



सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
पूर्वी क्षेत्रीय विद्युत समिति

Eastern Regional Power Committee

14, गॉल्फ क्लब रोड, टॉलीगंज, कोलकाता-700033
14 Golf Club Road, Tollygunj, Kolkata-700033



स./NO. पू.क्षे.वि.स./PROTECTION/2026/ 2127

दिनांक /DATE: 04/02/2026

सेवा में / To,

संलग्न सूची के अनुसार / As per list enclosed.

विषय : दिनांक – 20.01.2026 को आयोजित 154 वीं पीसीसी बैठक का कार्यवृत्त ।

Sub: Minutes of the 154th PCC meeting held on 20.01.2026

महोदय/ Sir,

20.01.2026 को आयोजित 154वीं पीसीसी बैठक का कार्यवृत्त पू.क्षे.वि.स. की वेबसाइट (<http://www.erpc.gov.in/>) पर उपलब्ध है। कृपया देखें।

Please find the minutes of the 154th PCC meeting of ERPC held on 20.01.2026 available at ERPC website (<http://www.erpc.gov.in/>).

यदि कोई अवलोकन हो, तो कृपया इस कार्यालय को यथाशीघ्र भेजा जाए।

Observations, if any, may please be forwarded to this office at the earliest.

भवदीय / Yours faithfully,

I.K.Mehra
4/2/2026

(आई.के.मेहरा / I.K.Mehra)
अधीक्षण अभियंता(पी.एस)
Superintending Engineer (PS)

LIST OF ADDRESSES:

Chief Engineer, Trans (O&M) Bihar State Power Transmission Limited, Vidyut Bhawan, Bailey Road, Patna-800021	Chief Engineer (CRITL) Bihar State Power Transmission Limited, Vidyut Bhawan, Bailey, Road, Patna-800021
Chief Engineer(System Operation), SLDC , BSPTCL, Patna-800021	
Chief Engineer (SLDC) Damodar Valley Corporation, GOMD-I Premises, P.O.- DaneshSeikh Lane, Howrah- 711109	Chief Engineer (CTC) Damodar Valley Corporation, P.O. Maithon Dam, Dist. Dhanbad,Jharkhand-828207
Chief Engineer, (CRITL) Jharkhand Urja Sancharan Nigam Limited Kusai Colony, Doranda, Ranchi-834002	Chief Engineer (CLD) Jharkhand UrjaSancharan Nigam Limited, Kusai Colony,Doranda, Ranchi-834002
Chief General Manager (O&M), OPTCL, Janpath, Bhubaneswar, Odisha – 751 022. FAX: 0674-2542932 cgm.onm@optcl.co.in	Sr. General Manager (PPA), Technical Wing, OHPCL, Orissa State Police Housing & Welfare Corp. Bldg. VaniviharChowk, Janpath, Bhubaneswar-752022
Chief Load Dispatcher, SLDC OPTCL, P.O. Mancheswar Rly. Colony Bhubaneswar-751017	Chief Engineer (Testing), WBSETCL Central Testing Laboratory, Abhikshan, Salt Lake, Kolkata-700091 (Fax no. 2367-3578/1235)
Chief Engineer (CLD) WBSETCL, P.O.Danesh Sheikh Lane, AndulRoad, Howrah-711109	Addl. Chief Engineer (ALDC) West Bengal Electricity Distribution Company Ltd VidyutBhavan, 7 th Floor, Bidhannagar, Sector-I Salt Lake City, Kolkata-700091(Fax-033-2334-5862)
Dy. Chief Engineer (Testing)/ Sr. Manager (Testing) CESC Ltd.,4, SasiSekhar Bose Road, Kolkata-700025	General Manager (O&M) KhSTPS, NTPC Ltd., P.O. Deepti Nagar, Dist. Bhagalpur, Bihar-813203
General Manager(O&M) FSTPS, NTPC Ltd., P.O. Nabarun, Dist. Murshidabad, West Bengal-742236	Dy. General Manager (Engineering), WBPDC, OS Dept. Corporate Office, 3/C, L.A Block, Salt Lake-III, Kolkata-700098 (Fax-033-23350516)
General Manager (O&M) Barh STPS, NTPC Ltd., P.O. NTPC Barh, Dist. Patna, Bihar-803213	General Manager (OS), ERHQ-II, NTPC Ltd., 3 rd flr. OLIC Building, Plot no. N 17/2, Nayapalli, Unit-8 Bhubaneswar- 751012 (Fax No. 0674-2540919)
General Manager(O&M), TSTPS, NTPC Ltd., P.O.Kaniha, Dist. Angul, Orissa-759117	General Manager (AM), POWERGRID, Odisha Projects, Sahid Nagar, Bhubaneswar – 751 007
General Manager (OS), ERHQ-I, NTPC Ltd., LoknayakJaiprakashBhawan, (2 nd Floor), DakBunglowChawk, Patna-800001	Manager (Electrical), Adhunik Power & Natural Resources Ltd. “Lansdowne Towers, Kolkata-700020 (Fax No. 033-2289 0285)
Executive Director (O&M) NHPC Ltd., NHPC Office Complex, Sector-33, Faridabad, Haryana-121003 (Fax-01292272413)	Electrical Superintending Engineer, TTPS, TenughatVidyut Nigam Ltd.,Lalpania, Dist. Bokaro, Jharkhand-829149
Dy. General Manager (Electrical) IB Thermal Power Station, OPGCL Banhapalli, Dist. Jharsuguda-768234, Orissa	General Manager (AM), ER-I Power Grid Corporation of India Ltd., Alankar Place, Boring Road, Patna-800001
Chief Engineer (Trans.) Power Deptt., Govt. of Sikkim, Gangtok-731010	Sr. Manager (CTMC) Durgapur Projects Limited,Durgapur-713201
Executive Director, ERLDC, POSOCO, Tollygunge, Kolkata-700033	Head –Regulatory and contracts, IndiGrid Limited , 247 Embassy, Office No 107, ‘B’ Wing, Hindustan Co. Bus Stop, Gandhi Nagar, L.B.S. Road, Vikhroli West, Mumbai – 400 079. Ph : +91 845509 96408
General Manager (AM), ER-II Power Grid Corporation of India Ltd., J-I-15, Block-EP, Sector-V,Salt Lake,Kolkata-91	The Plant Head, Maithon Power Limited, Maithon Office, MA 5 Gogna, Dist. Dhanbad, Jhankand State, PIN-828207
General Manager (P&O), PTC Ltd., Kanchanjunga Bldg.,18, Barakhamba Road,	

New Delhi-110001	
Managing Director, Bhutan Power Corporation Post Box no. 580, Thimpu, Bhutan.	Managing Director, Druk Green Power Corprn. P.O. Box-1351, Thimpu, Bhutan.
Associate Director (Commercial and Regulatory) Darbhanga-Motihari Transmission Company Limited (DMTCL),503,Windsor, Off CST Road, Kalina, Santacruz(E), Mumbai-400098	The Plant Head, JITPL. (FAX:011-26139256-65)
General Manager, Sikkim Urja Limited, New Delhi (FAX:011-46529744)	President , TPPL, Bhikaji Cama Place, New Delhi , 110066
Director (NPC), CEA, NRPC Building, KatwariaSarai, New Delhi- 110016	President, Dans Energy Pvt. Ltd, 5th Floor, DLF Building No. 8, Tower-C, Gurgaon - 722002
Director, Shiga Energy Pw. Ltd., 5th Floor, DLF Building No. 8, Tower-C, Gurgaon - 722002	DGM (E&I), HALDIA ENERGY LIMITED, BARIK BHAWAN, KOKATA-700072, FAX: 033-22360955
The Plant Head, Dikchu HEP, Sikkim	

मुख्य अभियंता, ट्रांस (ओ एंड एम), बिहार स्टेट पावर ट्रांसमिशन लिमिटेड, विद्युत भवन, बेली रोड, पटना-800021	मुख्य अभियंता (सीआरआईटीएल), बिहार स्टेट पावर ट्रांसमिशन लिमिटेड, विद्युत भवन, बेली, रोड, पटना-800021
मुख्य अभियंता (सिस्टम ऑपरेशन), एसएलडीसी, बीएसपीटीसीएल, पटना-800021	
मुख्य अभियंता (एसएलडीसी), दामोदर वैली कॉर्पोरेशन, जीओएमडी-1 परिसर, पी.ओ.- दानेशशेख लेन, हावड़ा- 711109	मुख्य अभियंता (सीटीसी), दामोदर घाटी निगम, पी.ओ. मैथन बांध, जिला। धनबाद, झारखण्ड-828207
मुख्य अभियंता (सीआरआईटीएल), झारखण्ड ऊर्जा संचरण निगम लिमिटेड कुसाई कॉलोनी, डोरंडा, रांची-834002	मुख्य अभियंता (सीएलडी), झारखंड ऊर्जा संचरण निगम लिमिटेड, कुसाई कॉलोनी, डोरंडा, रांची-834002
मुख्य महाप्रबंधक (ओ एंड एम), ओपीटीसीएल, जनपथ, भुवनेश्वर, ओडिशा – 751 022. फैक्स: 0674-2542932 cgm.onm@optcl.co.in	वरिष्ठ महाप्रबंधक (पीपीए), तकनीकी विंग, ओएचपीसीएल, उड़ीसा राज्य पुलिस आवास एवं कल्याण निगम बिल्डिंग वाणीविहार चौक, जनपथ, भुवनेश्वर-752022
मुख्य लोड डिस्पैचर, एसएलडीसी ओपीटीसीएल, पी.ओ. मंचेश्वर रेलवे कॉलोनी भुवनेश्वर-751017	मुख्य अभियंता (परीक्षण), डब्ल्यूबीएसईटीसीएल केंद्रीय परीक्षण प्रयोगशाला, अभिक्षण, साल्ट लेक, कोलकाता-700091 (फैक्स नंबर 2367-3578/1235)
मुख्य अभियंता (सीएलडी), डब्ल्यूबीएसईटीसीएल, पी.ओ. दानेश शेख लेन, अंदुलरोड, हावड़ा-711109	अतिरिक्त मुख्य अभियंता (एएलडीसी), पश्चिम बंगाल विद्युत वितरण कंपनी लिमिटेड विद्युत भवन, 7वीं मंजिल, बिधाननगर, सेक्टर-1 साल्ट लेक सिटी, कोलकाता-700091 (फैक्स-033-2334-5862)
उप मुख्य अभियंता (परीक्षण)/वरिष्ठ प्रबंधक (परीक्षण) सीईएससी लिमिटेड, 4, शशि शेखर बोस रोड, कोलकाता-700025	महाप्रबंधक (ओ एंड एम), खएसटीपीएस, एनटीपीसी लिमिटेड, पी.ओ. दीप्ति नगर, जिला भागलपुर, बिहार-813203
महाप्रबंधक (ओ एंड एम) एफएसटीपीएस, एनटीपीसी लिमिटेड, पी.ओ. नबारून, जिला- मुर्शिदाबाद, पश्चिम बंगाल-742236	उप. महाप्रबंधक (इंजीनियरिंग), डब्ल्यूबीपीडीसीएल, ओएस विभाग कॉर्पोरेट कार्यालय, 3/सी, एलए ब्लॉक, साल्ट लेक-III, कोलकाता-700098 (फैक्स-033-23350516)
महाप्रबंधक (ओ एंड एम), बाढ़ एसटीपीएस, एनटीपीसी लिमिटेड, पी.ओ. एनटीपीसी बाढ़, जिला- पटना, बिहार-803213	महाप्रबंधक (ओएस), ईआरएचक्यू-II, एनटीपीसी लिमिटेड, 3 rd Floor, ओएलआईसी बिल्डिंग, प्लॉट नं. एन 17/2, नयापल्ली, यूनिट-8 भुवनेश्वर- 751012 (फैक्स नंबर 0674-2540919)
महाप्रबंधक (ओ एंड एम), टीएसटीपीएस, एनटीपीसी लिमिटेड, पी.ओ.कनिहा, जिला- अंगुल, उड़ीसा- 759117	महाप्रबंधक (एएम), पावरग्रिड, ओडिशा प्रोजेक्ट्स, साहिद नगर, भुवनेश्वर - 751 007
महाप्रबंधक (ओएस), ईआरएचक्यू-I, एनटीपीसी लिमिटेड, लोकनायक जयप्रकाश भवन, (दूसरी मंजिल), डाकबंगलाचौक, पटना-800001	प्रबंधक (इलेक्ट्रिकल), आधुनिक पावर एंड नेचुरल रिसोर्सेज लिमिटेड, लैंसडाउन टावर्स, कोलकाता-700020 (फैक्स नंबर 033-2289 0285)

कार्यकारी निदेशक (ओ एंड एम), एनएचपीसी लिमिटेड, एनएचपीसी कार्यालय परिसर, सेक्टर-33, फरीदाबाद, हरियाणा-121003 (फैक्स- 01292272413)	विद्युत अधीक्षण अभियंता, टीटीपीएस, तेनुघाट विद्युत निगम लिमिटेड, ललपनिया, जिला। बोकारो, झारखण्ड-829149
उप महाप्रबंधक (विद्युत), आईबी थर्मल पावर स्टेशन, ओपीजीसीएल बनहापल्ली, जिला। झारसुगुड़ा-768234, उड़ीसा	महाप्रबंधक (एएम), ईआर-I पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड, अलंकार प्लेस, बोरिंग रोड, पटना- 800001
मुख्य अभियंता (ट्रांस.), विद्युत विभाग, सरकार। सिक्किम, गंगटोक-731010	वरिष्ठ प्रबंधक (सीटीएमसी), दुर्गापुर प्रोजेक्ट्स लिमिटेड, दुर्गापुर-713201
कार्यकारी निदेशक, ईआरएलडीसी, पोसोको, टॉलीगंज, कोलकाता-700033	प्रमुख-नियामक और अनुबंध, इंडीग्रिड लिमिटेड, 247 दूतावास, कार्यालय संख्या 107, 'बी' विंग, हिंदुस्तान कंपनी बस स्टॉप, गांधी नगर, एल.बी.एस. रोड, विक्रोली, पश्चिम, मुंबई - 400 079 फोन: +91 845509 96408
महाप्रबंधक (एएम), ईआर-II इंडिया लिमिटेड का पावर ग्रिड कॉर्पोरेशन।, जे-आई-15, ब्लॉक-ईपी, सेक्टर-वी, साल्ट लेक, कोलकाता- 91	प्लांट हेड, मैथन पावर लिमिटेड, मैथन कार्यालय, एमए 5 गोगना, जिला। धनबाद, झारखंड राज्य, पिन-828207
महाप्रबंधक (पी एंड ओ), पीटीसी लिमिटेड, कंचनजंगा बिल्डिंग, 18, बाराखंभा रोड, नई दिल्ली-110001	
प्रबंध निदेशक, भूटान पावर कॉर्पोरेशन पोस्ट बॉक्स नं. 580, थिम्पू, भूटान।	प्रबंध निदेशक, डुक ग्रीन पावर कॉर्पोरेशन। पी.ओ. बॉक्स-1351, थिम्पू, भूटान।
सह निदेशक (वाणिज्यिक एवं नियामक), दरभंगा- मोतिहारी ट्रांसमिशन कंपनी लिमिटेड (डीएमटीसीएल), 503, विंडसर, ऑफ सीएसटी रोड, कलिना, सांताक्रूज़ (पूर्व), मुंबई- 400098	प्लांट हेड, जेआईटीपीएल। (फैक्स:011-26139256-65)
महाप्रबंधक, सिक्किम ऊर्जा लिमिटेड, नई दिल्ली (फैक्स:011-46529744)	अध्यक्ष, टीपीटीएल, भीकाजी कामा प्लेस, नई दिल्ली- 110066
निदेशक (एनपीसी), सीईए, एनआरपीसी बिल्डिंग, कटवारियासराय, नई दिल्ली- 110016	अध्यक्ष, डान्स एनर्जी प्रा. लिमिटेड, 5वीं मंजिल, डीएलएफ बिल्डिंग नंबर 8, टावर-सी, गुडगांव - 722002
निदेशक, शिगा एनर्जी पी.डब्ल्यू. लिमिटेड, 5वीं मंजिल, डीएलएफ बिल्डिंग नंबर 8, टावर-सी, गुडगांव - 722002	डीजीएम (ई एंड आई), हल्दिया एनर्जी लिमिटेड, बारीक भवन, कोकाता-700072, फैक्स: 033-22360955
प्लांट हेड, डिक्चु एचईपी, सिक्किम ।	



Minutes
of
154th PCC Meeting

Date:04.02.2026
Eastern Regional Power Committee
14, Golf Club Road, Tollygunge
Kolkata: 700 033

EASTERN REGIONAL POWER COMMITTEE

MINUTES OF 154th PROTECTION COORDINATION SUB-COMMITTEE MEETING HELD ON 20TH JAN 2026 AT 10:30 HRS THROUGH MS TEAMS

*Member Secretary, ERPC chaired the meeting. He welcomed all the participants. List of participants is attached at **Annexure A.1**.*

He informed that ERPC secretariat has completed third party protection audit for 7 number of substations and there is a plan to carry out audit for another fifteen number of substations in FY 2026-27. He advised members to discuss and finalize the list of important substations where third party audit is required.

He highlighted recent disturbances occurred in OPTCL & JUSNL network and advised concerned utilities to take corrective actions to avoid repeated disturbances.

*ERLDC representative explained the protection performance of eastern region with help of presentation which is attached at **Annexure A.2**. It is noted that protection performance in terms of desired tripping has been increased from 40 % to 66 % from Nov 2025 to Dec 2025.*

PART – A

ITEM NO. A.1: Confirmation of Minutes of 153rd Protection Coordination sub-Committee Meeting held on 28th Nov 2025 at ERPC, Kolkata

The minutes of 153rd Protection Coordination sub-Committee meeting held on 28.11.2025 was circulated vide letter dated 9th Dec 2025.

Members may confirm the minutes of the Meeting.

Deliberation in the meeting

Members confirmed the minutes of 153rd PCC 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

SI 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	Received	Not Received	Received	Received
2	PG-ER-2	Received	Received	Received	Received
3	PG-Odisha	Received	Not Received	Received	Received
4	WBSETCL	Received	Not Received	Received	Received
5	BSPTCL	Received	Not Received	Not Received	Not Received
6	OPTCL	Received	Not Received	Not Received	Not Received
7	DVC	Received	Not Received	Received	Not Received
8	JUSNL	Received	Received	Received	Not Received
9	OPGC	Not Received	Not Received	Not Received	Not Received
10	OHPC	Not Received	Not Received	Not Received	Not Received
11	CESC	Received	Received	Received	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.

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

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

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

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

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

In 153rd PCC Meeting, BSPTCL representative said that SAS upgradation work is in progress at various 220 k V Substations therefore it is quite difficult to carry out protection audit at this stage. BSPTCL representative said that list will be provided to ERPC/ERLDC.

WBSETCL representative informed that internal audit schedule for FY 2026-27 is shared to ERPC.

JUSNL representative informed that third party protection audit is already in progress at various S/s.

PG Odisha has shared third party protection audit plan for FY 2025-26 vide email dated 16th Dec 2025.

Members may update.

Deliberation in the meeting

BSPTCL representative informed that internal protection audit plan of FY 2026-27 has already been shared.

DVC, NTPC Barh, MPL representatives submitted that internal protection audit plan of FY 2026-27 will be shared within a week.

PCC advised concerned utilities to share internal audit plan for FY 2026-27, third party protection audit plan for FY 2026-27 and protection audit reports of FY 2025-26 and older.

ITEM NO. B.2: Total Power Failure at 220 kV Rengali S/s on 12th Dec 2025 at 19:06 Hrs

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

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

Load Loss: 13 MW, Gen. Loss: 100 MW
Outage Duration: 04:58 Hrs

OHPC& OPTCL may explain.

Deliberation in the meeting

ERLDC representative explained the event in detail. The following issues were observed during the event:

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

The issues could not be discussed as both OPTCL and OHPC representatives were not present in the meeting. Member Secretary ERPC suggested to write a letter to both of the utilities seeking explanation regarding this event.

ITEM NO. B.3: Total Power Failure at 400 kV TISCO S/s on 5th Dec 2025 at 19:21 Hrs

400kV TISCO S/s is connected through 400kV TISCO Baripada S/C and 400kV TISCO Jamshedpur S/C lines. Prior to the disturbance 400kV TISCO- Baripada S/C was under planned shutdown and TISCO was drawing power through Jamshedpur radially. During charging attempt of Baripada line from TISCO end, Y-Phase LA at Baripada got burst and created Y phase fault. Fault was sensed by 400kV Jamshedpur- TISCO and 400kV Baripada-Jamshedpur line in Z-3 protection and both lines got tripped after 800 msec from Jamshedpur and Baripada end respectively subsequently 400kV TISCO S/s became dead.

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

Load Loss: 94 MW
Outage Duration: 01:13Hrs

DVC may explain.

Deliberation in the meeting

DVC representative explained on 5th Dec 2025, 400kV TISCO- Baripada S/C was under planned shutdown and TISCO was drawing power through Jamshedpur radially. Main and Tie breakers were under service, and the system was in grounded condition on both ends.

He informed that at the TISCO end, before charging, the Main breaker was opened and the Tie breaker was stuck; however, the Tie breaker status was showing open. During charging, a Y-phase lightning arrester (LA) flashover occurred at the Baripada end. At the TISCO end, the Main-1 and Main-2 distance protections were blocked due to VT failure, caused by the B-phase isolator not being properly closed. VT fail indications were also observed in both Main-1 and Main-2 relays. He further said that under VT failure conditions, the non-directional earth fault protection should have operated. However, at the TISCO end, the non-directional earth fault feature was not activated. Consequently, the fault was cleared from the Jamshedpur and Baripada ends in Zone-3.

Following joint discussions between TISCO and DVC, the reach settings were revised, but these revised settings have not yet been implemented. It was agreed that the implementation would be carried out during the next line shutdown.

On enquiry from PCC, it was further informed by DVC that the non-directional earth fault protection during VT failure, has been activated after the incident. He said that at the TISCO end, two distance protection relays are installed—one REL 670 and the other P442. DVC stated that in the P442 relay, the non-directional earth fault protection was not activated during VT failure; therefore, a DT (definite time) setting with a delay of 700–800 ms has been configured.

PCC said that line isolator interlock at the TISCO end for the Baripada line appears to have been bypassed for which DVC representative replied that issue has been identified and will be rectified during the shutdown in Feb 2026.

ERLDC representative and TISCO representative discussed that the Zone-3 reach is encroaching on both the Baripada and Jamshedpur lines; therefore, the Zone-3 time delay of the Jamshedpur line should be kept less than that of the Baripada line.

PCC advised TISCO representative to share the revised distance reach settings, directional earth fault settings, Zone-3 (Z3) time settings, at TISCO end to ERPC/ERLDC for review and further suggestion.

ITEM NO. B.4: Total Power Failure at 400 kV PVUNL S/s on 20th Dec 2025 at 11:23 Hrs

On 20/12/2025 at 11:06 Hrs, 400 kV New Ranchi-Patratu-1 line got tripped due to conductor snapping and 400 kV New Ranchi-Patratu-2 was under planned shutdown. After tripping of 400 kV Patratu- New Ranchi-1 Line, 400 kV PVUNL-Tenughat Line got tripped on SPS operation. Subsequently, PVUNL generation of around 665 MW was evacuated through 400 kV PVUNL-Patratu D/C and 400/220 kV ICTs at Patratu. At 11:23 Hrs, during charging attempt of 400kV Ranchi-Patratu-1 line from Patratu end, faulty line got tripped on SOTF and at the same time bus bar/LBB protection operated at 400kV Patratu S/s subsequently 400kV Patratu-PVUNL D/C got tripped and 400kV PVUNL became dead.

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

Gen. Loss: 665 MW

Outage Duration: 01:12 Hrs

JUSNL may explain.

Deliberation in the meeting

ERLDC representative explained the event with help of a presentation. The presentation is enclosed at Annexure-B4.1.

- On 20th December 2025, 400 kV New Ranchi -Patratu -2 was under planned shutdown. At 11:06 hrs, a B-phase to earth fault occurred on 400 kV New Ranchi -Patratu -1 line due to snapping of conductor. The auto-recloser was unsuccessful and line got tripped. After tripping of this line, the remaining power flow was diverted through the 400 kV PVUNL–Tenughat line, where the SPS protection was enabled. Consequently, the SPS operated, and the PVUNL–Tenughat line got tripped.*
- Following the tripping of the PVUNL–Tenughat line, approximately 665 MW power from PVUNL was evacuated to Patratu and further evacuated through two numbers of 315 MVA ICTs to the 220 kV circuits (Ratu and Hatia New). This network configuration remained in operation for approximately 20 minutes.*

- After about 20 minutes, charging attempt was made for 400 kV New Ranchi- Patratu-1 circuit. As the fault persisted, the line re-tripped during charging attempt. At the same time, busbar differential protection operated at Patratu end. Consequently 400 kV PVUNL– Patratu double-circuit lines got tripped leading to generation loss at PVUNL.

JUSNL representative informed that site visit was done on 15th Jan 2026 at Patratu S/s. Followings points were observed.

- For Line Bay 416 (PVUNL-1), unbalanced current was observed and the B-phase current was almost zero.
- The CT ratio for PVUNL-1 & PVUNL-2 line bays at field side 3000/1 A, whereas PU relays are connected with a ratio of 2000/1 A
- In Busbar CU-1 & 2, Tie Breakers 408 and 411 are configured; however, other tie breakers are not configured. The busbar protection scheme needs to be rechecked and confirmed with the OEM.
- Busbar Differential Stability needs to be checked.
- At the time of the site visit to Patratu Substation on 15.01.2026, the 400 kV Busbar-2 was under shutdown, 400 k V Pataru-Ranchi-1 was OFF, and all other line bays were charged. A load mismatch was observed in the 220 kV in SAS (PC).
- The Differential Current Supervision setting should be enabled as per CBIP guidelines.

JUSNL representative further informed that M/s Siemens(busbar relay OEM) has visited Patratu substation from 20th January 2026 to 22nd January 2026. During the visit, several observations were made. Some points related to relay configuration have already been rectified. However, a few points could not be rectified due to non-availability of line shutdown clearance. The observations and corrective actions taken by OEM is enclosed in Annexure B4.2. Some of the important observations made by the OEM are:

- Bay 413– CT Star Point Earthing: The CT star point has double earthing. It is recommended to remove the double earthing and maintain single-point earthing only.
- PU Configuration Mismatch (Bays 413, 415, 416 & 418): In the PU configuration for line bays 413, 415, 416, and 418, both 87BB1 and 87BB2 CT ratios are set as 2000/1 A. However, as per field conditions, the CT ratio is 3000/1 A. This mismatch should be corrected either by changing the field-side CT ratio or by updating the relay configuration accordingly.
- Bay 416 – 87BB1 PU Current Deviation: In Bay 416 (87BB1 PU), the B-phase current is observed 0.5%, whereas the R-phase and Y-phase currents are 8% each which indicates a possible CT core saturation issue in the B phase. It is recommended to check and verify the CT core condition.

PCC advised JUSNL representative to take rectification measures as suggested by the OEM and submit a compliance to ERPC/ERLDC.

ITEM NO. B.5: Total Power Failure at 220 kV Garhwa (JUSNL) S/s on 5th Nov 2025 at 02:05 Hrs

On 5th Nov 2025, due to heavy lightning and rain, 33 kV SST got burst and all associated 132 kV lines got tripped. At 02:05 Hrs, all 220kV feeders at Garhwa were hand tripped for safety reason consequently 220kV Garhwa S/s became dead.

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

Load Loss: 30 MW

Outage Duration: 01:40 Hrs

JUSNL may explain.

Deliberation in the meeting

Garhwa Substation is connected to the grid through 220 kV Daltonganj–Garhwa double-circuit lines. JUSNL representative informed that a three-phase fault developed due to a bird strike on the 33 kV bus side. 132/33 kV ICT-1 tripped on overcurrent earth fault protection after 1.36 seconds however due to a reversed polarity issue in 132/33 kV ICT-2, the fault was not detected, and after 7.7 seconds, both 220/132 kV ICTs tripped on overcurrent earth fault protection. Meanwhile, for safety purposes, both 220 kV feeders were manually tripped subsequently 220 kV Garhwa Substation became dead.

He intimated that CT polarity of the 132 kV side of the 132/33 kV Power Transformer-02 was rectified on 11.11.2025.

Further, backup o/c protection settings of the 220/132 kV ICTs and the 132/33 kV Power Transformers were already revised and shared to ERPC/ERLDC.

ITEM NO. B.6: Tripping of 400 kV Bus at Patna Substation on 12/12/2025

At 10:50 Hrs on 12.12.25, all main CBs connected to 400 kV Main Bus-2 at Patna SS got tripped due to Bus Bar protection operation. The fault was caused by the de-capping of polymer insulator in B-Phase of 400kV main bay of ICT-3, as intimated.

Following elements got tripped with 400kV Main bus 2:

1. 400 kV Barh -Patna ckt-3
2. 400 kV Barh -Patna ckt-4
3. 400 kV Patna Bakhtiyarpur ckt-1&2
4. 400/220 kV ICT 3 at Patna

Following issues associated with protection were observed in the event.

1. Unwanted tripping of 400kV-Patna-Barh-4 in Z-3 protection ($I_r=I_c=4$ kA). ERLDC has already communicated this issue via email dated 16th Dec'25 NTPC Barh advising review and resolution to prevent re-occurrence.
2. 400kV-Barh-Bakhtiharpur D/C line got tripped on Z-1 distance protection from Bakhtiyarpur end. ERLDC has communicated this issue via email dated 16th and 20th Dec'25, suggesting verification of relay setting data and carrying out DR Transplay test to analyze the relay response and resolve the issue.
3. DT signal received was recorded at Bakhtiyarpur end, which normally should not have been transmitted as the Tie CB at Patna was in close condition.

NTPC Barh, PG ER-1 and BSPTCL may explain.

Deliberation in the meeting

NTPC Barh representative informed that 400kV-Patna-Barh-4 tripped from Barh end in zone-3 protection during the above disturbance. He added that in earlier PSL logic, ANY TRIP with 2 phase/ 3 phase fault was integrated for tripping of 86 relays which resulted in incorrect tripping of the line. However, they have revised the PSL logic in consultation with their engineering team for all the lines at Barh.

Regarding tripping of 400kV-Barh-Bakhtiharpur D/C line, BSPTCL representative informed that only one circuit tripped from Bakhtiyarpur end in zone 1 protection however another circuit got tripped due to receipt of DT signal at their end. He added that shutdown of line is schedule on 5th Feb 2026 to test relay which has operated in zone-1 protection.

Regarding sending of DT signal sent from Patna , Powergrid representative replied that during the disturbance, main breaker was opened on operation of busbar protection and at the same time the tie breaker was also opened due to group-B protection operation. The group-B protection operated incorrectly and the issue was rinvestigated and rectified on that day. As both main & tie breakers opened, DT was sent to Bakhtiyarpur end.

ITEM NO. B.7: Third Party Protection audit of Sub stations for the Year 2026-27

As per IEGC 2023 Clause 15.2, “All users shall also conduct third party protection audit of each sub-station at 220 kV and above (132 kV and above in NER) once in five years or earlier as advised by the respective RPC.”

Further IEGC 2023 Clause 15.3 states that “After analysis of any event, each RPC shall identify a list of substations / and generating stations where third-party protection audit is required to be carried out and accordingly advise the respective users to complete third party audit within three months.”

ERPC Secretariat conducted protection audit for seven substations in 2025 with assistance from a third-party agency.

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

Accordingly, a list of S/s has been proposed below for third part protection audit in FY 2026-27.

400/220 kV Mendhasal S/s(OPTCL)	220 kV Subhasgram S/s(WBSETCL)
220 kV Indravati HEP(OHPC)	400/220 kV Mejia S/s(DVC)
220 kV Jaynagar S/s(OPTCL)	220 kV CTPS B S/s (DVC)
220 kV Budhipadar S/s(OPTCL)	220 kV Kalyansweri S/s(DVC)
220 kV Rengali S/s(OPTCL)	220 kV Hazipur S/s(BSPTCL)
400/220 kV Arambag S/s(WBSETCL)	220 kV Begusarai S/s(BSPTCL)
400/220 kV Gokarna S/s(WBSETCL)	220 kV Darbhanga S/s(BSPTCL)
400/220 kV Bidhannagar S/s(WBSETCL)	

Members may discuss.

Deliberation in the meeting

SE, ERPC representative informed that ERPC secretariat is planning to carryout protection audit for another 15 substations in Eastern Region in FY 2026-27 for which a list of fifteen number S/s has been prepared as per discussion between ERPC and ERLDC which is attached above.

He intimated that JUSNL is already carrying out third party protection audit for all its 220 kV and above substations hence the list has does not include substations of JUSNL.

ERLDC representative stated that grid disturbance had occurred in the past at Mejia S/s, Indravati S/s, Budhipadar S/s, Rengali S/s etc in last one year. Further Mendhasal S/s and Subhasgram S/s are critical in view of load connected with them. Carrier communication issues have been observed

at Hazipur S/s, Begusarai S/s and Darbhanga S/s in last 6 months. Therefore, all these substations are suggested for carrying out protection audit in 2026-27.

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

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

ITEM NO. B.8: Status of carrier communication for 220 kV Biharsharif–TTPS transmission line

As per discussions held in 150th PCC Meeting, BSPTCL representative informed that the PLCC equipment on the BSPTCL side is ready for 220 kV Biharsharif–TTPS line and commissioning of the PLCC system would be taken up once the PLCC equipment at the TTPS end is ready. In this connection, it is updated by BSPTCL that all associated works related to the commissioning of the PLCC panel at GSS Biharsharif have been completed, including laying of cables, LMU erection, and other allied works. Local testing of the PLCC panel was successfully carried out by the Mobile Team, Patna on 07.11.2025 at GSS Biharsharif. Further, commissioning of PLCC panels at Biharsharif will be done as soon as PLCC erection work is completed at TTPS end.

TVNL may update the present status at their end.

Deliberation in the meeting

In reply to the BSPTCL submission as mentioned in the agenda, TVNL representative informed that as per earlier MoM held in the year 2015 among BSPTCL, TVNL & M/s GE, erection and commissioning of PLCC at TTPS end falls under the scope of BSPTCL.

BSPTCL representative informed that contract was awarded to M/s GE for implementation of PLCC for 220 kV Biharsharif–TTPS transmission line. However, during execution of the work, OEM observed that wave trap commissioning was not possible at TTPS end due to structural issue and therefore the work could not be completed. Subsequently the contract was short closed.

TVNL representative submitted that they have not received any communication from BSPTCL regarding the short closure of the contract by the vendor. In absence of any formal communication they are unable to decide on a future course of action.

PCC observed that the issue was previously discussed in PCC meeting and even after repeated recommendations, both BSPTCL & TVNL have failed to resolve the issue bilaterally.

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

ITEM NO. B.9: Tripping of ICTs during the month of November & December 25

Sl. No	Name of the Element	Trip Date/Time	Reason of tripping	Utility
1	220KV/132KV, 160 MVA ICT 1 AT BARIPADA.	04-11-2025 10:14	ICT tripped due to the operation of group relays.	PG ODISHA

2	400KV/11KV, 80 MVA ICT 1 AT ACPP II	08-11-2025 19:32	Due to LV side REF protection.	JSPL/OPTCL
3	400KV/220KV, 315 MVA ICT 2 AT ARAMBAGH	10-11-2025 03:42	Tripped on differential protection.	WBSETCL
4	400KV/220KV, 315 MVA ICT 2 AT BINAGURI	18-11-2025 14:22	Tripped on differential protection due to LV side B-phase LA failed.	PG ER-II
5	220KV/132KV, 50 MVA ICT 1 AT MALDA	06-12-2025 10:20	Tripped due to LV side O/C E/F relay operation.	PG ER-II
6	400KV/220KV, 500 MVA ICT 1 AT BUXAR TPP	23-12-2025 14:13	Tripped on PRV protection	SJVN/BSPTCL
7	400KV/220KV, 315 MVA ICT 4 AT ARAMBAGH	31-12-2025 08:43	Tripped From HV Side on Pole Discrepancy.	WBSETCL

Concerned utilities may explain.

Deliberation in the meeting

- **Tripping of 220KV/132KV, 160 MVA ICT 1 AT BARIPADA on 4th Nov 2025 at 10:14 Hrs**

PG Odisha representative informed that on 4th Nov 2025 shutdown of main bay of ICT 1 was planned. While transferring the ICT to transfer bay, it was observed that breaker status of transfer bay was not clear. Further due to faulty protection transfer switch, main and transfer bay got tripped resulting in tripping of ICT 1. He informed that protection transfer switch was replaced after the event.

- **Tripping of 400KV/11KV, 80 MVA ICT 1 AT ACPP II on 8th Nov 2025 at 19:32 Hrs**

ACPP II representative was not present in the meeting.

- **Tripping of 400KV/220KV, 315 MVA ICT 2 AT ARAMBAGH on 10th Nov 2025 at 03:42 Hrs and Tripping of 400KV/220KV, 315 MVA ICT 4 AT ARAMBAGH on 31st Dec 2025 at 08:43 Hrs**

WBSETCL representative informed that one of phase to phase(Y-B) LA at Tertiary side got burst which lead to tripping of 315 MVA ICT-2 on differential protection. The faulty LA was replaced after the incident.

Regarding tripping of 400/220 k V 315 MVA ICT 4 AT ARAMBAGH on 31st Dec 2025 at 08:43 Hrs, they informed that ICT 4 tripped due to spurious operation of Pole discrepancy relay. The relay had been replaced after the incident.

- **Tripping of 400KV/220KV, 315 MVA ICT 2 AT BINAGURI on 18th Nov 2025 at 14:22 Hrs**

Powergrid representative informed that ICT-2 tripped on differential protection due to failure of LA on 220 kV side.

- **Tripping of 400KV/220KV, 500 MVA ICT 1 AT BUXAR TPP on 23rd Dec 2025 at 14:13 Hrs**

SJVN representative informed that on investigation no abnormality was found except some moisture ingress in junction box. He added that necessary corrective actions were taken, and no further tripping has been observed.

- **Tripping of 220KV/132KV, 50 MVA ICT 1 AT MALDA on 6th Dec 2025 at 10:20 Hrs**

Powergrid representative informed that there was a fault in downstream network (132 kV side) and fault current was observed from 132 kV side which was sensed by ICT 1 subsequently ICT 1 got tripped in o/c e/f protection due to low value of TMS. He further informed that TMS settings have been revised after the incident in coordination with zone 3 settings of 132 kV feeder.

ITEM NO. B.10: Tripping of Buses during the month of November & December 25

Sl. No	Name of the Element	Trip Date	Trip Time	Reason of tripping	Utility
1	220kV Main Bus-1 at Budhipadar SS	17-12-2025	15:37	All emanating line from main bus #1 tripped on Z-4 protection due to bus fault at Budhipadar (one of the pilot insulators connected to bus-1 failed)	OPTCL
2	400KV MAIN BUS - 1 AT MOTIHARI SS	02-11-2025	21:35	BB Relay Maloperation.	DMTCL

Concerned utilities may explain.

Deliberation in the meeting

- **Tripping of 220kV Main Bus-1 at Budhipadar SS on 17th Dec 2025 at 15:37 Hrs**

OPTCL representative informed that pilot insulator of bus 1 got failed while shifting a feeder to transfer bus which resulted in bus fault in main bus 1. Due to SAS upgradation work, bus bar protection is kept off at Budhipadar S/s hence all lines got tripped in zone 4 protection from local end. Further, bus coupler also got tripped in high set protection which resulted in avoiding tripping of bus 2.

- **Tripping of 400KV Main Bus- 1 AT Motihari SS on 2nd Nov 2025 at 21:35 Hrs**

DMTCL representative informed that on investigation of the event, cable of gas density monitor was found punctured which might have caused tripping of bus 1. The cable had been replaced after the incident.

ITEM NO. B.11: Repeated tripping of transmission lines during the month of November & December 25

SI.No.	Name of the Element	No. of times Tripped	Reason of tripping	Utility
1	132KV-BANKA (PG)-SULTANGANJ-1	9	Tripped in R-Earth fault in 3 instances and Y-Earth in 6 instances. Fault distance was around 25-30 kM from Sultanganj end.	BSPTCL
2	132KV-SULTANGANJ-DEOGHAR-1	9	Tripped in R-Earth fault in 3 instances and B-Earth in 3 instances.	BSPTCL & JUSNL

Concerned utilities may explain.

Deliberation in the meeting

- **Repeated tripping of 132KV-BANKA (PG)-SULTANGANJ-1**

BSPTCL representative informed that on patrolling of the above line, vegetation issue and punctured insulators had been found at certain locations.

He further informed that cutting of trees and replacement of punctured insulators have been completed at some of the identified locations and for remaining locations, the will be completed soon. Report will be shared to ERPC/ERLDC

On enquiry from PCC, ERLDC representative informed that no tripping of line is observed in Jan 2026.

PCC observed that the line is prone to vegetation issues and repeated tripping have been observed in the past too. PCC advised BSPTCL representative to plan for preventive maintenance of this line instead of corrective maintenance after multiple tripping of the lines.

- **Repeated tripping of 132KV-SULTANGANJ-DEOGHAR-1**

BSPTCL representative informed that on patrolling of the above line, vegetation issue and punctured insulators had been found at certain locations and the corrective actions are being taken up at their end.

ITEM NO. B.12: Single Line Tripping Incidences in month of November 2025 and December 2025

Single line tripping incidents in the month of November 2025 and December 2025 which needs explanation from constituents of either end is attached.

Members may discuss.

Deliberation in the meeting

Explanation from constituents of either end for single line tripping incidences in month of Nov and Dec 2025 is attached at **Annexure B.12.**

PART- C: OTHER ITEMS

ITEM NO. C.1: Collection Protection Settings data from the newly commissioned Substations

As part of the support service of Protection Database Project, M/s PRDC will collect relay settings data of the newly commissioned substations and update the data in the ER Protection Database.

The data collection for the following substations have been planned by M/S PRDC in Jan-26.

1. 400 kV Aditya Aluminum
2. 400 kV JSPL-ACPP-II
3. 220 kV Turumunga (OPTCL)

The utilities concerned are requested to facilitate the visit of the PRDC Personnel for collection of the protection settings data.

Members may note.

Deliberation in the meeting

PCC advised SLDC Odisha to facilitate visit of the PRDC Personnel for collection of the protection settings data.

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

As per IEGC 2023 Clause 15(6), 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.

Protection Performance Indices for Nov 2025 and Dec 2025 is attached.

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

Sl.no	Utility Name	August 2025	September 2025	October 2025	November 2025	December 2025
1	PG-ER-1	Yes (08.09.2025)	Yes (22.10.2025)	Yes (26.11.2025)	Yes (10.12.2025)	
2	PG-ER-2	Yes	Yes (17.10.2025)	Yes (21.11.2025)	Yes (31.12.2025)	Yes (12.01.2026)

3	PG-Odisha	Yes (03.09.2025)	Yes (06.10.2025)			Yes (05.01.2026)
4	WBSETCL/ WBPDC	Yes (04.09.2025)	Yes (08.10.2025)	Yes (07.11.2025)	Yes (04.12.2025)	Yes (05.01.2026)
5	BSPTCL/ BGCL		Yes (21.10.2025)	Yes (24.11.2025)	Yes (19.12.2025)	
6	OPTCL/ OHPC	Yes	Yes (27.10.2025)	Yes (24.11.2025)	Yes (18.12.2025)	
7	DVC		Yes (20.11.2025)	Yes (20.11.2025)		
8	JUSNL	Yes (06.09.2025)	Yes (17.10.2025)	Yes (17.12.2025)	Yes (17.12.2025)	
9	Sikkim					
10	OPGC					
11	PMTL					
12	NTPC- KHSTPP	Yes	Yes (10.10.2025)		Yes (30.12.2025)	
13	NTPC- FSTPP		Yes (10.10.2025)			
14	NTPC- BARH	Yes (04.09.2025)	Yes (06.10.2025)	Yes (01.11.2025)	Yes (01.12.2025)	Yes (05.01.2026)
15	NTPC- TSTPP					
16	NTPC- KBUNL		Yes (10.10.2025)			
17	NPGC					
18	BRBCL					
19	NTPC- DARILAPLI	Yes (01.09.2025)	Yes (01.10.2025)	Yes (03.11.2025)	Yes (01.12.2025)	Yes (01.01.2026)
20	NTPC- NORTH KARNPUA RA					
21	ATL					
22	APNRL	Yes (07.09.2025)	Yes (17.10.2025)		Yes (09.12.2025)	
23	CBPTCL					

24	DMTCL	Yes (04.09.2025)	Yes (04.10.2025)	Yes (04.11.2025)	Yes (03.12.2025)	Yes (02.01.2026)
25	ENICL	Yes (09.09.2025)	Yes (05.10.2025)	Yes (06.11.2025)	Yes (06.12.2025)	
26	Chuzachen HEP					
27	Jorethang HEP	Yes (01.09.2025)	Yes (01.10.2025)	Yes (01.11.2025)	Yes (01.12.2025)	Yes (01.01.2026)
28	Tashiding Hep	Yes (01.09.2025)	Yes (01.10.2025)	Yes (01.11.2025)	Yes (01.12.2025)	Yes (02.01.2026)
29	GMR					
30	IBEUL					
31	JITPL					
32	MPL					
33	NKTL					
34	OGPTL	Yes (09.09.2025)	Yes (05.10.2025)	Yes (06.11.2025)	Yes (06.12.2025)	
35	PMJTL					
36	Powerlink					
37	PKTCL	Yes (09.09.2025)	Yes (05.10.2025)	Yes (06.11.2025)	Yes (06.12.2025)	
38	CESC					
39	Rongnichu HEP					
40	TVNL	Yes (04.09.2025)	Yes (03.10.2025)	Yes (01.11.2025)		

Members may discuss.

Deliberation in the meeting

*Protection performance indices for Nov 2025 and Dec 2025 received from utilities is attached at **Annexure C.2.***

PCC advised concerned utilities to share indices data of particular month by 10th day of subsequent month to ERPC/ERLDC.

ITEM NO. C.3: Follow-up of Decisions of the Previous Protection Sub-Committee Meeting(s)

The decisions of previous PCC meetings are attached.

Members may update.

Deliberation in the meeting

*Updated status of decisions of previous PCC meetings is attached at **Annexure C.3.***

List of participants in 154th PCC Meeting held on 20th Jan 2026

Annexure A.1

Name	First Join	Email				
ERPC Kolkata	1/20/26, 10:11:17 AM	ERPC@KolkataMST.onmicrosoft.com				
Debabrata Biswas (External)	1/20/26, 10:18:55 AM	dbiswas@erldc.onmicrosoft.com				
AKHAND DVC (Unverified)	1/20/26, 10:19:41 AM					
NIRMAL MONDAL (WBSETCL) (Unverified)	1/20/26, 10:20:24 AM					
Pandi Krishnan N {पाण्डी कृष्णन एन.} (External)	1/20/26, 10:21:59 AM	pandikrishnan.n@powergrid.in				
Bimal (Unverified)	1/20/26, 10:22:30 AM					
Surya Pratap rath, AGM OPTCL (Unverified)	1/20/26, 10:22:57 AM					
Satyadeep Rai	1/20/26, 10:24:10 AM					
AVINASH SHUKLA (External)	1/20/26, 10:24:20 AM	AVINASHSHUKLA@NTPC.CO.IN				
PARAG CHATTERJEE (External)	1/20/26, 10:27:01 AM	PARAGCHATTERJEE@NTPC.CO.IN				
Shoeb Ahmad	1/20/26, 10:27:01 AM	shoeb.ahmad@tatasteel.com				
THEP CONTROL ROOM (Unverified)	1/20/26, 10:27:58 AM					
Ashish Kumar (External)	1/20/26, 10:28:02 AM	ashish.k@budhilhydro.com				
Gitesh Patel (External)	1/20/26, 10:28:56 AM	giteshpatel@erldc.onmicrosoft.com				
OPTCL MRDL (Unverified)	1/20/26, 10:30:21 AM					
EEE CRITL BSPTCL (Unverified)	1/20/26, 10:30:42 AM					
AKHAND (Unverified)	1/20/26, 10:30:59 AM					
DGM , J.Road , OPTCL (Unverified)	1/20/26, 10:31:01 AM					
Manas Das (External)	1/20/26, 10:31:26 AM	manasdas@erldc.onmicrosoft.com				
Kuntal Mukhopadhyay	1/20/26, 10:31:28 AM	k.mukhopadhyay@tatasteel.com				
EEE CRITL (Unverified)	1/20/26, 10:31:31 AM					
Anand Kr. Prajapati (External)	1/20/26, 10:31:38 AM	AKPRAJAPATI@NTPC.CO.IN				
Nishant Kumar Shankwar	1/20/26, 10:32:16 AM	Nishant.Kumar@energy-sel.com				
Mithun Gayen {मिथुन गायेन} (External)	1/20/26, 10:33:09 AM	mithun.gayen@powergrid.in				
Deepak Thakur (Unverified)	1/20/26, 10:33:15 AM					
Souradip Banerjee	1/20/26, 10:33:25 AM	souradip.banerjee@tatasteel.com				
Minhaj (Unverified)	1/20/26, 10:33:43 AM					
Dilshad Alam BSPTCL (Unverified)	1/20/26, 10:33:44 AM					
ESE Critl Bsptcl (Unverified)	1/20/26, 10:34:15 AM					
DGM,E&MR DIVISION, BURLA (Unverified)	1/20/26, 10:34:29 AM					
CE, CRITL (Unverified)	1/20/26, 10:34:33 AM					
EEE Critl (Unverified)	1/20/26, 10:35:10 AM					
bsptcl 123	1/20/26, 10:35:15 AM					

PRABHAT KUMAR -AVP-SPTL (Unverified)	1/20/26, 10:35:24 AM				
CRITL BSPTCL	1/20/26, 10:35:30 AM				
Bilash Achari (External)	1/20/26, 10:35:45 AM	bilash.achari@erldc.onmicrosoft.com			
Brij Mohan BSPTCL (Unverified)	1/20/26, 10:36:27 AM				
Rajiv (Unverified)	1/20/26, 10:37:59 AM				
Vallamsetty Anil Krishna {वेलमसेठी अनिल कृष्णा} (External)	1/20/26, 10:38:02 AM	anil.krishna.250@powergrid.in			
Amresh Prusti (External)	1/20/26, 10:38:05 AM	amresh.prusti@opgc.co.in			
SJVN Prabhakar (Unverified)	1/20/26, 10:38:27 AM				
Ranjan Kumar Biswal {रंजन कुमार बिस्वाल} (External)	1/20/26, 10:38:27 AM	ranjankumar@powergrid.in			
Puja Ranjan (Unverified)	1/20/26, 10:38:56 AM				
jayabikash behera	1/20/26, 10:39:08 AM				
OPTCL Meramundali (Unverified)	1/20/26, 10:39:50 AM				
Deepak Kumar EEE, CRITL, BSPTCL	1/20/26, 10:41:26 AM				
PRASANTA kumar PRUSTY	1/20/26, 10:42:02 AM				
Subhrakanta Dhal	1/20/26, 10:42:44 AM	subhrakanta.dhal@tatasteel.com			
Alok Pratap Singh (External)	1/20/26, 10:43:46 AM	apsingh@erldc.onmicrosoft.com			
kanak kumari (Unverified)	1/20/26, 10:48:04 AM				
Somnath Chatterjee (External)	1/20/26, 10:49:14 AM	schatterjee@tatapower.com			
Sudeep Kumar {सुदीप कुमार} (External)	1/20/26, 10:49:15 AM	sudeepkumar@powergrid.in			
S MD RASOOL (External)	1/20/26, 10:49:48 AM	SMDRASOOL@NTPC.CO.IN			
Samish (External)	1/20/26, 10:51:56 AM	samish@tvnl.in			
Sarfraj Akhtar	1/20/26, 10:54:28 AM				
Dharm Das Murmu (Unverified)	1/20/26, 10:56:17 AM				
Ese critl (Unverified)	1/20/26, 11:11:15 AM				
TVNL (Unverified)	1/20/26, 11:21:26 AM				
R.B.Mohanty (Unverified)	1/20/26, 11:22:36 AM				
supriya kumari (Unverified)	1/20/26, 11:27:53 AM				
P K PRUSTY (Unverified)	1/20/26, 11:39:19 AM				
Rajiv CESC (Unverified)	1/20/26, 11:41:13 AM				
S.Majhi (Unverified)	1/20/26, 11:47:14 AM				
jitesh kumar	1/20/26, 11:49:55 AM				
d d murmu (Unverified)	1/20/26, 11:50:34 AM				
Junior Manager CRITL	1/20/26, 11:50:48 AM				
sibesh kumar	1/20/26, 11:53:07 AM				

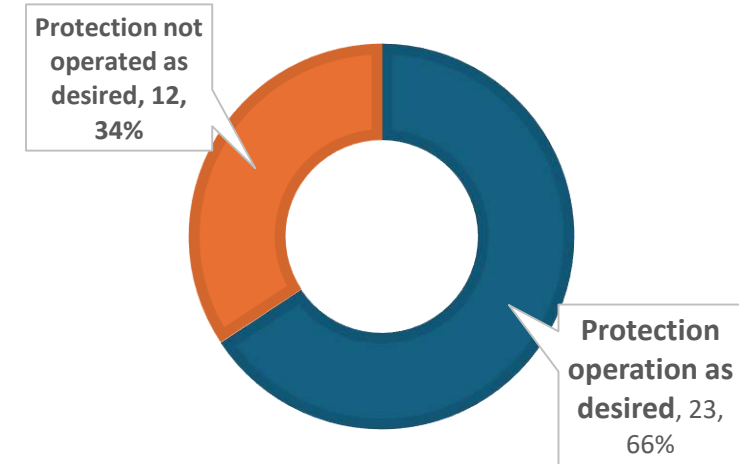
Ese Critl bsptcl (Unverified)	1/20/26, 12:02:19 PM					
Kothamasu (External)	1/20/26, 12:02:32 PM	SURESHKUMARK@NTPC.CO.IN				
EEE,CRITL,BSPTCL (Unverified)	1/20/26, 12:50:34 PM					
ese critl (Unverified)	1/20/26, 12:55:10 PM					
Eee Critl (Unverified)	1/20/26, 1:07:48 PM					
Biswaranjan Mohanty (Unverified)	1/20/26, 3:46:04 PM					

154th PCC Meeting (20-01-2026)

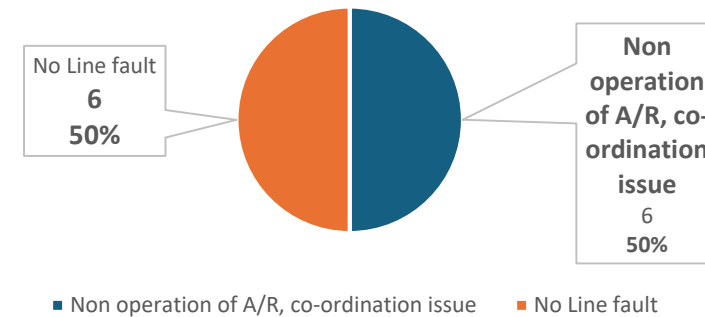
Protection Performance For The Month Of December 2025

- Total 35-line tripping:
 - Protection operation as per scheme: **23(66%)**
 - Protection operation not as desired: **12 (34%)**
- Number of Grid Event: **3**
 - Maximum load loss: **94 MW**(During disturbance at TISCO on 05/12/2025)
 - Maximum generation loss: **665 MW**(During disturbance at PVUNL on 20/12/2025).

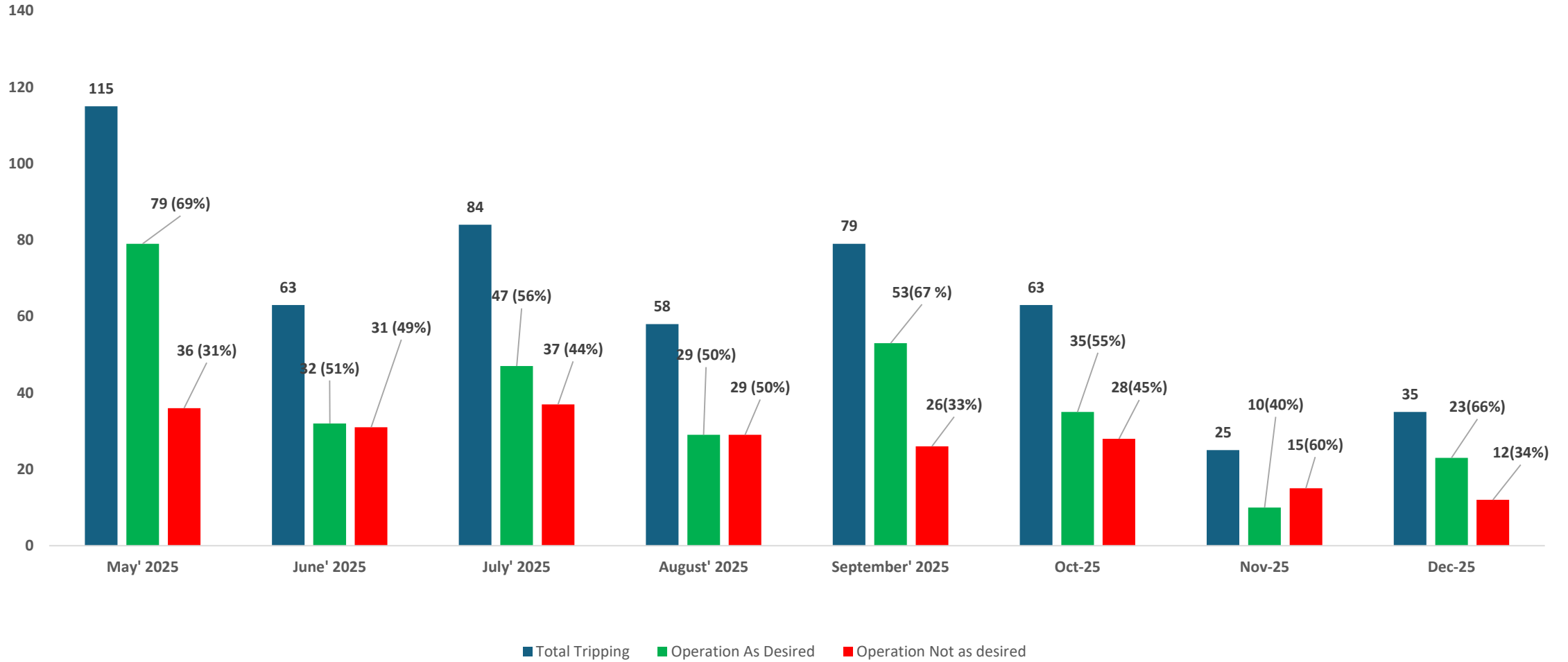
PROTECTION PERFORMANCE



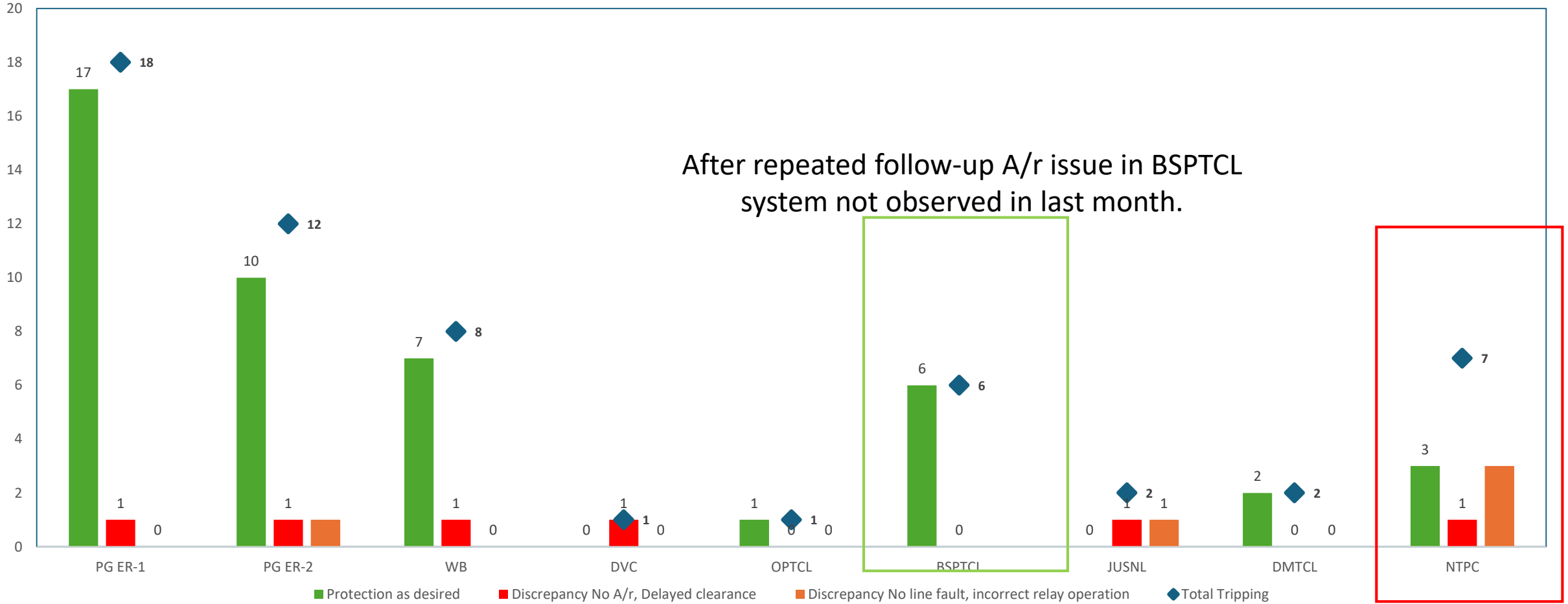
Protection not operated as desired



Protection Performance (May'2025-December '2025)



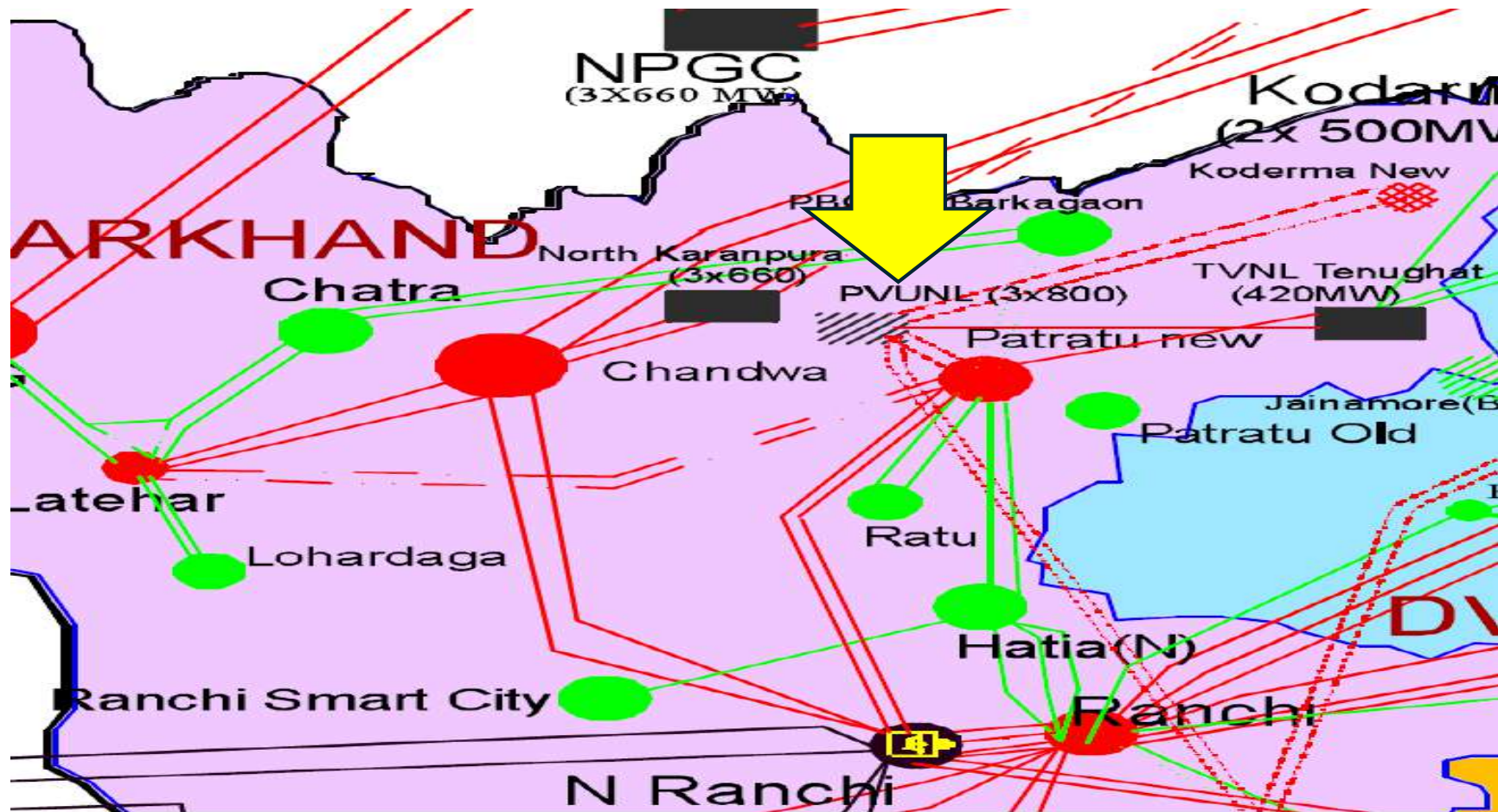
Utility wise performance for the month of December'25



Disturbance at PVUNL

Event Date: 20/12/2025

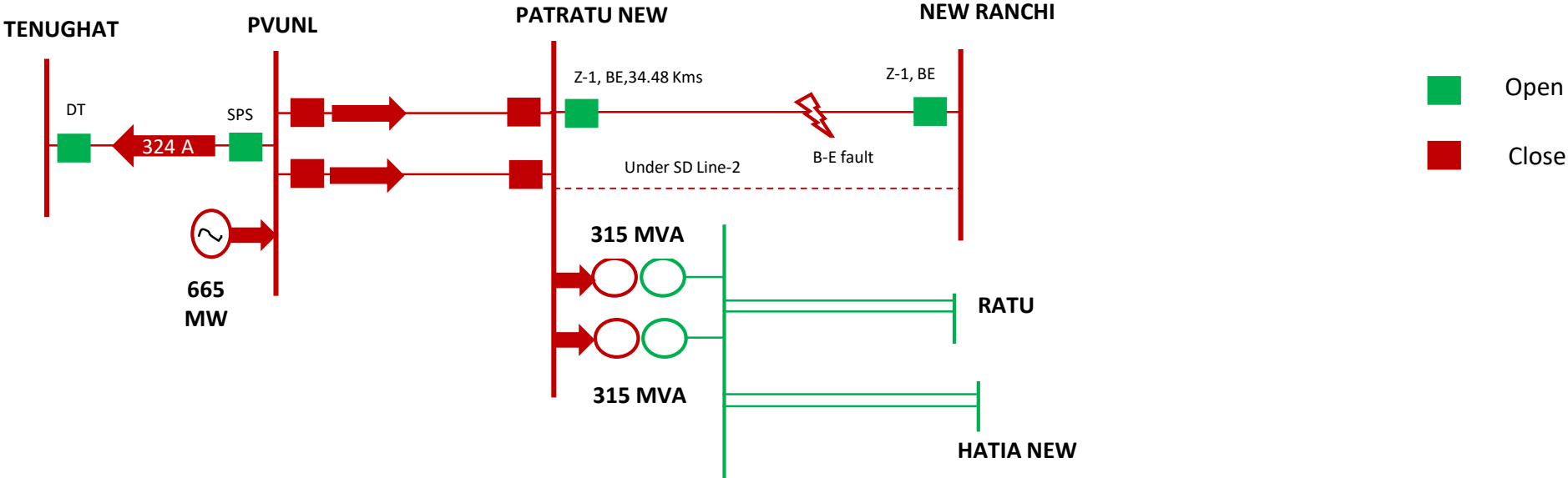
Affected Area & System Overview



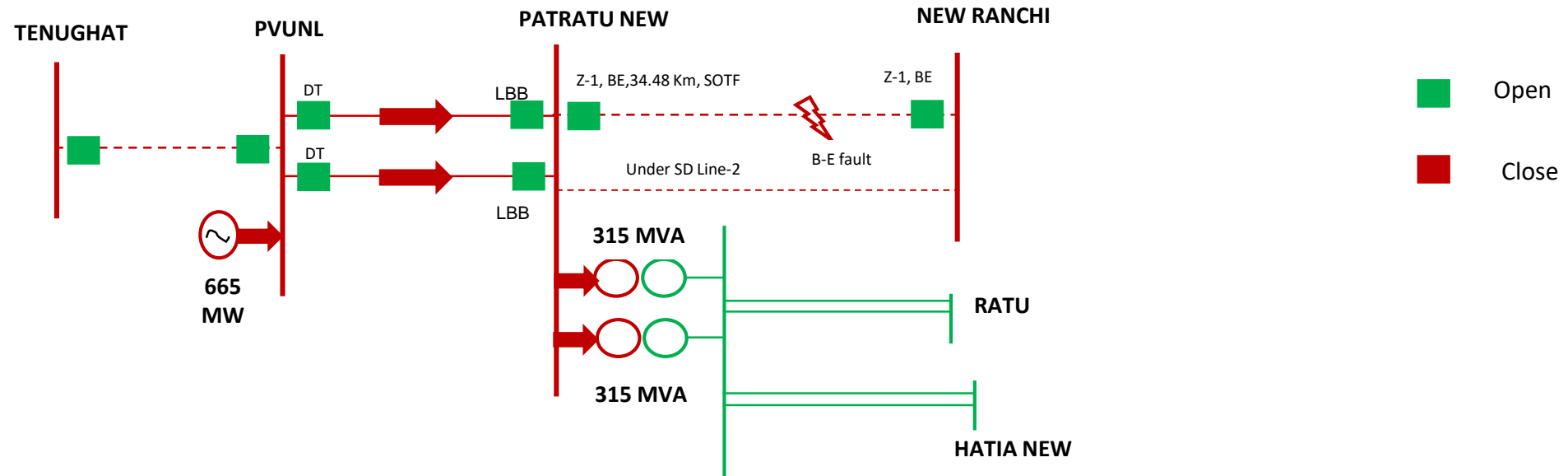
Sequence of Events

- At **11:06 Hrs** on 20/12/25, B-E fault occurred on 400 kV Patratu- New Ranchi-1 Line with I_b : 4.99 kA, V_{be} :106 kV. The fault was due to snapping of conductor in between Loc no 27-28 as intimated. A/R was attempted through Tie CB, but it was unsuccessful due to persistent fault after 1 sec.
- After tripping of 400 kV Patratu- New Ranchi-1 Line, 400 kV PVUNL-Tenughat Line tripped on SPS operation as per scheme (**324 A**). Subsequently, PVUNL generation was evacuated through 400 kV PVUNL-Patratu D/C and 400/220 kV ICTs at Patratu.
- At **11:23:28 Hrs**, during charging attempt, the 400 kV Patratu-New Ranchi-1 tripped again due to permanent fault on Z-1 operation. Within 17 msec from Z-1 operation, **LBB/BB operated**. Simultaneously, 400 kV PVUNL-Patratu D/C tripped on LBB at Patratu and DT receipt at PVUNL.
- This results loss of evacuation path and blackout of PVUNL bus, leading to a generation loss of **665 MW**, which is the matter of serious concern.

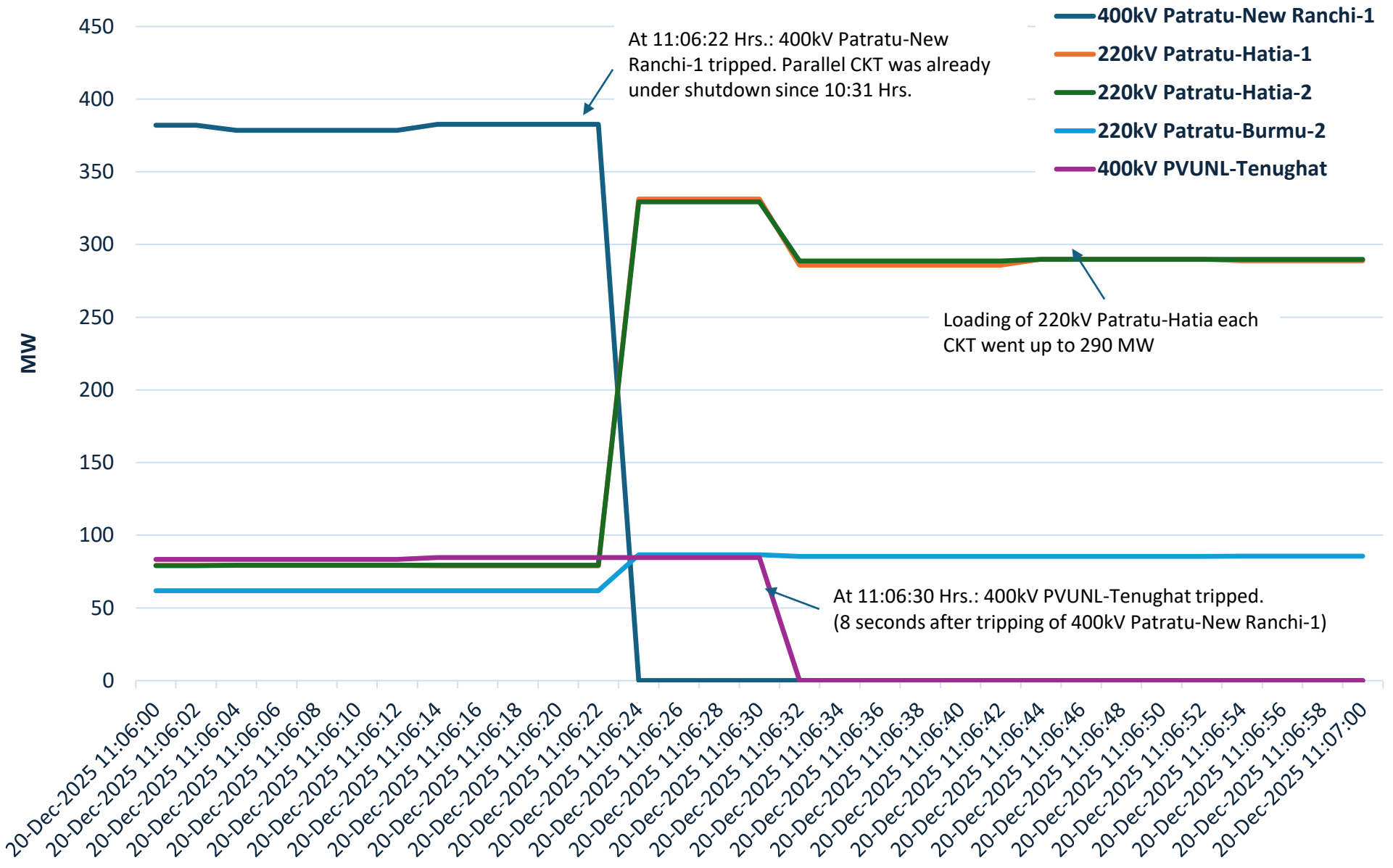
Events at 11:06 Hrs on 20/12/2025 at 400 kV Patratu New-New Ranchi-1 Line



Events at 11:23 Hrs on 20/12/2025 at 400 kV Patratu New-New Ranchi-1 Line



PVUNL Tripping Incident 20.12.2025

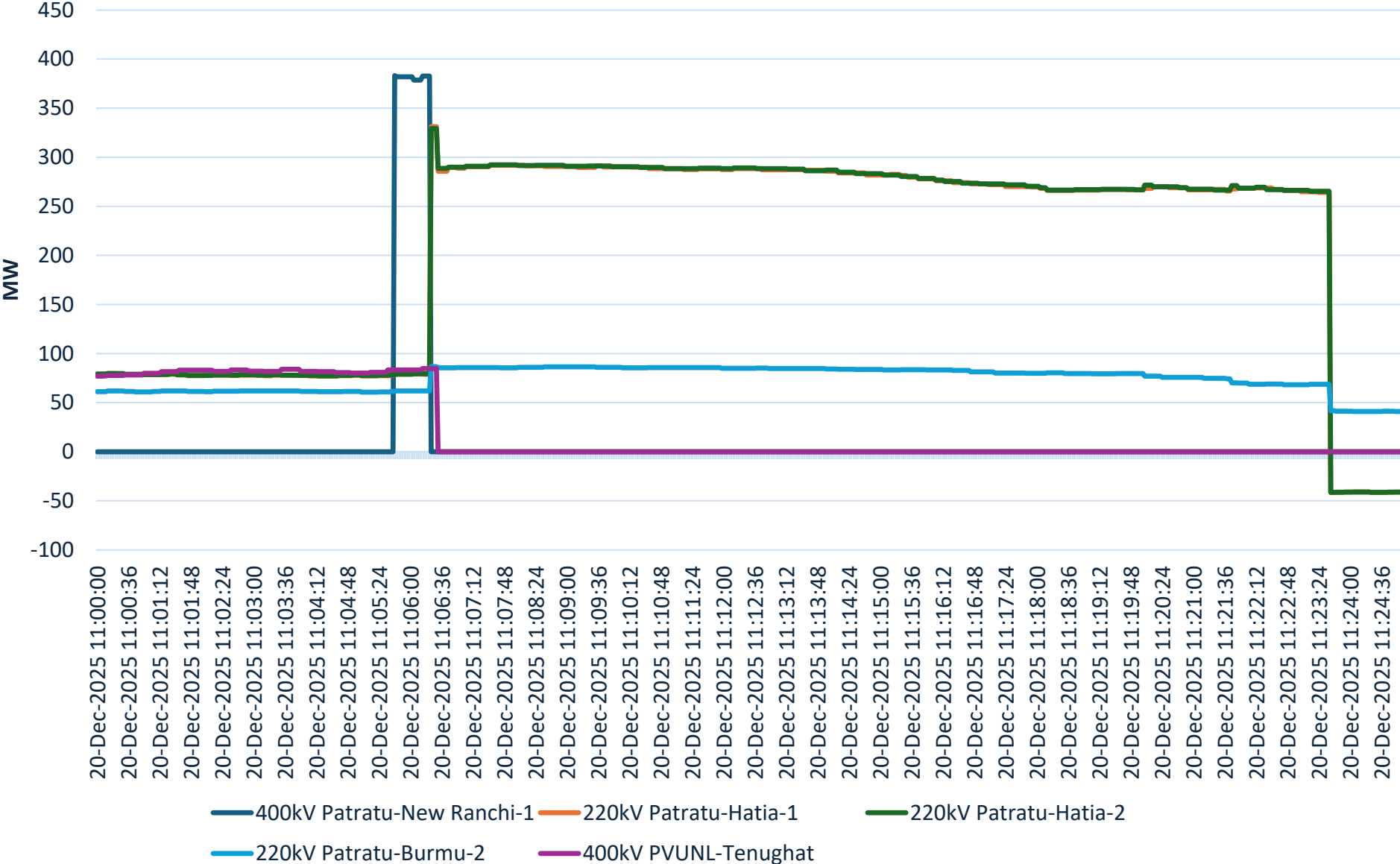


At 11:06:22 Hrs.: 400kV Patratu-New Ranchi-1 tripped. Parallel CKT was already under shutdown since 10:31 Hrs.

Loading of 220kV Patratu-Hatia each CKT went up to 290 MW

At 11:06:30 Hrs.: 400kV PVUNL-Tenughat tripped. (8 seconds after tripping of 400kV Patratu-New Ranchi-1)

Prior to the disturbance at PVUNL



OBSERVATION

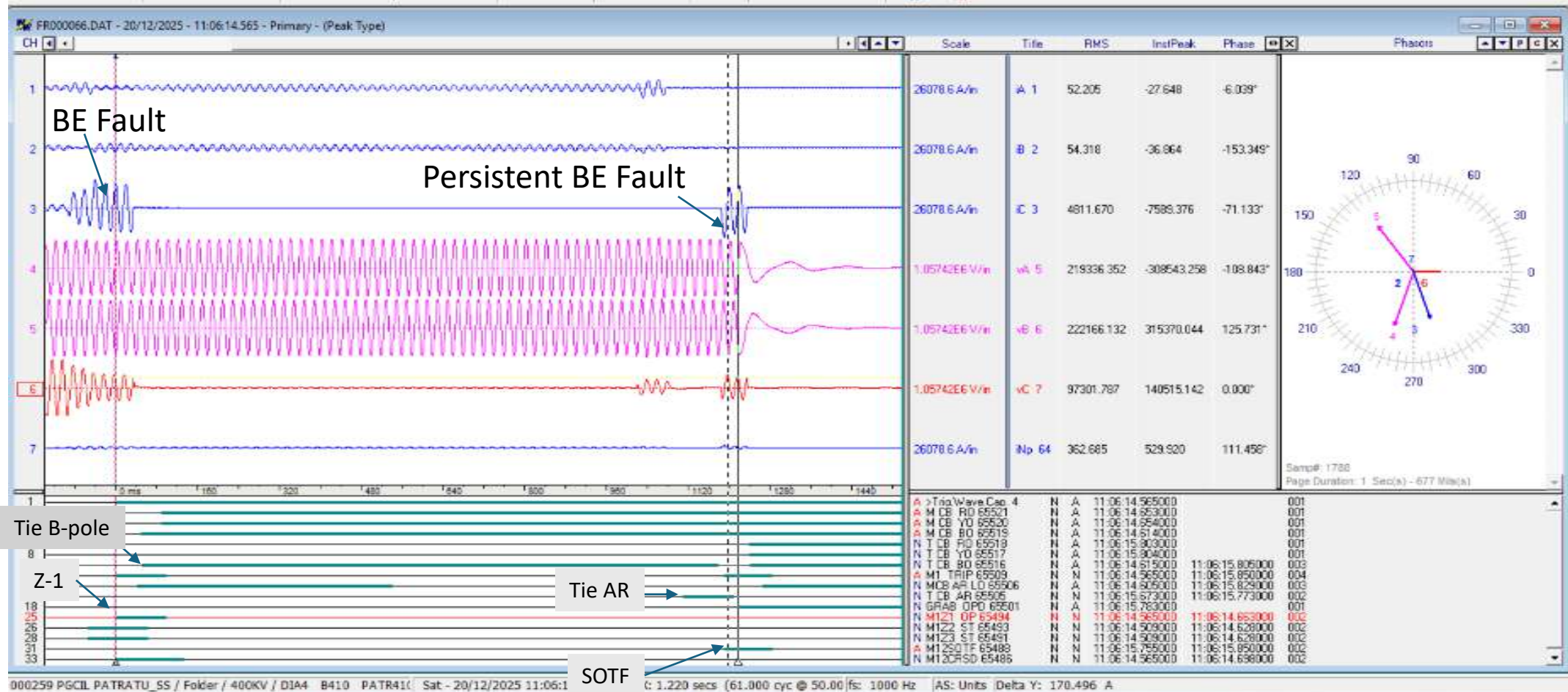
Protection Issues-

1. BB-1 and LBB operation inferred to be un-intended protection operation, which was initiated from 400 kV Patratu – PVUNL - 02 bay. It seems that there was some setting/wiring issue for LBB/ BB protection in PVUNL bay-2.
2. Complete verification of the entire BB protection wiring is required and issue to be resolved at earliest to prevent re-occurrence. After implementing the necessary corrections, busbar stability test shall be conducted to confirm healthy operation.

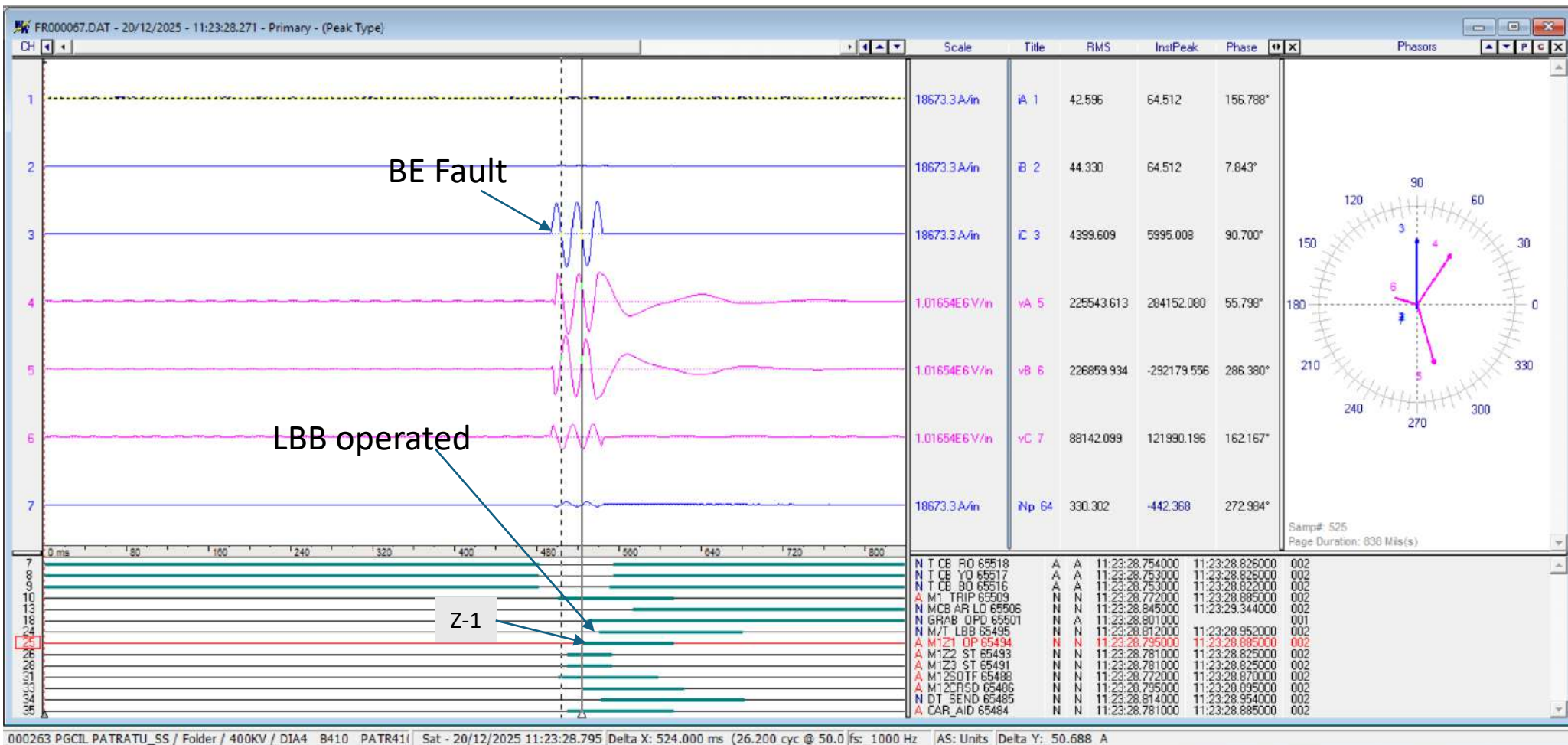
Operational Issues-

1. Since A/R was unsuccessful due to persistent fault on 400 kV Patratu- New Ranchi-1 Line, charging attempt should be under taken by SLDC only after thorough patrolling and confirmation of fault clearance by Line maintenance crew.
2. While permitting shutdown of the 400 kV Patratu–New Ranchi-1 line, PVUNL generation should be restricted to avoid SPS operation of 400kV Tenughat-PVUNL line and N-1 compliance in 220kV network.
3. Lack of proper maintenance of the line, resulting snapping of conductor with power flow 400 MW only. Last thermo-vision scanning report, maintenance of line/tightening of all joints need to be reviewed as per CEA regulation.

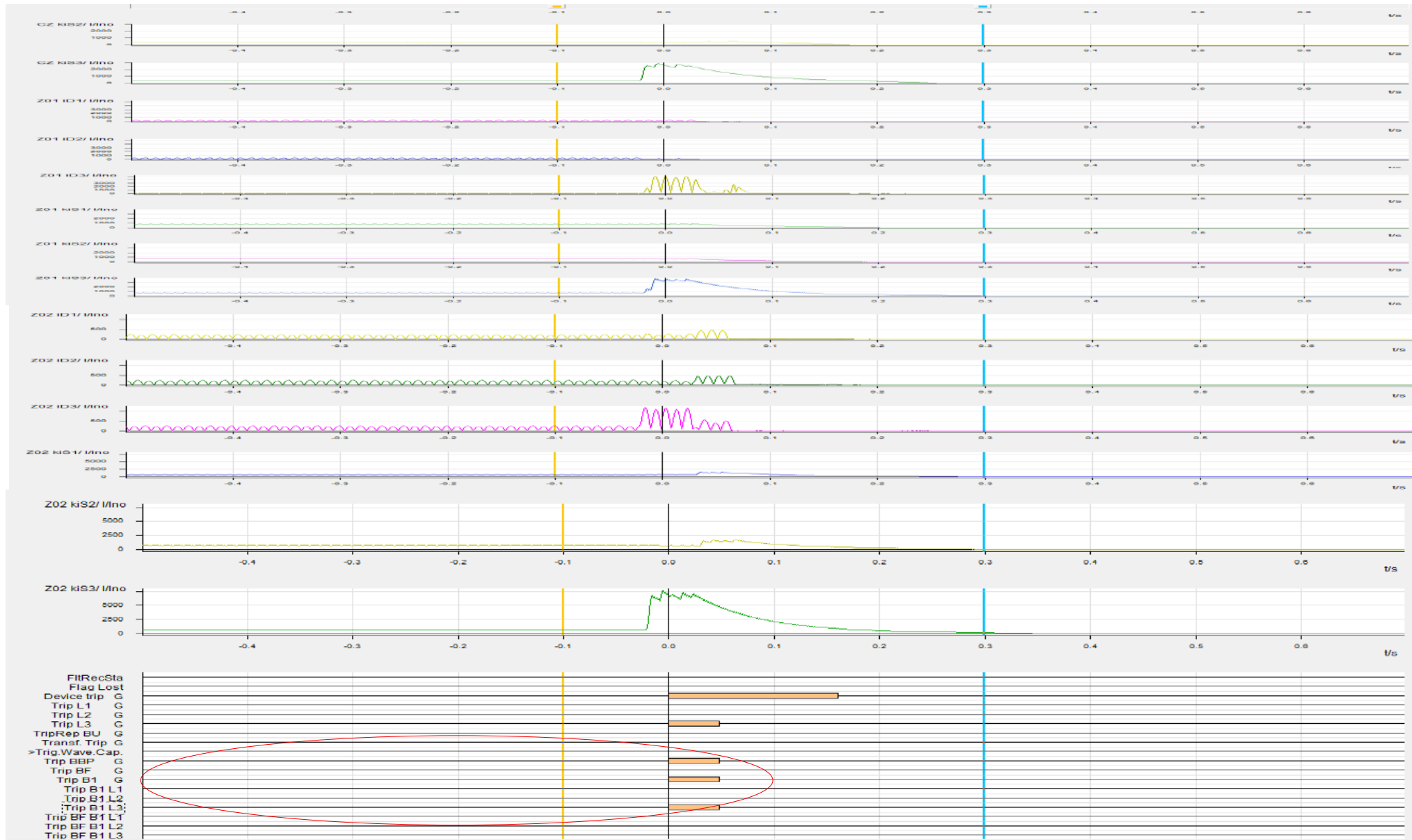
DR from Patratu for New Ranchi-1 at 11:06 Hrs



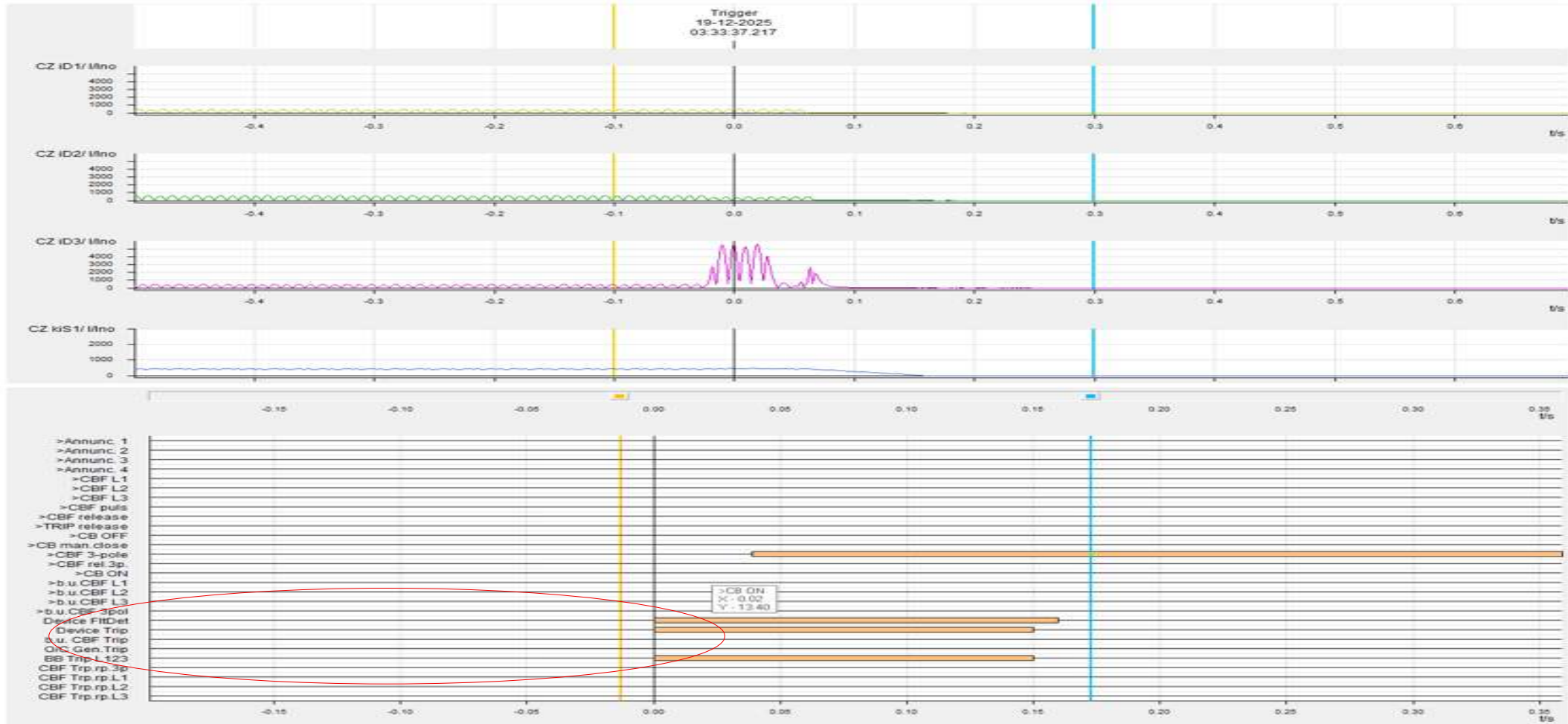
DR from Patratu for New Ranchi-1 at 11:23 Hrs



Bus Bar CU2



BB bay unit-2 of 400 kV PVUNL-2





Jharkhand Urja Sancharan Nigam Limited

Office of the General Manager (CRITL/ O.E)

Transmission Division Shed, Kusai Colony, Doranda, Ranchi – 834002

Office Order No: 19 /
GM/CRITL/O.E/RANCHI/105/2025-26

Dated: 13.01.2026

A committee of following members is hereby constituted on the recommendation of ERLDC/ERPC to visit and review BB/ LBB protection scheme at 400/220 KV Patratu (Katiya) GSS on dated 15.01.2026.

- | | |
|------------------------------|--------------------------|
| 1. Sri Pravin Ram, | DGM, TC/ Hazaribagh |
| 2. Sri Vikash Kumar | Sr. Manager, Katiya, GSS |
| 3. Sri Chandra Shekhar Kumar | Sr. Manager, CRITL |
| 4. Sri Dharm Das Murmu | Jr. Manager, CRITL |
| 5. Sri Akhay Singh, | DGM (EM), PVUNL |

This has got approval of Managing Director.

Sd/-
General Manager,
CRITL & O.E, JUSNL

Memo No

Date.....


Copy forwarded to Sri Dharm Das Murmu, Jr. Manager CRITL/ Sri Chandra Shekhar Kumar Sr. Manager, CRITL for information and necessary action.

Sd/-
General Manager,
CRITL & O.E, JUSNL

Memo No 13

Date.....13.01.2026

Copy forwarded to Sri Vikash Kumar Sr. Manager, (Katiya, GSS)/ Sri Pravin Ram DGM/TC, Hazaribagh, for information and necessary action.


15/01/26
General Manager,
CRITL & O.E, JUSNL

400kV Bus Tripping at Patna Substation on 12/12/2025:

At 10:50 Hrs on 12.12.25, all main CBs connected to 400 kV Main Bus-2 at Patna SS tripped due to Bus Bar protection operation. The fault was caused by the de-capping of polymer insulator in B-Phase of 400kV main bay of ICT-3 , as intimated.

Following elements tripped with 400kV Main bus 2:

1. 400 kV Barh -Patna ckt-3
2. 400 kV Barh -Patna ckt-4
3. 400 kV Patna Bakhtiyarpur ckt-1&2
4. 400/220 kV ICT 3 at Patna

PATNA_PG

↓ 75

Open Triad

SE LAYER

Go To 220 kV

SLD OVERLAY

NAUBATPUR-2

BALIA-3 (Erdwile Naubatpur -1)

BALIA-2

BALIA-1

JAKKANPUR-1

JAKKANPUR-2

SAHARSHA-2

63 MVAR LINE REACTOR

SAHARSHA-1

63 MVAR LINE REACTOR

ΣP -10
 ΣQ

400kV MAIN BUS-1

400kV MAIN BUS-1

Voltage (kV)	Freq (Hz)
R-Y 398	50.002
Y-B 398	
B-R 398	

Balia line 3 was under shutdown

All main bay of bus #2 got tripped on bus bar protection

B-Phase Insulator of ICT-3 broken on R phase of main bus 2 which Created R-B phase bus fault

ICT-3 Tripped on B-Phase differential protection

Bakhtiharpur line 1 & 2 tripped from remote end in distance protection

Barh line 4 got tripped from Barh end in Z-3 protection.

Barh line 3 got tripped due to tripping of main bay on bus bar protection operation.

400kV MAIN BUS-2

400kV MAIN BUS-2

Voltage (kV)	Freq (Hz)
R-Y 398	50.016
Y-B 398	
B-R 398	

BARH-4

BARH-3

BAKHTIYARPUR-1

BAKHTIYARPUR-2

ICT-1 400/220kV 500 MVA

ICT-2 400/220kV 500 MVA

ICT-3 400/220kV 500 MVA

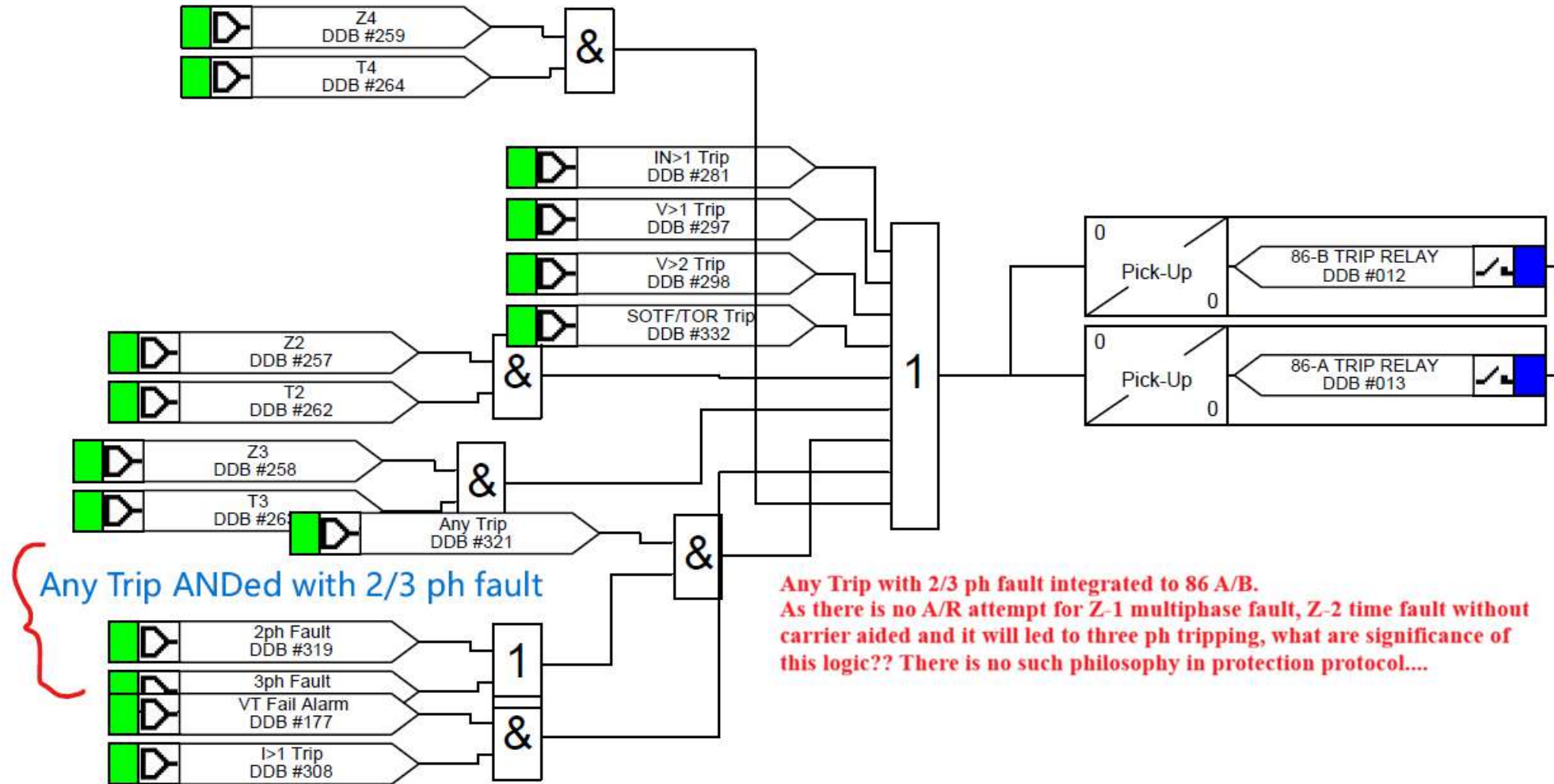
151

155

0

Protection Observations:

1. Tripping of 400kV-Patna-Barh -4 in Z-3 protection ($I_r=I_c=4$ kA) was un-wanted. As per existing PSL logic, any trip signal for two phase and three phase is integrated with 86 A/B. This protection philosophy is not in line with ERPC protection protocol. ERLDC has already communicated this issue via email dated 16th Dec'25, advising review and resolution to prevent re-occurrence. Latest update may be explained by NTPC Barh.
2. 400kV-Barh-Bakhtiharpur D/C line tripped on Z-1 distance protection, which was UNWANTED. ERLDC has already communicated this issue via email dated 16th AND 20th Dec'25, suggesting verification of relay setting data and carrying out DR Transplay test to analyse the relay response and resolve the issue. BSPTCL team may provide update.
3. DT signal received was recorded at Baktiyarpur end, which normally should not have been transmitted. as the Tie CB at Patna was in close condition. PG ER-1 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, टॉलिंगुंज, कोलकाता - 700033
 Office : 14, Golf Club Road, Tollygunge, Kolkata - 700033
 CIN : U40105DL2009GOI188682, Website : www.erfdc.in, E-mail : erfdinfo@grid-india.in, Tel.: 033 23890060/0061

Detailed Report of grid event at 220/132 kV Rengali 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): 29-12-2025

1. Event Summary (घटना का सारांश):

At 19:06 Hrs on 12.12.2025, Y phase Bus-1 post insulator of 220 kV Bus coupler bay at Rengali S/s snapped and created Y-Earth bus fault. The fault was sensed in zone-4 protection by 220kV Rengali PH #2 line, Z-2 protection from Tarkera end and OC protection by Rengali PG#2 line, leading to tripping of line. Consequently, the 220kV Rengali S/s became dead. Simultaneously, Rengali HEP unit -1 & 2 also tripped due to GT REF protection operation. As a result, a total load loss of 49 MW at Rengali S/s and 100 MW generation loss at Rengali HEP occurred.

2. Time and Date of the Event (घटना का समय और दिनांक): 19:06 hrs of 12.12.2025.

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	32286	22775	2435	5965
Post Event (घटना के बाद)	50.02	32186	22726	2335	5916

***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)	220 kV Rengali-Rengali (PG)-1, 220 kV Rengali-Rengali (PH)-1 was in idle charged condition from Rengali (OPTCL) end. 220kV Main Bus #2 was under out of service condition.
--	---

Weather Condition (मौसम स्थिति)

Normal.

6. **Load and Generation loss (लोड और जेनरेशन हानि):** Approximate load loss of 49 MW at Rengali and 100 MW Generation loss at Rengali PH.

7. **Duration of interruption (रुकावट की अवधि):** 04:58 Hrs.

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

9. **Details of Equipment Failure (if any during the event) (उपकरण विफलता का विवरण):** Y-Ph Bus-1 Post Insulator of Rengali B/C bay

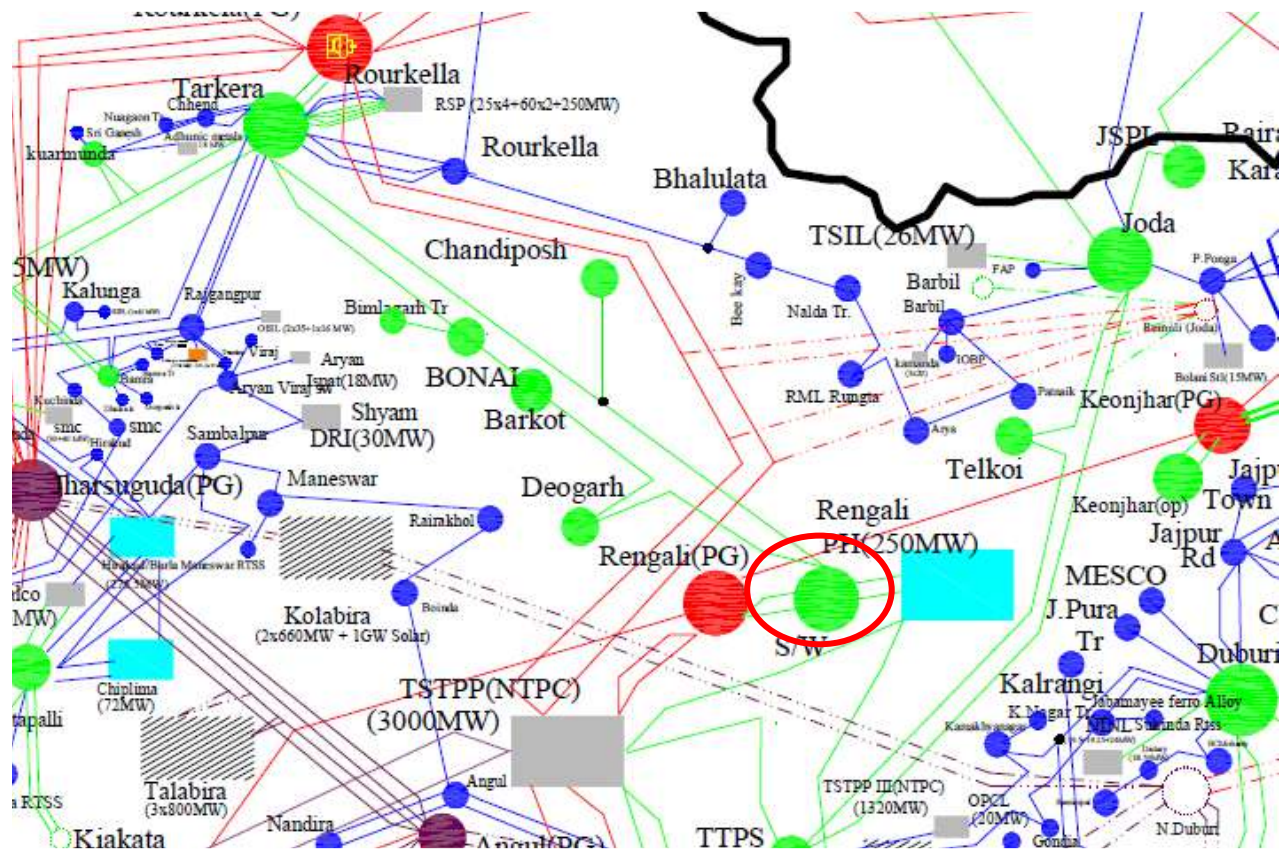


Figure 1: Network across the affected area

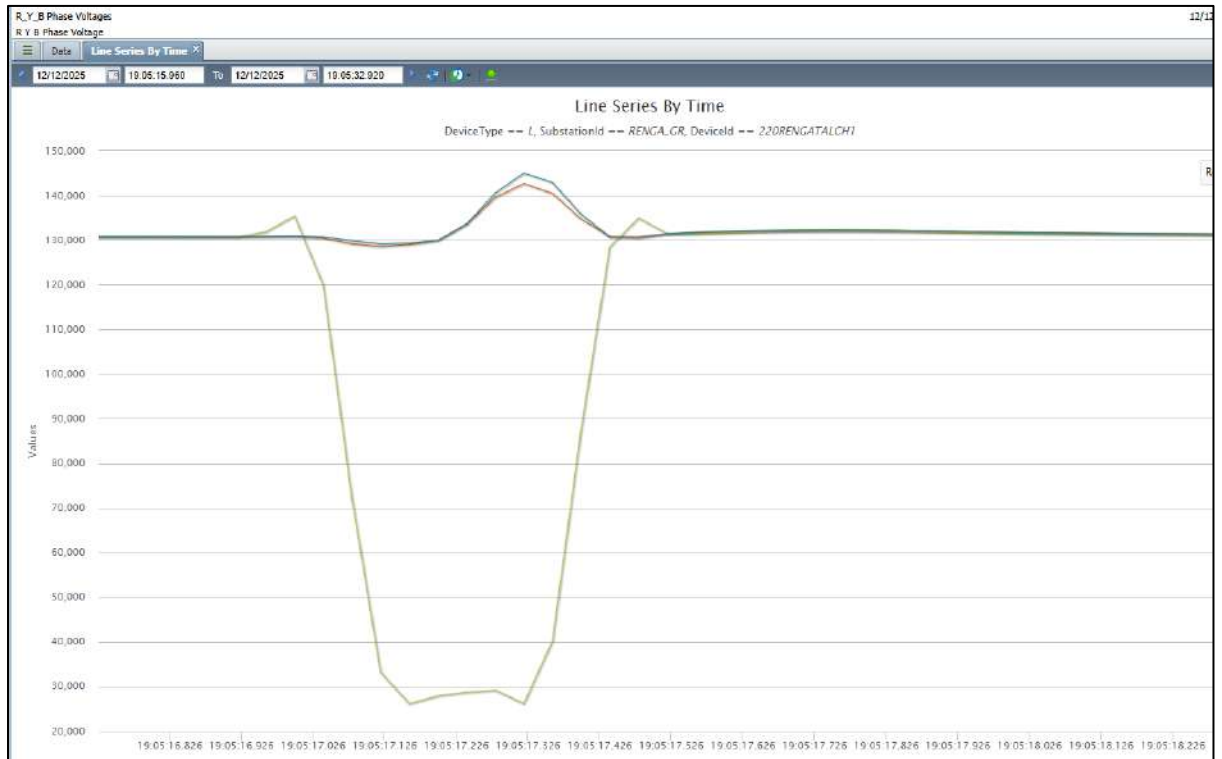
10. Major Elements Tripped (प्रमुख ट्रिपिंग):

क्र०स०	नाम	Trip time (hh:mm:ss)	उप केंद्र 1 रिले संकेत	उप केंद्र 2 रिले संकेत	Restoration time (Hrs)	
1	220KV-Rengali-Rengali (PG)-2	19:05:17	Rengali: Y_N, O/c e/f, Iy12.89 kA;	Didn't trip.	00:24 (13.12.25)	
2	220KV-Rengali-Rengali PH-2		Z-4, Y-Earth, FC-15.2 kA	-	00:40 (13.12.25)	
3	220 kV Rengali-Deogarh		Not Tripped		00:04 (13.12.25)	
4	220 kV Rengali-Tarkera		-	Z-2, FC-1.5kA, Y-Earth	00:09 (13.12.25)	
5	U#1, U#2 at Rengali PH (50 MW each)		GT REF operated during disturbance at Rengali S/s		19:28/19:31	
6	220KV-Rengali-Rengali (PG)-1		Idle charged from Rengali end.			
7	220KV-Rengali-Rengali PH-1					

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

- Prior to the disturbance, 220kV Main bus #2 was under S/D condition and 220kV Rengali PH #2 and 220kV Rengali PG #2 was in idle charged condition from Rengali S/s.
- At 19:05:17 Hrs, Y phase Bus-1 side post insulator of 220 kV Bus coupler bay at Rengali S/s snapped, resulting in a Y-Earth bus fault at Rengali S/s.
- The 220kV Rengali PG #2 line tripped on O/C Earth fault Stg-2 protection after 100 msec.
- The 220kV Tarkera feeder tripped from Tarkera end on Z-2 protection.
- The 220kV Rengali PH #2 line sensed the fault in Z-4 protection and tripped after 250 msec. (Bus bar protection was not in service at the time of event).
- Simultaneously, Rengali PH unit 1 & 2 got tripped due to REF operation of GT.
- Due to tripping of all emanating lines, the 220kV Rengali S/s became dead.
- Total load loss of 49 MW reported at Rengali S/s.

- Generation loss of 100 MW occurred at Rengali PH S/s.



PMU of Rengali voltage

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

- All Protection operated as per existing protection scheme at 220kV Rengali S/s.
- During bus fault, 220kV Rengali-Rengali PH #2 line tripped in Z-4 protection and simultaneously Rengali PH Unit 1 & 2 tripped due to unwanted GT REF protection operation. Reason of REF protection operation for line fault may be explain.
- DR of 220kV Rengali-Tarkera line at Tarkera S/s is not time synchronised. DR channel recording length needs to be increased to 3 sec as per ERPC guidelines.
- Non segregation of feeders between two main buses in the absence of feeder-wise voltage selection relay and BB protection has significantly reduces the reliability of Rengali SS. Uniform distribution of feeders on both buses is recommended to effectively utilise the double main bus scheme to enhance reliability. Further, installation of BB protection is required in accordance with Schedule-V, Section-4 of the CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022.
- As intimated only B/U protection is presently available for the 220 kV Rengali-Rengali PG lines. Line differential Protection needs to be provided, as the line length is less than 10 Kms, in compliance with CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022.

- Similarly for short 220 kV Rengali–Rengali PH line ((Less than 10 Kms), line differential protection relay needs to be installed as per the applicable CEA standards.
- Report received from SLDC is attached in Annexure.

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

14. Key Lessons Learnt (प्रमुख अधिगम बिंदु):

Annexure:

Annexure-3: Report received from OPTCL

Flash Report by SLDC/GENERATOR/ISTS/USER/UTILITY

(As per IEGC section 5.9.5, 5.9.6 (a), (b) & (c))

1. Name of the reporting entity: 220/33kV Grid S/S, Rengali OPTCL
2. Date and time of the Incident: 12.12.2025 ,19:06Hrs
3. Antecedent Conditions (Just Prior to Event):
 - a. Frequency:50Hz
 - b. Demand/Generation Met: 220kV Main BUS I & II was on shutdown from 09:02 Hr to 18:25 Hr for annual maintenance work of 220/33KV GSS Rengali, OPTCL
 - c. Lines/units/elements under shutdown: Nil
4. Details of tripping (Along with cause of the event and relay flag, whatever available):

Sl. No.	Area/ Region	Loss of Load(MW)	Loss of Generation(MW)
1	220KV Load loss	36 MW	
	33KV Load loss	12.8 MW	

Transmission/Generation Elements tripped during event:

Sl. No.	Name of the Element	Tripping Time	Restoration Time	Relay Indication (if available)	Extra Info
1	220kV Rengali S/Y-Rengali PH ckt II	19:06Hrs, Dt.12.12.20 25	00:24Hrs, Dt.13.12.20 25	Dist pick up, Zone - 4, Dist : 0.00km, Trip time: 247 ms, PU time: 322 ms, Ia: 0.23 kA, Ib: 7.15 kA, Ic: 0.33 kA	At 19:06Hr, 220/33kV GSS Rengali blacked out. Fault Details: 220kV Bus Coupler feeder , Y-Phase Main Bus A Insulator PI snapped at Rengali GSS, OPTCL, 220kV Bus coupler CB was open condition before fault.
2	220kV Rengali S/Y-PGCIL ckt II	19:06Hrs, Dt.12.12.20 25	00:40Hrs, Dt.13.12.20 25	Trip phase B N, Over current, Earth Fault, Fault Duration : 179.0 ms, CB Operation time: 64.00ms, IED trip time : 110.0ms, Ia : 1.814 kA, Ib : 12.89 kA, Ic : 1.738 kA	
3	220kV Rengali S/Y-Deogarh ckt	19:06Hrs, Dt.12.12.20 25	00:04Hrs, Dt.13.12.20 25		Tripped at Deogarh End.
4	220kV Rengali S/Y-Tarkera ckt	19:06Hrs, Dt.12.12.20 25	00:09Hrs, Dt.13.12.20 25		Tripped at Tarkera End.
5	220kV Rengali S/Y-PGCIL ckt I	Did not Trip			Idle charge from Rengali end before black out. At PGCIL end while charging the CB, feeder tripped on PD at PGCIL end Only.

6	220kV Rengali S/Y-Rengali PH ckt I	Did not Trip			Feeder was Idle charged since Dt.20.11.2025, 19:37 Hr from Rengali end due to CB problem at RPH end.
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1. **Action Taken/Remedial measures taken:-** 220kV Rengali S/Y – Tarkera RTSS Chandipsoh ckt charged from Tarkera End. RTSS Chandiposh is availing power from Tarkera end. All 220kV Feeders H/T to replace 220kV Bus Coupler Y-Phase Main Bus A Insulator PI snapped at Rengali GSS, OPTCL

2. **Restoration details:** After replacement of Y-Phase Main Bus A Insulator PI of 220kV Bus Coupler at Rengali GSS, OPTCL. All 220kV feeders charged through 220kV Main Bus A.








3. **Duration of the disturbance:** 19:06 Hr, Dt.12.12.2025 to 00:40 Hr, Dt.13.12.2025

Shift I/C

Sri Jitendra Majhi
Assistant Manager (Elect)
9438908492

Events Report
Substation: 220kv ohpc
File: 2026-01-05 11.46.50.evt
Model Number: P64292TD6S0910P

Printed on: 07/01/2026 12:12:52

- 7 Input L8 : OFF
- 8 Input L9 : OFF
- 9 Input L10 : OFF
- 10 Input L11 : OFF
- 11 Input L12 : OFF
- Evt Unique Id : 9207
-  Friday 12 December 2025 19:12:22.213: Indication Reset
 - Description: GT-1
 - Plant reference: GT-1
 - Model number: P64292TD6S0910P
 - Address: 001 Column: 01 Row: FF
 - Event type: Fault Record
 - Category: 0
 - Event Value : 7
 - Evt Unique Id : 9206
-  Friday 12 December 2025 19:10:15.253: Logic Inputs 1
 - Description: GT-1
 - Plant reference: GT-1
 - Model number: P64292TD6S0910P
 - Address: 001 Column: 00 Row: 20
 - Event type: Logic Input Changed State
 - Category: 0
 -  Event Value : 0000000000000000
 - 0 1-86 TRIP : OFF
 - 1 2 96 INNI : OFF
 - 2 Input L3 : OFF
 - 3 Input L4 : OFF
 - 4 Input L5 : OFF
 - 5 Input L6 : OFF
 - 6 Input L7 : OFF
 - 7 Input L8 : OFF
 - 8 Input L9 : OFF
 - 9 Input L10 : OFF
 - 10 Input L11 : OFF
 - 11 Input L12 : OFF
 - Evt Unique Id : 9205
-  Friday 12 December 2025 19:02:41.561: Output Contacts1
 - Description: GT-1
 - Plant reference: GT-1
 - Model number: P64292TD6S0910P
 - Address: 001 Column: 00 Row: 21
 - Event type: Relay Output Changed State
 - Category: 0
 -  Event Value : 0000000000000000
 - 0 R1 TO 86K TRIP : OFF
 - 1 R2 TO DIFF ANN : OFF
 - 2 R3 TO O/C TRP AN: OFF
 - 3 R4 REF TRP ANN : OFF
 - 4 R5 TO LBB ANN : OFF
 - 5 R6 V/F TRIP ANN : OFF
 - 6 R7 BUS DIFF ANN : OFF
 - 7 R8 V/F ALARM ANN: OFF
 - 8 R9 99/51 OP 86L : OFF
 - 9 R10 LBB TRIP -VE: OFF
 - 10 R11 LBB TRIP +VE: OFF
 - 11 Output R12 : OFF
 - Evt Unique Id : 9204
-  Friday 12 December 2025 19:02:41.532: Fault Recorded
 - Description: GT-1
 - Plant reference: GT-1
 - Model number: P64292TD6S0910P
 - Address: 001 Column: 01 Row: 00
 - Event type: Fault Record
 - Category: 0
 - Event Value : 0
 -  Faulted Phase : 00000110


Events Report
 Substation: 220kv ohpc
 File: 2026-01-05 11.46.50.evt
 Model Number: P64292TD6S0910P

Printed on: 07/01/2026 12:12:53

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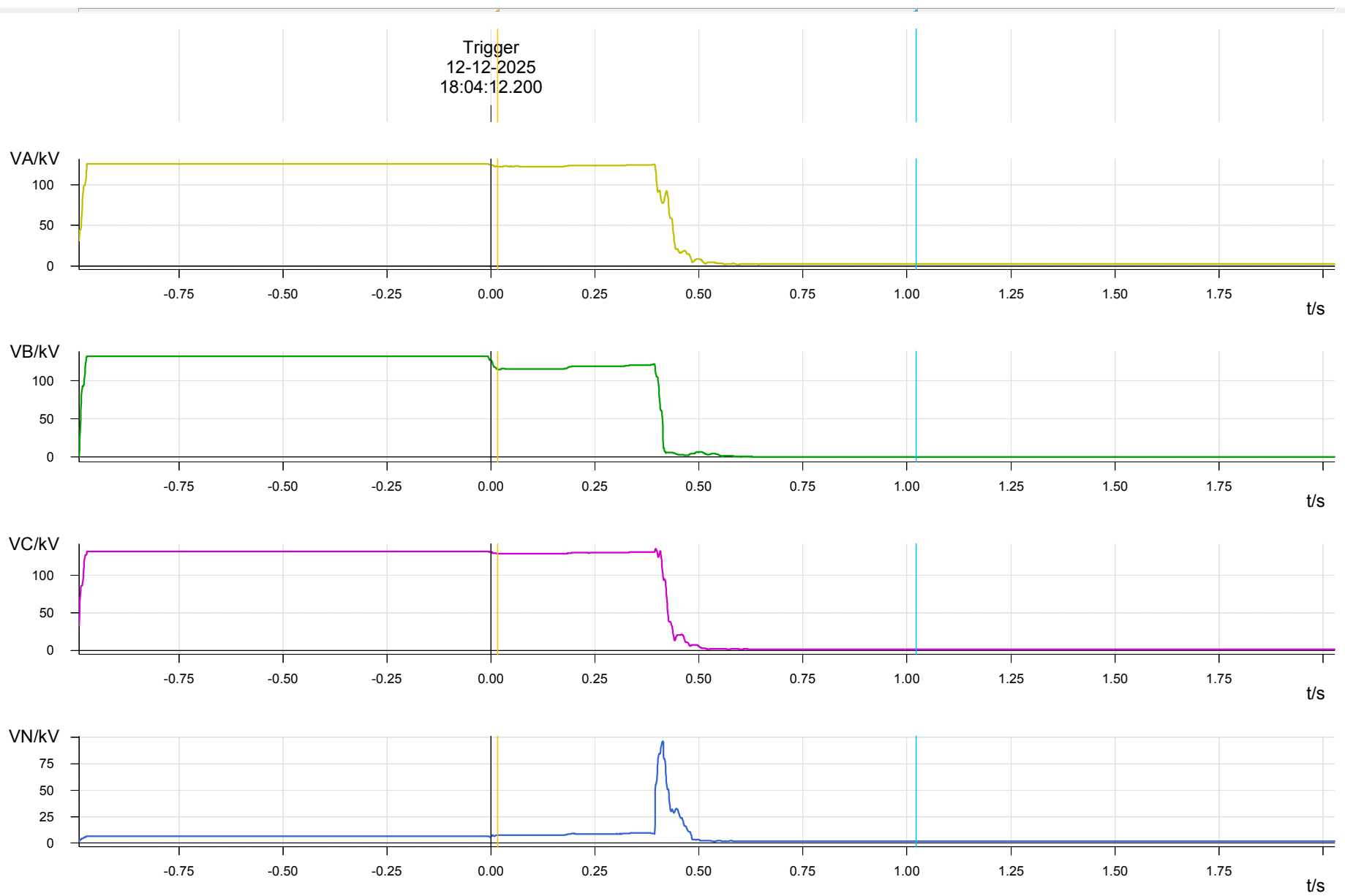
..... 3 CB2 BkTrip 3ph : OFF
..... 4 CB3 ReTrip 3ph : OFF
..... 5 CB3 BkTrip 3ph : OFF
..... 6 CB4 ReTrip 3ph : OFF
..... 7 CB4 BkTrip 3ph : OFF
..... 8 CB5 ReTrip 3ph : OFF
..... 9 CB5 BkTrip 3ph : OFF
..... 10 VTS      : OFF
..... 11 CTS      : OFF
..... 12 W1 V/Hz> Alarm : OFF
..... 13 Alarm RTD 1  : OFF
..... 14 Alarm RTD 2  : OFF
..... 15 Alarm RTD 3  : OFF
..... 16 Alarm RTD 4  : OFF
..... 17 Alarm RTD 5  : OFF
..... 18 Alarm RTD 6  : OFF
..... 19 Alarm RTD 7  : OFF
..... 20 Alarm RTD 8  : OFF
..... 21 Alarm RTD 9  : OFF
..... 22 Alarm RTD 10 : OFF
..... 23 Alarm CL Input 1: OFF
..... 24 Alarm CL Input 2: OFF
..... 25 Alarm CL Input 3: OFF
..... 26 Alarm CL Input 4: OFF
..... 27 W2 V/Hz> Alarm : OFF
..... Fault Time   : Friday 12 December 2025 19:02:41.452
..... Fault Type    :
..... Active Group  : 1
..... System Frequency : 50.03 Hz
..... IA-1 Magnitude : 136.9 A
..... IB-1 Magnitude : 616.0 A
..... IC-1 Magnitude : 363.6 A
..... IA-2 Magnitude : 2.790kA
..... IB-2 Magnitude : 6.135kA
..... IC-2 Magnitude : 3.778kA
..... IA-HV Magnitude : 136.9 A
..... IB-HV Magnitude : 616.0 A
..... IC-HV Magnitude : 363.6 A
..... IA-LV Magnitude : 2.790kA
..... IB-LV Magnitude : 6.135kA
..... IC-LV Magnitude : 3.778kA
..... I2-HV Magnitude : 116.7 A
..... I2-LV Magnitude : 2.428kA
..... IN-HV Measd Mag : 3.769 A
..... IN-LV Measd Mag : 4.683mA
..... V1 Magnitude    : 3.326kV
..... V2 Magnitude    : 3.326kV
..... VAB Magnitude   : 0.000 V
..... VBC Magnitude   : 9.974kV
..... VCA Magnitude   : 9.975kV
..... IADiff          : 36.19mPU
..... IBDiff          : 33.15mPU
..... ICDiff          : 3.163mPU
..... IABias          : 1.547 PU
..... IBBias          : 1.728 PU
..... ICBias          : 439.2mPU
..... REF HV LoZ Diff : 1.084kA
..... REF HV LoZ Bias : 309.9 A
..... 1ph VperHz      : 906.8mPU
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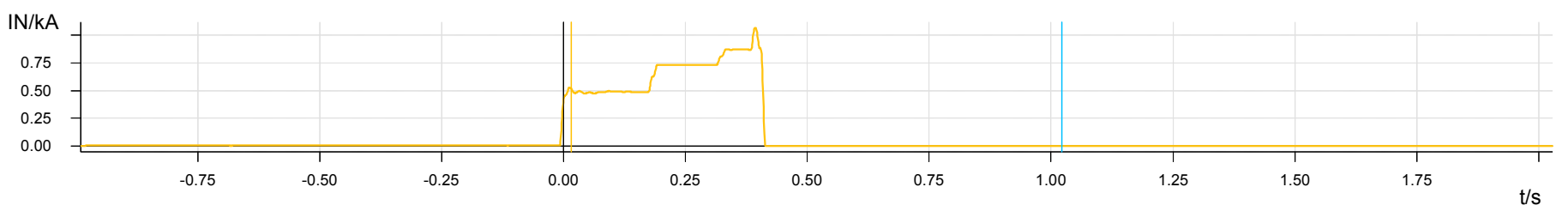
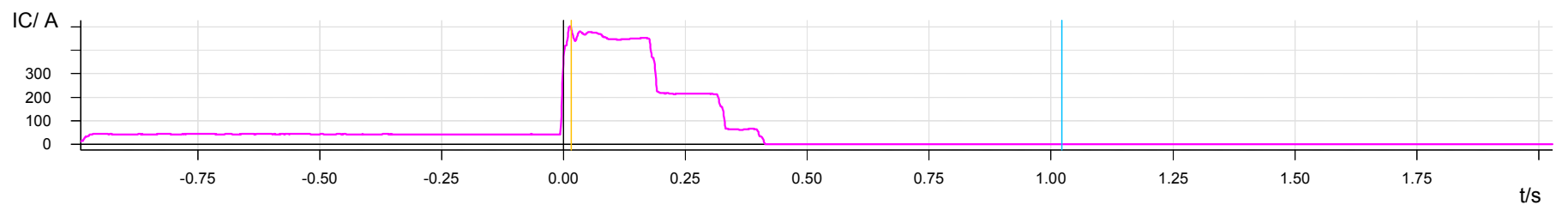
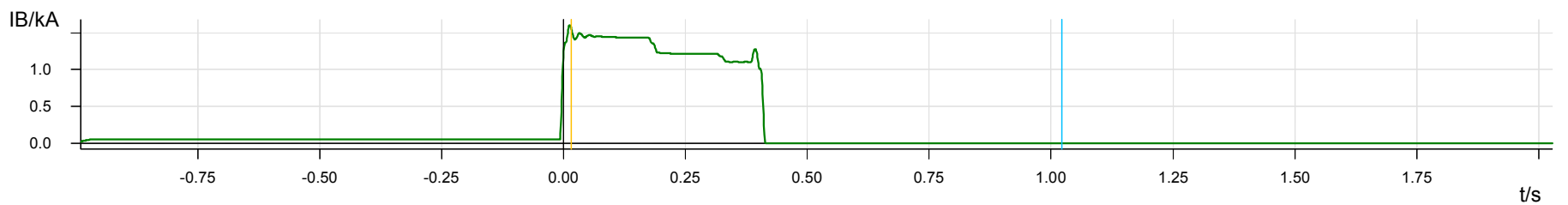
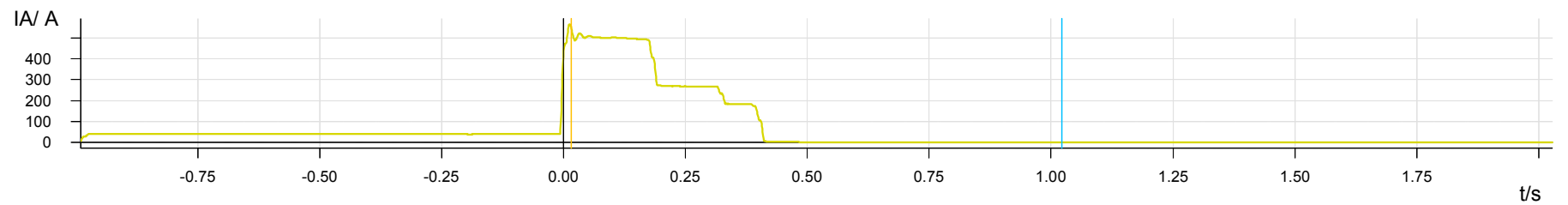
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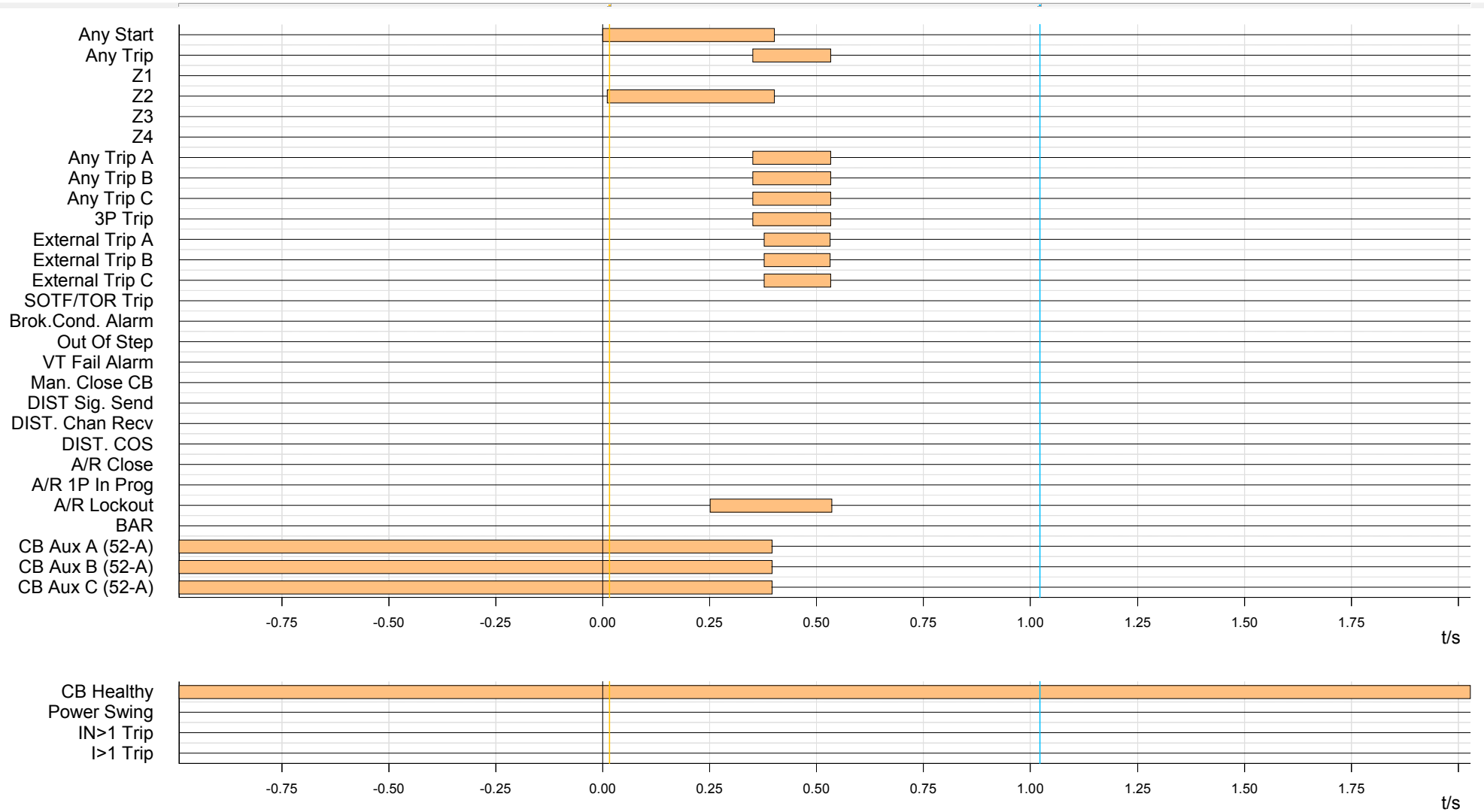
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..... Plant reference: GT-1
..... Model number: P64292TD6S0910P
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..... Event type: Relay Output Changed State
  
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TARKERA

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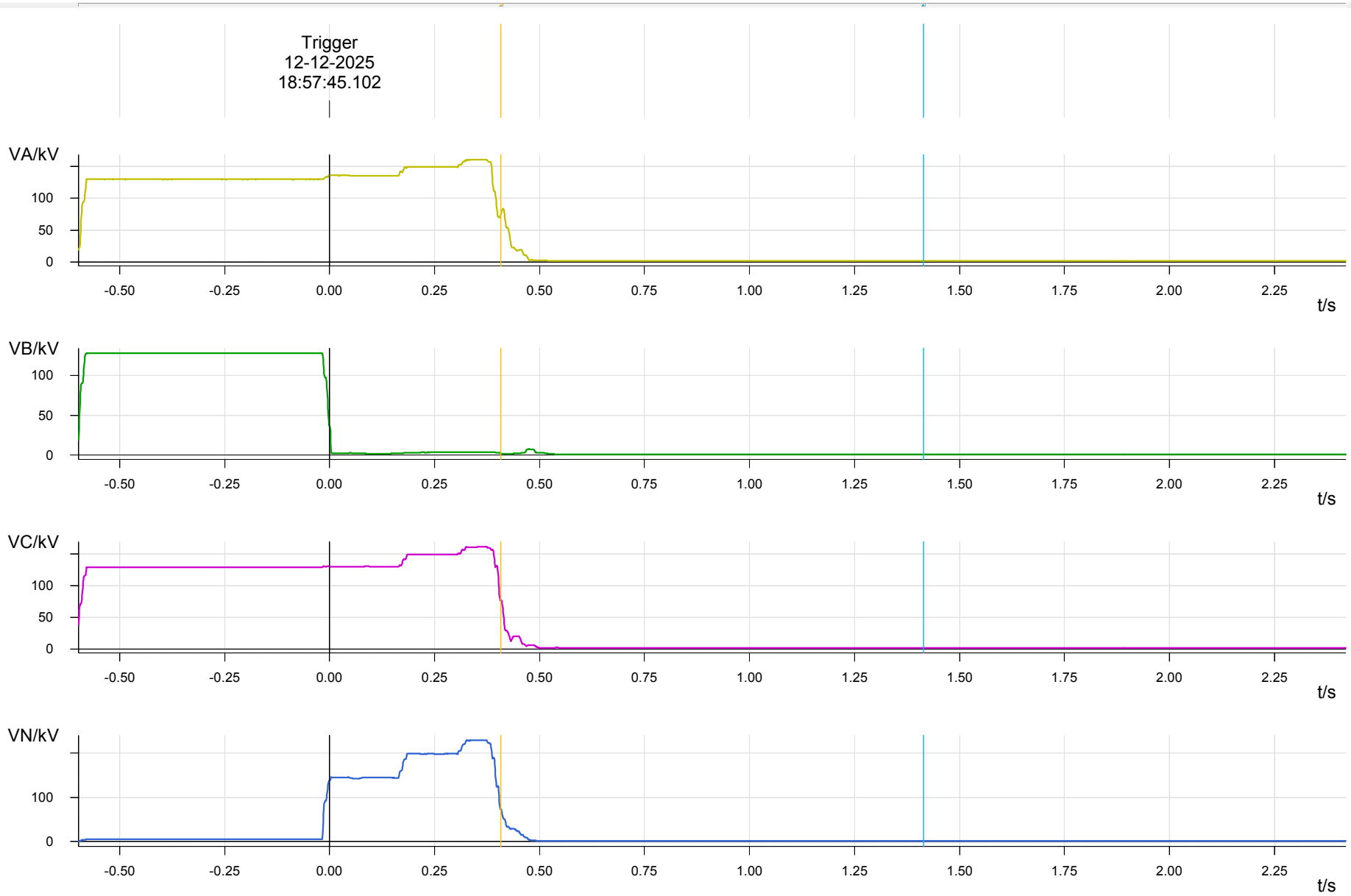


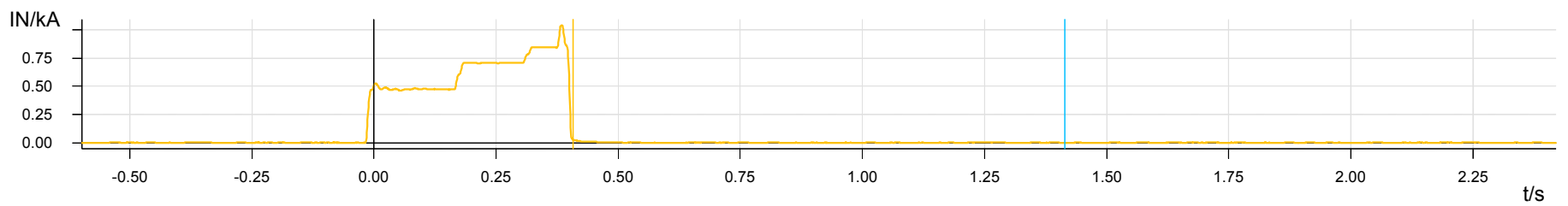
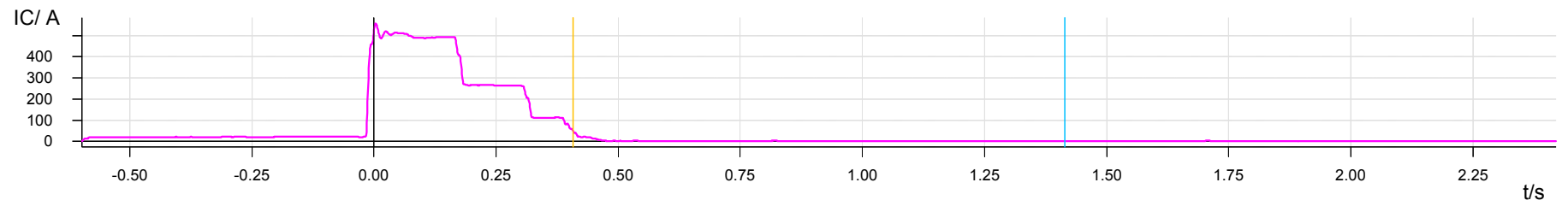
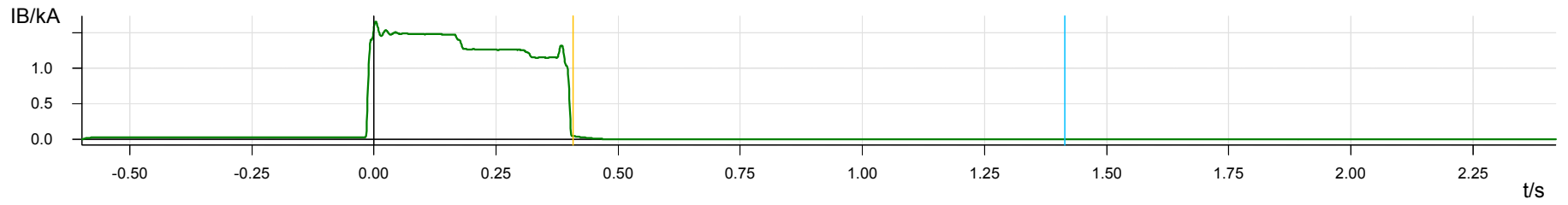
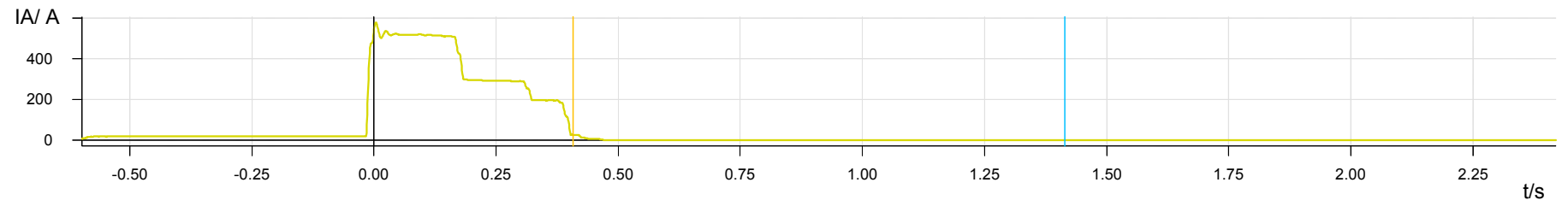


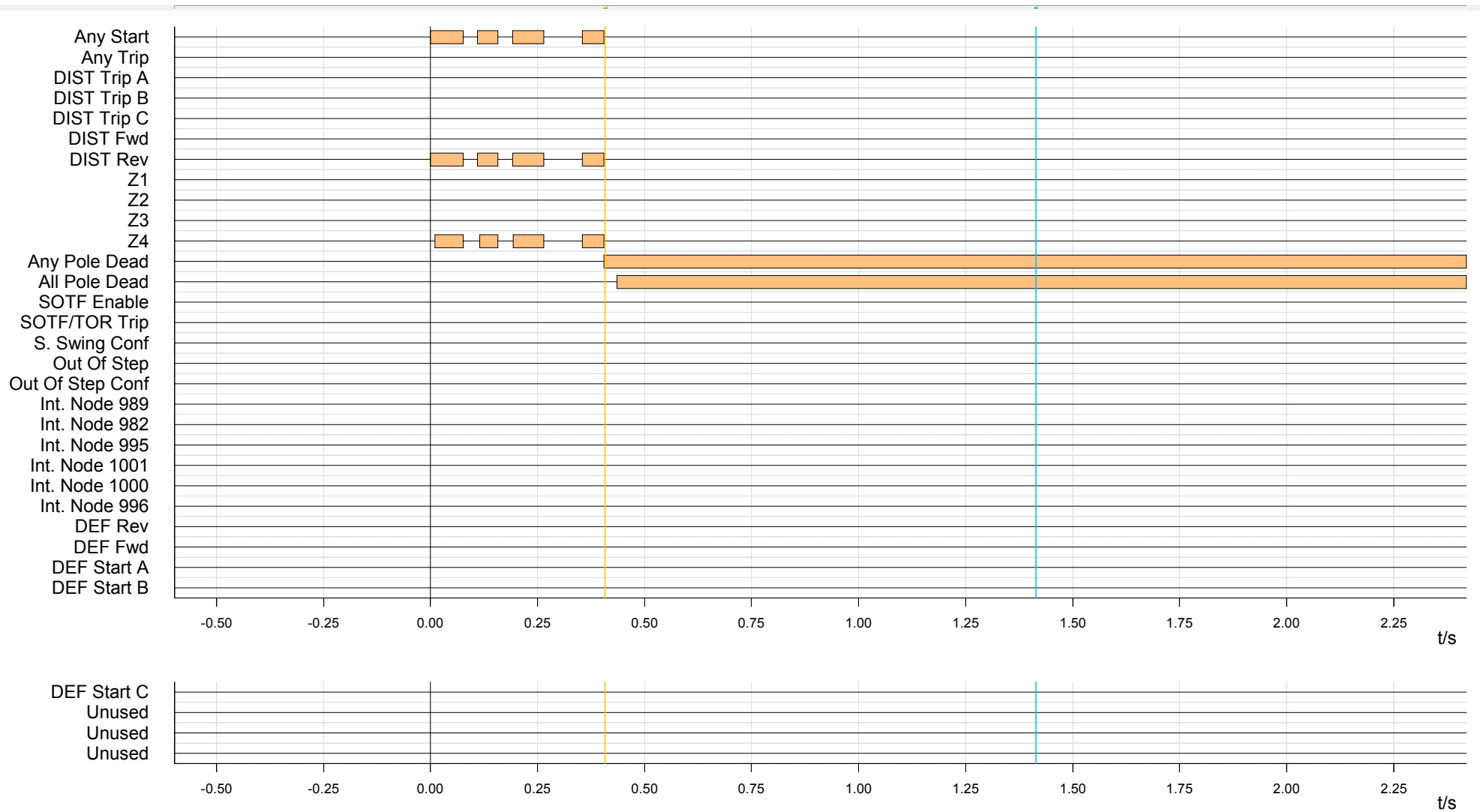


NiCOM

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Meramund 22 4 17 / SIEMENS / Rengali 220KV 7SA522 V4.6 Var RPH2

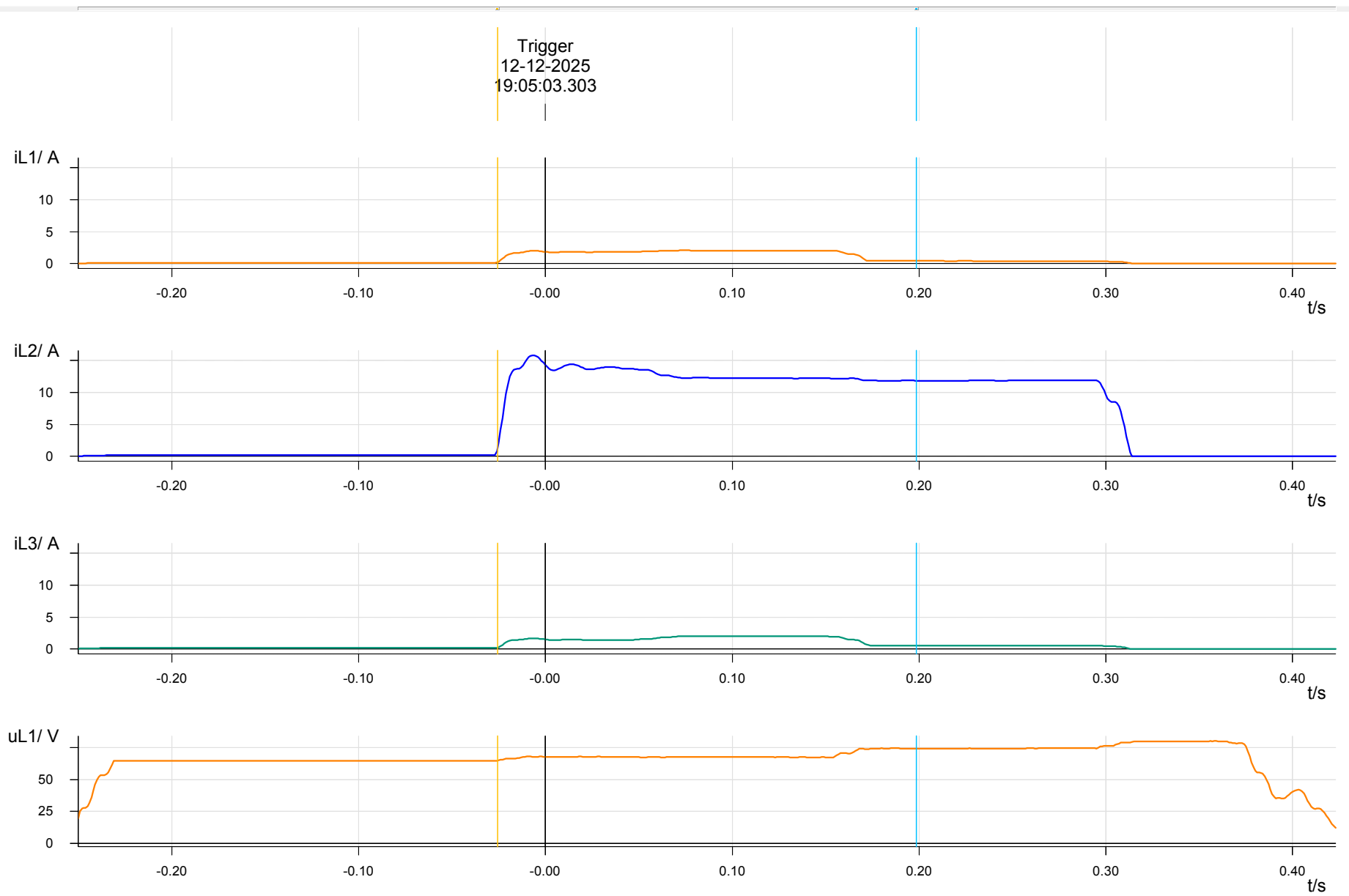
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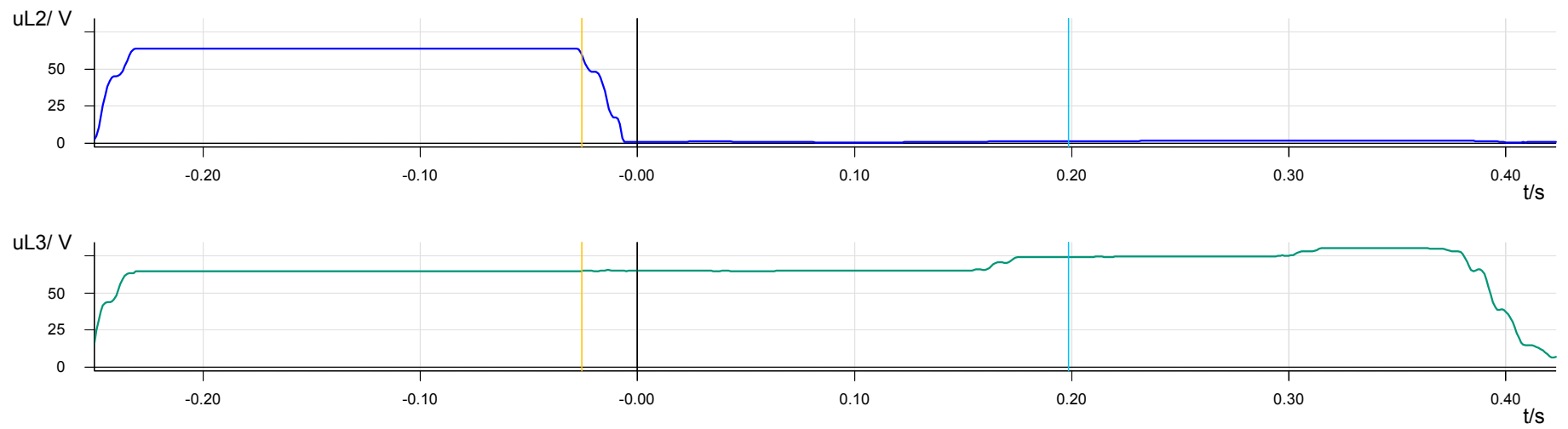
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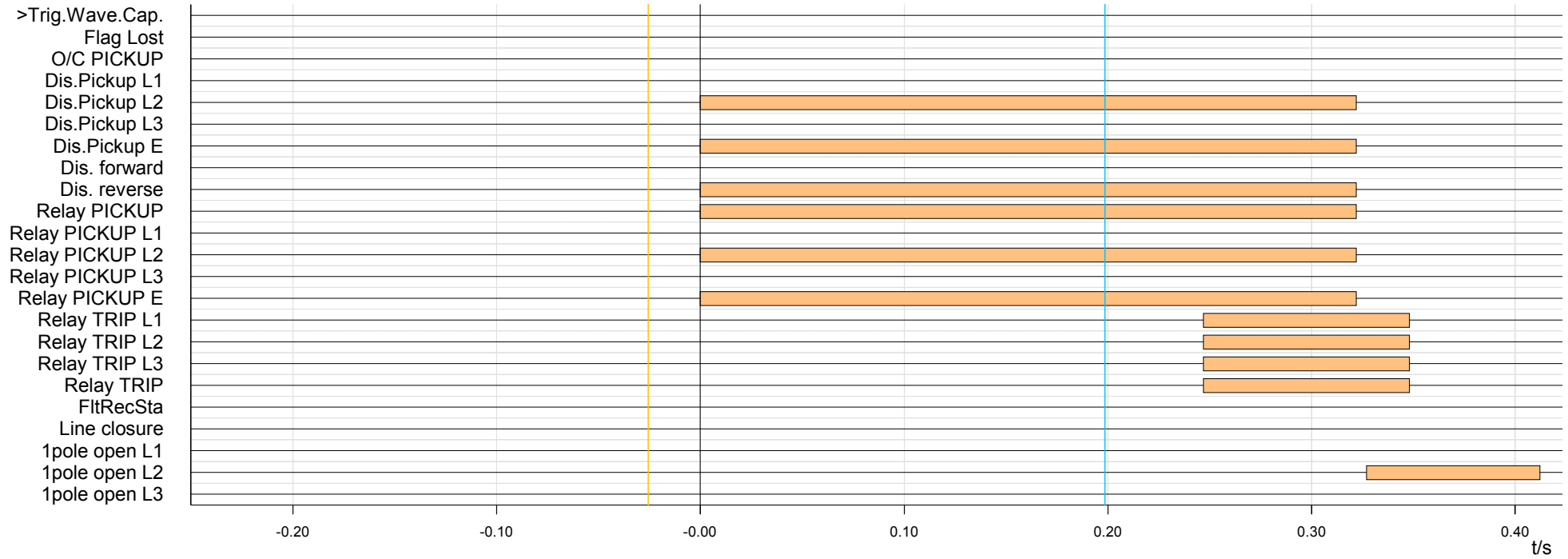
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RENGALI

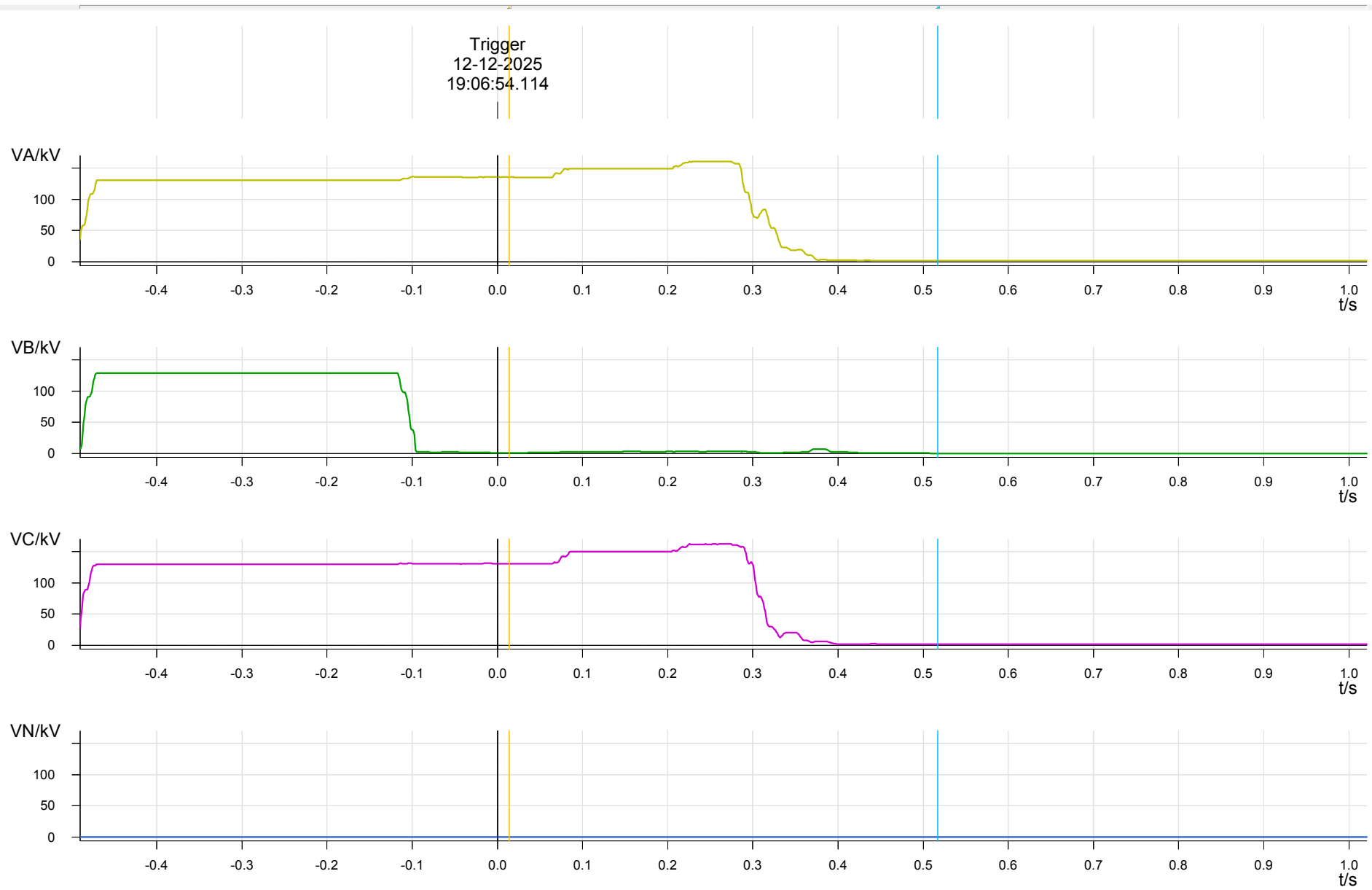
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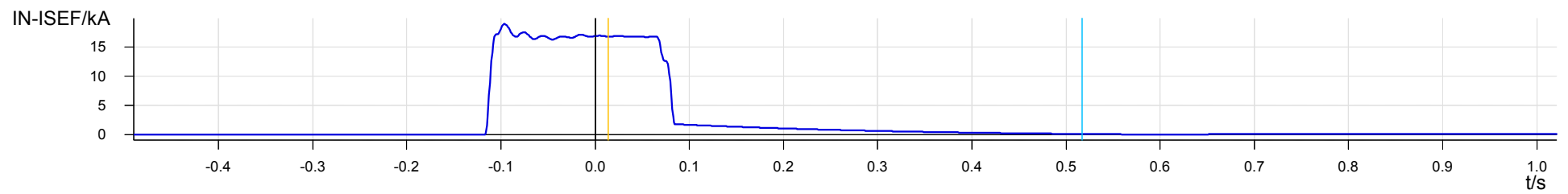
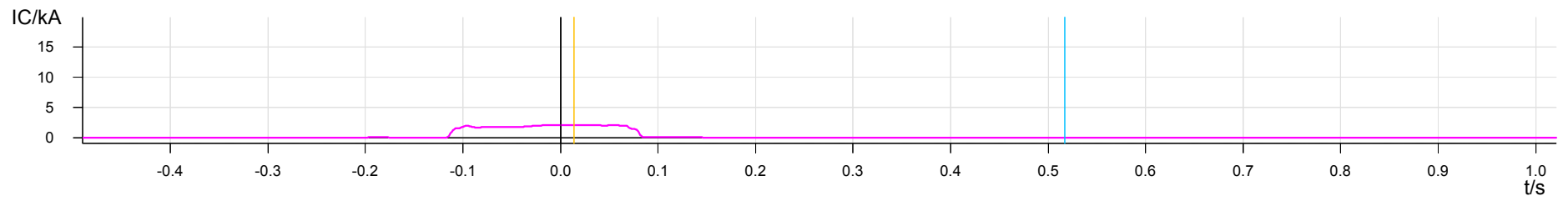
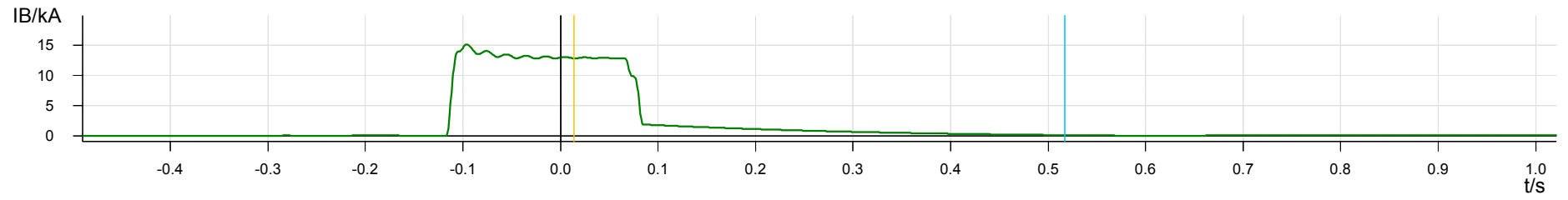
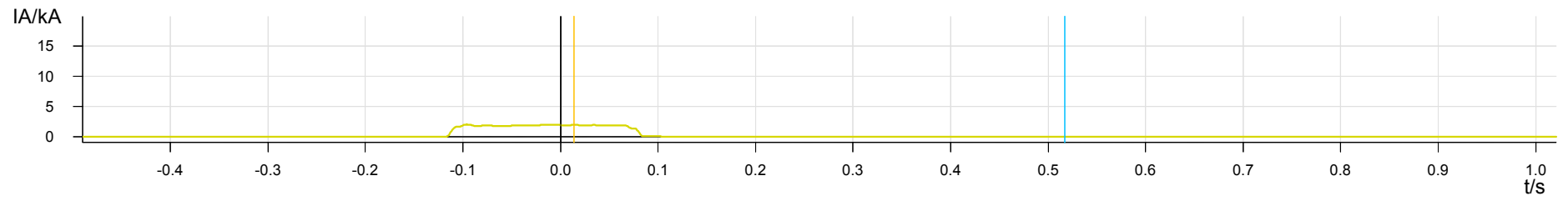
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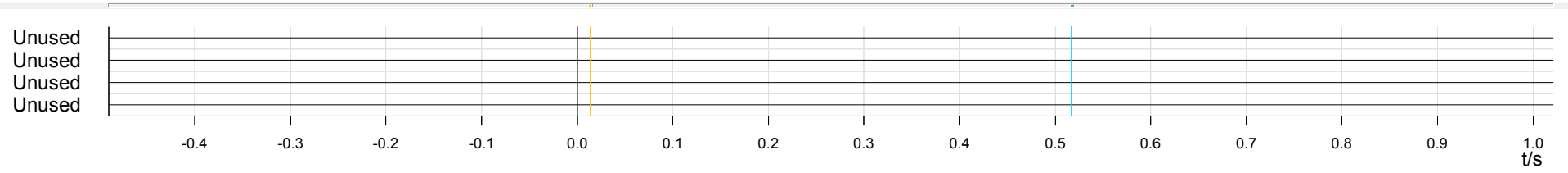
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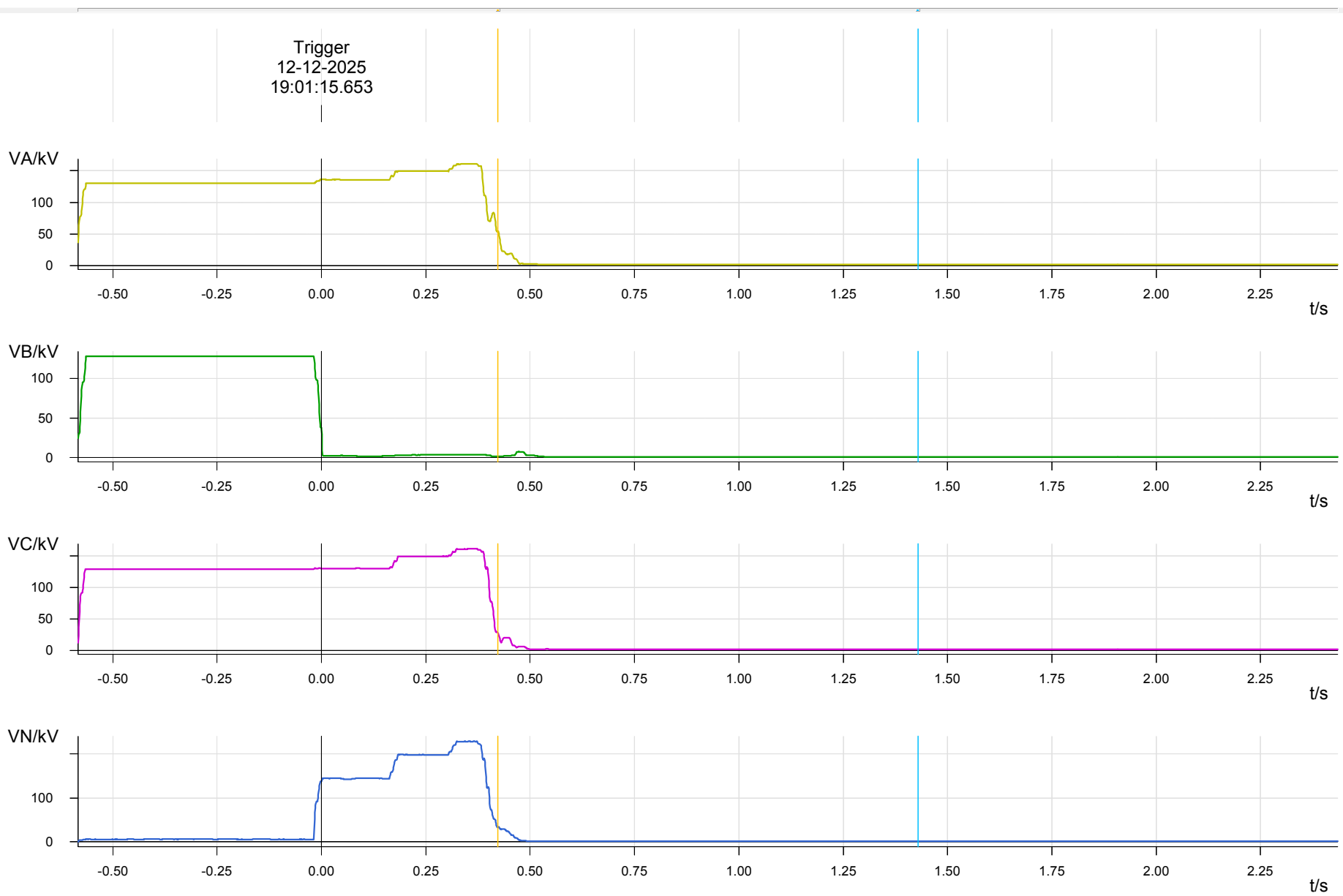


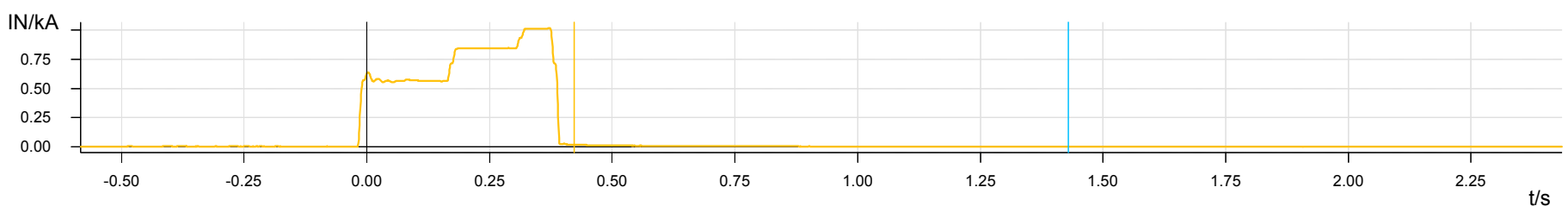
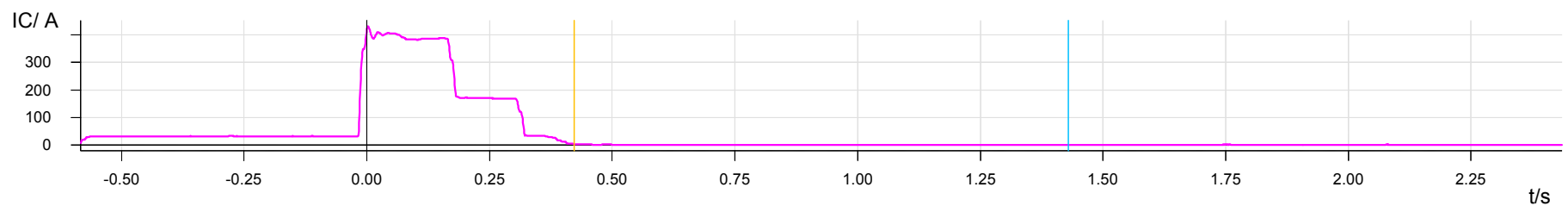
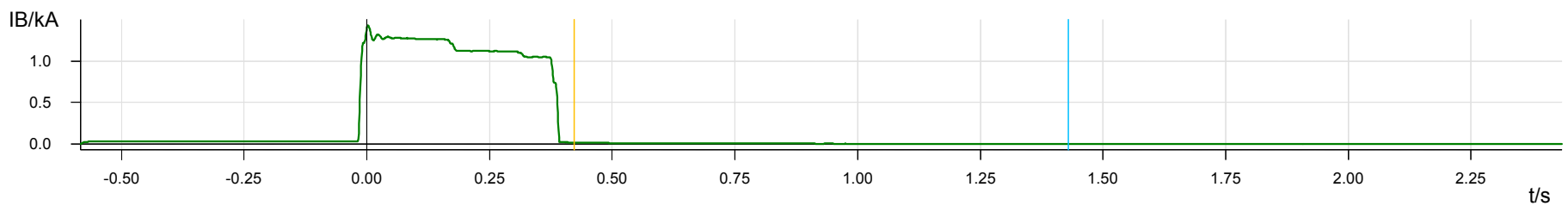
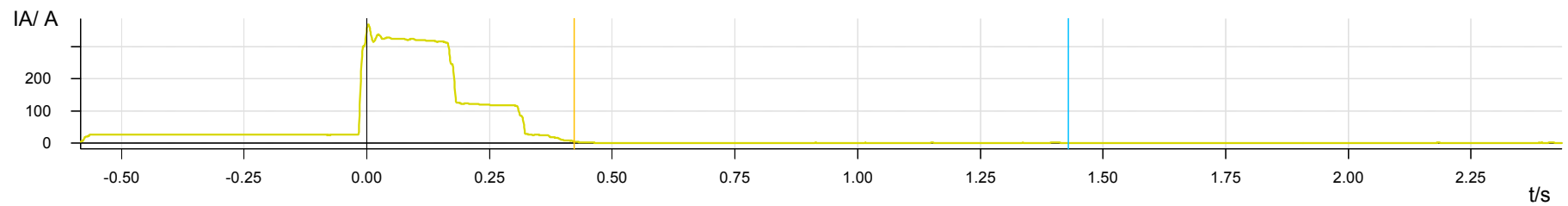


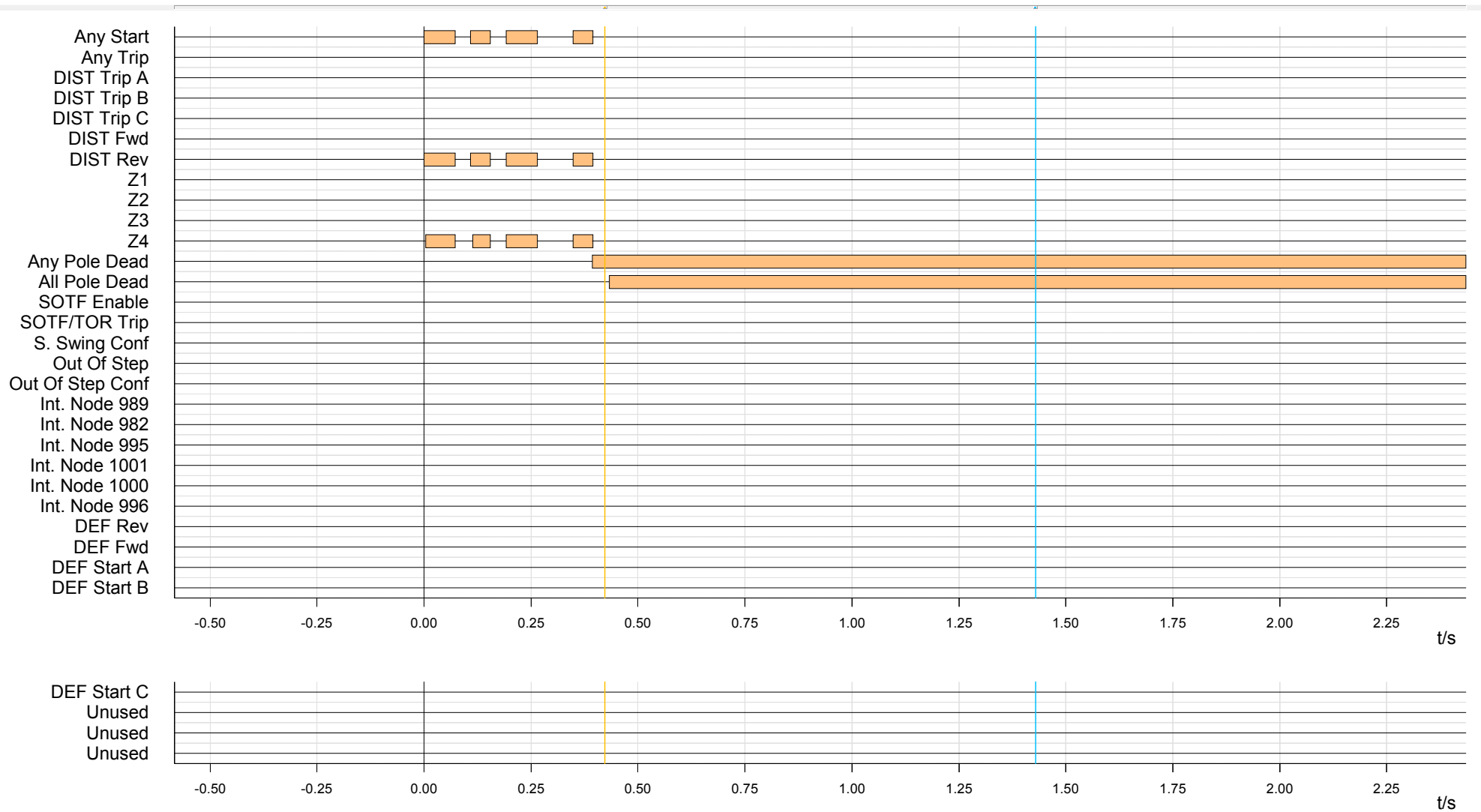


MiCOM

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Record type: COMTRADE









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 400 केवी टिस्को उप-केन्द्र में ग्रिड घटना पर विस्तृत रिपोर्ट / Detailed Report of grid event at 400 kV-TISCO 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):02-01-2026

• **Event Summary** (घटना का सारांश):

400kV TISCO S/s is connected to Grid through 400kV TISCO Baripada S/C and 400kV TISCO Jamshedpur S/C lines. Prior to the disturbance 400kV TISCO- Baripada S/C was under planned shutdown and TISCO draw power radially through Jamshedpur.

At 19:21 Hrs, during charging attempt of 400 kV TISCO Baripada S/C from TISCO end, Y-Phase LA at Baripada got burst and created Y-Earth fault. Fault was sensed by 400kV Jamshedpur- TISCO and 400kV Baripada-Jamshedpur line in Z-3 protection and after 1200 msec both lines got tripped from Jamshedpur and Baripada end respectively. 400kV TISCO S/s became dead and 94 MW load loss reported at TISCO S/s.

• **Time and Date of the Event** (घटना का समय और दिनांक): At 19:21 Hrs on 05/12/2025.

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

• **Location/Control Area** (स्थान/नियंत्रण क्षेत्र): DVC/ TISCO

• **Antecedent Conditions** (पूर्ववर्ती स्थिति):

	Frequency in Hz	Regional Generation in MW	Regional Demand in MW
Pre-Event (घटना पूर्व)	49.99	31791	21829
Post Event (घटना के बाद)	50.00	31791	21735

**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 है)	400 kV TISCO- BARIPADA S/C was under planned shutdown.
Weather Condition (मौसम स्थिति)	Normal.

- **Load and Generation loss (लोड और जेनरेशन हानि):**
 - **Load loss: 94 MW.**
- **Duration of interruption (रुकावट की अवधि): 01:13 Hrs.**
- **Network across the affected area (प्रभावित क्षेत्र का नक्शा)**

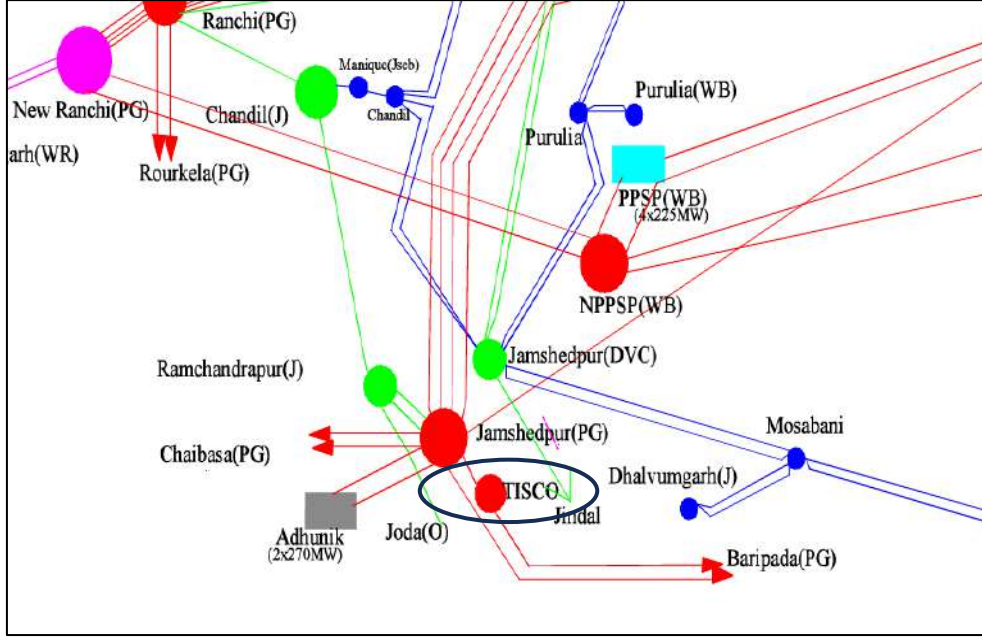
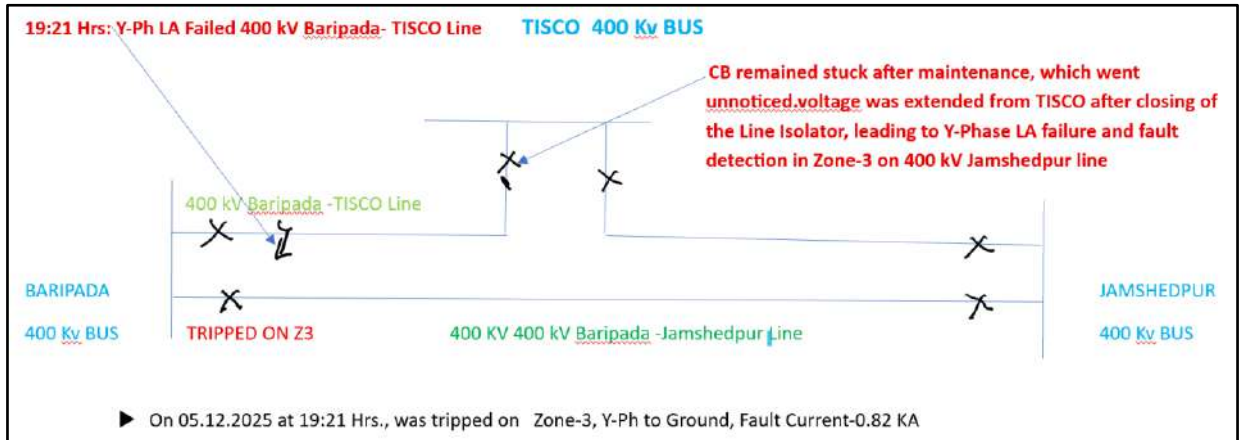


Figure 1: Network across the affected area

- **Details of Equipment Failure (if any during the event) (उपकरण विफलता का विवरण): Y-Phase LA of 400kV TISCO-Baripada line at Baripada end.**
- **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	400 kV TISCO-Jamshedpur-S/C	19:21	-	Y-E fault, Z-3, FC-2.84 kA FD- 186.2 km	20:34
2	400KV-JAMSHEDPUR-BARIPADA-S/C	19:21	-	Y-E fault, Z-3, FC-0.82 kA	20:23

- **Event Analysis (Based on PMU, SCADA & DR) (घटना का विश्लेषण):**



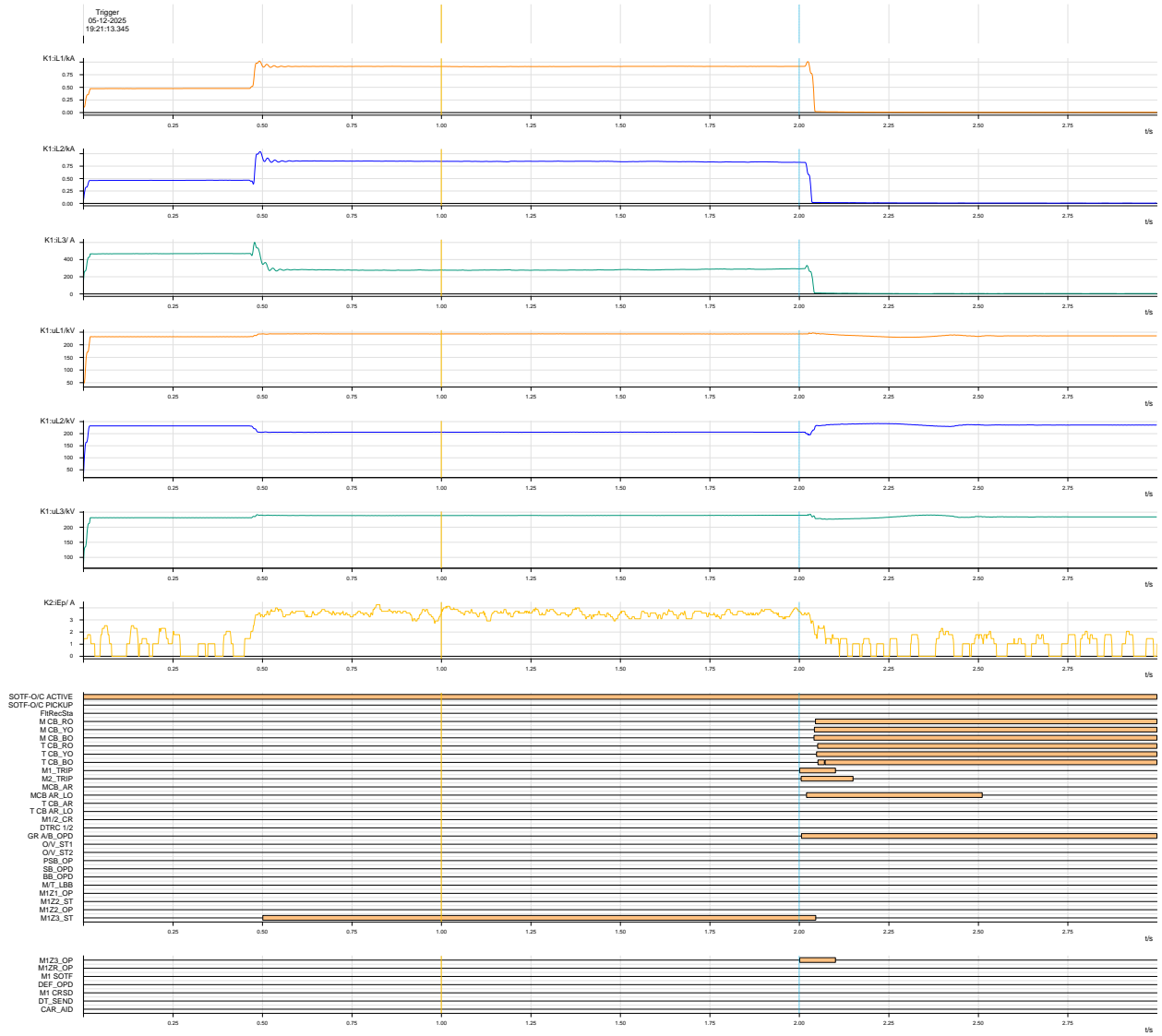
- Prior to the disturbance, TISCO Plant was radially connected through 400kV TISCO Jamshedpur line (400kV TISCO-Baripada line was under planned S/D)
- At 19:21:15 Hrs, during charging of 400kV TISCO-Baripada line from TISCO end, line got charged, while closing of line side isolator (*Tie CB at TISCO in stuck condition due to suspected control circuit issue at TISCO end*).
- Following the closing of line isolator at TISCO end, line got extended from TISCO end, during which Y-phase LA at Baripada burst. This creates Y-Earth fault in 400 kV TISCO-Baripada S/C. Protection system at TISCO failed to clear the fault, resulting clearance of fault by tripping of healthy 400kV Jamshedpur-Baripada line and 400kV Jamshedpur-Tisco line from Baripada and Jamshedpur end on Z-3 protection respectively.
- 400kV TISCO S/s became dead and 94 MW load loss reported at TISCO S/s.
- **Protection/Operational issues observed (सुरक्षा/परिचालन संबंधी समस्या):**
 - Non-operation of protection at TISCO end: The protection system for Baripada line at TISCO end did not operate. The reason for the same may be shared.
 - Z-III Coordination (Encroaching ROT) issue- The Z-III setting of 400 kV Baripada – Jamshedpur Line at Baripada appears to be overlapping with the Z-III of 400 kV Jamshedpur – TISCO Line. PG Odisha is requested to review the setting to ensure proper selectivity.
 - Line isolator interlock circuit (Electrical /mechanical) seems to be bypassed at TISCO for 400 kV Baripada Line. The reason for the same may be updated.
 - Report received from PG Odisha is attached in annexure.
- **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)	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)	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)	NA

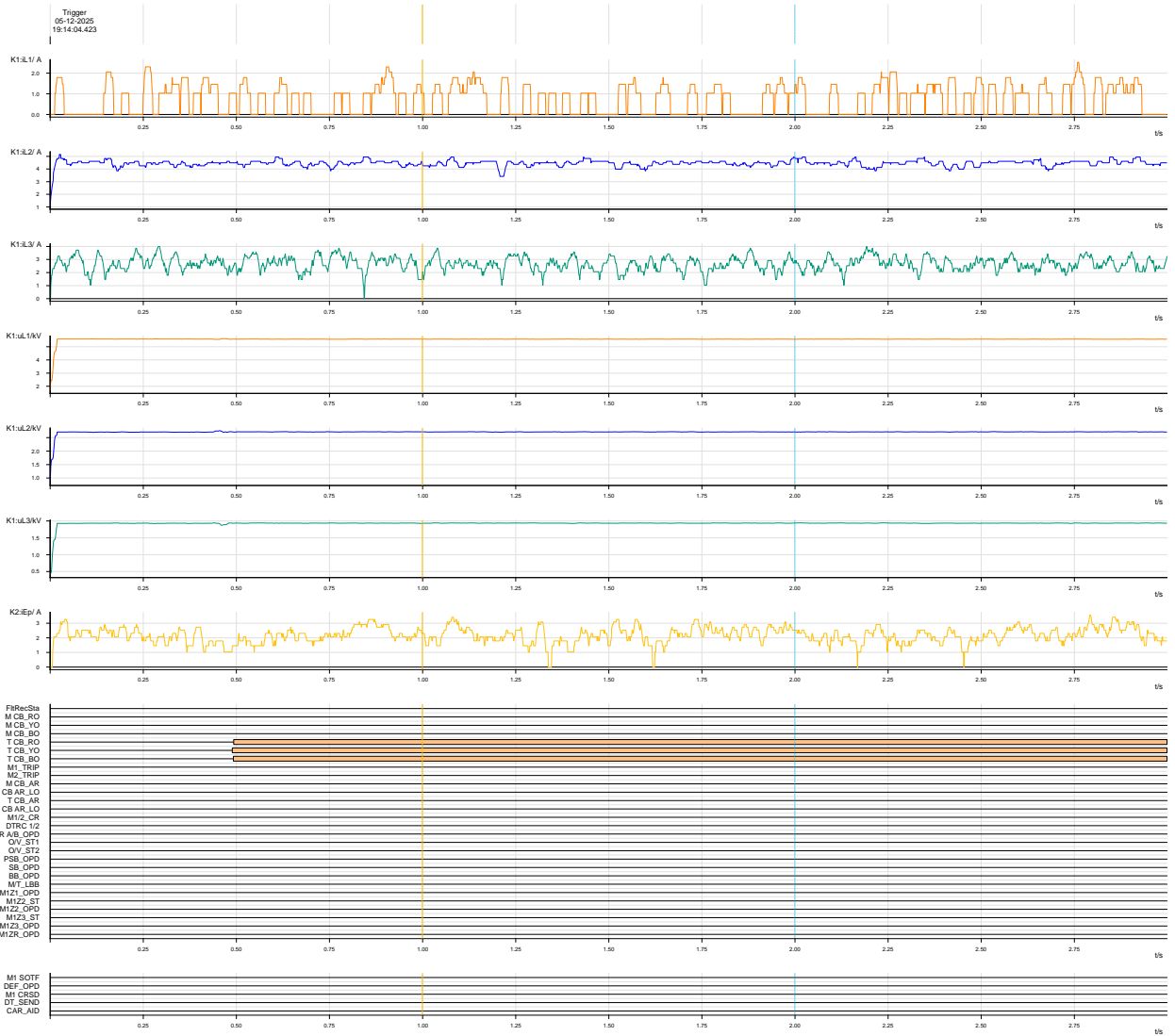
- **Key Lessons Learnt** (प्रमुख अधिगम बिंदु):

Annexure:

DR of Baripada-Jamshedpur line at Baripada end:



DR of Baripada-TISCO at Baripada end:





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 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):02-01-2026

• **Event Summary** (घटना का सारांश):

At 11:06 Hrs on 20/12/2025, 400 kV New Ranchi-Patratu-1 line tripped due to conductor snapping, while the 400 kV New Ranchi-Patratu-2 line was under planned shutdown. Following tripping of 400 kV Patratu- New Ranchi-1 Line, 400 kV PVUNL-Tenughat Line tripped on SPS operation. Subsequently, PVUNL generation around 665 MW was evacuated through 400 kV PVUNL-Patratu D/C and 400/220 kV ICTs at Patratu.

At 11:23 Hrs, during charging attempt of 400kV Ranchi-Patratu-1 line from Patratu end, faulty line tripped on SOTF. Simultaneously, bus bar/LBB protection operated at 400kV Patratu S/s, resulted in tripping of 400kV Patratu-PVUNL D/C Lines. Consequently, 400kV PVUNL bus became dead. Total 665 MW generation loss reported at PVUNL due to loss of evacuation path.

- **Time and Date of the Event** (घटना का समय और दिनांक): At 11:23 Hrs on 20/12/2025.
- **Event Category** (ग्रिड घटना का प्रकार): **Grid Disturbance (GD)-1**
- **Location/Control Area** (स्थान/नियंत्रण क्षेत्र): Jharkhand / 400kV-PVUNL
- **Antecedent Conditions** (पूर्ववर्ती स्थिति):

	Frequency in Hz	Regional Generation in MW	Regional Demand in MW
Pre-Event (घटना पूर्व)	49.953	29925	22933
Post Event (घटना के बाद)	49.901	29260	22933

*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 New Ranchi- Patratu-2 line was under planned S/D.
Weather Condition (मौसम स्थिति)	Normal.

- **Load and Generation loss** (लोड और जेनरेशन हानि):
 - **Generation loss: 665 MW.**
- **Duration of interruption** (रूकावट की अवधि): **01:12 Hrs.**
- **Network across the affected area** (प्रभावित क्षेत्र का नक्शा)

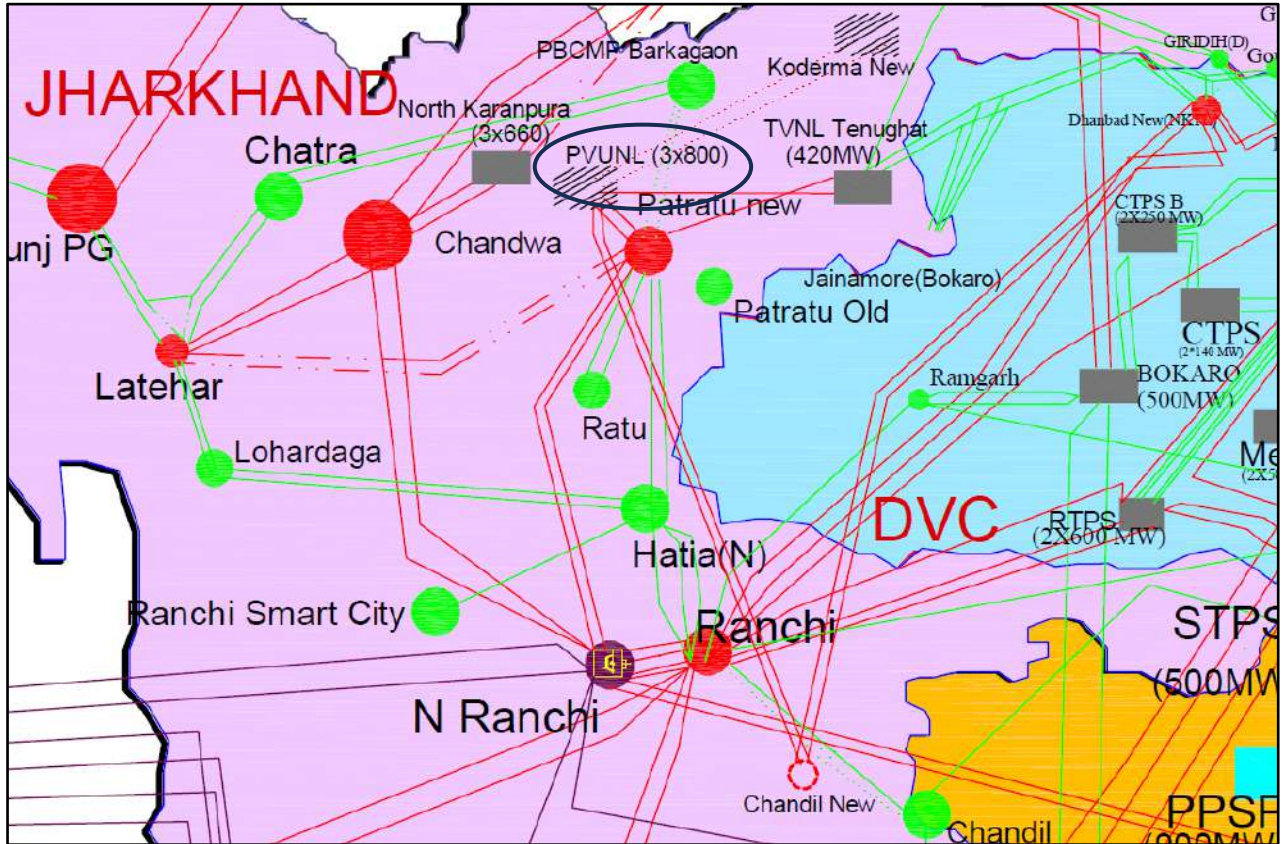


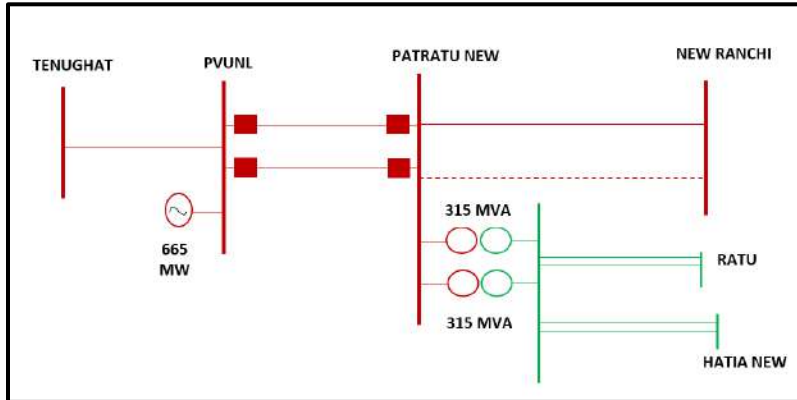
Figure 1: Network across the affected area

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

• **Major Elements Tripped (प्रमुख ट्रिपिंग):**

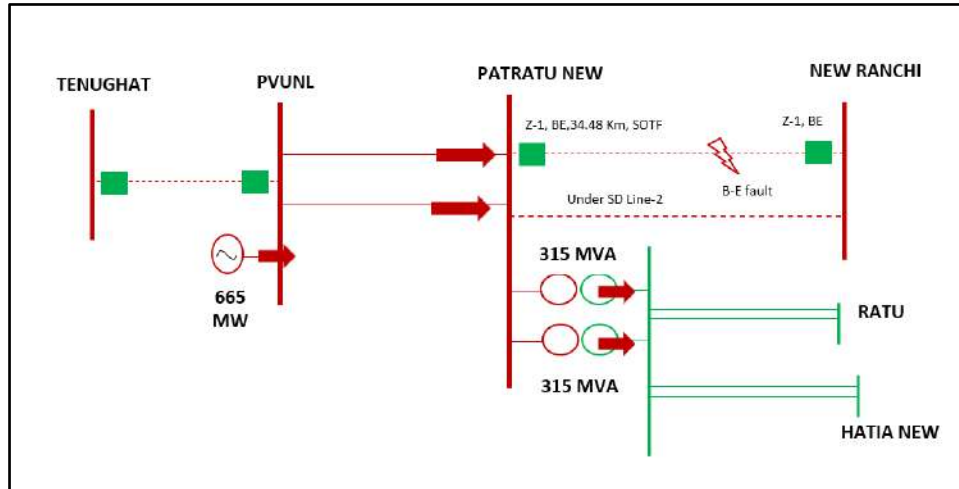
क्र०स०	नाम	Trip time (hh:mm:ss)	उप केंद्र 1 रिले संकेत	उप केंद्र 2 रिले संकेत	Restoration time (Hrs)
1	400 kV Patratu- New Ranchi -1 line	11:06:24	Z-1, B-E, FC-4.99 kA	B- E, FD: 10.4 km, FC- 15.3 kA	21/12/2025_16:45 Hrs
2	400 kV PVUNL- Tenughat line	11:06:30	SPS O/C Operated as per scheme.	DT received as per scheme.	21:03 Hrs
3	400 kV PVUNL- Patratu-1 line	11:23:28	Bus bar protection operated at Patratu end and DT received at PVUNL end		14:50 Hrs
4	400 kV PVUNL- Patratu-2 line	11:23:28			12:58 Hrs

• **Event Analysis (Based on PMU, SCADA & DR) (घटना का विश्लेषण):**

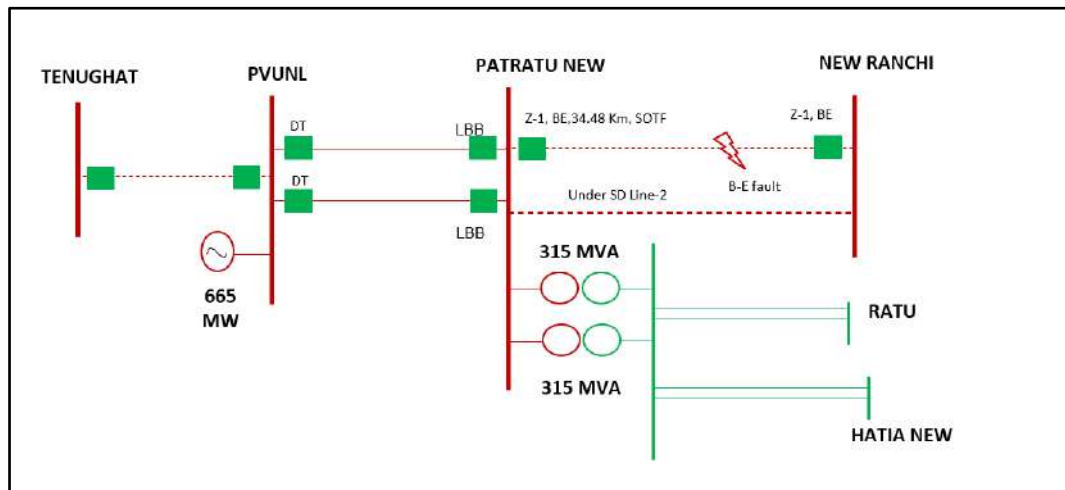


- Prior to event, PVUNL generation of around 665 MW was being evacuated through 400kV PVUNL-Patratu D/C and 400kV PVUNL-Tenughat line.
- 400kV New Ranchi-Patratu -2 line was under planned shutdown.
- At 11:06:15 Hrs on 20/12/25, B-E fault occurred on 400 kV Patratu- New Ranchi-1 Line due to snapping of conductor in between Loc No 27-28. A/R was attempted through Tie CB, but it was unsuccessful due to persistent fault after dead time of 1 sec.

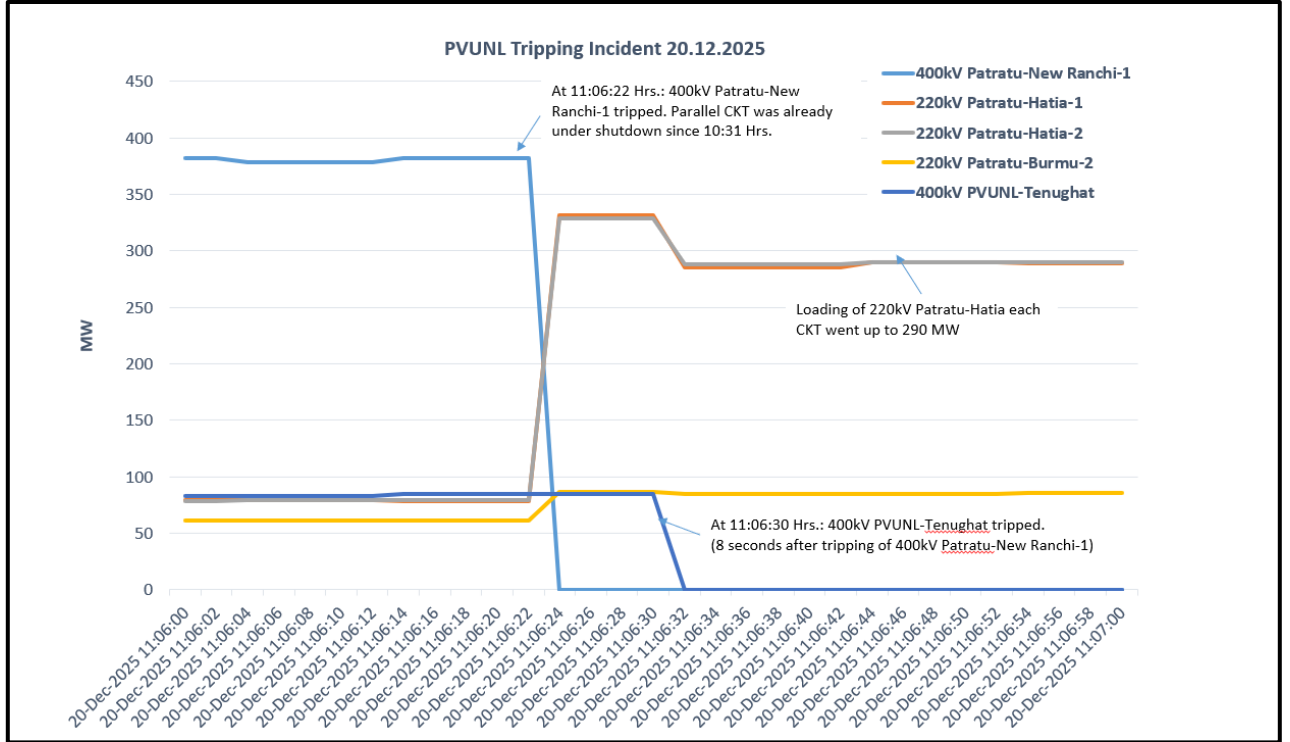
- Following tripping of 400 kV Patratu- New Ranchi-1 Line, 400 kV PVUNL-Tenughat Line tripped on SPS operation as per scheme (324 A). Subsequently, PVUNL generation was evacuated through 400 kV PVUNL-Patratu D/C and 400/220 kV ICTs at Patratu.



- At 11:23:28 Hrs, during charging attempt of the 400 kV Patratu-New Ranchi-1 from Patratu end, line tripped on SOTF due to permanent fault. Simultaneously, busbar/LBB protection operated at 400 kV Patratu substation, resulting in tripping of both 400 kV PVUNL-Patratu D/C lines on LBB/BB and DT receipt at PVUNL.



- This results loss of evacuation path and blackout of PVUNL bus, leading to a generation loss of 665 MW.



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

- BB-1 and LBB operation inferred to be un-intended protection operation, which was initiated from 400 kV Patratu – PVUNL - 02 bay. This indicates probable setting, CT polarity/and or wiring issue associated with the LBB/ BB protection scheme of PVUNL bay-2 and Patratu 400 kV Bus-1.
- Complete verification of the entire BB protection wiring is required and issue to be resolved at earliest to prevent re-occurrence. After implementing the necessary corrections, busbar stability test shall be conducted to confirm healthy operation.
- A/R not attempted with Main CB at Patratu for 400 kV New Ranchi-1 Line. Reason for the same need to be investigate.
- MOM which was held on 31/12/2025 is attached in annexure.
- Report received from JUSNL is attached in annexure.

Action Taken/Remedial Measures (सुधारात्मक उपाय): A committee will form with representatives from PVUNL, CRITL and JUSNL to review BB/LBB protection scheme at 400 kV Patratu substation and submit committee report within **one week**.

● **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

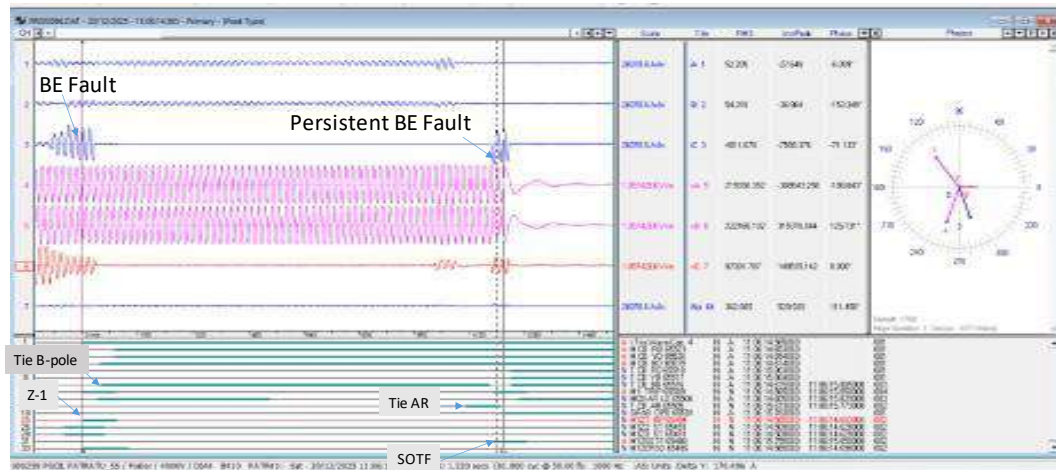
2	Whether DR/EL provided within 24 Hours?	1. IEGC section 37.2 (c) 2. CEA grid Standard 15.3	Submitted
3	Detailed Report received within 7 days?	IEGC section 37.2 (e)	Submitted
4	Protection system not operated correctly	CEA Technical Standard for Construction of Electrical Plants and Electric Lines: 48 (1) a. CEA (Technical standards for connectivity to the Grid) Regulation, 2007: Schedule Part 1. (6.1, 6.2, 6.3)	Unintended LBB/bus bar protection operated at Patratu S/s.

- **Key Lessons Learnt** (प्रमुख अधिगम बिंदु):

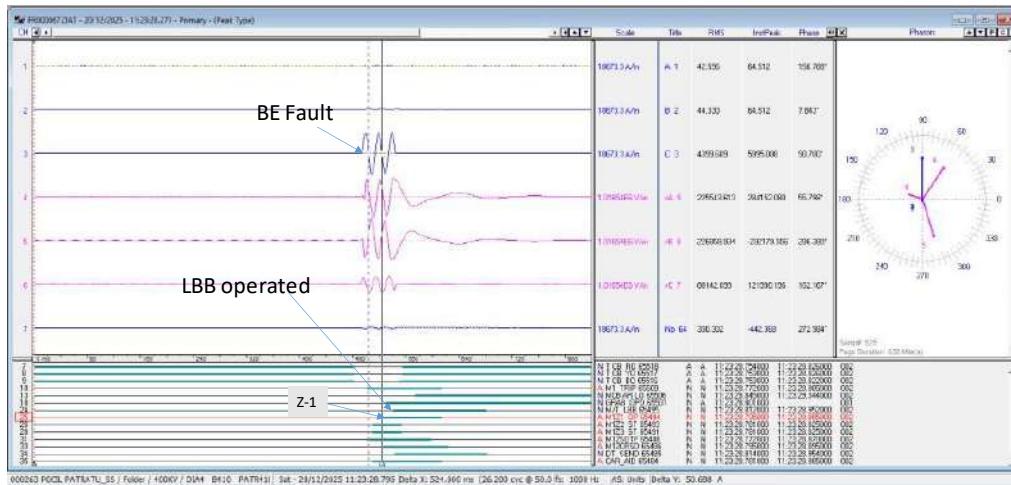
1. Preventive maintenance of the transmission line, including thermos-vision scanning and tightening of all loose joints in accordance with CEA Grid Standard regulation 2010 is essential to prevent incident such as snapping of ACSR twin moose conductor (flow 400 MW). Periodic checking of all protection settings through both internal reviews and Third-party Protection audit as mentioned in the Grid code, is required to avoid un-intended protection operation and to ensure system reliability.

Annexure 1:

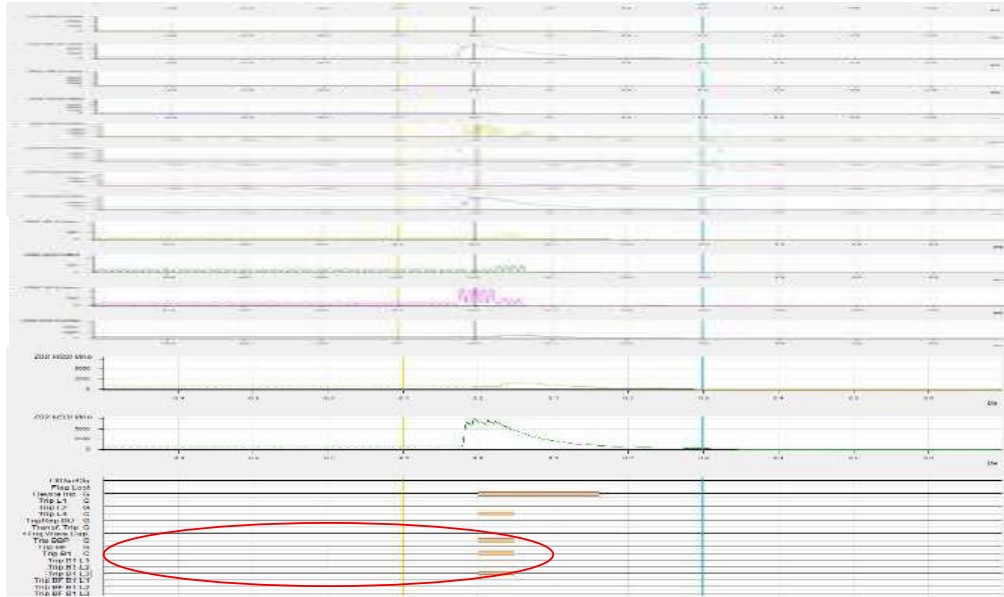
DR from Patratu for New Ranchi-1 at 11:06 Hrs



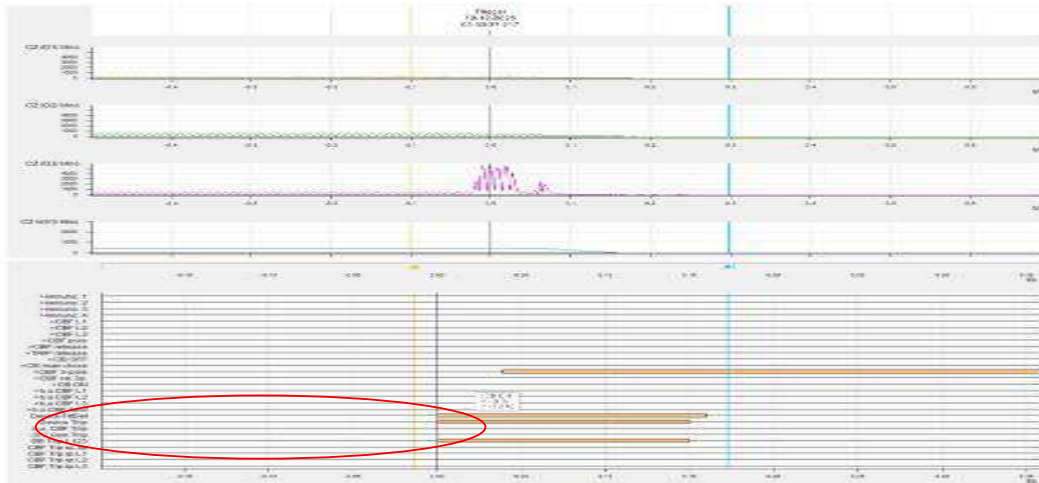
DR from Patratu for New Ranchi-1 at 11:23 Hrs



Bus Bar CU2



BB bay unit2 of 400 kV PVUN2



Recording of Meeting on disturbance at 400 kV PVUNL Generating Station

An online meeting was held on 31st December'25 to discuss the Grid Disturbance at 400 kV PVUNL Generating station that occurred on 20th December'25. The meeting was attended by representatives from PVUNL, JUSNL, CRITL Team, ERLDC and ERPC.

Following Key points were deliberated during the meeting-

- ERLDC explained the sequence of events through presentation and highlighted that the unintended LBB/BB protection operation at Patratu S/s, during charging attempt of faulty 400 kV Patratu-New Ranchi-1 Line, resulted PVUNL blackout and led to a generation loss of 665 MW at PVUNL.
- CRITL Team from JUSNL informed that the LBB initiation originated from Main Bay of 400 kV PVUNL-2, following which BB protection operated. Due to wiring/circuitry issue in LBB/BB protection, all tie CBs along with Main CBs connected to 400 kV Bus-1 tripped at 400 kV Patratu, resulting loss of evacuation of PVUNL and generation loss.
- It was agreed that CRITL will form a committee in presence of PVUNL representative to review the LBB and bus bar protection scheme and submit the findings along with root cause and remedial measures of this event within one week. JUSNL agreed.
- As an interim measure to prevent recurrence, Bus bar protection at Patratu S/s has been kept out of service and zone-4-time delay of all lines has been reduced to 250 msec. The BB protection may be taken in to service after reviewing bus bar scheme and successful BB stability test.
- ERLDC pointed that for availing any line shutdown at PVUNL or Patratu, PVUNL generation must be restricted to ensure N-1 compliance in 220kV network to avoid overloading in 220kV Patratu-Hatia D/C and 315 MVA ICTs at Patratu S/s.
- ERLDC highlighted that the 400kV Patratu-New Ranchi-1 line got tripped due to snapping of conductor in between Loc No 27-28 with loading of around 400 MW only. JUSNL is requested to carry out the proper maintenance of the line, in line with CEA grid standard regulation 2010 to avoid such breakdown in future. JUSNL agreed the same.
- ERLDC also raised concern about repeated (Three times) Grid disturbance at PVUNL in 2025 due to unwanted protection operation at Patratu S/s and sought an update on the status of internal protection audit for compliance of IEGC 2023. CRITL team

informed that the internal protection audit was conducted in December'25 and they will submit report within one month.

- PVUNL representative raised the concern about repeated unwanted disturbance at PVUNL due to protection issue at Patratu S/s, which adversely affecting generator stability and resulting in financial loss.

Finally it was decided that a committee will form with member from PVUNL, CRITL and JUSNL to review BB/LBB protection scheme and submit committee report within one week.

****Meeting concluded with a Vote of Thanks. ****

Members Present-

- K Suresh kumar, AGM(PVUNL)
- S Md Rasool, DGM(PVUNL)
- Rakesh Kumar, Senior Manager (PVUNL)
- R. L. Paswan, GM, Transmission Zone-V, Hazaribagh
- Pravin Ram, DGM (in-charge), Hazaribagh
- Vikash Kumar, Sr. Manager, 400/220kV Patratu S/s.
- Chandra Shekhar Kumar, Sr. Manager, CRIL
- Dharm Das Murmu, Jr. Manager, CRITL
- Raju Kachhap, Sr. Manager, SLDC
- Kumar Satyam, ERPC
- Manas Das, DGM, ERLDC
- Bilash Achari, DGM, ERLDC
- Bimal Swargiary, DGM, ERLDC
- Rakesh Kumar Pradhan, Chief Manager, ERLDC
- Alok Pratap Singh, Chief Manager, ERLDC
- Gitesh Patel, Deputy Manager, ERLDC

Grid Disturbance at 400/220 kV Patrattu GSS on 20.12.2025

At 11.23 Hrs Event :-

At 11:23 hrs during trial operation of 400 kV Patrattu - New Ranchi-1 Line, the line was tripped on SOTF, Z1 and same time BB1 protection operated which is incorrectly initiated from 400 kV PVUNL – 02 bay, simultaneously 400 kV PVNL D/C, 400 kV Latehar D/C main CB and concern Tie CB operated due which total power failure occurred at Patrattu s/s.

Again, at 12.21 hrs total power failure occurred while closing of CB of 400 kV Patrattu – PVUNL- 01 from PVUNL and this time also LBB protection operated which is incorrectly initiated from 400 kV PVUNL – 02 bay.

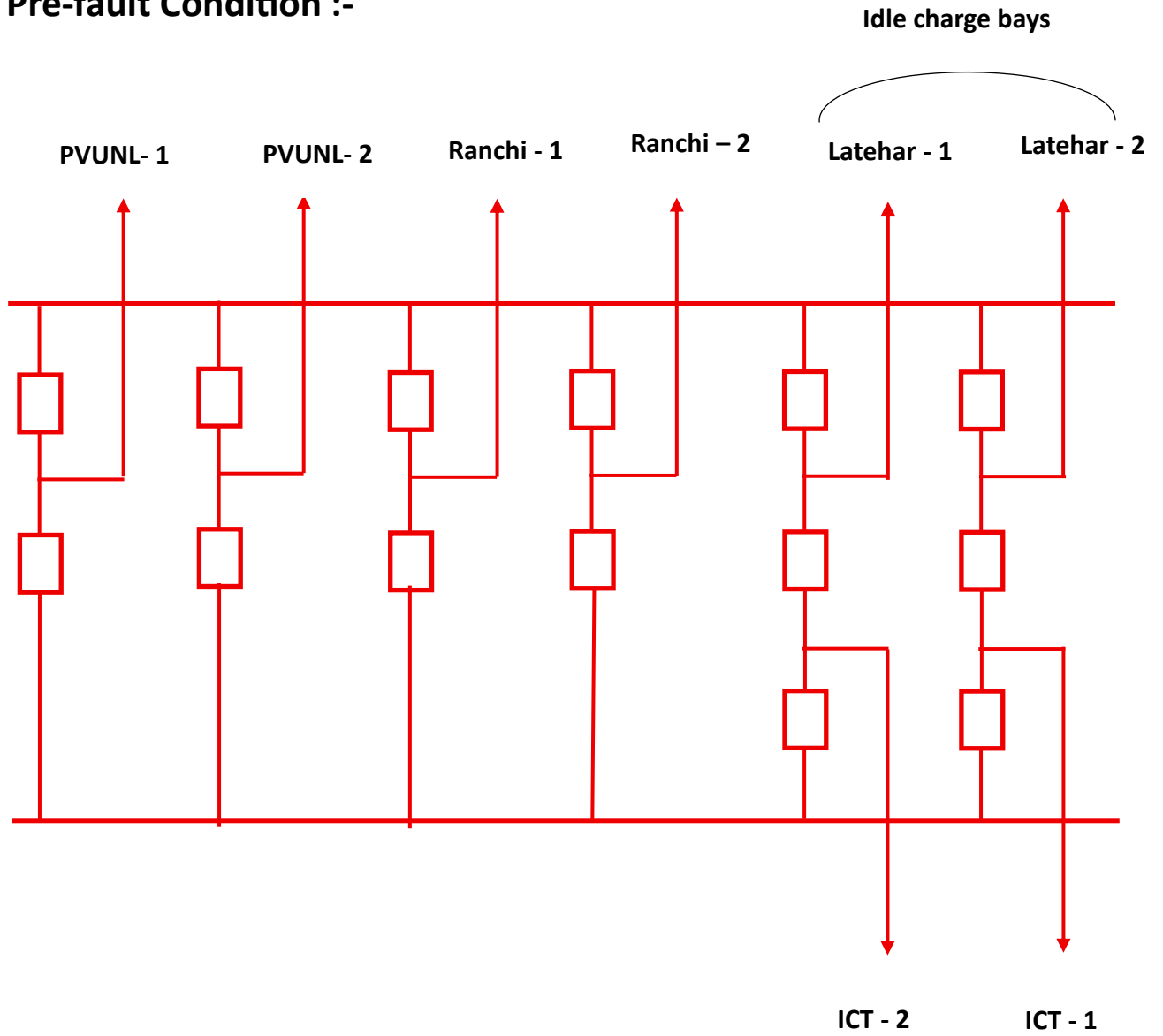
Weather condtion : - Normal

Generation Load Loss :- 665 MW

Elements under shutdown :- 400 kV Patrattu – New Ranchi – 02
(shutdown taken at 10:30 Hrs)

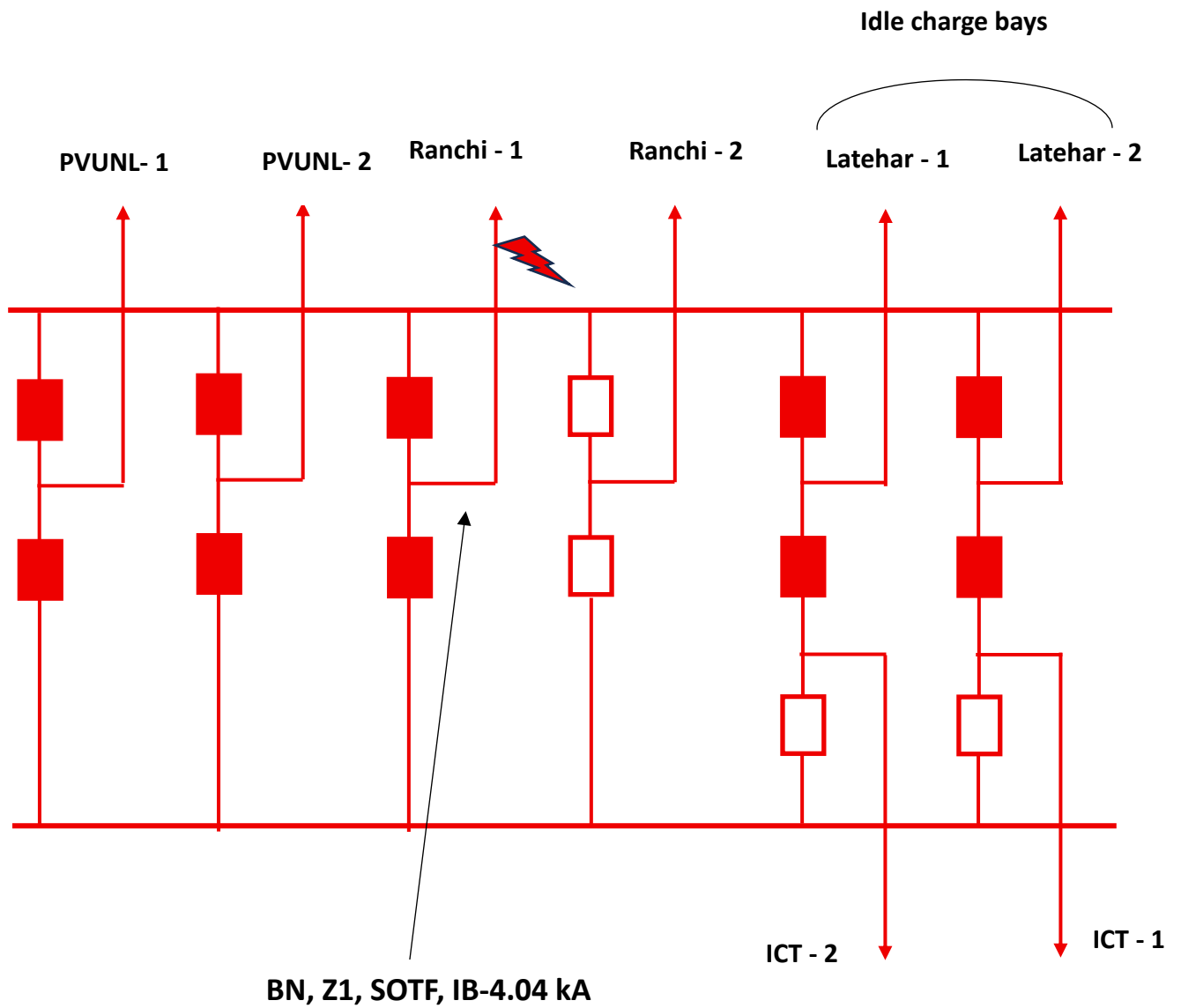
Element's tripped :- 400 kV Patrattu - New Ranchi-1, 400 kV Patrattu – PVUNL D/C, 400 kV Patrattu – Latehar D/C (idle charge bay)

Pre-fault Condition :-



- 400 kV Patratu – New Ranchi was under planned shutdown.

20.12.25, 11.23 Hrs Event :-

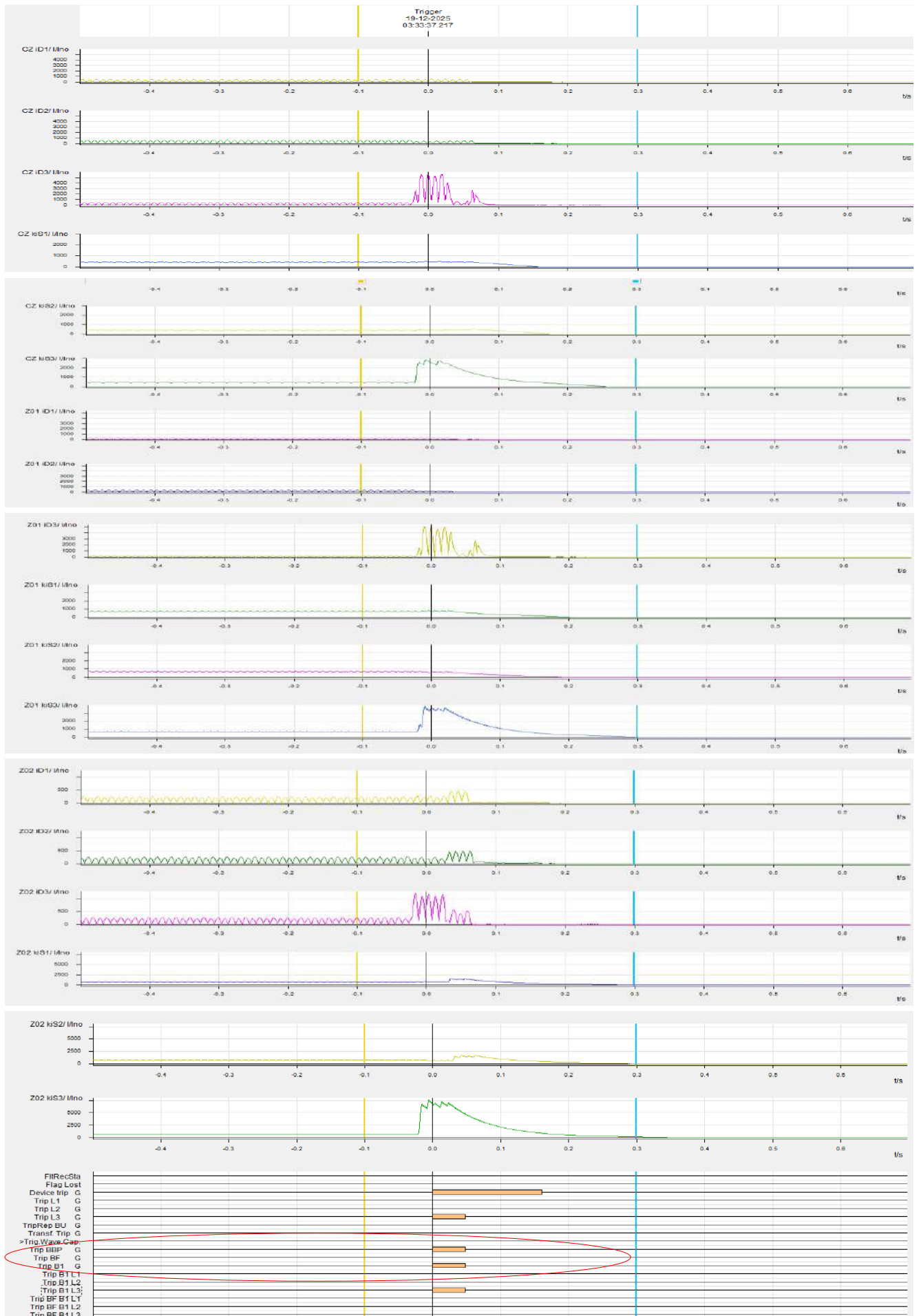


- With the tripping of 400 kV Patratu – New Ranchi – 01, Bus Bar – 1 operated.
- And all Main CB and Tie CB of 400 kV Line feeders operated.

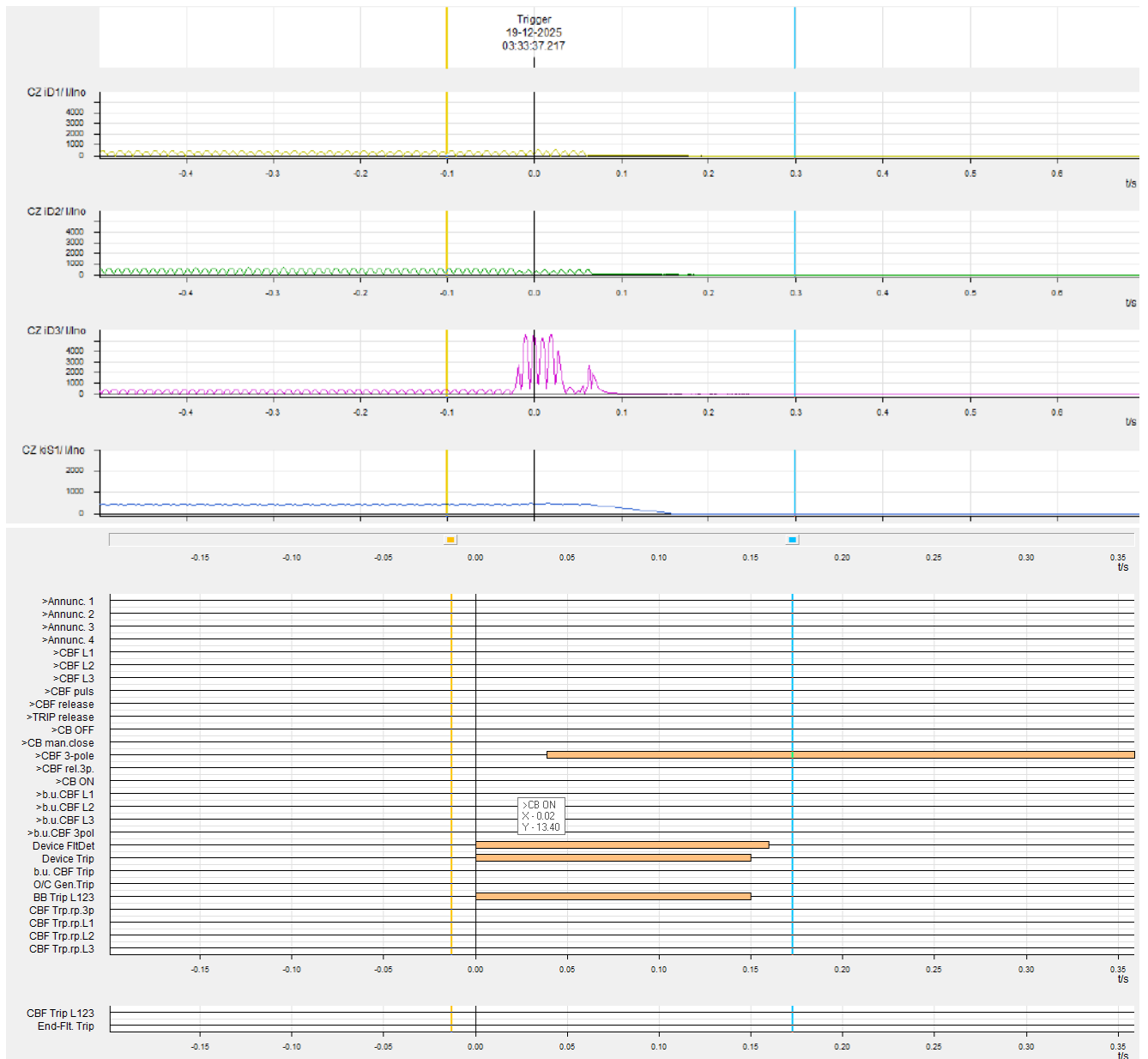
Fault Analysis :-

- BN fault occurred at 11:06 Hrs on 400 kV Patratu- New Ranchi-1 Line with Z1, 4.99 kA. The fault was due to snapping of conductor in between Loc No 27-28 as intimated. A/R was attempted through Tie CB, but it was unsuccessful due to persistent fault after 1 sec.
- After tripping of 400 kV Patratu- New Ranchi-1 Line, 400 kV PVUNL-Tenughat Line tripped on SPS operation. Subsequently, PVUNL generation was evacuated through 400 kV PVUNL-Patratu D/C and 400/220 kV ICTs at Patratu.
- At 11:23:28 Hrs, during charging attempt, the 400 kV Patratu-New Ranchi-1 tripped again due to permanent fault on Z-1 operation. Within 17 msec from Z-1 operation, Bus Bar-1 operated. Simultaneously, all Main CB and Tie CB of 400 kV line feeders tripped.
- This results loss of evacuation path and blackout of PVUNL bus, leading to a generation loss of 665 MW.
- It seems that Bus bar protection is operated incorrectly.

Indication of BB_CU2 :-



Indication of BB2 PU of 400 kV Patratu -2 Bay



1 Indications

1.1 Trip Log - 000002 / 19-12-2025 03:33:37.217 - PAT_231225 / Folder / PATR400BBM2/7SS522

Trip Log - 000002 / 19-12-2025 03:33:37.217 - PAT_231225 / Folder / PATR400BBM2/7SS522

Number	Indication	Value	Date and time	Cause	State
00301	Power System fault	2 - ON	19.12.2025 03:33:37.217		
00302	Fault Event	2 - ON	19.12.2025 03:33:37.217		
177.1344.01	Trip command for B1 L3	ON	0 ms		

20.12.25, 12.21 Hrs Event :-

Again, at 12.21 hrs total power failure occurred while closing of CB of 400 kV Patrattu – PVUNL- 01 from PVUNL end and LBB protection operated which is incorrectly initiated from 400 kV PVUNL – 02 bay.

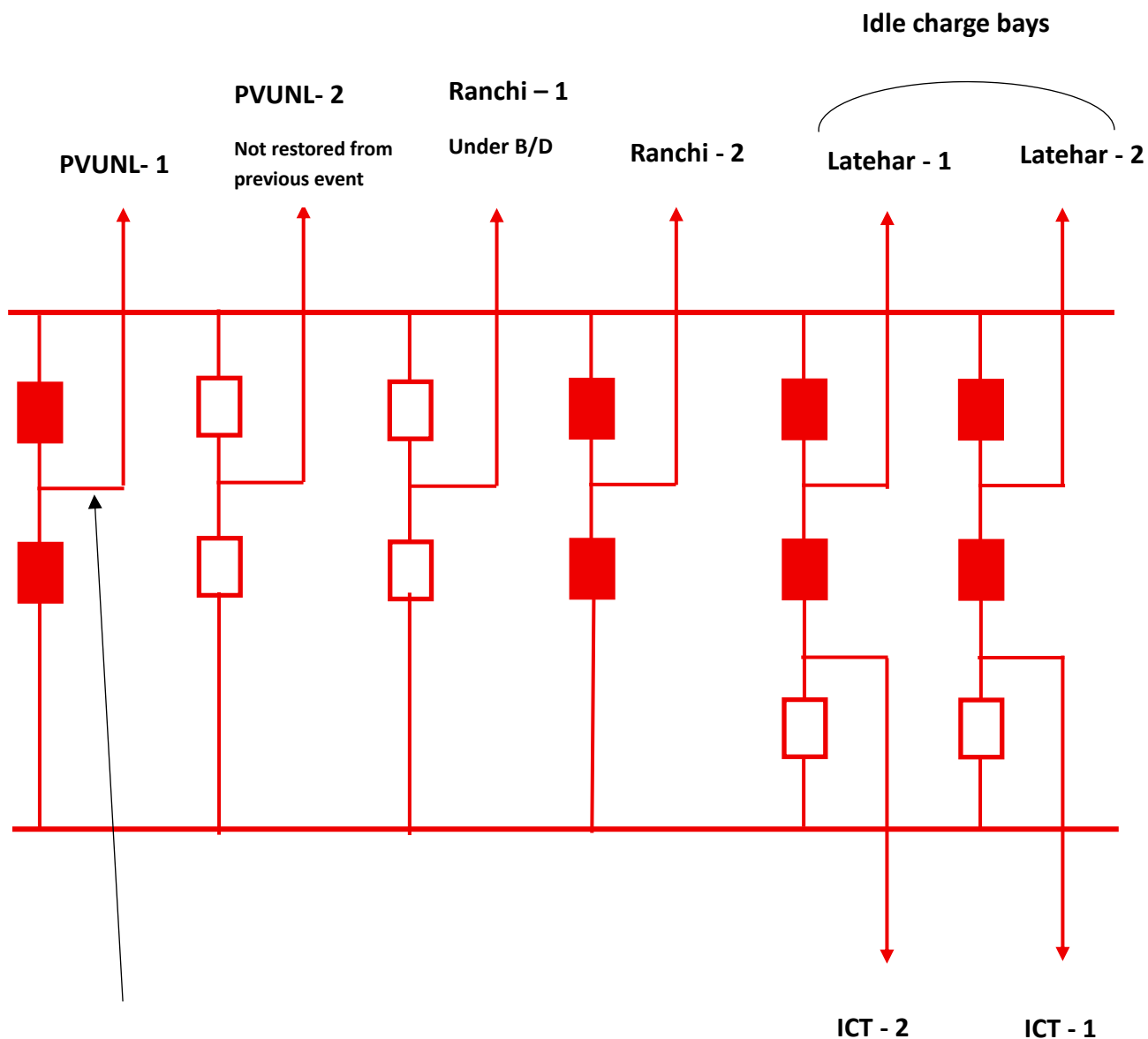
Weather condtion : - Normal

Generation Load Loss :-

Elements under outage:- 400 kV Patrattu – New Ranchi – 01
(under breakdown due to snapping of conductor in between Loc No 27-28)

Element's tripped :- 400 kV Patrattu - New Ranchi-2, 400 kV Patrattu – PVUNL- 01, 400 kV Patrattu – Latehar D/C (idle charge bay)

20.12.25, 12.21 Hrs Event :-



LBB operated while closing of CB of 400 kV
Patratu – PVUNL- 01 from PVUNL end.

- LBB operated which is incorrectly initiated from 400 kV PVUNL – 02 bay which is not in charged condition at the time of event.

Relay Indication –

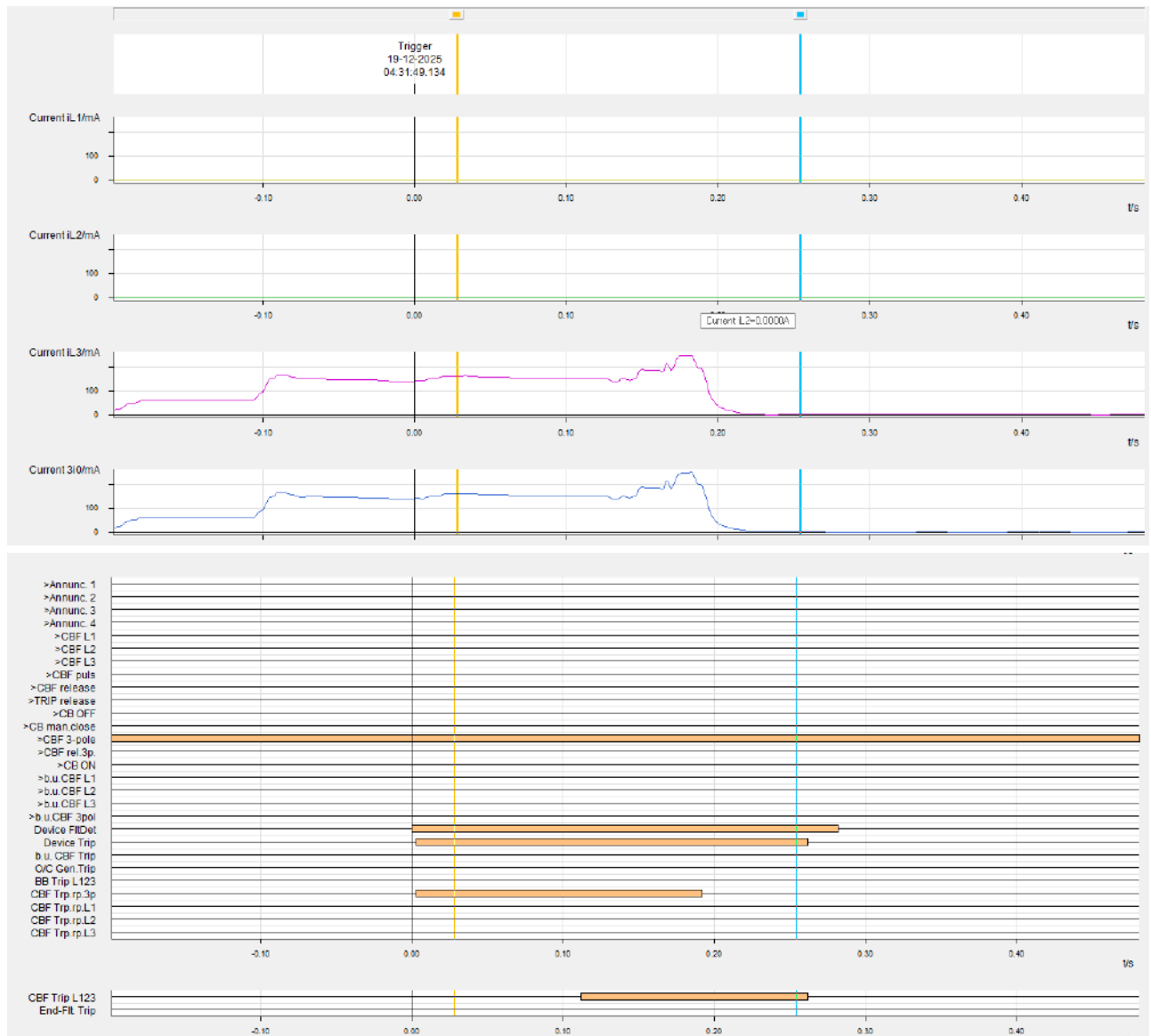
Bus Bar CU2 :-

1	Indications
1.1	Trip Log - 000003 / 19-12-2025 04:31:49.135 - PAT_231225 / Folder / PATR400BBM2/7SS522

Trip Log - 000003 / 19-12-2025 04:31:49.135 - PAT_231225 / Folder / PATR400BBM2/7SS522

Number	Indication	Value	Date and time	Cause	State
00301	Power System fault	3 - ON	19.12.2025 04:31:49.135		
00302	Fault Event	3 - ON	19.12.2025 04:31:49.135		
176.1071.09	Trip repeat Bay Unit @09 phase L1	ON	3 ms		
176.1072.09	Trip repeat Bay Unit @09 phase L2	ON	3 ms		
176.1073.09	Trip repeat Bay Unit @09 phase L3	ON	3 ms		
177.1352.01	Trip command BF for B1 phase L1	ON	102 ms		
177.1353.01	Trip command BF for B1 phase L2	ON	102 ms		
177.1354.01	Trip command BF for B1 phase L3	ON	102 ms		
176.1082.09	Breaker fail/Transfer trip Bay Unit @09	ON	124 ms		

BB bay unit-2 of 400 kV PVUNL-2



Observations/ Protection Issues-

1. Bus Bar -1 and LBB operation seems un-intended protection operation which was initiated from 400 kV Patrattu – PVUNL - 02 bay.
2. It seems that there was some wiring issue for LBB/ BB protection in PVUNL bay-2.

Operational Issues-

- Since A/R was unsuccessful due to persistent fault on 400 kV Patrattu- New Ranchi-1 Line, charging attempt should be under taken only after thorough patrolling and confirmation of fault clearance by Line maintenance crew.


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.erdc.in, E-mail : erdcinfo@grid-india.in, Tel.: 033 23890060/0061

Detailed Report of grid event at 220kV Garhwa 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): 25-11-2025

1. Event Summary (घटना का सारांश):

At 02:05 Hrs, an RYB fault occurred in 33 kV bus side (an SST supply bay) due to bird strike. Consequently, 220/132 kV ICTs tripped in O/C earth fault. Following this incident, all 220kV feeders at Garhwa were manually hand tripped for safety reason, leading to complete outage of 220kV Garhwa S/s. Total load loss of 30 MW reported at Garhwa S/s of Jharkhand Power System.

2. Time and Date of the Event (घटना का समय और दिनांक): At 02:05 Hrs on 05/11/2025:

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

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

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)	50.024	28142	18601	332	1137
Post Event (घटना के बाद)	50.024	28142	18571	332	1107

***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)	NIL
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जो बंद है)	
Weather Condition (मौसम स्थिति)	Inclement weather at Garwah S/S.

1. **Load and Generation loss (लोड और जेनरेशन हानि):** Approximate load loss of 30 MW at Garhwa (JH) area of Jharkhand Power System.

6. **Duration of interruption (रुकावट की अवधि):** 1 Hours and 40 minutes

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

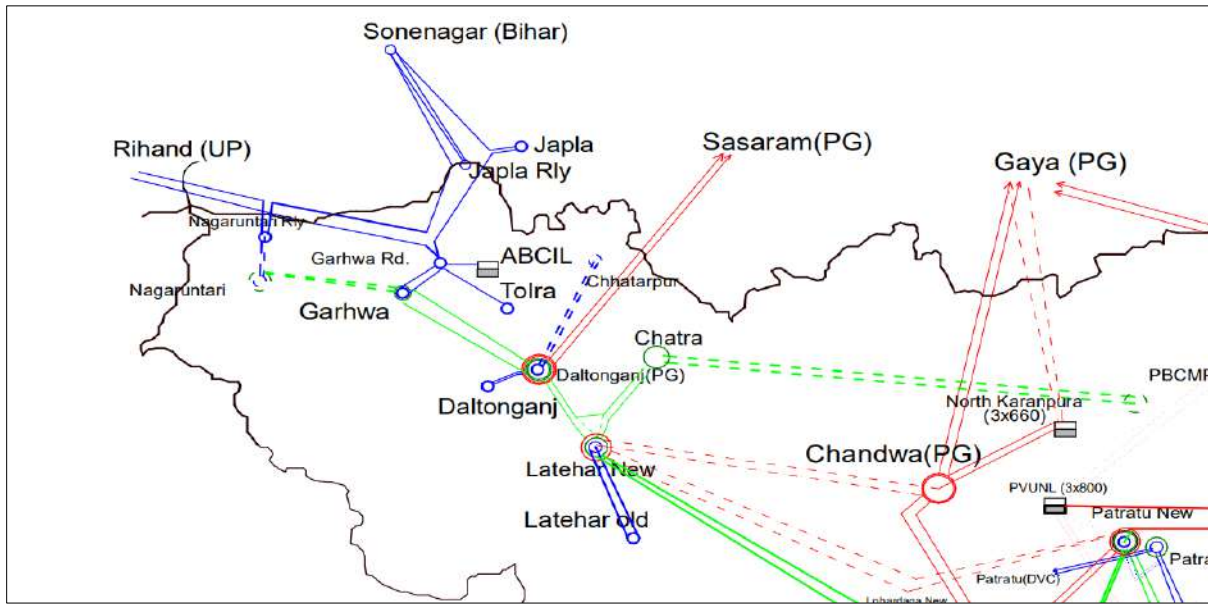


Figure 1: Network across the affected area

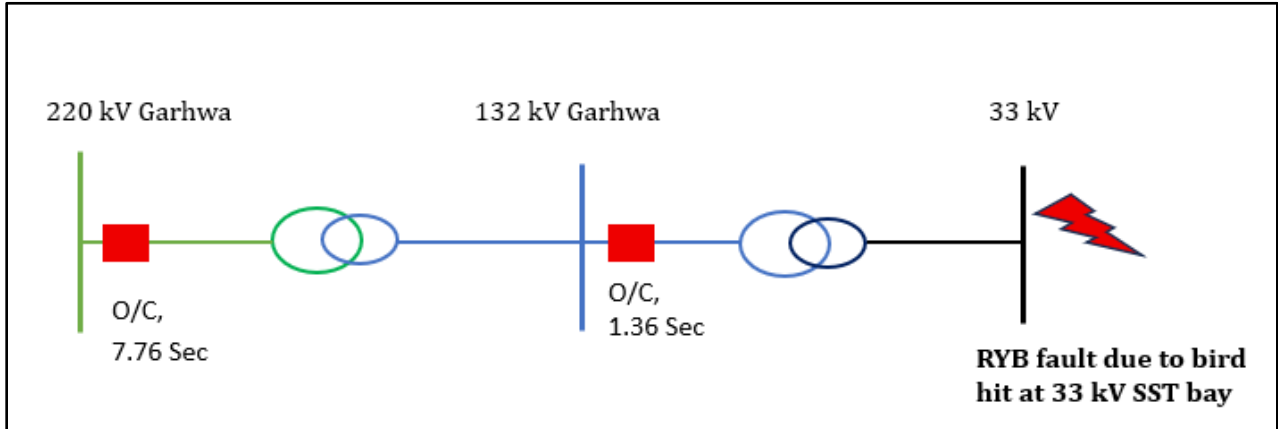
8. **Details of Equipment Failure (if any during the event) (उपकरण विफलता का विवरण):** NA

9. **Major Elements Tripped (प्रमुख ट्रिपिंग):**

क्र०स०	नाम	Trip time (hh:mm:ss)	उप केंद्र 1 रिले संकेत	उप केंद्र 2 रिले संकेत	Restoration time
1	220 KV Daltonganj (PG) – Garhwa ckt -1	02:05	Manually Hand Tripped		03:46
2	220 KV Daltonganj (PG) – Garhwa ckt -2	02:05	Manually Hand Tripped		03:47
3	220/132kV ICT -1	02:04:10	O/C Earth fault		-

4	220/132kV ICT- 2	02:04:10	O/C Earth fault	-
5	132/33kV ICT -1	02:04:04	O/C Earth fault	-

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



- 220kV Garhwa S/s is connected with Grid through 220kV-Daltongunj-Garhwa D/C.
- At 02:04:04 Hrs, a three phase fault occurred due to bird strike on 33kV bus side.
- Fault was partially cleared by 132/33kV ICT-1 on O/C earth fault after 1.36 sec.
- Due to reversed polarity issue of 132/33kV ICT-2, fault was not picked up and after 7.7 sec, both 220/132kV ICTs got tripped on O/C earth fault.
- Meanwhile for safety purpose, 220kV both feeders manually hand tripped.
- As a result 220kV Garhwa S/s became dead.
- Total load loss of 30 MW reported at Garhwa S/s.



Figure 2: PMU plot at 400KV Daltonganj Sasaram line#1 Voltage during tripping of 132 kV system

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

- Fault was occurred in 33kV bus side, which was partially cleared by 132/33kV ICT -1 but same fault was not sensed by 132/33kV ICT-2. As per report received from SLDC, Backup core CT polarity of 132 kV side of ICT-2 was found reversed. Issue resolved on 11/11/2025.
- Fault was occurred in 33kV network which was delayed cleared by 132/33kV ICT-1 and 220/132kV ICTs in 1.7 sec and 7.7 sec respectively. O/C earth fault setting of 220/132kV ICTs and 132/33kV ICTs may be coordinated.
- DR is not time synchronised.
- Detail Report received from SLDC is attached in Annexure.

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

The Back -up core CT polarity issue of 132 kV side of 132/33 kV Power Transformer-02 was rectified on 11.11.2025.

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

S.No.	Issues	Regulation Non-Compliance	Utilities
1.	DR/EL submitted within 24 hours	1. IEGC section 37.2 (c) 2. CEA grid Standard 15.3	YES
2	Detailed report not submitted within 7 days	IEGC section 37.2 (e)	YES

14. Key Lessons Learnt (प्रमुख अधिगम बिंदु):

Periodic internal protection audit should be carried out as mandated by Grid code once in a year to identify this type of CT polarity errors and protection Setting coordination, issues, thereby preventing un-intended protection operation .

Annexure 1:

Grid Disturbance at 220 kV Garhwa Substation on 05.11.2025 at 02:05 Hrs

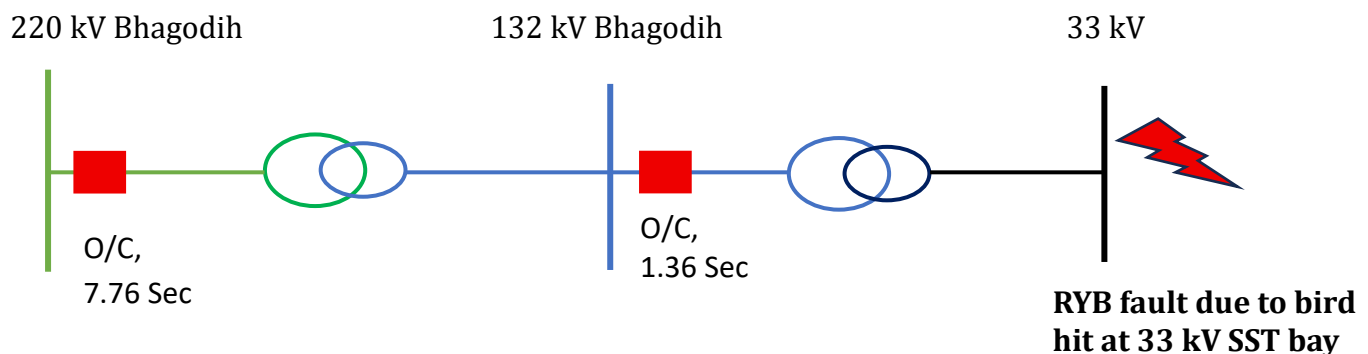
At 02:05 Hrs, an **RYB fault** occurred at 33 kV Bus side (at SST supply bay) due to bird hit and the fault was partially cleared within 1360 msec due to the tripping of one 132/33 kV Power Transformer-01. Due to none tripping of other 132/33 kV Power Transformer-02, the fault was completely cleared within 7760 msec by 220/132 kV ICTs with delayed fault clearance.

Weather condition – Normal

Element under outage prior to event – Nill

Element tripped – 132/33 kV Power Transformer-01, 220/132 kV ICTs.

Load Loss – 30 MW



Note :- 132/33 kV Power Transformer-02 didn't tripped due to incorrect CT polarity of Back-up core of 132 kV side.

Fault Analysis :-

- RYB fault occurred at 33 kV bus side due to bird hit at 33 kV SST bay and the fault was partially cleared within 1360 msec due to the tripping of one 132/33 kV Power Transformer-01.
- Due to none tripping of other 132/33 kV Power Transformer-02, the fault was completely cleared within 7760 msec by 220/132 kV ICTs with delayed fault clearance as the fault current seen by ICTs are of low magnitude.

Protection Issue :-

- The Back -up core CT polarity of 132 kV side of 132/33 kV Power Transformer-02 was found reverse (incorrect).

The issue was rectified on 11.11.2025.

- 220/132 kV ICTs and 132/33 kV Power Transformers back up setting weren't coordinated properly. The back settings are revised as follows –

OVER CURRENT PROTECTION

Function	150MVA ICTS				50MVA Power Transformer			
	HV (800/1)		LV (1200/1)		HV (300/1)		LV (1200/1)	
	Previous	Revised	Previous	Revised	Previous	Revised	Previous	Revised
IDMT Setting								
Pick up (A)	0.49 A	0.49 A	0.49 A	0.55 A	0.8 A	0.8 A	0.8 A	0.8 A
TMS (S)	0.25 A	0.25 A	0.25 A	0.22 A	0.260 A	0.200 A	0.19 A	0.19 A
Direction	Non-dir	Forward	Non-dir	Non-dir	Forward	Forward	Forward	Non-Dir
High Set Definite Time								
Pick Up (A)	4.0A	3.0 A	4.0 A	3.3 A	7.29 A	4.37 A	7.29 A	4.37 A
Time Dely (S)	0 S	0.1 S	0 s	0.1 S	0.2 S	0.1 S	0.15 S	0.1 S
Direction	Non-dir	Non-dir	Non-dir	Non-dir	Non-dir	Non-dir	Non-dir	Non-dir

EARTH FAULT PROTECTION

Function	150MVA ICTS				50MVA Power Transformer			
	HV (800/1)		LV (1200/1)		HV (300/1)		LV (1200/1)	
	Previous	Revised	Previous	Revised	Previous	Revised	Previous	Revised
IDMT Setting								
Pick up (A)	0.20 A	0.15 A	0.20 A	0.15 A	0.15 A	0.15 A	0.15 A	0.15 A
TMS (S)	0.25 A	0.35 S	0.25 S	0.32 S	0.355 S	0.30 S	0.27 S	0.27 S
Direction	Non-dir	Forward	Non-dir	Non-dir	Forward	Forward	Forward	Non-Dir
High Set Definite Time								
Pick Up (A)	2.5 A	2.4 A	2.5 A	2.6 A	5.47 A	3.5 A	5.47 A	3.5 A
Time Dely (S)	0 S	0.1 S	0	0.1 S	0.2 S	0.1 S	0.15 S	0.1S
Direction	Non-dir	Non-dir	Non-dir	Non-dir	Non-dir	Non-dir	Non-dir	Non-dir

Relay Indication of 220/132 kV ICT-1 HV Side

S	Fault start	Trip comm...	End of fault	Fault type
#	11/05/2025 03:17:41.716	03:17:49.352	03:17:49.436	*****

11/05/2025	03:17:41.716	03:17:49.352	03:17:49.436
Pickup		Trip	End
Fault type *****		Trip type *****	
Units			
	Pickup		Trip
Phase A Instantaneous Unit 1	Pick Up		Phase A Instantaneous Unit 1 Trip
Phase B Instantaneous Unit 1	Pick Up		Phase B Instantaneous Unit 1 Trip
Phase C Instantaneous Unit 1	Pick Up		Phase C Instantaneous Unit 1 Trip
Phase A Instantaneous Unit 2	Pick Up		Phase A Instantaneous Unit 2 Trip
Phase B Instantaneous Unit 2	Pick Up		Phase B Instantaneous Unit 2 Trip
Phase C Instantaneous Unit 2	Pick Up		Phase C Instantaneous Unit 2 Trip
Phase A Instantaneous Unit 3	Pick Up		Phase A Instantaneous Unit 3 Trip
Phase B Instantaneous Unit 3	Pick Up		Phase B Instantaneous Unit 3 Trip
Phase C Instantaneous Unit 3	Pick Up		Phase C Instantaneous Unit 3 Trip
Phase A Time Overcurrent Unit 1	Pick Up		Phase A Time Overcurrent Unit 1 Trip
Phase B Time Overcurrent Unit 1	Pick Up		Phase B Time Overcurrent Unit 1 Trip
Phase C Time Overcurrent Unit 1	Pick Up		Phase C Time Overcurrent Unit 1 Trip
Phase A Time Overcurrent Unit 2	Pick Up		Phase A Time Overcurrent Unit 2 Trip
Phase B Time Overcurrent Unit 2	Pick Up		Phase B Time Overcurrent Unit 2 Trip
Phase C Time Overcurrent Unit 2	Pick Up		Phase C Time Overcurrent Unit 2 Trip

Magnitudes

	Pre-Fault	Fault
IA	0.086 A	0.119 A
ANG IA	0.0 °	352.8 °
IB	0.123 A	0.879 A
ANG IB	211.5 °	201.7 °
IC	0.052 A	0.700 A
ANG IC	115.8 °	28.1 °
IG	3d37b396 *	3da8db05 *
ANG IG	434ab73e *	433a8cc0 *
IN	0.045 A	0.083 A
ANG IN	202.9 °	186.7 °
IPOL	0.000 A	0.000 A
ANG IPOL	***** °	***** °
ZSC	0.015 A	0.028 A
NSC	0.032 A	0.424 A
PSC	0.085 A	0.495 A
FREQ	50.000 Hz	50.000 Hz
IGN	0.000 A	0.000 A

General

ACTGRP	1
THERMAL IMG	0 %

Relay Indication of 220/132 kV ICT-1 LV Side

S	Fault start	Trip comm...	End of fault	Fault type
#	11/05/2025 02:55:57.388	02:56:05.016	03:14:52.934	BC

11/05/2025
 02:55:57.388 02:56:05.016 03:14:52.934

Pickup Trip End
 Fault type BC Trip type *****

Units

Pickup	Trip
Phase A Instantaneous Unit 1 Pickup	Phase A Instantaneous Unit 1 Trip
Phase B Instantaneous Unit 1 Pickup	Phase B Instantaneous Unit 1 Trip
Phase C Instantaneous Unit 1 Pickup	Phase C Instantaneous Unit 1 Trip
Phase A Instantaneous Unit 2 Pickup	Phase A Instantaneous Unit 2 Trip
Phase B Instantaneous Unit 2 Pickup	Phase B Instantaneous Unit 2 Trip
Phase C Instantaneous Unit 2 Pickup	Phase C Instantaneous Unit 2 Trip
Phase A Instantaneous Unit 3 Pickup	Phase A Instantaneous Unit 3 Trip
Phase B Instantaneous Unit 3 Pickup	Phase B Instantaneous Unit 3 Trip
Phase C Instantaneous Unit 3 Pickup	Phase C Instantaneous Unit 3 Trip
Phase A Time Overcurrent Unit 1 Pickup	Phase A Time Overcurrent Unit 1 Trip
Phase B Time Overcurrent Unit 1 Pickup	Phase B Time Overcurrent Unit 1 Trip
Phase C Time Overcurrent Unit 1 Pickup	Phase C Time Overcurrent Unit 1 Trip
Phase A Time Overcurrent Unit 2 Pickup	Phase A Time Overcurrent Unit 2 Trip
Phase B Time Overcurrent Unit 2 Pickup	Phase B Time Overcurrent Unit 2 Trip
Phase C Time Overcurrent Unit 2 Pickup	Phase C Time Overcurrent Unit 2 Trip

Magnitudes

	Pre-Fault	Fault
VA	64.333 V	62.660 V
ANG VA	0.0 °	359.3 °
VB	63.619 V	41.529 V
ANG VB	240.8 °	218.2 °
VC	64.725 V	43.573 V
ANG VC	121.9 °	138.7 °
IA	0.087 A	0.118 A
ANG IA	166.1 °	158.6 °
IB	0.118 A	0.878 A
ANG IB	18.4 °	7.3 °
IC	0.052 A	0.700 A
ANG IC	281.5 °	193.7 °
IG	38627e0f *	38ef1349 *
ANG IG	42c42f86 *	43528d98 *
IN	0.039 A	0.082 A
ANG IN	10.5 °	351.8 °
IPOL	0.000 A	0.000 A
ANG IPOL	***** °	***** °
VN	1.020 V	3.592 V
ANG VN	215.0 °	139.6 °
VSUNC	64.241 V	63.445 V

Relay Indication of 220/132 kV ICT-2 HV Side

Emulation

S	Fault start	Trip comm...	End of fault	Fault type
#	08/08/2022 22:48:21.956	22:48:26.840	22:48:26.928	*****

08/08/2022

22:48:21.956 22:48:26.840 22:48:26.928

Pickup Trip End

Fault type ***** Trip type *****

Units

	Pickup	Trip
Phase A Instantaneous Unit 1 Pick Up	●	Phase A Instantaneous Unit 1 Trip ●
Phase B Instantaneous Unit 1 Pick Up	●	Phase B Instantaneous Unit 1 Trip ●
Phase C Instantaneous Unit 1 Pick Up	●	Phase C Instantaneous Unit 1 Trip ●
Phase A Instantaneous Unit 2 Pick Up	●	Phase A Instantaneous Unit 2 Trip ●
Phase B Instantaneous Unit 2 Pick Up	●	Phase B Instantaneous Unit 2 Trip ●
Phase C Instantaneous Unit 2 Pick Up	●	Phase C Instantaneous Unit 2 Trip ●
Phase A Instantaneous Unit 3 Pick Up	●	Phase A Instantaneous Unit 3 Trip ●
Phase B Instantaneous Unit 3 Pick Up	●	Phase B Instantaneous Unit 3 Trip ●
Phase C Instantaneous Unit 3 Pick Up	●	Phase C Instantaneous Unit 3 Trip ●
Phase A Time Overcurrent Unit 1 Pick Up	●	Phase A Time Overcurrent Unit 1 Trip ●
Phase B Time Overcurrent Unit 1 Pick Up	●	Phase B Time Overcurrent Unit 1 Trip ●
Phase C Time Overcurrent Unit 1 Pick Up	●	Phase C Time Overcurrent Unit 1 Trip ●
Phase A Time Overcurrent Unit 2 Pick Up	●	Phase A Time Overcurrent Unit 2 Trip ●
Phase B Time Overcurrent Unit 2 Pick Up	●	Phase B Time Overcurrent Unit 2 Trip ●
Phase C Time Overcurrent Unit 2 Pick Up	●	Phase C Time Overcurrent Unit 2 Trip ●

Magnitudes

	Pre-Fault	Fault
IA	0.409 A	0.376 A
ANG IA	360.0 °	333.9 °
IB	0.342 A	0.726 A
ANG IB	184.0 °	202.5 °
IC	0.072 A	0.552 A
ANG IC	153.4 °	53.5 °
IG	3c175afb *	3b950fc7 *
ANG IG	4290e630 *	432da438 *
IN	0.009 A	0.005 A
ANG IN	70.5 °	170.9 °
IPOL	0.000 A	0.000 A
ANG IPOL	***** °	***** °
ZSC	0.003 A	0.002 A
NSC	0.204 A	0.209 A
PSC	0.235 A	0.530 A
FREQ	50.000 Hz	50.000 Hz
IGN	0.000 A	0.000 A

General

ACTGRP	1
THERMAL IMG	0 %

Relay Indication of 220/132 kV ICT-2 LV Side

S	Fault start	Trip comm...	End of fault	Fault type
#	11/05/2025 03:00:50.946	03:00:58.474	03:18:23.724	BC

11/05/2025

03:00:50.946

03:00:58.474

03:18:23.724

Pickup

Trip

End

Fault type BC

Trip type *****

Units

Pickup

Trip

Phase A Instantaneous Unit 1 Pick Up ●	Phase A Instantaneous Unit 1 Trip ●
Phase B Instantaneous Unit 1 Pick Up ●	Phase B Instantaneous Unit 1 Trip ●
Phase C Instantaneous Unit 1 Pick Up ●	Phase C Instantaneous Unit 1 Trip ●
Phase A Instantaneous Unit 2 Pick Up ●	Phase A Instantaneous Unit 2 Trip ●
Phase B Instantaneous Unit 2 Pick Up ●	Phase B Instantaneous Unit 2 Trip ●
Phase C Instantaneous Unit 2 Pick Up ●	Phase C Instantaneous Unit 2 Trip ●
Phase A Instantaneous Unit 3 Pick Up ●	Phase A Instantaneous Unit 3 Trip ●
Phase B Instantaneous Unit 3 Pick Up ●	Phase B Instantaneous Unit 3 Trip ●
Phase C Instantaneous Unit 3 Pick Up ●	Phase C Instantaneous Unit 3 Trip ●
Phase A Time Overcurrent Unit 1 Pick Up ●	Phase A Time Overcurrent Unit 1 Trip ●
Phase B Time Overcurrent Unit 1 Pick Up ●	Phase B Time Overcurrent Unit 1 Trip ●
Phase C Time Overcurrent Unit 1 Pick Up ●	Phase C Time Overcurrent Unit 1 Trip ●
Phase A Time Overcurrent Unit 2 Pick Up ●	Phase A Time Overcurrent Unit 2 Trip ●
Phase B Time Overcurrent Unit 2 Pick Up ●	Phase B Time Overcurrent Unit 2 Trip ●
Phase C Time Overcurrent Unit 2 Pick Up ●	Phase C Time Overcurrent Unit 2 Trip ●

Magnitudes

Pre-Fault

Fault

VA	64.696 V	63.502 V
ANG VA	0.0 °	359.2 °
VB	63.894 V	40.941 V
ANG VB	240.5 °	218.6 °
VC	65.443 V	42.234 V
ANG VC	120.3 °	137.1 °
IA	0.090 A	0.115 A
ANG IA	166.3 °	156.3 °
IB	0.090 A	0.868 A
ANG IB	18.8 °	6.7 °
IC	0.052 A	0.703 A
ANG IC	281.2 °	193.4 °
IG	3c00b242 *	3d994d0e *
ANG IG	43b07650 *	43ae30f2 *
IN	0.008 A	0.075 A
ANG IN	353.7 °	348.5 °
IPOL	0.000 A	0.000 A
ANG IPOL	***** °	***** °
VN	0.883 V	2.302 V
ANG VN	79.6 °	76.1 °
VSYNC	64.257 V	63.465 V

Relay Indication of 132 kV Power Transformer - 01 HV Side

Parameter	Value
Thursday 13 April 2000 17:19:50.229	User Logged In On UI Level 3
Thursday 13 April 2000 11:16:13.807	Fault Recorded
Description	P141 67HV
Plant reference	MiCOM
Model number	P141916N6M0610P
Address	001 Column: 01 Row: 00
Event type	Fault Record
Category	0
Event Value	0
Faulted Phase	00100111
Start Elements 1	00000000000000000000000000000000
Start Elements 2	00000000000000000000000000000000
Start Elements 3	00000000000000000000000000000000
Trip Elements 1	00000000000000000000000000000000
Trip Elements 2	00000000000000000000000000000000
Trip Elements 3	00000000000000000000000000000000
Trip Elements 4	00000000000000000000000000000000
Fault Alarms	00000000
Fault Time	Thursday 13 April 2000 11:16:13.807
Active Group	1
System Frequency	50.04 Hz
Fault Duration	1.252 s
CB Operate Time	55.00ms
Relay Trip Time	1.192 s
IA	45.80 A
IB	988.9 A
IC	851.1 A
VAB	117.0kV
VBC	64.48kV
VCA	117.6kV
IN Measured	101.8 A
IN Derived	100.0 A
IN Sensitive	0.000 A
VAN	74.67kV
VBN	49.10kV
VCN	50.74kV
VN Derived	3.003kV
Evt Unique Id	18868
Thursday 13 April 2000 11:16:13.804	Output Contacts1
Thursday 13 April 2000 11:16:13.803	l> BlockStart OFF
Thursday 13 April 2000 11:16:13.803	Trip Command In OFF
Thursday 13 April 2000 11:16:13.803	l>1 Trip OFF
Thursday 13 April 2000 11:16:13.803	Any Start OFF
Thursday 13 April 2000 11:16:13.803	l>1 Start OFF
Thursday 13 April 2000 11:16:13.803	l>1 Start B OFF
Thursday 13 April 2000 11:16:13.803	l>1 Trip B OFF
Thursday 13 April 2000 11:16:13.803	l>1 Start A OFF
Thursday 13 April 2000 11:16:13.792	l>1 Start C OFF
Thursday 13 April 2000 11:16:13.733	Output Contacts1
Thursday 13 April 2000 11:16:13.732	Trip Command In ON
Thursday 13 April 2000 11:16:13.732	l>1 Trip ON
Thursday 13 April 2000 11:16:13.732	l>1 Trip B ON
Thursday 13 April 2000 11:16:12.801	l>1 Start A ON
Thursday 13 April 2000 11:16:12.541	l> BlockStart ON
Thursday 13 April 2000 11:16:12.541	Any Start ON
Thursday 13 April 2000 11:16:12.541	l>1 Start ON
Thursday 13 April 2000 11:16:12.541	l>1 Start C ON
Thursday 13 April 2000 11:16:12.541	l>1 Start B ON
Thursday 13 April 2000 07:20:22.890	Fault Recorded



List of important transmission lines in ER which tripped in November and December 2025

Sl. No.	LINE NAME	TRIP DATE	TRIP TIME	RESTORATION DATE	RESTORATION TIME	Relay Indication LOCAL END	Relay Indication REMOTE END	Reason	Fault Clearance time in msec	Remarks	DR Configuration Discrepancy (Local End)	DR Configuration Discrepancy (Remote End)	DR/EL RECEIVED FROM LOCAL END	DR/EL RECEIVED FROM REMOTE END	LOCAL UTILITY	REMOTE UTILITY	UTILITY RESPONSE
1	400KV-ALIPURDUAR (PG)-BONGAIGAON-1	26-11-2025	12:53	26-11-2025	15:32	Alipurduar: R-B-E fault, 8.08 kA, 8.1 kA, 37.5 km	Bongaigaon End: RBE fault, 6 kA, 6 kA, 57.5 km.	R-Earth	100 msec	Line tripped in phase to phase to earth fault.			YES	NO	PG ER-II	PG NER	Ph-Ph fault occurred in line. Hence, 3 phase trip happened. Protection operated properly at PG ER-II end.
2	220KV-BIRPARA-MALBASE-1	25-11-2025	15:35	25-11-2025	21:01	Auto recloser successful at Birpara end: Relay BN fault, 3.6 kA, 40 km.		B-Earth	100 msec	A/r successful from Birpara end and line tripped from Bhutan end only.			YES	YES	PG ER-II	BHUTAN	Protection system operated properly at PG ER-II end.
3	400KV-BINAGURI-MALBASE-1	19-11-2025	10:43	19-11-2025	12:16	Binaguri end: Z-3, BN fault, 2.07 kA, 100 % distance,		B-Earth	800 msec	Line tripped from PG end in Z-3 protection due to fault in Bhutan Network which was not cleared from Bhutan end.			YES	NO	PG ER-II	BHUTAN	Fault was in Bhutan system beyond line length & it was not cleared timely. As a back-up, Z3 operated from Binaguri end. Protection operated properly at PG ER-II end.
4	220KV-BIRPARA-MALBASE-1	19-11-2025	10:43	19-11-2025	12:22	Birpara end: BN fault, Z-3, 99.06 km, 1.3 kA,		B-Earth	800 msec	Line tripped from PG end in Z-3 protection due to fault in Bhutan Network which was not cleared from Bhutan end.			YES	NO	PG ER-II	BHUTAN	Fault was in Bhutan system beyond line length & it was not cleared timely. As a back-up, Z3 operated from Birpara end. Protection operated properly at PG ER-II end.
5	400KV-BINAGURI-TALA-2	06-11-2025	20:52	06-11-2025	21:50	DT Received at Binaguri end.	Not Tripped	No Fault	NA	DT received at Binaguri end.			YES	NO	PG ER-II	BHUTAN	No fault was observed in line. DT was received at Binaguri end. Hence, 3 phase trip happened. Protection operated properly at PG ER-II end.
6	220KV-NEW PURNEA-MADHEPURA-2	03-11-2025	04:57	03-11-2025	16:08	New Purnea: Y_B , Y - 4.1 KA , B - 3.97 KA , 52 KM	Y-B, Z-1	Y-B	100 msec	Line tripped in phase to phase fault.	DR Length needs to be increased to 3 sec.		YES	NO	PG ER-I	BSPTCL	
7	220KV-MAITHON(PG)-DUMKA-1	02-11-2025	10:27	02-11-2025	10:54	Tripped from Maithon end only: B-N fault, 61.84km, 2.87 kA.	A/r successful from Dumka end.	B-Earth	350 msec	A/r successful from Dumka end and three phase tripping from Maithon end in Z-2 protection. PG ER-2 and JUSNL may explain.			NO	YES	PG ER-II	JUSNL	Fault was single phase type & detected in Z2 from Maithon end. However, carrier was not received from remote end. Hence, time delayed (at T2) 3 phase trip happened at Maithon SS. PLCC owned by JUSNL. Protection operated properly at PG ER-II end.

8	220KV-BINAGURI-BIRPARA-2	18-12-2025	15:22	19-12-2025	05:02	Binaguri end: R N fault, 5.17 kA, 29.7 km	Birpara: R-N fault 3.24 kA, 47.7 km.	R-Earth	100 msec	A/r failed after 1 sec.			YES	YES	PG ER-II	PG ER-II	Line tripped due to persisting fault in line. Protection operated properly at PG ER-II end.
9	400KV-DURGAPUR-KAHALGAON-1	17-12-2025	09:08	17-12-2025	11:45	Tripped from Durgapur end only due to DT received.	Not Tripped	No Fault	NA	As per PMU no fault was observed. Line tripped from Durgapur end due to DT received. PG ER-2 and NTPC Kahalgaon may explain.			NO	NO	PG ER-II	NTPC	No fault was observed in line. DT was received at Durgapur end. Hence, 3 phase trip happened. Protection operated properly at PG ER-II end.
10	220KV-BINAGURI-BIRPARA-2	16-12-2025	10:03	16-12-2025	21:37	Binaguri end Y_N FC=NA, FD=18.90KM,	R/I at Birpara end Y_N, FC= 2.02KA, FD=60.2KM	Y-Earth	100 msec	A/r failed after 1 sec.			YES	YES	PG ER-II	PG ER-II	Line tripped due to persisting fault in line. Protection operated properly at PG ER-II end.
11	400KV-DURGAPUR-KHSTPP-2	15-12-2025	11:45	15-12-2025	18:51	DT received at PG end.	Not Tripped	No Fault	NA	DT received at Durgapur end. NTPC Kahalgaon may explain.			NO	NA	PG ER-II	NTPC	No fault was observed in line. DT was received at Durgapur end. Hence, 3 phase trip happened. Protection operated properly at PG ER-II end.
12	400KV-MAITHON-DURGAPUR-1	04-12-2025	12:13	04-12-2025	13:45	YB 46.9 km, 7.04 kA, 6.95 kA.	YB , 20km, 7.08 kA, 7.18 kA.	Y-B	100 msec	Line tripped on phase to phase fault.			YES	YES	PG ER-II	PG ER-II	Ph-Ph fault occurred in line. Hence, 3ph trip happened. Protection operated properly at PG ER-II end. Protection operated properly at PG ER-II end.
13	400KV-DURGAPUR-SAGARDIGHI-2	03-12-2025	10:10	04-12-2025	18:59	Tripped on Over voltage	-	No Fault	NA	Line tripped on over voltage. R phase voltage showing abnormally high as compare to other two phase. PG ER-2 may explain.			YES	NA	PG ER-II	VBSETC	There was no system overvoltage. Only M1 relay operated at Durgapur SS. VT cable for M1 relay from switchyard to CRP failed. Therefore, neutral wire got earthed at more than one point due to failure of cable and potential rises in secondary circuit.
14	400KV-BARH-PATNA-3	18-12-2025	07:09	18-12-2025	20:41	Barh : Y-N-29kA, B-N-1.74kA, 2.85 KM	Patna : M1: FD-68.18KM, FC-8.7KA	Y-Earth	100 msec	A/r failed after 1 sec from Patna end and no A/r attempted from Barh after dead time , further after 2.5 sec line tripped on PD operation from Barh end. NTPC Barh may explain.			YES	NO	NTPC	PG ER-I	line tripped in persisting fault from patna end.
15	400KV-BIHARSARIFF(PG)-SAHUPURI(CHANDAULI)-1	17-12-2025	23:11	18-12-2025	01:58	Bliharsarif end R ph to ground, FD- 226.2km , FC-1.932KA. A/R Successfull	Sahupuri end: R- N ,FD 1.50KM IR 12.66KA	R-Earth	100 msec	A/r successful from Biharsariff end and three phase tripping from Sahupuri end.			YES	NO	PG ER-I	NR	Issue at Sahupuri end(UPPCL)

16	400KV-DURGAPUR-KHSTPP-2	15-12-2025	11:45	15-12-2025	18:51	DT received at PG end.	Not Tripped	No Fault	NA	DT received at Durgapur end. NTPC Kahalgaon may explain.			NO	NA	PG ER-II	NTPC	As informed by NTPC, M2 relay was found faulty (owned by PG) which as later replaced.
17	400KV-PUSAULI(PG)-ALLAHABAD-1	05-12-2025	23:49	06-12-2025	03:01	Causing operation of reactor LBB relay	DT received	No Fault	NA	Due to L/R LBB operation and DT send to remote end.			YES	NO	PG ER-I	PG NR	During Auto close command given to L/R, B ph got stuck which caused single phasing of reactor. overcurrent protection In>3 operated but again breaker was not opened causing operation of reactor LBB relay.
18	220KV-MUZAFFARPUR(PG)-HAZIPUR-2	04-12-2025	12:13	04-12-2025	13:39	-	Relay Details at GSS Hajipur(New) end: RN fault, 4.945 KA, Z-1	R-Earth	100 msec	A/r successful from Hazipur end and line tripped from Muzaffarpur end only. PG ER-1 may explain.			NO	YES	PG ER-I	BSPTCL	Bay and line owned and maintained by BSPTCL.

Month	Novemeber
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Date	Line tripping	Cause of Tripping	Tripping Analysis	Correct Operations at NTPC Barh (Nc)	Failed operations at NTPC Barh(Nf)	Number of Unwanted Operation (Nu)	Number of incorrect operations (Ni= Nf+Nu)
03.11.2025	400 kV Barh-Motihari Line 2	Direct Trip (DT) signal received from remote end	At NTPC Barh end, 400 kV Barh-Motihari circuit 2 received DT signal from remote (Motihari) end. On communication with Motihari substation, it was known that bus fault had taken place at remote end substation leading to transmission of direct trip signal. At Barh end, both main and tie breakers tripped as per envisaged protection scheme.	1	0	0	0
23.11.2025	400 kV Barh-Kahalgaon Line 2	Single Phase to ground fault (R-N)	400 kV Barh-Kahalgaon Line 2 initially encountered single phase, R-N transient fault. Fault distance: 46.3 kms, Fault current: 10kA as recorded at NTPC Barh event log. At NTPC Barh end , successful auto-reclore took place and line was under idle charged condition.	1	0	0	0

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

Chatterjee 11/12/25
 Signature of Area Engineer

Kanishka Ranjan
 Signature of Area In-charge

पराग चटर्जी/Parag Chatterjee
 सिनियर प्रबंधक (प्र. एवं अनु./वि.अनु. विभाग)
 Sr. Manager (O&M/EMD)
 नैतिक वि. बाह/NTPC Ltd., Barh

कनिष्का रंजन / KANISHKA RANJAN
 उप महाप्रबंधक (प्र. एवं अनु./विद्युत अनुरक्षण विभाग)
 Dy. General Manager (O&M/EMD)
 नैतिक वि. बाह /NTPC Ltd., Barh

Protection Performance Indices for the month-Nov-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+Nu+Nf))	Remark/Reason for performance indices less	Analysis for the event
						End A	End B	End A	End B	End A	End B	End A	End B					
1	Kh- Barh Line - 2 Main & Tie bay (3352, 3252), Kh-Farakka Line - 1	23.11.2025	1:55	24.11.2025	0:55	ZONE - 2		0		1		1		0	0	0		ZONE - 2, R - ph, Fault current 2.94 kA, Distance 182 Km, A/R unsuccessful. Kh-Farakka Line - 1 was charged only through Tie bay, since main bay uprating work is in progress due to tripping of tie bay, Kh Fkk Line - 1 also tripped.

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

Prepared By
[Signature]

[Signature]

Requested By
[Signature]
जी. भास्कर / G. BASKAR
 अवर प्रबंधक (प्रारणन) / AGM (O&M/E.M.U.)
 एनटीपीसी लिमिटेड / NTPC Limited
 कहलगाँव, भागलपुर / Kahalgaon, Bhagalpur

Performance Indices of Darlipali STPP for Nov'25

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

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

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

NOTE for reference of deciding parameters:

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

BSPTCL

Protection Performance Indices for the month of November'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	400KV-PATNA-BAKHTIYARPUR(BH)-2	14-11-2025	11:37	14-11-2025	12:44		Bakhtiyarpur-DT received in channel-2		0		1		0	0	0	0	Due to issue in PLCC at PG end. Problem attended and resolved by the Telecom Team.
2	220KV-PATNA-FATUHA-1	03-11-2025	08:05	03-11-2025	10:03		Fatuha-Zone 4, 1.644km, 4.825kA, R-Y-B-Earth		1		0		0	1	1	1	
3	220KV-NEW PURNEA-MADHEPURA-2	03-11-2025	04:57	03-11-2025	16:08	New Purnea: Y_B, Y - 4.1 KA, B - 3.97 KA, 52 KM	Madhepura-Y-B, Z-1	1	1	0	0	0	0	1	1	1	

JUSNL

Protection Performance Indices for the month of November' 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 - MAITHON(PG) - 1	02-11-2025	10:27	02-11-2025	10:54	BN, Z1, IB - 2.20 kA, AR successful		1		0		0		1	1	1	
2	220 KV CHANDIL - STPS (WBPDCL) -1	13-11-2025	11:51	13-11-2025	12:49	Mal operated due to issue in DC supply		1		1		0		1	0.5	0.5	Mal operated due to issue in DC supply
3	220 KV Govindpur-TTPS -2	13-04-2025	10:25	13-04-2025		BN, Z1, 56.85 km, IB - 1.30 kA, 3ph tripping		1		1		0		1	0.5	0.5	DTPC is unhealthy

OPTCL

PROTECTION PERFORMANCE INDICES AS PER TRIPPING LIST OF 154TH PCC MEETING AGENDA FOR THE MONTH OF NOVEMBER 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	220KV-PANDIABILI-PRATAPSASAN-1	24-11-2025	14:56	24-11-2025	19:53	NO TRIP	Master trip relay 86 oprated from Pratapsasan end	0	1	0	1	0	1	END A=0 ,END B=1/2	END A=0 ,END B=1/2	END A=1 ,END B=1/3	No Fault Master trip relay 86 oprated from Pratapsasan end
2	220KV-BUDHIPADAR-KORBA-3	13-11-2025	12:59	13-11-2025	20:52	DT Received at Budhipadar	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	No Fault.Line tripped due to DT received at Budhipadar end
3	220KV-BUDHIPADAR-KORBA-2	13-11-2025	00:06	13-11-2025	04:15	Bus bar protection Operated at Budhipadar	NO TRIP	1	0	0	0	0	0	END A=1 ,END B=0	END A=1 ,END B=0	END A=1 ,END B=0	Bus bar operated during charging attempt of 220 kV Budhipadar-SMC linewhich was under faulty condition

PG ER-1

Protection Performance Indices for the month of Nov'25 (In compliance of Clause 15(6) of IEGC 2023)																	
S. No.	Name of the element	Tripping Date	Tripping Time	Restoration Date	Restoration Time	Reason (Relay indication)		Nc		Nu		Nf		Dependability index (Nc/(Nc+Nf))	Security Index (Nc/(Nc+Nu))	Reliability Index (Nc/(Nc+Nu+Nf))	Remarks (Reason for performance indices less than 1)
						End A	End B	End A	End B	End A	End B						
1	132KVARA-DUMRAON(BSPTCL)-1	17-11-2025	19:18:00	17-11-2025	20:30:00	TRIPPED FROM BOTH ENDS DUE TO Y-N FAULT. ARA(SITE)-FD-11.57KM FC- 4.6kA. FAULT IS UNDER BSPTCL JURISDICTION	Other Utility	1	NA	0	NA	0	NA	1	1	1	
2	132KVARA-DUMRAON(BSPTCL)-1	01-11-2025	05:26:00	01-11-2025	06:25:00	TRIPPED FROM BOTH ENDS DUE TO Y-N FAULT ARA(AFAS):M1-FD-11.723km, FC-4816KA FAULT IS UNDER BSPTCL JURISDICTION	Other Utility	1	NA	0	NA	0	NA	1	1	1	
3	400KV BANKA BIHARSARIF-1	07-11-2025	10:56:00	07-11-2025	11:32:00	TRIPPED FROM BOTH ENDS DUE TO B-N FAULT. BANKA(SITE)-M2: FD-42.2KM FC-5.6KA FAULT OCCURED DUE TO KITE IN THE SECTION BETWEEN TOWER LOCATION NOS 176 AND 177 .		1	1	0	0	0	0	1	1	1	
4	400KV FARAKKA(NTPC)-KAHALGAON(NTPC)-1	23-11-2025	21:08:00	24-11-2025	01:00:00	TRIPPED FROM KAHALGAON END ONLY DUE TO PROBLEM AT NTPC END. FAULT IS UNDER NTPC KAHALGAON JURISDICTION.		NA	NA	NA	NA	NA	NA	NA	NA	NA	
5	400KV KAHALGAON(NTPC)-BANKA-2	01-11-2025	00:00:00	01-11-2025	18:00:00	Other Utility	TRIPPED FROM BOTH ENDS DUE TO DT RECEIVED AT BANKA END. AS REPORTED BY NTPC KAHALGAON, TEED RELAY OPERATED AT KAHALGAON END. FAULT	NA	1	NA	0	NA	0	1	1	1	
6	400KV KAHALGAON(NTPC)-BARH(NTPC)-2	23-11-2025	21:08:00	24-11-2025	00:55:00	A/R SUCCESSFUL FROM BARH END BUT TRIPPED FROM KAHALGAON END DUE TO R-N FAULT DUE TO PROBLEM AT NTPC END. BARH: M1-FD-46.3KM, FC-10KA. FAULT IS UNDER NTPC KAHALGAON JURISDICTION.		NA	NA	NA	NA	NA	NA	NA	NA	NA	
7	400KV KODERMA(DVC)-BOKARO(JBVNL)-1	18-11-2025	12:02:00	18-11-2025	13:52:00	TRIPPED FROM BOTH ENDS DUE TO B-N FAULT DUE TO LOCALIZED CYCLONE AROUND FAULT AREA. KODERMA SITE DETAIL:- M1: FD- 44.90KM, FC- 6.50KA.		NA	NA	NA	NA	NA	NA	NA	NA	NA	
8	400KV MOTIHARI(DMTCL)-GORAKHPUR-1	18-11-2025	17:20:00	18-11-2025	17:20:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO R-N FAULT. LIGHTENING AND THUNDERSTORM REPORTED NEAR FAULT AREA. MOTIHARI(SITE)-FD-136.8KM FC-2.33KA GKP-(SITE)- M1: FD-36.32KA FC-7.29KA M2: FD-35.8KA FC-7.32KA BROKEN INSULATOR AT LOC. 923		NA	NA	NA	NA	NA	NA	NA	NA	NA	
9	400KV MOTIHARI(DMTCL)-GORAKHPUR-2	06-11-2025	13:39:00	06-11-2025	13:39:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO B-N FAULT MOTIHARI:M1-34.4KM, FC- 4.93KA. FAULT IS UNDER DMTCL JURISDICTION.		NA	NA	NA	NA	NA	NA	NA	NA	NA	
10	400KV MOTIHARI(DMTCL)-GORAKHPUR-2	06-11-2025	12:33:00	06-11-2025	12:33:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO B-N FAULT MOTIHARI:M2-33.20KM, FC- 6.101KA. FAULT IS UNDER DMTCL JURISDICTION.		NA	NA	NA	NA	NA	NA	NA	NA	NA	
11	400KV PATNA-BAKHTIYARPUR-2	14-11-2025	11:37:00	14-11-2025	12:44:00	TRIPPED ONLY FROM BAKHTIYARPUR END DUE TO MALFUNCTION OF PLCC AT BAKHTIYARPUR END. FAULT IS UNDER BSPTCL JURISDICTION.	Other Utility	1	NA	0	NA	0	NA	1	1	1	

PG ER-2

List of important transmission lines in ER which tripped in November-2025					END-A						END-B					
Sl. No.	LINE NAME	TRIP DATE	TRIP TIME	UTILITY RESPONSE	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))
1	400KV-ALIPURDUAR (PG)-BONGAIGAON-1	26-11-2025	12:53	Ph-Ph fault occurred in line. Hence, 3 phase trip happened. Protection operated properly at PG ER-II end.	1			1	1	1	NA					
2	220KV-BIRPARA-MALBASE-1	25-11-2025	15:35	Protection system operated properly at PG ER-II end.	1			1	1	1	NA					
3	220KV-CHUKHA-BIRPARA-1	20-11-2025	12:25	Protection system operated properly at PG ER-II end.	NA						1			1	1	1
4	400KV-BINAGURI-MALBASE-1	19-11-2025	10:43	Fault was in Bhutan system beyond line length & it was not cleared timely. As a back-up, Z3 operated from Binaguri end. Protection operated properly at PG ER-II end.	1			1	1	1	NA					
5	220KV-BIRPARA-MALBASE-1	19-11-2025	10:43	Fault was in Bhutan system beyond line length & it was not cleared timely. As a back-up, Z3 operated from Birpara end. Protection operated properly at PG ER-II end.	1			1	1	1	NA					
6	400KV-KISHANGANJ-RANGPO-2	08-11-2025	14:16	Ph-Ph fault occurred in line. Hence, 3 phase trip happened. Protection operated properly at PG ER-II end.	NA						1			1	1	1
7	400KV-BINAGURI-TALA-2	06-11-2025	20:52	No fault was observed in line. DT was received at Binaguri end. Hence, 3 phase trip happened. Protection operated properly at PG ER-II end.	1			1	1	1	NA					
8	220KV-MATHON(PG)-DUMKA-1	02-11-2025	10:27	Fault was single phase type & detected in Z2 from Mathon end. However, carrier was not received from remote end. Hence, time delayed (at T2) 3 phase trip happened at Mathon SS. PLCC owned by JUSNL. Protection operated properly at PG ER-II end.	1			1	1	1	NA					

APNRL

ADHUNIK POWER AND NATURAL RESOURCES LIMITED 2 X 270 MW																		
Protection Performance Indices for the November' 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 November-25 (In compliance of Clause 15(6) of IEGC 2023)																			
S. No.	Name of Utility	Name of the element	Tripping Date	Tripping Time	Restoration Date	Restoration Time	Reason (Relay indication)		Nc		Nu		Nf		Dependability index (Nc/(Nc+Nf))	Security Index (Nc/(Nc+Nu))	Reliability Index (Nc/(Nc+Nu+Nf))	Remarks (Reason for performance indices less than 1)	
							End A	End B	End A	End B	End A	End B	End A	End B					
1	EAST NORTH INTERCONNECTION LIMITED	400 kv (Quad) D/C Bongaigaon - Alipurduar line CKT- 1(BNG- ALIP #1)	26-11-2025	12:53:00	26-11-2025	15:32:00	M1-FD-57.52 KM, FC-6 KA M2-FD-58.34 KM, FC-6 KA	M1-FD-37.5 KM, FC-8.08 KA M2-FD-39.2 KM, FC-8.2 KA	1.00	1.00	-	-	-	-	-NA-	1	1	Tripped due to R-phase to B- phase fault	
		400 kv (Quad) D/C Bongaigaon - Alipurduar line CKT- 2(BNG- ALIP #2)													-NA-	-NA-	-NA-	No events in the month of November'25	
		400 kv (Quad) D/C Purnia-Biharshrif Line CKT-1 (NPRN-BSF#1)														-NA-	-NA-	-NA-	No events in the month of November'25
		400 kv (Quad) D/C Purnia-Biharshrif Line CKT-2(NPRN- BSF# 2)														-NA-	-NA-	-NA-	No events in the month of November'25
		400 kv (Quad) D/C Alipurduar - Siliguri line CKT- 1(ALIP- SLG #1)														-NA-	-NA-	-NA-	No events in the month of November'25
		400 kv (Quad) D/C Alipurduar - Siliguri line CKT- 2(ALIP- SLG #2)														-NA-	-NA-	-NA-	No events in the month of November'25
2	ODISHA GENERATION PHASE - II LIMITED	765kV D/C Jharsuguda(Sundargarh)-Raipur pool CKT-1													-NA-	-NA-	-NA-	No events in the month of November'25	
		765kV D/C Jharsuguda(Sundargarh)-Raipur pool CKT-2													-NA-	-NA-	-NA-	No events in the month of November'25	
		400kV D/C IB-OPGC-Jharsuguda(Sundargarh) Ckt-1													-NA-	-NA-	-NA-	No events in the month of November'25	
		400kV D/C LILO POINT (T. No. - 130) - Sundargarh													-NA-	-NA-	-NA-	No events in the month of November'25	
		400kV D/C OPGC-LILO POINT (T. No. - 130)														-NA-	-NA-	-NA-	No events in the month of November'25
3	PURULIA KHARAGPUR TRANSMISSION COMPANY LIMITED	400 kv Chaibasa-Kharagpur D/C line CKT- 1													-NA-	-NA-	-NA-	No events in the month of November'25	
		400 kv Chaibasa-Kharagpur D/C line CKT- 2													-NA-	-NA-	-NA-	No events in the month of November'25	
		400 KV,D/C New Ranchi-New Purulia Line: CKT-1													-NA-	-NA-	-NA-	No events in the month of November'25	
		400 KV,D/C New Ranchi-New Purulia Line: CKT-2													-NA-	-NA-	-NA-	No events in the month of November'25	

Month	December
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Date	Line tripping	Cause of Tripping	Tripping Analysis	Correct Operations at NTPC Barh (Nc)	Failed operations at NTPC Barh(Nf)	Number of Unwanted Operation (Nu)	Number of Incorrect operations (Ni= Nf+Nu)
12.12.2025	400 kV Barh-Patna#3	Direct Trip (DT) signal received from remote end	At NTPC Barh end, 400 kV Barh-Patna#3 received DT (Direct Trip) signal from remote (Patna) end. On communication with Patna substation, it was learnt that bus fault had taken place at remote end substation leading to transmission of direct trip signal. At Barh end, both main and tie breakers tripped as per envisaged protection scheme.	1	0	0	0
12.12.2025	400 kV Barh-Patna#4	Breakers at Barh end tripped due to sensing of R-B fault. Line remained idle charged from Patna end	In line with the above incident, distance relay at Barh end sensed phase-phase fault in Zone 3. As per envisaged logic, multiphase fault (2 ph/3 ph) along with any trip has been hooked up for 86 master trip operation. Fault current sensed was 3.9 kA in both R and B phase. I>2 DDB (Digital Data Bus) has been enabled in settings tab for displaying 'Backup overcurrent' alarm in SCADA. I>2 is set at 1.13*I rated (3390Amps). Therefore when fault current breached I>2 limit, 'Any Trip' was triggered along with multiphase fault, which led to 86 master trip operation. Relay operation happened as per logic. However since zone 3 is a time delayed protection (Td- 1 sec), breakers at Barh end should not have opened as fault was transient in nature and decayed within 50 millisecond. Logic has been modified on consultation with NTPC Engg and Grid-India	0	0	1	1
18.12.2025	400 kV Barh-Patna#3	Zone-1 Y phase fault detected. Auto reclosure attempt taken but tripped on persisting fault	Y phase, Zone -1 fault detected at Barh end with a fault current of 30 kA at a distance of 2.85 kms from Barh end. Auto reclosure attempt was taken from Barh end but tripped on persisting fault. After receiving clearance from ERLDC, line was charged from Patna end but tripped again on SOTF protection (Switch on to fault). Line patrolling was done thereafter by Powergrid and fault was rectified.	1	0	0	0
27.12.2025	400 kV Barh-Motihari#1	Zone-1 R phase fault detected. Auto reclosure attempt taken but tripped on persisting fault	R phase, Zone-1 fault detected at a distance of 13 kms from Barh end with a fault current of 23 kA. Auto reclosure attempt taken from Barh end but tripped on SOTF protection. Line patrolling was done thereafter by Powergrid and fault was rectified. After receiving clearance, line was charged from Motihari end and synchronised from Barh end.	1	0	0	0

Dependability Index $D = Nc / (Nc + Nf)$	1
Security Index $S = Nc / (Nc + Nu)$	0.75
Reliability Index $R = Nc / (Nc + Ni)$	0.75

Chatterjee
 Signature of Area Engineer
 31/1/26
Parag Chatterjee

K.R.
 Signature of Area In-charge
 03/01/26
K. Ranjan

Performance Indices of Darlipali STPP for the month Dec'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**

Protection Performance Indices for the month of DECEMBER '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	GOKARNA-NEW PURNIA #1	07.12.25	14:38:00	07.12.25	15:40:00	Zone-2,R-B-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1		
2	DURGAPUR-PPSP # 1	25.12.25	00:59:00	25.12.25	17:32:00	Zone-1,Y-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1		
3	DALKHOLA-DALKHOLA PG #1	26.12.25	18:42:00	26.12.25	19:23:00	ZCAL-TRWEI Trip		0		1		0		#	#	#	Tripped in weak infeed signal operation	
4	JEERAT-BKTPP	30.12.25	13:12:00	30.12.25	18:15:00	Zone-1,Y-phase,CS ,CR ,A/R close,A/R L/O		1		0		0		1	1	1		
5	ARAMBAG-315 MVA TR #4	31.12.25	08:43:00	31.12.25	13:58:00	Pole Discrepancy operated		0		1		0		#	#	#	CB pole discrepancy relay mal-operated, replaced.	

PG ER-2

List of important transmission lines in ER which tripped in December-2025					END-A						END-B					
Sl. No.	LINE NAME	TRIP DATE	TRIP TIME	UTILITY RESPONSE	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))
1	400KV-BINAGURI-TALA-2	29-12-2025	11:07	Line tripped from Tala end only. No trip at Binaguri end. As no was present in line, protection operated properly at PG ER-II end.	1			1	1	1	NA					
2	220KV-DALKHOLA (WB)-DALKHOLA (PG)-1	26-12-2025	18:42	Line tripped only at WB end. No tripping at PG end. As no fault was observed in line, protection operated properly at PG ER-II end.	NA						1			1	1	1
3	220KV-BINAGURI-BIRPARA-2	18-12-2025	15:22	Line tripped due to persisting fault in line. Protection operated properly at PG ER-II end.	1			1	1	1	1			1	1	1
4	400KV-DURGAPUR-KAHALGAON-1	17-12-2025	09:08	No fault was observed in line. DT was received at Durgapur end. Hence, 3 phase trip happened. Protection operated properly at PG ER-II end.	1			1	1	1	NA					
5	220KV-BINAGURI-BIRPARA-2	16-12-2025	10:03	Line tripped due to persisting fault in line. Protection operated properly at PG ER-II end.	1			1	1	1	1			1	1	1
6	400KV-DURGAPUR-KHSTPP-2	15-12-2025	11:45	No fault was observed in line. DT was received at Durgapur end. Hence, 3 phase trip happened. Protection operated properly at PG ER-II end.	1			1	1	1	NA					
7	400KV-MAITHON-DURGAPUR-1	04-12-2025	12:13	Ph-Ph fault occurred in line. Hence, 3ph trip happened. Protection operated properly at PG ER-II end. Protection operated properly at PG ER-II end.	1			1	1	1	1			1	1	1
8	400KV-DURGAPUR-SAGARDIGHI-2	03-12-2025	10:10	There was no system overvoltage. Only M1 relay operated at Durgapur SB. VT cable for M1 relay from switchyard to CRP failed. Therefore, neutral wire got earthed at more than one point due to failure of cable and potential rises in secondary circuit.		1		#DIV/0!	0	0	NA					

Tashiding HEP

Tashiding Hydro Electric Project 2 X 48.5 MW																		
Protection Performance Indices for the DECEMBER -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)	Analysis of the event
						End A	End B	End A	End B	End A	End B	End A	End B					
1	220KV Tashiding-Legship Line-1	10-12-2025	08:56	10-12-2025	09:51												Black start testing at THEP End.	
2	220KV Tashiding-Legship Line-1	12-12-2025	11:14	12-12-2025	14:22												Black start testing at Rangpo End.	
3	220KV Tashiding-New Melli Line-2	12-12-2025	11:32	12-12-2025	14:37													
3	220KV Tashiding-Legship Line-1	16-12-2025	09:54	16-12-2025	12:49	--	--	--	--	--	--	--	--	--	--	--	For cutting the Bamboo tree	--
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.																		

SI No.	Name of the incidence	PCC Recommendation	Latest status
153rd PCC Meeting			
1.	Total Power Failure at 220 k V IBTPS(OPGC) S/s on 21st Oct 2025 at 17:25 Hrs	PCC advised OPGC representative to increase DR length to 3 sec with pre-fault time of 500 msec and post fault 2500 msec as per ERPC protection philosophy. OPGC was further advised to share settings of bus coupler to ERPC/ERLDC for review.	
152nd PCC Meeting			
2.	Total Power Failure at 220 kV Bolangir New (OPTCL) on 6th Sep 2025 at 12:16 Hrs	OPTCL representative was advised to analyze the reason behind non sensing the fault by relay in zone 2 and zone 3.	
151st PCC Meeting			
3.	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>	JUSNL representative informed that 220 k V Daltongunj Itkhori -1 is charged through bus coupler at present.Regarding BCU rectification, it is expected that rectification work will be started by 2 nd Dec 2025 and issue will be resolved by 2 nd week of Dec 2025.

4.	Total Power Failure at 220 kV Goraul (BSPTCL) S/s on 7th July 2025 at 14:31 Hrs	BSPTCL was advised to configure the DR time window as per ERPC Guidelines.	BSPTCL representative informed that replacement of BCU will be completed by Dec 2025.
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