



Agenda  
for  
**153<sup>rd</sup> PCC Meeting**

**Date:28.11.2025**  
**Eastern Regional Power Committee**  
**14, Golf Club Road, Tollygunge**  
**Kolkata: 700 033**

# EASTERN REGIONAL POWER COMMITTEE

## AGENDA FOR 153<sup>rd</sup> PROTECTION COORDINATION SUB-COMMITTEE MEETING TO BE HELD ON 28<sup>TH</sup> NOV 2025 AT 11:00 HRS AT ERPC, KOLKATA

### PART – A

**ITEM NO. A.1: Confirmation of Minutes of 152<sup>nd</sup> Protection Coordination sub-Committee Meeting held on 29<sup>th</sup> Oct 2025 through MS Teams.**

The minutes of 152<sup>nd</sup> Protection Coordination sub-Committee meeting held on 29.10.2025 was circulated vide letter dated 11<sup>th</sup> Nov 2025.

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

### PART – B

**ITEM NO. B.1: Submission of Protection Audit Plan & Audit Reports**

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

Quote

*(3) 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). .....*

*(4) All users shall also conduct third party protection audit of each substation at 220 kV and above (132 kV and above in NER) once in five years or earlier as advised by the respective RPC.*

.....

*(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

#### **A. Internal Audit**

Sl No.	Utility Name	Audit Plan for FY 2024-25	Audit Report for FY 2024-25	Audit Plan for FY 2025-26	Audit Plan for FY 2026-27
1	PG-ER-1 & PMTL				
2	PG-ER-2				
3	PG-Odisha				

4	WBSETCL	Received	Not Received	Received	Not Received
5	BSPTCL	Received	Not Received	Not Received	Not Received
6	OPTCL	Received	Not Received	Not Received	Not Received
7	DVC	Received	Not Received	Not Received	Not Received
8	JUSNL	Received	Received	Received	Not Received
9	OPGC	Not Received	Not Received	Not Received	Not Received
10	OHPC	Not Received	Not Received	Not Received	Not Received
11	CESC	Received	Not Received	Not Received	Not Received
12	NHPC	Received	Not Received	Received	Not Received
13	DMTCL	Received	Received	Received	Not Received
14	NTPC ER-I	Received	Not Received	Not Received	Not Received
15	NTPC ER-II	Received	Not Received	Not Received	Not Received
16	Tashiding HEP	Received	Received	Received	Received
17	Jorethang HEP	Received	Received	Received	Received
18	MPL	Not Received	Not Received	Not Received	Not Received
19	JITPL	Not Received	Not Received	Not Received	Not Received
20	GMR	Not Received	Not Received	Not Received	Not Received
21	Adhunik	Not Received	Not Received	Not Received	Not Received
22	IBEUL	Not Received	Not Received	Received	Not Received

 Received,  Not Received

Members may update.

**Deliberation in the meeting**

**B. Third Party Audit**

Third party Protection Audit has been completed, and report has been received for 220 kV Tashidinh HEP & Jorethang HEP. Audit plan has been received from DMTCL, Dikchu HEP, IBEUL. Apart from this ERPC secretariat has conducted third party audit of seven nos. of critical substations in FY 2025-26.

All other utilities are requested to submit their plan for third party protection audit.

In 152<sup>nd</sup> PCC Meeting, ERPC representative updated that that for FY 2024-25, protection audit plan was received from various utilities however audit reports were not received from most of the utilities. For FY 2025-26, protection audit plan (internal and third party) is received from few utilities. The status is given in the table.

PG ER-1 representative informed that protection audit plan for FY 2025-26 and reports for FY 2024-25 will be shared to ERPC within a week. Regarding third party protection audit, he updated that audit for 7 numbers of substations has been planned in phase 1 for which contract has been awarded. The phase wise plan for third party audit will be shared to ERPC within a week.

PG ER-2 representative submitted that internal audit is had been completed as per the plan & audit observations will be shared soon.

PG Odisha representative informed that that reports of protection audit carried out in FY 2024-25 will be shared to ERPC. He added that protection audit for FY 2025-26 is in progress and the plan will be shared to ERPC.

ERPC representative requested WBSETCL representative to share reports of internal protection audit for FY 2024-25 and FY 2025-26 to ERPC along with plan for FY 2026-27.

BSPTCL representative stated that SAS upgradation work is in progress at various 220 kV Substations therefore it is quite difficult to carry out protection audit at this stage. PCC advised that internal audit may be planned for the remaining substations where SAS work is not going on. Further audit plan for FY 2026-27 may be submitted.

JUSNL representative submitted that plan for FY 2025-26 will be shared to ERPC at the earliest.

MPL representative said that they had conducted third party protection audit & the report will be shared to ERPC.

**PCC advised all concerned utilities to submit the following:**

- 1. Reports/Observations of internal Audit conducted during FY 2024-25.**
- 2. Internal Audit Plan & Completion status as on date for FY 2025-26.**
- 3. Report of third-party audit conducted if any in FY 2024-25 & FY 2025-26.**
- 4. Plan for Internal Audit & Third-party Protection Audit for FY 2026-27.**

PG ER-1 vide email dated 5<sup>th</sup> Nov 2025 and JUSNL vide email dated 17<sup>th</sup> Nov 2025 had shared internal and third party protection audit plan for 2025-26 to ERPC. PG ER-2 vide email dated 24<sup>th</sup> Nov 2025 had shared protection audit plan for FY 2026-27.

**Members may update.**

**ITEM NO. B.2: Total Power Failure at 220 k V IBTPS(OPGC) S/s on 21<sup>st</sup> Oct 2025 at 17:25 Hrs**

On 21<sup>st</sup> Oct 2025 prior to the disturbance IBTPS unit 2 was generating around 176 MW and Unit 1 was under outage condition. Generation was evacuating through 220kV IBTPS-Budhipadar 1,2,3 & 4 line. At 17:25 hrs., 220 kV IBTPS–Budhipadar 1, 2, 3 & 4 lines got tripped on Zone 4 protection due to puncture of B phase Bus 1 side isolator of 220 kV IBTPS–Budhipadar-4 line at Budhipadar end subsequently 220kV IBTPS became dead.

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

**Gen. Loss: 176 MW**

**Outage Duration: 00:43 Hrs**

**OPGC and OPTCL may explain.**

**ITEM NO. B.3: Total Power Failure at 220 k V Chatra(JUSNL) S/s on 23<sup>rd</sup> Oct 2025 at 18:22 Hrs**

Prior to the disturbance, 220 kV Chatra S/s of Jharkhand Power System was connected with rest of ER grid through 220kV Chatra-Daltongunj line and 220kV Chatra-Latehar line. On 23<sup>rd</sup> October at 18:22Hrs, 220kV Chatra-Latehar line got tripped on Y-B-Earth fault, simultaneously 220kV Chatra-Daltongunj line also got tripped from Daltongunj end. Consequently, 220kV Chatra S/s became dead.

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

**Load Loss: 95 MW**

**Outage Duration: 00:53 Hrs**

**JUSNL may explain.**

**ITEM NO. B.4: Total Power Failure at 220 k V Kesinga(OPTCL) S/s on 29th Oct 2025 at 16:42 Hrs**

On 29<sup>th</sup> Oct 2025 prior to the disturbance 220kV Kesinga S/s was connected through 220kV Bolangir New (OPTCL) and 220kV Bolangir(PG) S/s. At 16:42 Hrs a Y-B-Earth fault got developed in 132kV Kesinga-Saintala feeder which was not cleared from Kesinga end due to faulty trip coil. Consequently, fault got persisted for around 1.8 seconds and was cleared by tripping of 220 kV Bolangir (PG)-Kesinga line and 220 kV Bolangir (New)-Kesinga line. Consequently, 220/132 kV Kesinga S/s became dead.

Detailed report from ERLDC is attached at **Annexure B.4.**

**Load Loss: 70 MW**

**Outage Duration: 00:26 Hrs**

**OPTCL may explain.**

**ITEM NO. B.5: Tripping of ICTs during the month of October 25**

Sl. No	Name of the Element	Trip Date/Time	Reason of tripping	Utility
1	400KV/220KV 315 MVA ICT 1 AT BIHARSARIFF	30-10-2025 17:13	Inter trip signal received on HV side. No fault signal observed in PMU	PG ER-1
2	400KV/220KV 315 MVA ICT 1 AT BIHARSARIFF	30-10-2025 15:25	Inter trip signal received on HV side. No fault signal observed in PMU	PG ER-1
3	400KV/11KV 80 MVA ICT 1 AT ACPP II	28-10-2025 14:26	Tripped on differential protection	ACPP II
4	400KV/11KV 80 MVA ICT 1 AT ACPP II	25-10-2025 18:55	HV REF Operated	ACPP II
5	400KV/220KV 315 MVA ICT 2 AT INDRAVATI HEP	25-10-2025 11:05	Tripped on over current earth fault due to Heavy spark near bus PT terminal at 220kV side.	PG Odisha
6	400KV/220KV 315 MVA ICT 1 AT BIDHANNAGAR	25-10-2025 06:56	Tripped on differential protection	WBSETC L
7	400KV/220KV 500 MVA ICT 3 AT NEW DUBURI	24-10-2025 05:46	Tripped on differential protection	OPTCL
8	400KV/220KV 315 MVA ICT 1 AT MEERAMUNDALI	22-10-2025 12:00	REF Operated	OPTCL
9	400KV/220KV 315 MVA ICT 1 AT LATEHAR(JUSNL)	22-04-2025 20:10	R phase LA of 400/220/33 KV ICT - I got burst	JUSNL

10	400KV/220KV 500 MVA ICT 2 AT MERAMUNDALI B	15-10-2025 09:38	OTI operated	OPTCL
11	400KV/220KV 315 MVA ICT 2 AT KEONJHOR(PG)	05-08-2025 14:59	Buchholz relay operated	PG Odisha
12	400KV/132KV 200 MVA ICT 2 AT MOTIHARI (DMTCL)	04-10-2025 10:44	PRV operated.	DMTCL
13	400KV/220KV 315 MVA ICT 2 AT JAMSHEDPUR	03-10-2025 12:17	Master Trip Relay Operated	PG ER-1

Concerned utilities may explain.

**ITEM NO. B.6: Tripping of Buses during the month of October 25**

Sl. No	Name of the Element	Trip Date	Trip Time	Reason of tripping	Utility
1	400KV MAIN BUS - 1 AT TALCHER	10/10/2025	20:53	Bus Bar protection operated due to faulty LBB relay of Meramundali-1 bay.	NTPC Talcher
2	220KV MAIN BUS - 1 AT PUSAULI	15/10/2025	09:36	Bus bar protection operated. BPI damaged while opening bus coupler isolator	BSPTCL

Concerned utilities may explain.

**ITEM NO. B.7: Repeated tripping of transmission lines during the month of October 25**

Sl.No.	Name of the Element	No. of times Tripped	Reason of tripping	Utility
1	400KV-PPSP-BIDHANNAGAR-2	3	Tripped on R-Earth fault in 2 instances and Y-Earth fault in one instance.	WBSETCL
2	400KV-MAITHON-GAYA-1	3	Tripped on R-Earth fault in 2 instances (Fault distance was around 34-38KM) and R-B fault in one instance.	PG ER-I & PG ER-II
3	220KV-NEW PURNEA-MADHEPURA-2	3	Tripped on Y-B fault in 2 instances and B-Earth fault in one instance.	BSPTCL

4	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	5	Tripped on phase to ground fault (R-Earth and Y-Earth fault with fault distance was around 50 KM and 30 Km from Laukahi respectively)	BSPTCL
5	132KV-MALDA (PG)-MANIKCHAK-D/C	7	Circuit 1 & 2 tripped on R-Earth fault in 4 and 3 instances respectively.	WBSETCL

**Concerned utilities may explain.**

**ITEM NO. B.8: SPS Mock Testing and Review:**

As per Clause 16.2 of IEGC-23, for the operational SPS, RLDC or NLDC, as the case may be, in consultation with the concerned RPC(s) shall perform mock testing for reviewing SPS parameters & functions, at least once a year. The objective is to review the SPS parameters and functional integrity. RLDC or NLDC shall share the report of such studies and mock testing including any short comings to respective RPC(s).

S.No	SPS Scheme Name	Implemented at (S/s)	Last Mock Test / Actual Operation of SPS	Actual Operation/Mock testing of SPS in FY 2025-26	Remarks
1	SPS for HVDC Talcher-Kolar	NTPC Talcher (TSTPP)	Successfully operated on 06/03/2025.		SPS reviewed and proposed for modification.
2	SPS for HVDC Bheramara for secure power transfer to Bangladesh	Behrampur	Yet not operated/tested		
3	SPS for 220 kV EMSS-Subhashgram D/c	EMSS	Testing Done on 31/08/2024	Successfully operated on 17/09/2025.	SPS reviewed and no modification required.
4	SPS for generation runback at JITPL	JITPL	Successfully operated on 05/08/2024.	Successfully operated on 26/11/2025.	SPS reviewed and no modification required.
5	SPS for 400/220 kV ICTs at Subhashgram	Subhashgram	Testing Done on 15/04/2024	Testing Done in April 2025.	SPS reviewed and no modification required.

6	SPS for evacuation of JSW EUL generation through interim arrangement	JSW EUL/OPGC	Revised scheme implemented for including U#2 of JSW EUL on January 2025	Successfully operated on 12/08/2025.	SPS reviewed and no modification.
7	SPS for 400/220 kV ICTs at Rajarhat	Rajarhat	Testing Done on 10/04/2024		SPS reviewed and no modification required.
8	SPS for 220 kV Maithon-Dumka D/c	Dumka	Testing Done on 27/11/2024	Successfully operated on 29/09/2025.	SPS reviewed and no modification.
9	SPS at 132 kV Rammam HEP	Rammam	Implemented on November 2024		SPS reviewed and no modification.
10	SPS for secure power evacuation of North Karanpura STPS	North Karanpura STPS	NA	Implemented on 14/06/2025.	SPS reviewed and no modification.
11	SPS at Sterlite Power (Sterlite)	Sterlite	Reviewed and modified SPS is under implementation by Sterlite		
12	SPS at JSPL and ACPP II	JSPL and ACPP II	SPS implementation under process.		

**Concerned utilities may update.**

**ITEM NO. B.9: Mock Black Start of Units in compliance with IEGC-2023**

As per IEGC Clause 34 (3), The user shall carry out a mock trial run of the procedure for different sub-systems including black-start of generating units along with grid forming capability of inverter based generating station and VSC based HVDC black-start support at least once a year under intimation to the concerned SLDC and RLDC.

The status of mock drills performed in the previous year and planned in the current FY is given below:

SI No	Name of Plants	Last date of Mock exercise	Tentative date for black start exercises for FY 2025-26	Remarks
1	U. Kolab	21st July 2022	11.12.2025	
2	Balimela	15th January 2025	14.12.2025	
3	Rengali	12 <sup>th</sup> July 2023	26.11.2025	
4	Burla	13th December 2024	09.12.2025	
5	U.Indravati	4th September 2024	10.12.2025	
6	Maithon	7th December 2024	08.11.2025	Unit-1 completed on 08.11.25. Report received

		7th December 2024	18.11.2025	Unit-2 deferred. Tentative date may be updated by DVC
7	TLDP-III	6th December 2021		Schedule not received from SLDC
8	TLDP-IV	22nd December 2024		
9	Subarna- rekha	3rd December 2024		Penstock issue. Under SD. May be in Dec 25/Jan26 as intimated by Jharkhand SLDC
10	Chuzachen	24th March 2025	2nd and 3rd week of March-2026	
11	Jorethang	24th March 2025	2nd week of December25	
12	Tashiding	04th March 2025	10.12.2025	
13	Dikchu	19th Feb 2020	18th Feb 2026	
14	Rongnichu HEP	18 <sup>th</sup> March and 20 <sup>th</sup> March 2024	15th Jan. 2026 to 31st Jan. 2026. The exact date will be shared in the last week of November 2025.	
15	Teesta V	Under Outage	N/A	
16	Teesta-III	Under Outage	N/A	

**Concerned utilities may update.**

**ITEM NO. B.10: Status of Bus Bar Protection at 220kV and above voltage level**

As discussed in 149<sup>th</sup> PCC meeting, bus bar protection should be available and healthy for 220kV and above voltage level as per CEA Technical Standards for Construction of Electrical Plants Lines Regulations 2022. Bihar, Jharkhand, DVC and West Bengal already shared the status of bus bar protection scheme and expected plan for upcoming bus bar protection. Details is attached at **Annexure B.10**. SLDCs are requested to revise zone-4 timing, if bus bar protection is not in service to 250 msec and share latest updated plan.

**Members may discuss.**

**ITEM NO. B.11: Single Line Tripping Incidences in month of October 2025**

Single line tripping incidents in the month of October 2025 which needs explanation from constituents of either end is attached at **Annexure B.11**.

**Members may discuss.**

## PART- C: OTHER ITEMS

### ITEM NO. C.1: 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), 15(7) all users shall submit protection performance indices of previous month by 10<sup>th</sup> of every month to ERPC and ERLDC along with reasons for performance indices less than unity of individual element wise protection system to the respective RPC and action plan for corrective measures. For the month of Oct 25, detailed list is attached at **Annexure C.1**.

Following table shows the status of PP Indices received for last five months.

Sl.no	Utility Name	June 2025	July 2025	August 2025	September 2025	October 2025
1	PG-ER-1	Yes	Yes (18.08.2025)	Yes (08.09.2025)	Yes (22.10.2025)	Yes (26.11.2025)
2	PG-ER-2	Yes (14.07.2025)	Yes	Yes	Yes (17.10.2025)	Yes (21.11.2025)
3	PG-Odisha		Yes	Yes (03.09.2025)	Yes (06.10.2025)	
4	WBSETCL/ WBPDC	Yes (07.07.2025)	Yes (05.08.2025)	Yes (04.09.2025)	Yes (08.10.2025)	Yes (07.11.2025)
5	BSPTCL/ BGCL	Yes (07.07.2025)	Yes (14.08.2025)		Yes (21.10.2025)	Yes (24.11.2025)
6	OPTCL/ OHPC	Yes (14.07.2025)	Yes (14.08.2025)	Yes	Yes (27.10.2025)	Yes (24.11.2025)
7	DVC		Yes		Yes (20.11.2025)	Yes (20.11.2025)
8	JUSNL		Yes (18.08.2025)	Yes (06.09.2025)	Yes (17.10.2025)	
9	Sikkim					
10	OPGC					
11	PMTL					
12	NTPC- KHSTPP	Yes (21.07.2025)	Yes	Yes	Yes (10.10.2025)	
13	NTPC- FSTPP				Yes (10.10.2025)	
14	NTPC- BARH		Yes (08.08.2025)	Yes (04.09.2025)	Yes (06.10.2025)	Yes (01.11.2025)
15						

	NTPC-TSTPP					
16	NTPC-KBUNL				Yes (10.10.2025)	
17	NPGC					
18	BRBCL					
19	NTPC-DARILAPLI	Yes (02.07.2025)	Yes (01.08.2025)	Yes (01.09.2025)	Yes (01.10.2025)	Yes (03.11.2025)
20	NTPC-NORTH KARNPUARA					
21	ATL					
22	APNRL	Yes (09.07.2025)	Yes (13.08.2025)	Yes (07.09.2025)	Yes (17.10.2025)	
23	CBPTCL					
24	DMTCL	Yes (03.07.2025)	Yes (04.08.2025)	Yes (04.09.2025)	Yes (04.10.2025)	Yes (04.11.2025)
25	ENICL	Yes (07.07.2025)	Yes (11.08.2025)	Yes (09.09.2025)	Yes (05.10.2025)	Yes (06.11.2025)
26	Chuzachen HEP					
27	Jorethang HEP		Yes (01.08.2025)	Yes (01.09.2025)	Yes (01.10.2025)	Yes (01.11.2025)
28	Tashiding Hep	Yes (01.07.2025)	Yes (01.08.2025)	Yes (01.09.2025)	Yes (01.10.2025)	Yes (01.11.2025)
29	GMR					
30	IBEUL					
31	JITPL					
32	MPL		Yes (08.08.2025)			
33	NKTL					
34	OGPTL	Yes (07.07.2025)	Yes (11.08.2025)	Yes (09.09.2025)	Yes (05.10.2025)	Yes (06.11.2025)
35	PMJTL					
36	Powerlink					
37	PKTCL	Yes (07.07.2025)	Yes (11.08.2025)	Yes (09.09.2025)	Yes (05.10.2025)	Yes (06.11.2025)
38	CESC	Yes (11.07.2025)	Yes (17.08.2025)			

39	Rongnichu HEP					
40	TVNL	Yes (01.07.2025)	Yes (04.08.2025)	Yes (04.09.2025)	Yes (03.10.2025)	Yes (01.11.2025)

**Members may discuss.**

**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.**


**ग्रिड-इंडिया**  
**GRID-INDIA**

**ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड**  
 (भारत सरकार का उद्यम)  
**GRID CONTROLLER OF INDIA LIMITED**  
 (A Government of India Enterprise)  
 [formerly Power System Operation Corporation Limited (POSOCO)]

**पूर्वी क्षेत्रीय भार प्रेषण केन्द्र / Eastern Regional Load Despatch Centre**

कार्यालय : 14, गोल्फ क्लब रोड, टॉलिंगंज, कोलकाता - 700033  
 Office : 14, Golf Club Road, Tollygunge, Kolkata - 700033  
 CIN : U40105DL2009GOI188682, Website : www.erfdc.in, E-mail : erfdinfo@grid-india.in, Tel.: 033 23890060/0061

**Detailed Report of grid event at 220kV IB-TPS S/s of Eastern Region**  
**(To be submitted by RLDC/NLDC during Grid Disturbances/Grid Incidents/Near Miss Event as per IEGC section 37.2 (f))**

(आई ई जी सी 37.2 (एफ) के अनुपालन में)

Date(दिनांक): 05-11-2025

**1. Event Summary (घटना का सारांश):**

Prior to the disturbance, IBTPS unit #2 was generating around 176 MW (Unit #1 was under outage condition) and evacuating power through 220kV IBTPS-Budhipadar 1,2,3 & 4 line. At 17:25 hrs., 220 kV IBTPS–Budhipadar 1, 2, 3 & 4 lines tripped on Z-4 protection due to puncture of B-phase post insulator on the 220 kV IBTPS–Budhipadar-4 Bus-1 side isolator at IBTPS end. As a result, 220kV IBTPS became dead, leading to generation loss of 176 MW reported at IBTPS.

**2. Time and Date of the Event (घटना का समय और दिनांक):** 17:25 Hrs on 21/10/2025.

**3. Event Category (ग्रिड घटना का प्रकार):** Grid Disturbance (GD)-1

**4. Location/Control Area (स्थान/नियंत्रण क्षेत्र):** IB-TPS/ ODISHA

**5. Antecedent Conditions (पूर्ववर्ती स्थिति):**

	Frequency in (Hz)	Regional Generation in (MW)	Regional Demand in (MW)	State Generation (MW)	State Demand (MW)
				Odisha	Odisha
<b>Pre-Event (घटना पूर्व)</b>	49.949	30142	25587	3448	5145
<b>Post Event (घटना के बाद)</b>	49.948	29966	25587	3272	5145

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

Important Transmission Line/Unit if under outage (महत्वपूर्ण संचरण लाइने/ विद्युत उत्पादन इकाइयां जो बंद हैं)	Unit #1 was under outage condition
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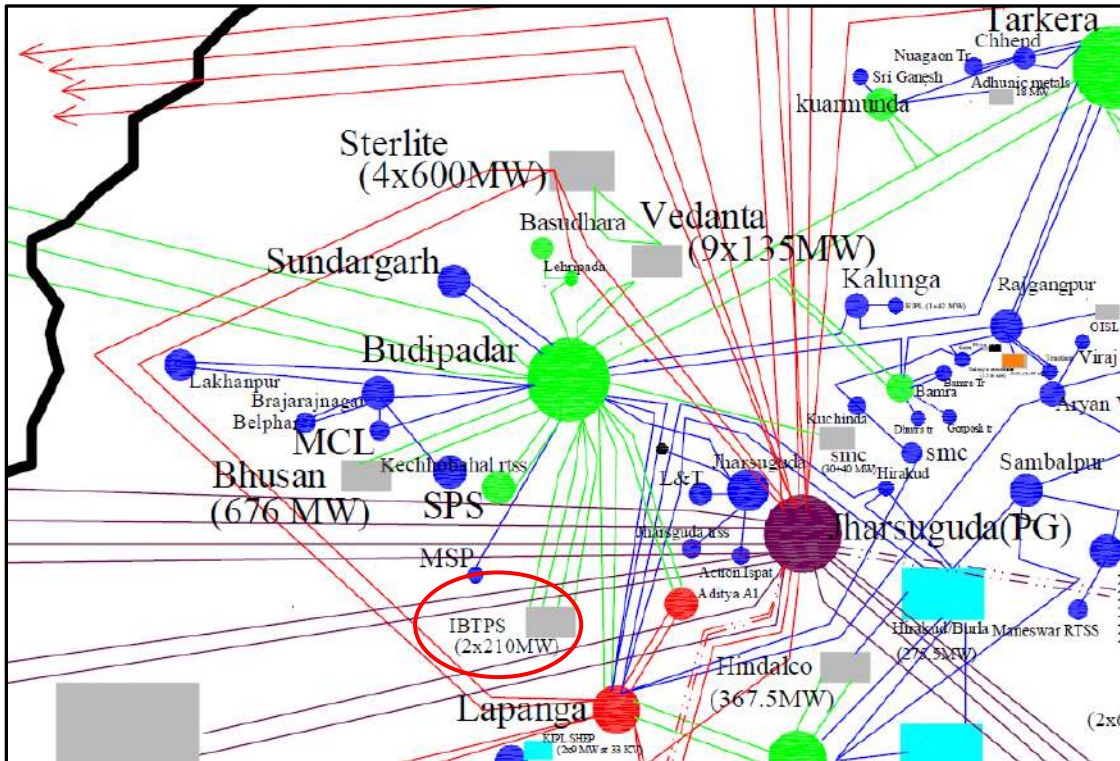
Weather Condition (मौसम स्थिति)

Normal.

6. Load and Generation loss (लोड और जेनरेशन हानि): Generation loss: 176 MW

7. Duration of interruption (रुकावट की अवधि): 00:43 Hrs (43 minutes).

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



**Figure 1: Network across the affected area**

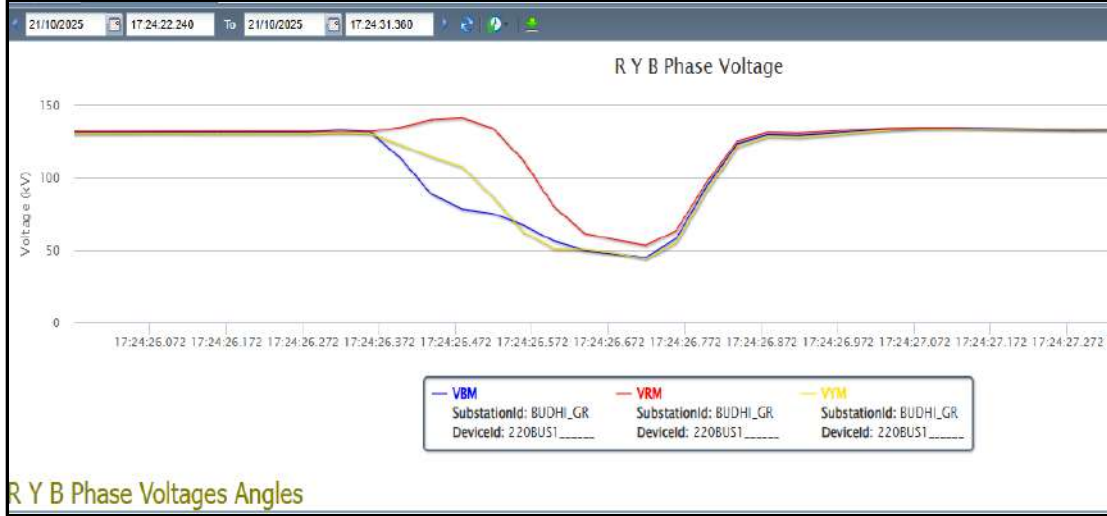
9. Details of Equipment Failure (if any during the event) (उपकरण विफलता का विवरण): NIL

## 10. Major Elements Tripped (प्रमुख ट्रिपिंग):

क्र०स०	नाम	Trip time (hh:mm:ss)	उप केंद्र 1 रिले संकेत	उप केंद्र 2 रिले संकेत	Restoration time (Hrs)
1	220KV-IBTPS-BUDHIPADAR- 1	17:24:26	Tripped in Z-4 protection	Not tripped	23:08 HRS
2	220KV-IBTPS-BUDHIPADAR- 2	17:24:26	Tripped in Z-4 protection		18:08 HRS
3	220KV-IBTPS-BUDHIPADAR- 3	17:24:26	Tripped in Z-4 protection		19:58 HRS
4	220KV-IBTPS-BUDHIPADAR- 4	17:24:26	Tripped in Z-4 protection		-
5	IB TPS UNIT -2	17:24:26	Loss of evacuation path		02:37 HRS

## 11. Event Analysis (Based on PMU, SCADA & DR) (घटना का विश्लेषण):

- Prior to the disturbance, IBTPS unit #2 was generating around 176 MW (Unit #1 was under outage condition) and evacuating power through 220kV Budhipadar-IBTPS lines 1,2,3 & 4.
- 220kV main bus #2 was under outage condition for hot spot rectification work.
- At 17:24:26 Hrs, 220kV main bus #1 side isolator of 220kV Budhipadar-IB TPS # 4 post insulator got punctured, resulting in a three phases fault on 220kV main bus 1.
- All 220kV lines at IBTPS sensed the fault in reverse zone and got tripped from IB TPS end after time delay of 350 msec.
- IB TPS unit #2 subsequently tripped on over speed/over frequency protection due to sudden loss of evacuation path.
- 220kV IB TPS S/s became dead.
- Generation loss of 176 MW reported at IB TPS S/s due to incident.



### PMU of Budhipadar Bus Voltage

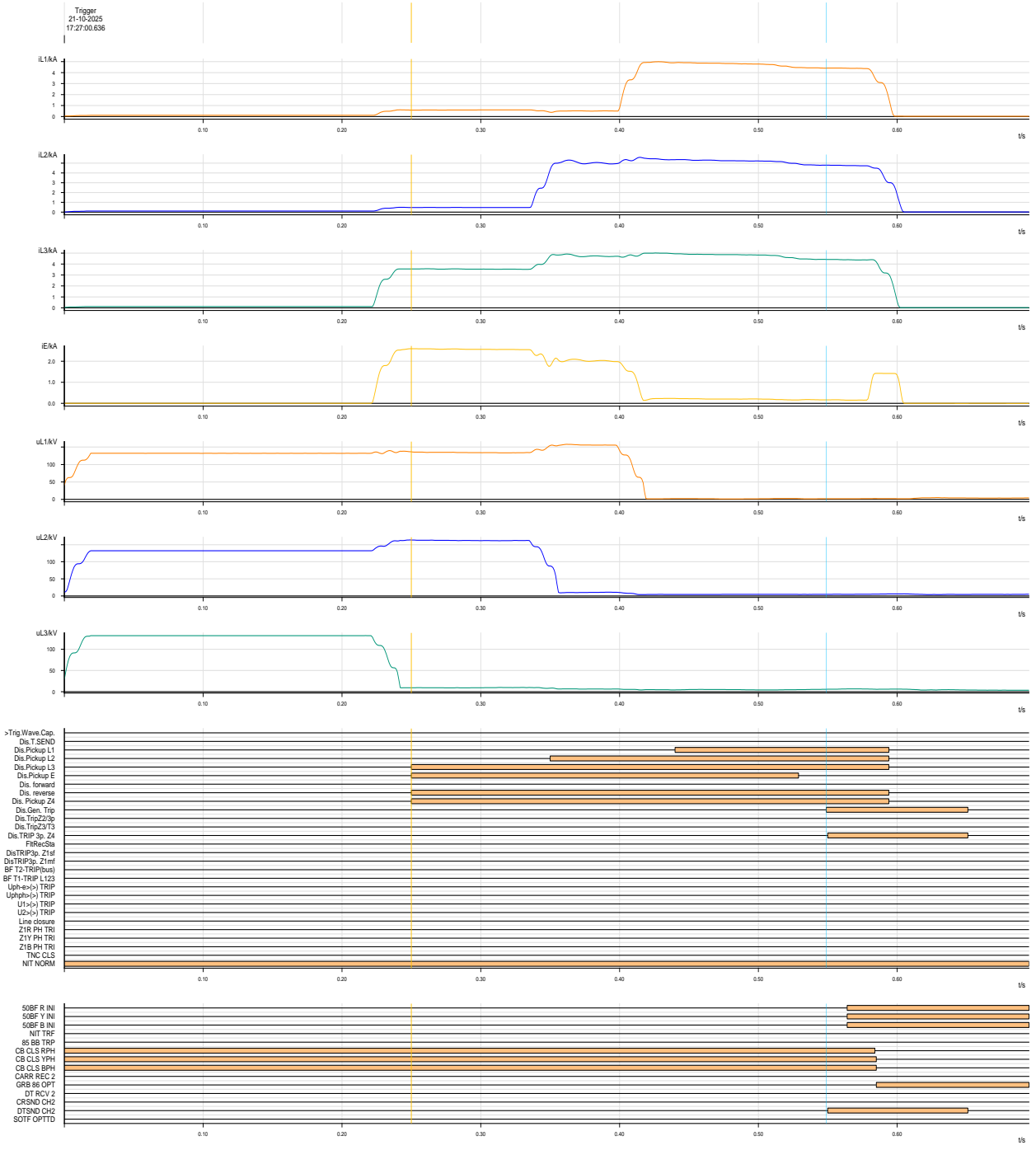
#### 12. Protection/Operational issues observed (सुरक्षा/परिचालन संबंधी समस्या):

- Protection operated as per scheme.
- DR length at IB TPS need to be increased to 3 sec with pre-fault time of 500 msec and post fault 2500 msec as per ERPC protection philosophy.
- Till commissioning of BB protection, Z-IV setting of all connected lines at IBTPS may be reduced to 250 msec and Bus coupler setting may be reviewed.

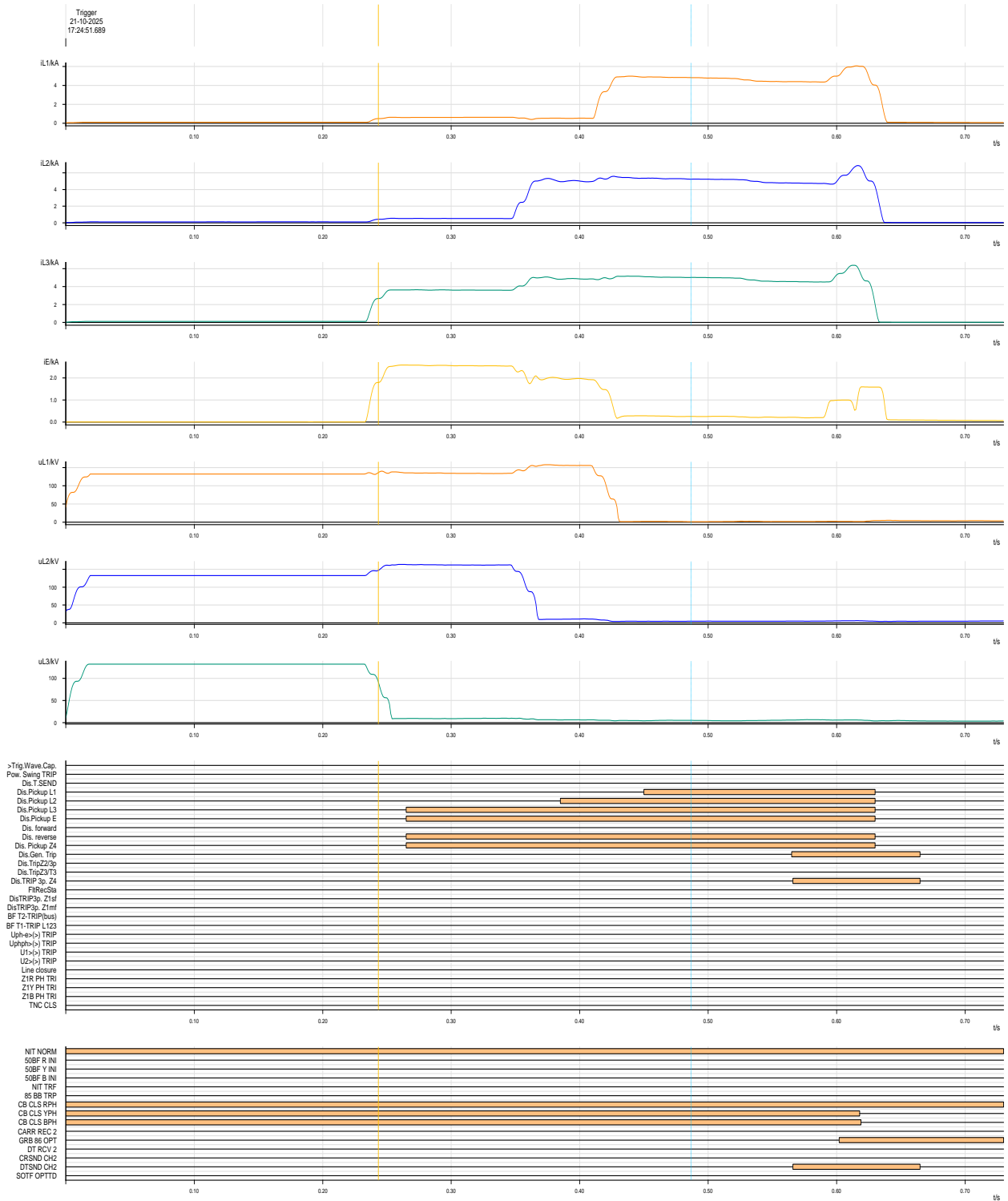
#### 13. Action Taken/Remedial Measures (सुधारात्मक उपाय): Report not submitted

# Annexure:

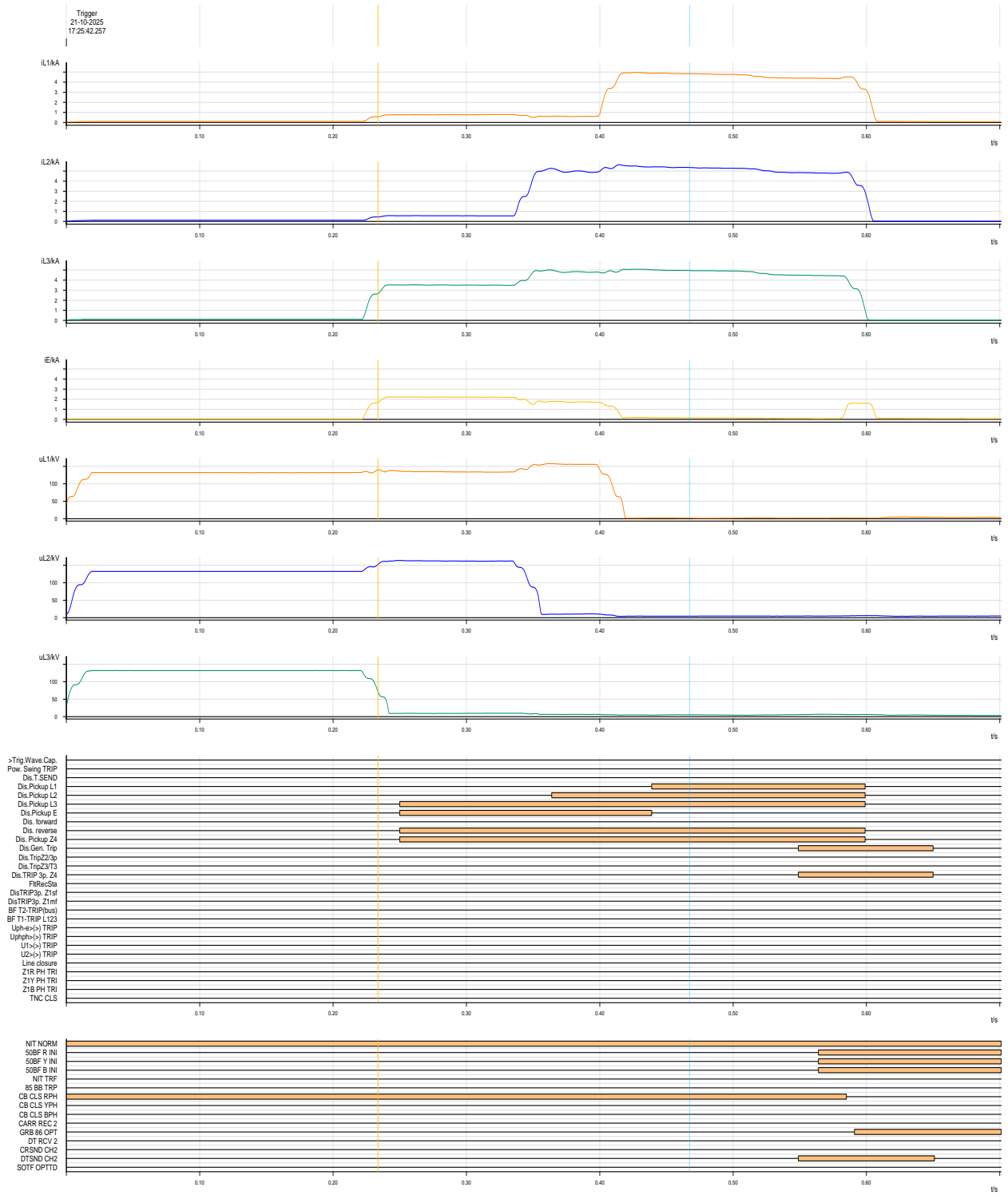
## DR of 220kV IB TPS-Budhipadar #1 at IB TPS:



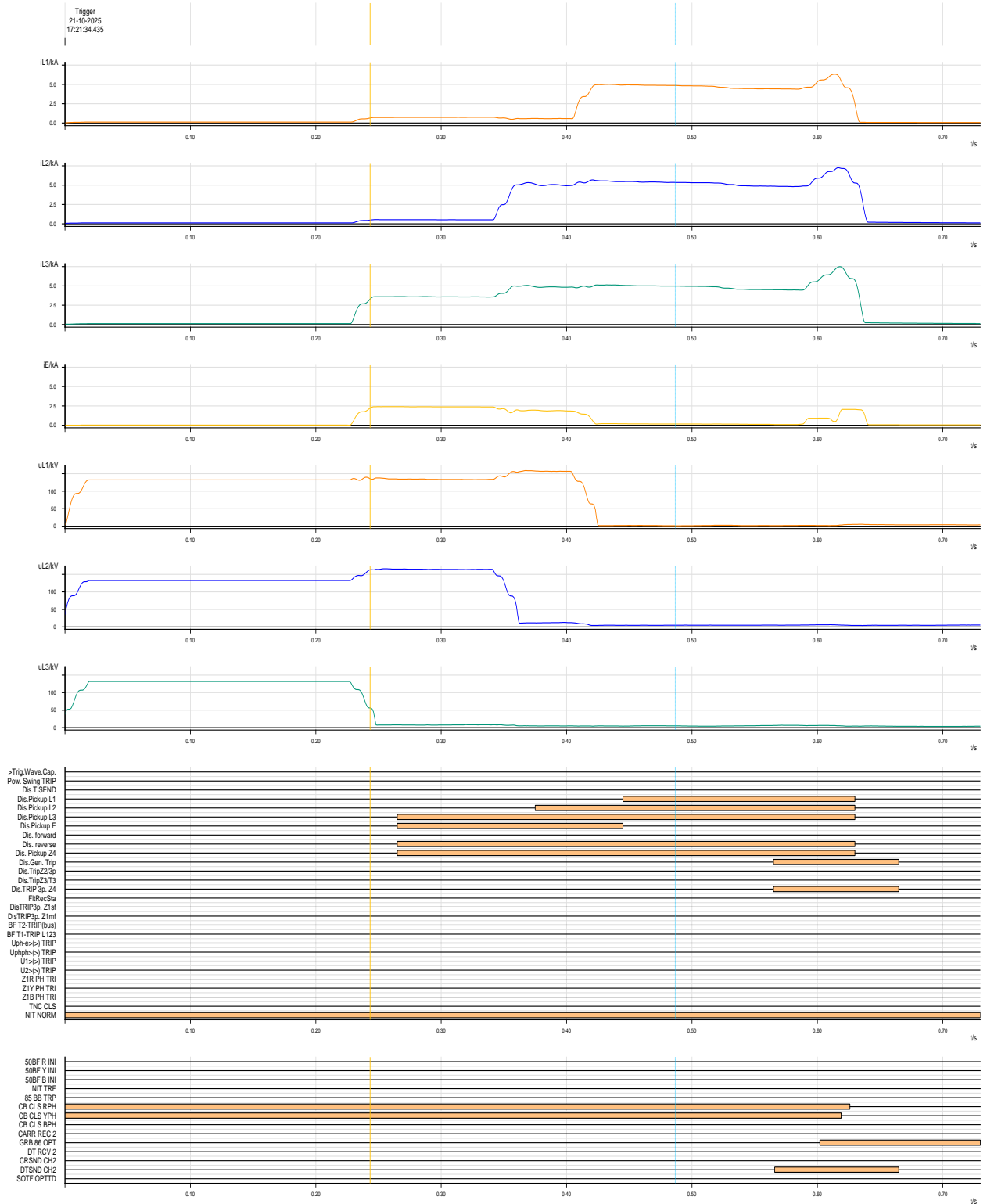
# DR of 220kV IB TPS-Budhipadar #2 at IB TPS:



# DR of 220kV IB TPS-Budhipadar #3 at IB TPS:



# DR of 220kV IB TPS-Budhipadar #4 at IB TPS:





**ग्रिड-इंडिया**  
GRID-INDIA

**ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड**  
(भारत सरकार का उद्यम)  
**GRID CONTROLLER OF INDIA LIMITED**  
(A Government of India Enterprise)  
[formerly Power System Operation Corporation Limited (POSOCO)]

**पूर्वी क्षेत्रीय भार प्रेषण केन्द्र / Eastern Regional Load Despatch Centre**

कार्यालय : 14, गोल्फ क्लब रोड, टॉलिंगुंज, कोलकाता - 700033  
Office : 14, Golf Club Road, Tollygunge, Kolkata - 700033  
CIN : U40105DL2009GOI188682, Website : www.erfdc.in, E-mail : erfdinfo@grid-india.in, Tel. : 033 23890060/0061




**पूर्वी क्षेत्र के 220/132 केवी चतरा में ग्रिड घटना पर विस्तृत रिपोर्ट / Detailed Report of grid event at 220/132 kV Chatra S/s of Eastern Region**  
(To be submitted by RLDC/NLDC during Grid Disturbances/Grid Incidents/Near Miss Event as per IEGC section 37.2 (f))  
(आई ई जी सी 37.2 (एफ) के अनुपालन में)

Date(दिनांक): 01-11-2025

**1. Event Summary (घटना का सारांश):**

Prior to the disturbance, 220 kV Chatra S/s of Jharkhand Power System was connected with rest of ER grid through 220kV Chatra-Daltongunj line and 220kV Chatra-Latehar line. At 18:22 Hrs, 220kV Chatra-Latehar line tripped on Y-B-Earth fault. Simultaneously, 220kV Chatra-Daltongunj line was also tripped from Daltongunj end. As a result, 220kV Chatra S/s became dead, resulting in a load loss of 95 MW at Chatra S/s. Power supply was restored through the 220kV Chatra-Daltongunj line at 19:15 Hrs.

**2. Time and Date of the Event (घटना का समय और दिनांक):** 18:22 hrs of 23.10.2025.

**3. Event Category (ग्रिड घटना का प्रकार):** Grid Disturbance (GD)-1

**4. Location/Control Area (स्थान/नियंत्रण क्षेत्र):** Jharkhand

**5. Antecedent Conditions (पूर्ववर्ती स्थिति):**

	Frequency in Hz	Regional Generation in MW	Regional Demand in MW	State Generation (MW)	State Demand (MW)
				Jharkhand	Jharkhand
Pre-Event (घटना पूर्व)	49.874	34636	27082	205	2038
Post Event (घटना के बाद)	49.874	34636	26987	205	1943

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

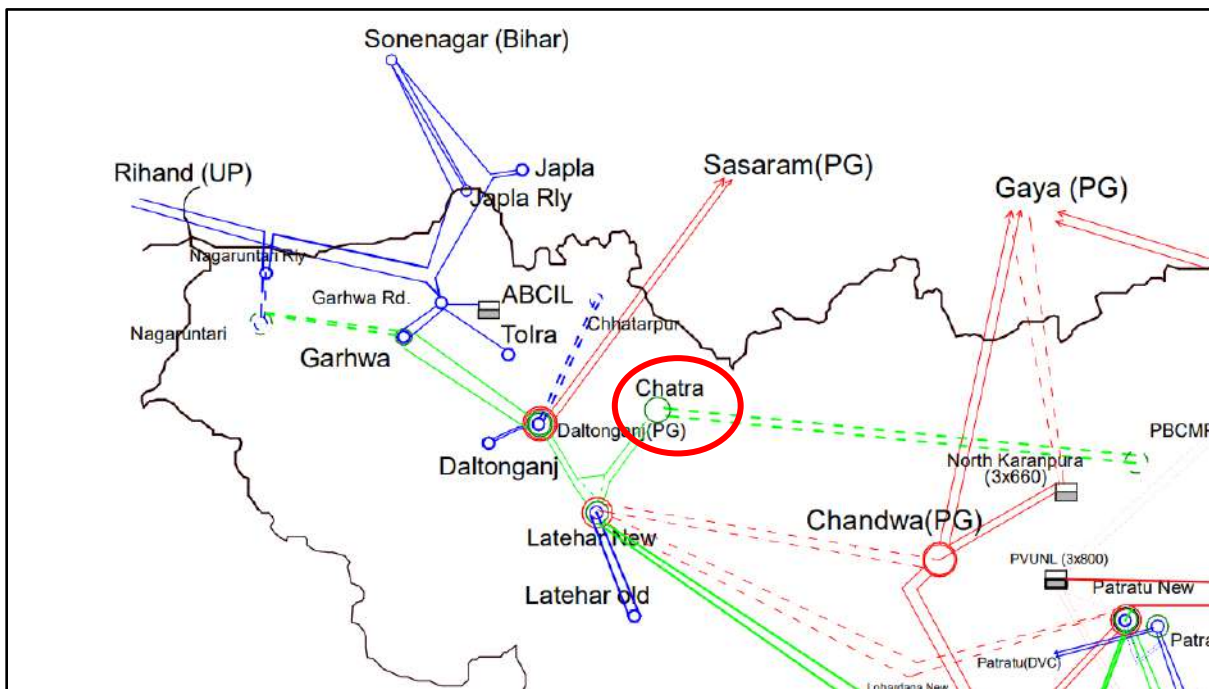
Important Transmission Line/Unit if under outage (महत्वपूर्ण संचरण लाइने/ विधुत उत्पादन इकाइयां)	Nil
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जो बंद है)	
Weather Condition (मौसम स्थिति)	Normal.

6. Load and Generation loss (लोड और जेनरेशन हानि): Approximate load loss of **95 MW** at Chatra S/s.

7. Duration of interruption (रूकावट की अवधि): 00:53 Hrs (53 minutes).

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



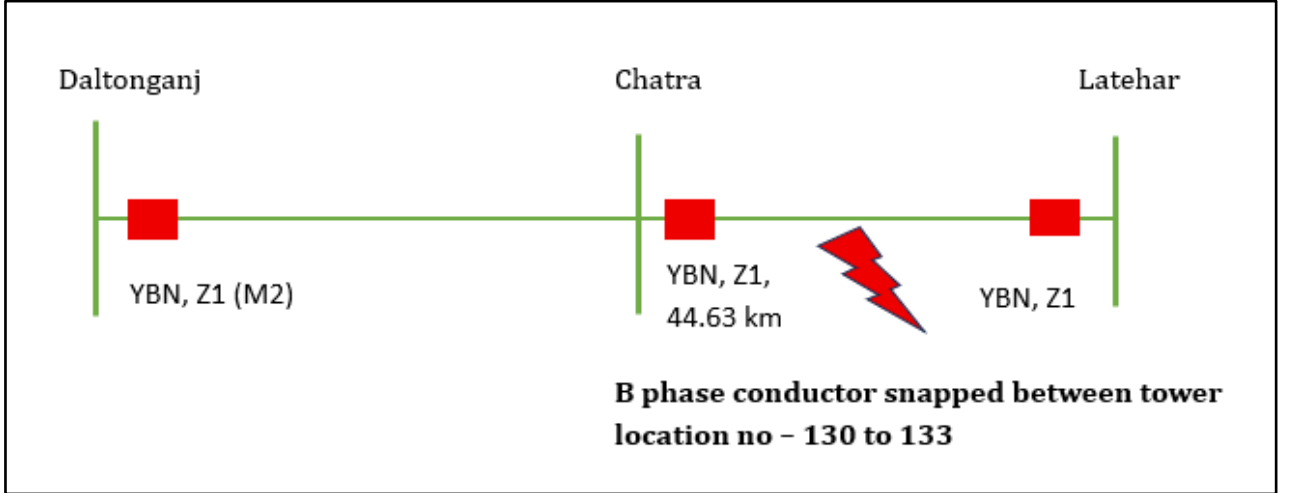
**Figure 1: Network across the affected area**

9. Details of Equipment Failure (if any during the event) (उपकरण विफलता का विवरण): NIL

### 10. Major Elements Tripped (प्रमुख ट्रिपिंग):

क्र०स०	नाम	Trip time (hh:mm:ss)	उप केंद्र 1 रिले संकेत	उप केंद्र 2 रिले संकेत	Restoration time (Hrs)
1	220kV Latehar-Chatra line	18:22:48	Z-1, Y_B_N	Chatra end: Y_B_N fault, FC-1.93 kA.	22:44 Hrs (25.10.2025)
2	220kV Daltongunj-Chatra line	18:22:48	Daltongunj end: Y_B_N fault, FD-144km, FC-1.56 kA.	Chatra end: Didn't tripped	19:15

### 11. Event Analysis (Based on PMU, SCADA & DR) (घटना का विश्लेषण):



- Prior to the disturbance, 220 kV Chatra S/s was connected through 220kV Chatra-Daltongunj line and 220kV Chatra-Latehar line.
- At 18:22:48 Hrs, Y-B-Earth fault occurred on 220kV Chatra-Latehar line due to snapping of B-Phase conductor and line got tripped in Z-1 protection from both ends.
- The same fault was also sensed at Daltongunj end in Z-1 protection, resulting in tripping of 220kV Daltongunj-Chatra line even before tripping of 220kV Chatra- Latehar line in Z-1 protection from Daltongunj end.
- Consequently, 220kV Chatra S/s became dead.
- Total load loss of 95 MW reported at Chatra S/s.



**Figure 2: PMU of voltage at 220 kV Daltongauni**

**12. Protection/Operational issues observed (सुरक्षा/परिचालन संबंधी समस्या):**

- Main 2 relay at Daltonganj operated in Z-1 for the fault, which appears to be unintended protection operation. Reason of the same may be explained.

**Action Taken/Remedial Measures (सुधारात्मक उपाय):** Report not submitted by PGCIL.

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

S.No.	Issues	Regulation Non-Compliance	Utilities
1.	Detailed Report received within 7 days?	IEGC section 37.2 (e)	YES

**14. Key Lessons Learnt (प्रमुख अधिगम बिंदु):** Periodic thermos-vision scanning for the overhead lines should be carried out to identify loose joints and hot spots as per CEA Technical standard regulation.

# Annexure: 1

## SOE of 220kV Chatra- Daltonganj at Daltonganj:

Date	Time	Message Group	WINCC MESSAGE TEXT	Value	Cause	Additional	
23/10/2025	18:22:48,316	SEREVR220KVIB20821M1_P444	DIRECTIONAL EARTH FAULT START	RAISED	spontaneous	no error	
833	23/10/2025	18:22:48,318	SEREVR220KVIB20821M2_REL670	ZONE-3 START	RAISED	spontaneous	no error
834	23/10/2025	18:22:48,321	SEREVR220KVIB20821M2_REL670	ZONE-2 BPH START	RAISED	spontaneous	no error
835	23/10/2025	18:22:48,321	SEREVR220KVIB20821M2_REL670	ZONE-2 START	RAISED	spontaneous	no error
836	23/10/2025	18:22:48,325	SEREVR220KVIB20821M2_REL670	DIRECTIONAL EARTH FAULT START	RAISED	spontaneous	no error
837	23/10/2025	18:22:48,333	SEREVR220KVIB20821M2_REL670	CARRIER SEND CH-1	RAISED	spontaneous	no error
838	23/10/2025	18:22:48,333	SEREVR220KVIB20821M2_REL670	CARRIER SEND CH-2	RAISED	spontaneous	no error
839	23/10/2025	18:22:48,333	SEREVR220KVIB20821M2_REL670	ZONE-1 BPH OPTD	---	spontaneous	no error
840	23/10/2025	18:22:48,333	SEREVR220KVIB20821M2_REL670	ZONE-1 OPTD	---	spontaneous	no error
841	23/10/2025	18:22:48,333	SEREVR220KVIB20821M2_REL670	CARRIER SENT	---	spontaneous	no error
842	23/10/2025	18:22:48,333	SEREVR220KVIB20821M2_REL670	ZONE-1 BPH START	RAISED	spontaneous	no error
843	23/10/2025	18:22:48,333	SEREVR220KVIB20821M2_REL670	ZONE-1 START	RAISED	spontaneous	no error
844	23/10/2025	18:22:48,337	SEREVR220KVIB208BCU_C264	AR B-PH INITIATION	RAISED	spontaneous	no error
845	23/10/2025	18:22:48,340	SEREVR220KVIB208BCU_C264	AR R-PH INITIATION	RAISED	spontaneous	no error
846	23/10/2025	18:22:48,340	SEREVR220KVIB208BCU_C264	AR Y-PH INITIATION	RAISED	spontaneous	no error
847	23/10/2025	18:22:48,341	SEREVR220KVIB20821M2_REL670	88 TRIP RELAY SUPERVISION	RAISED	spontaneous	no error
848	23/10/2025	18:22:48,341	SEREVR220KVIB208BCU_C264	LO TO IBC	RAISED	spontaneous	no error
849	23/10/2025	18:22:48,342	SEREVR220KVIB208BCU_C264	LOCKOUT FROM AR LOGIC	RAISED	spontaneous	no error
850	23/10/2025	18:22:48,342	SEREVR220KVIB208BCU_C264	86 LO OPTD	RAISED	spontaneous	no error
851	23/10/2025	18:22:48,344	SEREVR220KVIB20821M1_P444	MAIN-2 PROTECTION OPTD	RAISED	spontaneous	no error
852	23/10/2025	18:22:48,346	SEREVR220KVIB208BCU_C264	AR BLOCK	RAISED	spontaneous	no error
853	23/10/2025	18:22:48,347	SEREVR220KVIB20821M1_P444	85A TRIP RELAY FAULTY	RAISED	spontaneous	no error
854	23/10/2025	18:22:48,348	SEREVR220KVIB20821M2_REL670	88B RELAY OPTD	RAISED	spontaneous	no error
855	23/10/2025	18:22:48,354	SEREVR220KVIB20821M1_P444	85A RELAY OPTD	RAISED	spontaneous	no error
856	23/10/2025	18:22:48,356	SEREVR220KVIB208BCU_C264	CB-A3 CLOSE INTERLOCK	CLEARED	spontaneous	no error
857	23/10/2025	18:22:48,363	SEREVR220KVIB208BCU_C264	CB B-PH POSITION	OFF	spontaneous	no error
858	23/10/2025	18:22:48,366	SEREVR220KVIB208BCU_C264	CB R-PH POSITION	OFF	spontaneous	no error
859	23/10/2025	18:22:48,366	SEREVR220KVIB20821M2_REL670	ZONE-2 BPH START	CLEARED	spontaneous	no error
860	23/10/2025	18:22:48,369	SEREVR220KVIB20821M2_REL670	ZONE-2 START	CLEARED	spontaneous	no error
861	23/10/2025	18:22:48,366	SEREVR220KVIB20821M2_REL670	ZONE-3 START	CLEARED	spontaneous	no error
862	23/10/2025	18:22:48,369	SEREVR220KVIB20821M2_REL670	ZONE-1 BPH START	CLEARED	spontaneous	no error
863	23/10/2025	18:22:48,368	SEREVR220KVIB20821M2_REL670	ZONE-1 START	CLEARED	spontaneous	no error
864	23/10/2025	18:22:48,369	SEREVR220KVIB208BCU_C264	AR LOCK	RAISED	spontaneous	no error
865	23/10/2025	18:22:48,370	SEREVR220KVIB208BCU_C264	CB Y-PH POSITION	OFF	spontaneous	no error
866	23/10/2025	18:22:48,370	SEREVR220KVIB208BCU_C264	CB POSITION	OFF	spontaneous	no error
867	23/10/2025	18:22:48,371	SEREVR220KVIB20821M1_P444	MAIN CB B-PH OPEN	RAISED	spontaneous	no error

## GD at 220kV Chatra S/s on 23/10/2025 at 18:24 Hrs

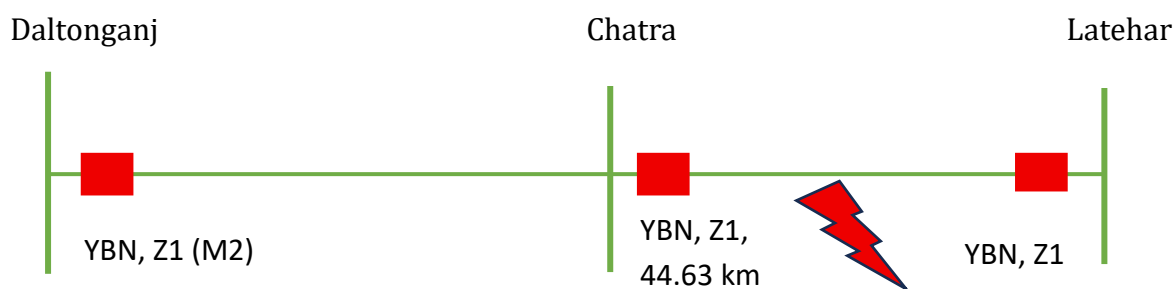
At 18:24 hrs, 220 kV Chatra – Daltonganj tripped from Daltonganj end and 220 kV Chatra – Latehar tripped from both end on YBN fault due to snapping of B phase conductor of 220 kV Chatra – Latehar transmission line between tower location no – 130 to 133 resulting total power failure at Chatra S/S.

Weather condition – Normal

Element under outage prior to event – Nill

Element tripped – 220 kV Daltonganj s/c and 220 kV Latehar s/c.

Load Loss –



**B phase conductor snapped between tower location no – 130 to 133**

### Relay Indication :-

S.N.	Element	Relay at End 1	Relay at End 2	Remarks
1	220 kV Chatra - Daltonganj	Didn't tripped.	<b>Main 1:</b> YBN, Z3 pick up, IY – 706.9 A, IB- 1.45 kA, F. Loc- 186 km <b>Main 2:</b> YBN, Z1, IY – 737.5 A, IB- 1.51 kA	LL – 144 km
2	220 kV Chatra - Latehar	YBN, Z1, 44.63 km, IY – 567.6 A, IB- 1.93 kA		LL – 107 km

### **Fault Analysis :-**

- B phase conductor of 220 kV Chatra – Latehar transmission line snapped between tower location no – 130 to 133, both end sense the fault in Z1 and tripped from both end within 100 ms.
- This fault also sensed by 220 kV Chatra – Daltonganj line from Daltonganj end and tripped in Z1(main -2 relay) instantaneously. The main- 1 relay sensed the fault correctly in Z3 (dist- 186 km) from Daltonganj end but it seems that main-2 relay sensed the fault incorrectly in Z1.

### **Protection Issue :-**

- It seems that the main-2 distance relay of 220 kV Daltonganj – Chatra T/L from Daltonganj end sensed the fault incorrectly in Z1.


### **Restoration time of element :-**

- 220 kV Chatra – Daltonganj - 19:15 Hrs
- 220 kV Chatra – Latehar - 22:44 Hrs (25.10.2025)

## Relay Indication of 220 kV Daltonganj – Chatra (Daltonganj end)

### Main – 1

**Events Report**  
 Substation: PGCIL DALTONGANJ  
 File: 2025-10-23 18.46.27.evt  
 Model Number: P444316J6M0550K



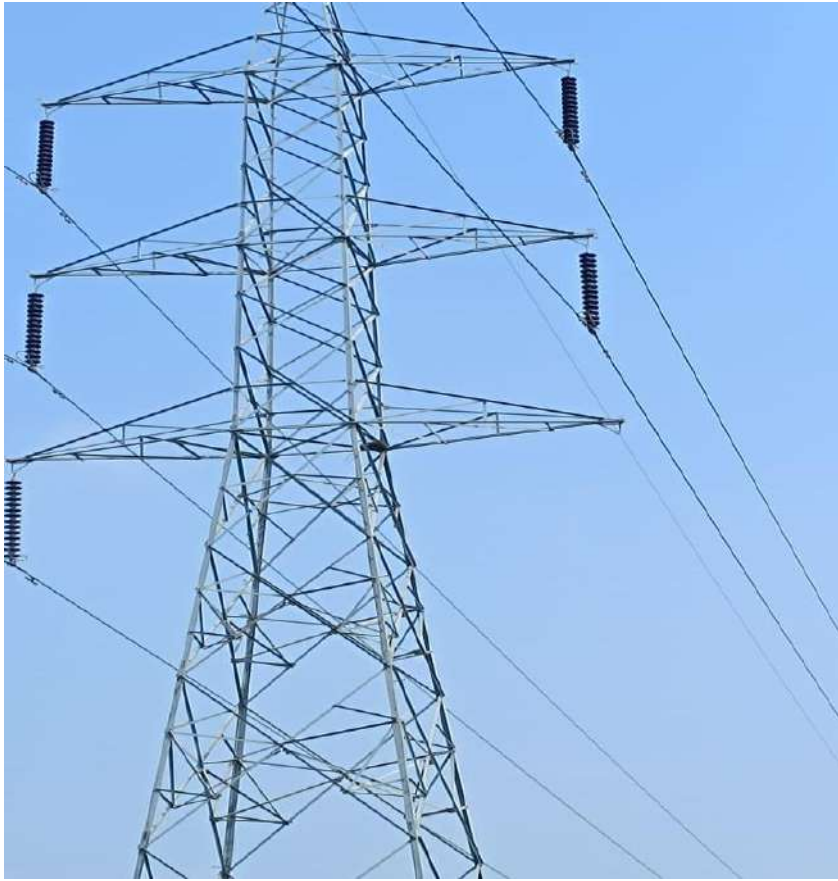
```

Fault Duration : 61.81ms
Relay Trip Time : 0.000 s
Fault Location : 186.0km
IA : 122.7 A
IB : 706.9 A
IC : 1.451kA
VAN : 122.7kV
VBN : 109.9kV
VCN : 97.11kV
Fault Resistance : 2.143 Ohm
Fault in Zone : Zone 3
Tripped Elts 2 : 000000000000000000000000
0 Trip I2>2 : OFF
1 Trip I2>3 : OFF
2 Trip I2>4 : OFF
3 Trip VN>1 : OFF
4 Trip VN>2 : OFF
    
```

### Main – 2

Type	Date & Time	Signal name	Status
P	10/23/2025 11:04:17	M-1/2 CAR RCV	On
P	10/23/2025 11:04:17	M-1/2 CAR RCV	Off
P	10/23/2025 11:40:42	M-1/2 CAR RCV	On
P	10/23/2025 11:40:42	M-1/2 CAR RCV	Off
P	10/23/2025 11:56:39	M-1/2 CAR RCV	On
P	10/23/2025 11:56:39	M-1/2 CAR RCV	Off
P	10/23/2025 12:54:10	M-1/2 CAR RCV	On
P	10/23/2025 12:54:10	M-1/2 CAR RCV	Off
P	10/23/2025 12:54:10	M-1/2 CAR RCV	On
P	10/23/2025 12:54:10	M-1/2 CAR RCV	Off
P	10/23/2025 18:22:48	Z-3 START	On
P	10/23/2025 18:22:48	Z-2 START	On
P	10/23/2025 18:22:48	CARR SEND	On
P	10/23/2025 18:22:48	MAIN-2 TRIP	On
P	10/23/2025 18:22:48	Z-1 TRIP	On
P	10/23/2025 18:22:48	86 GRP-A/B OP	On
P	10/23/2025 18:22:48	Z-1 TRIP	Off
P	10/23/2025 18:22:48	Z-2 START	Off
P	10/23/2025 18:22:48	Z-3 START	Off
P	10/23/2025 18:22:48	MAIN CB B-PH	On
P	10/23/2025 18:22:48	MAIN CB R-PH	On
P	10/23/2025 18:22:48	MAIN CB Y-PH	On
P	10/23/2025 18:22:48	CARR SEND	Off
P	10/23/2025 18:22:48	MAIN-2 TRIP	Off
P	10/23/2025 19:14:05	86 GRP-A/B OP	Off
P	10/23/2025 19:15:40	MAIN CB Y-PH	Off
P	10/23/2025 19:15:40	MAIN CB B-PH	Off






**ग्रिड-इंडिया**  
**GRID-INDIA**

**ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड**  
 (भारत सरकार का उद्यम)  
**GRID CONTROLLER OF INDIA LIMITED**  
 (A Government of India Enterprise)  
 [formerly Power System Operation Corporation Limited (POSOCO)]

**पूर्वी क्षेत्रीय भार प्रेषण केन्द्र / Eastern Regional Load Despatch Centre**

कार्यालय : 14, गोल्फ क्लब रोड, टॉलिंगंज, कोलकाता - 700033  
 Office : 14, Golf Club Road, Tollygunge, Kolkata - 700033  
 CIN : U40105DL2009GOI188682, Website : www.erldc.in, E-mail : erldcinfo@grid-india.in, Tel.: 033 23890060/0061

**पूर्वी क्षेत्र के 220/132kV केसिंगा में ग्रिड घटना पर विस्तृत रिपोर्ट / Detailed Report of grid event at  
 220/132 kV Kesinga S/s of Eastern Region  
 (To be submitted by RLDC/NLDC during Grid Disturbances/Grid Incidents/Near Miss Event as  
 per IEGC section 37.2 (f))  
 (आई ई जी सी 37.2 (एफ) के अनुपालन में)**

**Date(दिनांक): 01-11-2025**

**1. Event Summary (घटना का सारांश):**

Prior to the disturbance, 220kV Kesinga connected through 220kV Bolangir New (OPTCL) and 220kV Bolangir(PG) S/s. At 16:42 Hrs, a Y-B-Earth fault occurred in 132kV Kesinga-Saintala feeder which was not cleared from Kesinga end due to faulty trip coil. Fault persisted for around 1.8 seconds and was cleared by tripping of 220 kV Bolangir (PG)-Kesinga line and 220 kV Bolangir (New)-Kesinga line. Consequently, 220/132 kV Kesinga S/s became dead. Total load loss of 70 MW reported in Kesinga S/s.

**2. Time and Date of the Event (घटना का समय और दिनांक):** 16:42 hrs of 29.10.2025.

**3. Event Category (ग्रिड घटना का प्रकार):** Grid Disturbance (GD)-1

**4. Location/Control Area (स्थान/नियंत्रण क्षेत्र):** Kesinga /Odisha

**5. Antecedent Conditions (पूर्ववर्ती स्थिति):**

	Frequency in (Hz)	Regional Generation in (MW)	Regional Demand in (MW)	State Generation (MW)	State Demand (MW)
				Odisha	Odisha
<b>Pre-Event (घटना पूर्व)</b>	49.94	27843	21867	4248	5021
<b>Post Event (घटना के बाद)</b>	49.94	27843	21797	4248	4951

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

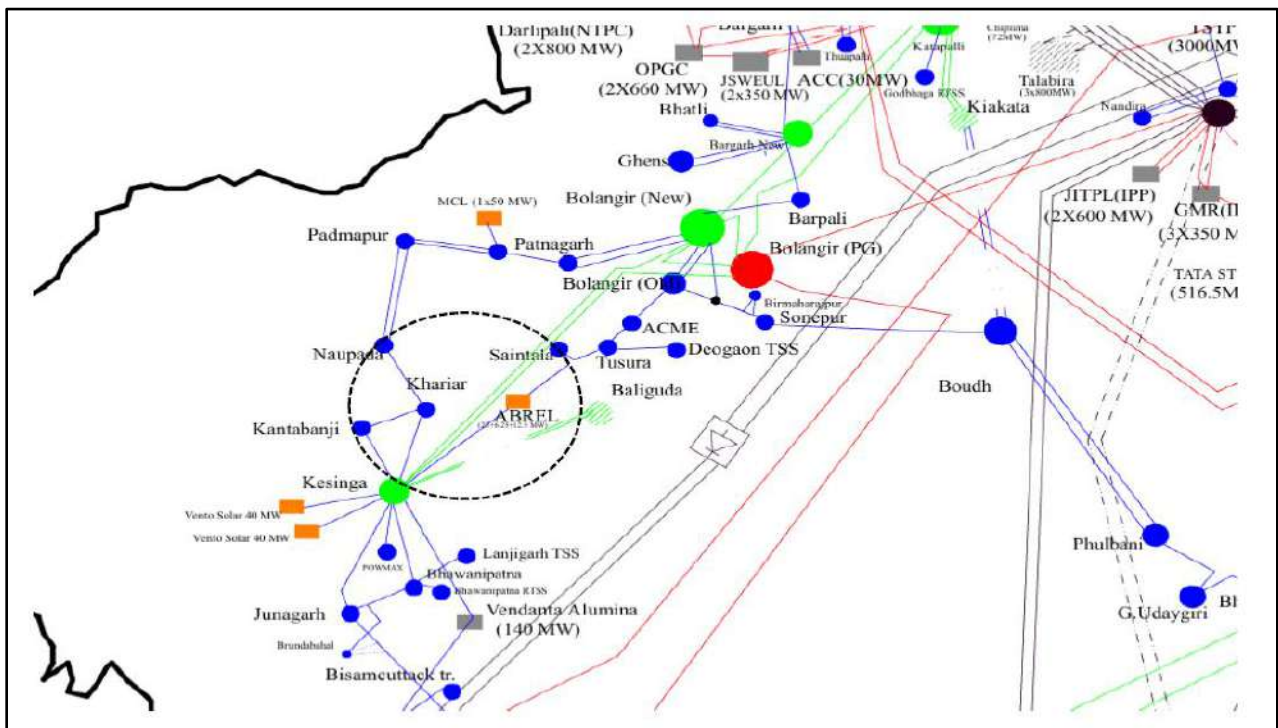
Important Transmission Line/Unit if under outage	NIL
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(महत्वपूर्ण संचरण लाइने/ विद्युत उत्पादन इकाइयां जो बंद हैं)	
Weather Condition (मौसम स्थिति)	Normal.

6. Load and Generation loss (लोड और जेनरेशन हानि): Approximate load loss of **70 MW** at Kesinga S/s.

7. Duration of interruption (रूकावट की अवधि): 00:26 Hrs (26 minutes).

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



**Figure 1: Network across the affected area**

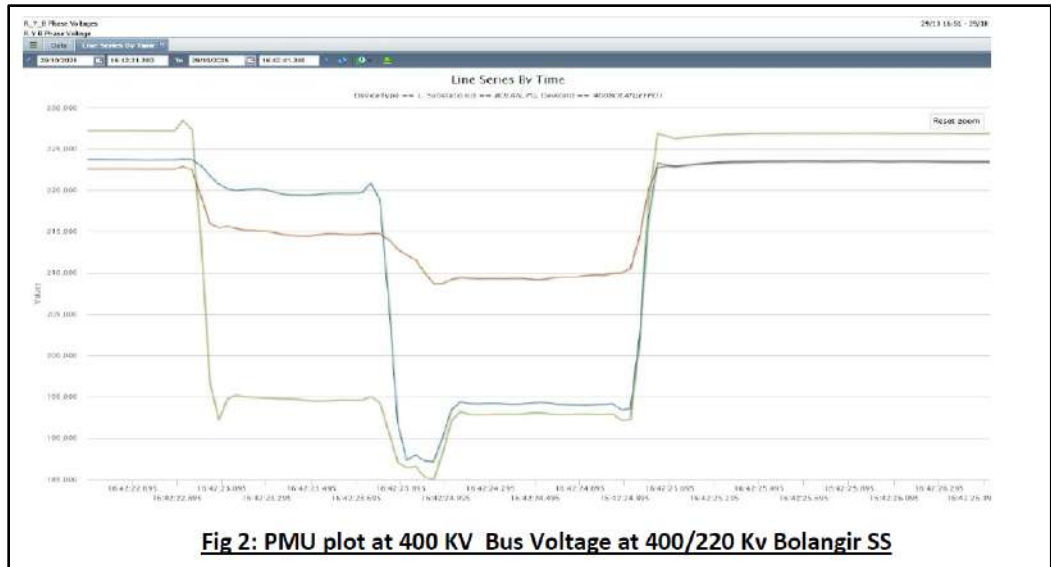
9. Details of Equipment Failure (if any during the event) (उपकरण विफलता का विवरण): NIL

### 10. Major Elements Tripped (प्रमुख ट्रिपिंग):

क्र०स०	नाम	Trip time (hh:mm:ss)	उप केंद्र 1 रिले संकेत	उप केंद्र 2 रिले संकेत	Restoration time (Hrs)
1	220kV Bolangir (PG)-Kesinga-1	16:42:23	Z-3 protection operated.	Not Tripped	17:44
2	220 kV Bolangir (NEW)-Kesinga-1	16:42:23	Z-3 protection operated.	Not Tripped	17:08
3	132 kV Kesinga-Saintala	16:42:23	Not tripped	Tripped in Z-1	-

### 11. Event Analysis (Based on PMU, SCADA & DR) (घटना का विश्लेषण):

- Prior to the disturbance, 220/132kV Kesinga was drawing power through 220kV Kesinga-Bolangir New and 220kV Kesinga-Bolangir(PG) line.
- At 16:42:23 Hrs Y\_B-Earth fault struck in 132 kV Kesinga-Saintala feeder which was not cleared from Kesinga due to faulty trip coil.
- Same fault was sensed from Bolangir New and Bolangir(PG) in Z-3 and cleared fault from remote end in Z-3 protection after 800 msec.
- 220kV Kesinga S/s became dead.
- Total load loss of 70 MW reported at Kesinga S/s during the incident.



**Fig 2: PMU plot at 400 KV Bus Voltage at 400/220 Kv Bolangir SS**

**12. Protection/Operational issues observed (सुरक्षा/परिचालन संबंधी समस्या):**

- Reason for non-opening of CB of 132kV Kesinga- Saintala at Kesinga may be shared.
- Fault was in 132kV network which was further cleared from remote end in Z-3 protection. 220/132kV Auto Transformer E/F setting may be check.
- 220kV E/F over current setting of 220kV Bus coupler at Kesinga may be reviewed.
- Report received from SLDC is attached in Annexure.

**13. Action Taken/Remedial Measures (सुधारात्मक उपाय):**

- Immediately replaced both the trip coils of 132KV ABREL line feeder Circuit breaker, checked the tripping and found ok.
- As the 132kv side ABREL Line feeder breaker failed to clear the fault it should be cleared by the upstream breakers that is 220KV Side of Auto-1 and Auto-2 but unfortunately due to setting discrepancies both the feeder's backup relay only picked up but did not trip to clear the fault.
- Relay setting of backup relays of both 220KV Side of Auto-1 and Auto-2 feeder were reviewed and changed as per ERPC Guideline and also tested thoroughly to prevent any such type of future abnormalities.

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

S.No.	Issues	Regulation Non-Compliance	Utilities
1.	Detailed Report received within 7 days?	IEGC section 37.2 (e)	YES

- 15. Key Lessons Learnt (प्रमुख अधिगम बिंदु):** Periodic testing and verification of protection relay circuits as per Grid Code provisions helps in early detection and rectification of potential issues, thereby enhancing system reliability and security.

**Disturbance occurred at 220/132/33 KV Kesinga GSS on  
29.10.2025.**

**Date 29.10.2025 ,Time- 16:43 Hrs.**

**Sub Station : 220/132/33kV GSS KESINGA**

- 1. Total power failure occurred at 220/132/33 KV Gss, Kesinga on above mentioned date and time stamp .**
- 2. During the event, Kesinga was drawing power from 440/220 kv Gss Balangir, PGCIL and 220/132/33 kv Gss Balangir new through 220KV Lines.**
- 3. Weather condition at kesinga end : Sunny.**

# LOAD FLOW AT 16:00 Hrs for 220 KV Bus

FEEDER NAME	LOAD IN MW
220 KV BALANGIR PGCIL	+38
220 KV BALANGIR NEW	+32
220 KV AUTO-1	+35
220 KV AUTO-2	+35
220 KV BALIGUDA-1	Idle charged
220KV BALIGUDA-2	Idle charged

# LOAD FLOW AT 16:00 Hrs for 132 KV Bus

FEEDER NAME	LOAD IN MW
132 KV LANJIGARH	+21
132 KV KHARIAR	+38
132 KV ABREL	+5
132 KV POWMAX	+ 0.3
132 KV BHAWANIPATNA	+ 19.6
132 KV JUNAGARH	+ 15.2
132 KV KESINGA RTSS	+5.3
132 KV VENTO SOLAR-1	+3.4
132 KV VENTO SOLAR-2	+3.8
132 KV Auto-1	+35
132 KV Auto-2	+35
132 KV 40 MVA POWER TRF-1	+10.8
132KV 40MVA POWER TRF-2	+10.8
132KV 20MVA POWER TRF-3	+ 6.8

# POST FAULT STATUS OF FEEDERS

FEEDER NAME	BREAKER STATUS
220 KV BALANGIR PGCIL	Tripped at balangir PGCIL end
220 KV BALANGIR NEW	Tripped at Balangir new end
220 KV BALIGUDA-1	Idle Charged condition
220 KV BALIGUDA-2	Idle Charged condition
220 KV AT-1	Did not trip
220 KV AT-2	Did not trip
132KV ABREL	Tripped From ABREL end
132KV KHARIAR	Did not trip
132KV LANJIGARH	Did not trip
132 KV JUNAGARH	Did not trip
132 KV BHAWANIPATNA	Did not trip
132 KV POWMAX	Did not trip
132 KV BURLA PH-2	Did not trip
132 KV RTSS KESINGA	Did not trip
132KV VENTO SOLAR-1	Did not trip
132KV VENTO SOLAR-2	Did not trip

# RELAY DATA(220KV SIDE)

FEEDER NAME	LOCAL END	REMOTE END
220 KV PGCIL BALANGIR	Did not tripped at Kesinga end.	<b>Distance Relay :</b> Distance relay Zone : 3 Trip Fault : Bph -Gnd
220 KV BALANGIR NEW	Did not tripped at Kesinga end.	<b>Distance Relay :</b> Distance relay Zone : 3 Trip Fault loop: B ph –Gnd Fault distance: 134.8 km Fault current: IR=562.9A, IY=1.533kA, IB=1.383kA
220 KV AUTO-1 (160MVA)	<b>Backup relay :</b> Phase B C N Pickup IA-340.7A, IB-716.3A, IC-114.6A IN-269.5A 1>1 pickup and IN1>1 Pickup	
220 KV AUTO-II (160MVA)	<b>Backup relay :</b> Phase B C N Pickup IA-334.5A, IB-666.3A, IC-96.05A IN-244.6A 1>1 pickup and IN1>1 Pickup	
220 KV BALIGUDA-1	In Idle Charged Condition	
220KV BALIGUDA-2	In idle Charged Condition	

# RELAY DATA (132KV SIDE)

FEEDER NAME	LOCAL END	REMOTE END
132 KV ABREL	<p><b>Distance Relay :</b> Distance Zone-1 trip led</p> <p><b>Backup Relay :</b> <b>IN1&gt;1 Trip</b> IR-0.01KA, IY-4.46KA, IB-0.01KA</p>	<p><b>Distance Relay :</b> Distance Zone-1 trip L2-E TRIP IR-504A , IY-1.83KA , IB – 308A Fault Distance – 22.51 km</p>

# Sequence of Fault:

Sequence of Tripping :

At 16.43 hrs on dated 29.10.2025 :

- 1) A Monkey Fault occurred at location no- 22 of 132kv Kesinga-ABREL Line, as a result it tripped the line from remote end (ABREL end ) on distance protection but the breaker at local end failed to trip.
- 2) Simultaneously Both the 220kv Source lines such as 220kv Balangir PGCIL and 220kv Balangir new line tripped from remote end with Zone-3 Distance protection to clear the fault.

# Analysis

1) After detail Checking of Tripping Circuit of ABREL

Breaker we found that even after operation of Master trip relay the breaker did not operate due to damaged trip coil causing instantaneous blowing of DC Fuse of the CR panel and as a result there is no fault recorded in Distance protection relay except the Zone-1 Trip Led only.

2) As the above fault was not cleared by it's own breaker it was cleared by both the remote end breakers from Balangir PGCIL and Balangir new GSS By Zone-3 Distance Trip

# Remedial Actions:

1. Immediately replaced both the trip coils of 132KV ABREL line feeder Circuit breaker, checked the tripping and found ok.
2. As the 132kv side ABREL Line feeder breaker failed to clear the fault it should be cleared by the upstream breakers that is 220KV Side of Auto-1 and Auto-2 but unfortunately due to setting discrepancies both the feeder's backup relay only picked up but did not trip to clear the fault.
3. Relay setting of backup relays of both 220KV Side of Auto-1 and Auto-2 feeder were reviewed and changed as per ERPC Guide line and also tested thoroughly to prevent any such type of future abnormalities.

Sr. No.	Substation Name	Voltage Level	Bus Scheme	Bus Bar protection Status	If Bus bar protection is not available/ Out of service		Remark
					Z-4 time delay for lines	Expected plan and date for Bus Bar protection implementation.	
1	220/132/33 kV Bodhgaya	220kV	Single bus	Not available	250 ms	Oct-25	it is to be implementaioned under (SAS work) NIT-08/PR/BSPTCL/2023
2	220/132/33 kV Dehri on-son	220kV	Single bus	Not available	250 ms	Nov-25	it is to be implementaioned under (SAS work) NIT-08/PR/BSPTCL/2023
3	220/132/33 kV Sonenagar (New)	220kV	Double bus	Working			

4	220/132/33 KV Khagaul GSS	220 KV	1 main bus & 1 transfer bus	yes	-	-	-
		132 KV	1 main bus & 1 transfer bus	ERECTION work completed	600 ms	-	Testing and commisioning work is pending by KRR and Work will be done as per KRR schedule and availability of shutdown.
5	220/132/33 KV Gaurichak GSS	220 KV	2 Main bus & 1 transfer bus	not commisioned	600 ms	-	Bus bar protection is under scope of KRR in SAS implementation work. Work will be done as per KRR schedule and availability of shutdown.
		132 KV	1 main bus & 1 transfer bus	not commisioned	600 ms	-	
6		220 KV	2 Main bus & 1 transfer bus	DEFECTIVE	600 ms	-	New panel Supplied by KRR under SAS IMPLEMENTATION SCHEME.

6	220/132/33 KV Fatuha GSS	132 KV	1 main bus & 1 transfer bus	ERECTION work completed	600 ms	-	Testing and commisioning work is pending by KRR .
7	400/220/132 KV Bakhtiyarpur GIS	400 KV	2 Main bus with Tie bay	Yes	-	-	-
		220 KV	2 Main bus with buscoupler	Yes	-	-	-
		132 KV	2 Main bus with buscoupler	Yes	-	-	-
		220 KV	2 Main bus & 1 transfer bus	Yes	-	-	-
8							

6	220/132/33 Karmanasa New GSS	132 KV	1 main bus & 1 transfer bus	No	600 ms	-	not in scheme.
9	220/132/33 KV Pusauli GSS	220 KV	2 Main bus & 1 transfer bus	not commisioned	600 ms	-	Bus bar protection is under scope of KRR in SAS implementation work. Work will be done as per KRR schedule and availability of shutdown.
		132 KV	1 main bus & 1 transfer bus	not commisioned	600 ms	-	
10	220/132/33 KV Bihta New GSS	220 KV	2 Main bus & 1 transfer bus	yes	-	-	-
		132 KV	1 main bus & 1 transfer bus	yes	-	-	-

11	220/132/33 KV Digha New GIS	220 KV	2 Main bus with buscoupler	yes	-	-	-
		132 KV	2 Main bus with buscoupler	yes	-	-	-
12	220/132 KV Hajipur	220kV	02 No. of Main Bus & 01 No. of Transfer Bus	Working	500 ms		
13	220/132/33 kV Samastipur	220kV	02 No. of Main Bus & 01 No. of Transfer Bus	Working	500 ms		
14	220/132/33 kV Goraul	220kV	02 No. of Main Bus & 01 No. of Transfer Bus	Working	500 ms		

15	220/132/33 kV Gopalganj	220kV	02 No. of Main Bus & 01 No. of Transfer Bus	Not Available	500 ms		It is to be implemented under (SAS WORK) NIT-08/PR/BSPTCL/2025
16	220/132/33 kV Kishanganj New	220kV	02 No. of Main Bus & 01 No. of Transfer Bus	Working	500 ms		
17	220/132/33 kV Begusarai	220kV	02 No. of Main Bus & 01 No. of Transfer Bus	Not Available	500 ms	proposed to be completed within 2 months by M/s KRR	Under implementation vide NIT-08/PR/BSPTCL/2025
18	220/132/33 kV Khagaria New	220kV	02 No. of Main Bus & 01 No. of Transfer Bus	Working	500 ms		
19	220/132/33 kV GSS Biharsharif	220 kV	02 nos. of Main Bus and 01 no. of Transfer Bus in 220 kV Side.	Not available	250ms	Estimate for supply and installation for Bus bar protection panel has been sent to Project wing, HQ, Patna.	

20	220/132/33 kV GSS Astawan	220 kV	02 nos. of Main Bus and 01 no. of Transfer Bus in 220 kV Side.	Available	500ms		
21	220/132/33kV GSS Motipur	220kV	2 Main Bus and 1 Transfer Bus	Working ( Centralized Bus bar)	NA	NA	
22	220/132/33kV GSS Musahari	220KV	2 Main Bus and 1 Transfer Bus	Out of service	500ms		CPU of 89L relay is not working, Make-GE, Model- B90
23	220/132/33kV GSS Raxaul New	220KV	2 Main Bus and 1 Transfer Bus	Active			
24	220/132/33 KV Madhepra	220kV	02 No. of Main Bus & 01 No. of Transfer Bus	Not Availble	500 ms		It is being implemented under (SAS WORK) NIT- 08/PR/BSPTCL/20 23. Work is under progress.

25	220/132 KV Darbhanga	220kV	02 No. of Main Bus & 01 No. of Transfer Bus	Not Available	500 ms	It is being implemented under (SAS WORK) NIT-08/PR/BSPTCL/2023. Work is under progress.
26	220/132/33 kV Laukahi	220kV	02 No. of Main Bus & 01 No. of Transfer Bus	Not Available	500 ms	At present, 220 kv Laukahi-Madhepura ckt-1 & 2 is not integrated in the Bus Bar Protection Scheme.

Sr. No.	Substation Name	Voltage Level	Bus Scheme	Bus Bar protection Status	If Bus bar protection is not available/ Out of service		Remark
					Z-4 time delay for lines	Expected plan and date for Bus Bar protection implementation.	
1	220/132 KV Hatia II	220 kV	2 Main & 1 Transfer Bus	Functioning	500 ms	-	-
2	220/132/33 KV Burmu	220 kV	2 Main & 1 Transfer Bus	Not Functioning	500 ms		
3	220/132 KV Dumka II (Madanpur)	220 kV	2 Main & 1 Transfer Bus	Not Functioning	250 ms	Tenatative time for completion is 8 months.	NIT in Process.
4	220/132/33 KV Jasidih	220 kV	2 Main & 1 Transfer Bus	Functioning	500 ms		
5	220/132/33 KV Giridih	220 kV	2 Main & 1 Transfer Bus	Not Functioning	250 ms		
6	220/132/33 KV Godda	220 kV	2 Main & 1 Transfer Bus	Not Functioning	500 ms		
7	220/132 KV Ramchandrapur	220 kV	2 Main & 1 Transfer Bus	Not Functioning	250 ms	Tenatative time for completion is 7 months.	1. NIT no. 575/PR/JUSNL/2024-25 pubshlied on 20.03.2025 2. Wanting document sought for techncial evolution.
8	220/132 KV Chandil	220 kV	1 Main & 1 Transfer Bus	Not installed	250 ms	Tenatative time for completion is 7 months	1. NIT no. 574/PR/JUSNL/2024-25 pubshlied on 20.03.2025 2. Price part is opened and finalization of tender in process.
9	220/132 KV Chaibasa I (Ulijahri)	220 kV	2 Main & 1 Transfer Bus	Not Functioning	250 ms	Tenatative time for completion is 7 months	1. NIT no. 76/PR/JUSNL/2025-26 Pubshlied on 14.05.2025 2. file is sent to account wing for C S Checking and Vatting.
10	220/132/33 KV Bhogodih (Garhwa)	220 kV	2 Main & 1 Transfer Bus	Not Functioning	500 ms		
11	220/132 KV Govindpur	220 kV	2 Main & 1 Transfer Bus	Functioning	500 ms	-	-
12	220/132/33 KV Chatra (Itkhor)	220 kV	2 Main & 2 Transfer Bus	Not Functioning	500 ms		
13	400/220 KV Latehar	400 KV	2 Main Bus (one & half)	Functioning	500 ms	-	-
14	400/220 KV Patratu	400 KV	2 Main Bus (one & half)	Functioning	500 ms	-	-

SL. No.	NAME OF TESTING AREA OFFICE	NAME OF TR. (O&M) AREA	NAME OF SUB-STATIONS / LOCATIONS	AIS/GIS	BUSBAR PRESENT/NOT	TYPE OF RELAY	NO. OF BAYS	SCHEME	
1	Baruipur	Behala	Lakshmikantapur 220 kV	AIS	YES	REB 670	2F+3TR+1TBC+1BC	2M+1T	
2	Baruipur	Behala	Lakshmikantapur 132 Kv SIDE	AIS	YES	REB 670	9F+6TR+1TBC	1M+1T	
3	Baruipur	Kasba	Subhasgram 220 kV	AIS	YES	FAC-34*	6F+2TR+1TBC+1BC	2M+1T	
4	Baruipur	Kasba	Subhasgram 132 KV SIDE	AIS	YES	REB 670	4F+5TR+1TBC	1M+1T	
5	Baruipur	Behala	Baruipur 220 kV	GIS	YES	7SS85	2F+2TR+1BC	2M	
6	Baruipur	Behala	Baruipur 132 Kv side	GIS	YES	7SS85	4F+4TR+1BC	2M	

7	Baruipur	Behala	Birlapur 132 kV	GIS	YES	WIP	4F+2TR+1BC	2M	
8	Baruipur	Behala	Ranganga 132 KV	GIS	YES	7SS85	4F+2TR+1BC	2M	
9	Baruipur	Kasba	Renia 132 kV	GIS	YES	7SS85	4F+2TR+1BC	2M	
11	Salt Lake	Barasat	Barasat 220 kV	AIS	YES	7SS85	6F+2TR+1BC	2M	
12	Salt Lake	Barasat	Barasat 132 kV side	AIS	YES	GE-B90	6F+3TR+1TBC	2M+1T	
13	Salt Lake	Kasba	Kasba 220 kV	AIS	YES	REB 670	6F+4TR+1TBC	1M+1T	
14	Salt Lake	Kasba	Kasba 132 KV side	AIS	YES	SIEMENS	9F+4TR+1BC	2M	

15	Salt Lake	Kasba	KLC 220 kV	AIS	YES	REB 670	2F+2TR+1TBC	1M+1T	Kept Off due to relay faulty. Zone-4 time reduces to 250 ms
16	Salt Lake	Kasba	KLC 132 kV side	AIS	YES	REB 670	2F+5TR+1TBC	1M+1T	Kept Off due to relay faulty. Zone-4 time reduces to 250 ms
17	Salt Lake	Saltlake	New Town AA I 132 kV	AIS	NO	7SS85	4F+3TR+1TBC	1M+1T	TO BE COMMISSIONED SHORTLY
18	Salt Lake	Saltlake	New Town AA III 220 kV	AIS	YES	RADHA *	4F+6TR+1TBC+1BC	2M+1T	
19	Salt Lake	Saltlake	New Town AA III 132 kV side	AIS	YES	REB 670	4F+3TR+1TBC	1M+1T	
20	Salt Lake	Saltlake	Saltlake Stadium GIS 132 kV	GIS	YES	7SS85	4F+2TR+1BC	2M	
21	Salt Lake	Saltlake	Silicon Valley 132 kV	GIS	YES	7SS85	2F+2TR+1BC	2M	

22	Salt Lake	Saltlake	New Town AA IIC 220 kV	GIS	YES	7SS85	2F+2TR+1BC	2M	
22	Salt Lake	Saltlake	New Town AA IIC 132 kV	GIS	YES	7SS85	2F+2TR+1BC	6M	
23	Salt Lake	Barasat	Nilgunj 132 kV	GIS	YES	ZIV, DBC/DBP	8F+2TR+1BC	2M	
24	Kalyani	Jeerat	Jeerat 400 kV	AIS	YES	REB 670	8F+5TR+1TBC+1BC	2M+1T	
25	Kalyani	Jeerat	Jeerat 220 kV side	AIS	YES	REB 670	8F+9TR+1TBC+1BC	2M+1T	
26	Kalyani	Jeerat	Jeerat 132 kV side	AIS	YES	REB 670	10F+4TR+1TBC+1BC	2M+1T	
27	Kalyani	Jeerat	Dharampur 132 kV side	AIS	YES	GE-B90	10F+5TR+1TBC+1BC	2M+1T	

28	Kalyani	Jeerat	Dharampur 220 kV	GIS	YES	P746	4F+2TR+1BC	2M	
29	Kalyani	Krishnanagar	Bagula 132 Kv	GIS	YES	7SS85	4F+2TR+1BC	2M	
30	Kalyani	Krishnanagar	Krishnanagar 220 kV	AIS	YES	FAC34 *	6F+3TR+1TBC+1BC	2M+1T	
31	Kalyani	Krishnanagar	Krishnanagar132 kV side	AIS	YES	REB 670	6F+7TR+1TBC	1M+1T	
32	Kalyani	Krishnanagar	Chapra 132 kV	GIS	YES	7SS85	4F+2TR+1BC	2M	
33	Kalyani	Barasat	Gaighata 132 kV	GIS	YES	7SS85	4F+2TR+1BC	2M	
34	Kalyani	Barasat	Panpur 132 kV	GIS	YES	ZIV, DBC/DBP	4F+2TR+1BC	2M	

35	Alipurduar	Alipurduar	Alipurduar 220 kV	GIS	YES	7SS52	2F+2TR+1BC	2M	
36	Alipurduar	Alipurduar	Alipurduar 132 kV	AIS	YES	GE-B90	4F+5TR+1TBC	1M+1T	
37	Alipurduar	Alipurduar	Falakata 220 kV	GIS	YES	WIP (REB-670)	4F+2TR+1BC	2M	
38	Alipurduar	Alipurduar	Falakata 132 kV	GIS	YES	WIP (REB-670)	4F+4TR+1BC	2M	
39	Siliguri	Siliguri	NJP 220 kV	AIS	YES	P741/P743	3F+3TR+1TBC+1BC	2M+1T	
40	Siliguri	Siliguri	NJP 132 kV side	AIS	YES	REB 670	7F+6TR+1TBC	1M+1T	
41	Raiganj	Raiganj	Dalkhola 220 kV	AIS	YES	RADHA *	2F+2TR+1TBC	1M+1T	

42	Raiganj	Raiganj	Dalkhola 132 kV side	AIS	YES	REB 670	6F+5TR+1TBC	1M+1T
43	Raiganj	Malda	Gazol 220 kV	GIS	YES	7SS85	4F+2TR+1BC	2M
44	Raiganj	Malda	Gazol 132 kV side	GIS	YES	7SS85	8F+4TR+1BC	2M
45	Raiganj	Malda	Manikchak 132 kV	GIS	YES	7SS85	4F+2TR+1BC	2M
46	Raiganj	Raiganj	Kusumandi 132 kV	GIS	YES	7SS85	4F+2TR+1BC	2M
47	Berhampore	Berhampore	Gokarna 400 kV	AIS	YES	REB 670	6F+5TR+1TBC+1BC	2M+1T
48	Berhampore	Berhampore	Gokarna 220 kV side	AIS	YES	REB 670	6F+6TR+1TBC+1BC	2M+1T

49	Berhampore	Berhampore	Gokarna132 kV side	AIS	YES	REB 670	11F+7TR+1TBC	1M+1T
50	Berhampore	Berhampore	New Sagardighi 220 kV	GIS	YES	ZIV, DBC/DBP	4F+2TR+1BC	2M
51	Berhampore	Krishnanagar	Rejinagar 220 kV	AIS	YES	P741/P743	4F+2T+3 TIE	1&1/2
52	Berhampore	Krishnanagar	Rejinagar 132 kV side	AIS	YES	P741/P743	8F+4TR+1TBC	1M+1T
53	Howrah	Haldia	New Haldia 220 kV	AIS	YES	RADHA *	4F+3TR+1TBC+1BC	2M+1T
54	Howrah	Haldia	New Haldia 132 kV side	AIS	YES	REB 670	6F+5TR+1TBC	1M+1T
55	Howrah	Haldia	Haldia 132 kV	AIS	YES	REB 670	8F+4TR+1TBC	1M+1T

56	Howrah	Haldia	Haldia NIZ 132 kV	AIS	YES	REB 670	9F+2TR+1TBC	1M+1T
57	Howrah	Tamluk	Kolaghat 132 kV	AIS	YES	REB 670	5F+3TR+1TBC	1M+1T
58	Howrah	Tamluk	Tamluk 132 kV	AIS	YES	REB 670	5F+3TR+1TBC	1M+1T
59	Howrah	Howrah	Foundry Park 220 kV	AIS	YES	7SS52	4F+2TR+1TBC+1BC	2M+1T
60	Howrah	Howrah	Liluah 132 kV	AIS	YES	REB 670	11F+5TR+1TBC	1M+1T
61	Howrah	Howrah	Howrah 220 kV	AIS	YES	FAC34 *	4F+5TR+1TBC+1BC	2M+1T
62	Howrah	Howrah	Howrah 132 kV side	AIS	YES	P741/P743	7F+7TR+1TBC+1BC	2M+1T

63	Howrah	New Chanditala	New Chanditala 400 kV	AIS	YES	P741/P743	8F+5TR+1TBC+1BC	2M+1T
64	Howrah	New Chanditala	New Chanditala 220 kV side	AIS	YES	P741/P743	10F+3TR+1TBC+1BC	2M+1T
65	Howrah	New Chanditala	Domjur 220 kV	AIS	YES	RADHA *	6F+2TR+1TBC	1M+1T
66	Howrah	New Chanditala	Domjur 132 kV side	AIS	YES	REB 670	6F+2TR+1TBC	1M+1T
67	Howrah	Chandannagar	Rishra 220 kV	AIS	YES	RADHA *	3F+3TR+1TBC+1BC	2M+1T
68	Howrah	Chandannagar	Rishra 132 kV side	AIS	YES	REB 670	9F+8TR+1TBC	1M+1T
69	Howrah	Howrah	Kona 132 kV	GIS	YES	GE, B90	4F+3TR+1BC	2M

70	Howrah	New Chanditala	Jangalpur 132 kV	GIS	YES	ZIV, DBC/DBP	2F+5TR+1BC	2M	
71	Howrah	Tamluk	Ramnagar 132 kV	GIS	YES	GE, B90	6F+2TR+1BC	2M	
72	Midnapore	Midnapore	Midnapore 220 kV	AIS	YES	RADHA *	4F+3TR+1TBC+1BC	2M+1T	
73	Midnapore	Midnapore	Midnapore 132 kV side	AIS	YES	REB 670	10F+6TR+1TBC	1M+1T	
74	Midnapore	New Kharagpur	New Kharagpur 400 kV	AIS	YES	P741/P743	7F+3TR+2 REC+1TBC+1BC	2M+1T	
75	Midnapore	New Kharagpur	New Kharagpur 220 kV side	AIS	YES	P741/P743	6F+5TR+1TBC+1BC	2M+1T	
76	Midnapore	New Kharagpur	New Kharagpur 132 kV side	AIS	YES	P741/P743	4F+2TR+1TBC+1BC	2M+1T	

77	Midnapore	Kharagpur	Egra 220 kV	AIS	YES	SIEMENS-7SS8522	2F+2TR+1BC	2M
78	Midnapore	Kharagpur	Egra 132 kV side	AIS	YES	REB 670	3F+5TR+1TBC	1M+1T
79	Midnapore	Kharagpur	Vidyasagar Park 220 kV	GIS	YES	FAC34 *	2F+2TR+1BC	2M
80	Midnapore	Midnapore	Goaltore 132 KV GIS	AIS	YES	GE, B90	2F+3TR+1BC+1TBC	2M+1T
81	Durgapur	Durgapur	Asansol 220 kV	AIS	YES	RADHA *	4F+2TR+1BC+ 1TBC	2M+1T
82	Durgapur	Durgapur	Asansol 132 kV side	AIS	YES	REB670	2F+8TR+ 1TBC	1M+1T
83	Durgapur	Durgapur	Durgapur 220 kV	AIS	YES	REB670	8F+3TR+ 1BC	2M

84	Durgapur	Durgapur	Durgapur 132 kV side	AIS	YES	REB670	12F+3TR+ 1BS+ 1TBC	2M+1T	
85	Durgapur	Durgapur	Durgapur 400 kV	AIS	YES	SIEMENS(7VH 60)*	5F+3TR+2 REAC+ 1BS+ 1TBC	2M+1T	
86	Durgapur	Durgapur	Durgapur AB Zone 220 kV	GIS	YES	SIEMENS (7SS85)	4F+2TR+ 1BC	2M	
87	Durgapur	Durgapur	Durgapur AB Zone 132 kV	AIS	YES	SIEMENS (7SS85)	6F+4TR+1TBC	1M+1T	
88	Durgapur	Birbhum	Sadaipur 220 kV	AIS	YES	REB670	4F+3TR+1TBC+1BC	2M+1T	
89	Durgapur	Birbhum	Sadaipur 132 kV	AIS	YES	REB670	6F+5TR+1TBC+1BC	2M+1T	
90	Durgapur	Birbhum	Pachami 132 kV	GIS	YES	SIEMENS(7SS85)	4F+2TR +1BC	2M	

91	Durgapur	Durgapur	Mongalpur 220 kV	GIS	YES	SIEMENS(7SS85)	4F+2TR +1BC	2M	
92	Purulia	Purulia	Hura 220 kV	AIS	YES	7SS52	4F+2TR +1BC+1TBC	2M+1T	
93	Purulia	Purulia	New PPSP 400 kV	GIS	YES	7SS52	6F+2REC	1&1/2	
94	Purulia	Purulia	Manbazar 132 kV	GIS	YES	GE,B90	2F+2TR+1BC	2M	
95	Purulia	Bankura	New Bishnupur 220 kV	AIS	YES	REB670	4F+3TR+1BC+1TBC	2M+1T	
96	Purulia	Bankura	New Bishnupur 132 kV side	AIS	YES	REB670	8F+6TR+ 1TBC	1M+1T	
97	Burdwan	Arambagh	Arambag 400kV	AIS	YES	RADHA *	5F+4TR+1TBC+1BC	2M+1T	

98	Burdwan	Arambagh	Arambag 220kV side	AIS	YES	REB670	7F+8TR+1TBC+1BC	2M+1T
99	Burdwan	Arambagh	Arambag 132kV side	AIS	YES	REB670	7F+7TR+1TBC	1M+1T
100	Burdwan	Chandannagar	Belmuri 220kV	GIS	YES	7SS85	2F+2TR+1BC	2M
101	Burdwan	Burdwan	Satgachhia 400 kV	GIS	YES	7SS85	4F+2TR	1&1/2
102	Burdwan	Burdwan	Satgachhia 220 kV	AIS	YES	REB670	6F+3TR+1TBC+1BC	2M+1T
103	Burdwan	Burdwan	Satgachhia 132 kV side	AIS	YES	REB670	9F+3TR+1TBC	1M+1T
104	Burdwan	Birbhum	Lavpur 132 kV	GIS	YES	7SS85	2F+2TR+1BC	2M

Sr. No.	Substation Name	Voltage Level	Bus Scheme	Bus Bar protection Status	If Bus bar protection is not available/ Out of service		Remark
					Z-4 time delay for lines	Expected plan and date for Bus Bar protection implementation.	
1	KTPS	400 KV	1 & 1/2 Breaker Scheme	In service	500 ms	NA	
2	BTPS	400 KV	2 Main Bus Scheme (GIS)	In service	500 ms	NA	
3	RTPS	400 KV	1 & 1/2 Breaker Scheme	In service	500 ms	NA	
4	DSTPS	400 KV	1 & 1/2 Breaker Scheme	In service	500 ms	NA	
5	MTPS	400 KV	2 Main Bus 1 Transfer Bus Scheme	In service	500 ms	NA	
6	CTPS	220 KV	2 Main Bus 1 Transfer Bus Scheme	In service	500 ms	NA	
7	MTPS	220 KV	2 Main Bus 1 Transfer Bus Scheme	In service	500 ms	NA	
8	KTPS	220 KV	2 Main Bus 1 Transfer Bus Scheme	In service	500 ms	NA	
9	RTPS	220 KV	2 Main Bus Scheme (GIS)	In service	500 ms	NA	
10	DSTPS	220 KV	1 Main Bus 1 Transfer Bus	In service	500 ms	NA	
11	KALYANESHWARI	220KV	2 Main Bus 1 Transfer Bus Scheme	In service	500 ms	NA	
12	DHANBAD	220 KV	2 Main Bus 1 Transfer Bus Scheme	In service	500 ms	NA	
13	GIRIDIH	220 KV	2 Main Bus 1 Transfer Bus Scheme	In service	500 ms	NA	
14	RAMGARH	220 KV	1 Main Bus 1 Transfer Bus	In service	500 ms	NA	
15	JAMSHEDPUR	220 KV	1 Main Bus 1 Transfer Bus	In service	500 ms	NA	
16	BURNPUR	220 KV	1 Main Bus 1 Transfer Bus	In service	500 ms	NA	
17	BURDWAN	220 KV	2 Main Bus Scheme (GIS)	In service	500 ms	NA	
18	PARULIA	220 KV	2 Main Bus 1 Transfer Bus Scheme	In service	500 ms	NA	
19	MUCHIPARA	220 KV	2 Main Bus 1 Transfer Bus Scheme	In service	500 ms	NA	
20	BARJORA	220 KV	1 Main Bus 1 Transfer Bus	In service	500 ms	NA	

### List of important transmission lines in ER which tripped in October-2025

Sl. No	LINE NAME	TRIP DATE	TRIP TIME	RESTORATION DATE	RESTORATION TIME	Relay Indication  LOCAL END	Relay Indication  REMOTE END	Reason	Fault Clearance time in msec	Remarks	DR Configuration Discrepancy(Local End)	DR Configuration Discrepancy(Remote End)	DR/EL RECEIVED FROM LOCAL END	DR/EL RECEIVED FROM REMOTE END	LOCAL END UTILITY	REMOTE END UTILITY
1	400KV-FARAKKA-GOKARNA-1	31-10-2025	18:53	31-10-2025	19:23	FSTPP end : Z-1, B_N, If: 11.34kA,FD: 29.8KM, A/R successful.	Gokarna End: B_N,FD: 221.6KM,If: 1.578 kA	B-Earth	100 msec	A/R successful at Farakka end and three phase tripping Gokarna end.(A/r kept OFF at Gokarna end).			YES	YES	NTPC	WBSETCL
2	400KV-KHSTPP-BANKA (PG)-2	30-10-2025	11:34	01-11-2025	18:00		DT receipt at Banka end	No Fault	NA	DT received at Banka end. NTPC Kahalgaon and PG may explain.			NO	YES	NTPC	PGER-I
3	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	30-10-2025	04:54	30-10-2025	05:32	Darbhanga : R-PH , 2.72 KA , 63.6 KM	Laukahi : Z1, R PH 33.15 KM , 3.30 KA	R-Earth	100 msec	Three phase tripping at Laukahi end and A/ R successfully at darbhagna side. BSPTCL may explain.			NO	YES	DMTCL	BSPTCL

4	220KV-KARAMNASHA (NEW)-SAHUPURI-1	29-10-2025	17:43	30-10-2025	00:05	R/I at Karamnasha: O/C operated, Ia- 590.9A Ib- 611.3A Ic- 599A		No Fault	NA	Tripped on overcurrent.	DR Length needs to be increased to 3 sec.		YES	NO	BSPTCL	PG NR
5	400KV-PPSP-BIDHANNAGAR-2	28-10-2025	18:22	28-10-2025	19:04	PPSP: Y_N , F Dist 114.6 km	Bidhannagar: Y_N, Z1, F Dist 50.53 km, Fault current 5.283 kA	Y-Earth	100 msec	Three phase tripping for phase to ground fault.			NO	YES	WBSEDCL	WBSETCL
6	400KV-ARAMBAGH-NEW CHANDITALA-1	28-10-2025	16:05	28-10-2025	17:18	R/I at New Chanditala end:R_N, F. Dist - 30.51 km, F Current Ir-7.858 kA, Zone-1	Arambagh end: R_N, Z-1, F. Dist - 25.23 km, F. Current-7.073 kA	R-Earth	100 msec	Line tripped in reclaim time			YES	YES	WBSETCL	WBSETCL
7	400KV-MAITHON-GAYA-1	28-10-2025	14:49	29-10-2025	12:48	R/I at Gaya: R_B ph, Z-1, F Current Ir-12.88kA, Ib-13.09 kA, F Dist 36.8 km;	Maithon: R_B, F Current Ir 2.65 kA, Ib 2.43 kA, F Dist 248 km	R-B	100 msec	Line tripped on phase to phase fault.			YES	YES	PG ER-I	PG ER-II
8	400KV-LAPANGA-ADITYA ALUMINIUM(AA)-1	28-10-2025	14:38	28-10-2025	15:59	-	Aditya Aluminium: Line Difference Protection	No Fault	NA	As per PMU no fault was observed. Line tripped from AA and on unwanted			YES	YES	OPTCL	OPTCL

9	400KV-LAPANGA-ADITYA ALUMINIUM(AA)-2	28-10-2025	14:38	28-10-2025	16:10	-	Aditya Aluminium: Line Difference Protection	No Fault	NA	End of unwanted differential protection. OPTCL may explain			YES	YES	OPTCL	OPTCL
10	220KV-KHAGARIA-NEW PURNEA-1	28-10-2025	05:39	28-10-2025	06:21	NEW PURNEA(PG) end: B_N,FD:68.9 KM,2.6kA	KHAGARIA: Bph Zone-1,Dist-51.66km, Ir - 80.84A, ly-231.5A, Ib-2884kA	B-Earth	100 msec	A/r failed after 1 sec			YES	YES	BSPTCL	PG ER-I
11	220KV-KISHANGANJ(PG)-KISHANGANJ(BSPTCL)-2	26-10-2025	07:02	26-10-2025	20:10	KISHANGANJ(BSPTCL): B_N,Zone-2, Distance-6.7KM,Ib:5.3kA	Kishanganj (PG): B_N, 1.353 km, 17.6 kA,	B-Earth	100 msec	A/r successful from PG end and three phase tripping from BSPTCL end in Z-2 protection. BSPTCL may explain.			YES	YES	PG ER-I	BSPTCL
12	400KV-RANCHI-RAGHUNATHPUR-2	24-10-2025	16:29	24-10-2025	17:54	DT RECEIVED AT RANCHI END	Not Tripped	No Fault	NA	DT received at Ranchi end. PG ER-1 and DVC may explain.			YES	NO	PG ER-I	DVC
13	220KV-KHAGARIA-NEW PURNEA-1	24-10-2025	06:27	24-10-2025	06:44	Khagaria: Not tripped, A/r successful	New Purnea : B_N, F Dist : 91.1 km, F Current : 2.22 kA	B-Earth	100 msec	A/r successful from Khagaria end and three phase tripping from Purnea end in Z-2 protection. PG ER-1 may explain.			YES	YES	BSPTCL	PG ER-I

14	220KV-ALIPURDUAR (PG)-SALAKATI-1	22-10-2025	13:01	22-10-2025	14:08	R/I at Alipurduar end :B-N, F Current =1.4kA, F Dist=92.6km	Salakati : B_N, F Current 2.14kA, F Dist 38.74km	B-Earth	100 msec	As per PMU line tripped on reclaim time.			YES	NO	PG ER-II	NERLDC
15	400KV-MERAMUNDALI-LAPANGA-1	22-10-2025	12:00	22-10-2025	14:34	-	Meeramu ndali End: R-ph, Z-1, Fc:12.5 kA, FD:12 Km	R-Earth	100 msec	A/r failed after 1 sec			YES	YES	OPTCL	OPTCL
16	220KV-NEW PURNEA-MADHEPURA-2	22-10-2025	11:05	22-10-2025	11:51	R/I at New Purnea: B_N, F Dist 66.4 km, F Current 1.99 kA	Madhepura :B_N, F Current Ib 2.128kA, F dist-34.63km	B-Earth	100 msec	Line tripped in reclaim time.			YES	NO	PG ER-I	BSPTCL
17	400KV-BINAGURI-RANGPO-1	22-10-2025	07:43	22-10-2025	14:53	RANGPO: R-N , 97.92 km , 2.076kA	BINAGURI: R-N , 13.69 KM 12.66 KA	R-Earth	100 msec	A/r failed after 1 sec			YES	YES	PG ER-II	PG ER-II
18	400KV-JAMSHEDPUR-TISCO-1	20-10-2025	11:37	20-10-2025	18:04	Jamshedpur: R-N, IR 8.38 kA 39 km.	-	R-Earth	100 msec	R phase tripped in Z-1 protection and after 700 msec B-Earth fault occurred and remaining pole got tripped.			YES	NO	PG ER-I	DVC

19	400KV-MAITHON-GAYA-1	20-10-2025	09:04	20-10-2025	20:11	Maithon: R-N, 216.6km, 2.14kA	Gaya: R- N, 38.4km, 4.98kA	R-Earth	100 msec	A/r failed after 1 sec			YES	YES	PG ER-II	PG ER-I
20	400KV-MAITHON-GAYA-1	19-10-2025	15:49	19-10-2025	16:32	Maithon : R_N, F Distance 207 km, No fault current recorded	R/I at Gaya: R_N, F Dist 38.2 km, F Current Ir 4.3 kA	R-Earth	100 msec	A/r failed after 1 sec			YES	YES	PG ER-II	PG ER-I
21	220KV-TENUGHAT- BIHARSARIFF-1	19-10-2025	13:38	19-10-2025	18:08	Tenughat: R-N, Z1, IR- 0.95A, 121km	Biharsari ff: R-N, 76 km, Ia- 1.68 kA	R-Earth	100 msec	Three phase tripping for phase to ground fault. BSPTCL and JUSNL may explain.			YES	YES	JUSNL	BSPTCL
22	400KV-PPSP- BIDHANNAGAR-2	19-10-2025	10:34	19-10-2025	11:24	Bidhannagar : Z1, A-N, D: 40.68 KM, Ia: 5.76 KA	PPSP: Z1, A-N, D: 125.12 KM	R-Earth	100 msec	Three phase tripping for phase to ground fault.			NO	YES	WBSEDCL	WBSETCL
23	220KV-PATNA-FATUHA-1	15-10-2025	13:20	15-10-2025	16:17	Patna: R_Y_B, Zone-2, 26.6 km, 6.77 kA	-	R_Y_B	350 msec	Three phase tripping for three phase fault from Patna end in Z-2 protection. BSPTCL may explain.			YES	NO	PG ER-I	BSPTCL

24	220KV-DEHRI-GAYA-1	14-10-2025	05:32	14-10-2025	15:33	Dehri: Zone-1, location - 14.79KM, B, IB-5.745 Ka	Gaya : Y-B , IY-2.94 KA , IB-2.85 KA , FD-54 KM	Y-B-Earth	100 msec	A/r failed after 1sec from Dehari end and three phase tripping on phase-to-phase fault due to conductor snapping.			YES	YES	PG ER-I	BSPTCL
25	220KV-NEW PURNEA-MADHEPURA-2	12-10-2025	13:51	12-10-2025	18:30	New Purnea: Y_B, F Dist 54.5 km, F Current ly 3.7 kA, Ib 3.6 kA	R/I at Madhepura : Y_B, zone-1 , F dist-39.48km, F Current Ib-2.973kA, ly-2.038kA	Y-B	100 msec	Line tripped on phase to phase fault.	DR Length needs to be increased to 3 sec.		YES	NO	PG ER-I	BSPTCL
26	220KV-SITAMARHI-MOTIPUR-1	11-10-2025	14:46	11-10-2025	17:15	DT received	No details	No Fault	NA	DT received at Motipur. PMTL may explain.			YES	YES	PMTL	BSPTCL
27	400KV-ANGUL-JITPL-1	10-10-2025	11:22	10-10-2025	15:05	Angul end: FD-51.69 km, BN fault, FC-11.39 kA	JITPL end: 49.89 km, BN fault, FC-2.82 kA	B-Earth	100 msec	As per PMU A/r failed after 1 sec from both ends.			NO	NO	PG ODISHA	JITPL
28	220KV-BUDHIPADAR-KORBA-2	09-10-2025	11:45	09-10-2025	13:44	Budhipadar: Z1, B-N, 88.18km, 1.650kA (A/R successful	Korba: B-N, 71km, 2.3kA	B-Earth	100 msec	A/r successful from Budhipadar end and three phase tripping from Korba end.			YES	NO	OPTCL	PG WR

29	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	09-10-2025	00:39	09-10-2025	01:25	Darbhanga End: A/R successful, Y-ph, FC:2.8 kA, FD:52.2 Km	Laukhai End: Y-ph, FD:33 Km, Z-1	Y-Earth	100 msec	A/r successful from DMTCL end and three phase tripping from BSPTCL end. BSPTCL may explain.			NO	YES	DMTCL	BSPTCL
30	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	07-10-2025	21:52	07-10-2025	22:55	A/R successful at DMTCL end, Y_N, 2.85 kA, 51.1 km	Laukahi end : Y_N, zone -1 F distance 32.93km	Y-Earth	100 msec	A/r successful from DMTCL end and three phase tripping from BSPTCL end. BSPTCL may explain.			YES	NO	DMTCL	BSPTCL
31	400KV-RANCHI-RAGHUNATHPUR-2	07-10-2025	17:11	07-10-2025	20:04	RANCHI END: Y_N, FD: 51.88 KM, Iy: 4.814 kA;	RTPS End: Z-1, Y_N, FD: 147 KM, Iy: 2.07kA	Y-Earth	100 msec	Line tripped in reclaim time			YES	NO	PG ER-I	DVC
32	400KV-DURGAPUR-JAMSHEDPUR-1	07-10-2025	11:07	07-10-2025	11:51	DGP: B-E, 61 km, 1.2kA	JMSD: Y-B, 97 km, IY: 0.23kA, IB: 2.53 kA	B-Earth	100 msec	A/r failed after 1 sec			YES	YES	PG ER-II	PG ER-I
33	220KV-CHUKHA-BIRPARA-1	06-10-2025	14:46	07-10-2025	15:03	Z-1, Y-Earth	Birpara: Y-N, 42.4km, 2.89kA	Y-Earth	100 msec	A/r failed after 1 sec			NO	YES	BHUTAN	PG ER-II

34	220KV-DALTONGANJ-CHATRA-1	06-10-2025	13:19	06-10-2025	16:26	R/I at Daltonganj: Y_B, F Current 1.52 kA, F Dist 129.08 km;	Chatra :Y_B, F Current 1.13kA, Ib- 1.18kA, F distance - 12.978km Zone	Y-B	350 msec	Three phase tripping on phase to phase fault in Z-1 protection from Chatra end and in Z-2 protection from Daltonganj end.			YES	YES	PG ER-I	JUSNL
35	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	05-10-2025	23:10	05-10-2025	23:53	Darbhang (DMTCL) :A/R Successful R-N, 4.83 kA, 27.2 km	Laukahi :Z -1,FD 50.28km ,IR- 2.102KA	R-Earth	100 msec	A/r successful from DMTCL end and three phase tripping from BSPTCL end. BSPTCL may explain.			YES	NO	DMTCL	BSPTCL
36	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	05-10-2025	20:11	05-10-2025	20:38	DMTCL: R_N, 5.013 kA, 27.52 km, A/r successful	Lauklhai: Z-1, 50.14 km , R-N , 2.114 kA	R-Earth	100 msec	A/r successful from DMTCL end and three phase tripping from BSPTCL end. BSPTCL may explain.			YES	NO	DMTCL	BSPTCL
37	400KV-NEW JEERAT-SUBHASGRAM(PG)-1	05-10-2025	12:36	05-10-2025	23:18	New Jeerat : B_N, F Current 5.136 kA, F Dist 58.00 km	Subhasgram: B_N, F Current 7.13 kA, F Dist 56.6 km	B-Earth	100 msec	A/r failed after 1 sec.			YES	YES	PMJTL	PG ER-II
38	220KV-JODA-RAMCHANDRAPUR-1	05-10-2025	11:31	05-10-2025	12:05	Joda End: A/R successful	Ramchandrapur End: B-ph, Z-2, FC:1.94 kA, FD:106.7 Km	B-Earth	350 msec	A/r successful from Joda end and three phase tripping in Z-2 protection from Ramchandrapur end. JUSNL may explain.			YES	YES	OPTCL	JUSNL

39	400KV-BINAGURI-MALBASE-1	05-10-2025	05:54	05-10-2025	07:01	Binaguri: B-Ph, Z-II, 110 Km, 2.834 KA	-	B-Earth	350 msec	Three phase tripping from Binaguri end in Z-2 protection.			YES	NO	PG ER-II	BHUTAN
40	220KV-BIRPARA-MALBASE-1	05-10-2025	05:53	05-10-2025	07:07	Birpara: Z-3 ,88km,B-Ph	-	B-Earth	800 msec	Three phase tripping from Birpara end in Z-3 protection.		.DAT file not available	YES	YES	PG ER-II	BHUTAN
41	220KV-CHUKHA-BIRPARA-2	05-10-2025	05:39	06-10-2025	13:33	Birpara: Y-B Ph, 46.3km, Iy-3.64 KA, Ib-3.78 KA	Y-B, Z-1	Y-B	100 msec	Line tripped pn phase to phase fault.			YES	YES	BHUTAN	PG ER-II
42	220KV-BARIPADA-BALASORE-1	05-10-2025	04:38	05-10-2025	09:03	Baripada: Not tripped.	Balasure: Master Trip Operated , Jumper snap at balasure Switchyard	B-Earth	100 msec	Three phase tripping from Balasure end for phase to ground fault. OPTCL may explain.			NO	NO	PG ODISHA	OPTCL
43	220KV-MUZAFFARPUR(PG)-GORAUL(BH)-1	05-10-2025	03:29	05-10-2025	10:36	R/I at Muzaffarpur : B_N, F Dist 9.1km, F Current 8.94 kA	-	B-Earth	100 msec	Line tripped in Z-1 protection on phase to ground fault and within 100 msec again same fault occurred and three phase got tripped.			YES	YES	PG ER-I	BSPTCL

44	220KV-CHUKHA-BIRPARA-1	05-10-2025	02:49	06-10-2025	13:25	-	Birpara end: R-N fault, FD-42.1 km, FC- 2.29 kA,	R-Earth	100 msec	A/r failed after 1 sec.			NO	YES	BHUTAN	PG ER-II
45	220KV-NEW PURNEA-MADHEPURA-1	04-10-2025	17:27	05-10-2025	14:05	R/I at New Purnea: B_Y, Iy 5.18 kA, Ib 5.19 kA, F Dist 34.5 km	Madhepura: Y_B, Zone-1 F Distance 58.97km, Iy-2.36kA Ib-2.364kA	Y-B-Earth	100 msec	Line tripped on phase to phase to earth fault from both ends.		DR Length needs to be increased to 3 sec.	YES	NO	PG ER-I	BSPTCL
46	220KV-SITAMARHI-MOTIPUR-2	04-10-2025	13:20	12-10-2025	17:03	Sitamarhi: 12.8kM, Y-N, Iy - 7.41 kA	Motipur: Z1, Y-N, Iy=4.621 kA, Distance =35.59KM	Y-Earth	100 msec	A/r failed after 1 sec from Sitamarhi end and PDR operated after 2.5 sec from Motipur end. BSPTCL may explain.		DR Length needs to be increased to 3 sec.	YES	YES	PMTL	BSPTCL
47	220KV-SAHARSA(PMTL)-KHAGARIA(NEW)-1	04-10-2025	12:14	04-10-2025	15:48	Tripped only at Saharsa end; R/I at Saharsa : R_N, Zone -2, Fault Current: 1.37kA, Fault distance - 73 km			100 msec						PMTL	BSPTCL
48	220KV-MUZAFFARPUR-HAJIPUR-2	04-10-2025	11:58	05-10-2025	09:43	Muzaffarpur: R_Y_N fault FD-63.92 km, FC-Ir 3.56 kA, Iy 3.36 kA	Z-1, R-Y-Earth	R-Y-Earth	100 msec	Line tripped on phase to phase to earth fault from both ends.			NO	YES	PG ER-I	BSPTCL

49	220KV-SAHARSA(PMTL)-KHAGARIA(NEW)-2	04-10-2025	11:26	05-10-2025	17:23	Saharsa: R-N, 42.6km, 3.49kA;	Khargaria: R-N, 27km, 3.43kA	R-Earth	100 msec	A/r failed after 1 sec from both ends.			YES	YES	PMTL	BSPTCL
50	220KV-SITAMARHI-MOTIPUR-1	04-10-2025	09:47	04-10-2025	14:08	Not tripped	Motipur : Overvoltage Vr=37.67kV Vy=146.5kV Vb=143.5kV	No Fault	NA	Line tripped from Motipur end on over voltage protection. BSPTCL may explain.			YES	YES	PMTL	BSPTCL
51	400KV-MUZAFFARPUR-GORAKHPUR-2	04-10-2025	09:12	04-10-2025	10:14	Muzaffarpur: Y-N,FD 102.13km, Iy 4.80 kA A/R Successful	Gorakhpur : Y-Earth F/D-46.499 Kms , F/C-1.04 KA	Y-Earth	100 msec	A/r successful from Muzaffarpur end and three phase tripping from Gorakhpur end.			YES	NO	PG ER-I	PG NR
52	400KV-BIHARSARIFF(PG)-SAHUPURI(CHANDAULI)-1	04-10-2025	02:29	04-10-2025	03:49	Tripped from Sahupuri end. Auto-recloser operated successfully at Biharsarif end. R/I at Biharsarif end: YN fault, FD-151.69 km, FD-3.46 kA.		Y-Earth	100 msec	A/r successful from Biharsariff end and three phase tripping from Sahupuri end.			YES	NO	PG ER-I	PG NR
53	400KV-BIHARSARIFF(PG)-SAHUPURI(CHANDAULI)-2	03-10-2025	18:51	03-10-2025	20:15	A/R successful at Biharshariff end	Sahupuri end: Z-1, B-ph, FD:21.88 Km, FC: 8.45 kA	B-Earth	100 msec	A/r successful from Biharsariff end and three phase tripping from Sahupuri end.			NO	NO	PG ER-I	PG NR

54	400KV-BIHARSARIFF(PG)-SAHUPURI(CHANDAULI)-1	03-10-2025	17:56	03-10-2025	19:39	A/R successful at Biharshariff end	Sahupuri : Zone-1, B phase to N, 21.88km, 8.451kA	B-Earth	100 msec	A/r successful from Biharshariff end and three phase tripping from Sahupuri end.			YES	NO	PG ER-I	PG NR
55	400KV-PPSP-BIDHANNAGAR-2	03-10-2025	05:09	03-10-2025	08:17	Bidhannagar : R-N, Z-1, 4.9 kM, 15.14 kA	PPSP: Z-1, R-N, 185 km.	R-Earth	100 msec	Three phase tripping for phase to ground fault.			NO	YES	WBSETCL	WBSETCL
56	220KV-PANDIABILI-SAMANGARA-2	03-10-2025	02:34	04-10-2025	10:40	Pandiabili z-2, r_n, fc-2.93 ka, fd-45.2 km	Samagra: Zone-I, dist=0.5 KM, IR1 =2.32KA mp, R phase to N	R-Earth	100 msec	A/r failed after 1 sec from both ends.			NO	NO	PG ODISHA	OPTCL
57	220KV-NEW PURNEA-MADHEPURA-1	02-10-2025	09:44	02-10-2025	10:35	New Purnea end: Y_B_N fault, FD-58.7 km, Iy 3.63 kA, Ib 3.53 kA.	Madhepura end: Zone-1, YBN fault, Distance-38.1KM, Ib-3.04KA, Ic-3.07KA	Y-B-Earth	100 msec	Line tripped on phase to phase to earth fault from both ends.			YES	NO	PG ER-I	BSPTCL
58	220KV-MUZAFFARPUR(PG)-AMNOUR-1	02-10-2025	07:42	02-10-2025	09:42	Amnour:Z1,10.4KM,BN,3.14KA Muz:BN, 49.87KM, 2.69KA	B-Earth, Z-1, FC-2.67kA	B-Earth	100 msec	Three phase tripping in phase to ground fault from both ends. PG ER-I and BSPTCL may explain.			YES	NO	PG ER-I	BSPTCL

59	765KV-MEDINIPUR-NEW JEERAT-1	02-10-2025	05:43	03-10-2025	00:15	Med: BN, 29.51KM, 6.998KA	NJeerat: BN,130KM,2.583 KA	B-Earth	100 msec	A/r failed after 1 sec from both ends.			NO	NO	PG ER-II	PG ER-II
60	400KV-JHARSUGUDA-RAIGARH-1	01-10-2025	15:58	02-10-2025	16:35	Jharsuguda -: Z-1 , y-N, 66.3 km,5.18 kA, A/r failed from both end.		Y-Earth	100 msec	As per PMU A/r failed after 1 sec from both ends.			NO	NO	PG ODISHA	PG WR
61	220KV-MUZAFFARPUR(PG)-AMNOUR-2	01-10-2025	11:51	01-10-2025	14:15	Amnour relay details- Ic 1.79 KA, , Fault location - 48.4 km, Z 01	-	B-Earth	120 msec	As per PMU Three phase tripping in phase to ground fault from both ends. PG ER-1 and BSPTCL may explain.			NO	NO	PG ER-I	BSPTCL
62	220KV-BOLANGIR(PG)-BOLANGIR(GRIDCO)-2	01-10-2025	10:48	01-10-2025	12:23	Tripped from BOLANGIR(PG) end only: Z-3, BN fault, FD-17.6 km, FC-250 A	Not Tripped	B-Earth	800 msec	B-Earth fault occurred in 220kV-Bolangir Kesinga line and fault was not cleared from Kesinga end, and after 800 msec same fault was cleared from Bolangir(PG)	.DAT file not available		YES	NA	PG ODISHA	OPTCL
63	220KV-MAITHON(PG)-DUMKA-2	01-10-2025	06:56	01-10-2025	14:45	R/I at Maithon -:Z-2, B_N, F Dist 61.78 km, F Current 3.16 kA	Z-1, A/r successful from Dumka end.	B-Earth	350 msec	A/r successful from Dumka end and three phase tripping from Maithon end in Z 2 protection. PG ER-2 may explain.			YES	YES	PG ER-II	JUSNL

Protection Performance Indices for the month of Oct'25 (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						
1	132KVARA-DUMRAON(BSPTCL)-1	04-10-2025	02:21:00	04-10-2025	03:11:00	TRIPPED FROM BOTH ENDS DUE TO Y-N FAULT AREA (SITE):Z1, FD-14.96KM, FC-4.013KA. FAULT IS UNDER BSPTCL JURISDICTION	Other Utility	1	NA	0	NA	0	NA	1	1	1	
2	220KV DEHRI(BSPTCL)-SASARAM-1	10-10-2025	11:40:00	10-10-2025	11:40:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO B-N FAULT SASARAM(SITE): M1: FD- 8.44KM, FC- 10.02KA ; M2: FD- 10.1KM, FC- 9.97KA FAULT IS UNDER BSPTCL JURISDICTION		NA	1	NA	0	NA	0	1	1	1	
3	220KV GAYA-DEHRI(BSPTCL)-1(LILO PART.)	14-10-2025	05:32:00	14-10-2025	14:33:00	TRIPPED FROM BOTH ENDS DUE TO Y-B-N FAULT. GAYA (SITE): M1: FD=64.4KM, FC: IV=2.94 KA, IB=2.85 KA. FAULT IS UNDER BSPTCL JURISDICTION	Other Utility	1	NA	0	NA	0	NA	1	1	1	
4	220KV SASARAM-NADOKHAR(BSPTCL)-1	15-10-2025	09:36:00	15-10-2025	10:31:00	TRIPPED DUE TO TRIPPING OF 220KV BUS-1 AT PUSALI	Other Utility	1	NA	0	NA	0	NA	1	1	1	
5	220KV SASARAM-NEW KARMNASA(BSPTCL)	15-10-2025	09:36:00	15-10-2025	10:52:00	TRIPPED DUE TO TRIPPING OF 220KV BUS-1 AT PUSALI	Other Utility	1	NA	0	NA	0	NA	1	1	1	
6	315MVA,400/220KV ICT-1 AT BIHARSHARIF	30-10-2025	17:13:00	30-10-2025	23:04:00	TRIPPED AS EXCREMENT AND FOREIGN MATTER WERE FOUND NEAR THE ZIV RELAY CONTRACT AT BSPTCL END, WHICH IS THE MAIN CAUSE OF THE UNWANTED TRIPPING. FAULT IS UNDER BSPTCL JURISDICTION		1	NA	0	NA	0	NA	1	1	1	
7	315MVA,400/220KV ICT-1 AT BIHARSHARIF	30-10-2025	15:25:00	30-10-2025	17:11:00	TRIPPED AS EXCREMENT AND FOREIGN MATTER WERE FOUND NEAR THE ZIV RELAY CONTRACT AT BSPTCL END, WHICH IS THE MAIN CAUSE OF THE UNWANTED TRIPPING. FAULT IS UNDER BSPTCL JURISDICTION		1	NA	0	NA	0	NA	1	1	1	
8	400 KV JAMSHEDPUR-TATA DVC-1	20-10-2025	11:37:00	20-10-2025	18:04:00	TRIPPED FROM BOTH ENDS DUE TO R-N FAULT JAMSHEDPUR(SITE):-M1-FD-37.5KM, FC7.38KA. FAULT IS UNDER TISCO JURISDICTION	Other Utility	1	NA	0	NA	0	NA	1	1	1	
9	400KV BARH(NTPC)-MOTIHARI(DMTCL)-2	08-10-2025	00:42:00	08-10-2025	00:42:00	A/R SUCCESSFUL FROM BOTH END DUE TO B-N FAULT DUE TO THUNDERSTORM AND LIGHTENING. MOTIHARI DETAILS-M1-165.1 KM, FC-2.06 KA, M2: 162.5KM, FC- 2.049KA BARH DETAILS- FD- 53.2KM, FC- 6.93KA.		NA	NA	NA	NA	NA	NA	NA	NA	NA	
10	400KV GAYA MAITHON-1	19-10-2025	15:49:00	19-10-2025	16:32:00	TRIPPED FROM BOTH END DUE TO R-N FAULT DUE TO HEAVY LOCALIZED CYCLONE REPORTED NEAR FAULT AREA. GAYA SITE DETAILS: M1: FC=4.3KA, FD=38.2KM. CONDUCTOR	Other Utility	1	NA	0	NA	0	NA	1	1	1	
11	400KV GAYA MAITHON-1	28-10-2025	14:49:00	29-10-2025	12:48:00	TRIPPED FROM BOTH ENDS ON B-R FAULT DUE TO LIGHTENING AND THUNDERSTORM REPORTED NEAR FAULT AREA. GAYA SITE DETAILS: M1: FC- R-12.88KA, B-13.09KA.	Other Utility	1	NA	0	NA	0	NA	1	1	1	
12	400KV GAYA MAITHON-1	20-10-2025	09:04:00	20-10-2025	20:11:00	TRIPPED FROM BOTH END DUE TO R-N FAULT DUE TO HEAVY LOCALIZED CYCLONE REPORTED NEAR FAULT AREA. GAYA(SITE): M1-FD-38.4KM, FC-4.98KA. CONDUCTOR (STEEL	Other Utility	1	NA	0	NA	0	NA	1	1	1	
13	400KV KHALGAON(NTPC)-BANKA-2	30-10-2025	11:34:00	01-11-2025	00:00:00	Other Utility	TRIPPED FROM BOTH ENDS DUE TO DT RECEIVED AT BANKA END. AS REPORTED BY NTPC KHALGAON, TEED RELAY OPERATED AT KHALGAON END. FAULT UNDER NTPC KHALGAON END.	NA	1	NA	0	NA	0	1	1	1	
14	400KV KHALGAON(NTPC)-LAKHISARAI-1	01-10-2025	23:48:00	01-10-2025	23:48:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO B-N FAULT. LIGHTENING AND THUNDERSTORM REPORTED NEAR FAULT AREA. KHALGAON-M2-FD-27.9KM, FC-11.22KA		NA	1	NA	0	NA	0	1	1	1	
15	400KV KHALGAON(NTPC)-LAKHISARAI-2	30-10-2025	11:34:00	30-10-2025	11:34:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO B-N FAULT. LIGHTENING AND THUNDERSTORM REPORTED NEAR FAULT AREA. LAKHISARAI SITE DETAILS:M1: FC=1.559KA, FD=119.9KM.		NA	1	NA	0	NA	0	1	1	1	
16	400KV KHALGAON(NTPC)-MAITHON-1	01-10-2025	18:42:00	01-10-2025	18:42:00	A/R SUCCESSFULLY OPERATED FROM BOTH ENDS DUE TO B-N FAULT. LIGHTENING AND THUNDERSTORM REPORTED AROUND THE FAULT AREA. KHALGAON (SITE) M1: FD- 126.4KM, FC-2.87KA.		NA	NA	NA	NA	NA	NA	NA	NA	NA	
17	400KV PATNA-BALIA-1	01-10-2025	14:38:00	01-10-2025	14:38:00	A/R SUCCESSFULLY OPERATED FROM BOTH ENDS DUE TO R-N FAULT. LIGHTENING AND THUNDERSTORM REPORTED AROUND THE FAULT AREA. PATNA (SITE) :- M1-FC-3.718KA,FD-173.9KM.		1	NA	0	NA	0	NA	1	1	1	
18	400KV PATNA-SAHARSA-1	01-10-2025	13:34:00	01-10-2025	13:34:00	A/R SUCCESSFUL FROM BOTH END DUE TO Y-N FAULT. THUNDERSTORM AND LIGHTENING REPORTED AROUND THE FAULT AREA. SAHARSA(SITE): M1: FD- 50.8KM, FC- 7.9KA .		1	1	0	0	0	0	1	1	1	
19	400KV RANCHI-MAITHON-1	02-10-2025	05:25:00	02-10-2025	05:25:00	A/R SUCCESSFULLY OPERATED FROM BOTH ENDS DUE TO R-N FAULT DUE TO LIGHTENING AND THUNDERSTORM AROUND THE FAULT AREA. RANCHI(SITE): M1: FD- 92.50KM, FC- 4.05KA.		1	NA	0	NA	0	NA	1	1	1	
20	400KV-BIHARSHARIF-SAHUPURI-ACL-CKT1	04-10-2025	02:29:00	04-10-2025	03:49:00	A/R SUCCESSFUL FROM BIHARSHARIF END AND TRIPPED FROM SAHUPURI END ONLY DUE TO PROBLEM AT SAHUPURI(UPTCL) END ON Y-N FAULT.BIHARSHARIF (SITE):-	Other Utility	1	NA	0	NA	0	NA	1	1	1	
21	400KV-BIHARSHARIF-SAHUPURI-ACL-CKT1	03-10-2025	17:56:00	03-10-2025	19:39:00	A/R SUCCESSFUL FROM BIHARSHARIF END AND TRIPPED FROM SAHUPURI END ONLY DUE TO PROBLEM AT SAHUPURI(UPTCL) END ON B-N FAULT.BIHARSHARIF(SITE):-	Other Utility	1	NA	0	NA	0	NA	1	1	1	
22	400KV-BIHARSHARIF-SAHUPURI-ACL-CKT2	03-10-2025	18:51:00	03-10-2025	20:15:00	A/R SUCCESSFUL FROM BIHARSHARIF END AND TRIPPED FROM SAHUPURI END ONLY DUE TO PROBLEM AT SAHUPURI(UPTCL) END ON Y-N FAULT.BIHARSHARIF (SITE):-	Other Utility	1	NA	0	NA	0	NA	1	1	1	
23	500MVA,400/220KV ICT-1 AT SASARAM	15-10-2025	09:36:00	15-10-2025	10:17:00	TRIPPED DUE TO TRIPPING OF 220KV BUS-1 AT PUSALI.		1	NA	0	NA	0	NA	1	1	1	
24	765KV GAYA-VARANASI-2	04-10-2025	03:11:00	04-10-2025	03:11:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO Y-N FAULT DUE TO LIGHTENING AND THUNDERSTORM AROUND THE FAULT AREA. GAYA (SITE): M1-90.4KM, FC-5.71KA.		1	NA	0	NA	0	NA	1	1	1	



WBSETCL

Protection Performance Indices for the month of OCTOBER '25 (In compliance of Clause 15(6) of IEGC 2023)																	
Sl. 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	DURGAPUR-PPSP # 1	03.10.25	05:09:00	03.10.25	08:17:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1	
2	KURSEONG-RANGIT #1	05.10.25	04:41:00	05.10.25	05:05:00	Zone-1,Y-phase,3-phase Trip		1		0		0		1	1	1	
3	JEERAT-SUBHASGRAM PG#1	05.10.25	12:36:00	05.10.25		NO TRIPPING AT JEERAT END											
4	MANIKCHAK-MALDA PG # 1	07.10.25	04:55:00	07.10.25	05:31:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1	
5	MANIKCHAK-MALDA PG # 1	08.10.25	10:38:00	08.10.25	11:08:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1	
6	MANIKCHAK-MALDA PG # 2	10.10.25	00:18:00	10.10.25	00:52:00	Zone-1,Y-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1	
7	MANIKCHAK-MALDA PG # 1	18.10.25	18:25:00	18.10.25	18:49:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1	
8	DURGAPUR-PPSP #2	19.10.25	10:34:00	19.10.25	11:24:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1	
9	MANIKCHAK-MALDA PG # 2	22.10.25	03:22:00	22.10.25	03:49:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1	
10	DURGAPUR 400 KV 315 MVA TR #1	25.10.25	06:56:00	25.10.25	09:13:00	Zone-1, Y- Phase, 3-Phase Trip		1		0		0		1	1	1	
11	ARAMBAG-NEW-CHANDITALA-1	28.10.25	16:05:00	28.10.25	17:18:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1	
12	DURGAPUR-PPSP # 2	28.10.25	18:22:00	28.10.25	19:04:00	Zone-1,Y-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1	
13	MANIKCHAK-MALDA PG # 2	28.10.25	23:08:00	28.10.25	23:38:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1	
14	MANIKCHAK-MALDA PG # 1	31.10.25	00:48:00	31.10.25	01:02:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1	
15	GOKARNA-FARRAKKA #1	31.10.25	18:53:00	31.10.25	19:23:00	Zone-1,R-phase, A/R OFF ,3-phase Trip		1		0		0		1	1	1	

# BSPTCL

Protection Performance Indices for the month of October'25																		
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 (/Rectification)	
						End A	End B	End A	End B	End A	End B	End A	End B					
1	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	30-10-2025	04:54	30-10-2025	05:32		Laukahi : Z1, R PH 33.15 KM , 3.30 KA		0		0		1	0	0	0	Remarks at S.no.12	
2	220KV-KARAMNASHA (NEW)-SAHUPURI-1	29-10-2025	17:43	30-10-2025	00:05	Karamnasha: O/C operated, Ia-590.9A Ib- 611.3A Ic- 599A		1		0			0	1	1	1	Tripped on overcurrent.	
3	220KV-KHAGARIA-NEW PURNEA-1	28-10-2025	05:39	28-10-2025	06:21	KHAGARIA: B ph Zone-1,Dist-51.66km, Ir - 80.84kA, Iy-231.5A, Ib-2.884kA, Vr - 135.2kV, Vy-135.7kV, Vb-98.98kV	NEW PURNEA(PG) end: B_N,FD:68.9 KM,2.6kA	1	1	0	0	0	0	1	1	1	A/r failed after 1 sec	
4	220KV-KISHANGANJ(PG)-KISHANGANJ(BSPTCL)-2	26-10-2025	07:02	26-10-2025	20:10		KISHANGANJ(BSPTCL): B_N,Zone-2, Distance-6.7KM,Ib:5.3kA							0	0	0	0	A/r used to occur at both ends for all past instances. The circuit checked, no any abnormality found, which can cause non operation of A/r. Circuit is under observation.
5	220KV-KHAGARIA-NEW PURNEA-1	24-10-2025	06:27	24-10-2025	06:44	Khagaria: Not tripped, A/r successful	New Purnea : B_N, F Dist : 91.1 km, F Current : 2.22 kA	1	0	0	0	0	1	khagaria-1 New Purnea-0	khagaria-1 New Purnea-0	New Purnea-0	khagaria-1 New Purnea-0	There was issue in PLCC at PG end. Issue rectified on dt-15/11/25
6	220KV-NEW PURNEA-MADHEPURA-2	22-10-2025	11:05	22-10-2025	11:51	New Purnea: B_N, F Dist 66.4 km, F Current 1.99 kA	Madhepura :B_N, F Current Ib 2.128kA, F dist- 34.63km	1	1	0	0	0	0	1	1	1	1	Line tripped in reclaim time.
7	220KV-TENUGHAT-BIHARSARIFF-1	19-10-2025	13:38	19-10-2025	18:08		Biharsariff: R-N, 76 km, Ia-1.68 kA							0	0	0	0	PLCC issue persisting since long . As stated earlier ,ERPc intervention required ,as it involves Inter state Transmission line.
8	220KV-PATNA-FATUHA-1	15-10-2025	13:20	15-10-2025	16:17		Fatuha-Bus fault,no relay operated							0	0	0	0	Z4 time revised to 250 ms on di-16/10/25. Earlier it was on higher side.
9	220KV-DEHRI-GAYA-1	14-10-2025	05:32	14-10-2025	15:33	Dehri: Zone-1,location - 14.79KM, B, IB-5.745 Ka		1		0				1	1	1	1	A/r failed after 1sec from Dehari end and three phase tripping on phase-to-phase fault due to conductor snapping.

10	220KV-NEW PURNEA-MADHEPURA-2	12-10-2025	13:51	12-10-2025	18:30	New Purnea: Y_B, F Dist 54.5 km, F Current ly 3.7 kA, lb 3.6 kA	Madhepura : Y_B, zone-1 , F dist- 39.48km, F Current lb- 2.973kA, ly- 2.038kA	1	1	0	0	1	1	1	1	1	1	1	Line tripped on phase to phase fault.
11	220KV-SITAMARHI-MOTIPUR-1	11-10-2025	14:46	11-10-2025	17:15		Motipur-DT received			1		0		0		1		1	DT received at Motipur from Sitamarhi PMTL. No any issue at Motipur
12	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	09-10-2025	00:39	09-10-2025	01:25		Laukhai End: Y-ph, FD:33 Km, Z-1												On dt-8/10, Faulty Main 1 Distance Protection relay was replaced by New (ZIV make) Distance Protection relay. Later, it was found that despite change of Distance Protection Relay, A/r was not operating perfectly. So on dt-01/11 Newly installed ZIV make distance Protection relay again tested for A/r by Service engineer, the relay was working perfectly and performing A/r. Now doubt is on Main 2 Distance Protection (ABB REL) Relay,BCU and other associated circuits.Relay,BCU and circuits are being carefully examined by CRITL.
13	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	07-10-2025	21:52	07-10-2025	22:55		Laukahi end : Y_N, zone -1 F distance 32.93km			0		0		1		0		0	
14	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	05-10-2025	23:10	05-10-2025	23:53		Laukahi Z-1,FD 50.28km ,IR-2.102KA												
15	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	05-10-2025	20:11	05-10-2025	20:38		Laukhai: Z-1, 50.14 km , R-N , 2.114 kA												
16	220KV-MUZAFFARPUR(PG)-GORAUL(BH)-1	05-10-2025	03:29	05-10-2025	10:36	Muzaffarpur : B_N, F Dist 9.1km, F Current 8.94 kA	-			1	1	0	0	0	0		1	1	Line tripped in Z-1 protection on phase to ground fault and within 100 msec again same fault occurred and three phase got tripped.
17	220KV-NEW PURNEA-MADHEPURA-1	04-10-2025	17:27	05-10-2025	14:05	New Purnea: B_Y, ly 5.18 kA, lb 5.19 kA, F Dist 34.5 km	Madhepura: Y_B, Zone-1 F Distance 58.97km, ly-2.36kA lb- 2.364KA			1	1	0	0	0	0		1	1	Line tripped on phase to phase to earth fault from both ends.
18	220KV-SITAMARHI-MOTIPUR-2	04-10-2025	13:20	12-10-2025	17:03		Motipur: Z1, Y-N Jy=4.621kA, Distance=35.59KM				0		0		1		0	0	Due to PLCC issue , close command not issued after single pole tripping at Motipur end.
19	220KV-SAHARSA(PMTL)-KHAGARIA(NEW)-1	04-10-2025	12:14	04-10-2025	15:48		Khagaria New-No tripping				1		0		0		1	1	It is to note that there was no tripping of 220KV-SAHARSA(PMTL)-KHAGARIA(NEW)-1 on dt-04/10/25 from Khagaria New side, also there was no any other power disturbance at Khagaria New end on dt-04/10/25 except 220KV-SAHARSA(PMTL)-KHAGARIA(NEW)-2.
20	220KV-MUZAFFARPUR-HAJIPUR-2	04-10-2025	11:58	05-10-2025	09:43	Muzaffarpur: R_Y_N fault FD- 63.92 km, FC-Ir 3.56 kA, ly 3.36 kA	hajipur-Z-1, R-Y-Earth			1	1	0	0	0	0		1	1	Line tripped on phase to phase to earth fault from both ends.

21	220KV-SAHARSA(PMTL)-KHAGARIA(NEW)-2	04-10-2025	11:26	05-10-2025	17:23		Khargaria: R-N, 27km, 3.43kA		1		0	0	1	1	1	A/r failed after 1 sec from both ends.
22	220KV-SITAMARHI-MOTIPUR-1	04-10-2025	09:47	04-10-2025	14:08	Not tripped	Motipur : Overvoltage Vr=37.67kV Vy=146.5kV Vb=143.5kV		1		0	0	1	1	1	Line tripped from Motipur end on over voltage protection.
23	220KV-NEW PURNEA-MADHEPURA-1	02-10-2025	09:44	02-10-2025	10:35	New Purnea end: Y_B_N fault, FD-58.7 km, Iy 3.63 kA, Ib 3.53 kA.	Madhepura end: Zone-1, YBN fault, Distance-38.1KM, Ib- 3.04KA, Ic- 3.07KA	1	1	0	0	0	0	1	1	Line tripped on phase to phase to earth fault from both ends.
24	220KV-MUZAFFARPUR(PG)-AMNOUR-1	02-10-2025	07:42	02-10-2025	09:42	Muz pg-B-Earth, Z-1, FC-2.67kA	Amnour-Z1,10.4KM,BN,3.14KA Muz:BN, 49.87KM, 2.69KA	0	0	0	0	1	1	0	0	PLCC issue
25	220KV-MUZAFFARPUR(PG)-AMNOUR-2	01-10-2025	11:51	01-10-2025	14:15	Muz pg-C-Earth, Z-1,	Amnour relay details- Ic 1.79 KA, . Fault location - 48.4 km, Z 01									

# OPTCL

## PROTECTION PERFORMANCE INDICES AS PER TRIPPING LIST OF 153rd PCC MEETING AGENDA FOR THE MONTH OF OCTOBER- 2025 FOR OPTCL ,SLDC,ODISHA

SL.NO	NAME OF THE ELEMENT	TRIPPING DATE	TRIPPING TIME	RESTORATION DATE	RESTORATION TIME	REASON(RELAX INDICATION)		NC		NU		NF		DEPENDABILITY INDEX (NC/NC+NF)	SECURITY INDEX (NC/NC+NU)	RELIABILITY INDEX(NC/NC+NU+NF)	REMARKS
						END-A	END-B	END-A	END-B	END-A	END-B	END-A	END-B				
						END-A	END-B	END-A	END-B	END-A	END-B	END-A	END-B				
1	400KV LAPANGA- ADITYA ALUMINA-1	28.10.2025	14:38	28.10.2025	15:59	NO TRIP	Line Differential Protection	0	0	0	1	0	0	END A=0 ,END B=0	END A=0 ,END B=0	END A=0 ,END B=0	No FAULT BUT LINE TRIPPED FROM ADITYA ALUMINA END DUE TO UNWANTED LINE DIFFERENTIAL PROTECTION.
2	400KV LAPANGA- ADITYA ALUMINA-2	28.10.2025	14:38	28.10.2025	16:10	NO TRIP	Line Differential Protection	0	0	0	1	0	0	END A=0 ,END B=0	END A=0 ,END B=0	END A=0 ,END B=0	No FAULT BUT LINE TRIPPED FROM ADITYA ALUMINA END DUE TO UNWANTED LINE DIFFERENTIAL PROTECTION.
3	220 KV BUDHIPADAR-KORBA-2	09.10.2025	11:45	09.10.2025	13:44	Z-1/B-N/1.65KA/88.18 KA/AR SUCCESS	Z-1/B-N/2.3KA/71Km	1	1	0	0	0	0	END A=1 ,END B=1	END A=1 ,END B=1	END A=1 ,END B=1	A/R SUCCESSFUL AT BUDHIPADAR END BUT THREE PHASE TRIPPING AT KORBA END
4	220 KV JODA-RAMCHANDRAPUR-1	05.10.2025	11:31	05.10.2025	12:05	AR SUCCESSFUL	Z-2/B-N/1.94KA/106.7km	1	1	0	0	0	0	END A=1 ,END B=1	END A=1 ,END B=1	END A=1 ,END B=1	A/R SUCCESSFUL AT JODA END BUT THREE PHASE TRIPPING IN Z-2 AT RAMCHANDRAPUR END.
5	220 KV BANIPADA (PG)-BALASORE -1	05.10.2025	04:38	05.10.2025	09:03	NO TRIP	TRIPPED IN MT	0	1	0	0	1	0	END A=0 ,END B=1	END A=0 ,END B=1	END A=0 ,END B=1	3 PH TRIP FROM BALASORE END AS JUMPER SNAPPED
6	220 KV PANDIAYIL PG-SAMAGARA-2	03.10.2025	02:34	04.10.2025	10:40	Z-2/B-N/2.93 KA/45.2 KM	Z-1/B-N/2.32 KA/0.5 KM	1	1	0	0	0	0	END A=1 ,END B=1	END A=1 ,END B=1	END A=1 ,END B=1	AR FAILED AFTER 1 Sec
7	220 KV BOLANGIR (PG)-BOLANGIR(OPTCL)	01.10.2025	10:48	01.10.2025	12:23	Z-3/B-E/0.25 KA/17.6KM	NO TRIP	1	0	0	0	0	1	END A=1 ,END B=0	END A=1 ,END B=0	END A=1 ,END B=0	FAULT WAS IN 220 KV BOLANGIR- KESINGA LINE(B-E). SAME FAULT WAS NOT CLEARED FROM KESINGA END,AFTER 800 msec FAULT WAS CLEARED IN ZONE-3 FROM BOLANGIR (PG ) END

SL NO.	VOLTAGE LEVEL	LINE NUMBER AND LINE LENGTH	S/D,B/D,TRIP, AUTO RECLOSE	INITIALISATION TIME	NORMALISATION TIME	OUTAGE HOUR	OUTAGE DESCRIPTION WITH RELAY INDICATION AND PLCC COUNTER READING	PRELIMINARY FINDINGS	ACTION TAKEN/REMEDIATION ACTION	WEATHER CONDITION	ACTION TO BE TAKEN
1	132 KV	L#20 (KALIPHARI-DTPS ) Line Length:40 km	DTPS End :TRIPPED KALIPHARI End: TRIPPED	04.10.25,01:22 hrs			<p><b>KALIPHARI END</b> Protection Operated:Distance Protection Z1 Trip, BPH, Bay Position:Normal Fault in Phase:BLUE-Phase Fault Distance: 18.23 KM Fault Loop:C-N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIP Fault Resistance: Ω Carrier Status: Carrier Switch-OUT, Fault Current: IA=211.61 A L66.9°,IB= 204.4 A L49.6°,IC=1977 A L51.0° Voltage during Fault : . VAN=82.84 KV L0°, VBN=79.30 KV L-118.6°,VCN=29.452 KV L109.6°</p> <p><b>DTPS END</b> Protection Operated: Distance Protection Z1 Trip, BPH Bay Position:Normal Fault in Phase:BLUE-Phase Fault Distance: KM Loop:C-N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIP Fault Resistance: Ω Carrier Status: Carrier Switch-OUT, PLCC COUNTER READING :</p>	PRELIMINARY FINDINGS:	<p>REMEDIAL ACTION : PATROLLING CARRIED OUT FROM 37 TO 65.</p> <p>NO ABNORMALITY OBSERVED</p> <p>DTPC PROTECTION NEEDS TO BE CHECKED 22.10.2025.</p>		TOWER TOP PATROLLING WILL BE CARRIED OUT FROM 37 TO 42 IN THIS WEEK.
2	132 KV	L#113 (DHANBAD-PATHERDIH ) Line Length:35 km	DHANBAD End :AUTORECLOSED PATHERDIH End: TRIPPED	01.10.25,17:50 hrs	01.10.25,19:06 hrs		<p><b>DHANBAD END</b> Protection Operated:Distance Protection ZCOM Trip, RPH, Bay Position:Normal Fault in Phase:RED-Phase Fault Distance: 32.1 KM Fault Loop:A-N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: AUTORECLOSED Fault Resistance: 5.58 + j 8.96 Ω Carrier Status: Carrier Switch-IN, CARRIER HEALTHY Fault Current: IA=2314.61 A L-58.9°,IB= 110.4 A L-65.6°,IC=79 A L128.0° Voltage during Fault : . VAN=67.84 KV L0°, VBN=74.30 KV L-99.6°,VCN=69.452 KV L115.6°</p> <p><b>PATHERDIH END</b> Protection Operated: Distance Protection Z1 Trip, RPH Bay Position:Normal Fault in Phase: RED-Phase Fault Distance: 10.9 KM Fault Loop:A-N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIP Fault Resistance: Ω Carrier Status: Carrier Switch-IN, CARRIER HEALTHY PLCC COUNTER READING :</p>	PRELIMINARY FINDINGS:	<p>REMEDIAL ACTION : GROUND PATROLLING CARRIED OUT FROM 28 TO 56.</p> <p>NO ABNORMALITY OBSERVED.</p>	RAINY AND THUNDERING	TOWER TOP PATROLLING WILL BE CARRIED OUT FROM 30 TO 40 BY 08.11.2025.  TOWER FOOT EARTHING MEASUREMENT MAY BE CARRIED OUT FROM 28 TO 56 BY THE END OF NOVEMBER.
3	220 KV	L#250 (RAMGARH-MTPS ) Line Length:211 km	RAMGARH End :AUTORECLOSED MTPS End: TRIP	08.10.25,10:50 hrs	08.10.25,11:02 hrs		<p><b>MTPS END</b> Protection Operated:Distance Protection Z1 Trip, BPH TRIP, CARRIER SEND Bay Position:Normal Fault in Phase:--BLUE -Phase Fault Distance: 142.9 KM Fault Loop:C-N Auxiliary Relay: Operated:186 A OPTD Autoreclose Status:TRIP Fault Resistance: Ω Carrier Status: Carrier Switch-IN  F/CR0.12KA/0.17KA/1.01KA</p> <p><b>RAMGARH END</b> Protection Operated:Distance Protection Z1 Trip, BPH TRIP, CARRIER SEND Bay Position:Normal Fault in Phase:--BLUE -Phase Fault Distance: 89.3 KM Fault Loop:C-N Auxiliary Relay: Operated:186 A OPTD Autoreclose Status:AUTORECLOSED Fault Resistance:13.04 + j14.85 Ω Carrier Status: Carrier Switch-IN, Fault Current: IA=131.92 A L160.4°,IB= 169.32 A L49.8°,IC=1331.53 A L66.4° Voltage during Fault : . VAN=127.52 KV L0°, VBN=127.08 KV L240.2°,VCN=115.65 KV L115.5°</p>	PRELIMINARY FINDINGS:	<p>REMEDIAL ACTION : Ground Patrolling AND TOWER TOP carried out from 452 to 470. No abnormality observed</p> <p>Ground Patrolling also carried out from 358 to 428. No abnormality observed</p>	Rainy and Lightning	

4	220 KV	L#250 (RAMGARH-MTPS ) Line Length:210 km	RAMGARH End :AUTORECLOSED MTPS End: TRIP	09.10.25,03 :40 hrs	09.10.25,03 :49 hrs	<p><b>MTPS END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, RPH TRIP, CARRIER SEND Bay Position:Normal Fault in Phase:-RED -Phase Fault Distance: 42.9 KM Fault Loop:A-N Auxiliary Relay: Operated:186 A OPTD Autoreclose Status:TRIP Fault Resistance: <math>\Omega</math> Carrier Status: Carrier Switch-IN F/C=3.885KA/169A/133.92A</p>	<p><b>RAMGARH END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, RPH TRIP, CARRIER SEND Bay Position:Normal Fault in Phase:-RED -Phase Fault Distance: 179.0 KM Fault Loop:A-N Auxiliary Relay: Operated:186 A OPTD Autoreclose Status:AUTORECLOSED Fault Resistance:6.27 + j29.52 <math>\Omega</math> Carrier Status: Carrier Switch-IN, Fault Current: IA=915.41 A L279.7°,IB= 138.88 A L58.0°,IC=107.65 A L283.9° Voltage during Fault : . VAN=117.86 KV L359.2°, VBN=129.118 KV L240.0°,VCN=128.87 KV L118.8°</p>	PRELIMINARY FINDINGS:	REMEDIAL ACTION : Tower Top Patrolling carried out from 125 to 145. No abnormality observed	Rainy and Lightning	Tower Patrolling will be carried out from 100 to 124 in this week.
5	220 KV	L#250 (RAMGARH-MTPS ) Line Length:210 km	RAMGARH End :TRIP MTPS End: TRIP	19.10.25,04 :36 hrs	19.10.25,04 :42 hrs	<p><b>MTPS END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, RPH TRIP, CARRIER SEND Bay Position:Normal Fault in Phase:-RED -Phase Fault Distance: 46.29 KM Fault Loop:A-N Auxiliary Relay: Operated:186 A OPTD Autoreclose Status:TRIP Fault Resistance: <math>\Omega</math> Carrier Status: Carrier Switch-IN F/C=3.57KA/159.64A/126.83A</p>	<p><b>RAMGARH END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, RPH TRIP, CARRIER SEND Bay Position:Normal Fault in Phase:-RED -Phase Fault Distance: 178.1 KM Fault Loop:A-N Auxiliary Relay: Operated:186 A OPTD Autoreclose Status:TRIP Fault Resistance:5.92 + j29.57<math>\Omega</math> Carrier Status: Carrier Switch-IN, Fault Current: IA=921.63 A L278.9°,IB= 136.79 A L53.1°,IC=96.788 A L282.6° Voltage during Fault : . VAN=117.72 KV L359.1°, VBN=129.047 KV L239.9°,VCN=128.70 KV L118.8°</p>	PRELIMINARY FINDINGS:	REMEDIAL ACTION : Tower Top Patrolling carried out from 125 to 145. No abnormality observed	Rainy and Lightning	Tower Patrolling will be carried out from 100 to 124 in this week.
6	220 KV	L#228 (KALYANESWARI-MTPS ) Line Length:56 km	KALYANESWARI End :AUTORECLOSED MTPS End: TRIPPED	13.10.25,14:56 hrs	13.10.25,15:07 hrs	<p><b>KALYANESWARI END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, BPH, Bay Position:Normal Fault in Phase:-BLUE -Phase Fault Distance: 45 KM Fault Loop:C-N Auxiliary Relay: Operated:86 OPTD Autoreclose Status:AUTORECLOSED Fault Resistance: <math>\Omega</math> Carrier Status: Carrier Switch-IN,</p>	<p><b>MTPS END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, BPH, Bay Position:Normal Fault in Phase:-BLUE -Phase Fault Distance: 9.347 KM Fault Loop:C- N Auxiliary Relay: Operated:86 OPTD Autoreclose Status:TRIPPED Fault Resistance: <math>\Omega</math> Carrier Status: Carrier Switch-IN,</p>	PRELIMINARY FINDINGS:	REMEDIAL ACTION : Insulator flash over observed at loc no. 150.  Insulator replaced on 15.10.2025		Tower top patrolling will be carried out 43 to 60 by this week.

7	220 KV	L#215 (JAMSHEDPUR- JINDAL ) Line Length:134 km	JAMSHEDPUR End :AUTORECLOSED JINDAL End: Autoreclosed	04.10.25,10:23 hrs			<p><b>JAMSHEDPUR END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, BPH Bay Position:Normal Fault in Phase:-BLUE -Phase Fault Distance: 88.3 KM Fault Loop:C- N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: <b>AUTORECLOSED</b> Fault Resistance: 45.2 + j 35.76 Ω Carrier Status: Carrier Switch-IN, CARRIER HEALTHY Fault Current: IA= 215.3 A L2.3°,IB= 253.88 A L-121.5°,IC=1077.4 A L86.2° Voltage during Fault : . VAN=133.94 KV L0°, VBN=132.68 KV L-118.9°,VCN=120.28 KV L114.5° PLCC COUNTER READING :</p>	<p><b>JINDAL END</b></p> <p>Protection Operated: : Distance Protection ZCOM Trip,B PH Bay Position:Normal Fault in Phase:-BLUE -Phase Fault Distance:74.25 KM Fault Loop:C- N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: Autoreclosed Fault Resistance: 54.14 Ω Carrier Status: Carrier Switch-IN,CARRIER HEALTHY Fault Current: IA= 322.3 A ,IB= 141.0 A ,IC=1386 A Voltage during Fault : . VAN=129.7 KV , VBN=129.2 KV, VCN=101.5KV . PLCC COUNTER READING :</p>	PRELIMINARY FINDINGS:	REMEDIAL ACTION : Ground patrolling carried out from 276 to 300	Ground patrolling to be carried out from loc 250 to 276 in this week.	
8	132 KV	L#80 (BTPS-BARHI) Line Length: 64 km	BARHI End :AUTORECLOSED BTPS End: AUTORECLOSED	18.10.25, 09:30 hrs			<p><b>BARHI END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, BPH O/C START &gt;1, EF START IN1 Bay Position:Normal Fault in Phase:-BLUE-Phase Fault Distance: 41.15 KM Fault Loop:C-N Auxiliary Relay: Operated:94 OPTD Fault Resistance: Ω Autoreclose Status: <b>AUTORECLOSED</b> Carrier Status: Carrier Switch-IN,Carrier healthy, Fault Current: IA= 135.43 A L108.4°,IB= 352.23 A L36.8°,IC=895 A L33.7° Voltage during Fault : . VAN=67.62 KV L0°, VBN=70.78 KV L-135.6°,VCN=35.57 KV L105.9° PLCC COUNTERREADING : BEFORE TRIPPING TX:49 RX:563 AFTER TRIPPING TX:50 RX:564</p>	<p><b>BTPS END</b></p> <p>Protection Operated;</p>	PRELIMINARY FINDINGS: Flash over observed at loc 55	REMEDIAL ACTION REQUIRED:	Insulators will be replaced at the earliest.	
9	132 KV	L#83 (KONAR-BARHI) Line Length: 82 km	BARHI End :AUTORECLOSED KONAR End: AUTORECLOSED	06.10.25, 04:40 hrs			<p><b>BARHI END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, RPH &amp; Y PH Bay Position:Normal Fault in Phase:-RED-YELLOW-Phase Fault Distance: 44.58 KM Fault Loop:A-B Auxiliary Relay: Operated:94 OPTD Fault Resistance: Ω Autoreclose Status: <b>AUTORECLOSED</b> Carrier Status: Carrier Switch-IN,Carrier healthy, Fault Current: IA= 322.54 A L174.3°,IB= 1045.4 A L173.8°,IC=254.71 A L-179.4° Voltage during Fault : . VAN=74.03 KV L0°, VBN=20.27 KV L-120.6°,VCN=72.52 KV L135.0° PLCC COUNTERREADING :</p>	<p><b>KONAR END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, RPH &amp; Y PH Bay Position:Normal Fault in Phase:-RED-YELLOW-Phase Fault Distance: 10.37 KM Fault Loop:A-B Auxiliary Relay: Operated:94 OPTD Fault Resistance: Ω Autoreclose Status: <b>AUTORECLOSED</b> Carrier Status: Carrier Switch-IN,Carrier healthy,</p>	PRELIMINARY FINDINGS: Flash over Insulator observed at loc no. 45 (Middle and Bottom phase insulators flash over observed)	REMEDIAL ACTION REQUIRED:Insulators replaced on 08.10.2025.	RAINY & Thundering.	
10	132 KV	L#61 (RAMKANALI-CTPS ) Line Length:60 km	RAMKANALI End :NA CTPS End: TRIPPED	06.10.25,05:38 hrs	06.10.25,05:46 hrs		<p><b>RAMKANALI END</b></p> <p>Protection Operated:</p>	<p><b>CTPS END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, RPH, Bay Position:Normal Fault in Phase:-RED Phase Fault Distance: 47.64 KM Fault Loop:A-N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIPPED. Carrier Status: Carrier Switch-OUT</p>	PRELIMINARY FINDINGS:	REMEDIAL ACTION : Shut down availed on 10.10.2025. flash over insulators replaced at loc 152 ( R & Y ), 155 ( R & Y ), 161 R ph	rainy and Thundering	Tower Top Patrolling to be carried out from loc 13 to 20 by 25.10.2025

11	132 KV	L#21 (KALIPHARI-DTPS ) Line Length:40 km	DTPS End :TRIPPED KALIPHARI End: TRIPPED	03.10.25,01:22 hrs		<p><b>KALIPHARI END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, YPH &amp; BPH, Bay Position:Normal Fault in Phase:-YELLOW-BLUE-Phase Fault Distance: 14.35 KM Fault Loop:B-C Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIP Fault Resistance: Ω Carrier Status: Carrier Switch-OUT, Fault Current: IA=60.61 A L88.9°,IB= 2244.4 A L-162.6°,IC=2206 A L16.0° Voltage during Fault : . VAN=80.84 KV L0°, VBN=48.30 KV L-160.6°,VCN=37.452 KV L155.6°</p>	<p><b>DTPS END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, YPH &amp; BPH Bay Position:Normal Fault in Phase:-YELLOW-BLUE-Phase Fault Distance: KM Loop:B-C Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIP Fault Resistance: Ω Carrier Status: Carrier Switch-OUT, PLCC COUNTER READING :</p>	Protection Fault	PRELIMINARY FINDINGS:	<p>REMEDIAL ACTION : PATROLLING CARRIED OUT FROM 37 TO 60.</p> <p>NO ABNORMALITY OBSERVED</p>		TOWER TOP PATROLLING WILL BE CARRIED OUT FROM 37 TO 42 IN THIS WEEK.
12	220 KV	L#248 (DHANBAD-GIRIDIH) Line Length: 45 km	DHANBAD End :AUTORECLOSED GIRIDIH End: AUTORECLOSED	01.10.25, 19:52 hrs		<p><b>DHANBAD END</b></p> <p>Protection Operated:DP OPTD, Z1 Trip, R PH, Bay Position:Normal Fault in Phase:--RED-Phase Fault Distance: 21.8 KM Fault Loop: A-N Auxiliary Relay: Operated:96 OPTD Autoreclose Status: AUTORECLOSED, Fault Resistance :- Ω Carrier Status: Carrier Switch-IN,Carrier healthy, Fault Current: IA= 5076.1A L-70.2°,IB=238.5 A L105.2°,IC=384.7 A L112.6°, Voltage during Fault : . VAN=72.1 KV L0°, VBN=143.23 KV L-131.0°,VCN=132.01 KV L131.6°</p>	<p><b>GIRIDIH END</b></p> <p>Protection Operated:Distance Z1 Trip, R PH CARRIER SEND Bay Position:Normal Fault in Phase:--RED-Phase Fault Distance: 18.1 KM Fault Loop:AN Auxiliary Relay: Operated:186A, 286B OPTD Autoreclose Status: AUTORECLOSED Carrier Status: Carrier Switch-IN,Carrier healthy,</p>	Protection	PRELIMINARY FINDINGS:	<p>REMEDIAL ACTION : ground &amp; tower top patrolling carried out from 80 to 90.</p> <p>R ph Disc insulator found broken at loc no. 90</p>	CLOUDY	Insulator will be replaced by 25.10.2025
13	220 KV	L#241 (DHANBAD-ESL ) Line Length:58.7 km	DHANBAD End :TRIPPED ESL End: TRIPPED	01.10.25, 17:37 hrs		<p><b>DHANBAD END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, RPH, Bay Position:Normal Fault in Phase:--RED-Phase Fault Distance: 32.7 KM Fault Loop:- A-N Auxiliary Relay: Operated:86A,86B OPTD Autoreclose Status: TRIP Fault Resistance: 1.65 + j 5.45 Ω Carrier Status: Carrier Switch-IN,Carrier Healthy, Fault Current: IA=3661.9 A L-72.8°,IB= 288.93 A L116.7°,IC=358.61 A L106.7° Voltage during Fault : . VAN=81.23 KV L0°, VBN=123.74 KV L-123.6°,VCN=135.452 KV L115.6°</p>	<p><b>ESL END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, RPH, Bay Position:Normal Fault in Phase:--RED-Phase Fault Distance: 54.9 KM Fault Loop:- A-N Auxiliary Relay: Operated:86A,86B OPTD Autoreclose Status: TRIP Fault Resistance: Ω Carrier Status: Carrier Switch-IN,Carrier Healthy, PLCC COUNTER READING :</p>	Protection	PRELIMINARY FINDINGS:	<p>REMEDIAL ACTION : Ground patrolling carried out from 80 to 100.</p> <p>No abnormality observed</p>	Rainy and Thundering	Tower top patrolling will be carried out from 80 to 90 in this week.

14	220 KV	L#242 (DHANBAD-ESL ) Line Length:58.7 km	DHANBAD End :TRIPPED ESL End: TRIPPED	01.10.25,17:37 hrs			<p><b>DHANBAD END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, RPH, Bay Position:Normal Fault in Phase:-RED-Phase Fault Distance: 25.6 KM Fault Loop:- A-N Auxiliary Relay: Operated:86A,86B OPTD Autoreclose Status: TRIP Fault Resistance: 1.87 + j 4.42 Ω Carrier Status: Carrier Switch-IN,Carrier Healthy, Fault Current: IA=3507.9 A L-64.8°,IB= 277.93 A L122.7°,IC=339.61 A L114.7° Voltage during Fault : . VAN=67.23 KV L0°, VBN=138.74 KV L- 121.6°,VCN=137.452 KV L128.6°</p>	<p><b>ESL END</b> Protection</p> <p>Protection Operated:Distance Protection Z1 Trip, RPH, Bay Position:Normal Fault in Phase:-RED-Phase Fault Distance: 39.0 KM Fault Loop:- A-N Auxiliary Relay: Operated:86A,86B OPTD Autoreclose Status: TRIP Fault Resistance: Ω Carrier Status: Carrier Switch-IN,Carrier Healthy, PLCC COUNTER READING :</p>	PRELIMINARY FINDINGS:	REMEDIAL ACTION : Ground patrolling carried out from 80 to 100.	Rainy and Thundering	Tower top patrolling will be carried out from 80 to 90 in this week.
15	220 KV	L#203 (DHANBAD-CTPS) Line Length: 445 km	DHANBAD End :TRIPPED CTPS End: TRIPPED	01.10.25, 17:52 hrs			<p><b>DHANBAD END</b></p> <p>Protection Operated: Distance prot Z1 Trip, B PH, Bay Position:Normal Fault in Phase:-BLUE-PHASE Fault Distance: 34.1 KM Fault Loop: C-N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIPPED, Fault Resistance :- 6.16 + j 5.84 Ω Carrier Status: Carrier Switch-IN,Carrier healthy, Fault Current: IA= 49.15 A L173.9°,IB=114.085 A L85.0°,IC=2984.98 A L70.8° Voltage during Fault : . VAN=119.41 KV L0°, VBN=131.49 KV L-126.2°,VCN=113.70 KV L111.8°</p>	<p><b>CTPS END</b> Protection</p> <p>Operated:Distance Z1 Trip, B PH CARRIER SEND Bay Position:Normal Fault in Phase:-BLUE-Phase Fault Distance: 26.28 KM Fault Loop:CN Auxiliary Relay: Operated:86A, 86B OPTD Autoreclose Status: TRIPPED, Fault Resistance :- Ω Carrier Status: Carrier Switch-IN,Carrier healthy,</p>	PRELIMINARY FINDINGS:	REMEDIAL ACTION : BOTTOM DISC INSULATOR FOUND DAMAGED AT LOC 95	CLOUDY	Insulator will be replaced by 25.10.2025
16	220 KV	L#213 (JAMSHEDPUR-BTPS ) Line Length:157 km	JAMSHEDPUR End :TRIPPED BTPS End: TRIPPED	02.10.25,01:22 hrs	02.10.25,11:03 hrs		<p><b>JAMSHEDPUR END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, RPH Bay Position:Normal Fault in Phase:-RED -Phase Fault Distance: 107.4 KM Fault Loop:A- N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIPPED DUE TO PERMANENT FAULT Fault Resistance: 2.52 + j 17.27 Ω Carrier Status: Carrier Switch- IN, CARRIER HEALTHY Fault Current: IA= 1435.17 A L280.7°,IB= 63.46 A L332.3°,IC=61.76 A L207.2° Voltage during Fault : . VAN=112.61 KV L0°, VBN=134.84 KV L241.3°,VCN=134.28 KV L118.1° PLCC COUNTER READING :</p>	<p><b>BTPS B END</b></p> <p>Protection Operated: : Distance Protection Z1 Trip, RPH Bay Position:Normal Fault in Phase:-RED -Phase Fault Distance: 17.24 KM Fault Loop:A- N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIP Fault Resistance:1.581 Ω Carrier Status: Carrier Switch- IN,CARRIER HEALTHY Fault Current: IA= 6490 A ,IB= 156.8 A ,IC=106.8 A Voltage during Fault : . VAN=79.58 KV , VBN=132.2 KV, VCN=128.3 KV</p>	PRELIMINARY FINDINGS: INSULATOR DECAPPING FOUND AT LOC 418	REMEDIAL ACTION : INSULATOR REPLACED on 02.10.2025		

17	220 KV	L#215 (JAMSHEDPUR- JINDAL ) Line Length:134 km	JAMSHEDPUR End :TRIPPED JINDAL End: AUTORECLOSED	03.10.25,14:30 hrs	03.10.25,15:00 hrs	<p><b>JAMSHEDPUR END</b></p> <p>Protection Operated:Distance Protection Z2 Trip, RPH Bay Position:Normal Fault in Phase:--RED -Phase Fault Distance: 120.1 KM Fault Loop:A- N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIPPED Fault Resistance: 30.07 + j 46.86 Ω Carrier Status: Carrier Switch- IN, CARRIER HEALTHY Fault Current: IA= 240.2 A L11.2°,IB= 1292.8 A L-172.9°,IC=303.2 A L-0.2° Voltage during Fault : . VAN=130.85 KV L0°, VBN=110.969 KV L-125.3°,VCN=130.28 KV L122.5° PLCC COUNTER READING :</p>	<p><b>JINDAL END</b></p> <p>Protection Operated: : Distance Protection Z1 Trip, R PH Bay Position:Normal Fault in Phase:--RED-Phase Fault Distance:25.78 KM Fault Loop:A- N Auxiliary Relay: Operated:94 OPTD Autoreclose Status: AUTORECLOSED Fault Resistance: 1.319 Ω Carrier Status: Carrier Switch-IN,CARRIER HEALTHY Fault Current: IA= 3054 A ,IB= 166 A ,IC=190.8 A Voltage during Fault : . VAN=55.6 KV , VBN=141.9 KV, VCN=138 KV . PLCC COUNTER READING :</p>	PRELIMINARY FINDINGS:  PLCC card issue at Jamshedpur end needs to be addressed at the earliest.	REMEDIAL ACTION :		
18	132 KV	L#80 (BTPS-BARHI) Line Length: 82 km	BARHI End :AUTORECLOSED BTPS End: AUTORECLOSED	03.10.25, 04:39 hrs		<p><b>BARHI END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, BPH O/C START &gt;1, EF START IN1 Bay Position:Normal Fault in Phase:--BLUE-Phase Fault Distance: 22.94 KM Fault Loop:C-N Auxiliary Relay: Operated:94 OPTD Fault Resistance: 4.52 Ω Autoreclose Status: AUTORECLOSED Carrier Status: Carrier Switch-IN,Carrier healthy, Fault Current: IA= 358.13 A L176.7°,IB= 1305.4 A L177.1°,IC=217.19 A L-168.7° Voltage during Fault : . VAN=74.88 KV L0°, VBN=29.27 KV L-118.6°,VCN=73.55 KV L134.9° PLCC COUNTERREADING :</p>	<p><b>BTPS END</b></p> <p>Protection Operated;</p>	PRELIMINARY FINDINGS: Flash over observed at loc no. 67	REMEDIAL ACTION REQUIRED: Ground Patrolling carried out from 59 to 75.  Insulators replaced on 14.10.2025.	RAINY	
19	132 KV	L#80 (BTPS-BARHI) Line Length: 82 km	BARHI End :AUTORECLOSED BTPS End: AUTORECLOSED	02.10.25, 00:02 hrs		<p><b>BARHI END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, RPH O/C START &gt;1, EF START IN1 Bay Position:Normal Fault in Phase:--RED-Phase Fault Distance: 42.54 KM Fault Loop:A-N Auxiliary Relay: Operated:94 OPTD Fault Resistance: Ω Autoreclose Status: AUTORECLOSED Carrier Status: Carrier Switch-IN,Carrier healthy, Fault Current: IA= 821.5 A L-69.3°,IB= 130.81 A L-40.1°,IC=258.71 A L-68.7° Voltage during Fault : . VAN=35.62 KV L0°, VBN=73.78 KV L-107.6°,VCN=74.57 KV L113.9° PLCC COUNTERREADING :</p>	<p><b>BTPS END</b></p> <p>Protection Operated;</p>	PRELIMINARY FINDINGS: Flash over observed at loc 158,167, 189	REMEDIAL ACTION REQUIRED: Insulators replaced on 14.10.2025.	RAINY	

20	132 KV	L#83 (KONAR-BARHI) Line Length: 82 km	BARHI End :TRIPPED KONAR End: TRIPPED	01.10.25, 17:35 hrs	01.10.25, 17:40 hrs	<p><b>BARHI END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, YPH O/C START &gt;1, EF START IN1 Bay Position:Normal Fault in Phase:--YELLOW-Phase Fault Distance: 15.52 KM Fault Loop:B-N Auxiliary Relay: Operated:94 OPTD Fault Resistance: Ω Autoreclose Status: TRIPPED Carrier Status: Carrier Switch-IN,Carrier healthy, Fault Current: IA= 322.54 A L174.3°,IB= 1045.4 A L173.8°,IC=254.71 A L-179.4° Voltage during Fault : . VAN=74.03 KV L0°, VBN=20.27 KV L- 120.6°,VCN=72.52 KV L135.0° PLCC COUNTERREADING :</p>	<p><b>KONAR END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, YPH O/C START &gt;1, EF START IN1 Bay Position:Normal Fault in Phase:--YELLOW-Phase Fault Distance: 50.34 KM Fault Loop:B-N Auxiliary Relay: Operated:94 OPTD Fault Resistance: Ω Autoreclose Status: TRIPPED Carrier Status: Carrier Switch-IN,Carrier healthy,</p>	PRELIMINARY FINDINGS: Flash over insulator observed at loc no. 95	REMEDIAL ACTION REQUIRED:	RAINY	Insulators will be replaced on 15.10.2025.
21	132 KV	L#83 (KONAR-BARHI) Line Length: 82 km	BARHI End :TRIPPED KONAR End: TRIPPED	01.10.25, 04:40 hrs		<p><b>BARHI END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, YPH O/C START &gt;1, EF START IN1 Bay Position:Normal Fault in Phase:--YELLOW-Phase Fault Distance: 3.35 KM Fault Loop:B-N Auxiliary Relay: Operated:94 OPTD Fault Resistance: Ω Autoreclose Status: TRIPPED Carrier Status: Carrier Switch-IN,Carrier healthy,  PLCC COUNTERREADING :</p>	<p><b>KONAR END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, YPH O/C START &gt;1, EF START IN1 Bay Position:Normal Fault in Phase:--YELLOW-Phase Fault Distance: 63.45 KM Fault Loop:B-N Auxiliary Relay: Operated:94 OPTD Fault Resistance: Ω Autoreclose Status: TRIPPED Carrier Status: Carrier Switch-IN,Carrier healthy,</p>	PRELIMINARY FINDINGS:Flash over insulator observed at loc no. 45	REMEDIAL ACTION REQUIRED: Insulators replaced on 08.10.2025.	RAINY	
22	132 KV	L#20 (KALIPHARI-DTPS ) Line Length:40 km	DTPS End :TRIPPED KALIPHARI End: TRIPPED	23.10.25,09:37 hrs		<p><b>KALIPHARI END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, YPH, Bay Position:Normal Fault in Phase:YELLOW-Phase Fault Distance: 26.17 KM Fault Loop:B-N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIP DUE TO FAULT Fault Resistance: Ω Carrier Status: Carrier Switch-IN, Fault Current: IA=346.4 A -178.1°,IB= 830.4 A L176.3°,IC=265.01 A L143.0° Voltage during Fault : . VAN=77.84 KV L0°, VBN=41.30 KV L- 147.6°,VCN=78.452 KV L124.6°</p>	<p><b>DTPS END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, YPH, Bay Position:Normal Fault in Phase:YELLOW-Phase Fault Distance: KM Fault Loop:B-N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIP Fault Resistance: Ω Carrier Status: Carrier Switch-IN, PLCC COUNTER READING :</p>	PRELIMINARY FINDINGS: AT LOC 67-68 GROUND CLEARANCE IS LOW DUE TO DUMPING.	REMEDIAL ACTION : LETTER MAY BE ISSUED TO ECL.		

23	132 KV	L#21 (KALIPHARI-DTPS ) Line Length:40 km	DTPS End :TRIPPED KALIPHARI End: TRIPPED	23.10.25,09:37 hrs	23.10.25,12:42 hrs	<p><b>KALIPHARI END</b></p> <p>Protection Operated:Distance Protection ZCOM Trip, YPH, CARRIER SEND, CARRIER RECEIVED Bay Position:Normal Fault in Phase:-YELLOW-Phase Fault Distance: 30.94 KM Fault Loop:B-N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIP DUE TO FAULT Fault Resistance: Ω Carrier Status: Carrier Switch-IN, Fault Current: IA=177.27 A L-177.9°,IB= 1480.2 A L171.4°,IC=131.96 A L-144.0° Voltage during Fault : . VAN=78.4 KV L0°, VBN=50.30 KV L-142.6°,VCN=80.59 KV L120.6°</p>	<p><b>DTPS END</b></p> <p>Protection</p> <p>Operated:Distance Protection Z1 Trip, YPH, Bay Position:Normal Fault in Phase:-YELLOW-Phase Fault Distance: KM Fault Loop:B-N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIP Fault Resistance: Ω Carrier Status: Carrier Switch-IN, PLCC COUNTER READING :</p>	<p>PRELIMINARY FINDINGS: AT LOC 67-68 GROUND CLEARANCE IS LOW DUE TO DUMPING.</p>	<p>REMEDIAL ACTION : LETTER MAY BE ISSUED TO ECL.</p>		
24	132 KV	L#21 (KALIPHARI-DTPS ) Line Length:40 km	DTPS End :TRIPPED KALIPHARI End: TRIPPED	24.10.25,10:52 hrs		<p><b>KALIPHARI END</b></p> <p>Protection Operated:Distance Protection ZCOM Trip, YPH, Bay Position:Normal Fault in Phase:-YELLOW-Phase Fault Distance: 38.52 KM Fault Loop:B-N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIP Fault Resistance: Ω Carrier Status: Carrier Switch-IN, Fault Current: IA=346.951 A L-177.9°,IB= 817.9 A L179.4°,IC=273.4 A L-148.0° Voltage during Fault : . VAN=77.4 KV L0°, VBN=43.30 KV L-147.6°,VCN=78.59 KV L122.6°</p>	<p><b>DTPS END</b></p> <p>Protection</p> <p>Operated:Distance Protection Z1 Trip, YPH, Bay Position:Normal Fault in Phase:-YELLOW-Phase Fault Distance: KM Fault Loop:B-N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIP Fault Resistance: Ω Carrier Status: Carrier Switch-IN, PLCC COUNTER READING :</p>	<p>PRELIMINARY FINDINGS: AT LOC 67-68 GROUND CLEARANCE IS LOW DUE TO DUMPING.</p>	<p>REMEDIAL ACTION : LETTER MAY BE ISSUED TO ECL.</p>		
25	220 KV	L#250 (RAMGARH-MTPS ) Line Length:211 km	RAMGARH End :TRIP MTPS End: TRIP	31.10.25,00:48 hrs	31.10.25,09:20 hrs	<p><b>MTPS END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, RPH, TRIP, CARRIER SEND Bay Position:Normal Fault in Phase:-RED-Phase Fault Distance: 195.2 KM Fault Loop:A-N Auxiliary Relay: Operated:186 A OPTD Autoreclose Status:TRIP Fault Resistance: Ω Carrier Status: Carrier Switch-IN</p> <p>Fault Current: IA=1142.9A L-73.1°,IB= 63.97 A L-156.3°,IC=309.1 A L115.9° Voltage during Fault : . VAN=126.49 KV L0°, VBN=131.79 KV L-119.9°,VCN=139.15 KV L119.3°</p>	<p><b>RAMGARH END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, RPH, TRIP, CARRIER SEND Bay Position:Normal Fault in Phase:-RED-Phase Fault Distance: 17.3 KM Fault Loop:A-N Auxiliary Relay: Operated:186 A OPTD Autoreclose Status:TRIP</p>	<p>PRELIMINARY FINDINGS:</p>	<p>REMEDIAL ACTION : Ground TOWER TOP PATROLLING CARRIED OUT FROM LOC 15 TO 25 AND 65 TO 75.</p> <p>NO ANORMALITY OBSERVED.</p>	<p>Rainy ande Lightning</p>	<p>TOWER Top Patrolling to be carried out from loc 25 to 65 by 10.11.2025</p>

26	220 KV	L#215 (JAMSHEDPUR- JINDAL ) Line Length:134 km	JAMSHEDPUR End :AUTORECLOSED JINDAL End: Autoreclosed	30.10.25,05:57 hrs			<p><b>JAMSHEDPUR END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, RPH Bay Position:Normal Fault in Phase:-RED -Phase Fault Distance: 16.7 KM Fault Loop:A- N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: <b>AUTORECLOSED</b> Carrier Status: Carrier Switch- IN, CARRIER HEALTHY Fault Current: IA= 3091.3 A L282.3°,IB= 204.88 A L275.5°,IC=139.4 A L280.2° Voltage during Fault : . VAN=40.94 KV L350.0°, VBN=138.68 KV L236.9°,VCN=134.28 KV L122.5° PLCC COUNTER READING : Before:- Tx - 22, 10; Rx- 11, 10 After :- Tx - 23, 11 Rx -11, 10.</p>	<p><b>JINDAL END</b></p> <p>Protection Operated: : Distance Protection ZCOM Trip,R PH Bay Position:Normal Fault in Phase:-RED -Phase Fault Distance:132.8 KM Fault Loop:A- N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: Autoreclosed Fault Resistance: 4.74 Ω Carrier Status: Carrier Switch-IN,CARRIER HEALTHY Fault Current: IA= 1.19 KA ,IB= 177.0 A ,IC=121.6 A Voltage during Fault : . VAN=99.7 KV , VBN=130.2 KV, VCN=129.0 KV . PLCC COUNTER READING : Before:- Tx - 70, 00; Rx- 35, 48 After :- Tx - 70,00; Rx - 36, 49.</p>	<p><b>PRELIMINARY FINDINGS:</b></p>	<p><b>REMEDIAL ACTION :</b> Ground Tower top patrolling done on 03.11.2025 from location 53-62.Flash over disc (5 nos.) found at location-61 in R-phase.Also,Disc flash over found at location 54 in all phases probably due to bird poop.</p> <p><b>INSULATORS WILL BE REPLACED AT LOC 54 &amp; 61 AND ALSO BIRD GUARD WILL BE INSTALLED AT LOC 54 IN NEXT SHUT DOWN.</b></p>		TOWER FOOT EARTHING MAY BE MEASURED AT LOC NO. 54 & 61.
27	220 KV	L#213 (JAMSHEDPUR-BTPS ) Line Length:157 km	JAMSHEDPUR End :AUTORECLOSED BTPS End: TRIP	30.10.25,03:40 hrs			<p><b>JAMSHEDPUR END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, RPH Bay Position:Normal Fault in Phase:-RED -Phase Fault Distance: 99.7 KM Fault Loop:A- N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: <b>AUTORECLOSED</b> Fault Resistance: 2.64 + j15.99 Ω Carrier Status: Carrier Switch- IN, CARRIER HEALTHY Fault Current: IA= 1521 A L281.3°,IB= 33.88 A L358.5°,IC=59.4 A L206.2° Voltage during Fault : . VAN=109.94 KV L358.8°, VBN=133.68 KV L241.9°,VCN=133.28 KV L118.5° PLCC COUNTER READING : Before:- Tx- 35,22; Rx- 11, 10 After :- Tx - 36, 23; Rx -11, 10.</p>	<p><b>BTPS END</b></p> <p>Protection Operated: : Distance Protection ZCOM Trip,R PH Bay Position:Normal Fault in Phase:-RED -Phase Fault Distance:34.28 KM Fault Loop:A- N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIP Fault Resistance: 73.13 m Ω Carrier Status: Carrier Switch-IN,CARRIER HEALTHY Fault Current: IA= 3.95 KA ,IB= 127.0 A ,IC=120.6 A Voltage during Fault : . VAN=97.7 KV , VBN=131.2 KV, VCN=129.0 KV . PLCC COUNTER READING :</p>	<p><b>PRELIMINARY FINDINGS:</b> FLASH OVER OBSERVED 387 &amp; 389. INSULATORS REPLACED ON 31.10.2025</p>	<p><b>REMEDIAL ACTION :</b></p>		TFER MEASUREMENT MAY PLEASE BE CARRIED OUT IN WINTER MAINTENANCE.
28	132 KV	L#90 (RAMKANALI-Jamuria ) Line Length:60 km	RAMKANALI End :NA Jamuria End: TRIPPED	23.10.25,08:39 hrs	23.10.25,14:08 hrs		<p><b>RAMKANALI END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, YPH, Bay Position:Normal Fault in Phase:-YELLOW Phase Fault Distance: 14.61 KM Fault Loop:B-N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIPPED. Carrier Status: Carrier Switch-OUT</p>	<p><b>JAMURIA END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, YPH, Bay Position:Normal Fault in Phase:-YELLOW Phase Fault Distance: 35.9 KM Fault Loop:B-N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIPPED. Carrier Status: Carrier Switch-OUT</p>	<p><b>PRELIMINARY FINDINGS:</b> JUMPER DICONNECTED AT LOC 279. JUMPER REPAIRED.</p>	<p><b>REMEDIAL ACTION :</b></p>		rainy and Thundering
29	132 KV	L#90 (RAMKANALI-Jamuria ) Line Length:60 km	RAMKANALI End :NA Jamuria End: TRIPPED	24.10.25,11:40 hrs	24.10.25,11:51 hrs		<p><b>RAMKANALI END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, BPH, Bay Position:Normal Fault in Phase:-BLUE Phase Fault Distance: 35.2 KM Fault Loop:C-N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIPPED. Carrier Status: Carrier Switch-OUT</p>	<p><b>JAMURIA END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, BPH, Bay Position:Normal Fault in Phase:-BLUE Phase Fault Distance: 35.2 KM Fault Loop:C-N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: TRIPPED. Carrier Status: Carrier Switch-OUT</p>	<p><b>PRELIMINARY FINDINGS:</b></p>	<p><b>REMEDIAL ACTION :</b> PATROLLING CARRIED OUT FROM 282 TO 299.</p> <p><b>TREE TRIMMING CARRIED OUT FROM LOC 316-317, 321-322, 322-323.</b></p>		rainy and Thundering

30	220 KV	L#240 (KALYANESWARI-MTPS ) Line Length:79.2 km	KALYANESWARI End :AUTORECLOSED MTPS End: TRIPPED	24.10.25,10:07 hrs		<p><b>KALYANESWARI END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, BPH, CARRIER SEND Bay</p> <p>Position:Normal</p> <p>Fault in Phase:--BLUE-Phase</p> <p>Fault Distance: 60.6 KM (M1), 60.9 KM (M2)</p> <p>Fault Loop:C-N</p> <p>Auxiliary Relay: Operated:186A,286B OPTD</p> <p>Autoreclose Status: AUTORECLOSED</p> <p>Fault Resistance: 4.20 + j 10.03 Ω</p> <p>Carrier Status: Carrier Switch-IN,Carrier Healthy,</p> <p>Fault Current: IA=26.86 A L94.9°,IB= 49.35 A L310.2°,IC=2593.51 A L52.8°,</p> <p>Voltage during Fault : . VAN=122.55 KV L0.2°, VBN=127.32 KV L235.4°,VCN=124.8 KV L116.7°</p> <p>PLCC COUNTER READING :</p>	<p><b>MTPS END</b> Protection</p> <p>Operated:Distance Protection Z1 Trip, BPH, CARRIER SEND</p> <p>Bay Position:Normal</p> <p>Fault in Phase:--BLUE-Phase</p> <p>Fault Distance: 1.5 KM</p> <p>Fault Loop:C-N</p> <p>Auxiliary Relay: Operated:94 OPTD</p> <p>Autoreclose Status: TRIPPED</p> <p>Fault Resistance: Ω</p> <p>Carrier Status: Carrier Switch-IN,Carrier Healthy,</p>	PRELIMINARY FINDINGS:	<p>REMEDIAL ACTION REQUIRED: GROUND AND TOWER TOP PATROLLING CARRIED OUT FROM 378 TO 388. TREE TRIMMING CARRIED OUT 382 TO 388.</p> <p>NO ABNORMALITY OBSERVED.</p>		ACTION REQ:- GROUND PATROLLING WILL BE CARRIED OUT FROM LOC 360 TO 378.
31	220 KV	L#217 (DHANBAD-MAITHON PG) Line Length: 52 km	DHANBAD End :AUTORECLOSED MAITHON PG End: AUTORECLOSED	24.10.25, 12:16 hrs		<p><b>DHANBAD END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, B PH, O/C START &gt;1, EF START IN1, CARRIER SEND</p> <p>Bay Position:Normal</p> <p>Fault in Phase:--BLUE-Phase</p> <p>Fault Distance: 20.7 KM (M1 &amp; M2)</p> <p>Fault Loop:CN</p> <p>Auxiliary Relay: Operated:186A, 286B OPTD</p> <p>Autoreclose Status: AUTRECLOSED,</p> <p>Fault Resistance :-3.34 + j 3.57 Ω</p> <p>Carrier Status: Carrier Switch-IN,Carrier healthy,</p> <p>Fault Current: IA= 272.40 A L160.6°,IB= 403.89 A L57.0°,IC=4020.11.76 A L66.4°,</p> <p>Voltage during Fault : . VAN=125.58 KV L353.8°, VBN=137.9 KV L243.5°,VCN=85.7 KV L112.8°</p> <p>PLCC COUNTERREADING :</p> <p>Before:- Tx- 654, Rx- 433</p>	<p><b>MAITHON_PG END</b></p> <p>Protection Operated:R PH,</p>	PRELIMINARY FINDINGS:	<p>REMEDIAL ACTION REQUIRED: BAMBOO TREE FOUND BETWEEN LOC 107 - 108.</p> <p>EMERGENCY SHUT DOWN HAS BEEN REQUESTED BUT CLEARANCE NOT RECEIVED TILL DATE.</p>		
32	220 KV	L#221 (MTPS-DTPS) Line Length: 14 km	MTPS End :TRIPPED DTPS End: TRIPPED	29.10.25, 18:09 hrs	29.10.25, 23:38 hrs	<p><b>MTPS END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, Y &amp; B PH, O/C START &gt;1, EF START IN1, CARRIER RECEIVED</p> <p>Bay Position:Normal</p> <p>Fault in Phase:--YELLOW-BLUE-Phase</p> <p>Fault Distance: 10.64 KM</p> <p>Fault Loop:B-C</p> <p>Auxiliary Relay: Operated:186A, 286B OPTD</p> <p>Autoreclose Status: TRIPPED,</p> <p>Fault Resistance :- Ω</p>	<p><b>DTPS END</b> Protection</p> <p>Operated;</p>	PRELIMINARY FINDINGS:	<p>REMEDIAL ACTION REQUIRED: ROW ISSUE AT LOC NO. 21-22 AND 37-38. MATTER HAS BEEN TAKEN UP WITH LOCAL PEOPLE. MATTER WILL BE RESOLVED AT THE EARLIEST IN NEXT SHUT DOWN.</p>		
33	220 KV	L#259 (RANCHI_PG -MTPS ) Line Length:220 km	RANCHI_PG End :AUTORECLOSED MTPS End: AUTORECLOSED	24.10.25,12:06 hrs		<p><b>MTPS END</b></p> <p>Protection Operated:Distance Protection Z1B Trip, BPH, TRIP, Bay</p> <p>Position:Normal</p> <p>Fault in Phase:--BLUE-Phase</p> <p>Fault Distance: KM</p> <p>Fault Loop:C-N</p> <p>Auxiliary Relay: Operated:186 A OPTD</p> <p>Autoreclose Status:AUTORECLOSED</p> <p>Fault Resistance: Ω</p> <p>Carrier Status: Carrier Switch-IN</p> <p>F/C#0.85KA</p>	<p><b>RANCHI_PG END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, BPH, TRIP, CARRIER SEND</p> <p>Bay Position:Normal</p> <p>Fault in Phase:--BLUE-Phase</p> <p>Fault Distance: 52.2 KM (M1), 58.9 KM (M2)</p> <p>Fault Loop:C-N</p> <p>Auxiliary Relay: Operated:186 A OPTD</p> <p>Autoreclose Status:AUTORECLOSED</p>	PRELIMINARY FINDINGS:	<p>REMEDIAL ACTION : Ground TOWER TOP PATROLLING CARRIED OUT FROM LOC 15 TO TO 75.</p> <p>NO ANORMALITY OBSERVED.</p>	Rainy ande Lightning	TFER MEASUREMENT MAY PLEASE BE CARRIED OUT IN WINTER MAINTENANCE.

34	220 KV	L#214 (JAMSHEDPUR-BTPS) Line Length:157 km	JAMSHEDPUR End :AUTORECLOSED BTPS End: AUTORECLOSED	31.10.25,04:21 hrs		<p style="text-align: center;"><b>JAMSHEDPUR END</b></p> <p>Protection Operated:Distance Protection Z1 Trip, RPH Bay Position:Normal Fault in Phase:-RED -Phase Fault Distance: 69.3 KM Fault Loop:A- N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: <b>AUTORECLOSED</b> Fault Resistance: 2.72 + j 11.22 Ω Carrier Status: Carrier Switch- IN, CARRIER HEALTHY Fault Current: IA= 1805.12 A L282.0°,IB= 49.76 A L36.5°,IC=171.445 A L307.1° Voltage during Fault : . VAN=95.36 KV L356.6°, VBN=136.98 KV L238.7°,VCN=135.26 KV L121.3° PLCC COUNTER READING :  Before:- Tx- 16,12,5, 16; Rx -24,24,25,25 After :- Tx - 18,14,7, 18; Rx -26,26,27,27.</p>	<p style="text-align: center;"><b>BTPS END</b></p> <p>Protection Operated: :Distance Protection Z1 Trip,R PH Bay Position:Normal Fault in Phase:-RED -Phase Fault Distance:96.62 KM Fault Loop:A- N Auxiliary Relay: Operated:86 OPTD Autoreclose Status: AUTORECLOSED Fault Resistance: m Ω Carrier Status: Carrier Switch-IN,CARRIER HEALTHY Fault Current: IA= 1.6 KA</p>	PRELIMINARY FINDINGS:	<p style="color: red;">REMEDIAL ACTION :TOWER TOP PATROLLING CARRIED OUT 230 TO 240. INSULATOR FLASHOVER OBSERVED AT LOC 233 ( R PH 05 NOS.)  INSULATORS REPLACED ON 04.11.2025.</p>		TFER MEASUREMENT MAY PLEASE BE CARRIED OUT IN WINTER MAINTENANCE.
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NTPC Barh

Month	October						
Date	Line tripping	Cause of Tripping	Tripping Analysis	Correct Operations at NTPC Barh (Nc)	Failed operations at NTPC Barh(Nf)	Number of Unwanted Operation (Nu)	Number of incorrect operations (Ni= Nf+Nu)
No Tripping observed in the month of October-2025							
Dependability Index $D = Nc / (Nc + Nf)$							
Security Index $S = Nc / (Nc + Nu)$							
Reliability Index $R = Nc / (Nc + Ni)$							

## Performance Indices of Darlipali STPP for Nov'25

Index. No.	Number of correct operations at internal power system faults( Nc)	Number of failures to operate at internal power system faults(Nf)	The Dependability Index( $D=Nc/(Nc+Nf)$ )
1	1	0	1

Index. No.	Number of correct operations at internal power system faults( Nc)	Number of unwanted operations (Nu)	The Security Index( $S=Nc/(Nc+Nu)$ )
2	1	0	1

Index. No.	Number of correct operations at internal power system faults( Nc)	Number of incorrect operations ( $Ni=Nf+Nu$ )	The Reliability Index ( $R=Nc/(Nc+Ni)$ )
3	1	0	1

**NOTE for reference of deciding parameters:**

- 1) Nc = The number of correct operation of switchyard breakers (220kV and above) on protection to be counted i.e if the breaker has operated correctly on internal protection operation**
- 2) Nf = The number of failure of switchyard breaker (220kV and above) to operate on its protection to be counted i.e if the breaker has not operated on internal protection operation (includes LBB operation etc)**
- 3) Nu = The number of unwanted operation of switchyard breaker (220kV and above) without its own protection operation to be counted i.e if the breaker has opened without operation of its protection leading to tripping of other breaker or grid connected equipments**



ENICL, OGPTL, PKTCL

Protection Performance Indices for the month of October-25 (In compliance of Clause 15(6) of IEGC 2023)																			
S. No.	Name of Utility	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	EAST NORTH INTERCONNECTION LIMITED	400 kv (Quad ) D/C Bongaigaon - Alipurduar line CKT- 1(BNG- ALIP #1)							-	-	-	-	-	-	-NA-	-NA-	-NA-	No events in the month of October'25	
		400 kv (Quad ) D/C Bongaigaon - Alipurduar line CKT- 2(BNG- ALIP #2)							-	-	-	-	-	-	-NA-	-NA-	-NA-	No events in the month of October'25	
		400 kv (Quad) D/C Purnia-Biharshrif Line CKT-1 (NPRN-BSF#1)								-	-	-	-	-	-	-NA-	-NA-	-NA-	No events in the month of October'25
		400 kv (Quad) D/C Purnia-Biharshrif Line CKT-2( NPRN- BSF# 2)								-	-	-	-	-	-	-NA-	-NA-	-NA-	No events in the month of October'25
		400 kv (Quad ) D/C Alipurduar - Siliguri line CKT- 1(ALIP- SLG #1)								-	-	-	-	-	-	-NA-	-NA-	-NA-	No events in the month of October'25
		400 kv (Quad ) D/C Alipurduar - Siliguri line CKT- 2(ALIP- SLG #2)								-	-	-	-	-	-	-NA-	-NA-	-NA-	No events in the month of October'25
2	ODISHA GENERATION PHASE - II LIMITED	765kV D/C Jharsuguda(Sundargarh)-Raipur pool CKT-1							-	-	-	-	-	-	-NA-	-NA-	-NA-	No events in the month of October'25	
		765kV D/C Jharsuguda(Sundargarh)-Raipur pool CKT-2							-	-	-	-	-	-	-NA-	-NA-	-NA-	No events in the month of October'25	
		400kV D/C IB-OPGC-Jharsuguda(Sundargarh) Ckt-1							-	-	-	-	-	-	-NA-	-NA-	-NA-	No events in the month of October'25	
		400kV D/C LILO POINT (T. No. - 130) - Sundargarh							-	-	-	-	-	-	-NA-	-NA-	-NA-	No events in the month of October'25	
		400kV D/C OPGC-LILO POINT (T. No. - 130)							-	-	-	-	-	-	-NA-	-NA-	-NA-	No events in the month of October'25	
3	PURULIA KHARAGPUR TRANSMISSION COMPANY LIMITED	400 kV Chaibasa-Kharagpur D/C line CKT- 1							-	-	-	-	-	-	-NA-	-NA-	-NA-	No events in the month of October'25	
		400 kV Chaibasa-Kharagpur D/C line CKT- 2							-	-	-	-	-	-	-NA-	-NA-	-NA-	No events in the month of October'25	
		400 KV,D/C New Ranchi-New Purulia Line: CKT-1							-	-	-	-	-	-	-NA-	-NA-	-NA-	No events in the month of October'25	
		400 KV,D/C New Ranchi-New Purulia Line: CKT-2							-	-	-	-	-	-	-NA-	-NA-	-NA-	No events in the month of October'25	

Protection Performance Indices for the month of September 2025(In compliance of Clause 15(6) of IEGC 2023)

Sl. 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 TTPS-Bihar Shariff T/L	19.10.2025	13:37 HRS	19.10.2025	18:10 HRS	STARTED PH AN /EARTH FAULT Z-1 121.9 KM		1		1		0		1.0000	0.5000	0.5000	
2	220KV TTPS-GOVINDPUR CKT 2 T/L	31.10.2025	22:21 HRS	31.10.2025	22:48 HRS	STARTED PH AN /EARTH FAULT Z-1 59.68 KM		1		1		0		1.0000	0.5000	0.5000	

NOTE:

Nc is the number of correct operations at internal power system faults  
 Nf is the number of failures to operate at internal power system faults.  
 Nu is the number of unwanted operations.  
 Ni is the number of incorrect operations and is the sum of Nf and Nu

SI No.	Name of the incidence	PCC Recommendation	Latest status
<b>152<sup>nd</sup> PCC Meeting</b>			
1.	Repeated Disturbance at 220 kV Balimela HEP (OHPC) on 6th Sep 2025 at 01:26 Hrs and on 9th Sep 2025 at 19:51 Hrs.	<p>OHPC replied that DR of each feeder is not configured separately due to time synchronisation issue. They are in the process of rectification of the issue and it would take 3-4 months to complete the work.</p> <p>OHPC representative submitted that they are in discussion with the OEM(BHEL) for implementation of SPS logic and it will be implemented by 1st quarter of 2026-27. PCC advised OHPC to share the SPS logic to ERLDC/ERPC before its implementation.</p>	
2.	Total Power Failure at 220 kV Bolangir New (OPTCL) on 6th Sep 2025 at 12:16 Hrs	OPTCL representative was advised to analyze the reason behind non sensing the fault by relay in zone 2 and zone 3.	
3.	Disturbance at 220 kV Biharsharif (BSPTCL) S/s on 28th Sep 2025 at 08:18 Hrs	On enquiry from PCC regarding reason behind non opening of breaker during the incident, BSPTCL representative informed that DCRM test of breaker was done and no abnormality was noticed except non smooth opening of B phase pole. The issue has been communicated to OEM.	
4.	Disturbance at 220 kV Raxaul New (BSPTCL) S/s on 21 <sup>st</sup> Sep 2025 at 11:45 Hrs	On enquiry from PCC regarding physical findings for the fault, BSPTCL representative submitted that detailed patrolling report will be shared to ERPC/ERLDC.	
5.	Tripping of 400KV/220KV 500 MVA ICT 3 AT NEW DUBURI on 25 <sup>th</sup> Sep 2025	On enquiry from PCC regarding any remedial plan for avoiding conservative o/c settings for ICT	

	at 18:26 Hrs and on 24 <sup>th</sup> Sep 2025 at 10:57 Hrs	3, OPTCL representative replied that plan for double cable installation is already forwarded to higher authority and it is expected that implementation will be done within 6 months.	
6.	Repeated tripping of 132KV-SULTANGANJ-DEOGHAR-1 in Sep 2025	<p>PCC advised BSPTCL representative to share resistive reach settings of the relay at Sultanganj end to ERPC/ERLDC.</p> <p>PCC advised following:</p> <p>1)BSPTCL to share relay settings of Sultanganj end to ERPC/ERLDC.</p> <p>2) BSPTCL to share DR of all three events to JUSNL.</p> <p>J3) USNL to submit bs coupler settings at Deoghar end for review.</p>	
<b>151<sup>st</sup> PCC Meeting</b>			
7.	Disturbance at 220 kV Chatra (JUSNL) S/s on 7th Aug 2025 at 04:43 Hrs	<p>PCC advised that DC leakage issue in the substation shall be promptly addressed and resolved to avoid this type of disturbance in future.</p> <p>Regarding restoration of BCU &amp; PLCC panel, they updated that both BCU &amp; PLCC are of ZIV make and the OEM has been communicated for support. Further the BCU will be replaced with the spare BCU available with them. They added that OPGW in the line is already commissioned. DTPC will be commissioned soon. After commissioning DTPC, the carrier communication issue will be resolved.</p>	<p><i>JUSNL representative updated the BCU &amp; PLCC issue of ZIV make has not yet been resolved.</i></p> <p><i>Regarding DC leakage issue, he informed that issue has been rectified.</i></p>
8.	Tripping of generating units of JSWEUL on 12th Aug 2025 at 22:37 Hrs	PCC advised Sterlite representative to refer the issue to relay OEM and seek their recommendation for the relay	<i>Sterlite representative was not available in the meeting.</i>

		configuration. They are also advised to share raw file of settings to ERPC/ERLDC.	
<b>150<sup>th</sup> PCC Meeting</b>			
<b>9.</b>	Total Power Failure at 220 kV Goraul (BSPTCL) S/s on 7th July 2025 at 14:31 Hrs	BSPTCL was advised to configure the DR time window as per ERPC Guidelines.	<i>BSPTCL representative informed that replacement of BCU will be completed by Dec 2025.</i>