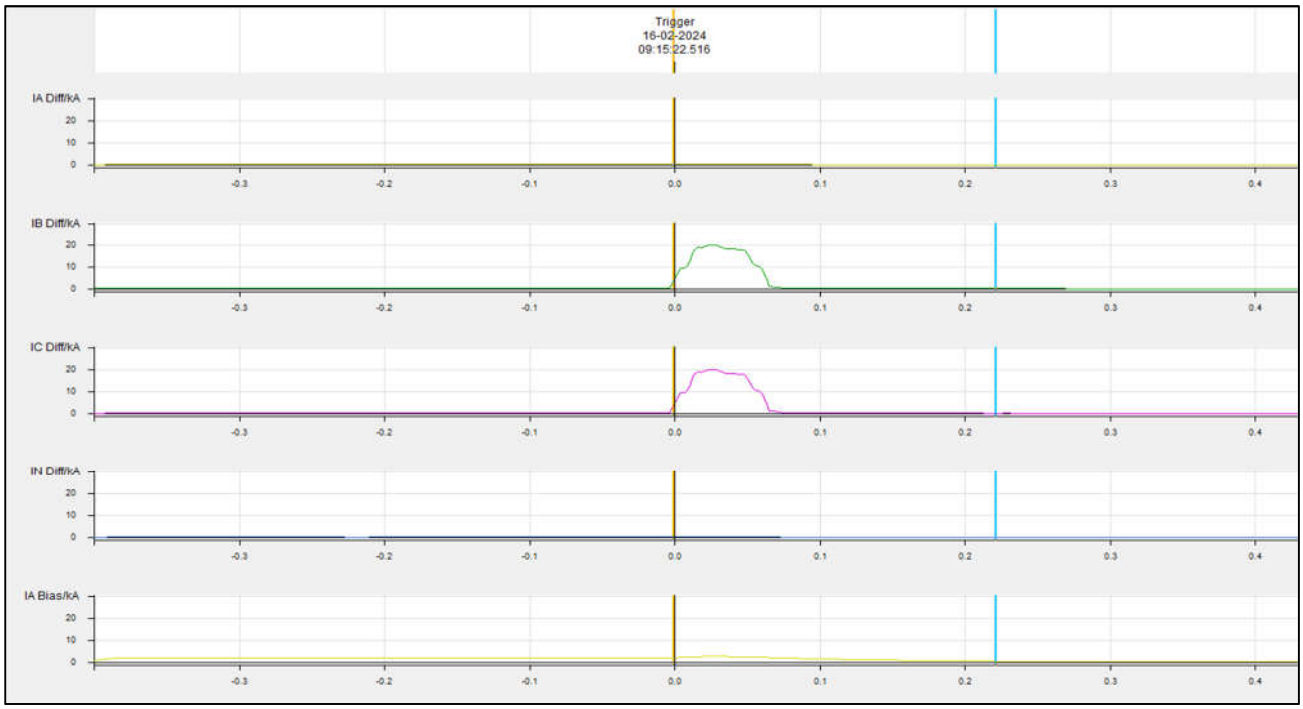
# Annexure-I

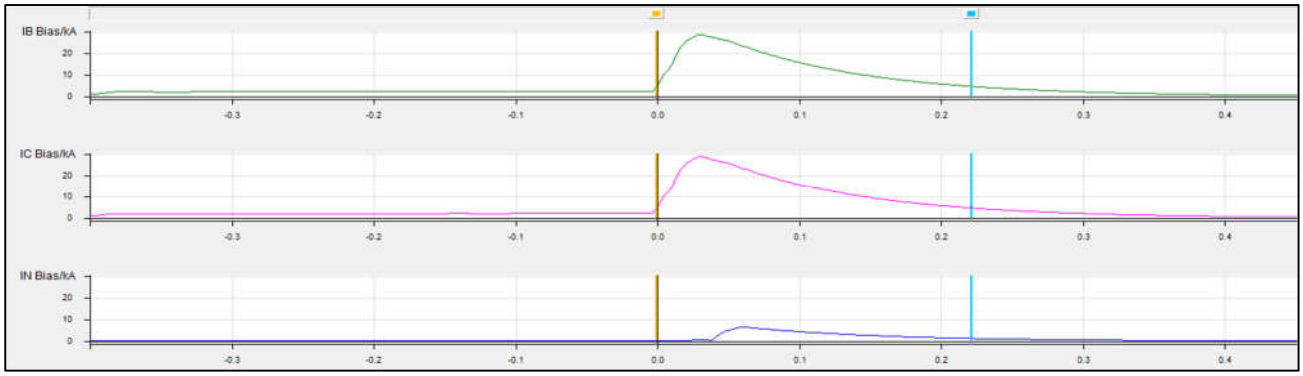
## SLD of the Faulty section of the busbar.

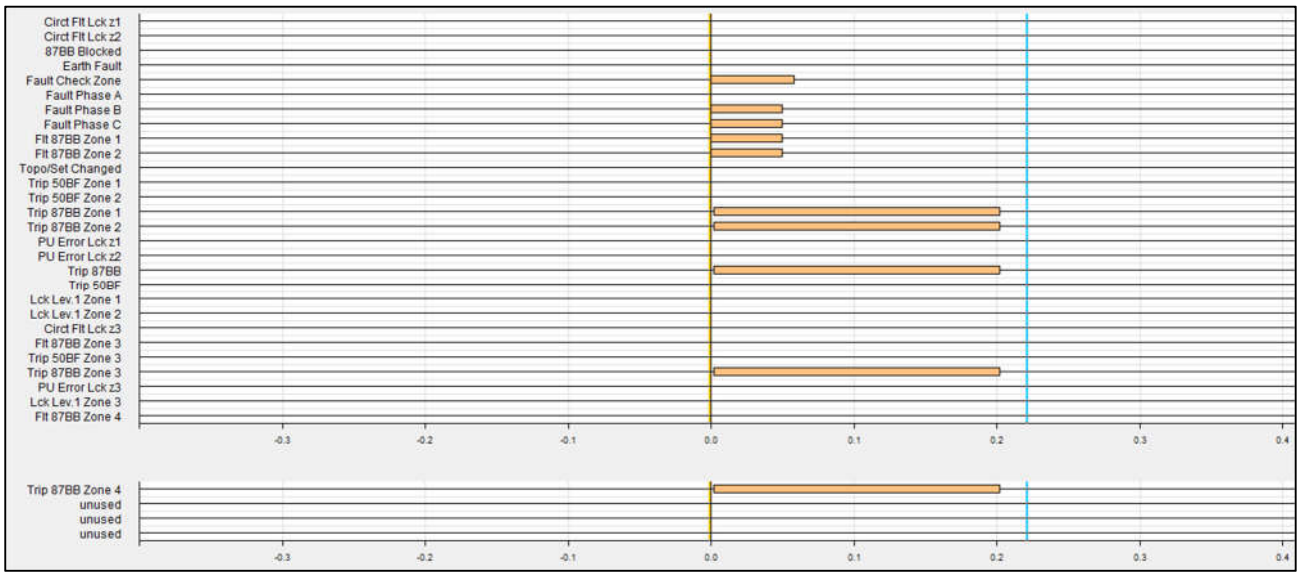


# Annexure-II

## Disturbance Record of the Central Unit Relay



Annexure-B2

## Protection Performance Indices for the month of January'24 & February'24 (In compliance of Clause 15(6) of IEGC 2023)

| S. No. | Name of the element | Tripping Date | Tripping Time | Restoration Date | Restoration Time | Reason (Relay indication) | | Nc | | Nu | | Nf | | Dependability index (Nc/(Nc+Nf)) | Security Index (Nc/(Nc+Nu)) | Reliability Index (Nc/(Nc+Nu+Nf)) | Remarks (Reason for performance indices less than 1) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | End A | End B | End A | End B | End A | End B | End A | End B | | | | |
| 1 | 220KV Bolangir-Sadaipali Line-1 | 04-01-2024 | 17:05:00 | 05-01-2024 | 02:19:00 | Tripped on R-PH to Ground Fault.<br>R/I at Bolangir:<br>M1:Z1, 8.86kA,2.1KM<br>M1:Z1, 8.82kA,2.8KM | Reason of Fault: LA Blasted at Sadaipali SS. | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | |
| 2 | 765KV Sundargarh-Dharamjaygarh Ckt#1 | 19-01-2024 | 01:22:00 | 19-01-2024 | 19:39:00 | Line tripped on Persistent fault<br>R/I at Sundargarh end :<br>M1: Z-1; BN Fault; 117.9 km; 5 kA<br>M2:Z-1; BN Fault; 95 km; 5.3 kA | Dharmajayagarh end :<br>M1: Z-1; BN Fault;23.3 km; 18.88 kA<br>M2: Z-1; BN Fault;24.35 km;18.88 kA | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | |
| 3 | 220KV Bolangir-Kesinga | 30-01-2024 | 12:24:00 | 30-01-2024 | 17:47:00 | Tripped on persistrnt fault in R-G<br>R/I at Bolangir:<br>M1:Z1; RN Fault; 49.9 km;R=2.23 kA<br>M1:Z1;RN Fault; 48.7km; , R=2.29=kA | R/I at kesinga<br>M1:Z1; RN Fault; 44.5 km; 1.42kA<br>M2;Z1; RN Fault; 12.12 km; 2.15kA | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | |
| 4 | 220kV Budhipada-Korba ck | 12-02-2024 | 01:56:44 | 12-02-2024 | 05:02:00 | tripped due to R-B-N fault in the line.<br>Relay indication details are<br>Main-1, Zone-1, R-B-N, Ir-2.11kA, Ib-1.95kA, F.L-87.6KM<br>Main-2, Zone-1, R-B-N, Ir-2.12kA, Ib- | | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | |
| 5 | 220kV Rourkela-Tarkera-1 | 23-02-2024 | 20:35 | 23-02-2024 | 20:42 | Tripped on PD | - | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | From DR it is evident that the B pole opened spuriously which led to tripping of Circuit Breaker on ploe discrepancy/on further investigation the |

# List of important transmission lines in ER which tripped in February-2024

| 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 | 400 KV PPSP-BIDHANNAGAR-2 | 01-02-2024 | 18:11 | PPSP: B-N, 41 km | Bidhannagar; B_N, 135 km, 2.335 kA | B-Earth | 100 | A/r kept disabled as per OEM advise | No | Yes | WBSEDCL | WBSETCL |
| 2 | 400 KV BARH-MOTIHARI-1 | 02-02-2024 | 15:19 | Barh: R-Y, 217 km, IR=3.05 KA, Iy= 2.67 KA | Motihari: R-Y, IR-7.38kA, IY-8.2kA, 9.2km | R-Y | 100 | Phase to phase fault | Yes | Yes | NTPC | DMTCL |
| 3 | 400 KV BARH-MOTIHARI-2 | 02-02-2024 | 15:19 | Barh: Z-2, 217.8KM , Y-B,Iy= 3.38 km, Ib= 3.055 kA | Motihari: Y-B, Iy-5.83kA, IB-6.18kaA, 9.9km | Y-B | 100 | Phase to phase fault | Yes | Yes | NTPC | DMTCL |
| 4 | 400 KV MOTIHARI-GORAKHPUR-1 | 02-02-2024 | 15:19 | Motihari: R-Y, IR-9.6kA, IY-9.4kA, 6.7km | | R-Y | 100 | Phase to phase fault | Yes | Yes | DMTCL | NR |
| 5 | 400 KV MOTIHARI-GORAKHPUR-2 | 02-02-2024 | 15:19 | Motihari: Y-B, IY-11.3kA, IB-11.05kA, 10.4km | | Y-B | 100 | Phase to phase fault | Yes | Yes | DMTCL | NR |
| 6 | 400 KV BARH-KAHALGAON-1 | 06-02-2024 | 05:05 | BARH : B-N, 0.193 km, 31.87 kA | KHSTPP: Main 1 protection trip, overvoltage stage-1/2, protection 2 , CB pole discrepancy | B-Earth | 100 | A/r not attempted at Barh. O/V appeared at Kahalgaon. NTPC may explain. | Yes | No | NTPC | NTPC |
| 7 | 220 KV PUSAULI-KARMNASHA-1 | 10-02-2024 | 14:20 | | Karmnash: Didn't trip | No fault | NA | PG ER-1 may explain | Yes | No | PG ER-1 | BSPTCL |
| 8 | 220 KV BUDHIPADAR-KORBA-2 | 12-02-2024 | 01:56 | Budhipadar: R-B-N, 87.4km, Ir-1.983kA, Iy-93.12A, Ib-108.7A | Korba: B_N, 84.20km, Ir- 0A, Iy-73.71A, Ib- 2.095kA | R-Earth | 100 | First, fault struck R_ph. After 150 msec, another fault truck B_ph and all three phase tripped at Budhipadar | Yes | NA | OPTCL | WR |
| 9 | 400 KV CHAIBASA-KHARAGPUR-1 | 12-02-2024 | 14:53 | Chaibasa : Y-B fault, 152.2 Km, Iy:3.03 kA, Ib:3kA | Kharagpur:Y-B, 13 Km, Iy:13.35 kA, Ib:13.84 kA | Y-B | 100 | Phase to phase fault | Yes | Yes | PG ER-1 | WBSETCL |
| 10 | 400 KV BIHARSHARIF-VARANASI-1 | 13-02-2024 | 22:48 | Biharsharif: Y-N, 2.26 kA, 227.5 km | Varanasi : Y-N, 123 km, 5.5 kA | Y-Earth | 100 | A/r failed after 1 second | Yes | NA | PG ER-1 | NR |
| 11 | 220 KV RANCHI-RAMGARH-1 | 14-02-2024 | 05:35 | Ranchi : R-N, 2.4 kA, 80.31 km | Ramgarh: R-N, 6.29 kA, 8.8 km | R-Earth | 400 | Tripped in Zone-2 time from Ranchi as no carrier received. A/r successful from Ramgarh. | Yes | Yes | PG ER-1 | DVC |
| 12 | 400 KV BINAGURI-TALA-1 | 15-02-2024 | 19:36 | Binaguri: R-N, 3.669kA,122.7km, A/R successful but tripped due to DT received | Tala: R-N | R-Earth | 100 | A/r successful at Binaguri, however later DT received from Tala and line tripped. No A/r attempt taken at Tala. | No | Yes | PG ER-2 | BHUTAN |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | 765 KV NEW RANCHI-DHARAMJAIGARH-1 | 16-02-2024 | 05:39 | New Ranchi: Y_N, 74 km, 6 kA | Dharamjaigarh: Y-N, 234 km, 3.2 kA | Y-Earth | 100 | A/r failed after 1 second | No | NA | PG ER-1 | WR |
| 14 | 220 KV SAHARSA-KHAGARIA-1 | 16-02-2024 | 06:08 | Saharsha: B_N, 1.87 kA, 106 km | Khagaria: B_N, 5.86 kA, 1.565 km | B-Earth | 400 | Tripped in Zone-2 time from Saharsa as no carrier received, A/r failed at Khagaria after 1 second. | Yes | Yes | PMTL | BSPTCL |
| 15 | 220 KV RANCHI-HATIA-2 | 19-02-2024 | 12:41 | Ranchi: B-N, 7.28 K=kA, 19 km, A/r successful | Hatia :B-N, 5.19 kA, 22.4 Km | B-Earth | 100 | Three phase tripping and no A/r attempted at Hatia. A/r successful from Ranchi. | Yes | Yes | PG ER- | JUSNL |
| 16 | 220 KV DARBHANGA-DARBHANGA(DMTCL)-2 | 21-02-2024 | 05:58 | | DMTCL: Didn't trip | No fault | NA | No fault observed from PMU. BSPTCL may explain. | No | NA | BSPTCL | DMTCL |
| 17 | 220 KV SAHARSA-BEGUSARAI-1 | 21-02-2024 | 06:36 | Saharsha: R-N, 25.34km,3.159kA | Begusarai: R-N, 61.95 km, 2.56 kA | R-Earth | 100 | A/r failed after 1 second | Yes | Yes | PMTL | BSPTCL |
| 18 | 220 KV DARBHANGA-DARBHANGA(DMTCL)-2 | 21-02-2024 | 07:43 | | DMTCL: Didn't trip | No fault | NA | No fault observed from PMU. BSPTCL may explain. | No | NA | BSPTCL | DMTCL |
| 19 | 220 KV ROURKELA-TARKERA-1 | 23-02-2024 | 20:35 | PD operated at Rourkela | | No fault | NA | No fault observed from PMU. PG Odisha may explain. | No | NA | PG Odisha | OPTCL |
| 20 | 400 KV ARAMBAGH-KOLAGHAT-1 | 25-02-2024 | 07:46 | Arambag: B_N, 48.6 km, 5.8 kA | Kolaghat: B_N, A/r successful | B-Earth | 100 | A/r successful at Kolaghat. No A/r attempted at Arambagh and other two phase CB tripped on PD after 2.5 seconds. | Yes | No | WBSETCL | WBPDCL |
| 21 | 220 KV CHANDIL-SANTALDIH | 29-02-2024 | 00:56 | Chandil: R_N, 29 km, 1.4 kA | Santaldih: R_N, 86.03km, 1.64 kA, Zone-2 | R-Earth | 100 | Charging attempted at 01:48 Hrs but line didn't hold. R-Phase cross-arm was in damaged condition at tower Loc no 274 and the conductor was broken between tower no 274-275. Whether A/r attempted from either end. JUSNL/WBPDCL may confirm | Yes | No | JUSNL | WBPDCL |

**ANNEXURE-C2**

| Sl No. | Name of the incidence | PCC Recommendation | Latest status |
|---|---|---|---|
| **132nd PCC Meeting** | | | |
| **1** | Disturbance at 220 kV Biharsharif S/s on 14.01.2024 | ➢ PCC advised Powergrid and BSPTCL to jointly review the highset overcurrent protection considering the present network configuration and fault level.<br>➢ PCC advised BSPTCL to review E/F setting of the ICTs as well as lines at 220 kV Biharsharif S/s<br>➢ DR configuration to be done by BSPTCL for the relays of ICT-1 & 2 and relays of Mokama lines. | |
| **131st PCC Meeting** | | | |
| **1.** | Total Power failure at 400/220 kV Tenughat TPS(TVNL) on 06.12.2023 at 07:04 Hrs. | PCC advised TVNL following:<br>➢ To replace the static busbar relay with numerical relay for better performance and reliability.<br>➢ To time-synchronize the relays with GPS clock.<br>➢ To enable directional feature in earthfault relay of the 220 kV feeders.<br>➢ JUSNL was advised to rectify the GPS clock synchronization issue at Govindpur end. | TVNL representative was not available in 132nd PCC Meeting. |
| **130th PCC Meeting** | | | |
| **2.** | Tripping of 220 kV Main Bus-2 at Budhipadar on 06.10.23 at 16:14 Hrs | PCC advised to replace the defective bay unit at the earliest and restore the busbar protection for bus-2 thereafter. | *OPTCL representative informed that OEM M/s Siemens had been communicated for this issue. He further informed that bus bar protection for bus 2 is in off condition and for bus 1 is in service at present.* |
| **125th PCC Meeting** | | | |

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| **6.** | Repeated Line tripping of 220 kV Ramchandrapur - Joda in April 2023 | Regarding status of commissioning of DTPC in the line, PCC advised the matter may be taken with their telecom wing for early commissioning of the same. | *The tendering for procurement of DTPC is in process.* |