



Agenda
for
152nd PCC Meeting

Date: 29.10.2025
Eastern Regional Power Committee
14, Golf Club Road, Tollygunge
Kolkata: 700 033

EASTERN REGIONAL POWER COMMITTEE

AGENDA FOR 152nd PROTECTION COORDINATION SUB-COMMITTEE MEETING TO BE HELD ON 29TH OCT 2025 AT 11:00 HRS THROUGH MS TEAMS

PART – A

ITEM NO. A.1: Confirmation of Minutes of 151st Protection Coordination sub-Committee Meeting held on 18th Sep 2025 through MS Teams.

The minutes of 151st Protection Coordination sub-Committee meeting held on 18.09.2025 was circulated vide letter dated 26th Sep 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	Not Received	Not 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.

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.

Members may update.

ITEM NO. B.2: 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.

A) Disturbance at 220 kV Balimela HEP (OHPC) on 6th Sep 2025 at 01:26 Hrs

Prior to the disturbance Balimela (Unit 1,2,3,4,7,8) were generating around 370 MW and evacuating through 220kV Balimela-Jaynagar 1,2 & 3. On 6th Sep 2025, at 01:26 Hrs, the Jumper of B-phase of unit-7 got broken in between GT of unit 7 and Bus 1 and created a B phase fault outside the bus bar zone. 220kV Jaynagar 1 & 2 and 220kV Jaynagar-3 got tripped on Zone 4 protection from Balimela end and Zone 2 from remote end respectively. Meanwhile, all running

units at Balimela got tripped on over speed/over frequency protection due to loss of evacuation path consequently 220kV Balimela S/s became dead.

Gen. Loss: 370 MW

Outage Duration: 01:26 Hrs

OHPC & OPTCL may explain.

B) Disturbance at 220 kV Balimela HEP (OHPC) on 9th Sep 2025 at 19:51 Hrs

At 19:51 Hrs, due to heavy rainfall and thunderstorm Rphase-Yphase to earth fault occurred in 220kV Balimela-Jaynagar 1 & 2 line and both lines got tripped from both ends in Z-1 protection. Simultaneously 220kV Balimela-Govindpali (LILO of 220kV Balimela-Jaynagar #3 at Govindpali) got tripped on over voltage protection from remote end. Meanwhile, all running units at Balimela HEP got tripped on over speed/Over frequency protection due to loss of evacuation path consequently 220kV Balimela HEP became dead.

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

Gen. Loss: 371 MW

Outage Duration: 00:44 Hrs

OHPC & OPTCL may explain.

ITEM NO. B.3: Total Power Failure at 220 kV Bolangir New (OPTCL) on 6th Sep 2025 at 12:16 Hrs

B phase to Earth fault occurred in 220 kV Bolangir New-Kesinga line which was not cleared from Bolangir New end and the same fault was sensed by Bolangir(PG) in Zone 3 protection. After 800 msec, 220 kV Bolangir (PG)-Bolangir New D/c tripped from PG end in Zone-3 protection (220kV Bolangir New-Bargarh kept open in power regulation) consequently 220/132kV Bolangir New S/s became dead.

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

Load Loss: 75 MW

Outage Duration: 00:29 Hrs

OPTCL may explain.

ITEM NO. B.4: Disturbance at 400 kV PVUNL S/s on 19th Sep 2025 at 09:53 Hrs

Prior to the disturbance, PVUNL unit 1 infirm generation was around 460 MW evacuating through 400kV PVUNL Patratu-1 and 400kV PVUNL-Tenughat line (400kV PVUNL-Patratu- 2 line was under outage condition). At 09:53 Hrs, Y phase fault occurred in 400kV Tenughat-PVUNL line and A/R got successful from both ends after 1 second. Same fault was sensed by Patratu S/s in Z-3 protection and 400kV PVUNL-Patratu-1 got tripped in Z-3 protection from Patratu end instantaneously due to incorrect Z-3-time delay at Patratu end (Z-3-time delay set as 0 msec). After tripping of 400kV Patratu-PVUNL-1, total infirm generation was evacuating through 400kV Tenughat-PVUNL line. Further, over current protection operated at PVUNL end as per SPS logic and line got tripped from both ends. Meanwhile, PVUNL unit 1 got tripped on over speed/over frequency protection due to loss of evacuation path and 400kV PVUNL S/s became dead.

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

Gen. Loss: 460 MW
Outage Duration: 01:22 Hrs

PVUNL and JUSNL may explain.

ITEM NO. B.5: Disturbance at 220 kV Biharsharif (BSPTCL) S/s on 28th Sep 2025 at 08:18 Hrs

R-phase CT of 220kV Biharsharif-Tenughat at Biharsariff got burst which resulted in R phase-Earth bus fault at Biharsariff. All connected lines from Biharsariff got tripped from Biharsariff end in Z-4 protection and 220kV Biharsharif S/s became dead.

Detailed report from ERLDC is attached at **Annexure B.5**

Load Loss: 0 MW, Gen. Loss: 0 MW
Outage Duration: 00:48 Hrs

BSPTCL may explain.

ITEM NO. B.6: Disturbance at 220 kV Raxaul New (BSPTCL) S/s on 21st Sep 2025 at 11:45 Hrs

Prior to the disturbance 220kV Sitamarhi-Raxaul New-2 was under tripped condition since 08:04 Hrs of 21/09/2025 and 220kV Raxaul New-Gopalganj D/C was under planned shutdown. 220kV Raxaul New was radially fed from Sitamarhi S/s. At 11:45 Hrs, 220 kV Sitamarhi-Raxaul New-1 tripped on Y-B fault which led to total power failure at 220kV Raxaul New S/s.

Detailed report from ERLDC is attached at **Annexure B.6.**

Load Loss: 25 MW
Outage Duration: 00:55 Hrs

BSPTCL may explain.

ITEM NO. B.7: Disturbance at 220 kV Purnea Old (PG) S/s on 24th Sep 2025 at 13:18 Hrs

On 24th Sep 2025 at 13:11 Hrs E/S/D of 220kV-New Purnea-Purnea Old-1 was availed for rectification of hot spot in R phase line isolator at New Purnea end. After availing E/S/D around 280 MW load of Purnea (BSPTCL) was radially fed through 220kV Purnea New-Purnea Old #2. At 13:18 Hrs 220kV-New Purnea-Purnea Old-2 got tripped on backup O/C protection from Purnea New end which led to total power failure at 220kV Purnea Old S/S.

Detailed report from ERLDC is attached at **Annexure B.7.**

Load Loss: 280 MW
Outage Duration: 00:42 Hrs

Powergrid may explain.

ITEM NO. B.8: Tripping of ICTs during the month of September 25

Sl. No	Name of the Element	Trip Date/Time	Reason of tripping	Utility
1	400KV/220KV 500 MVA ICT 2 AT SATGACHIA	31-08-2025 19:01	Flash over in LA	WB
2	400KV/220KV 500 MVA ICT 3 AT NEW DUBURI	25-09-2025 18:26	Tripped on over current	OPTCL
3	400KV/220KV 315 MVA ICT 2 AT NEW DUBURI	24-09-2025 10:57	Buchholz relay operated	OPTCL
4	400KV/220KV 315 MVA ICT 2 AT PATRATU	14-09-2025 15:15	Master trip relay operated	JUSNL
5	400KV/220KV 500 MVA ICT 2 AT DARBHANGA(DMTCL)	11-09-2025 17:20	LV side B phase bushing failure at DMTCL Darbhanga	DMTCL
6	765KV/400KV 1500 MVA ICT 1 AT MEDINIPUR	11-09-2025 17:20	B-PH Differential protection operated. FC-4.5 kA	PG ER-II
7	400KV/220KV 500 MVA ICT 2 AT BUXAR TPP	02-09-2025 23:28	REF protection operated.	BSPTCL

Concerned utilities may explain.

ITEM NO. B.9: Repeated tripping of transmission lines during the month of September 25

Sl.No.	Name of the Element	No. of times Tripped	Reason of tripping	Utility
1	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	6	Tripped on phase to ground (R-Earth & Y-Earth) fault in all instances.	DMTCL/BSPTCL
2	220KV-TENUGHAT-BIHARSARIFF-1	3	Tripped on phase to ground fault in 2 instances.	BSPTCL/JUSNL
3	132KV-MALDA (PG)-MANIKCHAK-2	10	Tripped on phase to ground (R-Earth & Y-Earth) fault in all instances.	WBSETCL
4	132KV-SULTANGANJ-DEOGHAR-1	10	Tripped on R-Earth Z-3 protection in 5 instances from Sultanganj end.	BSPTCL/JUSNL

Concerned utilities may explain.

ITEM NO. B.10: Outage of 400kV & 220kV Busbar protection at Malda SS: Powergrid ER-II

Commissioning of new CRP panel under ADDCAP (19-24) will be started in the 1st week of November'25 at Malda SS. Under the current package, existing conventional type CRP panels will be replaced with new SAS based panels & existing centralized busbar protection will be replaced with distributed type busbar protection. CRP panel replacement will be done bay wise during shut down. During the migration process from old to new system, busbar protection cannot be kept in service.

It is therefore proposed that busbar protection of both 400kV & 220kV bus at Malda SS may be kept out of service during ADDCAP upgradation works. In absence of busbar protection, reverse zone time of all the feeders in 400kV & 200kV bus will be reduced to 0.25 sec as per ERPC protection philosophy. Tentative outage of busbar protection will be from 01.11.2025 to 31.03.2026.

Members may discuss.

ITEM NO. B.11: Over-voltage setting of 400kV & above transmission lines in Eastern Region: - Powergid ER-II

As per ER protection philosophy, overvoltage settings need to be enabled in 400kV & above transmission lines. Earlier, overvoltage settings of few lines were shared from ERLDC/ERPC as per grid requirement. However, lot of changes happened in network after that.

It is therefore proposed that ERLDC/ERPC may once again review the overvoltage settings of the lines where special settings need to be done. In other cases, overvoltage settings will be done as per existing philosophy only.

Members may discuss.

ITEM NO. B.12: Single Line Tripping Incidences in month of September 2025

Single line tripping incidents in the month of September 2025 which needs explanation from constituents of either end is attached at **Annexure B.12**.

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 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 Sep 25, detailed list is attached at **Annexure C.1**.

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

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Sl.no	Utility Name	May 2025	June 2025	July 2025	August 2025	September 2025
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1	PG-ER-1	Yes	Yes	Yes (18.08.2025)	Yes (08.09.2025)	Yes (22.10.2025)
2	PG-ER-2	Yes	Yes (14.07.2025)	Yes	Yes	Yes (17.10.2025)
3	PG-Odisha	Yes (16.06.2025)		Yes	Yes (03.09.2025)	Yes (06.10.2025)
4	WBSETCL/ WBPDC	Yes (09.06.2025)	Yes (07.07.2025)	Yes (05.08.2025)	Yes (04.09.2025)	Yes (08.10.2025)
5	BSPTCL/ BGCL	Yes (18.06.2025)	Yes (07.07.2025)	Yes (14.08.2025)		Yes (21.10.2025)
6	OPTCL/ OHPC	Yes (16.06.2025)	Yes (14.07.2025)	Yes (14.08.2025)	Yes	Yes (27.10.2025)
7	DVC			Yes		
8	JUSNL	Yes (22.06.2025)		Yes (18.08.2025)	Yes (06.09.2025)	Yes (17.10.2025)
9	Sikkim					
10	OPGC					
11	PMTL					
12	NTPC- KHSTPP	Yes (14.06.2025)	Yes (21.07.2025)	Yes	Yes	Yes (10.10.2025)
13	NTPC- FSTPP					Yes (10.10.2025)
14	NTPC- BARH	Yes (14.06.2025)		Yes (08.08.2025)	Yes (04.09.2025)	Yes (06.10.2025)
15	NTPC- TSTPP					
16	NTPC- KBUNL					Yes (10.10.2025)
17	NPGC					
18	BRBCL					
19	NTPC- DARILAPLI	Yes (02.06.2025)	Yes (02.07.2025)	Yes (01.08.2025)	Yes (01.09.2025)	Yes (01.10.2025)
20	NTPC- NORTH KARNPUA RA					
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 (04/06/2025)	Yes (03.07.2025)	Yes (04.08.2025)	Yes (04.09.2025)	Yes (04.10.2025)
25	ENICL		Yes (07.07.2025)	Yes (11.08.2025)	Yes (09.09.2025)	Yes (05.10.2025)
26	Chuzachen HEP					
27	Jorethang HEP	Yes (01/06/2025)		Yes (01.08.2025)	Yes (01.09.2025)	Yes (01.10.2025)
28	Tashiding Hep	Yes (02/06/2025)	Yes (01.07.2025)	Yes (01.08.2025)	Yes (01.09.2025)	Yes (01.10.2025)
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)
35	PMJTL					
36	Powerlink					
37	PKTCL		Yes (07.07.2025)	Yes (11.08.2025)	Yes (09.09.2025)	Yes (05.10.2025)
38	CESC	Yes (11.07.2025)	Yes (11.07.2025)	Yes (17.08.2025)		
39	Rongnichu HEP					
40	TVNL	Yes (04.06.2025)	Yes (01.07.2025)	Yes (04.08.2025)	Yes (04.09.2025)	Yes (03.10.2025)

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

**पूर्वी क्षेत्र के 220 केवी बालीमेला पीएच उप-केन्द्र में ग्रिड घटना पर विस्तृत रिपोर्ट / Detailed Report of grid event at 220 kV Balimela PH Generating Station 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):26-09-2025

1. Event Summary (घटना का सारांश):

Event at 01:26 Hrs on 06-09-2025:

Prior to the disturbance, Balimela (Unit 1,2,3,4,7,8) were generating around 370 MW and evacuating through 220kV Balimela-Jaynagar 1,2 & 3 lines. At 01:26 Hrs, the Jumper of B-phase of unit-7 got broken in between GT of Unit #7 to Bus#1 and created a B-earth fault outside the bus bar protection zone. Consequently, 220kV Jaynagar # 1 & 2 and 220kV Jaynagar #3 got tripped on Z-4 from Balimela and Z-2 from remote end. Simultaneously, all running units at Balimela got tripped on over speed/over frequency protection due to loss of evacuation path. As a result, 220kV Balimela S/s became dead and total 370 MW generation loss occurred at Balimela HEP.

Event at 19:51 Hrs on 09-09-2025:

Prior to the disturbance, Balimela HEP generating around 371 MW (Unit-5 & 6 are under planned outage for repair and maintenance work) and evacuating through 220kV Balimela-Jaynagar # 1,2 & 3 lines. At 19:51 Hrs, due to heavy rainfall and thunderstorm, R-phase to Y-phase to earth fault occurred in 220kV Balimela-Jaynagar#1 & 2 line and both lines got tripped from both ends in Z-1 protection. Simultaneously 220kV Balimela-Govindpali (LIL0 of 220kV Balimela-Jaynagar #3 at Govindpali) got tripped on over voltage protection from remote end. All running units at Balimela HEP got tripped on over speed/Over frequency protection due to loss of evacuation path. 220kV Balimela HEP became dead, and 371 MW generation loss occurred at Balimela HEP.

2. Time and Date of the Event (घटना का समय और दिनांक): 01:26 Hrs on 06-09-2025 & 19:51 Hrs on 09-09-2025

3. Event Category (ग्रिड घटना का प्रकार): Grid Incident (GI)-1

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

5. Antecedent Conditions (पूर्ववर्ती स्थिति):

Event at 01:26 Hrs on 06-09-2025:

	Frequency (Hz)	Regional Generation (MW)	Regional Demand (MW)	State Generation	State Demand
				Odisha (MW)	Odisha (MW)
Pre-Event (घटना पूर्व)	50.01	31975	28131	3216	5112
Post Event (घटना के बाद)	50.01	31605	28131	2846	5112

**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)	Both Balimela Unit-5 & 6 are under planned outage for repair and maintenance work.
Weather Condition (मौसम स्थिति)	Normal.

Event at 19:51 Hrs on 09-09-2025:

	Frequency (Hz)	Regional Generation (MW)	Regional Demand (MW)	State Generation	State Demand
				Odisha (MW)	Odisha (MW)
Pre-Event (घटना पूर्व)	49.87	34563	30017	3787	5807
Post Event (घटना के बाद)	49.85	34120	30042	3397	5777

**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)	Both Balimela Unit-5 & 6 are under planned outage for repair and maintenance work.
Weather Condition (मौसम स्थिति)	Heavy thunderstorm and rainfall

6. Load and Generation loss (लोड और जनरेशन हानि):

Event at 01:26 Hrs on 06-09-2025: Generation loss of 370 MW at Balimela (Odisha) area.

Event at 19:51 Hrs on 09-09-2025: Generation loss of 390 MW at Balimela (Odisha) area.

7. Duration of interruption (रुकावट की अवधि):

Event at 01:26 Hrs on 06-09-2025: 00:43 Hrs.

Event at 19:51 Hrs on 09-09-2025: 00:44 Hrs.

Network across the affected area (प्रभावित क्षेत्र का नक्शा)

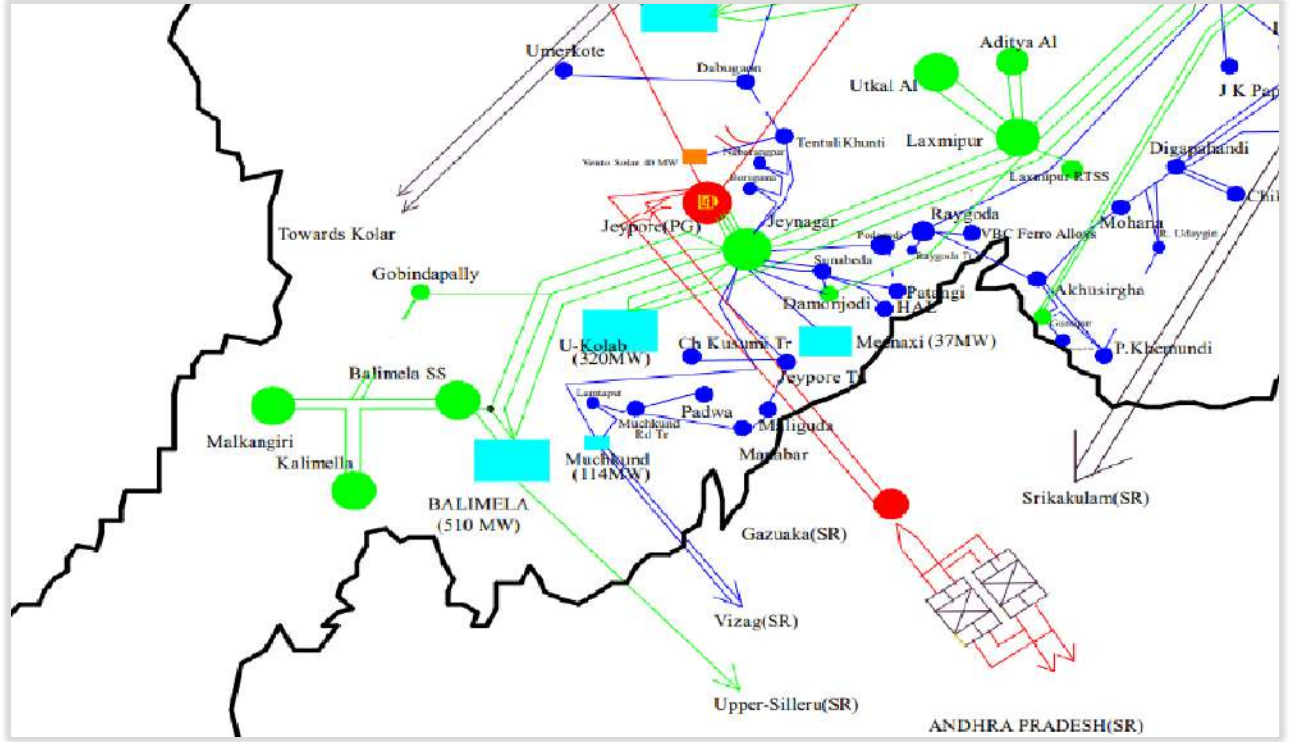


Figure 1: Network across the affected area

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

9. Major Elements Tripped (प्रमुख ट्रिपिंग):

Event at 01:26 Hrs on 06-09-2025:

क्र०स०	नाम	Trip time (hh:mm:ss)	उप केंद्र 1 रिसे संकेत	उप केंद्र 2 रिसे संकेत	Restoration time
1	220kV Balimela- Jaynagar-1 line	01:26:44	Tripped on Z-4 operation	-	02:12
2	220kV Balimela- Jaynagar-2 line		-	Tripped on Z-2 protection	02:09

3	220kV Balimela- Jaynagar-3 line		Tripped on Z-4 operation	-	02:52
4	Balimela Unit-1		Over speed and over frequency protection		-
5	Balimela Unit-2				03:34
6	Balimela Unit-3				03:13
7	Balimela Unit-4				03:41
8	Balimela Unit-7				-
9	Balimela Unit-8				-

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

Event at 01:26 Hrs on 06-09-2025:

- Prior to the disturbance Balimela (Unit 1,2,3,4,7,8) were generating around 370 MW and feeder status as follows:

BUS-1		BUS-2	
UNITS	FEEDERS	UNITS	FEEDERS
UNIT-1	BML-U SILERU CKT (L- 201)	UNIT-2	BML - JNR CKT-3 (L-202)
UNIT-3	BML-JNR CKT-1 (L- 203)	UNIT-4	BML - JNR CKT-2 (L-204)
UNIT-5	BML-OPTCL (L205)	UNIT-6	
UNIT-7	(220/11) KV ST TFR	UNIT-8	

- At 01:26:44 Hrs, Jumper along with the insulator of Phase-B of unit-7 got brok between tower line from GT to Bus, which resulted in phase to earth fault outside bus bar protection zone.
- 220kV Balimela-Jaynagar# 1 & 3 line tripped after 500 msec in Z-4 protection and 220kV Balimela-Jaynagar #2 line tripped from remote end in Z-2 protection.
- All running units at Balimela got tripped on over speed/ over frequency protection due to loss of evacuation path.
- The 220kV Balimela S/s became dead.
- Total generation loss of 370 MW occurred at Balimela S/s.

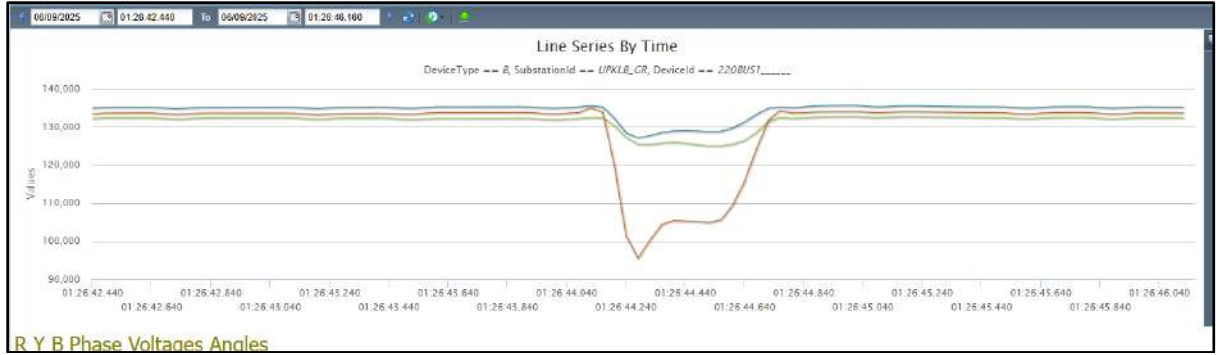


Figure 1: PMU of voltage

Event at 19:51 Hrs on 09-09-2025:

- 19:50:58 Hrs, R-Y-Earth fault occurred in 220kV Balimela-Jaynagar 1 & 2 line and line got tripped in Z-1 protection from both ends.
- After tripping of Jaynagar circuits 1 & 2, balimela generation around 390 MW evacuating through 220kV Balimela-Govindpally-Jaynagar line which got tripped on over current protection from remote end.
- All running units at Balimela got tripped on over speed/over frequency protection due to loss of evacuation path.
- 220kV Balimela S/s became dead.
- Around 390 MW generation loss occurred at Balimela S/s.

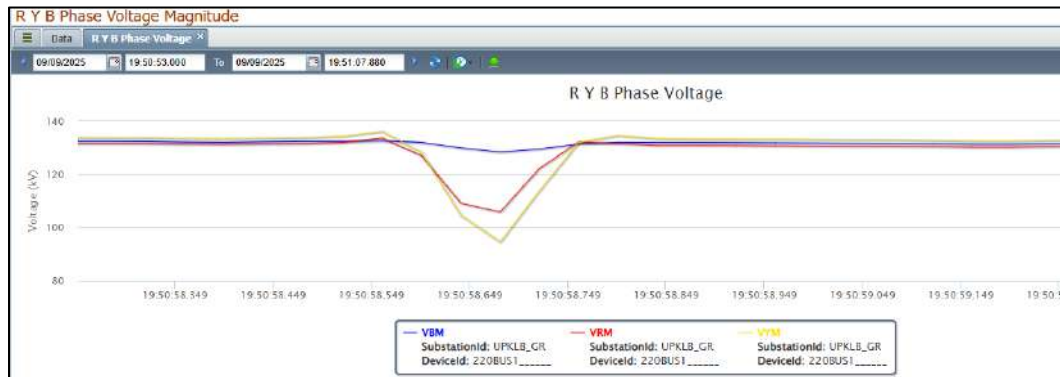


Figure 2: PMU of voltage

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

- Protection operated as per scheme.
- DR of feeders may be configured separate for each feeder to analyse feeder wise protection operation.
- As the entire generation from Balimela is being evacuated through 220 kV Balimela–JNR-I, II and JNR-III (LILo at Govindpali) and considering that Line-I & II are on the same tower, it is suggested

to explore an SPS logic to mitigate operational issues in case of simultaneous tripping of both 220 kV JNR D/C lines.

11. Action Taken/Remedial Measures (सुधारात्मक उपाय): Nil

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

S.No.	Issues	Regulation Non-Compliance	Utilities
1.	DR/EL not submitted within 24 hours	1. IEGC section 37.2 (c) 2. CEA grid Standard 15.3	Yes

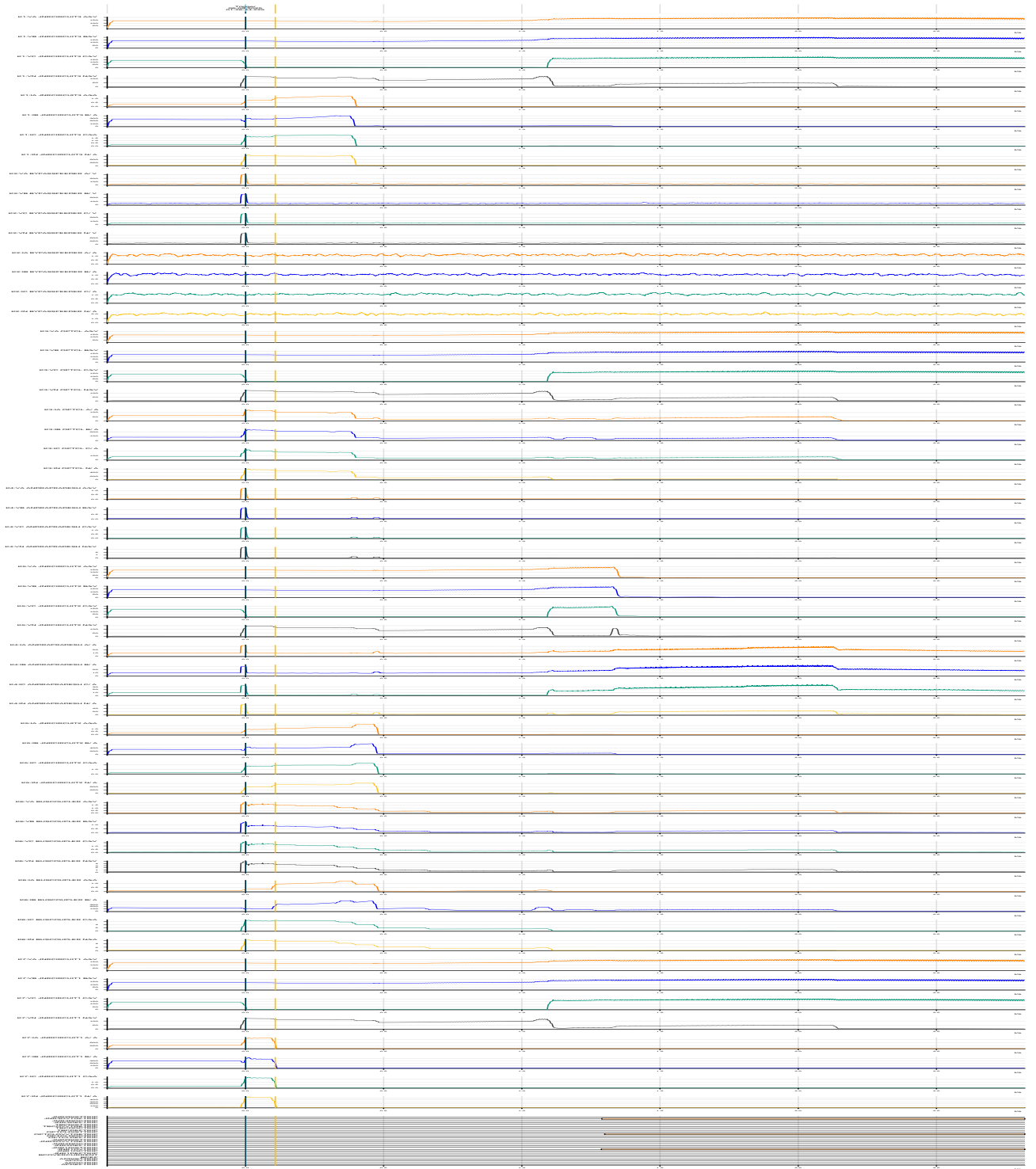
13. Key Lessons Learnt (प्रमुख अधिगम बिंदु): Nil

Annexure 1: (Sequence of Events-As per ERLDC SCADA):

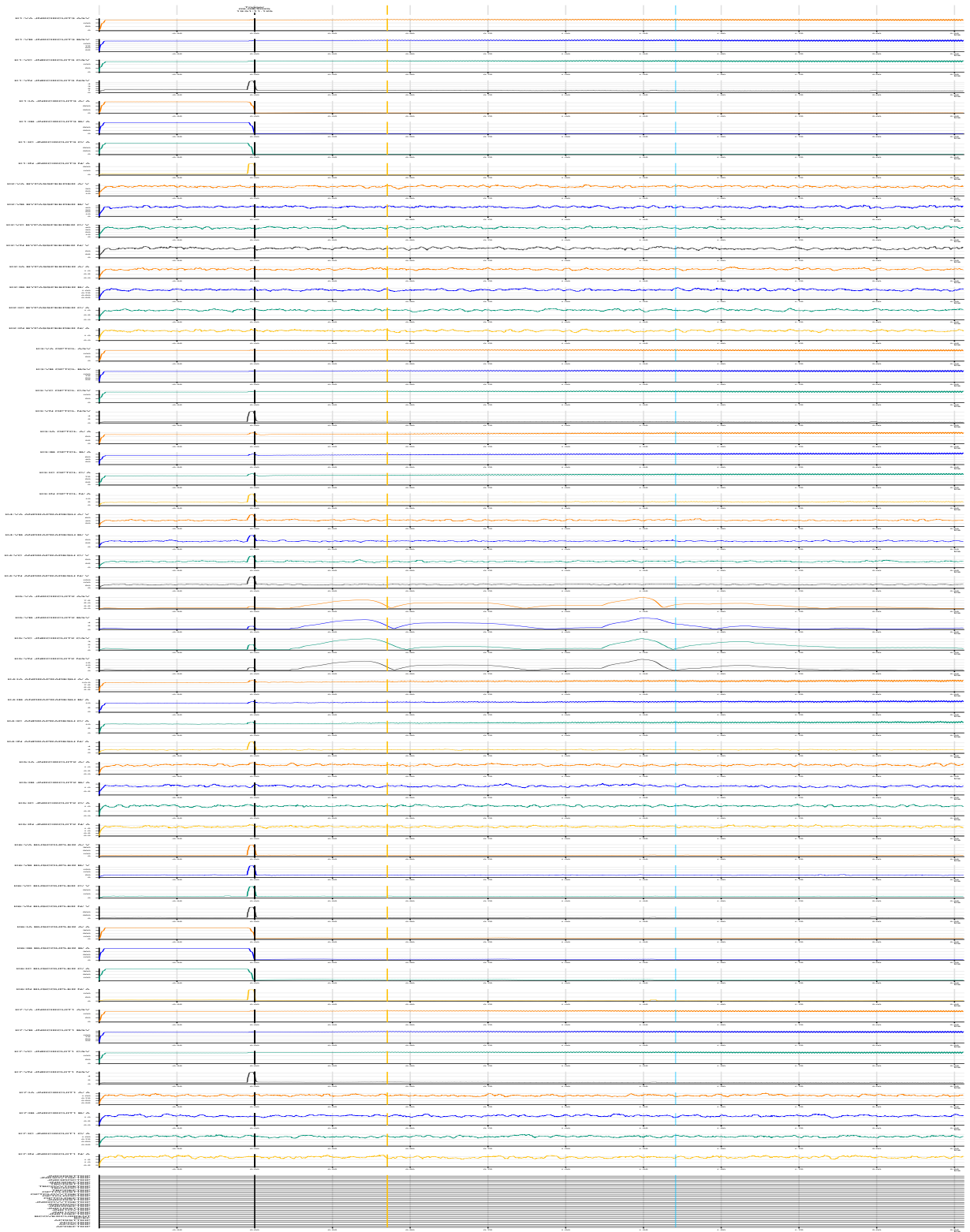
SoE data not available at ERLDC.

Annexure 2:

DR for event on 06/09/2025:



DR for event on 09/09/2025



**GRID INCIDENT REPORT OF BALIMELA POWER HOUSE
OCCURRED AT 01:26HRS. OF DTD.06.09.2025.**

1. STATUS OF BALIMELA POWER HOUSE BEFORE GRID INCIDENT:

Running Units:

UNIT-1	UNIT-2	UNIT-3	UNIT-4	UNIT-7	UNIT-8	TOTAL
60 MW	60 MW	60 MW	60 MW	65 MW	65 MW	370MW

PH Auxiliary:

- Part of PH auxiliary for 0.4KV 1H Sec-I fed from 11T (Through 7GT) & 1H Sec-II fed through SAT-1 from new 11kv system.
- Another Part of PH auxiliary for 0.4KV 2H Sec-I & 2H Sec-II connected through Sectional Bus Coupler were fed from 13T (Through SAT-II).
- Balance part of PH auxiliary were availed from 0.4KV New SSB fed from 14T (through SAT-II).

220KV Feeder Status:

Balimela-JayanagarCkt-I(L203), Balimela-JayanagarCkt-II(L204), Balimela-Jayanagar CKT-III(L202) & Balimela-OPTCL CKT(L205) were in charged condition. BML-Upper Sileru (L201) feeder was idle charged condition from Balimela end.

220KV BUS Status:

Both BUS-I & BUS-II was in service. Bus Coupler was in closed condition. All the running units and feeders were connected to 220KV BUS-I and BUS-II in the following manner.

BUS-1		BUS-2	
UNITS	FEEDERS	UNITS	FEEDERS
UNIT-1	BML-U SILERU CKT(L- 201)	UNIT-2	BML - JNR CKT-3 (L-202)
UNIT-3	BML-JNR CKT-1 (L- 203)	UNIT-4	BML - JNR CKT-2 (L-204)
UNIT-5	BML-OPTCL (L205)	UNIT-6	
UNIT-7	(220/11)KV ST TFR	UNIT-8	

BUS Voltage -BUS-I & BUS-II Both are 237 KV & BUS Frequency - 50.04 Hz.

CAUSE OF FAULT INITIATION

At 01.26 hrs the Jumper with insulator of Phase-C of unit-7 got broken in between tower line from GT to Busbar of SY.

2. DURING INCIDENT:

- 01:26Hrs due to aforesaid incident earth fault (Phase-C to Earth) occurred outside 220KV Busbar system towards GT end of the Unit-7.
- Due to this Earth fault reverse zone protection in BML-JNR CKT-1 & CKT-3 got operated and tripped.
- Simultaneously the BML- JNR CKT-2 got tripped in zone-2 at remote end.
- AP Feeder (L-201), BML OPTCL Feeder (L -205) & 220/11KV ST were ON condition.
- Unit-7 got tripped with Transformer Definite time Over Current & earth fault protection stage-1 and was running with mechanical spinning condition.

- Unit-1,2,3,4 & 8 got tripped with 120% over speed protection from the Governor and got stopped. Therefore total Power House got Blackout.
-

3. **RESTORATION PROCESS:**

01.36 Hrs: 750KVA DG started for avail the Power House auxiliary system.

01.50 Hrs: 0.4KV 1H section and 2H section charged through DG set.

02.00 Hrs: BML-OPTCL Feeder hand tripped.

02.04 Hrs: BML-JNR CKT-II was charged from both end so that auxiliary Power through 220/11KV Station Transformer got availed.

02.08 Hrs: BML- JNR - CKT-II was charged from both end.

02.10 Hrs: BML-OPTCL Feeder charged from both end.

02.11Hrs: BML- JNR - CKT-I was charged from both end.

02.51 Hrs: BML- JNR - CKT-III (LILO at Govindapali Grid) was charged from both end.

03.13 Hrs: Unit -3 Synchronized to the Grid

03.34 Hrs: Unit -2 Synchronized to the Grid.

03.41 Hrs: Unit -2 Synchronized to the Grid.

DETAILED ANALYSIS OF EVENTS ARE AS FOLLOWS:

- **Antecedent condition prior to the event:** As described above
- **List of elements (which have influence on the event) which were under outage**
- **prior to the event:** N/A
- **Amount of load & generation loss in MW:** During this operation #1/60MW, #2/60MW, #3/60MW, #4/60MW,#7/65MW & #8/65MW generation loss occurred.(Total=370MW)
- **Amount of Energy unserved in MU to consumer/customer:** NA
- Duration of event: from 01.26 Hrs to 03.41Hrs
- DR/EL in comtrade format recorded for tripping of lines: **Attached**
- Photography of affected area and Unit trends - **Attached**





R. Ram
06.09.2025

**Sub-Divisional officer (El.),
Balimela P&C Sub-Division-I,
Balimela.**

GRID INCIDENT REPORT OF BALIMELA POWER HOUSE OCCURRED AT 19:51 HRS. OF DATED 09.09.2025

1. STATUS OF BALIMELA POWER HOUSE BEFORE GRID INCIDENT:

Running Units:

UNIT-1	UNIT-2	UNIT-3	UNIT-4	UNIT-7	UNIT-8	TOTAL
60 MW	60 MW	60 MW	60 MW	65 MW	66 MW	371MW

PH Auxiliary:

- The entire Power houses auxiliary were being availed through (220/11)kV STN TFR.

220KV Feeder Status:

Balimela-Jayanagar Ckt-I (L203), Balimela-Jayanagar Ckt-II (L204), Balimela-Jayanagar CKT-III (L202) & Balimela-OPTCL CKT (L205) were in charged condition. BML-Upper Sileru (L201) feeder was idle charged condition from Balimela end.

220KV BUS Status:

Both BUS-I & BUS-II were in service. Bus Coupler was in closed condition. All the running units and feeders were connected to 220KV BUS-I and BUS-II in the following manner.

BUS-1		BUS-2	
UNITS	FEEDERS	UNITS	FEEDERS
UNIT-1	BML-U SILERU CKT(L- 201)	UNIT-2	BML - JNR CKT-3 (L-202)
UNIT-3	BML-JNR CKT-1 (L- 203)	UNIT-4	BML - JNR CKT-2 (L-204)
UNIT-7	BML-OPTCL (L205)	UNIT-8	
	(220/11)KV STN TFR		

BUS Voltage -BUS-I & BUS-II Both are 235 KV & BUS Frequency – 49.86 Hz.

CAUSE OF FAULT INITIATION

- 19.50 hrs - Balimela-Jayanagar Ckt-I (L203), Balimela-Jayanagar Ckt-II (L204) got auto-tripped due to Zone-1 Distance Protection from both ends.
- 19.51 hrs - Balimela-Jayanagar CKT-III (L202) LILO at Govindpali got auto-tripped at our end due to Over-voltage and Govindpali-Jayanager LILO Ckt got auto-tripped due Over-current at Govindpali end.
- 19.51 hrs - Balimela-OPTCL CKT (L205) got auto-tripped due to over-voltage at BHEP end.

2. DURING INCIDENT:

- 19.50 hrs - Balimela-Jayanagar Ckt-I (L203), Balimela-Jayanagar Ckt-II (L204) got auto-tripped due to Zone-1 Distance Protection from both ends.
- 19.51 hrs - Balimela-Jayanagar CKT-III (L202) got tripped at both ends.

- 19.51 hrs - Balimela-OPTCL CKT (L205) got auto-tripped due to over-voltage at BHEP end.
- Unit-1, 2, 3, 4, 7 & 8 got tripped with 120% over speed protection from the Governor and got stopped. Therefore total Power House got Blackout.
- The carrier phone available at MCR and mobile Phones got out of service during this incident. Hence, the communication to SLDC, Jayanagar Grid, Govindpali grid & OPTCL Balimela could not be established.

3. RESTORATION PROCESS:

- 20.10 Hrs - 750KVA DG was started for availing supply to the Power House auxiliary system. But after, 2mins it got auto tripped during switching on the auxiliary system breaker. After several attempts it was found that there was problem in the mechanical latching system of outgoing 1250A Havells make ACB of the DG set.
- 20.35 Hrs - Balimela-Jayanagar CKT-III (L202) LILO at Govindpali was charged from both the end after communication with the Govindpali grid.
- 220kV Station-Transformer was charged at 20.42Hrs, however due to abnormal sound at Y-ph line CT, it was hand-tripped.
- 21.15 hrs - After rectification of mechanical fault_of DG set ACB, ACB was closed and the power house auxiliary supply was restored.
- 21.20 hrs – (220/11) KV ST TFR was charged after checking of STN TFR CT circuits and stood ok.
 - Subsequently, all the power house auxiliary was availed through STN TFR and the DG source was disconnected.
- 21.50 hrs - 220kV Balimela-Jayanagar Ckt-II (L204) was charged.
- 21.56 hrs – Unit-7 synchronized.
- 22.10 hrs - Unit-3 synchronized.
- 22.12 hrs - Unit-4 synchronized.
- 22.24 hrs – 220kV Balimela-Jayanagar Ckt-I (L203) was charged.
- 22.30 hrs – 220kV BML-OPTCL (L205) was charged.
- 22.32 hrs - Unit-8 synchronized.
- 22.52 hrs - Unit-1 synchronized.
- 23.08 hrs - Unit-1 synchronized

All the machines and feeders of BHEP were normalized in co-ordination with SLDC.

DETAILED ANALYSIS OF EVENTS ARE AS FOLLOWS:

- **Antecedent condition prior to the event:** As described above
- **List of elements (which have influence on the event) which were under outage prior to the event:** N/A
- **Amount of load & generation loss in MW:** During this operation #1/60MW, #2/60MW, #3/60MW, #4/60MW, #7/65MW & #8/66MW generation loss occurred. (Total=371MW)
- **Amount of Energy unserved in MU to consumer/customer:** NA
- **Duration of event:** From 19.50hr to 21.56hr on dt-09.09.2025
- **DR/EL in comtrade format recorded for tripping of lines:** **Attached**


10-09-2025

Sub-Divisional officer (EI.),
P&C Sub-Division-I
BHEP, Balimela



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




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): 21-09-2025

1. Event Summary (घटना का सारांश):

At 12:16 Hrs on 06-09-2025, B phase to Earth fault occurred in 220 kV Bolangir New-Kesinga line which did not cleared from Bolangir New end. The same fault was sensed by Bolangir(PG) in Z-3 protection. After 800 msec, 220 kV Bolangir (PG)-Bolangir New D/c tripped from PG end in Zone-3 protection (220kV Bolangir New-Bargarh was kept open in power regulation). As a result, 220/132kV Bolangir New S/s became dead and around 75 MW load loss occurred at Sadeipalli, Bolangir, Barpalli, Patnagarh and Birmaharajpur area of Odisha Power system. Power at Bolangir New was restored through 220 kV Bolangir New-Bargarh at 12:45 Hrs.

2. Time and Date of the Event (घटना का समय और दिनांक): 12:16 hrs of 06.09.2025.

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)	State Generation (MW)	State Demand (MW)
				Odisha	Odisha
Pre-Event (घटना पूर्व)	50.02	23790	27929	2435	5965
Post Event (घटना के बाद)	50.02	23790	27854	2435	5890

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

Important Transmission Line/Unit if under outage	220 kV Bolangir new-Bargarh kept open under power regulation.
--	---

(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 **75 MW** at Bolangir S/s.

7. Duration of interruption (रूकावट की अवधि): 00:29 Hrs (29 minutes).

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

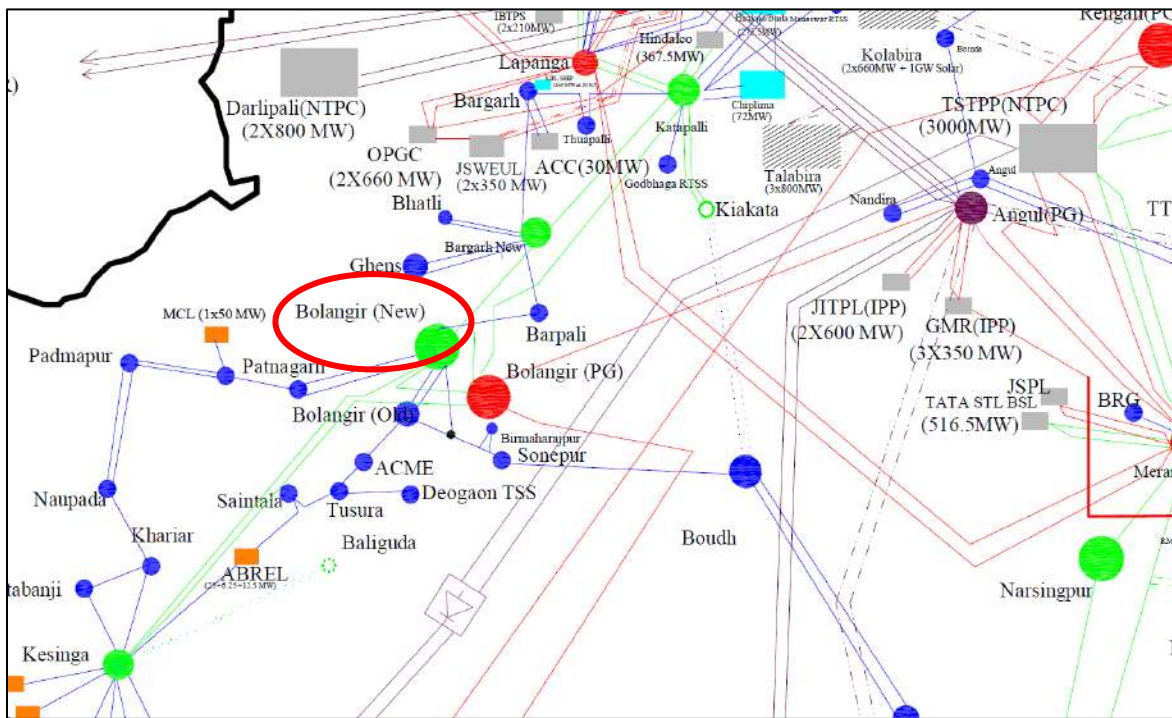


Figure 1: Network across the affected area

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 new-Bolangir (PG)-1	12:16:53	Not Tripped	Bolangir (PG)-B_N, Zone-3, 60.8 km, FC-1.66 kA	12:47
2	220kV Bolangir new-Bolangir (PG)-2	12:16:53	Not Tripped	Bolangir (PG)-B_N, Zone-3, 60.8 km, FC-1.66 kA	12:54
3	220kV Bolangir new-Kesinga-1	12:16:53	Not Tripped	Tripped on Z-1 protection	-

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

- Prior to the disturbance, the Bolangir New load was being fed from 220kV Bolangir (PG) S/s through 220kV Bolangir New-Bolangir D/C (220kV Bolangir New Bargarh line was kept opened for system requirement)



- At 12:16:53 Hrs, B-Earth fault occurred in 220kV Bolangir New-Kesinga line and distance protection operated at both ends but line failed to open from Bolangir New end.
- Due to non-opening of CB from Bolangir New end, fault was fed from Bolangir(PG) end. After 800 msec, 220kV Bolangir New-Bolangir(PG) D/C tripped from Bolangir(PG) end under Z-3 protection.

- Consequently, 220kV Bolangir New S/s became dead.
- Around 75 MW load loss reported at Bolangir New S/s.

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

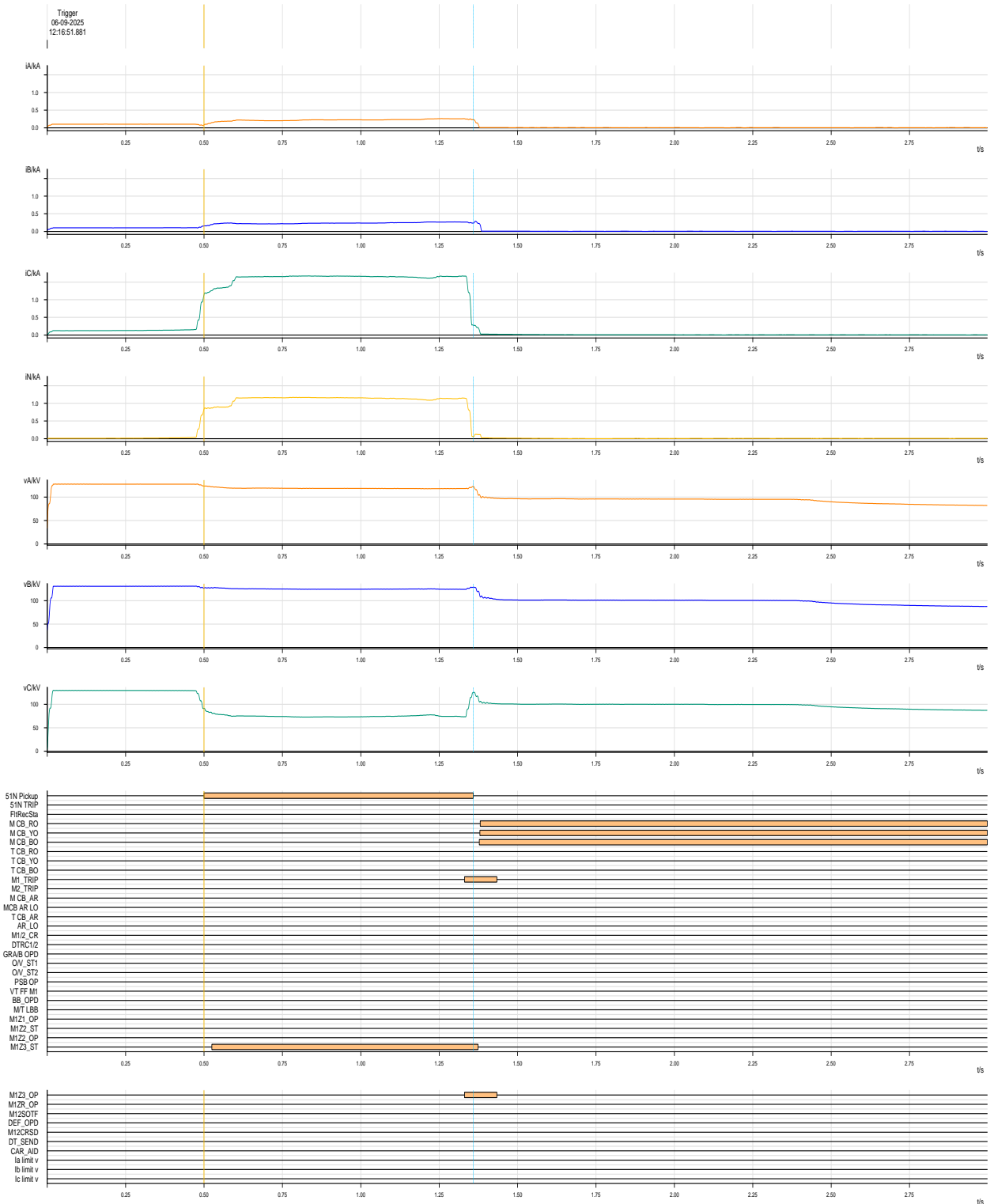
- Reason for non-opening of CB at Bolangir New end may be shared.
- Reason for non-operation of LBB (Local Breaker Backup) protection may be shared.

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

14. 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.

Annexure:

DR of 220kV Bolangir New-Bolangir #1 at Bolangir(PG):





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 : erfdcinfo@grid-india.in, Tel.: 033 23890060/0061




पूर्वी क्षेत्र के 400 केवी पी.वी.यू.एन.एल. उप-केन्द्र में ग्रिड घटना पर विस्तृत रिपोर्ट / Detailed Report of grid event at 400 kV-PVUNL Station 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):02-10-2025

1. Event Summary (घटना का सारांश):

Prior to the disturbance PVUNL unit #1 infirm generation was around 460 MW evacuating through 400kV PVUNL- Patratu #1 and 400kV PVUNL-Tenughat line (400kV PVUNL-Patratu #2 line was under outage condition). At 09:53 Hrs, Y-Earth fault occurred on the 400kV Tenughat-PVUNL line and A/r successful from both end after 1 second. However, the same fault was sensed at Patratu S/s under Z-3 protection, causing the 400kV PVUNL-Patratu #1 line to trip instantly on Z-3 protection from Patratu end due to incorrect Z-3 time delay setting at Patratu end(Z-3 time delay set as 0 msec). After tripping of 400kV Patratu-PVUNL #1, total infirm generation was evacuating through 400kV Tenughat-PVUNL line. Consequently, the over current protection (As per SPS logic) operated at PVUNL end and line got tripped from both ends. Subsequently, PVUNL unit #1 got tripped on over speed/over frequency protection due to loss of evacuation path and 400kV PVUNL S/s became dead. Total generation loss of 460 MW reported at PVUNL.

2. Time and Date of the Event (घटना का समय और दिनांक): At 09:53 Hrs on 19/09/2025

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

4. Location/Control Area (स्थान/नियंत्रण क्षेत्र): Jharkhand / 400kV-PVUNL

5. Antecedent Conditions (पूर्ववर्ती स्थिति):

	Frequency in Hz	Regional Generation in MW	Regional Demand in MW	State Generation in MW	State Demand in MW
				Jharkhand	Jharkhand
Pre-Event (घटना पूर्व)	50.016	27027	26222	386	1754
Post Event (घटना के बाद)	50.005	26567	26222	386	1754

**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)	400 kV PVUNL- PATRATU#2 line had been in idle charged condition from Patratu end.
Weather Condition (मौसम स्थिति)	Normal.

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

- **Generation loss: 460 MW; Load loss: Nil.**

7. Duration of interruption (रुकावट की अवधि): 01:22 Hrs.

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

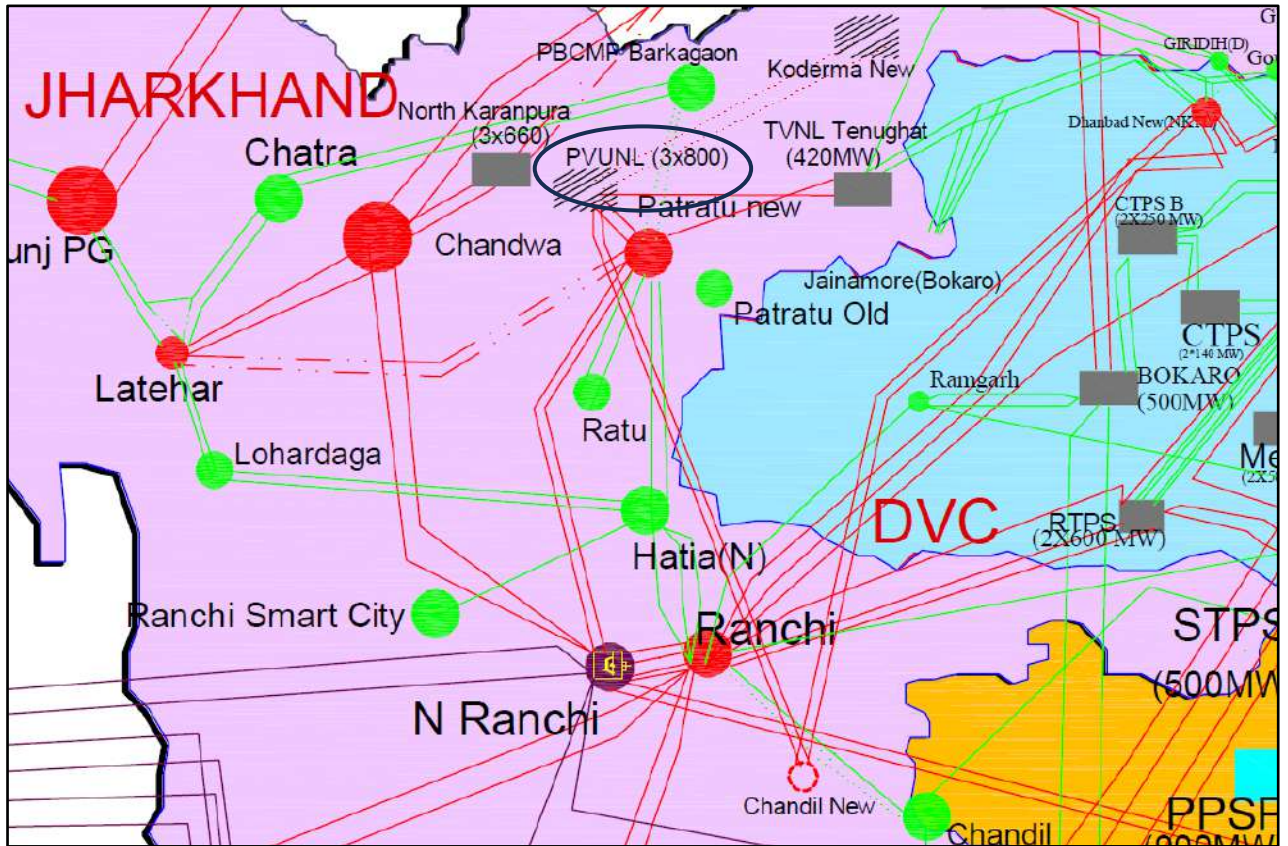


Figure 1: Network across the affected area

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

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	400KV-TENUGHAT-PVUNL	09:53:09	A/r successful after 1 sec, further DT received from remote end due to SPS operation at PVUNL end.	A/r successful after 1 sec, further after 800 msec, over current SPS operated	20:23
2	400KV PVUNL-PATRATU #1	09:53:07	Not tripped	Instantaneous Z-3 operated	12:19
3	PVUNL Unit#1	09:53:09	Loss of evacuation path		23:36

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

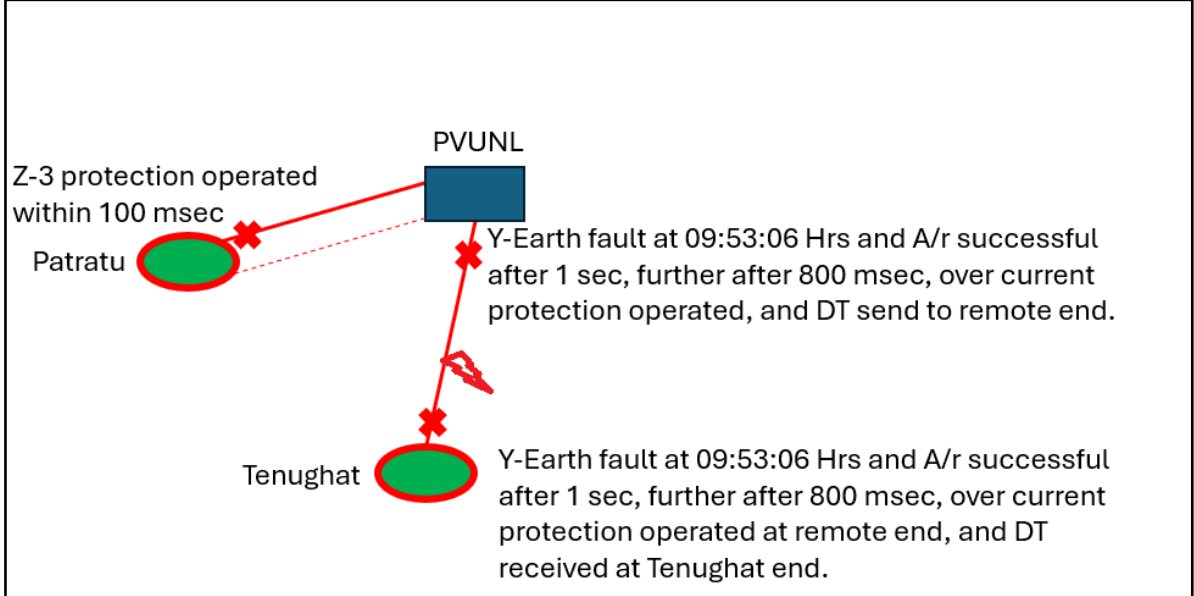
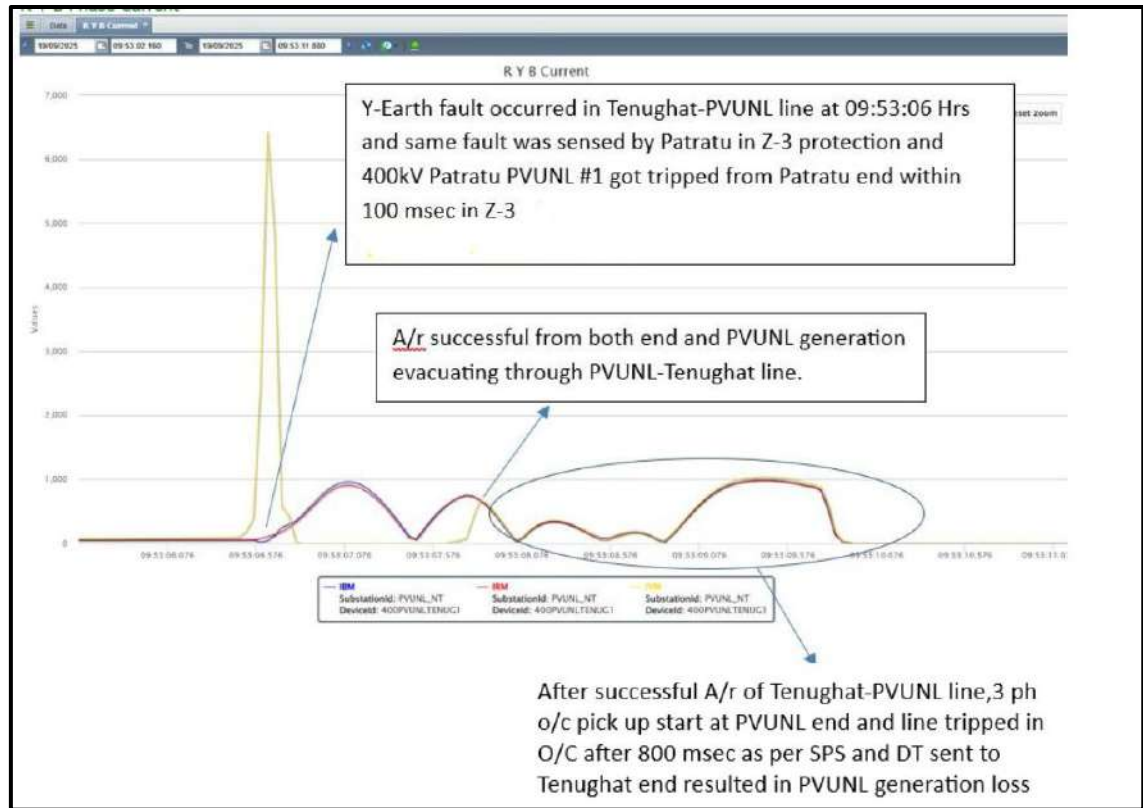


Figure 1: Network Diagram of PVUNL area

- PVUNL infirm generation was around 460 MW evacuating through 400kV Patratu #1 and 400kV Tenughat line.
- 400kV Patratu-PVUNL #2 was under outage condition.



- At 09:53:06 Hrs, a transient Y-Earth fault occurred on the 400kV PVUNL-Tenughat line and A/r successful from both ends after 1 sec.
- Simultaneously, same fault was sensed at Patratu under Z-3 protection by the Main 2 relay.
- Due to an instantaneous Z-3-time delay (as the Anti-theft setting was not reverted into normal setting during charging of line), line got tripped at 09:53:06:570 Hrs from Patratu end under Z-3 protection.

Type	Date & Time	Signal name	Status
P	19-09-2025 9:53:06	M2 OPTD	Off
P	19-09-2025 9:53:06	MCB Y PH OPEN	On
P	19-09-2025 9:53:06	TCB B PH OPEN	On
P	19-09-2025 9:53:06	TCB R PH OPEN	On
P	19-09-2025 9:53:06	TCB Y PH OPEN	On
P	19-09-2025 9:53:06	Z3 OPTD	Off
F	19-09-2025 9:53:06	Z3 START	Off
P	19-09-2025 9:53:06	MCB B PH OPEN	On
P	19-09-2025 9:53:06	MCB R PH OPEN	On
P	19-09-2025 9:53:06	M2 OPTD	On
P	19-09-2025 9:53:06	Z3 OPTD	On
P	19-09-2025 9:53:06	Z3 START	On

- After the successful A/r of the 400kV PVUNL-Tenughat line, the infirm generation of 460MW was evacuating through this line.

- At 09:53:09 Hrs, three phase Over current protection picked up (Pickup current set as 300 A in three phase) and after 800 msec, O/C protection operated at PVUNL end and DT send to remote end.
- Due to loss of evacuation path, PVUNL unit #1 got tripped on overspeed/over frequency protection.
- 400kV PVUNL S/s subsequently became dead, resulting in an infirm generation loss of 460 MW at PVUNL.

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

- Anti-theft protection setting of 400kV Patratu-PVUNL #1 at Patratu end for Main #2 relay not reverted into normal setting, which led to instantaneous tripping under Z-3 protection for transient fault on 400kV PVUNL -Tenughat line.
- The Z-3 setting for Main 2 relay of 400kV PVUNL-Patratu D/C need to be review.

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

- Anti-theft setting of Main 2 relay of 400kV PVUNL Patratu #1 at Patratu end reverted to normal setting.
- Letter from GM(SO), ERLDC is attached in Annexure 2:

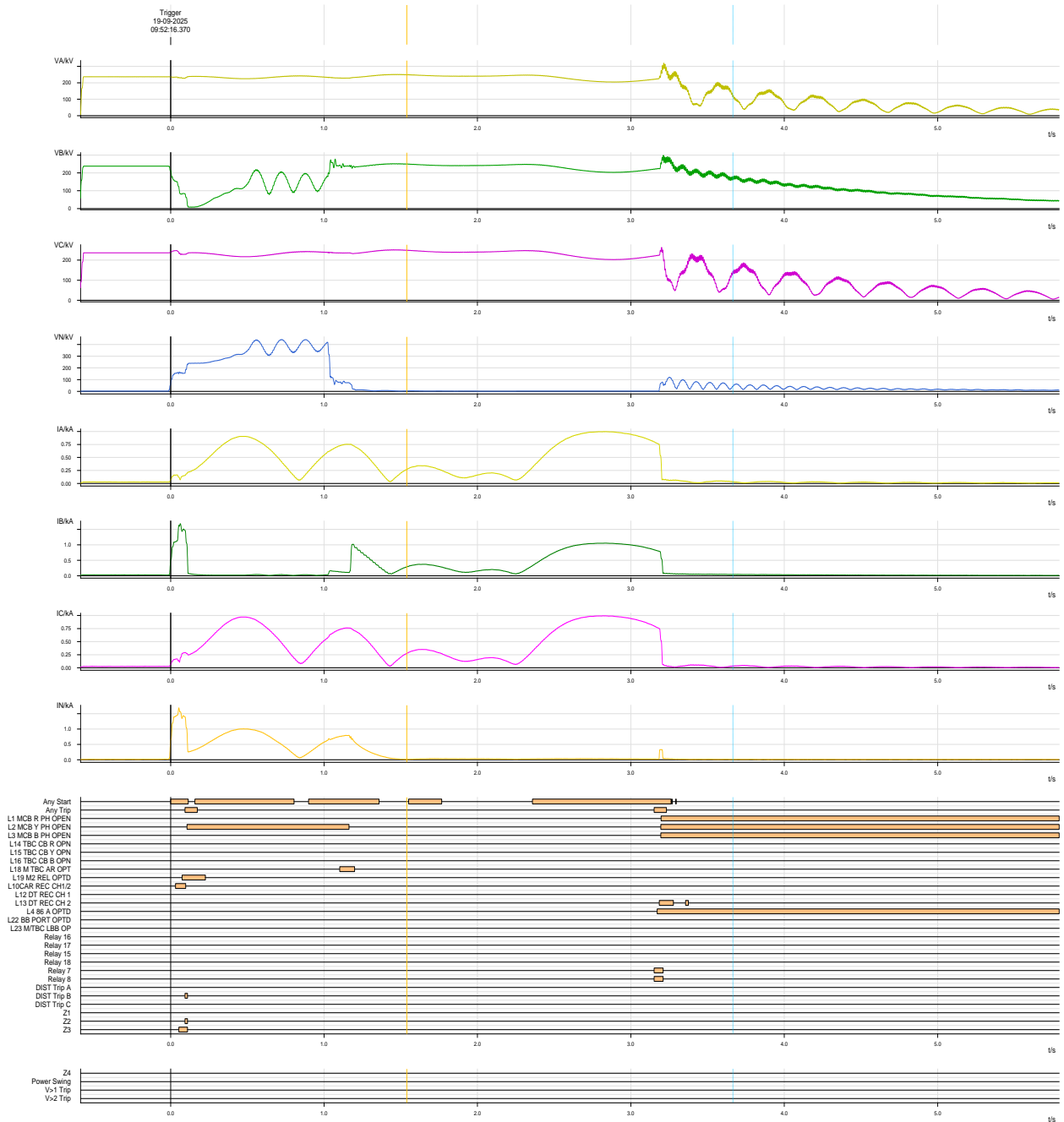
14. Non-compliance observed (विनियमन का गैर-अनुपालन):

S.No.	Issues	Regulation Non-Compliance	Remark
1	Flash Report received within 8hrs?	IEGC section 37.2 (b)	Not Submitted
2	Whether DR/EL provided within 24 Hours?	1. IEGC section 37.2 (c) 2. CEA grid Standard 15.3	Submitted
3	Detailed Report received within 7 days?	IEGC section 37.2 (e)	Not Submitted
4	Protection system not operated correctly	CEA Technical Standard for Construction of Electrical Plants and Electric Lines: 48 (1) a. CEA (Technical standards for connectivity to the Grid) Regulation, 2007: Schedule Part 1. (6.1, 6.2, 6.3)	Distance Protection setting not as per ERPC protection philosophy.

- Key Lessons Learnt (प्रमुख अधिगम बिंदु):** Verification and documentation of relay settings before and after any configuration change are essential to ensure proper zone coordination. Cross-verification by protection teams prior to energization helps ensure all settings are aligned with approved protection schemes.

Annexure 1:

DR of 400kV PVUNL-Tenughat at Tenughat:



Event log of 400kV Patratu PVUNL #1 at Patratu end:

Type	Date & Time	Signal name	Status
P	19-09-2025 9:53:06	M2 OPTD	Off
P	19-09-2025 9:53:06	MCB Y PH OPEN	On
P	19-09-2025 9:53:06	TCB B PH OPEN	On
P	19-09-2025 9:53:06	TCB R PH OPEN	On
P	19-09-2025 9:53:06	TCB Y PH OPEN	On
P	19-09-2025 9:53:06	Z3 OPTD	Off
P	19-09-2025 9:53:06	Z3 START	Off
P	19-09-2025 9:53:06	MCB B PH OPEN	On
P	19-09-2025 9:53:06	MCB R PH OPEN	On
P	19-09-2025 9:53:06	M2 OPTD	On
P	19-09-2025 9:53:06	Z3 OPTD	On
P	19-09-2025 9:53:06	Z3 START	On
P	14-09-2025 18:47:13	TCB Y PH OPEN	Off
P	14-09-2025 18:47:13	TCB B PH OPEN	Off
P	14-09-2025 18:47:13	TCB R PH OPEN	Off
P	14-09-2025 18:46:54	MCB R PH OPEN	Off
P	14-09-2025 18:46:54	MCB B PH OPEN	Off
P	14-09-2025 18:46:54	MCB Y PH OPEN	Off
P	14-09-2025 8:07:49	MCB Y PH OPEN	On
P	14-09-2025 8:07:49	MCB B PH OPEN	On
P	14-09-2025 8:07:49	MCB R PH OPEN	On
P	14-09-2025 8:07:42	TCB B PH OPEN	On
P	14-09-2025 8:07:42	TCB R PH OPEN	On
P	14-09-2025 8:07:42	TCB Y PH OPEN	On

				Project	Responsible department	Technical ref...	Document kind	Doc. designation			
				JUSNL PATRATU(3)	ABB Ltd.		IED events	B41621M2			
			Repla...	JUSNL		Created by	Title	Document id.			
				PATRATU(3).Substation:400/220 kV GSS KATIA SS.Voltage Lev...		Approved by		PATR41621M2	d		
Rev.	Modification	Rev. date	Created by	Revised on				Rev.	Rev. date	Lang	1 / 1

Annexure:3



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, Tel.: 033 23890060/0061

ERLDC / SO / 2025-26/536

Date:23.09.2025

To,
General Manager (GM),
Jharkhand Urja Sancharan Nigam Limited (JUSNL),
Kusai, Doranda, Ranchi, Jharkhand 834002

Subject: Mal-operation of Protection System leading to blackout at 400 kV PVUNL Station-reg

Dear Sir,

This is to bring to your kind attention that at 09:53:06 hrs on 19.09.2025, a Grid Disturbance (Category **GD-1**) occurred at **400 kV PVUNL sub-station** under JUSNL system. Details of tripping are tabulated below:

Sl No	Name of Tripping element	Reason of tripping/ Relay Indication	Remarks
01	400 kV S/C PVUNL-Tenughat Line	Z-1, Y-E fault, Auto-Reclose successful. However, tripped on SPS operation both ends.	Single-phase transient fault.
02	400 kV PVUNL-Patratu-1 Line	Z-3 protection operated within 100 msec at Patratu end only	Unwanted tripping of healthy 400 kV PVUNL-Patratu-1 Line due to Z-3 protection operation. (400 kV PVUNL-Patratu-2 Line out of service)
03	PVUNL Unit-1(800 MW)	Loss of evacuation Path	Unwanted tripping of the generating unit due to loss of connectivity.

The above incident led to a generation loss of **460 MW**, which is a matter of serious concern from system operational point of view. (Communication email attached in annexure 1)

It may be noted that a similar kind of unintended protection operation occurred earlier on 19.08.2025, when both circuits 400 kV PVUNL-Patratu D/C line tripped on DEF operation from Patratu end. The same was already discussed during 151st PCC meeting held on **18.09.2025**.

It is intimated that the mal-operation was happened due to non-reversal of protection settings from Anti-theft mode to Normal mode in the Main-2 relay at 400 kV Patratu substation.

In view of the above, it is requested to kindly look into the issues and take necessary corrective action at earliest to prevent recurrence of such unwanted protection operations. Further, it is advised that relay settings be thoroughly verified prior to their declaration to ERPC and ERLDC, need to ensure protection security and reliability of system.

Your cooperation in matter is highly appreciated.

Yours sincerely

23/09/2025
(D. Biswas)
General Manager (SO)

Copy: For kind information please.

1. ED, ERLDC Kolkata
2. MS, ERPC, Kolkata

 Reply all |   Delete  Junk |  ...



Regarding tripping of 400kV PVUNL-Patratu #1 and 400kV PVUNL-Tenughat




Gitesh Patel (गितेश पटेल)

 Reply all | 

Fri 9/19/2025 5:02 PM

To: critljusnl@gmail.com; sldcranchi@gmail.com; sldcranchi.report@gmail.com

Cc: D Biswas (डी बिस्वास); Manas Das (मानस दास); Bilash Achari (बिलाश आचारी); Bimal Swargiary (बिमल स्वर्गीयारी); erpc-protection@gov.in; erpcprotection@gmail.com 

Sent Items

You forwarded this message on 9/19/2025 5:51 PM

Sir,

At 09:53 hrs, Y ph fault occurred in 400 KV Tenughat-PVUNL ckt and at the same time Patratu PVUNL ckt 1 tripped in instantaneous Zone 3 distance protection sensing the Tenughat PVUNL fault (may be antitheft setting was not reverted back). Though PVUNL Tenughat reclosed successfully, but total 460 MW started flowing through PVUNL-Tenughat line and 3 ph line overcurrent protection operated as current remained more than 300 A (as per SPS logic), which led to outage of 460 MW infirm generation at PVUNL unit 1.

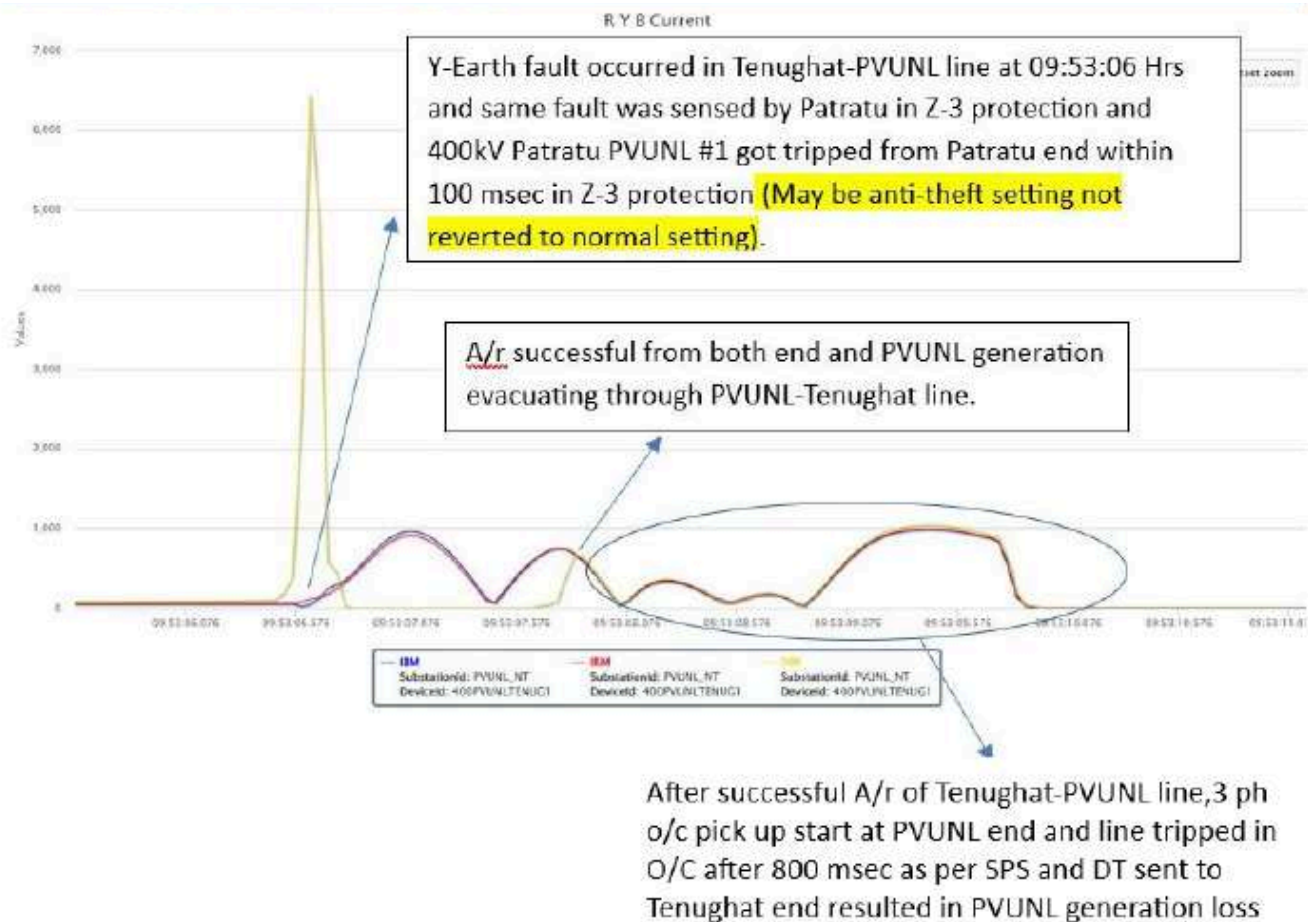


Figure #1 Sequence of event based on PMU

Protection Observation at Patratu end:

400kV Patratu PVUNL #1 tripped within 100 msec in Zone-3 protection for the fault in 400kV Tenughat-PVUNL line. As per ERPC protection philosophy Zone-3 time delay should be 800-1000 msec. Kindly share reason of unwanted Zone-3 protection operation and setting file of line at Patratu end to reverify distance protection setting in order to ERPC protection philosophy to avoid unwanted tripping.

सादर धन्यवाद / Thanks & Regards,

गितेश पटेल/ Gitesh Patel

उप प्रबंधक / Deputy Manager

पू.क्षे.भा.प्रे.के. / Eastern Regional Load Despatch Centre

ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड

Grid Controller of India Limited

formerly Power System Operation Corporation Ltd. (POSOCO)

Contact No. :- 9147016222



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**पूर्वी क्षेत्र के 220 केवी बिहारशरीफ में ग्रिड घटना पर विस्तृत रिपोर्ट / Detailed Report of grid event at
 220kV Biharsariff 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): 10-10-2025

1. Event Summary (घटना का सारांश):

At 08:18 Hrs on 28/09/2025, R-phase CT of 220kV Biharshariff-Tenughat line at Biharsariff burst, resulting in an R Ph-Earth bus fault at Biharsariff Substation. Consequently, all connected lines from Biharsariff got tripped from Biharsariff end in Z-4 protection. The 220kV Biharsariff S/s became dead. No load loss reported during this disturbance.

2. Time and Date of the Event (घटना का समय और दिनांक): 08:18 hrs of 28.09.2025.

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

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

5. Antecedent Conditions (पूर्ववर्ती स्थिति):

	Frequency in (Hz)	Regional Generation in (MW)	Regional Demand in (MW)	State Generation (MW)	State Demand (MW)
				Bihar	Bihar
Pre-Event (घटना पूर्व)	50.006	26555	23907	511	6325
Post Event (घटना के बाद)	50.006	26555	23907	511	6325

***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)	NIL
--	-----

Weather Condition (मौसम स्थिति)

Normal.

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

7. Duration of interruption (रुकावट की अवधि): 00:48 Hrs (48 minutes).

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

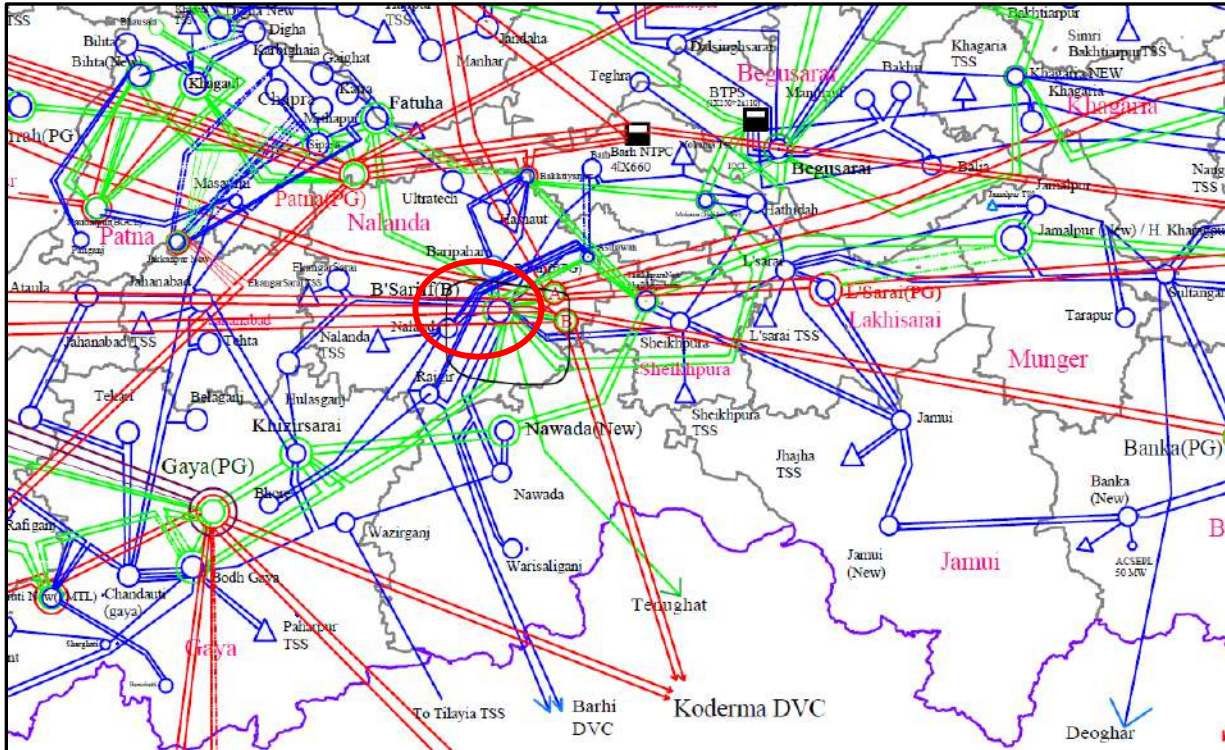


Figure 1: Network across the affected area

9. Details of Equipment Failure (if any during the event) (उपकरण विफलता का विवरण): R-phase CT of 220kV Biharshariff-Tenughat line at Biharshariff.

10. Major Elements Tripped (प्रमुख ट्रिपिंग):

S.No. (क्र० सं०)	Transmission/Generation element name (संचरण लाइन / विद्युत उत्पादन इकाई का नाम)	Trip Time (बंद होने का समय)	Restoration time (वापस आने का समय)	Reason/ Relay Indication (कारण/रिले संकेत)
1	220KV-BIHARSARIFF-TTPS-1	08:18:34 Hrs	Under Breakdown	Line tripped from remote end in Z-2 protection.
2	220KV-BIHARSARIFF-MOKAMA-1		10:02 Hrs	Tripped on Z-4 protection at Biharsariff end
3	220KV-BIHARSARIFF-MOKAMA-2		10:03 Hrs	Tripped on Z-4 protection at Biharsariff end
4	400KV/220KV 315 MVA ICT 1 AT BIHARSARIFF(PG)		10:42 Hrs	Tripped on Earth fault
5	400KV/220KV 315 MVA ICT 2 AT BIHARSARIFF(PG)		10:44 Hrs	Tripped on Earth fault
6	400KV/220KV 315 MVA ICT 3 AT BIHARSARIFF(PG)		-	Tripped on Earth fault
7	400KV/220KV 500 MVA ICT 4 AT BIHARSARIFF(PG)		12:35 Hrs	Tripped on Earth fault
8	220KV-BIHARSARIFF-Khizersarai-1		09:06 Hrs	Tripped on Z-4 protection at Biharsariff end
9	220KV-BIHARSARIFF-Khizersarai-2		09:06 Hrs	
10	220KV-BIHARSARIFF-Fatuha-1		09:08 Hrs	
11	220KV-BIHARSARIFF-Fatuha-2		09:08 Hrs	
12	220/132KV 160MVA ICT1 at Biharsharif(BH)		09:14 Hrs	Tripped on Earth fault
13	220/132KV 160MVA ICT2 at Biharsharif(BH)		09:14 Hrs	
14	220/132KV 160MVA ICT3 at Biharsharif(BH)		09:30 Hrs	

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

- At 08:18:34 Hrs, R-phase CT of 220kV Biharshariff-Tenughat line at Biharsariff got burst, which created R-Earth and Z-1 protection operated at Biharsariff end but CB didn't open which further converted into R-Y-Earth bus fault at Biharsariff end.
- 220kV Biharshariff-Tenughat line tripped from remote end in Z-2 protection.
- As Bus bar protection not available at Biharsariff S/s so all feeders connected to Biharsariff S/s got tripped after 250 msec in Z-4 protection.
- 220kV Biharsariff S/s became dead.

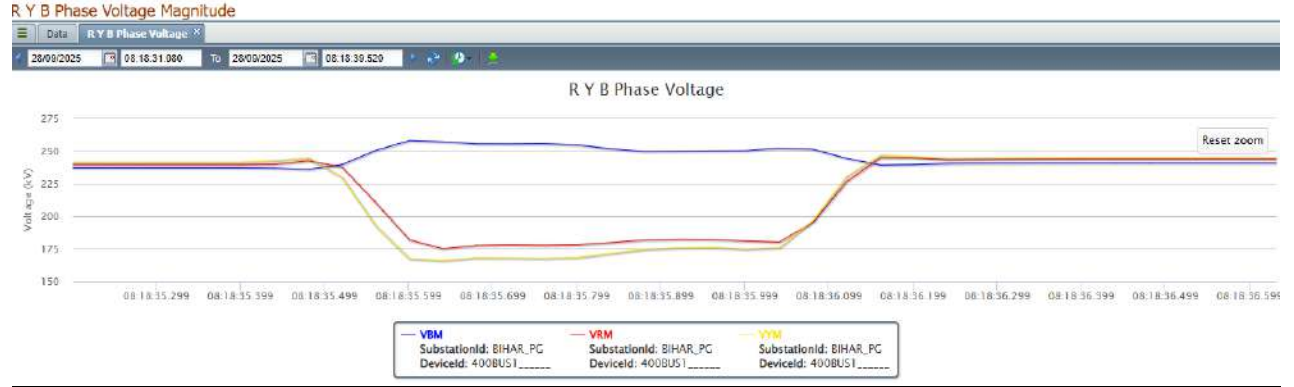


Figure 1: PMU of Voltage of BSF bus

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

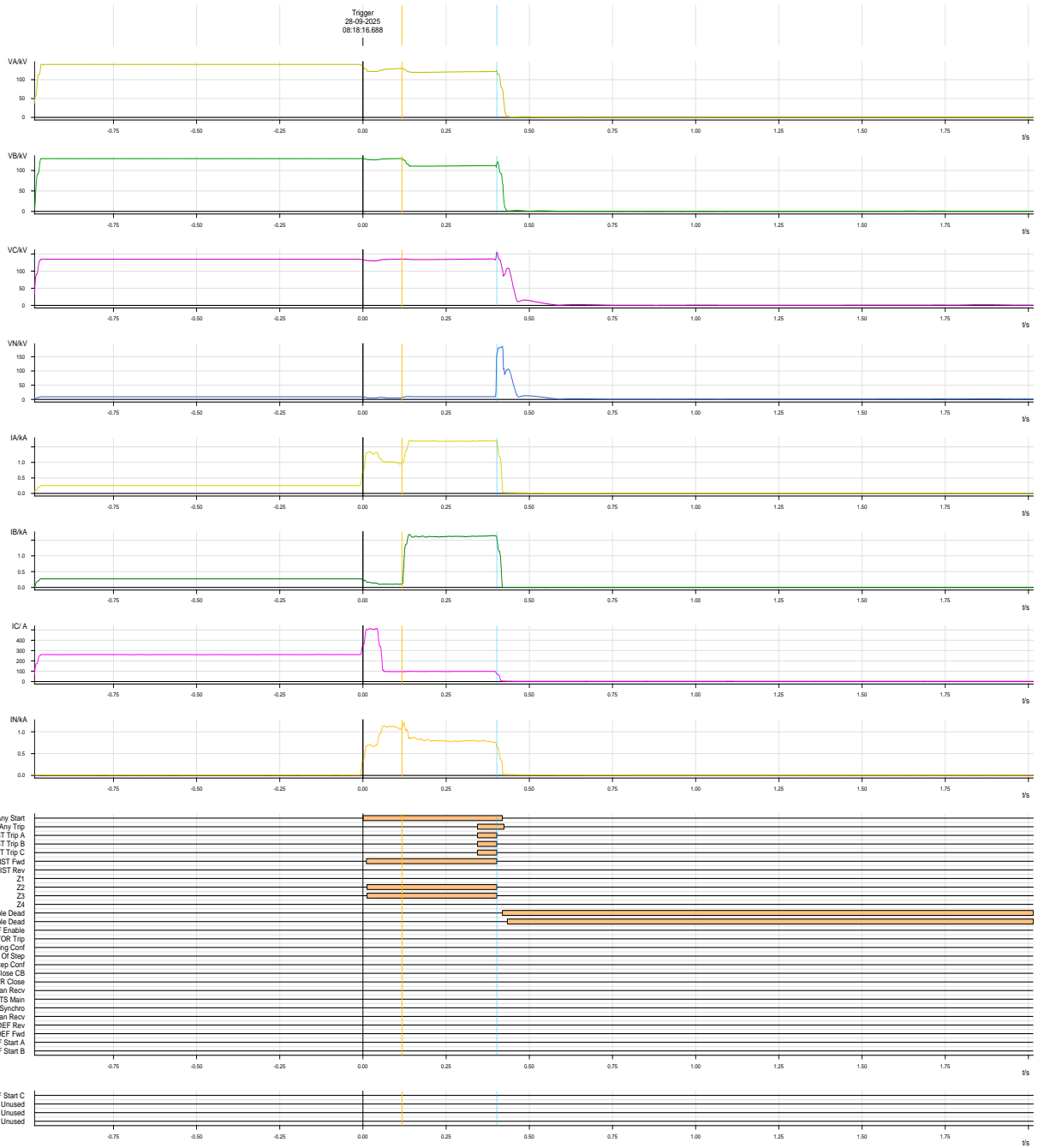
- Bus bar protection is not available at Biharsariff end. So, during bus fault at Biharsariff S/s, enabling the earth fault overcurrent(highest) protection is recommended to ensure faster fault and prevent a total black out of substation.
- High set over current earth fault may be enabled for bus coupler bay at 220 kV Biharsariff as per ERPC protection philosophy to avoid total black out during bus fault.
- Status of implementation of Bus bar protection scheme may be expedited, and latest status may be shared.

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

14. Key Lessons Learnt (प्रमुख अधिगम बिंदु):

- NIL

DR of 220kV Biharsariff-Tenughat line at Tenughat end:





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GRID-INDIA
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड
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**पूर्वी क्षेत्र के 220/132kV रक्सौल न्यू में ग्रिड घटना पर विस्तृत रिपोर्ट / Detailed Report of grid event
at 220/132 kV Raxaul 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): 05-10-2025

1. Event Summary (घटना का सारांश):

Prior to the disturbance, 220kV Sitamarhi-Raxaul New #2 line was under tripped condition since 08:04 Hrs of 21.09.2025 and 220kV Raxaul New-Gopalganj D/C line was under planned shutdown. 220kV Raxaul New S/s was radially fed from Sitamarhi S/s. At 11:45 Hrs, 220 kV Sitamarhi-Raxaul New#1 tripped on Y-B fault. This led to total power supply failure at 220kV Raxaul New S/s. Total load loss of 25 MW occurred at Raxaul New S/s.

2. Time and Date of the Event (घटना का समय और दिनांक): 11:45 hrs of 21.09.2025.

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

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

5. Antecedent Conditions (पूर्ववर्ती स्थिति):

	Frequency in (Hz)	Regional Generation in (MW)	Regional Demand in (MW)	State Generation (MW)	State Demand (MW)
				Bihar	Bihar
Pre-Event (घटना पूर्व)	49.959	23657	25604	345	5618
Post Event (घटना के बाद)	49.959	23651	25585	345	5593

***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)

- 220kV Raxaul New-Gopalganj D/C was under shutdown.
- 220kV Sitamarhi-Raxaul New#2 was already under tripped condition since 08:04 Hrs on date.

जो बंद है)	
Weather Condition (मौसम स्थिति)	Normal.

6. Load and Generation loss (लोड और जेनरेशन हानि): Approximate load loss of 25 MW at Raxaul S/s.

7. Duration of interruption (रूकावट की अवधि): 00:55 Hrs (55 minutes).

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

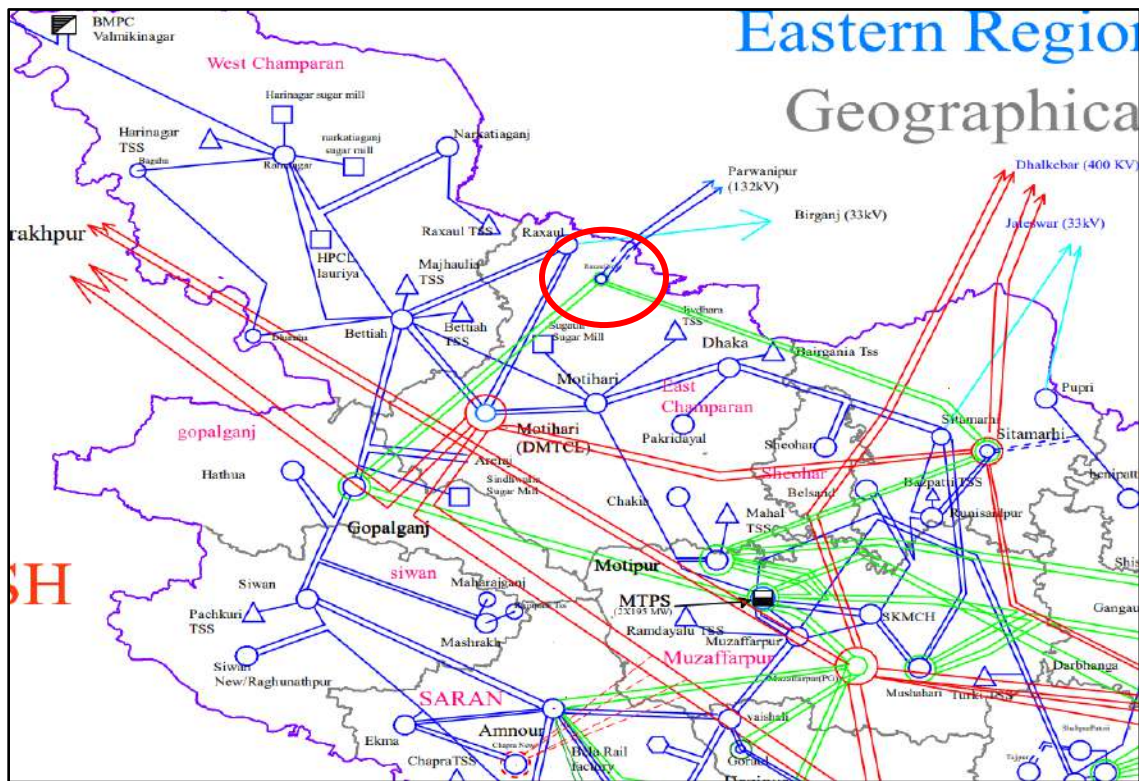


Figure 1: Network across the affected area

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 Sitamarhi-Raxaul New#1 line	11:45:29	Sitamarhi: Y_B, Iy-6.59 kA, Ib-6.55 kA, 34.1 km	-	12:47

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

- Prior to the disturbance, 220kV Sitamarhi-Raxaul New #2 was under tripped condition (Tripped at 08:04 Hrs on same date) and 220kV Raxaul New-Gopalganj D/C was under shutdown condition.
- 220kV Raxaul New load was radially fed from 220kV Sitamarhi S/s.
- At 11:45:29 Hrs 220kV Raxaul New-Sitamarhi #1 line tripped on phase-to-phase fault, resulting in a total power supply failure at 220kV Raxaul New S/s.
- Total load loss of 25 MW reported at Raxaul New S/s.



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

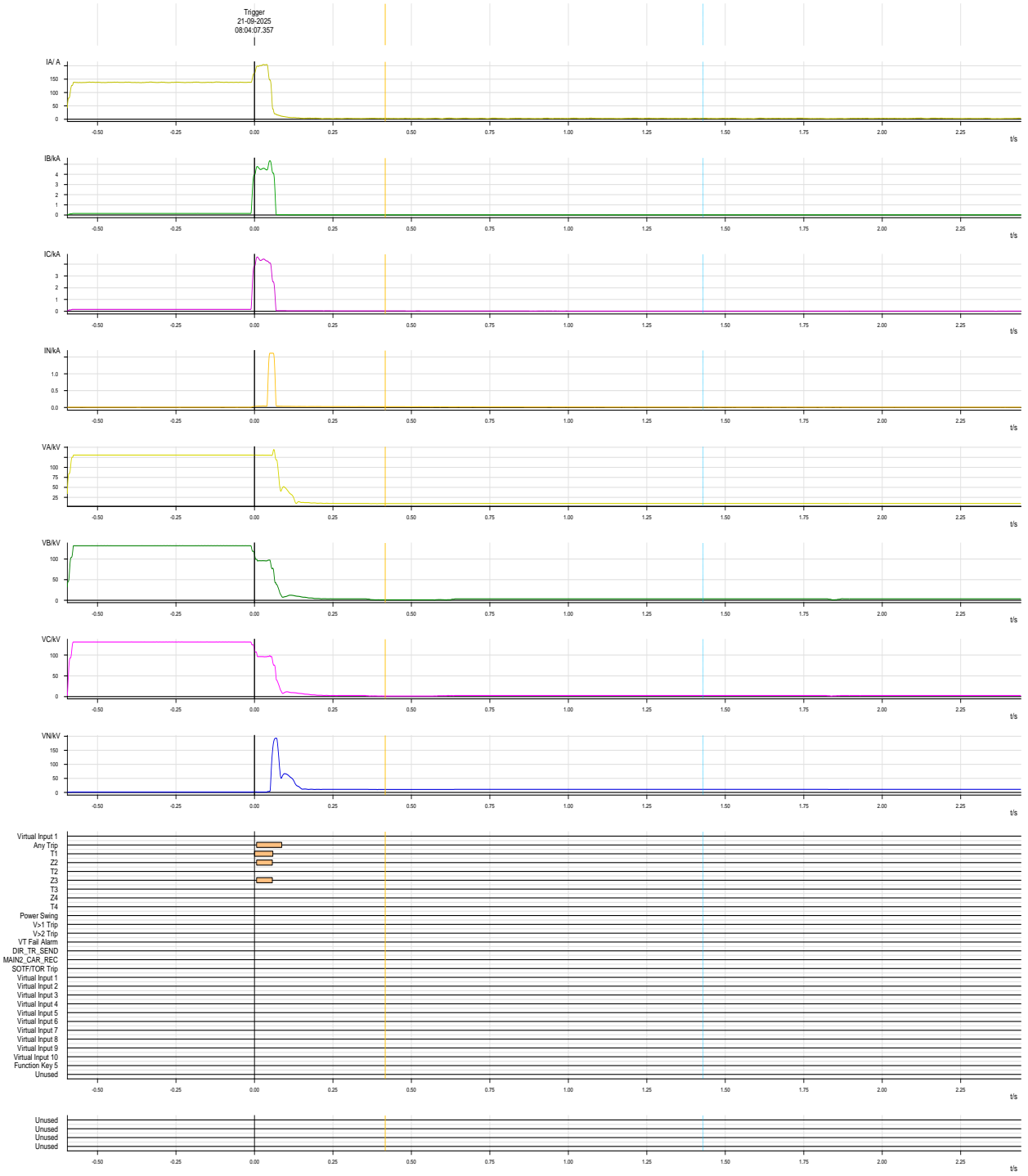
- Protection operated as per scheme.

- After tripping of the 220kV Sitamarhi-Raxaul New #2 line at 08:04 Hrs, the entire Raxaul area of the Bihar Power system was operating radially until 11:45:29 Hrs. Proper real time planning such as early restoration of 220kV Sitamarhi-Raxaul New #2 line or revival of either circuit of 220kV Raxaul New-Gopalganj D/C (which was under SD) could have averted the N-1 contingency and prevented the total power supply failure.
- **Action Taken/Remedial Measures (सुधारात्मक उपाय): NIL**

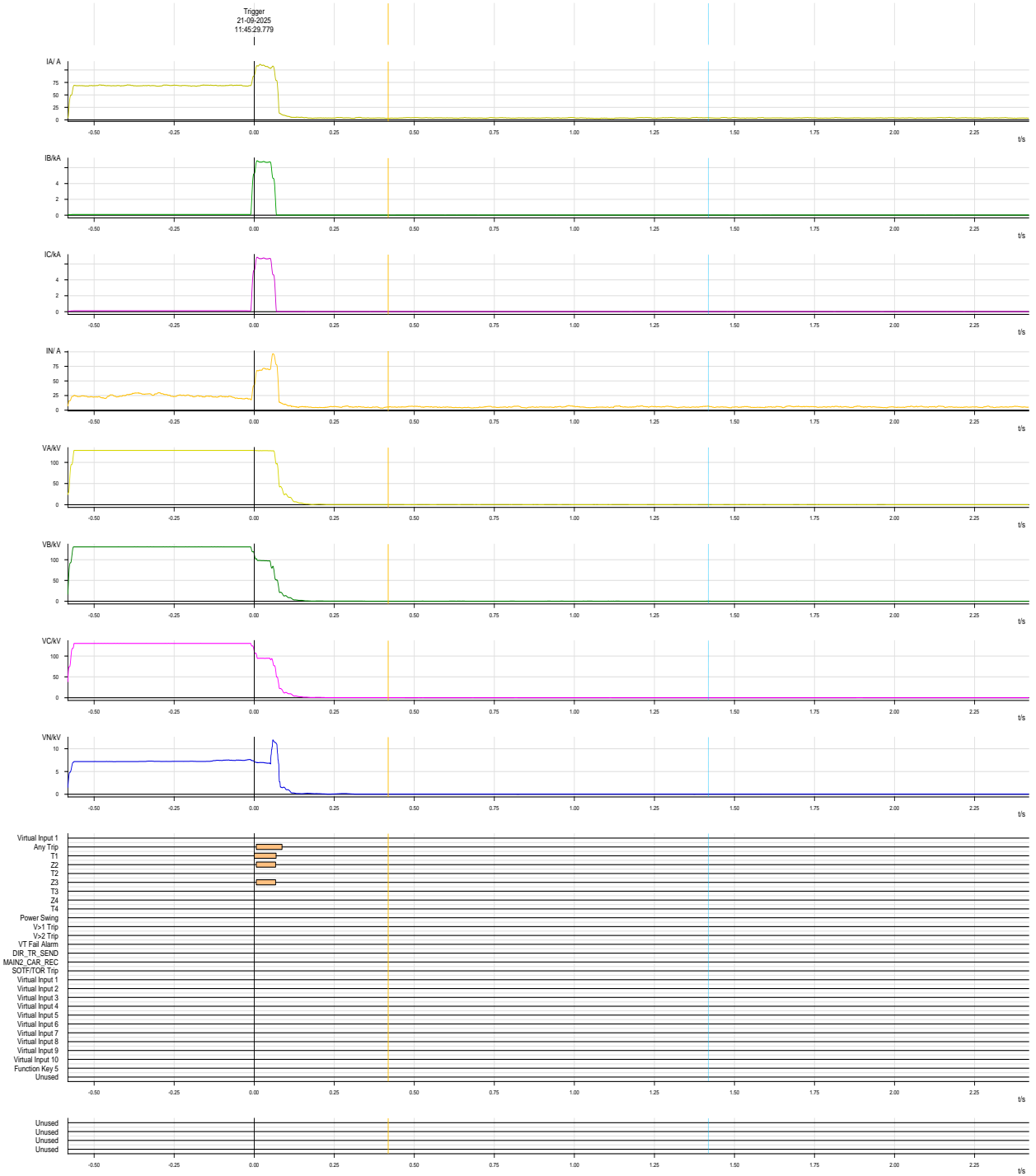
Key Lessons Learnt (प्रमुख अधिगम बिंदु): Proper outage management considering all probable contingencies with proactive real time operation planning is very much essential to ensure the reliability and security of the grid.

Annexure:

DR of 220kV Sitamarhi-Raxaul New #2 at Sitamarhi:



DR of 220kV Sitamarhi-Raxaul New #1 at Sitamarhi:





ग्रिड-इंडिया
GRID-INDIA

ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड
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पूर्वी क्षेत्र के 220/132 केवी पुरनिया ओल्ड में ग्रिड घटना पर विस्तृत रिपोर्ट / Detailed Report of grid event at 220/132 kV Purnea Old 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): 21-07-2025

1. Event Summary (घटना का सारांश):

Prior to the disturbance, 220 kV Purnea Old S/s was connected through 220kV New Purnea-Purnea Old D/C (220kV-Dalkhola-Purnea Old-D/C kept open on system requirement). At 13:11 Hrs, the E/S/D of 220kV-New Purnea-Purnea Old #1 line was availed for rectification of hot spot in R phase line isolator at New Purnea end. During this period, around 280 MW load of Purnea(BSPTCL) was being fed radially through 220kV Purnea New-Purnea Old #2 line. At 13:18 Hrs, 220kV-New Purnea-Purnea Old#2 line tripped on backup O/C protection from Purnea New end, which led to total power supply failure at 220kV Purnea Old S/S. Consequently, entire 280 MW load at Purnea S/s was lost.

2. Time and Date of the Event (घटना का समय और दिनांक): 13:18 hrs of 29.09.2025.

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

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

5. Antecedent Conditions (पूर्ववर्ती स्थिति):

	Frequency in (Hz)	Regional Generation in (MW)	Regional Demand in (MW)	State Generation (MW)	State Demand (MW)
				Bihar	Bihar
Pre-Event (घटना पूर्व)	50.113	24345	26770	732	6464
Post Event (घटना के बाद)	50.140	24345	26520	732	6214

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

Important Transmission Line/Unit if under	220KV-NEW PURNEA-PURNEA#1 line
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outage (महत्वपूर्ण संचरण लाइने/ विधुत उत्पादन इकाइयां जो बंद है)	220KV-DALKHOLA-PURNEA#1 line 220KV-DALKHOLA-PURNEA#2 line
Weather Condition (मौसम स्थिति)	Normal.

6. **Load and Generation loss (लोड और जेनरेशन हानि):** Approximate load loss of **280 MW** at Purnea.

7. **Duration of interruption (रुकावट की अवधि):** 00:42 Hrs (42 minutes).

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

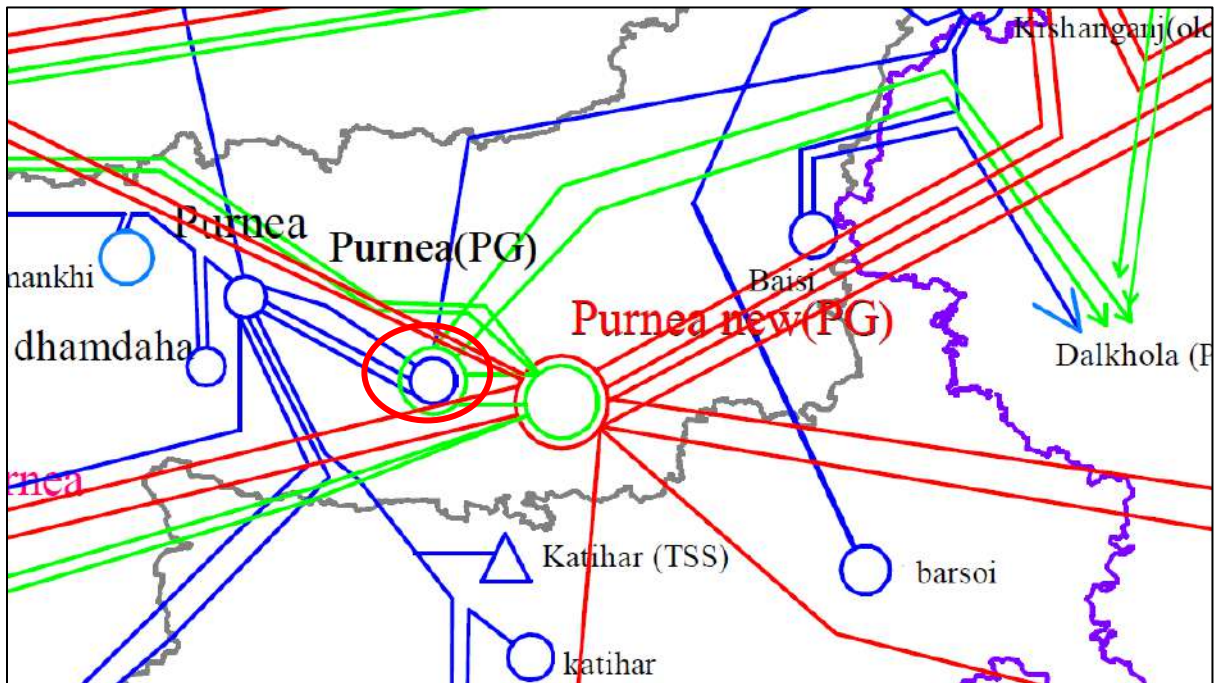


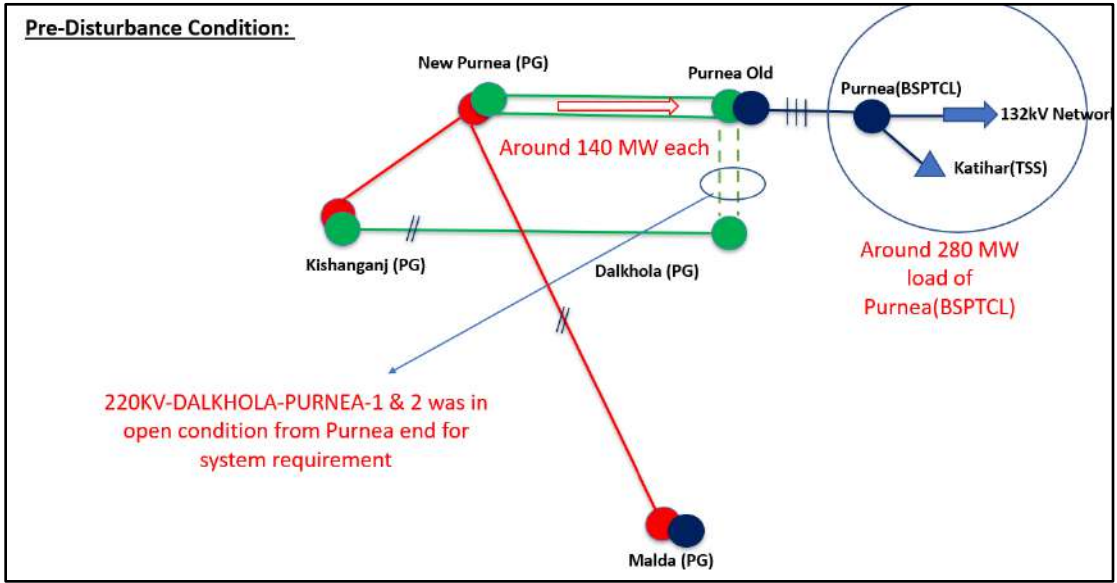
Figure 1: Network across the affected area

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

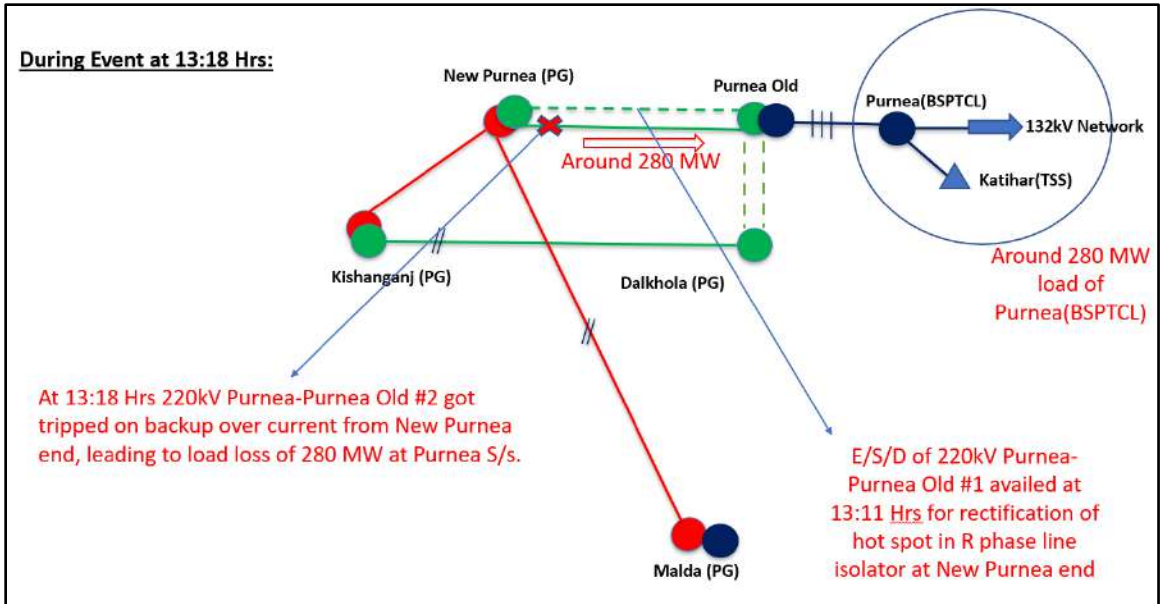
10. Major Elements Tripped (प्रमुख ट्रिपिंग):

क्र०स०	नाम	Trip time (hh:mm:ss)	उप केंद्र 1 रिले संकेत	उप केंद्र 2 रिले संकेत	Restoration time (Hrs)
1	220kV-NEW PURNEA-PURNEA#2 line	13:18	B/U Directional O/C protection operated at New Purnea end.	DT received at Purnea.	14:01

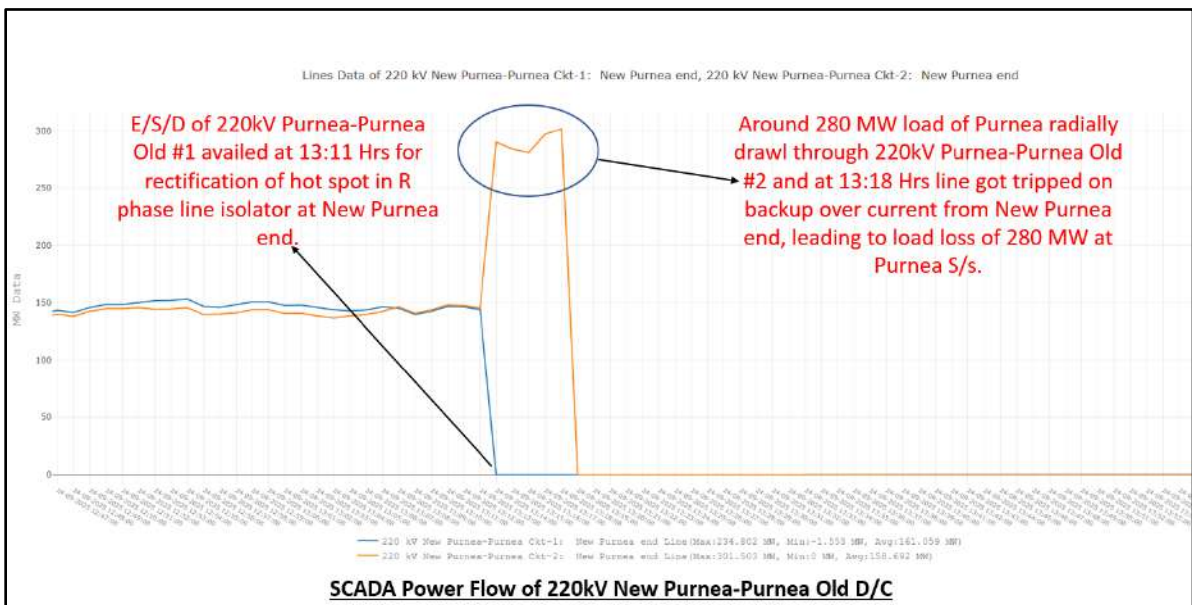
11. Event Analysis (Based on PMU, SCADA & DR) (घटना का विश्लेषण):



- Prior to the disturbance 132kV Purnea (BSPTCL) load was feeding from 220kV New Purnea-Purnea old D/C and 220kV Purnea Old-Dalkhola D/C was kept out of service on system requirement.



- At 13:11 Hrs, E/S/D of 220kV Purnea-Purnea old #1 line was availed for rectification of hot spot in R phase line isolator at New Purnea end.
- During this time, total load of Purnea(BSPTCL) was around 280 MW radially feeding through 220kV New Purnea-Purnea old #2 line.
- At 13:18:35 Hrs, 220kV Purnea-Purnea old #2 line got tripped on directional B/U over current protection from New Purnea end and on received of DT at Purnea end. This led to total power supply failure at 220kV Purnea Old S/s.
- Around 280 MW load loss occurred at 132kV Purnea (BSPTCL) S/s.



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

- The 220 kV New Purnea–Purnea Old line tripped on backup overcurrent (O/C) protection from New Purnea end due to conservative O/C setting, which was not aligned as per ERPC protection philosophy.
- As verbally confirmed, the backup O/C pickup value was kept as 800 A, which was not as per ERPC protection guidelines.
- Thermal rating of the 220kV New Purnea-Purnea Old D/C is around 420 MVA. As decided in PCC meeting, the over current setting should not be enabled for lines at 220kV and above voltage level.
- In cases where over current protection must be enabled due to non-availability of Main-II protection, the pickup value should be set at 120-130 % of thermal rating of the line, subject to ERPC approval.

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

As discussed in the meeting held on 26.09.2025 regarding the disturbance at 220kV Purnea Old S/s on 24.09.2025, the following action points were agreed:

- The CT ratio at both ends of the 220kV Purnea New–Purnea Old D/C line will be changed to 1600/1 A to match with the line thermal capability. This work will be undertaken after the Puja period, subject to shutdown approval from Bihar.
- Relay settings will be modified accordingly based on the new CT ratio and the revised setting file will be shared with ERPC and ERLDC.
- Minutes of the meeting held on 26.09.2025 is attached in Annexure.

14. Key Lessons Learnt (प्रमुख अधिगम बिंदु):

- When upgrading conductors to higher ampacity, all associated bay equipment must also be enhanced to handle the line's full thermal capacity.
- Protection settings should be reviewed and adjusted in accordance with the upgraded equipment ratings.

Recording of the Meeting on disturbance at Purnea 220/132 kV S/S

An online meeting was held on 26th September 2025 to discuss the disturbance at Purnea 220/132 kV substation that occurred on 24th September 2025. ERLDC, ERPC, POWERGRID ER-1, SLDC Bihar participated in the meeting.

- The disturbance occurred when one circuit of 220kV Purnea – New_Purnea was taken shutdown and another circuit tripped on operation of backup overcurrent protection, although line flow (300MW) was well within its capacity of 419MVA.
- POWERGRID explained that in the absence of Main-2 distance protections, backup O/C protection had been applied but the O/C settings was not revised after upgradation of the said line to HTLS and the settings remained at 800A although the line was capable to carry 1100 A \approx 419 MVA, and as the load reached around 280–300 MW, the relay operated, resulting in unwanted tripping.
- PGCIL informed that, as an immediate measure, the O/C relay settings had been revised to 1200 A as a temporary measure. For permanent correction, the CT ratio will be changed to allow the relay to be set at 1600 A, which matches the line capability. This work will be carried out after the Puja period with shutdown approval from Bihar. Bihar SLDC confirmed that coordination will be done for providing shutdown at a suitable time.
- SLDC Bihar opined that there is no scope of load shifting from 220/132kV Purnea S/S. Due to high load at Purnea itself, 220kV-Purnea-Dalkhola D/C can't be operated in closed condition and there is no option of any short-term measures to increase reliability.
- ERLDC requested POWERGRID to check protection settings of all lines where HTLS upgradation were taken place, so that full capacity of all upgraded lines can be utilized. POWERGRID agreed to submit a report within one week on the O/C relay settings of all HTLS lines.
- Bihar highlighted the need for long-term strengthening measures such as construction of an additional 220 kV line between New Purnea and Purnea, augmentation or addition of 220/132 kV ICTs at Purnea, and assessment of the requirement for a third 400/220 kV ICT to meet future load growth. ERLDC advised SLDC Bihar to take up all proposals in consultation with CMETS.
- ERPC stressed that PGCIL should review all substations where reconductoring or HTLS upgradation has been carried out to ensure that protection settings have been updated in line with line capacity.

Participants:

Bihar

1. A. K. Chaudhary, CE, SLDC Bihar
2. Amrit Raj EEE SLDC

ERLDC

3. Bilash Achari, DGM (SO)
4. Manas Das, DGM (SO)
5. Bimal Swargiary, DGM (SO)
6. Chandan Mallick, CM (SO)
7. Alok Pratap Singh, CM (SO)
8. Gitesh Patel, DM (SO)
9. Srimalya Ghosal, AM (SO)

POWERGRID

10. V P Srivastava, CGM-AM
11. Hansraj Prasad, DGM-AM
12. Sudeep Kumar, DGM-AM

ERPC

13. P.P. Jena, EE
14. B S Ray, EE
15. D K Khuntia, AEE

LIST OF SINGLE LINE TRIPPING IN SEP 2025															
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)	D/R/E/L/R/E/C/E/I/V/E/D/F/R	DR/E/L/RECEIVED FROM REMOTE END	LOCAL UTILITY	REMOTE UTILITY
400KV-ALIPURDUAR (PG)-BINAGURI-3	30-09-2025	10:20	30-09-2025	11:47	ALPD: B-N, FD-64 KM, FC-4.25KA, Z-1	BINAGURI: B-N, FD-55.97KM, FC-4.25KA	B-Earth	100 msec	A/r failed after 1 sec.			NO	NO	PG ER-II	PG ER-II
400KV-TENUGHAT-PVUNL-1	29-09-2025	23:03	30-09-2025	00:35	TTPS end- Over current trip , Ia- 292.3 A , Ib- 306.9 A, Ic- 296.3 A,		No Fault	-	Line tripped on O/C as per SPS logic			YES	YES	JUSNL	PVUNL
400KV-KOLAGHAT-KHARAGPUR-2	29-09-2025	12:40	29-09-2025	16:30	Kharagpur: B-Ph, Z-I, 5.8kA,46 km Kolaghat: Z-I, B-Ph,61km,4.8kA		B-Earth	100 msec	A/r failed after 1 sec			NO	YES	WBPDCL	WBSETCL

220KV-DARBHANGA(DMTCL)-LAUKAHI-1	29-09-2025	11:41	29-09-2025	18:05	Darbhanga(DMTCL): z-1, Y-B, FD-9.6 KM, FC: R-0.05 KA, Y-11.1 KA, B-11.47 KA, Laukahi(BH): Y-B, fd-76.35 km, fe: r-0.048ka, y-1.74ka, b-1.82ka		Y-B	100 msec	Line tripped on phase to phase fault.			NO	NO	DMTCL	BSPTCL
400KV-JAMSHEDPUR-BARIPADA-1	29-09-2025	10:53	29-09-2025	11:32	baripada: Z-1 r-n, 2.87 kA, fd-72 km, Jamshedpur: r-n, FD-59.5 KM, FC-5.6 KA		R-Earth	100 msec	A/r failed after 1 sec			NO	NO	PG ER-I	PG ODISHA
400KV-JEERAT-BAKRESWAR-1	28-09-2025	16:32	29-09-2025	01:47	Bakreshwar: Z-1, R-N, FD: 0.127 km, FC: 10.72 kA	Jeerat- Z-1, R-N FD: 169.7 km, FC: 2.61 kA	R-Earth	100 msec	A/r failed after 1 sec			NO	NO	WB	WB
220KV-CHUKHA-BIRPARA-1	27-09-2025	14:35	27-09-2025	16:09	R-Y PHASE TO GROUND FAULT: M1: FD= 38.66KM, FC=5.378KA. M2: FD=39.447KM, FC=5.343KA.		R-Y-Earth	100 msec	Line tripped on phase to phase to earth fault			YES	YES	BHUTAN	PG ER-II

400KV-MEDINIPUR-NEW CHANDITALA-2	27-09-2025	11:32	28-09-2025	00:51	Medinipur end: B_N, zone-1, 8.7 km, 12,08 kA	New chanditala: B-N, 86 km, IB 3.4 kA, Z-2	B-Earth	100 msec	A/r failed after 1 sec			YES	YES	PG ER-II	WBSETC L
220KV-KARAMNASHA (NEW)- SAHUPURI-1	26-09-2025	19:05	26-09-2025	20:56	Tripped on Over current		No Fault	NA	Line tripped on over current protection			NO	NO	BSPTCL	NRLDC
220KV-TENUGHAT-BIHARSARIFF- 1	26-09-2025	15:10	26-09-2025	15:45	TTPS end - Zone-1 , R-phase trip,Distance - 54.88 km,IR- 2.143 KA	-	R-Earth	100 msec	Three phase tripping for phase to ground fault.			NO	NO	JUSNL	BSPTCL
400KV-PPSP-BIDHANNAGAR-1	26-09-2025	09:17	27-09-2025	05:49	PPSP: Y-N, Z1, 123km	Bidhannagar: Y-N, Z1, 42.7km, 5.85kA.	Y-Earth	100 msec	Three phase tripping for phase to ground fault.			NO	YES	WBSEDC L	WBSETC L

220KV-KHAGARIA-NEW PURNEA-1	26-09-2025	08:59	26-09-2025	12:17	Purnea: B_N, 92.5kM, 2.19 kA	-	B-Earth	100 msec	A/r successful from Khagaria end and three phase tripping from PG end in Z-2 protection. PG may explain.			YES	YES	BSPTCL	PG ER-I
220KV-DARBHANGA(DMTCL)-LAUKAHI-2	26-09-2025	02:15	26-09-2025	02:52	Darbhanga: 58.10km, Y-Ph, 2.351kA, Z-I, A/R Successful	Laukahi end: fault in Y-phase ,zone -1, distance 24.48KM, FC-3.342KA	Y-Earth	100 msec	A/r successful from Darbhanga end and three phase tripping from BSPTCL end. BSPTCL mey explain.			YES	YES	DMTCL	BSPTCL
220KV-DARBHANGA(DMTCL)-LAUKAHI-2	25-09-2025	20:46	25-09-2025	21:30	Darbhanga: Y-Ph, 63.39km, 2.469kA, A/R Successful	Laukahi end: fault in Y-phase ,zone -1, distance 24.17KM, FC-3.235KA	Y-Earth	100 msec	A/r successful from Darbhanga end and three phase tripping from BSPTCL end. BSPTCL mey explain.			YES	YES	DMTCL	BSPTCL
400KV-MALDA(PG)-NEW PURNEA-1	25-09-2025	19:47	26-09-2025	17:32	Malda : R_B-Earth , F Dist 90.39 km, F Current 6.06 kA	New Purnea: R-B-Earth, fault , Ir-5.8 kA, Ib-5.1 kA, 62.19 km	R-B-Earth	100 msec	Line tripped on phase to phase to earth fault			YES	YES	PG ER-II	PG ER-I

220KV-NEW MELLI-TASHIDING-2	25-09-2025	13:08	25-09-2025	19:25	New Melli - Y-B, FD- 4.956 KM, FC- Iy- 7.74 kA,Ib- 7.964 kA.		Y-B	100 msec	Line tripped on phase to phase fault			YES	YES	PG ER-II	TASHIDING
400KV-LAPANGA-STERLITE-2	24-09-2025	00:41	24-09-2025	17:30	Lapanga: Z-1, B_Earth, FC- 19.9 kA, FD-8 km	Sterlite: Z-1, B_Earth, FC- 28.7 kA	B-Earth	100 msec	A/r failed after 1 sec.			YES	NO	OPTCL	OPTCL
220KV-BUDHIPADAR-KORBA-1	23-09-2025	19:02	23-09-2025	22:30	Tripped from Korba end. A/R successful at Budhipadar: R_N, 54.07 km.	-	R-Earth	100 msec	A/r successful from Budhipadar end and three phase tripping from Korba end.			YES	NO	OPTCL	WRLDC
765KV-JHARSUGUDA-DHARAMJAIGARH-4	23-09-2025	17:58	24-09-2025	09:25	JHARSU: RN fault, Z1, Dist:62.7 km, Fault current:11.59 kA	-	R-Earth	100 msec	A/r failed after 1 sec.			YES	NO	PG ODISHA	WRLDC

220KV-BUDHIPADAR-KORBA-2	22-09-2025	13:28	22-09-2025	19:38	Budhipadar end: RN fault, 87.13 km, 1.87kA.	-	R-Earth	120 msec	A/r failed after 1 sec from Budhipadar end.			YES	NO	OPTCL	WRLDC
220KV-DEHRI-GAYA-1	22-09-2025	11:03	22-09-2025	16:48	Gaya: B_N, 2.651 kA, 82.5 km	-	B-Earth	100 msec	A/r failed after 1 sec.			YES	YES	BSPTCL	PG ER-I
400KV-BINAGURI-TALA-4	22-09-2025	10:24	22-09-2025	11:22	Binaguri: Y_B, 108.36 km, Iy=Ib=4.68 kA	Tala: Y_B, 24.1 km, Iy-8.56 kA, Ib-8.22 kA	Y-B	100 msec	Line tripped on phase to phase fault.			YES	NO	PG ER-II	BHUTAN
220KV-SITAMARHI-RAXAUL(NEW)-1	21-09-2025	11:45	21-09-2025	20:21	Sitamarhi: Y_B, Iy-6.59 kA, Ib-6.55 kA, 34.1 km	-	Y-B	100 msec	Line tripped on phase to phase fault.			YES	NO	PMTL	BSPTCL

400KV-RANCHI-SIPAT-1	21-09-2025	11:41	21-09-2025	12:48	Ranchi: Y_N, 200.712 km, 1.506 kA	-	Y-Earth	100 msec	Line tripped in reclaim time.			YES	YES	PG ER-I	WRLDC
220KV-RANCHI-HATIA-2	21-09-2025	11:04	21-09-2025	13:25	Ranchi: Y_B, 30.175 km, Iy=6.722 kA, Ib=6.72 kA;	Hatia: Y_B 2.5 km, Iy=10.37 kA, Ib=10.50 kA	Y-B	100 msec	Line tripped on phase to phase fault.			YES	YES	PG ER-I	JUSNL
220KV-DARBHANGA(DMTCL)-LAUKAHI-2	20-09-2025	20:47	20-09-2025	21:32	Laukahi: Z1, R-N, 26.53KM, 3KA;	Darbhanga: A/R successful (R-N, 2.58kA, 52km)	R-Earth	100 msec	A/r successful from Darbhanga end and three phase tripping for phase to ground fault from Laukahi end. BSPTCL may explain.			YES	YES	DMTCL	BSPTCL
400KV-JHARSUGUDA-ROURKELA-2	20-09-2025	17:30	20-09-2025	19:01	Jharsuguda: Y_N, 76. km; R_N, 81.7 km, 4.52 kA.	Rourkela: Y_N, 63 km, 5.687 kA	R-Y-Earth	100 msec	R phase tripped on Z-1 protection, further within 300 msec Y-Earth fault occurred which led to three phase tripping.			YES	YES	PG ODISHA	PG ODISHA

400KV-ALIPURDUAR (PG)-PUNASANGCHUN-2	20-09-2025	11:04	20-09-2025	12:12	Tripping Alipurduar: B ph, 2.8 kA, 93.12 km; Punatsangchu: B ph, dist.28.7Km, F/C:3.06kA		B-Earth	100 msec	Three phase tripping for phase to ground fault.			YES	YES	PG ER-II	BHUTAN
220KV-NEW TOWN(AA-III)-RAJARHAT-2	20-09-2025	10:46	20-09-2025	11:06	-	Rajarhat: Zone-1, B N, FC-16.89 KA, FD-0.73 KM	B-Earth	100 msec	A/r failed after 1 sec.			YES	YES	WBSETCL	PG ER-II
220KV-BUDHIPADAR-KORBA-1	20-09-2025	10:40	20-09-2025	16:15	Not tripped;	Line tripped from Korba end.	No Fault	NA	As per PMU no fault was observed. Line tripped from Korba end only.			NO	NO	OPTCL	WRLDC
220KV-PATNA-FATUHA-1	20-09-2025	05:55	20-09-2025	07:13	Patna: Not tripped;	Fatuha: Relay Maloperation.	No Fault	NA	As per PMU no fault was observed. Line tripped from Fatuha end. BSPTCL may explain.			YES	YES	PG ER-I	BSPHCL

220KV-ROURKELA-TARKERA-2	19-09-2025	10:38	19-09-2025	11:38	Rourkela: Z-1, B-N, 9.8 km, 4.4 kA	A/R successful	B-Earth	100 msec	Line tripped from Raourkela end. PG Odisha may explain.	DR Length needs to increase to 3 sec.		YES	NO	PG ODISHA	OPTCL
220KV-BINAGURI-SILIGURI-1	18-09-2025	18:08	18-09-2025	19:08	R/I at Binaguri : R-Y_N, F Dist 0.864 km, F Current 29.82 kA; Siliguri R-Y_N, F Dist 5.225 km F Current 5.38 Ka		R-Y-Earth	100 msec	Line tripped on Phase-phase to Earth fault.		YES	YES	PG ER-II	PG ER-II	
400KV-NEW PPSP-NEW RANCHI-1	18-09-2025	11:55	18-09-2025	17:01	PPSP: Z1, Y-B, IY-5.57kA, IB-5.79kA, 69.4km	New Ranchi: Z1, Y-B, IY-10.09kA, IB-10.24kA, 49.2kA	Y-B	100 msec	Line tripped on phase to phase fault.		YES	YES	WBSEDC L	PG ER-I	
400KV-RENGALI-INDRAVATI-1	18-09-2025	07:33	18-09-2025	10:35	DT received at Rengali	Tripped due to LRV operation of L/R at Indravati End	No Fault	NA	Line tripped due to LRV operation of L/R at Indravati end DT send to Rengali end.		YES	YES	PG ODISHA	PG ODISHA	

220KV-SUBHASGRAM(PG)-CESC(EMSS)-1	17-09-2025	16:49	17-09-2025	17:59	Subhagram; DT received at ;R_Y, F Dist 24.1 km, Ir-6.79 kA, Iy 6.01 kA	EMSS: R-Y , Dist 0.2 km	R-Y	100 msec	Line tripped on phase to phase fault.			YES	NO	PG ER-II	CESC
220KV-DALTONGANJ-CHATRA-1	17-09-2025	16:46	17-09-2025	17:39	Daltonganj : R_N, F Current 1.5 kA, F Distance 95.5 km;	Chatra:R_N, Ir-0.964 kA, F distance -99.063 km , Zone-1	R-Earth	100 msec	Three phase tripping for phase to ground fault. JUSNL may explain.			YES	YES	PG ER-I	JUSNL
220KV-GAYA-KHIZERSARAI-2	17-09-2025	02:29	17-09-2025	03:15	Khijirsarai: R-N, FD-27.3 KM, FC-4.49 KA	Gaya: R-N ,FD-26.5 KM, FC-5.18 KA	R-Earth	100 msec	R phase tripped in Z-1 protection and after 100 msec remaining pole got tripped from Gaya end. PG ER-1 may explain	DR Length needs to increase to 3 sec.		YES	NO	PG ER-I	BSPTCL
220KV-KHAGARIA-NEW PURNEA-2	16-09-2025	13:00	16-09-2025	13:42	Purnea end : B_N, Z-1, 4.95 kA, 24.7 KM	Khagaria end: Main-2, B_N, Zone-1, Distance - 74.76 km,Ib- 2.092kA	B-Earth	100 msec	A/r failed after 1 sec.			YES	YES	BSPTCL	PG ER-I

400KV-BINAGURI-RANGPO-2	15-09-2025	16:38	16-09-2025	10:47	Binaguri: Y-N, 80.5km, 4.1kA;	Rangpo: Y-N, 28.4km, 9.59kA	Y-Earth	100 msec	A/r failed after 1 sec.			YES	YES	PG ER-II	PG ER-II
220KV-KHAGARIA-NEW PURNEA-1	15-09-2025	11:20	15-09-2025	12:23	New Purnea: BN fault, FC-3.4 kA, FD-59,2 km	Khagaria(New): Distance Protection Relay :B ph, Zone-1, Distance -46.33km, Ib-3.217kV.	B-Earth	100 msec	A/r failed after 1 sec.			NO	YES	BSPTCL	PG ER-I
220KV-RANCHI-RAMGARH-I	15-09-2025	08:00	15-09-2025	09:47	Tripped at Ramgarh end : fault type ACG, Fault location 24.4 km. A/R successful	R/I at Ranchi end: B_R, F Current 3.8 kA, F Dist 76.3 km;	R-B-Earth	100 msec	3-phase A/r successful at Ranchi end and three phase tripping from Ramgarh end on phase to phase fault. PG ER-1 may explain.			YES	NO	PG ER-I	DVC
220KV-ALIPURDUAR (PG)-SALAKATI-1	13-09-2025	02:27	13-09-2025	06:55	APD: R-Y-B-N, F/D: 29.4 KM, F/C: Ir: 6.91kA, Iy: 5.125kA, Ib: 4.269kA;	-	R-Y-B-Earth	100 msec	Line tripped on three phase to ground fault.			NO	NO	PG ER-II	NERLDC

220KV-ALIPURDUAR (PG)-SALAKATI-2	13-09-2025	02:27	13-09-2025	06:31	APD: Y-B-N, F/D: 29.76KM, F/C: Iy: 3.881kA, Ib: 4.061kA;	-	Y-B-Earth	100 msec	Line tripped on phase to phase to earth fault.			NO	NO	PG ER-II	NERLDC
220KV-DARBHANGA(DMTCL)-LAUKAHI-2	12-09-2025	23:34	13-09-2025	00:20	Laukahi: R-phase fault, FC: 2.62 ka FD: 51.2 km	Darbhanga : Not tripped, A/r successful	R-Earth	100 msec	A/r successful from DMTCL end and three phase tripping from Laukahi end for phase to ground fault. BSPTCL may explain.			NO	YES	DMTCL	BSPTCL
400KV-FSTPP-KHSTPP-1	12-09-2025	15:23	12-09-2025	16:30	FSTPP-R_N, 6.5 kA, 59.10 km	KhSTPP: R_N, 7.9 kA, 39.9 km,	R-Earth	100 msec	As per PMU three phase tripping for phase to ground fault at Farakka end and A/r successful from Kahalgaon end. NTPC Farakka may explain.		.DAT file not available	NO	YES	NTPC	NTPC
400KV-KODERMA-BIHARSARIFF(PG)-2	11-09-2025	12:09	11-09-2025	13:03	A/R successful in Biharsariff end	B-ph, FD:54.9 Km, FC: 5.007 kA, Z-1	B-Earth	100 msec	A/r successful from Biharsariff end and three phase tripping from Koderma end. DVC may explain.			NO	YES	DVC	PG ER-I

400KV-DURGAPUR-KAHALGAON-2	11-09-2025	11:13	11-09-2025	12:39	A/r successful	B-N, IB 8.2 kA, 38 km	B-Earth	100 msec	A/r successful from Durgapur end and line tripped from Kahalgaon end. NTPC Kahalgaon may explain	.DAT file not available	YES	YES	PG ER-II	NTPC
220KV-PANDIABILI-PRATAPSASAN-2	11-09-2025	02:40	11-09-2025	04:35	Pandiabili: Not tripped	Tripped on Yph to E/F (3.19 kA) from Pratapsasan end only	Y-Earth	100 msec	Tripped from Pratapsasan end only on bus bar operation due to Y-ph PT of 220KV Main bus-2 burst at Pratapsasan.		YES	YES	PG ODISHA	OPTCL
765KV-DHARAMJAIGARH-JHARSUGUDA-2	10-09-2025	14:34	10-09-2025	16:25	Dhramjaigarh: R_N, Fault current: 17.064 kA Fault distance: 18.731km	R/T at Jharsuguda: R-N, Fault Current Ir : 7.983 kA Fault Dist: 130.442km	R-Earth	100 msec	A/r failed after 1 sec.		NO	YES	WRLDC	PG ODISHA
220KV-MUZAFFARPUR(PG)-AMNOUR-2	10-09-2025	10:42	10-09-2025	11:29	Muzaffarpur: B-N, Z2, 61km, 2.8kA (A/R successful);	Amnour: B-N, Z1, 6.3km, 5.5kA	B-Earth	100 msec	A/r successful from Muzaffarpur end and three phase tripping from BSPTCL end. BSPTCL may explain.		YES	NO	PG ER-I	BSPTCL

220KV-PANDIABILI-PRATAPSASAN-1	10-09-2025	10:32	10-09-2025	17:43	Pandiabili: B-N, 30km 2.5kA;	Pratapsasan : B-N ,Z-1 ,D:4.8 KM, IB=5.9 KA	B-Earth	100 msec	Line tripped in reclaim time.			YES	NO	PG ODISHA	OPTCL
400KV-BINAGURI-BONGAIGAON-2	10-09-2025	09:24	10-09-2025	11:11	Binaguri: R-B-Earth, 216km, IR-1.7kA, IB-1.8kA	-	R-B-Earth	100 msec	Line tripped on phase to phase to earth fault			YES	NO	PG ER-II	NERLDC
220KV-DARBHANGA(DMTCL)-LAUKAHI-2	08-09-2025	20:07	08-09-2025	20:55	A/r successful from Darbhanga end	LAUKAHI end: Z-1, R-N, FC-1.972kA	R-Earth	120 msec	A/r successful from Darbhanga end and three phase tripping from Laukahi end. BSPTCL may explain			YES	YES	DMTCL	BSPTCL
220KV-JSPL-JAMSHEDPUR(DVC)-1	08-09-2025	13:28	08-09-2025	16:30	JSPL end: R_Y fault, Ir-1.885kA, Iy- 2.009 kA, FD-95.06 km.	-	R-Y	100 msec	Line tripped on phase to phase fault			NO	NO	OPTCL	DVC

220KV-TTPS-TSTPP-1	07-09-2025	17:14	07-09-2025	19:21	Talcher: R Ph, Z1, 1.51 km , 7.169 KA 17:14	TTPS: R PH , 3.62 KA , Z1 , 25.68 KM	R-Earth	100 msec	As per PMU three phase tripping for phase to ground fault. NTPC and OPTCL may explain.			NO	NO	OPTCL	NTPC
400KV-KISHANGANJ-RANGPO-1	07-09-2025	07:18	07-09-2025	12:53	Kishanganj end: 82.5 km B_R, Bph- 7.19 kA. R-ph 4.99 kA)	R/I at Rangpo : R_B, F Current - Ir 2.7 kA IB 6.0 kA, F Dist 107.558 km;	R-B	100 msec	Line tripped on phase to phase fault.		YES	YES	PG ER-I	PG ER-II	
400KV-ALIPURDUAR (PG)- PUNASANGCHUN-2	06-09-2025	15:08	06-09-2025	22:04	Not tripped	Tripped due to LBB operation at bhutan end.	No Fault	NA	Line tripped due to LBB operation at Bhutan end.		YES	NO	PG ER-II	BHUTAN	
220KV-MUZAFFARPUR(PG)- AMNOUR-1	06-09-2025	11:41	06-09-2025	13:04	Muzaffarpur: B_N, 98 km, 3.38 kA	-	B-Earth	100 msec	Three phase tripping for phase to ground fault from both end, BSPTCL and PG ER-1 may explain		NO	NO	PG ER-I	BSPTCL	

220KV-HAZIPUR-MUZAFFARPUR-1	06-09-2025	11:10	06-09-2025	14:59	Muzaffarpur: B_N, 45.76 km	-	B-Earth	100 msec	Three phase tripping for phase to ground fault from both end. BSPTCL and PG ER-1 may explain			NO	YES	BSPHCL	PG ER-I
400KV-CHANDWA-LATEHAR(JUSNL)-1	06-09-2025	09:11	06-09-2025	09:52	Chandwa: B_N, 41.25 km, 6.68 kA	A/r successful from Latehar end.	B-Earth	100 msec	A/r successful from Latehar end and three phase tripping for phase to ground fault from Chandwa end. PG ER-1 may explain.			YES	NO	PG ER-I	JUSNL
220KV-TENUGHAT-BIHARSARIFF-1	06-09-2025	09:09	06-09-2025	09:46	Tenughat: Y_N, 169 km, 0.8 kA	Biharsharif: Y_N, 29.2 km, 3.624 kA	Y-Earth	100 msec	Three phase tripping for phase to ground fault. BSPTCL and JUSNL may explain.			NO	NO	JUSNL	BSPTCL
220KV-NEW MELLI-TASHIDING-2	06-09-2025	00:32	06-09-2025	01:39	Z-1, R-Earth, FC-2.88kA	Z-1, R-Earth, FC-6.59kA	R-Earth	100 msec	Tripping phase for phase to ground fault. PG ER-2 & Tashiding may explain.			YES	YES	PG ER-II	DANS POWER

220KV-RANCHI-HATIA-2	05-09-2025	13:06	05-09-2025	16:21	Ranchi end: B-N , FD- 30.121 km, FC-5.733 kA ,	Hatia end: B-N, fc-7.60kA, fd-10.9 km	B-Earth	100 msec	A/r failed after 1 sec			YES	YES	PG ER-I	JUSNL
765KV-ANGUL-SRIKAKULAM-1	04-09-2025	15:30	04-09-2025	17:34	R_Y_N , fd- 5.4 km, fc-18.38 kA	-	R-Y-Earth	100 msec	Line tripped on phase to phase to earth fault			YES	NO	PG ODISHA	SRLDC
220KV-BIRPARA-MALBASE-1	04-09-2025	15:02	04-09-2025	16:17	R_N, 40.74 km, 3.22 kA, A/r successful	R-Earth, FC-3.7kA	R-Earth	100 msec	A/r successful from Birpara end and three phase tripping from Malbase end for phase to ground fault.			YES	YES	PG ER-II	BHUTAN
220KV-CHUKHA-BIRPARA-1	04-09-2025	14:52	05-09-2025	19:22	-	R_Y, 43.68km, Ir=Iy=3.3 kA	R-Y-Earth	100 msec	Line tripped on phase to phase to earth fault			YES	YES	BHUTAN	PG ODISHA

220KV-CHUKHA-BIRPARA-2	04-09-2025	14:52	05-09-2025	19:47		Y_R, 43.1 km, Iy-2.73 kA, Ib-3.06 kA	R-Y-Earth	100 msec	Line tripped on phase to phase to earth fault			YES	YES	BHUTAN	PG ODISHA
220KV-KHAGARIA-NEW PURNEA-2	03-09-2025	14:22	03-09-2025	16:05	Y-B, Z-1	Purnea - Y-B, FD:8.9 km, FCy:11.05 kA, FCb:11.08 kA, Z-1	Y-B	100 msec	Line tripped on phase to phase fault		DR length needs to increase to 3 sec.	NO	YES	BSPTCL	PG ER-I
220KV-PATNA-KHAGAUL-3	03-09-2025	08:28	03-09-2025	09:01	A/R successful at Patna end, Patna : R_N, F Current Ir 10.5 kA, F Dist 11.55 km	Khagaul end: R_N, FD 11.31 km, F Current Ir- 7.275 kA	R-Earth	100 msec	A/r successful from Patna end and three phase tripping from Khagaul end on phase to ground fault. BSP TCL may explain.			YES	NO	PG ER-I	BSPHCL
400KV-NAUBATPUR(BH)-BALIA-2	02-09-2025	23:28	03-09-2025	05:37	(Y-N) phase fault at distance 95.0km from Naubatpur end. Fault current:- Yph- 3.71kA	-	Y-Earth	100 msec	A/r failed after 1 sec.			NO	NO	BSPTCL	NRLDC

400KV-NAUBATPUR(BH)-BALIA-1	02-09-2025	23:28	03-09-2025	10:46	(Y-N) phase fault at distance 95.0km from Naubatpur end. Fault current:- Yph- 3.71kA	-	Y-Earth	100 msec	A/r failed after 1 sec.			NO	NO	BSPTCL	NRLDC
765KV-JHARSUGUDA-RAIPUR PS (DURG)-1	02-09-2025	17:59	12-09-2025	15:51	Jharsuguda end: Y-B, FD:94.196 Km, FC:11.16 kA;	Raipur: Y_B, FD 202 km, Iy 5.7 kA, Ib 5.5 kA	Y-B-Earth	100 msec	Line tripped on phase to phase to earth fault			YES	NO	PG ODISHA	WRLDC
220KV-NEW PURNEA-MADHEPURA-1	02-09-2025	04:25	02-09-2025	05:40	Madhepura End: Z-1,B_N, FD-71.87KM, FC-1.76kA,	Purnia End: B_N,FD-4.01 KM, FC-14.9kA, Z-1	B-Earth	100 msec	A/r successful from Purnea end and after 2.5 sec PDR operated. And three phase tripping from Madhepura end. BSPTCL may explain.			YES	NO	PG ER-I	BSPTCL
220KV-CHANDIL-STPS(WBPDCL)-1	02-09-2025	03:04	02-09-2025	13:51	STPS end: Relay Indications: R Ph, Z1, SOTF Operated, Carrier sent, M/T AR Operated, Distance: 36 Km, Ir=3.588KA.	.Chandil end:-Zone -1, Ia=2.11KA, fault distance =69.3km.	R-Earth	100 msec	A/r failed after 1 sec from STPS end and from chandil end three phase tripping from chandil end. JUSNL may explain	DR length needs to increase to 3 sec.	.DAT file not available	YES	YES	JUSNL	WBPDCL

220KV-BUDHIPADAR-KORBA-1	01-09-2025	13:37	01-09-2025	15:47	Budhipadar:Z-1, R-N, 53.5 km, 2.8 kA, A/R Successful	Korba :R_N, Ir = 1.777 ka Zone - 1 loc= 103km	R-Earth	100 msec	A/r successful from Budhipadar end and three phase tripping from Korba end.			YES	NO	OPTCL	WRLDC
400KV-ALIPURDUAR (PG)-BINAGURI-4	01-09-2025	10:33	01-09-2025	13:58	Binaguri - B-N, 63.66KM, 4.3KA.	Alipurduar - B-N, 64KM, 4KA	B-Earth	100 msec	A/r failed after 1 sec.			YES	YES	PG ER-II	PG ER-II
400KV-ALIPURDUAR (PG)-BINAGURI-3	01-09-2025	10:33	01-09-2025	17:13	Binaguri - B-N, 55.58KM, 5.5KA	Alipurduar - B-N, 61KM, 3.5KA	B-Earth	100 msec	A/r failed after 1 sec.			YES	YES	PG ER-II	PG ER-II
220KV-MAITHON(PG)-DUMKA-1	01-09-2025	09:31	01-09-2025	21:25	Dumka end:-Iy-2.087 kA, Ib-2.437 kA, zone1, dist-45.86 km	Maithon : Y-B ,Iy 7.92kA, Ib 7.99 kA 25.59 km	Y-B	100 msec	Line tripped on phase to phase fault			YES	YES	PG ER-I	JUSNL

26	400KV BARH(NTPC)-PATNA-3	11-09-2025	14:19:00	11-09-2025	20:56:00	Other Utility	TRIPPED FROM BOTH ENDS DUE TO B-N FAULT DUE TO LIGHTENING AND THUNDERSTORM AROUND THE FAULT AREA.. PATNA AFAS- M1-FD-43.81 KM, FC-8.9 KA, M2-FD-43.8 KM, FC-8.9 KA. INSULATOR DE-CAPPED AT LOC NO-35.	NA	1	NA	0	NA	0	1	1	1	
27	400KV BIHARSHARIF-MUZAFFARPUR-2	20-09-2025	13:55:00	20-09-2025	13:55:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO R-N FAULT.FAULT DETAILS. BIHARSHRIF(SITE)-M1-FD-10.6KM, FC-12.972KA, M2-FD-10.90KM, FC-13.21KA	1	1	0	0	0	0	1	1	1	1	
28	400KV BIHARSHARIF-SASARAM-1	24-09-2025	16:21:00	24-09-2025	16:21:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO R-N FAULT DUE TO THUNDERSTORM AND LIGHTENING AROUND FAULT AREA. BIHARSHARIF(SITE DETAILS)-M1-12.68 KM, FC-10.78 KA, M2-FD-13 KM, FC-13.05 KA	1	1	0	0	0	0	1	1	1	1	
29	400KV CHANDAUTI NABINAGAR 1	02-09-2025	15:35:00	02-09-2025	15:35:00	A/R SUCCESSFUL FROM BOTH END DUE TO R-N FAULT DUE TO THUNDERSTORM AND LIGHTENING AROUND FAULT AREA. CHANDAUTI SITE DETAILS- M1: FD- 26KM, FC-10.832KA, M2: FD- 26KM, FC-10.832KA NABINAGAR SITE DETAILS-40.98KM, FC- 9.27KA	1	NA	0	NA	0	NA	1	1	1	1	
30	400KV DHANBAD- MAITHON RB 1(MRB LILO)	09-09-2025	19:06:00	09-09-2025	20:23:00	A/R SUCCESSFUL FROM DHANBAD END AND LINE TRIPPED FROM MAITHON (RB) END DUE TO Y-N FAULT DHANBAD: M1: FC- 8.593KA, FD- 3.95KM ; M2: FC- 8.54KA, FD- 5.70KM MAITHON: DIFFERENTIAL Y-PHASE PROTECTION OPERATED. FAULT IS UNDER MPL JURISDICTION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
31	400KV FARAKKA(NTPC)-KAHALGAON(NTPC)-1	12-09-2025	15:23:00	12-09-2025	16:30:00	A/R SUCCESSFUL FROM KAHALGAON END & TRIPPED FROM FARAKKA END ON R-N FAULT DUE TO PROBLEM IN RELAY AT FARAKKA NTPC END. FARAKKA (SITE) FD- 49.1KM, FC-6.5KA. KAHALGAON (SITE) FD-39.9KM, FC-7.9KA.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
32	400KV FARAKKA(NTPC)-KAHALGAON(NTPC)-2	07-09-2025	11:13:00	08-09-2025	14:49:00	TRIPPED DUE TO 400KV BUS-3 TRIPPING AT NTPC KAHALGAON END. FAULT UNDER NTPC KAHALGAON END	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
33	400KV GAYA MAITHON-1	02-09-2025	14:20:00	02-09-2025	14:20:00	AR SUCCESSFUL DUE TO RN FAULT. GAYA (SITE) M1: FD- 87.4KM, FC-3.49KA, M2: FD- 87.4KM, FC-3.53KA MAITHON (SITE): M1: R-N, Z1, F/C: 1.77 KA, F/D: 196.6 KM;M2: R-N, Z1, F/C: 1.6 KA, F/D:205 KM. LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA	1	NA	0	NA	0	NA	1	1	1	1	
34	400KV GAYA MAITHON-1	30-09-2025	14:33:00	30-09-2025	14:33:00	A/R SUCCESSFULLY OPERATED FROM BOTH ENDS DUE TO B-N FAULT GAYA(SITE) :- M1-FC-3.49KA-FD-96.1KM, M2-FC-3.977KA-FD-96.61KM	1	NA	0	NA	0	NA	1	1	1	1	
35	400KV GAYA MAITHON-2	14-09-2025	12:16:00	14-09-2025	12:16:00	A/R SUCCESSFUL FROM BOTH END DUE TO R-N FAULT AT 12:16HRS ON DATED: 14.09.2025. GAYA(AFAS): M1: FD-106.496KM, FC- 4.73KA; M2: FD- 106.972KM, FC- 4.74KA GAYA(SITE): M1: FD- 91.30KM, FC- 3.71KA; M2: FD- 92.5KM, FC- 4.01KA LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA	1	NA	0	NA	0	NA	1	1	1	1	
36	400KV GAYA MAITHON-2	26-09-2025	14:54:00	26-09-2025	14:54:00	A/R SUCCESSFUL FROM BOTH END DUE TO Y-N FAULT MAITHON SITE DETAILS- M1: FD- 146.4KM, FC- 2.03 KA, M2: FD- NA, FC- 1.5 KA. LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA	1	NA	0	NA	0	NA	1	1	1	1	
37	400KV GAYA MAITHON-2	20-09-2025	20:36:00	20-09-2025	20:36:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO B-N FAULT GAYA(SITE): M1-FD-190.2KM, FC-1.84KA, M2-FD-192.1KM, FC-1.89KA LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA	1	NA	0	NA	0	NA	1	1	1	1	
38	400KV JAMSHEDPUR-BARIPADA-2	26-09-2025	15:25:00	26-09-2025	15:25:00	A/R SUCCESSFUL FROM BOTH END DUE TO R-N FAULT. JAMSHEDPUR SITE DETAILS- M1: FD- 78.7KM, FC-4.52KA, M2: FD- 73.9KM, FC- 4.54KA. LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA	1	NA	0	NA	0	NA	1	1	1	1	
39	400KV JAMSHEDPUR-BARIPADA-2	29-09-2025	10:53:00	29-09-2025	11:32:00	TRIPPED FROM BOTH ENDS DUE TO R-N FAULT, LIGHTENING AND THUNDERSTORM REPORTED NEAR FAULT AREA. FAULT DETAILS-JAMSHEDPUR(SITE): M1-FD-59.5KM, FC- 5.6KA, M2-FD-52.1KM, FC-4.70KA AT LOG NO 142 (TP TOWER) AS FLASH POINT BETWEEN ARCING HORN AND CC RING.	Other Utility	1	NA	0	NA	0	NA	1	1	1	
40	400KV KAHALGAON(NTPC)-BARH(NTPC)-2	15-09-2025	11:59:00	15-09-2025	13:55:00	TRIPPED FROM BOTH ENDS DUE TO Y-N FAULT. KAHALGAON END DETAILS: FC=3.0KA, FD=147.56KM. LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA. LIGHTENING FLASHOVER MARK FOUND ON ARCING HORN & JUMPER CONDUCTOR AT LOC. 397	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
41	400KV KAHALGAON(NTPC)-LAKHISARAI-1	25-09-2025	13:13:00	25-09-2025	13:13:00	A/R SUCCESSFUL FROM BOTH END DUE TO R-N FAULT LAKHISARAI(SITE): M1: FD- 16.69KM, FC- 7.36KA ; M2: FD- 16.18KM, FC- 7.06KA. LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA	NA	1	NA	0	NA	0	1	1	1	1	
42	400KV KAHALGAON(NTPC)-MAITHON-1	07-09-2025	11:13:00	07-09-2025	21:51:00	TRIPPED DUE TO 400KV BUS-3 TRIPPING AT NTPC KAHALGAON END. FAULT UNDER NTPC KAHALGAON END	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
43	400KV KISHANGANJ-SAHARSA-1	11-09-2025	10:47:00	11-09-2025	10:47:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO B-N FAULT. KISHANGANJ (SITE) M1: FD-100.6KM, FC-3.63KA, M2: FD-101.2KM, FC-3.67KA, LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA.	1	1	0	0	0	0	1	1	1	1	
44	400KV KISHANGANJ-SAHARSA-1	27-09-2025	09:41:00	27-09-2025	09:41:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO B-N FAULT KISHANGANJ(SITE): M1-FD-123.3KM, FC-2.81KA, M2-FD-123.4KM, FC-2.98KA. LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA.	1	1	0	0	0	0	1	1	1	1	
45	400KV KISHANGANJ-SAHARSA-1	27-09-2025	14:23:00	27-09-2025	14:23:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO B-N FAULT KISHANGANJ SITE DETAILS- M1: FD- 137.3KM, FC- 2.62KA, M2: FD- 123.4KM, FC- 2.77KA. LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA.	1	1	0	0	0	0	1	1	1	1	
46	400KV KISHANGANJ-SAHARSA-2	13-09-2025	23:59:00	13-09-2025	23:59:00	A/R SUCCESSFUL FROM BOTH END DUE TO B-N FAULT. KISHANGANJ (AFAS) M1-FD- 183.2KM, FC- 2.673 KA. SAHARSA (AFAS) M1- FD- 2.8KM, FC- 14.943KA. LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA.	1	1	0	0	0	0	1	1	1	1	
47	400KV KODERMA(DVC)-BIHARSHARIF-1	11-09-2025	12:06:00	11-09-2025	12:06:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO R-N FAULT BSF(SITE): M1-FD-51.22KM, FC-3.814KA KOD: FD-37.9KM, FC- 8.63KA. LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA	NA	1	NA	0	NA	0	1	1	1	1	
48	400KV KODERMA(DVC)-BIHARSHARIF-2	11-09-2025	12:06:00	11-09-2025	13:03:00	Other Utility	A/R SUCCESSFUL FROM BIHARSHARIF END AND TRIPPED FROM KODERMA END DUE TO B-N FAULT BSF(SITE): M2-FD-54.9KM, FC-5.007KA, M1-FD-51.49, FC-3.871KA, LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA. LIGHTENING FLASHOVER MARK FOUND ON PORCELAIN INSULATOR & JUMPER CONDUCTOR AT LOC. 85.	NA	1	NA	0	NA	0	1	1	1	1
49	400KV KODERMA(DVC)-GAYA-1	07-09-2025	14:33:00	07-09-2025	14:33:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO R-N FAULT.FAULT DETAILS, GAYA(AFAS)-M1-FD-85.882KM FC-5.105 M2: FD-105.953 KM FC-5.115KA. LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA	NA	1	NA	0	NA	0	1	1	1	1	
50	400KV NAUBATPUR BALIA CKT-2	02-09-2025	23:28:00	03-09-2025	10:45:00	TRIPPED FROM BOTH ENDS DUE TO Y-N FAULT DUE TO LIGHTENING AND THUNDERSTORM REPORTED NEAR FAULT AREA BALIA(SITE): M2: FD- 49.7 KM, FC- 7.35 KA NOTE-BURNT CLR INSULATOR AT LOC NO 501.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
51	400KV NEW RANCHI-CHANDWA-1	10-09-2025	17:31:00	10-09-2025	17:31:00	A/R SUCCESSFUL FROM BOTH END DUE TO R-N FAULT. RANCHI SITE DETAILS- M1: R-G, 4.90 KA, 66.8 KM, M2: R-G, 1.507KA, 66.98KM CHANDWA SITE DETAILS- M1: FD: 6.3KM, FC: 15.23 KA, M2: FD: 6.3KM, FC: 12.06 KA. LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA.	1	1	0	0	0	0	1	1	1	1	
52	400KV PATNA-BALIA-1	27-09-2025	01:11:00	27-09-2025	01:11:00	A/R SUCCESSFUL FROM BOTH END DUE TO R-N FAULT PATNA(AFAS): M1: FD- 142.031, FC- 4.25KA ; M2: FD- 142.779KM, FC- 4.24KA. LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA	1	NA	0	NA	0	NA	1	1	1	1	

53	400KV PATNA-SAHARSA-2	16-09-2025	21:15:00	16-09-2025	21:15:00	A/R SUCCESSFUL FROM BOTH END DUE TO Y-N FAULT. PATNA M1-174.399km , FC-2.8 KA,SAHARSA (SITE)-M1-60.3km , FC-5.216KA. LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA	1	1	0	0	0	0	1	1	1	
54	400KV PATNA-SAHARSA-2	16-09-2025	15:06:00	16-09-2025	15:06:00	A/R SUCCESSFUL FROM BOTH END DUE TO B-N FAULT. PATNA SITE-M1-FD-140.0 KM, FC-3.2 KA. SAHARSA(SITE)- M1: FD-78.8KM, FC-5.39KA ; M2: FD- 82.57KM, FC- 4.171KA	1	1	0	0	0	0	1	1	1	
55	400KV PATNA-SAHARSA-2	19-09-2025	17:48:00	19-09-2025	17:48:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO R-N FAULT. SAHARSA(AFAS)-M1-45.6 KM, FC-6 KA	1	1	0	0	0	0	1	1	1	
56	400KV RAGHUNATHPUR(DVC)-MAITHON-1	09-09-2025	13:33:00	09-09-2025	16:56:00	TRIPPED FROM BOTH END DUE Y-N FAULT MAITHON AFAS- M2: FC- 45.1KM, FC- RTPS SITE DETAILS- ZONE-1, M1: FC-12.65KA, FD- 4.29KM, M2: FD- 3.7, FC- 11.05 KA. FAULT IS UNDER DVC JURISDICTION	NA	NA	NA	NA	NA	NA	NA	NA	NA	
57	400KV RANCHI-RAGHUNATHPUR(DVC)-1	26-09-2025	14:08:00	26-09-2025	14:08:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO R-N FAULT RANCHI(AFAS):M1-FD-13.975KM, FC-14.74KA. LIGHTENING AND THUNDRSTORM REPORTED IN FAULT AREA.	1	NA	0	NA	0	NA	1	1	1	
58	500MVA,400/220KV ICT-4 AT BIHARSHARIF	28-09-2025	08:18:00	28-09-2025	12:45:00	TRIPPED DUE TO R-PH CT FAIL OF 220KV BIHARSHARIF-TENUGHAT LINE AT BIHARSHARIF (BSPTCL) END. FAULT IS UNDER BSPTCL JURISDICTION	1	NA	0	NA	0	NA	1	1	1	

PG ER-2

						END-A						END-B					
LINE NAME	TRIP DATE	TRIP TIME	RESTORATION DATE	RESTORATION TIME	Reason	Nc	Nu	Nf	Dependability Index (Nc/(Nc+Nf))	Security Index (Nc/(Nc+Nu))	Reliability Index (Nc/(Nc+Nu+Nf))	Nc	Nu	Nf	Dependability Index (Nc/(Nc+Nf))	Security Index (Nc/(Nc+Nu))	Reliability Index (Nc/(Nc+Nu+Nf))
400KV-ALIPURDUAR (PG)-BINAGURI-3	30-09-2025	10:20	30-09-2025	11:47	B-Earth	1			1	1	1	1			1	1	1
220KV-CHUKHA-BIRPARA-1	27-09-2025	14:35	27-09-2025	16:09	R-Y-Earth				#DIV/0!	#DIV/0!	#DIV/0!	1			1	1	1
400KV-MEDINIPUR-NEW CHANDITALA-2	27-09-2025	11:32	28-09-2025	00:51	B-Earth	1			1	1	1	NA					
400KV-MALDA(PG)-NEW PURNEA-1	25-09-2025	19:47	26-09-2025	17:32	R-B-Earth	1			1	1	1	NA					
220KV-NEW MELLI-TASHIDING-2	25-09-2025	13:08	25-09-2025	19:25	Y-B	1			1	1	1	NA					
400KV-BINAGURI-TALA-4	22-09-2025	10:24	22-09-2025	11:22	Y-B	1			1	1	1	NA					
400KV-ALIPURDUAR (PG)-PUNASANGCHUN-2	20-09-2025	11:04	20-09-2025	12:12	B-Earth	1			1	1	1	NA					
220KV-NEW TOWN(AA-III)-RAJARHAT-2	20-09-2025	10:46	20-09-2025	11:06	B-Earth	NA						1			1	1	1
220KV-BINAGURI-SILIGURI-1	18-09-2025	18:08	18-09-2025	19:08	R-Y-Earth	1			1	1	1	1			1	1	1
220KV-SUBHASGRAM(PG)-CESC(EMSS)-1	17-09-2025	16:49	17-09-2025	17:59	R-Y	1			1	1	1	NA					
400KV-BINAGURI-RANGPO-2	15-09-2025	16:38	16-09-2025	10:47	Y-Earth	1			1	1	1	1			1	1	1
220KV-ALIPURDUAR (PG)-SALAKATI-1	13-09-2025	02:27	13-09-2025	06:55	R-Y-B-Earth	1			1	1	1	NA					
220KV-ALIPURDUAR (PG)-SALAKATI-2	13-09-2025	02:27	13-09-2025	06:31	Y-B-Earth	1			1	1	1	NA					
400KV-DURGAPUR-KAHALGAON-2	11-09-2025	11:13	11-09-2025	12:39	B-Earth	1			1	1	1	NA					
400KV-BINAGURI-BONGAIGAON-2	10-09-2025	09:24	10-09-2025	11:11	R-B-Earth	1			1	1	1	NA					
400KV-KISHANGANJ-RANGPO-1	07-09-2025	07:18	07-09-2025	12:53	R-B	NA						1			1	1	1
400KV-ALIPURDUAR (PG)-PUNASANGCHUN-2	06-09-2025	15:08	06-09-2025	22:04	No Fault	1			1	1	1	NA					
220KV-NEW MELLI-TASHIDING-2	06-09-2025	00:32	06-09-2025	01:39	R-Earth	1			1	1	1	NA					
220KV-BIRPARA-MALBASE-1	04-09-2025	15:02	04-09-2025	16:17	R-Earth	1			1	1	1	NA					
400KV-ALIPURDUAR (PG)-BINAGURI-4	01-09-2025	10:33	01-09-2025	13:58	B-Earth	1			1	1	1	1			1	1	1
400KV-ALIPURDUAR (PG)-BINAGURI-3	01-09-2025	10:33	01-09-2025	17:13	B-Earth	1			1	1	1	1			1	1	1

PG Odisha

Protection Performance Indices for the month of September-25 (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						
1	765 KV-JHARSUGUDA 765 KV-765 KV-DHARAMJAYGARH-4	23-09-2025	17:58:00	Line tripped on persistent fault R/I at Sundargarh Main-1, Z-1, R-N, Ir-11.59kA, F.I- 62.7KM Main-2, Z-1, R-N, Ir-11.59kA, F.I- NA		1	1	0	0	0	0	1	1	1	
2	220 KV-ROURKELA 400KV-220 KV-TARKERA 220KV-2	19-09-2025	10:38:00	Line tripped on persistent fault within Dead time R/I at Sundargarh M1:Z1, YN fault, 55.24km, 4.84kA M2: Z1, YN fault, 69.92km, 5.332kA		1	1	0	0	0	0	1	1	1	
3	400 KV-RENGALI 400KV-400 KV-INDRAVATI 400KV-1	18-09-2025	07:33:00	DT Received at Rengali end	Line tripped due to PRV operation of Non switchable LR-NGR at Indravati	1	1	0	1	0	0	1	0.666666667	0.666666667	NGR PRV Mal-operated at Indravati S/s. Action taken: Cable meggering was done & Identified Faulty cable replaced with new spare cable
4	765 KV-DHARAMJAYGARH-765 KV-JHARSUGUDA 765 KV-2	10-09-2025	14:34:00	Line tripped on persistent fault R/I at Sundargarh M1:Z1, R-N fault, 112.3km, 5.13kA M2: Z1, R-N Fault, 129.9km, 5.11kA		1	1	0	0	0	0	1	1	1	
5	220 KV-PANDIABIL 400KV(PGCIJ)-220 KV-PRATAPASAN 220KV-1	10-09-2025	10:32:00	Line tripped on persistent fault R/I at Pandiabili M1:Z2, B-G, 2.7kA, 27.3km M2: Z2, B-G, 2.5kA, 30.5km		1	1	0	0	0	0	1	1	1	
6	220 KV-BOLANGIRNEW220KV-220 KV-BOLANGIR 400KV-2	06-09-2025	12:19:00	Line tripped 2-3 Protection with B-G Fault R/I at Bolangir M1: Z3, B-G, 1.66kA, 60.8km M2: Z3, B-G, 1.63kA		1	1	0	0	0	0	1	1	1	
7	765 KV-ANGUL -765 KV-SRIKAKULAM-1	04-09-2025	15:30:00	Line tripped on Ph-Ph fault. R/I at Angul M1: Z1, R-Y Fault, 6 km, 16.26kA. M2: Z1, R-Y fault, 5.8 km, 25.47kA		1	1	0	0	0	0	1	1	1	
8	765 KV-JHARSUGUDA 765 KV-765 KV-RAIPUR-1	02-09-2025	17:59:00	Line Tripped on Ph-Ph Fault R/I at Sundargarh M1: Z1, YBN, 97.79km, 10.38kA M2: Z1, YBN, 81.8km, 7.64kA		1	1	0	0	0	0	1	1	1	

WBSETCL

Protection Performance Indices for the month of AUGUST '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)	Analysis of the event
						End A	End B	End A	End B	End A	End B	End A	End B					
1	MANIKCHAK-MALDA PG # 1	02.09.25	03:37:00	02.09.25	04:05:00	Zone-1,R-phase, CS, CR, 3-phase Trip		1	0	0	0			1	1	1		
2	MANIKCHAK-MALDA PG # 2	05.09.25	22:43:00	05.09.25	22:58:00	Zone-1,R-phase, CS, CR, 3-phase Trip		1	0	0	0			1	1	1		
3	MANIKCHAK-MALDA PG # 2	06.09.25	04:36:00	06.09.25	05:01:00	Zone-1,Y-phase, CS, CR, 3-phase Trip		1	0	0	0			1	1	1		
4	MANIKCHAK-MALDA PG # 1	12.09.25	19:29:00	12.09.25	19:58:00	Zone-1,R-phase, CS, CR, 3-phase Trip		1	0	0	0			1	1	#		
5	MANIKCHAK-MALDA PG # 2	13.09.25	20:42:00	13.09.25	21:00:00	Zone-1,R-phase, CS, CR, 3-phase Trip		1	0	0	0			1	1	1		
6	NEW PPSR-RANCHI #1	18.09.25	11:55:00	18.09.25	17:01:00	Zone-1,Y-B-phase, CS, CR, 3-phase Trip		1	0	0	0			1	1	1		
7	MANIKCHAK-MALDA PG # 2	19.09.25	19:05:05	19.09.25	19:38:00	Zone-1,Y-phase, CS, CR, 3-phase Trip		1	0	0	0			1	1	1		
8	MANIKCHAK-MALDA PG # 1	19.09.25	21:33:00	19.09.25	21:56:00	Zone-1,Y-phase, CS, CR, 3-phase Trip		1	0	0	0			1	1	1		
9	MANIKCHAK-MALDA PG # 2	20.09.25	01:24:00	20.09.25	01:52:00	Zone-1,R-phase, CS, CR, 3-phase Trip		1	0	0	0			1	1	1		
10	NEWTOWN AAIH-RAJARHAT PG #2	20.09.25	10:46:00	20.09.26	11:06:00	Zone-2, B-Phase, A/R Close, A/R LVO		1	0	0	0			1	1	1		
11	MANIKCHAK-MALDA PG # 1	22.09.25	18:36:00	22.09.25	19:02:00	Zone-1,R-phase, CS, CR, 3-phase Trip		1	0	0	0			1	1	1		
12	DURGAPUR-PPSP #1	26.09.25	09:17:00	27.09.25	05:49:00	Zone-1,Y-phase, CS, CR, 3-phase Trip		1	0	0	0			1	1	1		
13	New-Chanditala-Midnapore PG #2	27.09.25	11:32:00	27.09.25	12:09:00	Zone-2, B-Phase, A/R Close, A/R LVO		1	0	0	0			1	1	1		
14	Kharagpur-KTTP #2	29.09.25	12:40:00	29.09.25	16:30:00	Zone-1, Y-Phase, A/R Close, A/R LVO		1	0	0	0			1	1	1		

BSPTCL

Protection Performance Indices for the month of September'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-1	29-09-2025	11:41	29-09-2025	18:05		Laukahi(BH): Y-B, fd-76.35 km, fc: r-0.048ka, y-1.74ka, b-1.82ka		1		0		0	1		1	Line tripped on phase to phase fault.	
2	220KV-KARAMNASHA (NEW)-SAHUPURI-1	26-09-2025	19:05	26-09-2025	20:56	Tripped on Over current			1		0		0	1		1	Line tripped on over load protection	
3	220KV-TENUGHAT-BIHARSARIFF-1	26-09-2025	15:10	26-09-2025	15:45		Biharsharif R phase, Dist Prot				0		1	0		0	PLCC issue persisting since long. As stated earlier, ERPC intervention required, as it involves Inter state Transmission line.	
4	220KV-KHAGARIA-NEW PURNEA-1	26-09-2025	08:59	26-09-2025	12:17	Khagaria-Z1, BN, A/R	Purnea: B_N, 92.5km, 2.19 kA		1	0	0	0	0	1	khagaria-1 New Purnea-0	khagaria-1 New Purnea-0	khagaria-1 New Purnea-0	PLCC issue at Purnea PG End
5	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	26-09-2025	02:15	26-09-2025	02:52		Laukahi end: fault in Y-phase zone -1, distance 24.48KM, FC-3.342KA				0		1	0		0	0	A/R issue resolved and faulty Distance Protection replaced at Laukahi end
6	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	25-09-2025	20:46	25-09-2025	21:30		Laukahi end: fault in Y-phase zone -1, distance 24.17KM, FC-3.235KA				0		1	0		0	0	A/R issue resolved and faulty Distance Protection replaced at Laukahi end
7	220KV-DEHRI-GAYA-1	22-09-2025	11:03	22-09-2025	16:48	Dehri-Dist Prot, B-N			1		0		0	1		1	1	A/r failed after 1 sec.
8	220KV-SITAMARHI-RAXAUL(NEW)-1	21-09-2025	11:45	21-09-2025	20:21		Raxaul-DistProt, YB			1			0	1		1	1	Line tripped on phase to phase fault.
9	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	20-09-2025	20:47	20-09-2025	21:32		Laukahi: Z1, R-N, 26.53KM, 3KA;				0		1	0		0	0	A/R issue resolved and faulty Distance Protection replaced at Laukahi end
10	220KV-PATNA-FATUHA-1	20-09-2025	05:55	20-09-2025	07:13	Patna: Not tripped;	Fatua: Relay Maloperation.				0		1	0		0	0	Breaker tripped due to grounding of cable in post close supervision relay. Problem is rectified.
11	220KV-KHAGARIA-NEW PURNEA-2	16-09-2025	13:00	16-09-2025	13:42	Khagaria end: Main-2, B_N, Zone-1, Distance -74.76 km, Ib- 2.092kA	Purnea end : B_N, Z-1, 4.95 kA, 24.7 KM		1	1	0	0	0	1		1	1	A/r failed after 1 sec.
12	220KV-KHAGARIA-NEW PURNEA-1	15-09-2025	11:20	15-09-2025	12:23	Khagaria(New): Distance Protection Relay :B ph, Zone-1, Distance -46.33km, Ib-3.217kV.	New Purnea: BN fault, FC- 3.4 kA, FD-59.2 km		1	1	0	0	0	1		1	1	A/r failed after 1 sec.
13	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	12-09-2025	23:34	13-09-2025	00:20		Laukahi: R-phase fault, FC: 2.62 ka FD: 51.2 km				0		1	0		0	0	A/R issue resolved and faulty Distance Protection replaced at Laukahi end
14	220KV-MUZAFFARPUR(PG)-AMNOUR-2	10-09-2025	10:42	10-09-2025	11:29	Muzaffarpur: B-N, Z2, 61km, 2.8kA (A/R successful);	Amnour: B-N, Z1, 6.3km, 5.5kA		1	0	0	0	0	1	Muz-1 amnour-0	Muz-1 amnour-0	Muz-1 amnour-0	PLCC issue
15	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	08-09-2025	20:07	08-09-2025	20:55	A/r successful from Darbhanga end	LAUKAHI end: Z-1, R-N, FC-1.972kA				0		1	0		0	0	A/R issue resolved and faulty Distance Protection replaced at Laukahi end
16	220KV-MUZAFFARPUR(PG)-AMNOUR-1	06-09-2025	11:41	06-09-2025	13:04	Muzaffarpur: B_N, 98 km, 3.38 kA	Amnour: B-N, Z1, Dist Prot		1	0	0	0	0	1	Muz-1 amnour-0	Muz-1 amnour-0	Muz-1 amnour-0	PLCC issue
17	220KV-HAZIPUR-MUZAFFARPUR-1	06-09-2025	11:10	06-09-2025	14:59		Muzaffarpur: B_N, 45.76 km		0	0	0	0	1	1		0	0	PLCC issue
18	220KV-TENUGHAT-BIHARSARIFF-1	06-09-2025	09:09	06-09-2025	09:46		Biharsharif: Y_N, 29.2 km, 3.624 kA				0		1	0		0	0	PLCC issue persisting since long. As stated earlier, ERPC intervention required, as it involves Inter state Transmission line.
19	220KV-KHAGARIA-NEW PURNEA-2	03-09-2025	14:22	03-09-2025	16:05	Y-B, Z-1	Purnea - Y-B, FD:8.9 km, FCy:11.05 kA, FCb:11.08 kA, Z-1		1	1	0	0	0	1		1	1	Line tripped on phase to phase fault
20	220KV-NEW PURNEA-MADHEPURA-1	02-09-2025	04:25	02-09-2025	05:40	Purnia End: B_N, FD-4.01 KM, FC-14.9kA, Z-1	Madhepura End: Z-1, B_N, FD-71.87KM, FC-1.76kA,		1	0	0	0	0	1	Purnea PG-1 madhepura-0	Purnea PG-1 madhepura-0	Purnea PG-1 madhepura-0	A/r issue at Madhepura end rectified.

PROTECTION PERFORMANCE INDICES AS PER TRIPPING LIST OF 152nd PCC MEETING AGENDA FOR THE MONTH OF SEPTEMBER 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				
1	400KV LAPANGA- STERLITE-2	24/09/2025	00:41	24/09/2025	17:30	Z-1/B-N/19.9KA/8 KM	Z-1/B-N/28.7 KA	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 FAILED AFTER 1 SECOND
2	220 KV BUDHPADAR-KORBA-1	23/09/2025	19:02	23/09/2025	22:30	Z-1/R-N/54.07 KM	TRIPPED	0	1	0	1	0	1	END A=0,END B=1/2	END A=0,END B=1/2	END A=0,END B=1/3	A/R SUCCESSFUL AT BUDHPADAR END BUT THREE PHASE TRIPPING AT KORBA END
3	220 KV BUDHPADAR-KORBA-1	20/09/2025	10:46	20/09/2025	16:15	NO TRIP	TRIPPED	0	1	0	1	0	1	END A=0,END B=1/2	END A=0,END B=1/2	END A=0,END B=1/3	NO FAULT BUT LINE TRIPPED FROM KORBA END ONLY
4	220 KV ROURKELA PG- TARKERA-2	19/09/2025	10:38	19/09/2025	11:38	Z-1/B-N/4.4 KA/9.8 KM	A/R SUCCESSFUL	1	0	1	0	1	0	END A=1/2,END B=0	END A=1/2,END B=0	END A=1/3,END B=0	LINE TRIPPED FROM ROURKELA PG END ONLY
5	400 KV RENGALI PG-INDRAVATI-1	18/09/2025	07:33	18/09/2025	10:35	DT RECEIVED	TRIPPED(LRV OPERATED)	0	1	0	1	0	1	END A=0,END B=1/2	END A=0,END B=1/2	END A=0,END B=1/3	LINE TRIPPED DUE TO LRV OPERATION OF L/R AT INDRAVATI END AND DT SENT TO RENGALI END
6	220 KV PANDIAVIL PG-PRATASASAN -2	09-11-2025	02:40	09-11-2025	04:35	NO TRIP	Y-N/3.19 KA	0	1	0	1	0	1	END A=0,END B=1/2	END A=0,END B=1/2	END A=0,END B=1/3	TRIP FROM PRATAPSASAN END ONLY ON BUSBAR OPTO DUE TO Y-PHASE PT 220 KV MAIN BUS-2 BRUST AT PRATAPSASAN END
7	220 KV PANDIAVIL PG-PRATASASAN -1	09-10-2025	10:32	09-10-2025	17:43	Z-1/B-N/2.5 KA/30 KM	Z-1/B-N/5.9 KA/4.8 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	LINE TRIPPED IN RECLAIM TIME
8	220 KV JSPL-JAMSHEDPUR-1	09-08-2025	13:28	09-08-2025	16:30	Z-1/R-V/I=1.885 KA ,Jy=2.009 KA/95.06KM	NO TRIP	1	0	1	0	1	0	END A=1/2,END B=0	END A=1/2,END B=0	END A=1/3,END B=0	LINE TRIPPED DUE TO PH-PH FAULT
9	220 KV TTPS-TSTPP-1	09-07-2025	17:14	09-07-2025	19:21	Z-1/R-N/7.169 KA/1.51 KM	Z-1/R-N/3.62 KA/25.68 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	3-PHASE TRIPPING FOR SINGLE PHASE TO GROUND FAULT AT BOTH END
10	220 KV BUDHPADAR-KORBA-1	09-01-2025	13:37	09-01-2025	15:47	Z-1/R-N/2.8 KA/53.5 KM A/R SUCCESSFUL	Z-1/R-N/1.777 KA/103 KM	0	1	0	1	0	1	END A=0,END B=1/2	END A=0,END B=1/2	END A=0,END B=1/3	A/R SUCCESSFUL AT BUDHPADAR END BUT THREE PHASE TRIPPING AT KORBA END

Protection Performance Indices for the month of September' 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	End A	End B				
1	220 kV Dumka II (Madanpur) - Rupnarayanpur - 02	01-10-2025	06:56			YB, Z1, 45.86 km, IY - 2.087 kA, IB - 2.437 kA		1		0		0	0	1	1	1	
2	220kv Chandil-STPS	02-09-2025	03:04	02-09-2025	13:51	RN, Z1, 69.8 km, IR- 2.11 kA		1		0		0	0	1	1	1	
3	220 KV Latehar-Lohardaga - 01	04-09-2025	15:29	05-09-2025	15:39	YN, Z1, 65.17 km, IY - 2.44 kA, AR successful; tripped in reclaim time		1		0		0	0	1	1	1	
4	220 KV Latehar-Lohardaga - 02	04-09-2025	15:29	05-09-2025	15:51	YN, 849.92 A		1		1		0	0	1	0.5	0.5	
5	220KV Hatia II - Ranchi(PG)- 02	05-09-2025	13:06	05-09-2025	16:21	RN, Z1, 10.1 km, IR- 9.16 kA, AR successful but tripped on reclaim time.		1		0		0	0	1	1	1	
6	220KV Hatia II - Patratu - 01	09-09-2025	14:58			Z1, YBN, IY - 5.04 kA, IB - 7.48 kA	Z1, YBN, IY - 4.78 kA, IB - 8.67 kA	1	1	0	0	0	0	1	1	1	
7	220KV Hatia II - Patratu - 02	09-09-2025	14:59			Z1, YBN, IY - 3.91 kA, IB - 0.79 kA	Z1, YBN, IY - 7.21 kA, IB - 7.18 kA	1	1	0	0	0	0	1	1	1	
8	220 kv Ramchandrapur - Joda	11-09-2025	19:06	11-09-2025	21:13 hrs	RYBN, Z4, IR - 1.69 kA, IY - 1.77 kA, IB - 1.54 kA,		1		0		0	0	1	1	1	Due to bursting of R Phase of CT of Jamshepur (PG)- 02 feeder
9	220 kv Ramchandrapur - Chandil	11-09-2025	19:06	11-09-2025	21:08 hrs	RYN, Z4 (main-2), IR - 4.55 kA, IY - 3.96 kA	Didn't Tripped	1		0		0	0	1	1	1	
10	220 kv Ramchandrapur - Chaibasa - 01	11-09-2025	19:06	12.09.25	00:17 hrs	RYN, Z4 pick up, IR - 4.36 kA, IY - 4.25 kA	RYN, Z1, IR - 4.35 kA, IY - 4.26 kA	1		0		0	0	1	1	1	
11	220 kv Ramchandrapur - Jamshepur (PG) - 01	11-09-2025	19:06	12.09.25	00:35 hrs	BN, Inter - trip, IR - 5.62 kA, IY - 5.62 kA, IB - 7.13 kA, within <600 ms.		1		0		0	0	1	1	1	
12	220 kv Ramchandrapur - Jamshepur (PG) - 01	11-09-2025	19:06	15.09.25	19:27 hrs	RN, 1.657 kA. Inter trip from remote end (<100 ms)		1		0		0	0	1	1	1	
13	220 kv Chaibasa - Chaibasa (PG)- 01	11-09-2025	19:06			Didn't Tripped, Tripped from remote end		1		0		0	0	1	1	1	
14	220 kv Chaibasa - Chaibasa (PG)- 02	11-09-2025	19:06			Didn't Tripped, Tripped from remote end		1		0		0	0	1	1	1	
15	220 KV-Daltonganj - CHATRA - 01	17-09-2025	16:46			RN, Z1, IR - 1.25 kA		1		1		0	0	1	0.5	0.5	3ph tripping for 1ph fault. Carrier is unhealthy
16	400 kv Patratu - PVUNL - 01	19-09-2025	09:52			YN, Z3, Instantaneous tripping		1		1		0	0	1	0.5	0.5	Due to an instantaneous Z-3 time delay in main - 2 relay (as the Anti-theft setting was not reverted into normal setting during charging of line)
17	400 kv Patratu - PVUNL - 02	19-09-2025	13:06					1		0		0	0	1	1	1	
18	220KV Hatia II - Ranchi(PG)- 02	21-09-2025	11:04			YBN, Z1, IY- 11.04kA, IB- 11.25 kA		1		0		0	0	1	1	1	
19	220 kv Govindpur - TVNL - 01	25.09.25	14:47			RN, Z1, 67.85 km, IR - 1.66 kA		1		1		0	0	1	0.5	0.5	3ph tripping for 1ph fault. Carrier is unhealthy
20	220 kv Govindpur - TVNL - 02	27.09.25	14:21			BN, Z1, 55.67 km, IB - 1.17 kA		1		1		0	0	1	0.5	0.5	3ph tripping for 1ph fault. Carrier is unhealthy

NTPC Kahalgaon

Protection Performance Indices for the month-Aug-2025 - NTPC Kahalgaon

SL No	Name of 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+Nf+Nu))	Reason for performance indices less than 1)	Analysis for the event
						End A	End B	End A	End B	End A	End B	End A	End B					
1	400kV Kh Farakka Line - main bay-3052 & Bus - 3	07.09.2025	11:13	07.09.2025	20:56	ZONE - 1		0		1		1		0	0	0		ZONE - 1, Y - ph. Fault current: 16.57 kA. Distance: 6.9 Km, Main CB 3052 did not open. BFR operated resulting in tripping in 400kV Bus - 3, U-5 & U-6 tripped since CB connected to Bus - 4 also tripped due to Class - A protection
2	400kV Kh Dgp Line - 2 Tie Bay 1752	11.09.2025	11:14	11.07.2025	12:39	ZONE-1		0		1		1		0	0	0		ZONE - 1, B - ph. Fault current: 8.2 kA. Distance: 38 Km, tie CB 1752 A/R unsuccessful. Line remained charged through Main bay 1852
3	400kV Kh Farakka Line - 1 Tie Bay 3252	12.09.2025	13:45	12.09.2025	16:30	ZONE - 1		0		1		1		0	0	0		ZONE - 1, R - ph. Fault current: 7.9 kA. Distance: 39.9 Km, tie CB 352 A/R unsuccessful. Line remained charged through Main bay 3152
4	400kV Kh Barh Line - 2 Main & Tie Bay 3252 & 3352	15.09.2025	11:56	15.09.2025	13:56	ZONE - 1		0		1		1		0	0	0		ZONE - 1, Y - ph. Fault current: 3 kA. Distance: 68.2 Km, Main & Tie bay 352 & 3252 A/R unsuccessful
5	400kV Dgp Line - 1 Tie Bay 2052	25.09.2025	10:41	25.09.2025	1:30	ZONE - 1		0		1		1		0	0	0		ZONE - 1, Y - ph. Fault current: 2.5 kA. Distance: 147.81 Km, tie CB 352 A/R unsuccessful. Line remained charged through Main bay 2152
6	400kV Lakhisarai - 1 Tie Bay 552	25.09.2025	13:13	25.09.25	14:11	ZONE - 2		0		1		1		0	0	0		ZONE - 2, R - ph. Fault current: 2.8 kA. Distance: 154.9 Km, tie CB 552 A/R unsuccessful. Line remained charged through Main bay 652

Nc	Number of correct operation at internal power system Faults
Nf	Number of failures to operate at internal power system Faults
Nu	Number of unwanted operations

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10.10.25

देवोर्षि चक्रवर्ती / DEBORSHI CHAKRABORTY
 अभियंता (ओ. एण्ड एम. ई. एम. डी.) / DGM (O&M/E.M.D.)
 एनटीपीसी लिमिटेड / NTPC Limited
 कार्यालय: फागलपुर, बिहार Phagalpur

Performance Indices of Darlipali STPP for Oct'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**

NTPC Farakka

Protection Performance Indices for the month of Spetember'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	End A	End B				
400 KV-Farakka(400'220'15.75)-400 KV-KAHALGAON 400KV-1		12-09-2025	15:23:00	-	-	Zone-1	Zone-1, Tie brkr LBB	1	-	0	-	0	-	1	1	1	LBB operated in the breaker at Kahalgaon end. Farakka operation ok.
400 KV-Farakka(400'220'15.75)-400 KV-KAHALGAON 400KV-2		07-09-2025	11:13:00	-	-	Zone-1	Zone-1	1	-	0	-	0	-	1	1	1	Line tripped again in Zone 1, 500ms after reclosing

NTPC Kanti

Protection Performance Indices for the month of September'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)	Correct operation (Nc)	Unwanted operation (Nu)	failure to operate (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)
1	SAMASTIPUR NEW 2 (214)	01-09-2025	11:12	01-09-2025	18:56	Z4 operated	1	0	0	1	1	1	
2	SAMASTIPUR NEW 1 (213)	01-09-2025	11:34	01-09-2025	18:56	Z1 & Over current operated	1	0	0	1	1	1	
3	SAMASTIPUR NEW 1 (213)	07-09-2025	13:36	07-09-2025	18:15	Overcurrent operated	1	0	0	1	1	1	
4	SAMASTIPUR NEW 1 (213)	12-09-2025	22:44	12-09-2025	23:42	Z3 & Over Current operated	1	0	0	1	1	1	
5	SAMASTIPUR NEW 1 (213)	18-09-2025	15:18	18-09-2025	17:02	Z1 operated	1	0	0	1	1	1	
6	SAMASTIPUR NEW 1 (213)	19-09-2025	12:59	19-09-2025	18:47	Z1 & Over current operated	1	0	0	1	1	1	
7	SAMASTIPUR NEW 2 (214)	19-09-2025	12:59	19-09-2025	19:38	Z1 operated	1	0	0	1	1	1	
8	GOPALGANJ 1 (219)	22-09-2025	12:38	22-09-2025	13:18	over current operated	1	0	0	1	1	1	
9	GOPALGANJ 1 (219)	22-09-2025	13:55	22-09-2025	18:30	Z1 & Over current operated	1	0	0	1	1	1	
10	SAMASTIPUR NEW 1 (213)	27-09-2025	00:25	27-09-2025	14:44	Z1 operated	1	0	0	1	1	1	
11	SAMASTIPUR NEW 1 (213)	30-09-2025	12:59	30-09-2025	12:59	Earth fault operated	1	0	0	1	1	1	

APNRL

ADHUNIK POWER AND NATURAL RESOURCES LIMITED 2 X 270 MW																		
Protection Performance Indices for the September 2025 (In compliance of Clause 15(6) of IEGC 2023)																		
Sl.No	Name of the element	Tripping Date	Tripping Time	Restoration Date	Restoration on Time	Reason (Relay indication)		Nc		Nu		Nf		Dependability (Nc/(Nc+Nf))	Security Index (Nc/Nc+Nu)	Reliability Index (Nc/Nc+Nu+Nf)	Remarks (Reason for performance indices less than 1)	Analysis of the Event
						End A	End B	End A	End B	End A	End B	End A	End B					
1	--																Adhunik Line-1 & Line-2 not operated.	
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.																		

ENICL, OGPTL, PKTCL

Protection Performance Indices for the month of September-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 - Alipurdwar line CKT-1(BING-ALJP #1)							-	-	-	-	-	-	-NA	-NA	-NA	No events in the month of September25
		400 kv (Quad) D/C Bongaigaon - Alipurdwar line CKT-2(BING-ALJP #2)							-	-	-	-	-	-	-NA	-NA	-NA	No events in the month of September25
		400 kv (Quad) D/C Purnia-Biharsharif Line CKT-1 (NPRN-BSP# 1)								-	-	-	-	-	-NA	-NA	-NA	No events in the month of September25
		400 kv (Quad) D/C Purnia-Biharsharif Line CKT-2 (NPRN-BSP# 2)								-	-	-	-	-	-NA	-NA	-NA	No events in the month of September25
		400 kv (Quad) D/C Alipurdwar - Siliguri line CKT-1(ALJP-SLG #1)								-	-	-	-	-	-NA	-NA	-NA	No events in the month of September25
2	ODISHA GENERATION PHASE- II LIMITED	400 kv (Quad) D/C Alipurdwar - Siliguri line CKT-2(ALJP-SLG #2)							-	-	-	-	-	-NA	-NA	-NA	No events in the month of September25	
		765KV D/C Jharsuguda(Sundargarh)-Raipur pool CKT-1							-	-	-	-	-	-NA	-NA	-NA	Line tripped due to Y-phase to B-phase fault	
		765KV D/C Jharsuguda(Sundargarh)-Raipur pool CKT-2							-	-	-	-	-	-NA	-NA	-NA	No events in the month of September25	
		400KV D/C BI OPGC-Jharsuguda(Sundargarh) CKT-1							-	-	-	-	-	-NA	-NA	-NA	No events in the month of September25	
		400KV D/C LILO POINT (T. No. - 130) - Sundargarh								-	-	-	-	-	-NA	-NA	-NA	No events in the month of September25
3	PURULLA KHARAGPUR TRANSMISSION COMPANY LIMITED	400KV D/C OPGC-LILO POINT (T. No. - 130)							-	-	-	-	-	-NA	-NA	-NA	No events in the month of September25	
		400 KV Chabassa-Kharagpur D/C line CKT- 1							-	-	-	-	-	-NA	-NA	-NA	No events in the month of September25	
		400 KV Chabassa-Kharagpur D/C line CKT- 2							-	-	-	-	-	-NA	-NA	-NA	No events in the month of September25	
		400 KV/D/C New Ranchi-New Purulia Line: CKT-1	18-09-2025	11:55	18-09-2025	17:01	49.2 KM, Iy-10 & Ib-9.24 kA	59.4 KM, Iy-5.79 & Ib-5.57 kA	1.00	1.00	-	-	-	-	-NA	1	1	Line tripped due to Y-phase to B-phase fault
		400 KV,D/C New Ranchi-New Purulia Line: CKT-2								-	-	-	-	-	-NA	-NA	-NA	No events in the month of September25

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	06.09.2025	09:09 HRS	06.09.2025	09:48 HRS	STARTED PH BN /EARTH FAULT Z-2		1		0		0		1.0000	1.0000	1.0000	
2	220KV TTPS-Bihar Shariff T/L	15.09.2025	14:03 HRS	15.09.2025	14:55 HRS	STARTED PH BN /EARTH FAULT Z-2 144KM		1		0		0		1.0000	1.0000	1.0000	
3	400 KV TTPS-PVUNL T/L	19.09.2025	09:52 HRS	19.09.2025	21:27 HRS	OVERVOLTAGE, DT RECEIVED		1		1		0		1.0000	0.5000	0.5000	
4	220KV TTPS-GOVINDPUR CKT 1 T/L	20.09.2025	20:27 HRS	20.09.2025	21:09 HRS	STARTED PH AN,E/F, ZONE 1, 44.40KM		1		0		0		1.0000	1.0000	1.0000	
5	400 KV TTPS-PVUNL T/L	23.09.2025	13:01 HRS	24.09.2025	11:12 HRS	OVERVOLTAGE, STARTED PH A, DT REC		1		1		0		1.0000	0.5000	0.5000	
6	400 KV TTPS-PVUNL T/L	24.09.2025	12:40 HRS	25.09.2025	00:33 HRS	OVERVOLTAGE, DT RECEIVED		1		1		0		1.0000	0.5000	0.5000	
7	220KV TTPS-GOVINDPUR CKT 1 T/L	25.09.2025	14:46 HRS	25.09.2025	15:09 HRS	STARTED PH AN,E/F,ZONE 1, 3.186 KM		1		0		0		1.0000	1.0000	1.0000	
8	220KV TTPS-Bihar Shariff T/L	26.09.2025	15:10 HRS	26.09.2025	15:45 HRS	STARTED PH AN,E/F,ZONE 1, 54.88 KM		1		0		0		1.0000	1.0000	1.0000	
9	220KV TTPS-GOVINDPUR CKT 2 T/L	27.09.2025	14:22 HRS	27.09.2025	14:40 HRS	STARTED PH BN,E/F,ZONE 1, 36.54 KM		1		0		0		1.0000	1.0000	1.0000	
10	220KV TTPS-Bihar Shariff T/L	28.09.2025	08:18 HRS	29.09.2025	06:05 HRS	R-PH CT EXPLOSION AT BIHAR SHARIF S/S - STARTED PHASE ABN, E/F/ ZONE-2, 176.8 KMS		1		1		0		1.0000	0.5000	0.5000	
11	400 KV TTPS-PVUNL T/L	29.09.2025	23:03 HRS	30.09.2025	00:36 HRS	OVERVOLTAGE, DT RECEIVED		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
151st PCC Meeting			
1.	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 & 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.</p>	
2.	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 configuration. They are also advised to share raw file of settings to ERPC/ERLDC.	
150th PCC Meeting			
3.	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.	In 151 st PCC Meeting, BSPTCL representative said that replacement of BCU is in progress and it is expected that issue will be resolved in 2 months.