

GOVERNMENT OF INDIA
MINISTRY OF POWER
Eastern Regional Power Committee

AGENDA
FOR
155th PCC MEETING

Date: 19.02.2026

Time: 11:00 Hrs

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Eastern Regional Power Committee, Kolkata

AGENDA FOR 155th PCC MEETING

Date: 19th February, 2026(Thursday) at 11:00 Hrs

1. PART-A

1.1. Confirmation of Minutes of 154th PCC Meeting held on 20.01.2026

The minutes of 154th PCC meeting held on 20.01.2026 through virtual mode was circulated vide letter no. ERPC/ Protection/2026/2127 dated 04.02.2026.

Members may confirm the minutes of 154th PCC meeting.

2. PART-B: ITEMS FOR DISCUSSION

2.1 Disturbance at 220 kV Bolangir New(OPTCL) S/s on 13.01.2026 at 12:38 Hrs

Prior to the disturbance, 220kV Bolangir (OPTCL) was drawing power from 220kV BolangirBolangir (PG) D/C through 220kV Main Bus #1(220kV Main Bus #2 was under planned shutdown). At 12:38 Hrs, during shifting of 220kV Kesinga line to TBC bay for availing shutdown of main bay of 220kV Kesinga line at Bolangir, LBB protection operated. This resulted tripping of all connected lines. Consequently, 220kV Bolangir (OPTCL) S/s became dead.

Report from ERLDC is attached at **Annexure 2.1**.

Load Loss: 15 MW

Outage Duration: 00:13 Hrs

OPTCL may explain.

2.2 Total Power Failure at 220 kV Rengali S/s on 12th Dec 2025 at 19:06 Hrs

On 12.12.2025 at 19:06 hrs, Y phase Bus-1 post insulator of 220 kV Bus coupler at Rengali S/s got snapped and created Y phase bus fault. Fault was sensed in zone -4 protection by all emanating lines and got tripped after 250 msec in Z-4 protection as Bus bar protection was not in service. subsequently 220kV Rengali S/s became dead. Further, Rengali HEP unit -1 & 2 also tripped at the same time.

The following discrepancies were highlighted by ERLDC in 154th PCC Meeting:

- Tripping of Rengali PH Unit 1 & 2 due to unwanted GT REF protection
- Non time synchronization of DR for 220kV Rengali-Tarkera line at Tarkera S/s
- Non segregation of feeders between two main buses in the absence of busbar protection at Rengali S/s
- Non availability of differential protection for short 220 kV Rengali–Rengali PH line and 220 kV Rengali-Rengali PG lines of line length less than 10 kms.

OPTCL & OHPC may explain.

2.3 Third Party Protection audit by ERPC for the Year 2026-27

In 55th TCC & ERPC Meeting held in Dec-25, ERPC approved the proposal for carrying out audit for 15 nos. of substations in ER in FY 2026-27.

In 154th PCC Meeting held in Jan-26, SE, ERPC representative informed that ERPC secretariat is planning to carryout protection audit for another 15 substations in Eastern Region in FY 2026-27 for which a list of fifteen number S/s has been prepared as per discussion between ERPC and ERLDC which is attached above. He intimated that JUSNL is already carrying out third party protection audit for all its 220 kV and above substations hence the list has does not include substations of JUSNL.

ERLDC representative stated that grid disturbance had occurred in the past at Mejia S/s, Indravati S/s, Budhipadar S/s, Rengali S/s etc in last one year. Further Mendhasal S/s and Subhasgram S/s are critical in view of load connected with them. Carrier communication issues have been observed at Hazipur S/s, Begusarai S/s and Darbhanga S/s in last 6 months. Therefore, all these substations are suggested for carrying out protection audit in 2026-27.

It was informed that third party protection audit for Kalyaneshawari, Mejia S/s is in progress. Further tender for protection audit of CTPS S/s is already floated.

After discussion, PCC advised all state utilities to suggest 3-4 important/critical substations in each of their control area for third party protection audit within a week so that list of the substations for audit can be finalized.

However, no suggestion was received from any of the utility in this regard.

A modified list of the substations is proposed below:

1. 400/220 kV Mendhasal S/s(OPTCL)	2. 220 kV Subhasgram S/s(WBSETCL)
3. 400/220 kV New Duburi(OPTCL)	4. 220 kV Kasba S/s(WBSETCL)
5. 220 kV Jaynagar S/s(OPTCL)	6. 220 kV Balimela HEP(OHPC)
7. 220 kV Budhipadar S/s(OPTCL)	8. 220 kV Indravati HEP(OHPC)
9. 220 kV Rengali S/s(OPTCL)	10. 220 kV Hazipur S/s(BSPTCL)
11. 220 kV Begusarai S/s(BSPTCL)	12. 220 kV Darbhanga S/s(BSPTCL)

Members may discuss.

2.4 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

Internal Audit Plan Status

Sl No.	Utility Name	Audit Plan for FY 2025-26	Audit Plan for FY 2026-27
1	PG-ER-1 & PMTL	Received	Received
2	PG-ER-2	Received	Received
3	PG-Odisha	Received	Received
4	WBSETCL	Received	Received
5	BSPTCL	Received	Received
6	OPTCL	Received	Received
7	DVC	Received	Received
8	JUSNL	Received	Not Received
9	OPGC	Not Received	Not Received
10	OHPC	Not Received	Not Received
11	CESC	Received	Received
12	NHPC	Received	Not Received
13	DMTCL	Received	Not Received
14	NTPC ER-I	Not Received	Not Received
15	NTPC ER-II	Not Received	Not Received
16	Tashiding HEP	Received	Received
17	Jorethang HEP	Received	Received
18	MPL	Not Received	Not Received
19	JITPL	Not Received	Not Received
20	GMR	Not Received	Not Received
21	Adhunik	Not Received	Not Received
22	IBEUL	Received	Not Received

Received, Not Received

Members may update.

2.5 Tripping of ICTs during the month of January-26

Sl. No	Name of the Element	Trip Date/Time	Reason of tripping	Utility
1	400KV/220KV 250 MVA ICT 2 AT TENUGHAT	24-01-2026 03:10	Differential Protection operated, FC- ly-2.252kA	TVNL
2	400KV/220KV 315 MVA ICT 3 AT BIHARSARIFF	07-01-2026 12:09	During Charging attempt of 220kV BSPTCL-Asthama line, 220kV side Circuit Breaker (CB) of 315MVA ICT-3 tripped at the BSPTCL end.	BSPTCL/PG ER-1
3	400KV/220KV 315 MVA ICT 3 AT BIHARSARIFF	07-01-2026 02:35	Spurious 86 relay Operated	BSPTCL/PG ER-1
4	400KV/220KV 500 MVA ICT 2 AT NEW PURNEA	01-01-2026 06:16	LBB operated during Auto-reclose attempt in 220 kV Madhepura- New Purnea-1 due to non-opening of CB at New Purnea PG.	PG ER-1

Concerned Utilities may explain.

2.6 Tripping of Buses during the month of January-26

Sl. No	Name of the Element	Trip Date	Trip Time	Reason of tripping	Utility
1	400KV MAIN BUS - 1 AT NEW PPSP	20-01-2026	13:27	Busbar Protection Operated due to SF6 gas zone tripping during replacement of 400 kV Main Bay CB/isolator of 400 kV Arambagh-2 bay.	WBSETCL
2	400KV MAIN BUS - 1 AT NEW PPSP	02-01-2026	23:21	Busbar Protection Operated due to CT flashover inside 400 kV PPSP-1 main bay GIS module.	WBSETCL
3	220KV MAIN BUS - 2 AT NEW PURNEA	01-01-2026	06:16	LBB operated during Auto-reclose attempt in 220 kV Madhepura- New Purnea-1 due to non-opening of CB at New Purnea PG.	PG ER-1

Concerned Utilities may explain.

2.7 Repeated tripping of transmission lines during the month of January-26

Sl.No.	Name of the Element	No. of times Tripped	Reason of tripping	Utility
1	220KV-CHAIBASA(PG)-CHAIBASA(JUSNL)-1	2	DT received at PG end in both instances.	PG ER-1 and JUSNL
2	220KV-DALTONGANJ-CHATRA-1	2	Tripped on R-Y and Y-Earth fault with fault distance was 43 kM and 63 kM from Daltonganj end respectively.	JUSNL
2	220KV-MUZAFFARPUR(PG)-AMNOUR-1	2	Tripped on R-Y and Y-B fault with fault distance was 25 kM and 13 kM from Amnour end respectively.	BSPTCL

Concerned Utilities may explain.

2.8 Single Line Tripping Incidences in month of January-2026

Single line tripping incidents in the month of January-2026 which needs explanation from constituents of either end is attached at **Annexure 2.8**.

Members may discuss.

3. PART-C: FOLLOW UP ITEMS

3.1. Status of Carrier Communication for 220 kV Biharsharif–TTPS transmission line

In 154th PCC Meeting held in Jan-26, PCC observed that the issue was previously discussed in PCC meeting and even after repeated recommendations, both BSPTCL & TVNL have failed to resolve the issue bilaterally.

Member Secretary, ERPC opined that 220 kV Biharsharif-Tenughat line is an interstate line and critical for evacuation of Tenughat Power. He suggested TVNL to take immediate steps for implementation of PLCC at their end by their own. For compatibility in technical specifications of the equipment with the Biharsharif end, they may consult BSPTCL before finalizing the work.

TVNL may update the status.

3.2. Over-voltage setting of 400kV & above transmission lines in Eastern Region

In 152nd PCC Meeting, it was decided that ERLDC will circulate list of 400 kV & above level lines in the ER to all the concerned utilities. Concerned Utilities will verify the details & submit the existing overvoltage settings of the lines.

After receiving all the details, the overvoltage protections will be reviewed in the subsequent PCC Meeting.

The settings have been received from all the utilities.

ERLDC may update. Members may discuss.

3.3. 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 10th 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 January'26, detailed list attached as **Annexure 3.3**. Below table shows the status of PP Indices received for last five months. Utilities are requested to submit the details every month for necessary grid code compliance.

Sl.no	Utility Name	August 2025	September 2025	November 2025	December 2025	January 2026
1	PG-ER-1	Yes (08.09.2025)	Yes (22.10.2025)	Yes (10.12.2025)	Yes (19.01.2026)	Yes (12.02.2026)

2	PG-ER-2		Yes (17.10.2025)	Yes (31.12.2025)	Yes (12.01.2026)	
3	PG-Odisha	Yes (03.09.2025)	Yes (06.10.2025)		Yes (05.01.2026)	Yes (04.02.2026)
4	WBSETCL/ WBPDC	Yes (04.09.2025)	Yes (08.10.2025)	Yes (04.12.2025)	Yes (05.01.2026)	Yes (05.02.2026)
5	BSPTCL/ BGCL		Yes (21.10.2025)	Yes (19.12.2025)		Yes (13.02.2026)
6	OPTCL/ OHPC					
7	DVC		Yes (20.11.2025)			
8	JUSNL	Yes (06.09.2025)	Yes (21.10.2025)	Yes (17.12.2025)		Yes (04.02.2026)
9	Sikkim					
10	OPGC					
11	PMTL					
12	NTPC- KHSTPP	Yes (17.09.2025)				
13	NTPC- FSTPP		Yes (10.10.2025)			
14	NTPC- BARH					
15	NTPC- TSTPP					

16	NTPC-KBUNL		Yes (10.10.2025)			
17	NPGC					
18	BRBCL					
19	NTPC-DARILAPLI	Yes (01.09.2025)	Yes (01.10.2025)	Yes (01.12.2025)	Yes (01/01/2026)	
20	NTPC-NORTH KARNPUA RA					
21	ATL					
22	APNRL					
23	CBPTCL					
24	DMTCL	Yes (04/09/2025)	Yes (04/10/2025)	Yes (03/12/2025)	Yes (02/01/2026)	Yes (04/02/2026)
25	ENICL	Yes (03.09.2025)	Yes (05.10.2025)	Yes (06.12.2025)		
26	Chuzachen HEP					
27	Jorethang HEP	Yes (01/09/2025)	Yes (05/10/2025)	Yes (07/12/2025)	Yes (02/01/2026)	
28	Tashiding Hep	Yes (01/09/2025)	Yes (05/10/2025)	Yes (07/12/2025)	Yes (02/01/2026)	
29	GMR					
30	IBEUL					
31	JITPL					
32	MPL					
33	NKTL					
34	OGPTL	Yes (09/09/2025)	Yes (05.10.2025)	Yes (06.12.2025)		
35	PMJTL					

36	Powerlink					
37	PKTCL	Yes (09/09/2025)	Yes (05.10.2025)	Yes (06.12.2025)		
38	CESC	Yes (26/11/2025)	Yes (26/11/2025)	Yes (26/11/2025)		
39	Rongnichu HEP					
40	SPTL					
41	TVNL	Yes (04.09.2025)	Yes (03.10.2025)			

Members my update.

3.4. Follow-up of Decisions of the Previous Protection Sub-Committee Meeting(s)

SI No.	Name of the Incidence	PCC Recommendation	Latest status
154th PCC Meeting			
1.	Total Power Failure at 400 kV TISCO S/s on 5 th Dec 2025 at 19:21 Hrs	PCC observed that line isolator interlock at the TISCO end for the Baripada line appears to have been bypassed for which DVC representative replied that issue has been identified and will be rectified during the shutdown in Feb 2026.	
2.	Total Power Failure at 400 kV PVUNL S/s on 20 th Dec 2025 at 11:23 Hrs	PCC advised JUSNL representative to take rectification measures as suggested by the OEM and submit a compliance to ERPC/ERLDC.	
153rd PCC Meeting			
3.	Total Power Failure at 220 k V IBTPS(OPGC) S/s on 21st Oct 2025 at 17:25 Hrs	PCC advised OPGC representative to increase DR length to 3 sec with pre-fault time of 500 msec and post fault 2500 msec as per ERPC protection philosophy. OPGC was further advised to share settings of bus coupler to ERPC/ERLDC for review.	
151st PCC Meeting			
4.	Disturbance at 220 kV Chatra (JUSNL)	PCC advised that DC leakage issue in the substation shall be promptly	JUSNL representative informed that 220 k V Daltongunj Itkhor -1 is

	S/s on 7th Aug 2025 at 04:43 Hrs	addressed and resolved to avoid this type of disturbance in future. Regarding restoration of BCU & PLCC panel, they updated that both BCU & 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.	charged through bus coupler at present.Regarding BCU rectification, it is expected that rectification work will be started by 2 nd Dec 2025 and issue will be resolved by 2 nd week of Dec 2025.
5.	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.	BSPTCL representative informed that replacement of BCU will be completed by Dec 2025.

पूर्वी क्षेत्र के 220 बोलांगिर में ग्रिड घटना पर विस्तृत रिपोर्ट / Detailed Report of grid event at 220/132 kV Bolangir New 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): 12-02-2026

1. Event Summary (घटना का सारांश):

Prior to the disturbance, 220kV Bolangir (OPTCL) was drawing power from 220kV Bolangir-Bolangir (PG) D/C through 220kV Main Bus #1(220kV Main Bus #2 was under planned shutdown).

At 12:38 Hrs, during shifting of 220kV Kesinga line to TBC bay for availing shutdown of main bay of 220kV Kesinga line at Bolangir, LBB protection operated. This resulted tripping of all connected lines. Consequently, 220kV Bolangir (OPTCL) S/s became dead.

Total load loss of **15 MW** reported at Bolangir (OPTCL) S/s of Odisha Power System.

2. Time and Date of the Event (घटना का समय और दिनांक): 12:38 hrs of 13/01/2026.

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

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

5. Antecedent Conditions (पूर्ववर्ती स्थिति):

	Frequency in (Hz)	Regional Generation in (MW)	Regional Demand in (MW)
Pre-Event (घटना पूर्व)	49.96	25800	22317
Post Event (घटना के बाद)	49.96	25800	22317

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

Important Transmission Line/Unit if under outage	220 kV Bolangir (Gr)- Bargarh (Idle charged from Bargarh end),
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(महत्वपूर्ण संचरण लाइने/ विद्युत उत्पादन इकाइयां जो बंद हैं)	220 kV Bus -2 at Bolangir (Gr) (SD)
Weather Condition (मौसम स्थिति)	Normal.

6. Load and Generation loss (लोड और जेनरेशन हानि): Approximate load loss of **15 MW** at Bolangir S/s.

7. Duration of interruption (रूकावट की अवधि): 00:13 Hrs (13 minutes).

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

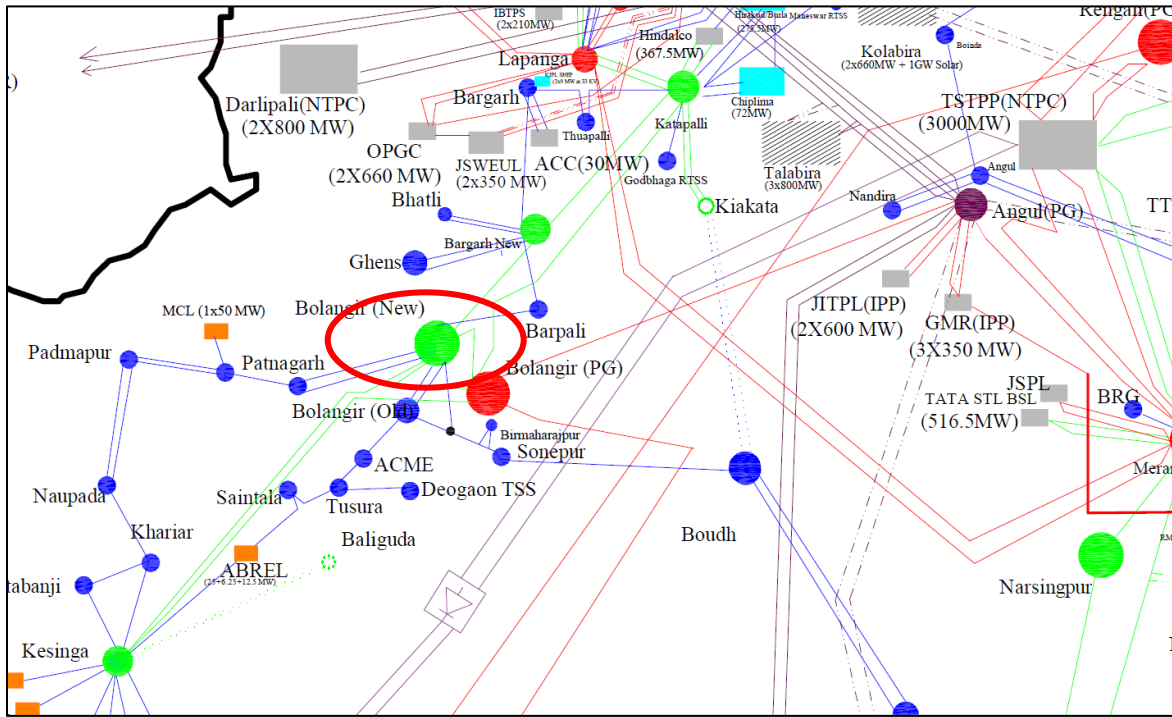


Figure 1: Network across the affected area

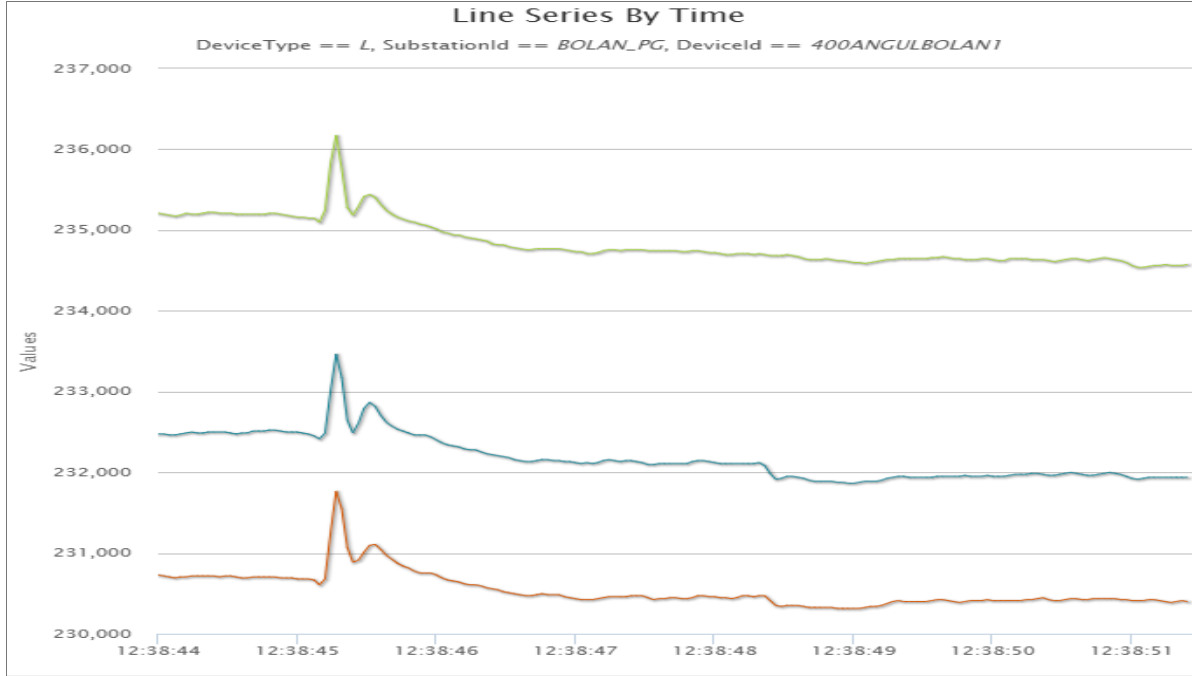
9. Details of Equipment Failure (if any during the event) (उपकरण विफलता का विवरण): NIL

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	220 kV Bolangir (PG)-Bolangir (GRIDCO) -1	12:38:45	-	LBB of TBC bay operated during shifting of Kesinga feeder to TBC	15:05
2	220 kV Bolangir (PG)-Bolangir (GRIDCO) -2		-		15:35
3	220 kV Kesinga-Bolangir (GRIDCO)		-		15:50
4	220 kV Main Bus-1 at Bolangir (GRIDCO)		-		12:51

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

- Prior to the disturbance, 220kV Bolangir (OPTCL) was drawing power from 220kV Bolangir-Bolangir (PG) D/C through 220kV Main Bus #1(220kV Main Bus #2 was under planned shutdown).
- At 12:38:45 Hrs, during shifting of 220kV Kesinga feeder to TBC bay for availing shutdown of 220kV main bay of Kesinga, LBB protection of TBC bay operated due to wrong wiring of TBC CB close command with LBB operated.
- Due to LBB protection operation all connected feeders from main 220 kV Main bus #1 got tripped.
- Consequently, 220kV Bolangir New S/s became dead.
- Around 15 MW load loss reported at Bolangir New S/s.

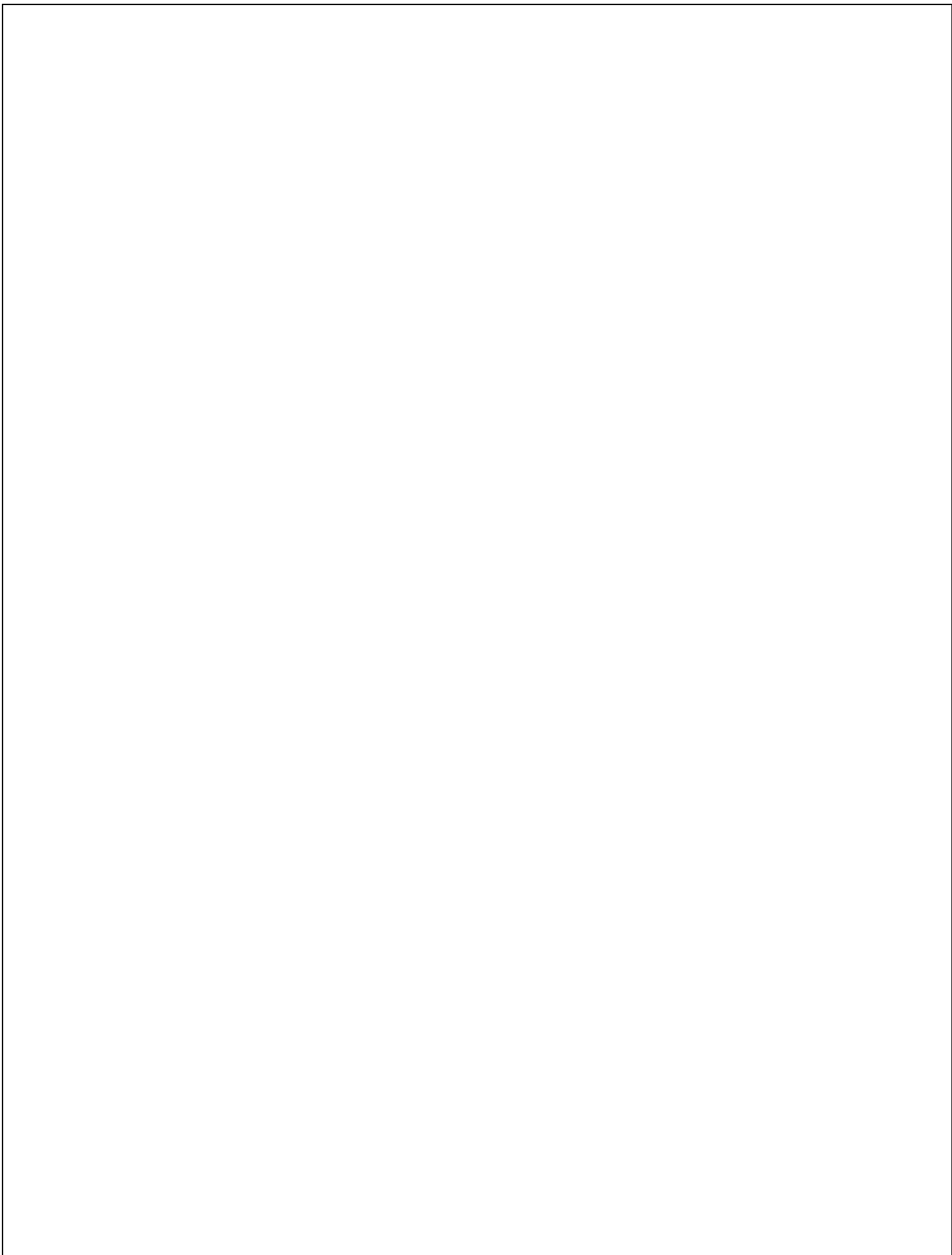


12. Protection/Operational issues observed (सुरक्षा/परिचालन संबंधी समस्या):

- Detail reason of LBB protection operation and remedial measures taken may be shared.
- It is requested to check LBB/BB protection wiring as per scheme and ensure its proper healthiness. Necessary corrective action may be taken to prevent any unintended LBB/BB operation, which may otherwise lead to disturbance/ load loss.

13. Action Taken/Remedial Measures (सुधारात्मक उपाय): Not furnished.

14. Key Lessons Learnt (प्रमुख अधिगम बिंदु): Meticulous planning, supervision and adherence to standard procedures are essential during execution of R&M works. 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.



List of important transmission lines in ER which tripped in January-2026

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	DRE/EL RECEIVED FROM REMOTE END	LOCAL END UTILITY	REMOTE END UTILITY
1	400KV-DURGAPUR-KAHALGAON-2	31-01-2026	03:28	31-01-2026	06:19	Zone 1 , 6.8 KM , Y_N , 23.961 KA, A/r successful from Durgapur end.	Line tripped from NTPC end only, Y-Earth, Z-1	Y-Earth	>100 msec	A/r successful from Durgapur end and three phase tripping from NTPC end. NTPC may explain.			YES	NO	PG ER-II	NTPC
2	765KV-ANGUL-SRIKAKULAM-1	30-01-2026	17:36	30-01-2026	18:26	Angul: Z1, R-B, 189.9 km, Z1, IR-4.40 kA, IB-4.69kA	-	R-B	>100 msec	Line tripped on phase to phase fault.			NO	NO	PG ODISHA	PG SR
3	400KV-MOTIHARI-BARH-2	27-01-2026	13:30	27-01-2026	16:13	Motihari: B_N, 14.26 kA, 10.6 km	Barh-Y_N, 173.3 km, 2.45 Ka	B-Earth	>100 msec	B-Phase tripped in Z-1 protection from both end and after 1.5 sec another Y Earth fault occurred and Y pole also got tripped from Barh end, further after 2.5 sec of fault event PDR operated and R pole also tripped from Barh end. NTPC may explain.			NO	YES	DMTCL	NTPC
4	220KV-DALTONGANJ-CHATRA-1	27-01-2026	01:53	27-01-2026	02:37	Daltonganj-Y_N fault,FC-2.11kA,FD-63.58kM	Chatra-Zone-1, FD-64.076 km, Ia-165.6A, Ib-1514.4 A, Ic-231.6 A, fault phase Y-N	Y-Earth	>100 msec	Three phase tripping for phase to ground fault from both end.			YES	YES	PG ER-I	JUSNL

5	400KV-ARAMBAGH-BAKRESWAR-1	25-01-2026	15:28	25-01-2026	15:58	Arambag End: Zone 1, B Phase, Carrier Received	BKTPP End: Zone 1, B Phase, Dist: 102.5 KM, Fault Current: 2.413 KA, Carrier Sent	B-Earth	>100 msec	Line tripped in reclaim time.			YES	YES	WBSET CL	WBPDC L
6	400KV-KOLAGHAT-ARAMBAGH-1	25-01-2026	15:27	25-01-2026	19:53	KTPP End: Zone 3, C Phase, Distance: 68.43 KM, Fault Current: 4.063 KA	Arambag End: Zone 1, A/R Lock Out, Distance: 60.15 Mtr., Fault Current: 15.22 KA	B-Earth	>100 msec	Line tripped in reclaim time.			NO	YES	WBPDC L	WBSET CL
7	220KV-MUZAFFARPUR(PG)-AMNOUR-1	25-01-2026	14:12	25-01-2026	15:11	Amnour R_Y, 25.7 km, Ir 4.15 kA, Iy 4.33 kA	-	R-Earth	>100 msec	Line tripped on phase to phase fault.			YES	NO	PG ER-I	BSPTCL
8	400KV-MEDINIPUR-NEW CHANDITALA-2	24-01-2026	16:30	24-01-2026	11:10	Medinipur : R_N, FD: 48.9 km, FC: 4.998 kA	Chanditala end:R_N, FD: 34.37 Km,FC:8.943 kA	R-Earth	>100 msec	A/r failed after 1 sec.			YES	YES	PMJTTL	WBSET CL
9	220KV-KHAGARIA-NEW PURNEA-2	23-01-2026	06:06	23-01-2026	06:59	New Purnea: R-N , fc-2.44 kA, Fd-82.6 km		R-Earth	350 msec	A/r successful from Khagaria end and three phase tripping from Purnea end in Z-2 protection. PG and BSPTCL may explain.		DR length needs to be increased to 3 sec.	YES	YES	BSPTCL	PG ER-I

10	220KV-DALTONGANJ-CHATRA-1	21-01-2026	16:07	21-01-2026	18:04	Daltonganj: R-Y , 43.47 KM , Ir:2.8 KA , Iy:2.8 KA	Chatra: R-Y .Ir: 1.2 KA Iy:1.2KA Distance:94 KM	R-Y	>100 msec	Line tripped on phase to phase fault.			YES	YES	PG ER-I	JUSNL
11	220KV-DALKHOLA (PG)-GAZOLE-2	19-01-2026	07:06	19-01-2026	19:37	Dalkhola-A/r successful	Gazole: B_N, 70.9 km, 0.79 kA	B- Earth	>100 msec	A/r successful from Dalkhola end and A/r failed from Gazole end.			YES	YES	PG ER-II	WBSET CL
12	400KV-NEW RANCHI-RTPS-1	16-01-2026	05:47	16-01-2026	11:22	Ranchi End: Y_N,FD:152.3KM,I y: 2,6kA,Z-2	RTPS End: Y_N,Z- 1,FD:76 KM, Iy: 4.8kA	Y- Earth	>100 msec	A/r failed after 1 sec.			YES	NO	PG ER-I	DVC
13	220KV-CHANDIL-STPS(WBPDCL)-1	15-01-2026	22:40	16-01-2026	15:30	STPS :Y-Ph, Z-I, 48 km,3kA	Chandil : 46.7km, Z-I,y- Ph, 3.5KA	Y- Earth	>100 msec	A/r failed after 1 sec.	.DAT file not uploaded on PDMS portal.		YES	NO	JUSNL	WBSET CL
14	220KV-MUZAFFARPUR(PG)-AMNOUR-1	15-01-2026	14:08	15-01-2026	18:49	Muzaffarpur : Y_B, FD- 49.98km, FC- IY=4.1kA & IB=3.91kA	Amnour:Y_B, distance 13 km, IB - 5.57 kA, IC-5.71 kA	Y-B	>100 msec	Line tripped in phase to phase fault.			YES	YES	PG ER-I	BSPTC L

15	400KV-MUZAFFARPUR-GORAKHPUR-1	15-01-2026	13:51	15-01-2026	15:04	Muzaffarpur End: B_N, FD:91.5km FC:7.56kA, A/R successful		B-Earth	>100 msec	A/r successful from Muzaffarpur end and line tripped from NR end.			YES	NO	PG ER-I	PG NR
16	220KV-RANCHI-HATIA-2	13-01-2026	11:40	13-01-2026	14:40	Hatia: IA-11.46 KA ,IB-11.67 KA , IC-0.23 KA , Distt: 3.6 KM, Zone-1 opt, R-Y Ph fault	Ranchi: RANCHI AFAS DETAILS: M1: FC=6.8KA, FD=28.83KM . M2: FC=6.8KA, FD=28.87KM	R-Y	>100 msec	Line tripped in phase to phase fault.			YES	YES	PG ER-I	JUSNL
17	220KV-CHAIBASA(PG)-CHAIBASA(JUSNL)-1	12-01-2026	13:18	12-01-2026	16:53	DT received at PG end		No Fault	NA	As per PMU no fault was observed and three phase tripping from JUSNI end and DT send to PG end. JUSNL may explain.			YES	NO	PG ER-I	JUSNL
18	220KV-CHAIBASA(PG)-CHAIBASA(JUSNL)-1	10-01-2026	13:45	10-01-2026	19:02	DT received at Chaibasa (PG) end.	Three phase tripping	No Fault	NA	CT SF6 low protection operated at JUSNL end and DT send to PG end. JUSNL may explain.			YES	YES	PG ER-I	JUSNL
19	220KV-BOLANGIR(PG)-SADEIPALI-1	08-01-2026	15:12	08-01-2026	16:25	96 relay operated at Sadeipali end during testing of Bus Bar protection.		No Fault	NA	Tripped during testing of Bus bar protection at Sadeipalli end. OPTCL may explain.			NA	NO	PG ODISHA	GRIDCO

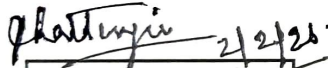
20	400KV-TSTPP-ROURKELA-1	08-01-2026	03:33	08-01-2026	04:42	TSTPP: Not Tripped	Rourkella: Operation of Pole discrepancy in Main Bay and TIE Bay, Z1, RN fault, 24.6KM, 10.4KA	R-Earth	>100 msec	A/r successful from Talcher end and three phase main CB tripping at Rourkela end for phase to ground fault, while Tie CB A/r not attempted from Rourkela end, further after 2.5 sec line tripped from Rourkela end on PDR operation. PG Odisha may explain.	DR length needs to be increased to 3 sec.		YES	YES	NTPC	PG ODISHA
21	220KV-CHUKHA-BIRPARA-1	07-01-2026	06:10	07-01-2026	07:32	IR: 193.85A, IY:199.99A, IB: 194.77A, IN: 8.49A VR: 128.10kV, VY: 129.58kV, VB: 128.37kV, VN: 127.54kVLBB operated at Chukha		No Fault	NA	line tripped from Bhutan end due to LBB operation at Chukha end.			NA	NO	BHUTAN	PG ER-II
22	400KV-JAKKANPUR(BH)-PATNA-1	05-01-2026	11:34	05-01-2026	20:10	Patna end relay: BN fault, 14.3 km, 12.52 kA,		B-Earth	>100 msec	A/r failed after 1 sec from Jakkampur end and three phase tripping from Patna end for phase to ground fault. PG ER-1 may explain			NO	YES	BGCL	BSPTCL
23	220KV-SAHARSA-BEGUSARAI-2	03-01-2026	03:42	03-01-2026	23:33	Begusarai: Z-1, B-N, 71.6km, 2.2kA	Saharsa: B-N, 18.2km, 6.3kA	B-Earth	>100 msec	A/r failed after 1 sec.			YES	YES	PMTL	BSPTCL
24	400KV-GOKARNA-NEW PURNEA-1	02-01-2026	15:14	02-01-2026	00:35	Gokarna: R_B, Z-2, Ir: 2.5kA, Ib: 2.79 kA, 224.1 km;	New Purnea: R_B, 35 km, Ir=Ib=12 kA	R-B-Earth	>100 msec	Line tripped on phase to phase to earth fault.			YES	YES	WBSETCL	PG ER-I

25	220KV-NEW PURNEA-PURNEA-1	01-01-2026	06:16			LBB operated due to fault in 220 kV Madhepura- New Purnea-1		R-Earth	>100 msec	R-Earth fault occurred in 220kV N Purnea-Madhepura line and CB at N Purnea end not opened during A/r failed operation, resulting in LBB operation at New Purnea S/s.			NA	YES	PG ER-I	BSPTCL		
26	220KV-KHAGARIA-NEW PURNEA-2	01-01-2026	06:16			LBB operated due to fault in 220 kV Madhepura- New Purnea-1									YES	NA	PG ER-I	BSPTCL
27	220KV-NEW PURNEA-MADHEPURA-1	01-01-2026	06:16	07-01-2026	21:02	New Purnea End: R_N,2.18kA,71.1KM;	Madhepura end : Z-1,R_N,3.905kA,9.85 KM								YES	YES	PG ER-I	BSPTCL
28	220KV-TTPS-TSTPP-1	01-01-2026	01:14	01-01-2026	14:11	TTPS end relay:Z-1, 21.99 km, 3-phase fault.		R-Y-B	>100 msec	Line tripped in thre phase fault.			NO	YES	GRIDCO	NTPC		

Month	January
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<u>Date</u>	<u>Line tripping</u>	<u>Cause of Tripping</u>	<u>Tripping Analysis</u>	<u>Correct Operations at NTPC Barh (Nc)</u>	<u>Failed operations at NTPC Barh(Nf)</u>	<u>Number of Unwanted Operation (Nu)</u>	<u>Number of incorrect operations (Ni=Nf+Nu)</u>
27.01.2026	400 kV Barh-Motihari#2	Distance Protection operated (Zone 2-B phase, Zone 1-Y phase)	At NTPC Barh end, zone-2 B phase protection operated. As per SCADA event, zone-1 Y phase operated after 737 ms. Dead time for auto reclosure operation is 1 second. As fault actuated in second phase within the dead time, three phase tripping was generated leading to opening of breaker poles at Barh end. Impedance plot of main-1 relay shows point of tripping in zone-2 (Y-B phase).	1	0	0	0

Dependability Index $D = Nc/(Nc+Nf)$	1
Security Index $S = Nc/(Nc+Nu)$	1
Reliability Index $R = Nc/(Nc+Ni)$	1


Signature of Area Engineer

पराग चटर्जी/Parag Chatterjee
वरिष्ठ प्रबंधक (प्र. एवं अनु./वि.अनु. विभाग)
Sr. Manager (O&M/EMD)
एनटीपीसी लि०, बाढ़/NTPC Ltd., Barh


Signature of Area In-charge

कनिष्क रंजन / KANISHKA RANJAN
उप महाप्रबंधक (प्र. एवं अनु./विद्युत अनुसंधान विभाग)
Dy. General Manager (O&M/EMD)
एनटीपीसी लि० बाढ़/NTPC Ltd. Barh

Protection Performance Indices for the month of Jan'26 (In compliance of Clause 15(6) of IEGC 2023)																	
S. No.	Name of the element	Tripping Date	Tripping Time	Restoration Date	Restoration Time	Reason (Relay indication)		Nc		Nu		Nf		Dependability index (Nc/(Nc+Nf))	Security Index (Nc/(Nc+Nu))	Reliability Index (Nc/(Nc+Nu+Nf))	Remarks (Reason for performance indices less than 1)
						End A	End B	End A	End B	End A	End B	End A	End B				
1	132KVVARA-DUMRAON(BSPTCL)-1	08-01-2026	06:34:00	08-01-2026	07:46:00	TRIPPED FROM BOTH ENDS DUE TO Y-N FAULT:FAULT DETAILS, ARA(SITE)-FD-7.550KM FC-6.215KA. FAULT IS UNDER BSPTCL JURISDICTION	Other Utility	1	NA	0	NA	0	NA	1	1	1	
2	220KV PURNEA-NEW PURNEA-1	01-01-2026	06:16:00	01-01-2026	09:14:00	TRIPPED FROM NEW PURNEA END ONLY BECAUSE LBB OPERATED IN 220 KV NEW PURNEA-MADHEPURA CKT-1 (LINE AND BAY OWNED AND MAINTAINED BY BSPTCL), WHICH OPERATED THE BUSBAR PROTECTION OF 220 KV BUS-2 AT NEW PURNEA ULTIMATELY TRIPPING THE CB OF 220 KV NEW PURNEA-PURNEA-1 AT NEW PURNEA END.		1	NA	0	NA	0	NA	1	1	1	
3	220KV RANCHI-HATIA(JSEB)-2	13-01-2026	11:39:00	13-01-2026	14:40:00	TRIPPED DUE TO R-Y FAULT FROM BOTH ENDS. RANCHI AFAS DETAILS: M1: FC=6.8KA, FD=28.83KM. FAULT UNDER JUSNL JURISDICTION.	Other Utility	1	NA	0	NA	0	NA	1	1	1	
4	315MVA,400/220KV ICT-3 AT BIHARSHARIF	07-01-2026	12:09:00	07-01-2026	20:59:00	TRIPPED ONLY FROM BSPTCL END (220KV SIDE) DURING CHARGING OF 132 KV BSPTCL-ASTHAMA LINE BY BSPTCL, DUE TO WIRING ISSUE AT BSPTCL END. FAULT UNDER BSPTCL JURISDICTION.		1	NA	0	NA	0	NA	1	1	1	
5	315MVA,400/220KV ICT-3 AT BIHARSHARIF	07-01-2026	02:35:00	07-01-2026	06:26:00	TRIPPED ONLY FROM BSPTCL END (220KV SIDE), DUE TO MASTER TRIP RELAY WIRING ISSUE IN BSPTCL BAYS. FAULT UNDER BSPTCL JURISDICTION.		1	NA	0	NA	0	NA	1	1	1	
6	400KV DALTONGANJ- SASARAM-1	09-01-2026	19:56:00	09-01-2026	19:56:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO Y-N FAULT DUE TO DENSE FOG AROUND FAULT AREA.FAULT DETILS, DALTONGANG(SITE)-M1: FD-65.399KM FC-1.995KA		1	1	0	0	0	0	1	1	1	
7	400KV BARH(NTPC)-MOTIHARI(DMTCL)-2	27-01-2026	13:30:00	27-01-2026	16:13:00	TRIPPED FROM BOTH ENDS DUE TO B-N FAULT.FAULT DETAILS- MOTIHARI (SITE)-M1: FD-10.6KM FC-14.26KA FAULT UNDER DMTCL JURISDICTION		NA	NA	NA	NA	NA	NA	NA	NA	NA	
8	400KV CHANDWA-GAYA-2	10-01-2026	23:44:00	10-01-2026	23:44:00	A/R SUCCESSFUL FROM BOTH END DUE TO Y-N FAULT DUE TO DENSE FOG AROUND FAULT AREA. GAYA AFAS- M2: FD-67.921KM, FC- 6.431 KA. CHANDWA AFAS- M1: FD- 48.747KM, FC-6.487 KA, M2: FD- 48.765KM, FC- 6.489 KA		1	1	0	0	0	0	1	1	1	
9	400KV PATNA-JAKKANPUR CKT-1	05-01-2026	11:34:00	05-01-2026	20:10:00	TRIPPED FROM BOTH ENDS DUE TO B-N FAULT. JAKKANPUR(SITE) DETAIL- M2: FD- 3.43KM, FC- 18.96KA, FAULT UNDER BGCL JURISDICTION.	Other Utility	1	NA	0	NA	0	NA	1	1	1	
10	400KV RANCHI-MAITHON-1	12-01-2026	21:41:00	12-01-2026	21:41:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO Y-N FAULT RANCHI (AFAS):M1-FD-76.812KM, FC-4.077KA. KITE THREAD FOUND ON TOWER BODY AT LOC. NO. 292.	Other Utility	1	NA	0	NA	0	NA	1	1	1	
11	500MVA,400/220KV ICT-2 AT NEW PURNEA	01-01-2026	06:16:00	01-01-2026	09:11:00	TRIPPED BECAUSE LBB OPERATED IN 220 KV NEW PURNEA-MADHEPURA CKT-1 (LINE AND BAY OWNED AND MAINTAINED BY BSPTCL), WHICH OPERATED THE BUSBAR PROTECTION OF 220 KV BUS-2 AT NEW PURNEA ULTIMATELY LEADING TO TRIPPING OF ICT.		1	NA	0	NA	0	NA	1	1	1	
12	765KV GAYA-VARANASI-2	14-01-2026	14:31:00	14-01-2026	14:31:00	A/R SUCCESSFUL FROM BOTH END DUE TO R-N FAULT DUE TO DENSE FOG AROUND FAULT AREA. GAYA (SITE): M1: FD-32.1KM. FC-9.54KA ; M2: FD-31.41KM. FC-9.464	Other Utility	1	NA	0	NA	0	NA	1	1	1	

Protection Performance Indices for the month of January-26 (In compliance of Clause 15(6) of IEGC 2023)															
S. No.	Name of the element	Tripping Date	Tripping 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						
	400 KVRourkela -Talcher-1	08-01-2026	03:33:00	Line tripped on 1-ph fault due to AR relay issue without AR attempt M1:Z1, RN fault, 24.6KM, 10.4KA M2:Z1, RN fault, 25.3KM, 10.3KA		0	1	1	0	0	0	1	0.5	0.5	Line tripped on 1-ph fault due to AR relay issue without AR attempt after retrofitting of AR Relay in main bay. Un-tested AR Relay in main bay causes the AR Loukout & B6A/B operation. Action taken: Schme modified and Bay wise testing of AR carried out & found OK.

Protection Performance Indices for the month of JAN'26 (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	GOKARNA-PURNIA #1	02.01.2026	15:14:00	03.01.2026	00:35:00	Zone-2,R-B-Phase,BAR, CR , A/R L/O		1		0		0		1	1	1	
2	New PPSP-Ranchi # 1	02.01.2026	23:21:00	03.01.2026	01:47:00	Gas Zone Trip		0		1		0		#	#	#	
3	New PPSP-Ranchi # 2	02.01.2026	23:21:00	03.01.2026	01:49:00	Gas Zone Trip		0		1		0		#	#	#	
4	New-Town AA3-Subhasgram PG	10.02.2026	16:38:00	11.02.2026	12:35:00	Zone-1,R-Phase, 3-phase Trip		1		0		0		1	1	1	
5	Gazol-Dalkhola PG #2	19.01.2026	07:06:00	19.01.2026	19:37:00	Zone-1,B-Phase,A/R Close, A/R L/O		1		0		0		1	1	1	
6	New PPSP-OLD PPSP # 2	20.01.2026	13:32:00	20.01.2026	14:36:00	Gas Zone Trip		0		1		0		#	#	#	
7	New PPSP-Arambag # 1	20.01.2026	13:32:00	20.01.2026	14:32:00	Gas Zone Trip		0		1		0		#	#	#	
8	New-Chanditala-Midnapore PG #2	24.01.2026	16:30:00	25.01.26	11:10:00	Zone-1,R-Phase,A/R Close, A/R L/O		1		0		0		1	1	1	
9	Arambag-Kolaghat # 1	25.01.2026	15:27:00	25.01.26	19:53:00	Zone-1,B-Phase,A/R Close, A/R L/O		1		0		0		1	1	1	
10	Arambag- BKTTP # 1	25.01.2026	15:28:00	25.01.26	15:58:00	DT Receive		1		0		0		1	1	1	
11	Manikchak-Malda PG #2	31.01.2026	04:02:00	31.01.2026	04:54:00	Zone-1,R-Phase,CS, CR ,3-phase Trip		1		0		0		1	1	1	

Protection Performance Indices for the month of January' 2026 (In compliance of Clause 15(6) of IEGC 2023)																	
S. No.	Name of the element	Tripping Date	Tripping Time	Restoration Date	Restoration Time	Reason (Relay indication)		Nc		Nu		Nf		Dependability Index (Nc/(Nc+Nf))	Security Index (Nc/(Nc+Nu))	Reliability Index (Nc/(Nc+Nu+Nf))	Remarks (Reason for performance indices less than 1)
						End A	End B	End A	End B	End A	End B	End A	End B				
1	220KV CHAIBASA(PG) - CHAIBASA(JUSNL) -1	10-01-2026	13:45			CT SF6 Low trip	DT received	1		1		0		1	0.5	0.5	Mal-operated due to circuitary issue.
2	220KV CHAIBASA(PG) - CHAIBASA(JUSNL) -1	12-01-2026	13:18			CT SF6 Low trip	DT received	1		1		0		1	0.5	0.5	Mal-operated due to circuitary issue.
3	220 kV Hatia - Ranchi (PG) - 02	13-01-2026	11:40			RY, Z1, 3.80 km, IR- 11.33 kA, IY - 11.56 kA		1		0		0		1	1	1	
4	220KV CHANDIL - STPS(WBPDCL) - 1	15-01-2026	22:40			YN, Z1, 53.6 km, IY- 2.50 kA, A/R successful	A/R successful	1		0		0		1	1	1	
5	220 kV Chatra - Daltonganj - 1	21-01-2026	16:07			RY, Z1, 94.668 km, IR- 1.29 kA, IY - 1.24 kA		1		0		0		1	1	1	
6	220 kV Chatra - Latchar - 2	21-01-2026				RN, Z1, 66.91 km, IR- 0.992 kA		1		1		0		1	0.5	0.5	DTPC is not installed
7	220 kV Chatra - Daltonganj -1	27-01-2026	01:53			YN, Z1, 64.076 km, IY- 1.53 kA		1		1		0		1	0.5	0.5	PLCC is unhealthy
8	220kV Govindpur - TTPS - II	27-01-2026	04:55			RN, Z1, 47.55 km, IR- 2.03 kA		1		1		0		1	0.5	0.5	DTPC is unhealthy

Protection Performance Indices for the month of January'26																			
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-MUZAFFARPUR(PG)-AMNOUR-1	25-01-2026	14:12	25-01-2026	15:11		Annour R_Y, 25.7 km, Ir 4.15 kA, Iy 4.33 kA		1		0		0	1				1	Line tripped on phase to phase fault.
2	220KV-KHAGARIA-NEW PURNEA-2	23-01-2026	06:06	23-01-2026	06:59	Khagaria: R-N ,Z1, Ar success	New Purnea: R-N , fc-2.44 kA, Fd-82.6 km	1	0	0	0	0	0	1	Khagaria-1 Purnea-0	Khagaria-1 0	Purnea- 0	Khagaria-1 Purnea-0	PLC defective at PG end. Engagement of OEM for Testing/Replacement of Burnt card at field level is under process
3	220KV-MUZAFFARPUR(PG)-AMNOUR-1	15-01-2026	14:08	15-01-2026	18:49		Annour-Y_B, distance 13 km, IB - 5.57 kA, IC-5.71 kA		1		0		0	1				1	Line tripped in phase to phase fault.
4	220KV-SAHARSA-BEGUSARAI-2	03-01-2026	03:42	03-01-2026	23:33		Begusarai: Z-1, B-N, 71.6km, 2.2kA		1		0		0	1				1	A/r failed after 1 sec.
5	220KV-KHAGARIA-NEW PURNEA-2	01-01-2026	06:16			LBB operated at New Purnea S/s(PG) due to fault in 220 kV Madhepura- New Purnea-1			1		0		0	1				1	R-Earth fault occurred in 220kV N Purnea-Madhepura 1 line and CB at N Purnea end not opened during A/r failed operation, resulting in LBB operation at New Purnea S/s. After thorough inspection and analysis contactor K11 of breaker of Madhepura-1 Line found suspicious and replaced.
6	220KV-NEW PURNEA-MADHEPURA-1	01-01-2026	06:16	07-01-2026	21:02	w Purnea End: R_N,2.18kA,71.1kV	Madhepura end : Z-1,R_N,3.905kA,9.85 KM	0	1	0	0	1	0	Purnea-0 Madhepura-1	Purnea-0	Madhepura-1	Purnea-0 Madhepura-1		

