



सत्यमेव जयते

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

**Eastern Regional Power Committee**

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



स./NO. पू.क्षे.वि.स./PROTECTION/2025/1170

दिनांक /DATE: 26/09/2025

सेवा में / To,

संलग्न सूची के अनुसार / As per list enclosed.

विषय : दिनांक – 18.09.2025 को आयोजित 151 वीं पीसीसी बैठक का कार्यवृत्त ।

Sub: Minutes of the 151<sup>st</sup> PCC meeting held on 18.09.2025

महोदय/ Sir,

18.09.2025 को आयोजित 151वीं 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 151<sup>st</sup> PCC meeting of ERPC held on 18.09.2025 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.

यह सदस्य सचिव, पू. क्षे. वि. स. के अनुमोदन से जारी किया जाता है।

This issues with approval of Member Secretary, ERPC.

भवदीय / Yours faithfully,

*for*  
*D. K. Mehra*  
*26.9.25*  
(आई.के.मेहरा / L.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 <sup>th</sup> 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 <sup>rd</sup> 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 <sup>nd</sup> 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 , TPTEL, 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 <sup>rd</sup> 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  
**151<sup>st</sup> PCC Meeting**

**Date:26.09.2025**  
**Eastern Regional Power Committee**  
**14, Golf Club Road, Tollygunge**  
**Kolkata: 700 033**

## **EASTERN REGIONAL POWER COMMITTEE**

### **MINUTES OF 151<sup>ST</sup> PROTECTION COORDINATION SUB-COMMITTEE MEETING HELD ON 18<sup>TH</sup> SEP 2025 AT 11:00 HRS THROUGH MS TEAMS**

*Member Secretary, ERPC welcomed all the participants to the meeting. List of participants is attached at **Annexure A.1**. He stated that protection audit of various substations in Bihar & Jharkhand has been carried out in August-25 and the audit report will be finalized soon. He raised his concern on repeated disturbances at NTPC Kahalgaon from last few months and suggested to complete the protection audit of the substation in Oct 2025 as per the audit plan.*

*SE(Protection), ERPC highlighted non submission of audit plan by the utilities and requested all the utilities to share internal protection audit plan, third party protection audit plan and reports for FY 2025-26 to ERPC.*

*ERLDC representative explained protection performance of Eastern Region for Aug-25. In addition to it, they presented month wise comparison of protection performance from May-25 to Aug-25. The presentation which is attached at **Annexure A.2**. It was observed that out of the total trippings, undesired trippings constitutes in the range of 50-60 %. Out of the undesired operations, the trippings due to non-operation of auto recloser & coordination issue is significant. The major contributors to the undesired trippings are BSPTCL, JUSNL & OPTCL. MS, ERPC advised all the utilities to take corrective actions to minimize the undesired trippings of the elements.*

### **PART – A**

#### **ITEM NO. A.1: Confirmation of Minutes of 150<sup>th</sup> Protection Coordination sub-Committee Meeting held on 18<sup>th</sup> Aug 2025 through MS Teams.**

The minutes of 150<sup>th</sup> Protection Coordination sub-Committee meeting held on 18.08.2025 was circulated vide letter dated 10<sup>th</sup> Sep 2025.

Members may confirm the minutes of the Meeting.

#### **Deliberation in the meeting**

*Members confirmed the minutes of 150<sup>th</sup> PCC Meeting.*

### **PART – B**

#### **ITEM NO. B.1: Disturbance at 400 kV Dikchu HEP on 31st Aug 2025 at 13:51 Hrs**

Prior to the disturbance Dikchu generation was around 106 MW evacuating through 400kV Dikchu-Rangpo Line as 400kV Dikchu-Rangpo (Teesta-III Bypass) line was under outage condition.

On 31<sup>st</sup> Aug 2025 at 13:51 hrs, the 400/132kV ICT at Dikchu got tripped on HV side overcurrent earth fault protection subsequently, there was loss of the evacuation path which resulted in the tripping of Dikchu units 1 & 2 on overspeed/ overfrequency protection.

Detailed report from ERLDC for the disturbance is attached at **Annexure B.1**.

Gen. loss: 106 MW

Outage Duration: 13:51 Hrs

Dikchu HEP may explain.

### **Deliberation in the meeting**

*Dikchu representative informed that there was a high resistive fault in 400 kV Dikchu-Rangpo line. The fault was picked up by O/C earthfault relay of HV side of the ICT at Dikchu(the setting was kept non-directional). After 272 msec, HV side ICT at Dikchu HEP got tripped on O/C earth fault protection leading to loss of evacuation path for Dikchu HEP unit #1 & 2.*

*He updated that Dikchu HEP representative informed that the O/C E/F setting was enabled in two relays and in one of the relay it was made non-directional inadvertently. Now they have kept the E/F settings in one relay with directional feature.*

*On a query regarding recommendation of PCC for third party protection audit, he updated that quotation for third party protection audit has been received and it is expected that audit will be completed by Nov 2025.*

### **ITEM NO. B.2: Disturbance at 220 kV Chatra (JUSNL) S/s on 7th Aug 2025 at 04:43 Hrs**

220 kV Chatra S/s of JUSNL was connected with rest of ER grid through 220kV Chatra-Daltongunj line and 220kV Chatra-Latehar line.

On 7<sup>th</sup> Aug 2025 at 04:43 Hrs, both circuits connected to Chatra S/s were hand tripped from the Chatra end due to fire incident in the control panel caused by short circuit in BCU unit and PLCC panel of the 220kV Chatra-Daltongunj line subsequently, 220kV Chatra S/s became dead.

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

Load loss: 40 MW

Outage Duration: 02:20 Hrs

JUSNL may explain.

### **Deliberation in the meeting**

*JUSNL representative informed that on 7<sup>th</sup> Aug 2025, there was heavy rainfall at the site. At 04:43 hrs, fire was observed in the control panel of 220kV Chatra-Daltongunj line at Chatra S/s due to short circuit inside BCU. Subsequently both the 220 kV lines connected to Chatra S/s were hand tripped as a safety measure leading to total power failure at 200kV Chatra S/s. She further informed that on investigation DC earth leakage was found which has been rectified subsequently and is healthy at present.*

*PCC advised that DC leakage issue in the substation shall be promptly addressed and resolved to avoid this type of disturbance in future.*

*Regarding restoration of BCU & PLCC panel, they updated that both BCU & PLCC are of ZIV make and the OEM has been communicated for support. Further the BCU will be replaced with the spare BCU available with them. They added that OPGW in the line is already commissioned. DTPC will be commissioned soon. After commissioning DTPC, the carrier communication issue will be resolved.*

### **ITEM NO. B.3: Tripping of generating units of JSWEUL on 12<sup>th</sup> Aug 2025 at 22:37 Hrs**

On 12<sup>th</sup> Aug 2025 at 22:36 hrs, while opening the 400 kV Lapanga–Sterlite Circuit-1 to control the loading of 400 kV OPGC Lapanga D/C, the B-phase circuit breaker of its tie bay at Lapanga

remained stuck. As a result, 400 kV Lapanga–Sterlite-2 and 400 kV OPGC–Lapanga-2 circuits got tripped on DEF which resulted in the rise of loading of the 400 kV OPGC–Lapanga-1 line above 1000 MW, triggering the SPS logic and leading to the sequential tripping of both JSWEUL units within 10 seconds.

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

In 150<sup>th</sup> PCC Meeting, it was informed that there was discrepancy in relay setting configuration for direction earth fault of the lines at OPGC & Sterlite end. Representative of OPGC & Sterlite was not present in the meeting.

The matter was also discussed in 230<sup>th</sup> OCC Meeting wherein SLDO Odisha was advised to take up various corrective measures to prevent similar grid disturbances in future.

Gen. loss: 540 MW  
Outage Duration: 02:49 Hrs

OPGC, Sterlite & OPTCL may update.

**Deliberation in the meeting**

*OPGC representative informed that there was discrepancy in relay setting configuration for direction earth fault relay of the line due to which tripping command was issued. The issue has been rectified after consultation with the relay OEM M/s GE.*

*Sterlite representative informed that relay was checked and it has directional feature enabled (forward) and it was operating with the fault simulation similar to the actual event. However, the polarization voltage which was kept at 1 % has increased to 5% at present. He added that the RCA angle is kept at -45 degree however as per relay manual (REL670) the default value recommended is -60 degree.*

*OPTCL representative stated that at their end the DEF is a standalone relay and with the setting of RCA -45 degree with polarization voltage at 10 %, the relay operates correctly. He suggested that DEF may be implemented through standalone backup relay instead of the main distance relay.*

*WBSETCL representative suggested that in the application configuration of the ABB relay, the timing of block setting of the DEF may be checked. They have faced a similar issue where due to incorrect time setting in the DEF block in ABB relay, the directional feature did not function correctly.*

*PCC advised Sterlite representative to refer the issue to relay OEM and seek their recommendation for the relay configuration. They are also advised to share raw file of settings to ERPC/ERLDC.*

**ITEM NO. B.4: Repeated tripping at 400 kV Kahalgaon S/s**

**1. Event on 17-08-2025:**

400 kV Bus-1 at 400kV Kahalgaon S/s tripped due to LBB operation during charging of 400 kV Kahalgaon-Durgapur-2 line on 17-08-2025.

**2. Event on 07-09-2025:**

At 11:13 Hrs on 07-09-2025 Grid Event (GI-2) occurred due to mal operation of the protection system at Kahalgaon S/s. The details are as follows-

Sl. No	Name of the Tripping element	Relay Indication	Remarks
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1	400 kV Kahalgaon-Farakka-2 line	DP, Z-1, YE, FD: 6.9 Kms	Y-Earth fault in line. Y-pole Main CB stuck at Kahalgaon.
2	400 kV Bus-3 along with associated CBs	LBB operation	LBB operation operated due to stuck of Main CB of 400kV Farakka-2 at Kahalgaon.
3	Tripping of Unit-5 & 6(500 MW each) connected to 400 kV Bus-4	LBB operation	Unwanted tripping of Units due to LBB operation.

The above incident led to Generation loss of 510 MW (Unit # 5 & 6), which is a matter of serious concern as it could have resulted into a major grid disturbance in Eastern Region. MOM of meeting held on 27/08/2025 and letter to Kahalgaon from GM(SO), ERLDC attached at **Annexure B.4.**

NTPC Kahalgaon may explain.

### **Deliberation in the meeting**

*ERLDC explained the events with a presentation. The presentation is enclosed at **Annexure B.4.1***

#### **Disturbance on 17<sup>th</sup> Aug 2025**

- *During charging of 400 kV Kahalgaon-Durgapur-2 on 17.08.25, Y and B phase breaker closed from Kahalgaon end however R phase did not close.*
- *Pole Discrepancy Relay (PDR) operated after 2.6 seconds in which only B phase got opened. Since Y phase was still closed, around 250 A of current was observed in the line and back up overcurrent protection operated leading to issue of three phase tripping command.*
- *However, due to continuous flow of current through Y phase LBB operated and lead to tripping of 400 kV bus-1.*
- *ERLDC informed that issue was discussed in special meeting held on 29<sup>th</sup> Aug 2025 where it was informed by NTPC that the breaker issue was due to K10 contactor in the closing/tripping circuit and the contactor was subsequently replaced and CB was tested successfully.*

#### **Disturbance on 07<sup>th</sup> Sep 2025**

- *On 7<sup>th</sup> Sep 2025 at 11:13 Hrs, Y phase fault developed in the 400 kV Kahalgaon-Farakka-2 line. The fault was cleared from Farakka end however Y phase main CB got stuck at Kahalgaon end. Consequently, LBB protection operated and tripped 400 kV Bus-3 along with associated elements. Further unit 5 and 6 which were connected to both 400 kV Bus 3 and 400 kV Bus 4 also got tripped.*
- *NTPC Kahalgaon representative informed that on investigation it was found that due to extra cable connected to bus during commissioning process, tripping command was issued to GRP in case of initiation of LBB hence unit 5 and 6 also got tripped.*
- *On enquiry from PCC regarding reason behind stuck of Y pole of breaker during the event she replied that old A5 contactor (M/s BHEL) was found stuck. She further informed that testing of remaining breakers is under progress.*

*PCC advised NTPC Kahalgaon to check the LBB operations for other bus also.*

*It was informed by ERPC Secretariat that protection audit for Kahalgaon S/s is planned in Oct 2025.*

**ITEM NO. B.5: Proposal for Additional overcurrent function for 315MVA, 400/220kV ICT-1 and ICT-2 at 400 kV Jamshedpur S/s--POWERGRID ER1**

There are 03 nos 400/220kV ICTs having rating 315MVA each at POWERGRID Jamshedpur SS. 220 kV side of ICTs are directly connected to adjacent JUSNL Ramchandrapur SS. It has been observed that due to fault in 220 kV JUSNL switchyard, ICTs are feeding heavy current due to delayed tripping on back up protection. It happens due to non-operation of primary protection at JUSNL end.

400/220 kV ICTs at Jamshedpur are very critical and prone to damage if subjected to such type of faults. Also, failure of such critical elements may lead to long outage. In the recent tripping occurred on 11.09.2025, 19:05 Hrs, both the ICT's have been tripped due to fault at JUSNL end. On fault, ICT-2 was tripped in OHL Differential protection-R Ph with fault current of 2.5kA in HV side. In ICT-1, 3 phase fault current of 3.5kA (which is equivalent to the max short circuit current of 315MVA ICT) flowed for almost 600ms and tripped on backup impedance protection in Zone-2 time delay. It may be noted that the 220kV busbar protection of JUSNL Ramchandrapur is not in service.

To avoid the prolonged feeding of fault current through ICT's and to avoid any major impact on health of ICT's, it is proposed to enable an additional overcurrent function at HV side of the ICT-1 and ICT-2 with **2.4kA** in primary (average fault current observed in past tripping's) with **180ms** delay, which is in line with the additional O/C protection implemented in ICT-3 at Jamshedpur as per minutes of 141<sup>st</sup> PCC meeting.

POWERGRID ER-1 may explain. Members may discuss

**Deliberation in the meeting**

*PG ER-1 representative made a presentation on this issue.*

*There are 03 nos 400/220kV ICTs having rating 315MVA each at Jamshedpur SS(PG) and 220 kV side of ICTs are directly connected to adjacent Ramchandrapur SS of JUSNL.*

*In recent times it is observed that during the fault in 220 kV JUSNL switchyard and in adjacent line, primary protection is not being operated timely from JSUNL end. This resulted in tripping of the ICT on back up protection and feeding heavy fault current during the disturbance.*

*During a disturbance on 11<sup>th</sup> Sep 2025, for ICT-1, 3 phase fault current of 3.5kA (which is equivalent to the max short circuit current of 315MVA ICT) flowed for almost 600ms and tripped on backup impedance protection in Zone-2 time delay.*

*He informed that 400/220 kV ICTs at Jamshedpur are very critical and prone to damage if subjected to such type of faults hence he proposed that an additional overcurrent function at HV side of the ICT-1 and ICT-2 with 2.4kA in primary (average fault current observed in past tripping's) with 180ms delay may be enabled.*

*ERLDC representative informed that on 11<sup>th</sup> Sep 2025, R phase CT of ICT 2 got burst at 19:02 Hrs at JUSNL end subsequently ICT got tripped within 100 ms from both ends however after 1.7 seconds another R Y fault got developed which converted to three phase fault. The fault was fed from bus 1 at Ramchandrapur end and due to non-availability of busbar protection the fault was cleared from connected feeders in zone 4 protection.*

Regarding time settings of bus coupler at RCP end, ERLDC representative replied that 100 ms delay is kept for bus coupler at Ramchandrapur end therefore ICT proposed settings is well coordinated with bus coupler settings.

PCC agreed with the proposal of Powergrid for enabling additional overcurrent protection on HV side of ICT-1 & 2 at Jamshedpur S/s with the current & time settings as suggested by them. The settings will be reviewed when the busbar protection at Ramchandrapur end will be made operational.

PCC advised JUSNL representative to set the zone-4 timer settings to 250 ms for all the lines at 220 kV Ramchandrapur S/s.

#### ITEM NO. B.6: Tripping of ICTs during the month of August 25

Sl. No	Name of the Element	Trip Date	Trip Time in Hrs	Reason of tripping	Utility
1	400KV/220KV 315 MVA ICT 2 AT TSTPP	29-08-2025	10:53	Directional earth fault.	NTPC
2	400KV/220KV 315 MVA ICT 1 AT NEW DUBURI	24-08-2025	16:21	Tripped during bus bar protection testing	OPTCL
3	400KV/220KV 315 MVA ICT 2 AT BIDHANNAGAR	23-08-2025	02:01	Neutral Displacement Relay operated	WBSETCL
4	400KV/220KV 315 MVA ICT 1 AT BARIPADA(PG)	21-08-2025	16:39	86 relay mal operated	PG Odisha
5	400KV/220KV 315 MVA ICT 1 AT PATRATU	20-08-2025	12:52	Tripped from 220 kV side only. 86 Relay operated.	JUSNL
6	400KV/220KV 315 MVA ICT 1 AT PATRATU	20-08-2025	10:21	DC Earth fault	JUSNL
7	400KV/220KV 315 MVA ICT 1 AT PATRATU	19-08-2025	21:27	DC power failure in LV side	JUSNL
8	400KV/220KV 315 MVA ICT 1 AT PATRATU	19-08-2025	11:15	DC Earth fault	JUSNL
9	400KV/220KV 315 MVA ICT 2 AT KEONJHOR(PG)	05-08-2025	14:59	Buchholz relay operated	PG Odisha
10	400KV/220KV 500 MVA ICT 1 AT BAKHTIYARPUR(BH)	01-08-2025	04:05	OTI operated due to faulty protection cable	BSPTCL

Concerned utilities may explain.

**Deliberation in the meeting**

- **Tripping of 400KV/220KV 315 MVA ICT 2 AT TSTPP on 29<sup>th</sup> Aug 2025 at 10:53 Hrs**

*NTPC Talcher representative was not present in the meeting.*

- **Tripping of 400KV/220KV 315 MVA ICT 1 AT NEW DUBURI on 24<sup>th</sup> Aug 2025 at 16:21 Hrs**

*OPTCL representative informed that on 24<sup>th</sup> Aug 2025, 400 kV bus 2 was under shutdown due to commissioning work of busbar and all feeders were connected to bus 1. During testing of LBB for ICT-1, LV side tripped due to incorrect logic in the relay. HV side tripped on intertrip signal. The LBB scheme has been modified and new scheme is implemented in the relay.*

- **Tripping of 400KV/220KV 315 MVA ICT 2 AT BIDHANNAGAR on 23<sup>rd</sup> Aug 2025 at 02:01 Hrs**

*WBSETCL representative informed that B-phase LA got burst on 33 kV side of ICT 2 (tertiary side) at Bidhannagar due to which neutral displacement relay operated and resulted in tripping of ICT 2.*

- **Tripping of 400KV/220KV 315 MVA ICT 1 AT BARIPADA(PG) on 21<sup>st</sup> Aug 2025 at 16:39 Hrs**

*PG Odisha representative was not present in the meeting.*

- **Tripping of 400KV/220KV 315 MVA ICT 1 AT PATRATU on 19<sup>th</sup> Aug at 11:15 Hrs, 21:27 Hrs and on 20<sup>th</sup> Aug 2025 at 10:21 Hrs and 12:55 Hrs**

*Report received from JUSNL is attached at **Annexure B.6**. JUSNL informed that ICT1 at patratu got tripped twice both on 19<sup>th</sup> Aug 2025 and 20<sup>th</sup> Aug 2025 due to DC earth fault. The DC issue has been attended, and no further tripping of ICT observed after rectification.*

- **Tripping of 400KV/220KV 315 MVA ICT 2 AT KEONJHOR(PG) on 5<sup>th</sup> Aug 2025 at 14:59 Hrs**

*PG Odisha representative was not present in the meeting.*

- **Tripping of 400KV/220KV 500 MVA ICT 1 AT BAKHTIYARPUR(BH) on 1<sup>st</sup> Aug 2025 at 04:05 Hrs**

*BSPTCL representative informed that due to defective cable, OTI operated resulting in tripping of ICT1 at Bakhtiyarpur S/s. Later cable was replaced and subsequently ICT was charged.*

**ITEM NO. B.7: Tripping of Buses during the month of August 25**

Sl. No	Name of the Element	Trip Date	Trip Time	Reason of tripping	Utility
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1	400KV MAIN BUS - 1 AT KHSTPP	17-08-2025	20:44	During Charging of 400 kV Durgapur Line-2 from Kahalgaon, Main CB Y-pole Got Stuck Up, which led to tripping of 400 kV Bus-1 On LBB Protection.	NTPC Kahalgaon
2	400KV MAIN BUS - 2 AT DIKCHU	05-08-2025	18:59	Bus bar protection operated	Dikchu HEP

Concerned utilities may explain.

**Deliberation in the meeting**

- **Tripping of 400KV MAIN BUS - 1 AT KHSTPP on 17<sup>th</sup> Aug 2025 at 20:44 Hrs**

*Issue is discussed in Item No. B.4.*

- **Tripping of 400KV MAIN BUS - 2 AT DIKCHU on 5<sup>th</sup> Aug 2025 at 18:59 Hrs**

*Issue has been discussed in special meeting held on 3<sup>rd</sup> Sep 2025.*

**ITEM NO. B.8: Repeated tripping of transmission lines during the month of August 25**

Sl.No.	Name of the Element	No. of times Tripped	Reason of tripping	Utility
1	400KV-GORAKHPUR-MOTIHARI-1	3	Line tripped on Y-Earth fault in 3 instances with fault distance around 9-10 km from Motihari end in 2 instances.	DMTCL/ PG-ER 1
3	400KV-LAPANGA-OPGC (IB THERMAL)-2	3	Line tripped on phase-to-phase fault, DT received at Lapanga end and DEF protection operated at OPGC.	OPTCL
4	220KV-JODA-RAMCHANDRAPUR-1	4	Tripped due to bus bar operation at Joda end in 2 instances and phase to ground fault in 2 instances.	OPTCL/JUSNL
5	220KV-TENUGHAT-BIHARSARIFF-1	3	Tripped on phase to ground fault in all instances (2 times on B-Earth fault and once on Y-Earth fault)	JUSNL/BSPTCL

6	220KV-BUDHIPADAR-KORBA-2	2	Pole discrepancy relay (PDR) operated in 2 instances	OPTCL
7	132KV-MALDA (PG)-MANIKCHAK D/C	9	Line #1 and 2 tripped on R phase to ground fault in 5 & 4 instances respectively.	WBSETCL
8	132KV-KAHALGAON(BSEB)-LALMATIA-1	4	Line tripped on phase to ground fault in all instances. (4 times tripping reported during July 2025)	BSPTCL/JUSNL
9	132KV-KHSTPP-KAHALGAON(BSEB)-1	3	Line tripped in Z-3 protection from NTPC end on phase-to-phase fault in 2 instances during July 2025)	BSPTCL/Kahalgaon

Concerned utilities may explain.

**Deliberation in the meeting**

- **Repeated tripping of 400KV-GORAKHPUR-MOTIHARI-1 in Aug 2025**

*DMTCL representative was not present in the meeting.*

- **Repeated tripping of 400KV-LAPANGA-OPGC (IB THERMAL)-2 in Aug 2025**

*OPTCL representative informed that line had tripped thrice in Aug 2025. In first instance it got tripped due to DT receipt at Lapanga end. In second instance it got tripped in near Miss event at Lapanga on 12.08.2025 and in third instance line got tripped due to fault however no fault was identified physically. He confirmed that issue of DT had been rectified in coordination with OPGC.*

- **Repeated tripping of 220KV-JODA-RAMCHANDRAPUR-1 in Aug 2025**

*OPTCL representative informed that line had tripped twice due to spurious bus bar protection operation at Joda S/s on a single day. Subsequently OEM M/s Siemens had been communicated regarding the issue and bus bar protection is kept out of service at present.*

*JUSNL representative informed that line had tripped twice due to non operation of auto-recloser from Ramchandrapur end for transient faults in the line. He further informed that OPGW rectification work which was pending has been completed and commissioning of link is pending.*

- **Repeated tripping of 220KV-TENUGHAT-BIHARSARIFF-1 in Aug 2025**

ERLDC representative informed that line had tripped 4 times in month of Aug 2025 in which three phases were opened for phase to ground fault. As per record, line was charged within one hour which shows that faults were transient in nature and line had tripped due to non operation of auto-recloser.

TVNL representative informed that PLCC needs to be implemented at TVNL by BSPTCL. BSPTCL representative replied that the scheme was short closed due to non-installation of wave trap at TVNL end for gantry structure issue.

Considering the long pending issue, it was decided that ERPC Secretariat would write a letter to BSPTCL & TVNL for implementation of carrier communication at the earliest and resolve any issues in this regard at the earliest.

Regarding tripping on the line, BSPTCL representative informed that bad weather and heavy rain was observed on days of tripping however no fault was found physically. Further he added that vegetation trimming is in progress for line.

- **Repeated tripping of 220KV-BUDHIPADAR-KORBA-2 in Aug 2025**

OPTCL representative informed that line had tripped twice on 22<sup>nd</sup> Aug 2025. On day of incident heavy rainfall and bad weather was reported. After first tripping incident at 09:30 Hrs, line was charged. Again it got tripped at 12:48 hrs. Subsequently investigation was done and PD relay timer was found defective was rectified and line was charged at 14:54 Hrs.

- **Repeated tripping of 132KV-MALDA (PG)-MANIKCHAK D/C in Aug 2025**

ERLDC representative informed that 132KV-MALDA (PG)-MANIKCHAK-1 and 2 had tripped 9 times (cumulative of both line tripping) in month of Aug 2025 mostly due to R phase fault at 10-12 km from Manikchak end.

WBSETCL representative informed that line is newly commissioned. On patrolling of line, punctured polymer insulators were found which had been replaced and line is being kept under observation.

PCC advised to carry detailed survey of line and submit a report to ERPC/ERLDC.

- **Repeated tripping of 132KV-KAHALGAON(BSEB)-LALMATIA-1 in Aug 2025**

ERLDC representative informed that 132KV-KAHALGAON(BSEB)-LALMATIA-1 and 132KV-KHSTPP-KAHALGAON(BSEB)-1 lines has tripped repeatedly in July 2025 and Aug 2025.

BSPTCL representative informed that tripping of 132KV-KAHALGAON(BSEB)-LALMATIA line is due to vegetation issues for which tree trimming work is in progress. He informed that on 24<sup>th</sup> July 2025 conductor of 132KV-KHSTPP-KAHALGAON(BSEB)-1 got snapped. Since 132KV-KAHALGAON(BSEB)-LALMATIA-1 and 132KV-KHSTPP-KAHALGAON(BSEB)-1 are on the same tower hence this line also got tripped.

PCC advised to clear all the vegetation related clearance issues at the earliest. Further suggested that periodical patrolling shall be carried out in the line and address the vegetation issues as part of preventive maintenance.

- **Repeated tripping of 132KV-KHSTPP-KAHALGAON(BSEB)-1 in Aug 2025**

BSPTCL representative informed that repeated cases of jumper snapping and insulator damage is observed for 132 kV Kahalgaon(BSEB)- Goradih line and due to carbon deposits in relay panel and breaker terminal at their end, tripping is getting delayed from BSPTCL end and hence tripping is observed from NTPC end.

PCC advised BSPTCL representative to take necessary corrective actions to avoid repeated tripping of 132KV-KHSTPP-Goradih line and the consequent tripping of 132 kV Kahalgaon(BSEB)-Kahalgaon(NTPC) line.

**ITEM NO. B.9: Single Line Tripping Incidences in month of August 2025**

Single line tripping incidents in the month of August 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 Aug 2025 is attached at **Annexure B.9**.

**PART- C: OTHER ITEMS**

**ITEM NO. C.1: Submission of protection performance indices on monthly basis by users to RPC and RLDC for 220 kV and above lines**

As per IEGC 2023 Clause 15(6), 15(7) all users shall submit protection performance indices of previous month by 10<sup>th</sup> of every month to ERPC and ERLDC along with reasons for performance indices less than unity of individual element wise protection system to the respective RPC and action plan for corrective measures. For the month of Aug'25, detailed list is attached.

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

Sl.no	Utility Name	April 2025	May 2025	June 2025	July 2025	August 2025
1	PG-ER-1	Yes (23.02.2025)			Yes (18.08.2025)	Yes (08.09.2025)
2	PG-ER-2	Yes		Yes (14.07.2025)	Yes	

3	PG-Odisha	Yes (12.05.2025)	Yes (16.06.2025)		Yes	Yes (03.09.2025)
4	WBSETCL/ WBPDCL	Yes (07.05.2025)	Yes (09.06.2025)	Yes (07.07.2025)	Yes (05.08.2025)	Yes (04.09.2025)
5	BSPTCL/ BGCL	Yes (13.05.2025)	Yes (18.06.2025)	Yes (07.07.2025)	Yes (14.08.2025)	
6	OPTCL/ OHPC	Yes (15.05.2025)	Yes (16.06.2025)	Yes (14.07.2025)	Yes (14.08.2025)	
7	DVC	Yes (12.05.2025)			Yes	
8	JUSNL	Yes (21.05.2025)	Yes (22.06.2025)		Yes (18.08.2025)	Yes (06.09.2025)
9	Sikkim					
10	OPGC					
11	PMTL					
12	NTPC- KHSTPP	Yes (23.05.25)	Yes (14.06.2025)	Yes (21.07.2025)		
13	NTPC- FSTPP					
14	NTPC- BARH	Yes (09.05.2025)	Yes (14.06.2025)		Yes (08.08.2025)	Yes (04.09.2025)
15	NTPC- TSTPP					
16	NTPC- KBUNL					
17	NPGC					
18	BRBCL					
19	NTPC- DARILAPLI	Yes (02.04.2025)	Yes (02.06.2025)	Yes (02.07.2025)	Yes (01.08.2025)	Yes (01.09.2025)
20	NTPC- NORTH KARNPUA RA					
21	ATL					
22	APNRL			Yes (09.07.2025)	Yes (13.08.2025)	Yes (07.09.2025)
23	CBPTCL					
24	DMTCL	Yes (03.05.2025)	Yes (04/06/2025)	Yes (03.07.2025)	Yes (04.08.2025)	Yes (04.09.2025)

25	ENICL	Yes (13.05.2025)		Yes (07.07.2025)	Yes (11.08.2025)	Yes (09.09.2025)
26	Chuzachen HEP					
27	Jorethang HEP	Yes (02.05.2025)	Yes (01/06/2025)		Yes (01.08.2025)	Yes (01.09.2025)
28	Tashiding Hep	Yes (03.05.2025)	Yes (02/06/2025)	Yes (01.07.2025)	Yes (01.08.2025)	Yes (01.09.2025)
29	GMR					
30	IBEUL					
31	JITPL					
32	MPL				Yes (08.08.2025)	
33	NKTL					
34	OGPTL	Yes (13.05.2025)		Yes (07.07.2025)	Yes (11.08.2025)	Yes (09.09.2025)
35	PMJTL					
36	Powerlink					
37	PKTCL	Yes (13.05.2025)		Yes (07.07.2025)	Yes (11.08.2025)	Yes (09.09.2025)
38	CESC	Yes (11.07.2025)	Yes (11.07.2025)	Yes (11.07.2025)	Yes (17.08.2025)	
39	Rongnichu HEP					
40	TVNL	Yes (03.05.2025)	Yes (04.06.2025)	Yes (01.07.2025)	Yes (04.08.2025)	Yes (04.09.2025)

Members may discuss.

### **Deliberation in the meeting**

*ERPC representative informed that protection performance indices for Aug 2025 has been received from PG ER-I, PG ER-II, PG Odisha, WBSETCL, BSPTCL, JUSNL, OPTCL, NTPC Barh, NTPC Darlipalli, NTPC Kahalgaon, APNRL, DMTCL, Indigrid, Tashiding HEP, Jorethang HEP and TVNL.*

*ERLDC representative informed that protection performance indices were received from DVC which will be shared to ERPC.*

*Protection performance indices for Aug 2025 received from utilities is attached at **Annexure C.1**.*

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

**ITEM NO. C.2: Internal Protection Audit and Third Party Protection Audit of Sub stations for the Year 2025-26**

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

**Quote**

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

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

**Unquote**

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."

and as per clause 15.5," 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."

In 150<sup>th</sup> PCC Meeting, PCC advised concerned utilities to share internal protection audit plan for FY 2025-26 to ERPC at earliest. It further said that final report of completed audits should also be shared with ERPC.

PCC advised all utilities to share third party protection audit plan for FY 2025-26 to ERPC at earliest. It further said that final report of completed audits should also be shared with ERPC.

Protection Audit plan for FY 2025-26 is received from following constituents.

<b>S. No.</b>	<b>Utility Name</b>	<b>Date of receipt</b>
1	Powergrid ER-2	19.04.2025
2	DMTCL	05.04.2025
3	NTPC North Karanpura	27.03.2025
4	NTPC Talcher Kaniha	27.03.2025

Concerned utilities may update.

**Deliberation in the meeting**

*ERPC representative informed that protection audit plan for FY 2025-26 is received from PG ER-2, DMTCL, NTPC North Karanpura and NTPC Talcher.*

*ERLDC representative said that protection audit plan for FY 2025-26 is received from WBSETCL which will be shared to ERPC.*

*PCC advised remaining utilities to share protection audit plan to ERPC by 30<sup>th</sup> Sep 2025. It further advised utilities that final report of completed audits should also be shared with ERPC.*

**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.***

Name	First Join	Email
ERPC Kolkata	9/18/25, 10:28:09 AM	ERPC@KolkataMST.onmicrosoft.com
Sayan Sarkar (PRDC) (Unverified)	9/18/25, 10:28:34 AM	
ss (Unverified)	9/18/25, 10:29:11 AM	
Mithun Gayen {मिथुन गायेन} (External)	9/18/25, 10:35:36 AM	mithun.gayen@powergrid.in
rupa kumari,SM,TD,HZB JUSNL (Unverified)	9/18/25, 10:37:05 AM	
400/220KV GSS Patratu (Unverified)	9/18/25, 10:37:08 AM	
Pravin Ram (Unverified)	9/18/25, 10:45:21 AM	
TC DUMKA (Unverified)	9/18/25, 10:46:02 AM	
GCR TTPS	9/18/25, 10:49:18 AM	
SLDC, ODISHA (Unverified)	9/18/25, 10:50:14 AM	
SMS Sahoo, GM(Elect), OPTCL (Unverified)	9/18/25, 10:50:49 AM	
TVNL (Unverified)	9/18/25, 10:51:09 AM	
Gitesh Patel (External)	9/18/25, 10:51:56 AM	giteshpatel@erldc.onmicrosoft.com
erldc (Unverified)	9/18/25, 10:53:27 AM	
Somnath Chatterjee (External)	9/18/25, 10:54:09 AM	schatterjee@tatapower.com
Ganesh Korada (External)	9/18/25, 10:54:11 AM	ganesh.korada@opgc.co.in
Bimal ERLDC (Unverified)	9/18/25, 10:54:41 AM	
critl bsptcl (Unverified)	9/18/25, 10:56:33 AM	
Pandi Krishnan N {पाण्डी कृष्णन एन.} (External)	9/18/25, 10:56:51 AM	pandikrishnan.n@powergrid.in
Amiya Kumar Pradhan (External)	9/18/25, 10:57:17 AM	Amiya.Pradhan@vedanta.co.in
NIRMAL MONDAL(WBSETCL) (Unverified)	9/18/25, 10:57:59 AM	
Yamana Ayyappa	9/18/25, 10:59:30 AM	
RAHUL RAJ	9/18/25, 10:59:33 AM	
Ashish Kumar (External)	9/18/25, 10:59:54 AM	ashish.k@budhilhydro.com
Sarv Verma (External)	9/18/25, 11:00:55 AM	sverma@erldc.onmicrosoft.com
dikchu (Unverified)	9/18/25, 11:00:57 AM	
DGM,E&MR DIVISION, BURLA (Unverified)	9/18/25, 11:02:06 AM	
OPTCL MERAMUNDALI (Unverified)	9/18/25, 11:02:08 AM	
arindam bsptcl (Unverified)	9/18/25, 11:02:11 AM	
CRITL BIHAR (Unverified)	9/18/25, 11:03:22 AM	
BSPTCL (Unverified)	9/18/25, 11:03:24 AM	
Deepak Kumar EEE, CRITL, BSPTCL	9/18/25, 11:04:27 AM	
Manas Das (External)	9/18/25, 11:04:45 AM	manasdass@erldc.onmicrosoft.com

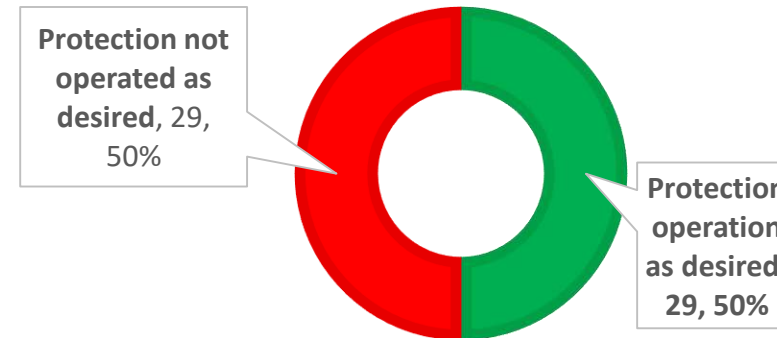
Sudeep Kumar {सुदीप कुमार} (External)	9/18/25, 11:04:48 AM	sudeepkumar@powergrid.in
OPTCL, JAJPUR (Unverified)	9/18/25, 11:05:00 AM	
Arfin (Unverified)	9/18/25, 11:05:11 AM	
PRABHAT KUMAR -CGM-SPTL (Unverified)	9/18/25, 11:05:46 AM	
RAHUL (Unverified)	9/18/25, 11:05:47 AM	
ms erpc (Unverified)	9/18/25, 11:06:01 AM	
D.Biswas (Unverified)	9/18/25, 11:06:04 AM	
EEE CRITL BIHAR (Unverified)	9/18/25, 11:08:08 AM	
Bilash Achari (External)	9/18/25, 11:09:14 AM	bilash.achari@erldc.onmicrosoft.com
Rajiv Singh (External)	9/18/25, 11:10:33 AM	rajiv.singh1@rpsg.in
Dikchu (Unverified)	9/18/25, 11:12:44 AM	
Alok Pratap Singh (External)	9/18/25, 11:14:00 AM	apsingh@erldc.onmicrosoft.com
P p jena (Unverified)	9/18/25, 11:15:00 AM	
PARAG CHATTERJEE (External)	9/18/25, 11:15:30 AM	PARAGCHATTERJEE@NTPC.CO.IN
Ramesh rajak (Unverified)	9/18/25, 11:16:02 AM	
EEE Critl (Unverified)	9/18/25, 11:16:23 AM	
Chandra Shekhar Kumar (Unverified)	9/18/25, 11:17:06 AM	
benudhar (Unverified)	9/18/25, 11:20:22 AM	
sibesh kumar	9/18/25, 11:28:54 AM	
I K MEHRA Director ERPC (Unverified)	9/18/25, 11:31:47 AM	
ESE BSPTCL (Unverified)	9/18/25, 11:36:41 AM	
Amresh Prusti (External)	9/18/25, 11:40:21 AM	amresh.prusti@opgc.co.in
K RANJAN (External)	9/18/25, 11:44:15 AM	KANISHKARANJAN@NTPC.CO.IN
Debabrata Biswas (External)	9/18/25, 11:45:20 AM	dbiswas@erldc.onmicrosoft.com
jitesh kumar (Unverified)	9/18/25, 11:46:42 AM	
Lily Choudhury (External)	9/18/25, 11:48:36 AM	LILYCHOWDHURY@NTPC.CO.IN
I K MEHRA Director ERPC (Unverified)	9/18/25, 11:56:08 AM	
bsptcl (Unverified)	9/18/25, 12:00:46 PM	
P P Jena (Unverified)	9/18/25, 12:06:19 PM	
Shweta Nirmata, AEx.E (CRITL), BSPTCL (Unverified)	9/18/25, 12:14:07 PM	
WBPDCL (Unverified)	9/18/25, 12:22:47 PM	
Samish (External)	9/18/25, 12:34:31 PM	samish@tvnl.in
DHARMADAS TRIPATHI (External)	9/18/25, 12:43:46 PM	dharmadas.tripathi@dvc.gov.in
Nishant Kumar Shankwar	9/18/25, 2:38:13 PM	Nishant.Kumar@energy-sel.com

# 151<sup>st</sup> PCC Meeting (18-09-2025)

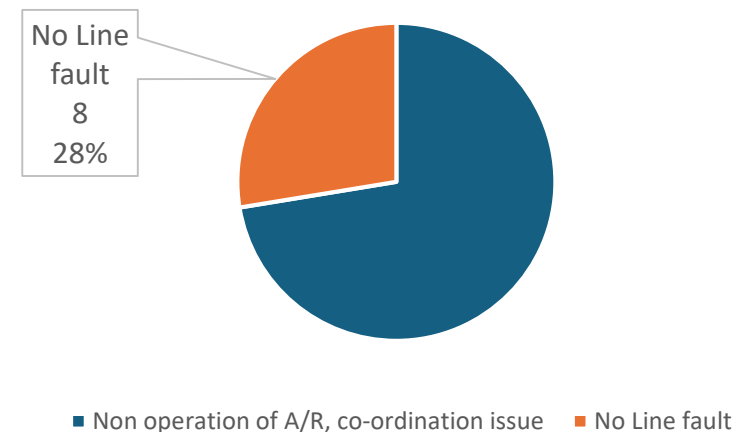
# Protection Performance For The Month Of August 2025

- Total 58-line tripping:
  - Protection operation as per scheme: **29 (50%)**
  - Protection operation not as desired: **29 (50%)**
- Number of Grid Event: **3**
  - Maximum Generation loss: **540 MW**(Grid Event at JSWEUL Due to SPS operation of 400kV OPGC-Lapanga D/C)
  - Total generation loss: **1.61 MU**

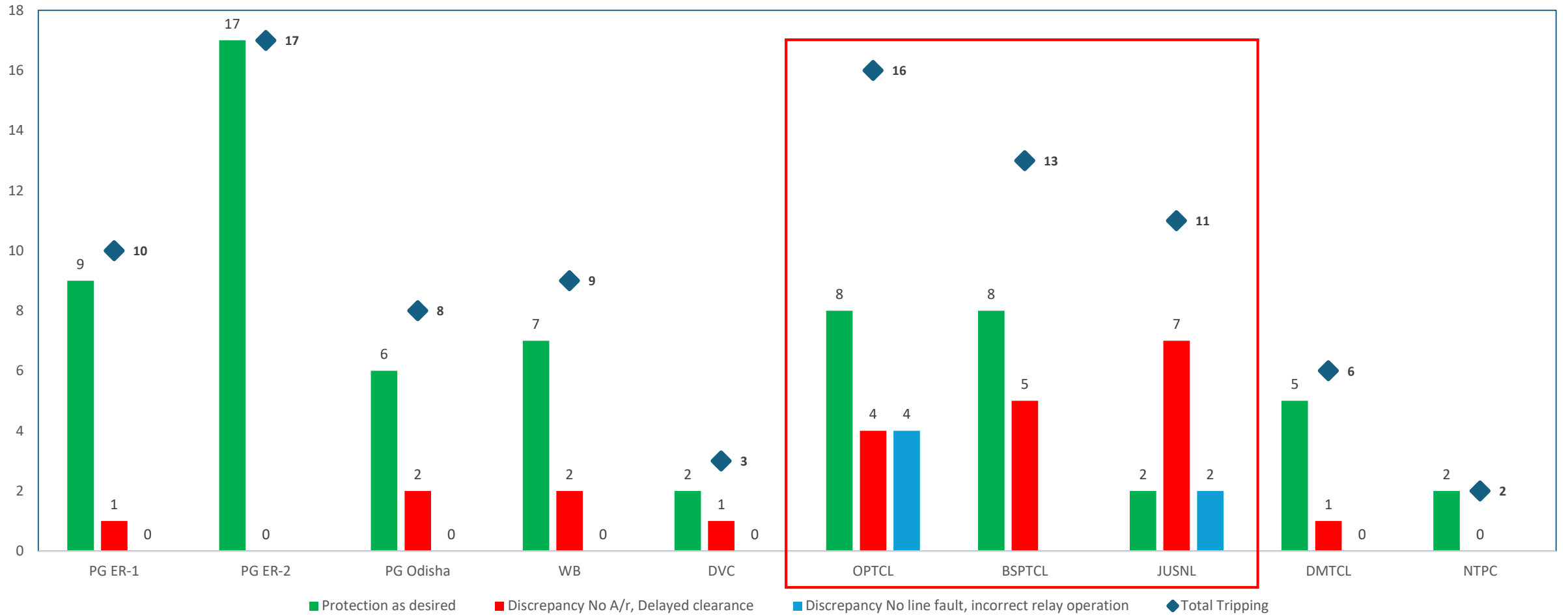
PROTECTION PERFORMANCE



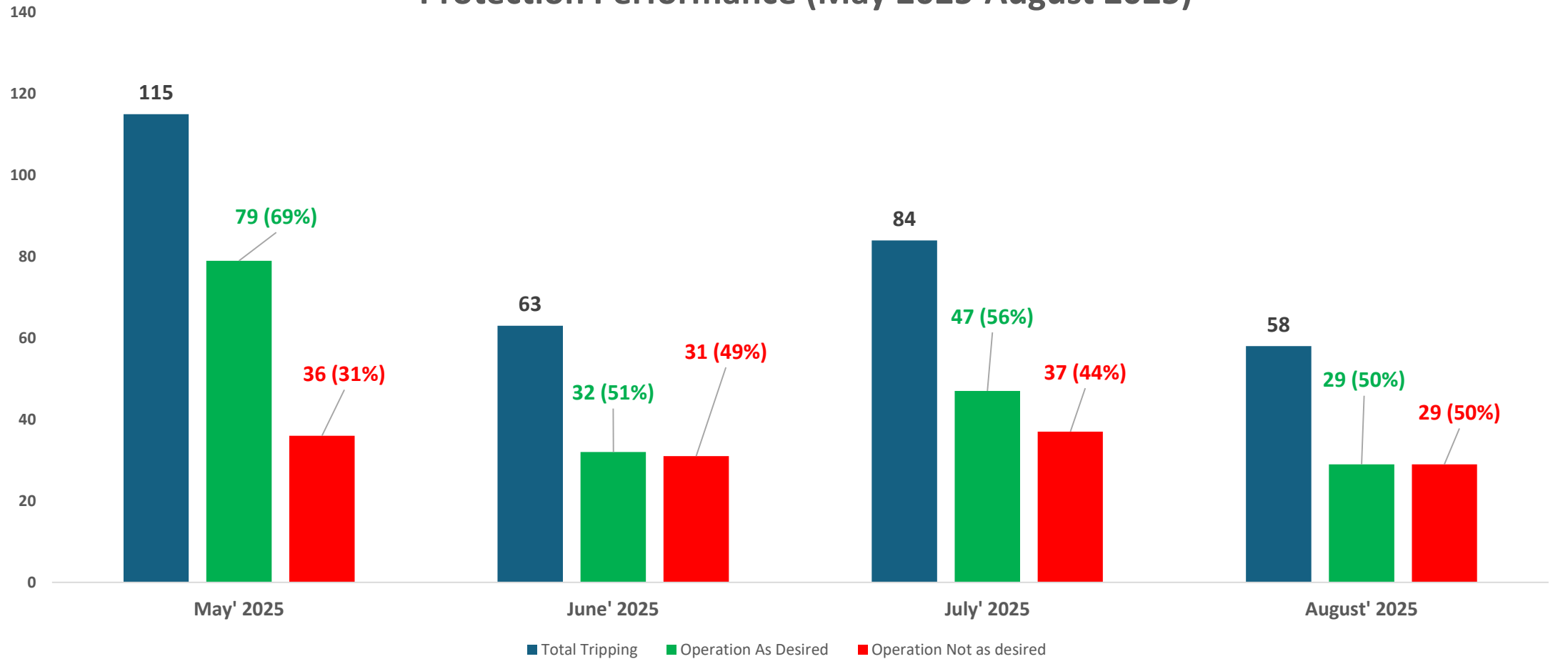
Protection not operated as desired



Utility wise protection performance for the month of August'25

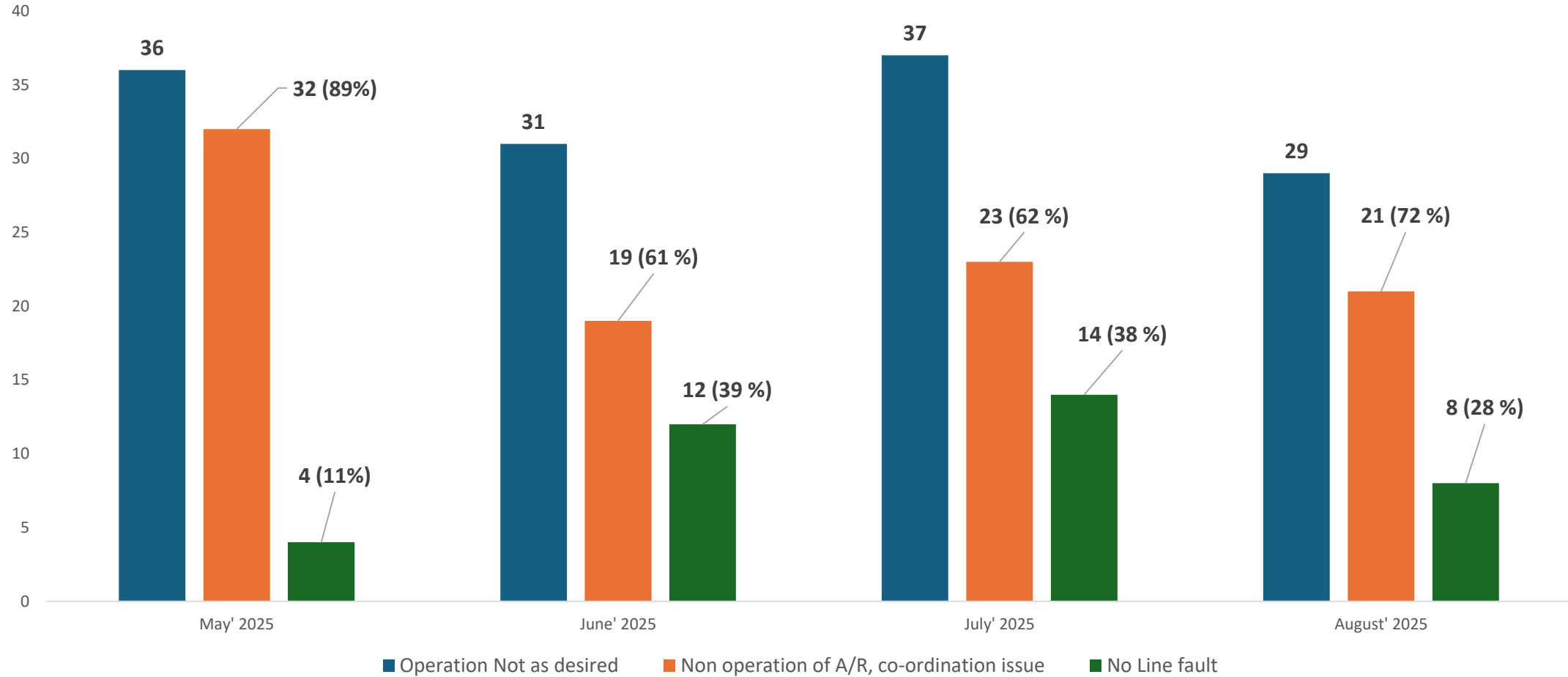


## Protection Performance (May'2025-August'2025)



❑ Major contributor for undesired operation : BSPTCL, JUSNL and OPTCL

## Operation Not as desired (May'2025-August'2025)



## Suggestion to improve performance of protection system

Sr. No.	Reason	Recommendation
1	<b>A/R not attempted for single phase transient fault</b>	Check AR circuit and test relay for A/R functionality.
2	<b>Spurious Direct Trip signal received</b>	A standard time delay of 10 msec may be added in all protection coupler (PLCC/DTPC) having provision for the same. Any DC earth fault flashover sustain for <10 msec.
3	<b>Tripping due to DC earth fault in the S/S</b>	Check DC output voltage for both Positive-to-Earth and Negative-to-Earth. Attend DC EF immediately to avoid unintended protection operation.

**THANK YOU**



**ग्रिड-इंडिया**  
GRID-INDIA

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




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

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

**पूर्वी क्षेत्र के 400 केवी दिक्चू में ग्रिड घटना पर विस्तृत रिपोर्ट / Detailed Report of grid event at 400 kV  
Dikchu S/s of Eastern Region  
(To be submitted by RLDC/NLDC during Grid Disturbances/Grid Incidents/Near Miss Event as  
per IEGC section 37.2 (f))  
(आई ई जी सी 37.2 (एफ) के अनुपालन में)**

**Date(दिनांक): 10-09-2025**

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

Prior to the disturbance, Dikchu HEP was generating around 106 MW, evacuating through 400kV Dikchu-Rangpo Line. (400kV Dikchu-Rangpo (Teesta-III Bypass) Line was under outage condition). At 13:50 hrs, the 400/132kV, 270 MVA ICT at Dikchu HEP tripped on overcurrent earth fault protection. This resulting loss of the evacuation path caused Dikchu Unit #1 & 2 to trip on overspeed/overfrequency protection, leading to a total generation loss of 106 MW at Dikchu substation.

**2. Time and Date of the Event (घटना का समय और दिनांक): 13:50 hrs of 31.08.2025**

**3. Event Category (ग्रिड घटना का प्रकार): Grid Incident (GI)-2**

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

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

	Frequency in Hz	Regional Generation in MW	Regional Demand in MW
Pre-Event (घटना पूर्व)	50.125	23024	25972
Post Event (घटना के बाद)	50.125	22918	25972

**\*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)	400kV Dikchu-Rangpo (Teesta-III Bypass) Line was under outage condition.
--	--

Weather Condition (मौसम स्थिति)

Inclement weather reported.

6. Load and Generation loss (लोड और जेनरेशन हानि): Generation loss of 106 MW at Dikchu HEP.

7. Duration of interruption (रूकावट की अवधि): 00:50 Hrs.

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

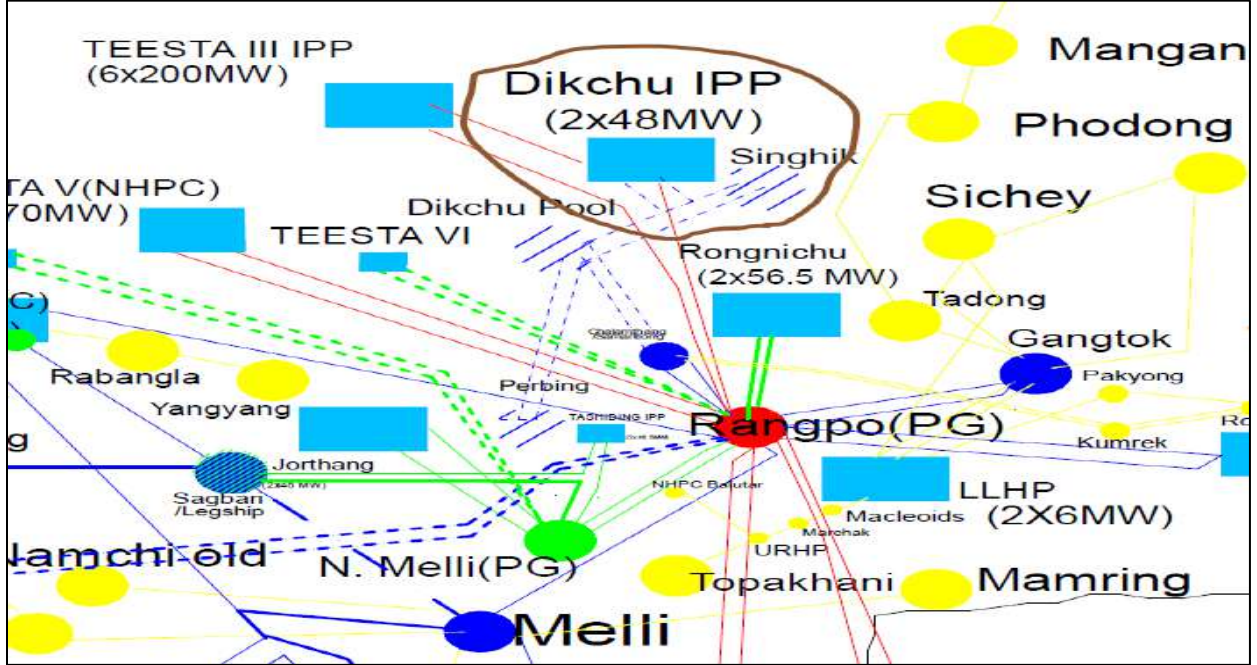


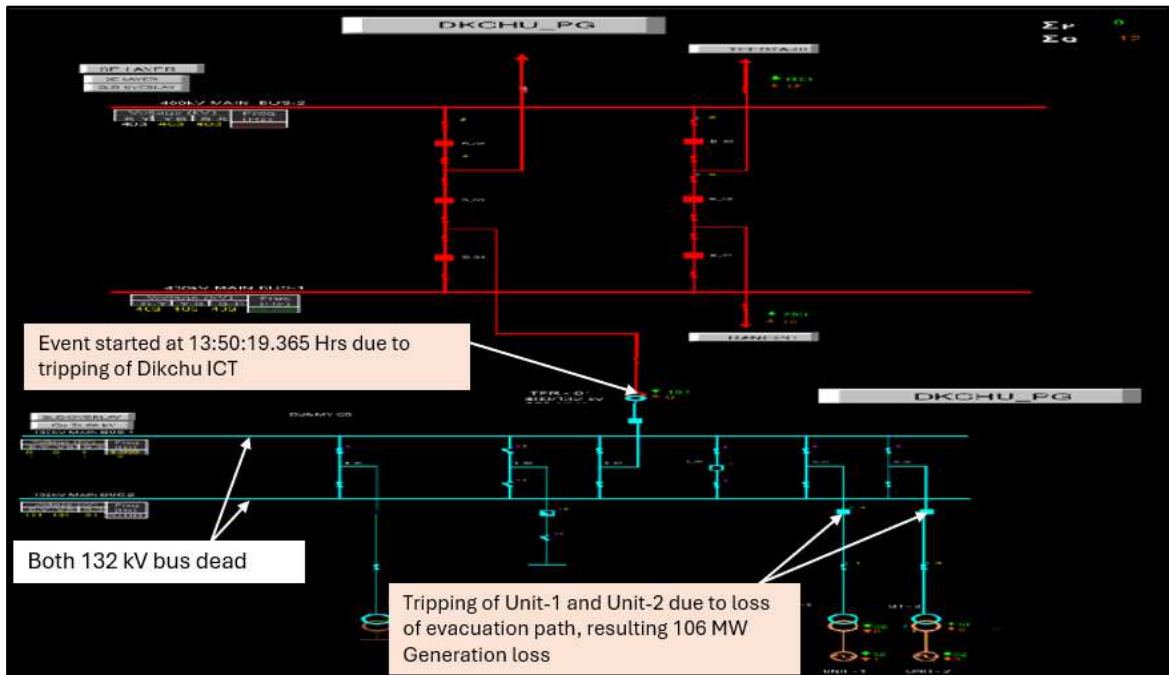
Figure 1: Network across the affected area

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

10. Major Elements Tripped (प्रमुख ट्रिपिंग):

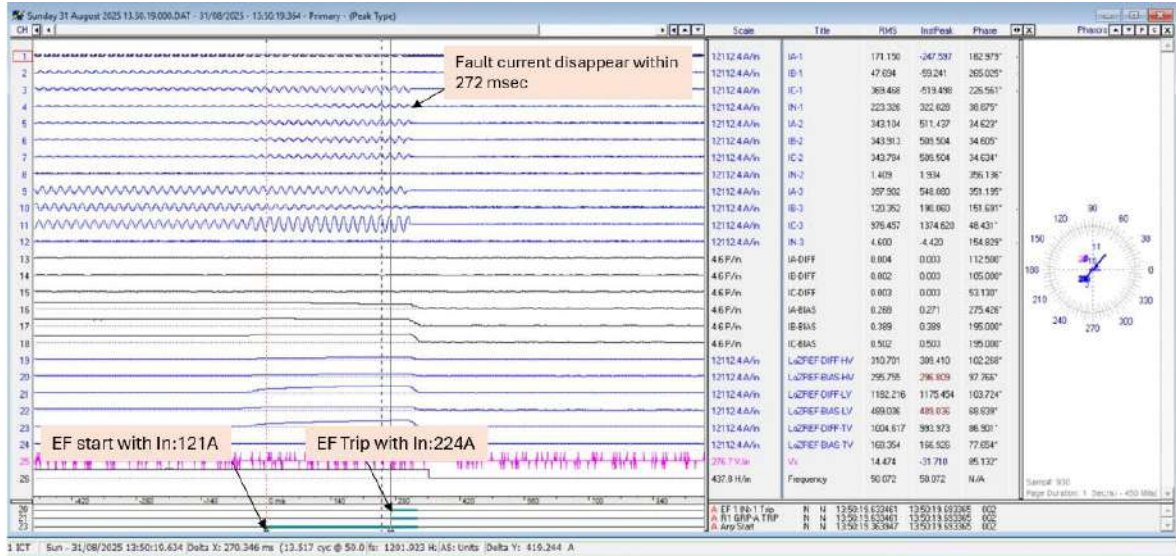
क्र०स०	नाम	Trip time (hh:mm:ss)	उप केंद्र 1 रिले संकेत	उप केंद्र 2 रिले संकेत	Restoration time in Hrs
2	400/132kV, 270 MVA ICT at Dikchu	13:50:19	HV side B/U over current EF protection operated		14:41
3	Dikchu Unit-1		Over frequency/Overspeed		14:49
4	Dikchu Unit-2		Over frequency/Overspeed		14:55

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



**Figure 2: SLD of 400kV Dikchu S/s**

- Dikchu HEP was generating around 106 MW, evacuating through the 400kV Dikchu-Rangpo Line. (400kV Dikchu-Rangpo (Teesta-III Bypass) Line was under outage condition).
- At 13:50:19 Hrs, transient high resistive fault occurred in the line, which was picked up by 400/132kV ICT at Dikchu HEP (O/C Earth fault setting kept as non-directional on the HV side of ICT).
- After 272 msec, HV side ICT at Dikchu HEP got tripped on O/C earth fault protection.
- The loss of evacuation path subsequently caused Dikchu HEP unit #1 & 2 to trip on over speed/ over frequency protection.
- This led to a generation loss of 106 MW at Dikchu HEP.



**Figure 3: DR of ICT at Dikchu HEP**

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

- O/C Earth fault setting kept as non-directional, which was not as per ERPC protection philosophy and decided in 148<sup>th</sup> PCC meeting.



- O/C Earth fault setting may be reviewed, and it is to be revised as per Protection philosophy of ERPC.
- MOM of meeting held on 03/09/2025 is attached in Annexure 1.

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

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

S.No.	Issues	Regulation Non-Compliance	Remark
1	<b>Flash Report received within 8hrs?</b>	IEGC section 37.2 (b)	Submitted
2	<b>Whether DR/EL provided within 24 Hours?</b>	1. IEGC section 37.2 (c) 2. CEA grid Standard 15.3	Submitted
3	<b>Detailed Report received within 7 days?</b>	IEGC section 37.2 (e)	Submitted
4	<b>Protection system not operated correctly</b>	ERPC protection philosophy.	400/132kV ICT tripped on backup over current due to directional feature of O/C E/F kept as non-directional which was not as per ERPC protection philosophy.

**15. Key Lessons Learnt (प्रमुख अधिगम बिंदु):** Ensuring proper protection setting in line with ERPC protection Philosophy is essential to prevent UNWANTED tripping and system disturbance. As per Grid code, this should be verified by the user through an internal protection audit conducted annually.



## **Minutes of Meeting held on 03<sup>rd</sup> September'25 to discuss repeated Grid Disturbance at Dikchu HEP**

An online meeting was held on 3<sup>rd</sup> September 2025 with participation from Dikchu HEP, ERLDC and ERPC to discuss the issue of protection mal operation at Dikchu HEP. Agenda points are as follow:

1. Grid Disturbance (GD) at Dikchu HEP due to unwanted tripping of 400/132kV, 270 MVA ICT on 31/08/2025 led to Generation loss of 106 MW.
2. Action to be taken to avoid such grid disturbance at Dikchu HEP and compliance to be taken of internal and third-party protection audit as per clause 15(1)(2) of IEGC 2023.

**Deliberation of the discussion are as follows:**

- 1. Grid Disturbance at Dikchu HEP due to unwanted tripping of 400/132kV, 270 MVA ICT on 31/08/2025 led to Generation loss.**
  - a. ERLDC presented details of grid disturbances since April'25, leading to generation loss due to tripping of the 400/132 kV ICT and associated lines. These are on account of incorrect implementation of relay settings and non-adherence of recommendation given in the 148th PCC meeting (details in Annexure-1)
  - b. ERLDC mentioned discrepancies, observed in HV side Backup OC EF setting for 400/132kV ICT at Dikchu HEP and the same is listed below:
    - Back-up OC Earth Fault setting configured as non-directional instead of directional towards ICT.
    - High set pickup for Back-up OC EF setting is not in line with ERPC protection philosophy.
    - Different B/U OC EF settings were implemented in P643 87T and P645 OA relay.
  - c. Dikchu HEP clarified that the directional feature was not visible in Relay P643 87T during implementation of the recommended setting. However, presently they made it directional after the event.
  - d. ERPC recommended that backup protection setting may be implemented in one relay. However, if enabled in both relays identical setting should be implemented for uniformity.
- 2. Action to be taken to avoid such grid disturbance at Dikchu HEP and compliance to be taken of internal and third-party protection audit as per clause 15(1)(2) of IEGC 2023.**
  - a. ERLDC highlighted that the primary cause of repeated grid disturbances at Dikchu HEP has unwanted protection operation mainly due to incorrect relay settings, mal operation of bus bar protection and non-operation of A/r during transient faults.
  - b. Subsequent to deliberation, Dikchu HEP committed that they will form a committee to reverify all implemented relay setting of feeders and ICT at Dikchu HEP in line with

- ERPC protection philosophy. The revised relay setting will be shared with ERPC and ERLDC along with comprehensive committee report within 15 days.
- c. It is further emphasized that Dikchu HEP should immediately carry out necessary Relay testing and A/R scheme to avoid unintended operations. Dikchu HEP agreed to address and resolve all protection issues.
  - d. ERLDC/ERPC advise to conduct an internal and third-party protection audit to ensure compliance with IEGC 2023.

*Meeting concluded with a Vote of Thanks to all participants.*

**Members Present:**

1. Sh. DP Bhargava (SBU Head-North Hydro Operations)
2. Mr. Md. Arif (Sr. Manager-North Hydro Operations)
3. Mr. Baburaj K (AGM-Design)
4. Mr. Md. Firoz Khan (AGM-Dikchu HEP)
5. Ashish Kumar (Manager-Operations Dikchu HEP)
6. Keshav Kumar (Officer-Operations Dikchu HEP)
7. P. P. Jena, EE, ERPC
8. D Biswas, GM(SO), GRID-INDIA
9. Manas Das, DGM(SO), ERLDC, GRID-INDIA
10. Bilash Achari, DGM (SO), ERLDC, GRID-INDIA
11. Bimal Swargiary, DGM (SO), ERLDC, GRID-INDIA
12. Alok Pratap Singh, CM (SO), ERLDC, GRID-INDIA
13. Gitesh Patel, DM (SO), ERLDC, GRID-INDIA


**ग्रिड-इंडिया**  
**GRID-INDIA**

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

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

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

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

**Date(दिनांक): 21-07-2025**

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

Prior to the disturbance, 220 kV Chatra S/s of Jharkhand Power System was connected with rest of ER grid through 220kV Chatra-Daltongunj line and 220kV Chatra-Latehar line. **At 04:43 Hrs**, both circuits connected to Chatra S/s were hand tripped from the Chatra end due to fire incident in the control panel (caused by short circuit in BCU unit and PLCC panel of the 220kV Chatra-Daltongunj line). Consequently, 220kV Chatra S/s became dead, resulting in a load loss of 40 MW.. Power supply was restored through the 220kV Chatra-Latehar line at 07:03 Hrs.

**2. Time and Date of the Event (घटना का समय और दिनांक):** 04:43 hrs of 07.08.2025.

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

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

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

	Frequency in Hz	Regional Generation in MW	Regional Demand in MW	State Generation (MW)	State Demand (MW)
				Jharkhand	Jharkhand
<b>Pre-Event (घटना पूर्व)</b>	50.00	32922	24845	201	1513
<b>Post Event (घटना के बाद)</b>	50.00	32922	24810	201	1473

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

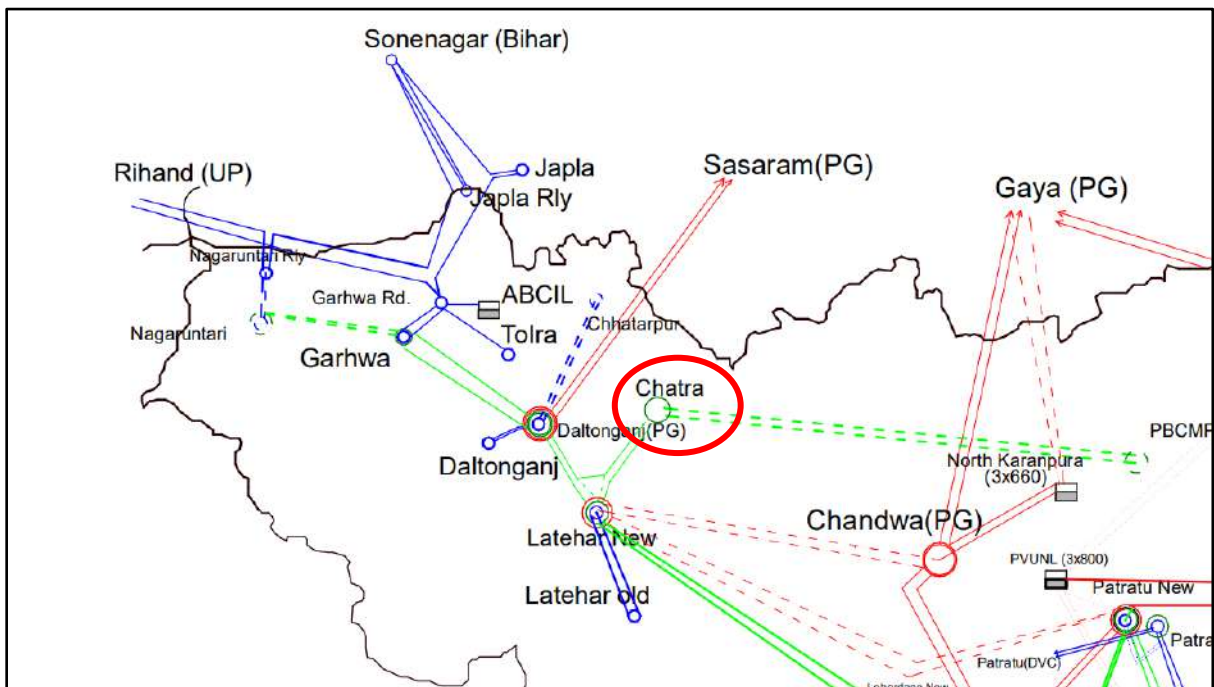
Important Transmission Line/Unit if under outage	Nil
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(महत्वपूर्ण संचरण लाइने/ विद्युत उत्पादन इकाइयां जो बंद हैं)	
Weather Condition (मौसम स्थिति)	Normal.

**6. Load and Generation loss (लोड और जेनरेशन हानि):** Approximate load loss of **40 MW** at Chatra S/s.

**7. Duration of interruption (रूकावट की अवधि):** 02:20 Hrs (2 Hours and 20 minutes).

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



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

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

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

क्र०स०	नाम	Trip time (hh:mm:ss)	उप केंद्र 1 रिले संकेत	उप केंद्र 2 रिले संकेत	Restoration time (Hrs)
1	220kV Latehar-Chatra line	04:42:30	No Tripping	Hand Tripped	07:24
2	220kV Daltongunj-Chatra line	04:42:30	No Tripping	Hand Tripped	14:45

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

- Prior to the disturbance 220 kV Chatra S/s was connected through 220kV Chatra-Daltongunj line and 220kV Chatra-Latehar line.
- At 04:42:30 Hrs, a fire was observed in the control panel at Chatra S/s due to short circuit in BCU and PLCC panel of 220kV Chatra-Daltongunj line. Subsequently, both 220kV circuits at Chatra S/s were hand tripped as a safety measure. As a result, 200kV Chatra S/s became dead.
- A total load loss of 40 MW was reported at Chatra S/s.



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

- Power supply was restored by charging of 220kV Chatra-Latehar line at 07:24 Hrs.

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

13. Action Taken/Remedial Measures (सुधारात्मक उपाय): PLCC of 220kV Chatra-Daltongunj line at Chatra isolated from relay control circuit.

14.

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

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

**16. Key Lessons Learnt (प्रमुख अधिगम बिंदु): Nil**


**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**

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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

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**Detailed Report of grid event at 400kV JSWEUL 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): 27-08-2025

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

At 22:36 hrs, during opening of the 400 kV Lapanga–Sterlite Circuit-1 to control the loading of 400 kV OPGC-Lapanga D/C, the B-phase circuit breaker of its tie bay at Lapanga substation failed to open(stuck). As a result, 400 kV Lapanga–Sterlite-2 and 400 kV OPGC–Lapanga-2 circuits tripped on DEF. This caused the loading of the 400 kV OPGC–Lapanga circuit-1 line to rise above 1000 MW, thereby triggering the SPS logic and leading to the sequential tripping of both JSWEUL units within 10 seconds, resulting in a total generation loss of around **540 MW**.

**2. Time and Date of the Event (घटना का समय और दिनांक):** 22:37 hrs of 12.08.2025.

**3. Event Category (ग्रिड घटना का प्रकार):** Grid Incident (GI)-2

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

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

	Frequency in Hz	Regional Generation in MW	Regional Demand in MW
Pre-Event (घटना पूर्व)	49.91	34402	30841
Post Event (घटना के बाद)	49.91	33862	30841

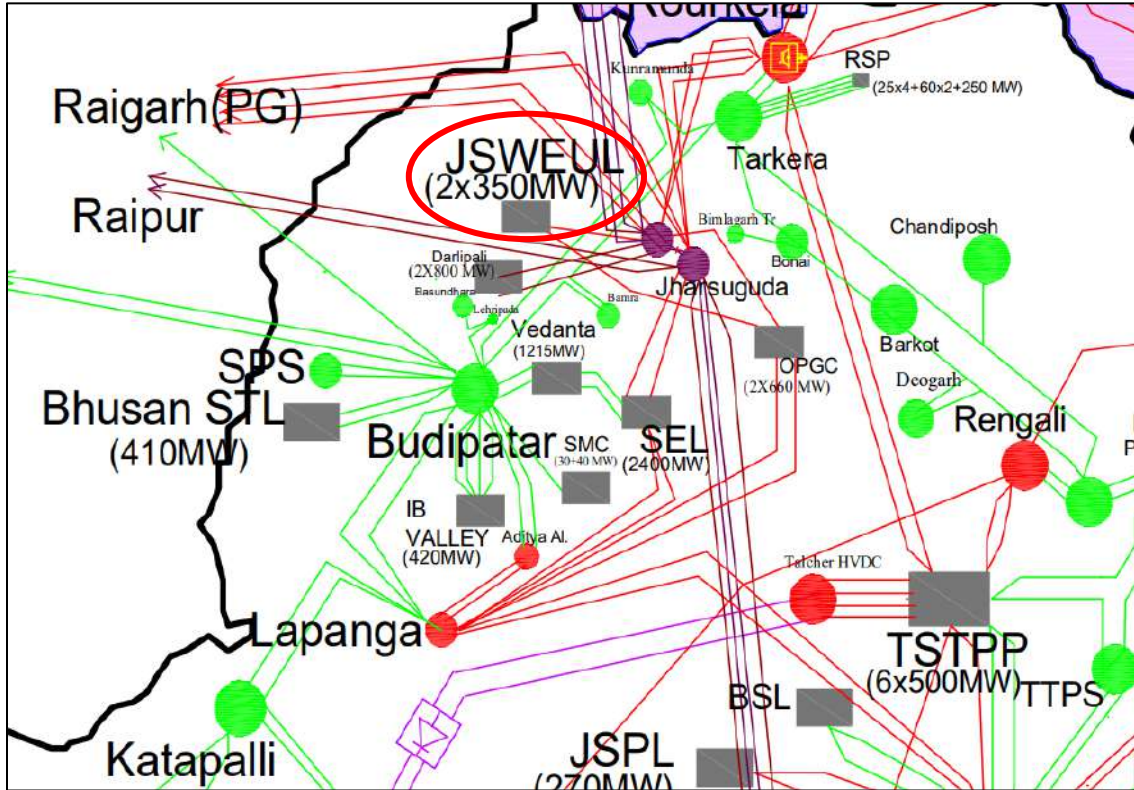
*\*Pre and post data of 1 minute before and after the event*

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

6. Load and Generation loss (लोड और जेनरेशन हानि): Generation loss of **540 MW**.

7. Duration of interruption (रुकावट की अवधि): 2 Hour 49 Minutes.

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



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

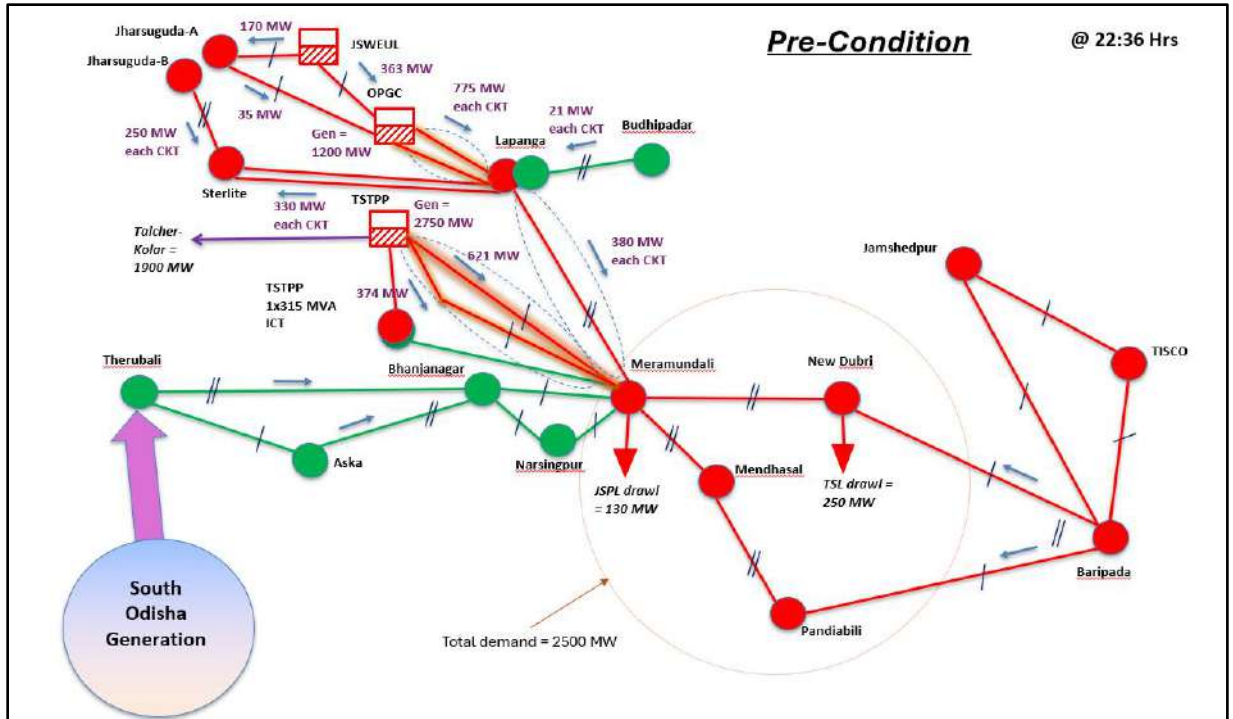
9. Details of Equipment Failure (if any during the event) (उपकरण विफलता का विवरण): NIL

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

क्र०स०	नाम	Trip time (hh:mm:ss)	उप केंद्र 1 रिले संकेत	उप केंद्र 2 रिले संकेत	Restoration time (Hrs)
1	JSWEUL Unit-1	22:37:46	SPS operated		02:16
2	JSWEUL Unit-2	22:37:51	SPS operated		01:26
3	400kV OPGC-Lapanga circuit-1	22:37:58	Earth Fault	DT received	23:41
4	400kV OPGC-Lapanga circuit-2	22:37:38	Earth Fault	DT received	23:41
5	400kV Sterlite-Lapanga circuit-1	22:36:00	Tripped on Earth fault from Sterlite	Hand tripped from Lapanga (B pole failed to open).	01:30
6	400kV Sterlite-Lapanga circuit -2	22:36:58	Tripped on Earth Fault from Sterlite	No tripping.	01:04

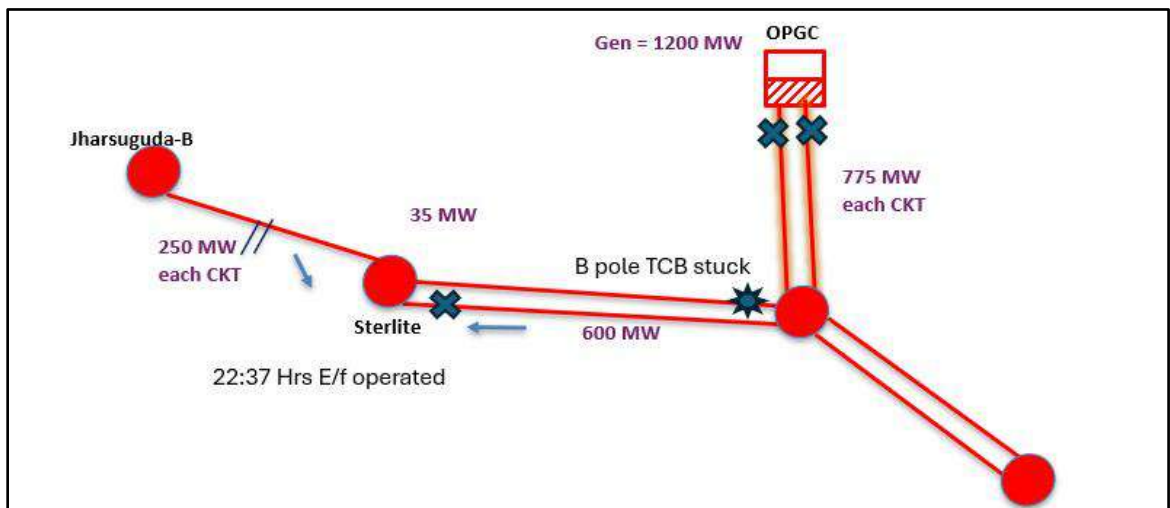
Sr. No.	Time_ 12/08/2025	Event Summary
1	22:36:52 Hrs	During opening of 400kV Lapanga-Sterlite circuit-1, B phase of Tie CB failed to open(stuck).
2	22:37:00 Hrs	400kV Lapanga-Sterlite circuit-2 got tripped from Sterlite end on DEF.
3	22:37:31 Hrs	400kV Lapanga-OPGC circuit-2 got tripped on DEF at OPGC end and DT send to Lapanga end.
4	22:37:48 Hrs	Due to tripping of 400kV Lapanga-OPGC circuit-2, SPS operated at OPGC and both unit of JSWEUL got tripped. 400kV Lapanga-OPGC circuit-1 got tripped on DEF at OPGC end and DT send to Lapanga end.

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



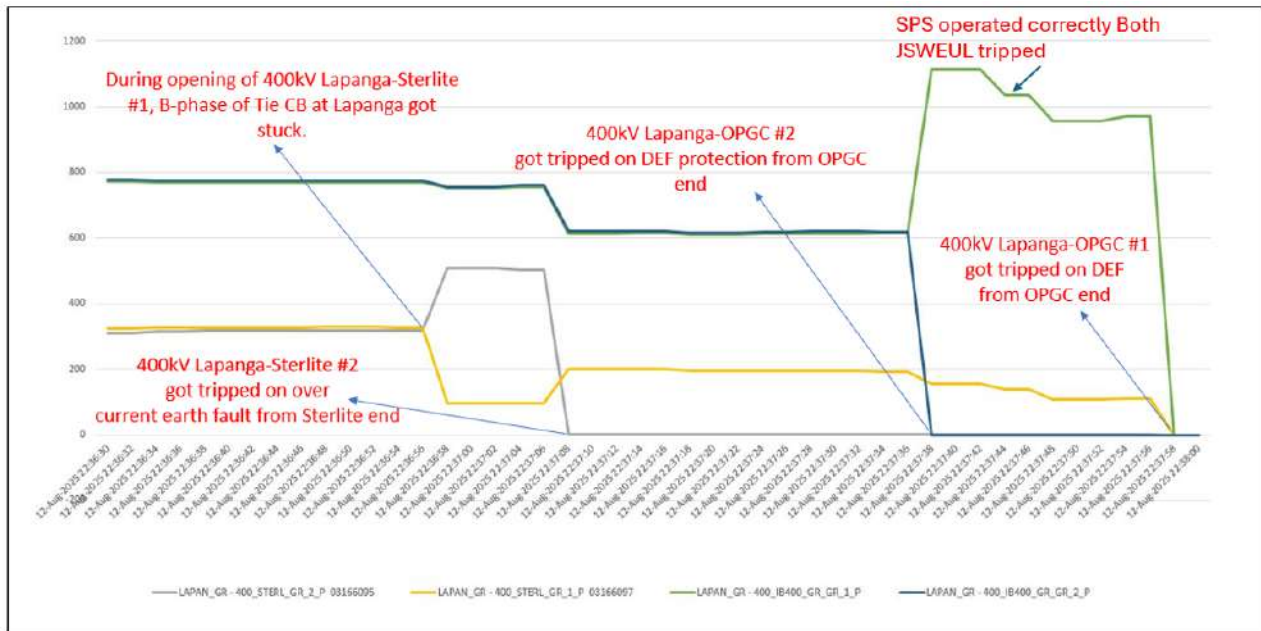
**Figure 2: Flow pattern prior to the tripping**

- At 22:36: Hrs, 400kV Sterlite-Lapanga circuit-1 line opened to control the loading of 400kV OPGC-Lapanga D/C.
- At 22:36:58 Hrs, during opening of said circuit, B-phase pole of Tie CB at Lapanga S/s got stuck and unbalance created in system through stuck CB.



- At 22:37:08 Hrs, 400kV Lapanga-Sterlite circuit-2 tripped on earth fault protection.
- At 22:37:38 Hrs, 400kV OPGC-Lapanga circuit-2 tripped on earth fault protection and DT send to Lapanga end.

- Following the tripping of 400kV OPGC-Lapanga circuit-2, loading of 400kV OPGC-Lapanga circuit-1 reached up to 1115 MW.
- JSWEUL SPS got triggered and leading to the sequential tripping of both JSWEUL units within 10 seconds.
- JSWEUL unit 1 & 2 got tripped due to SPS operation.
- Total generation loss of around **540 MW** reported at JSWEUL.
- At 22:37:58 Hrs 400kV OPGC-Lapanga circuit-1 line got tripped on earth fault protection and DT send to Lapanga end.



**Figure 2: Sequence of tripping**

12. Protection/Operational issues observed (सुरक्षा/परिचालन संबंधी समस्या): Unwanted operation of DEF protection at OPGC and Sterlite substation.
13. Action Taken/Remedial Measures (सुधारात्मक उपाय): Necessary setting/logic revised at OPGC and tested the DEF feature.
14. Non-compliance observed (विनियमन का गैर-अनुपालन): NIL
15. Key Lessons Learnt (प्रमुख अधिगम बिंदु): Periodic review of protection setting as per grid code and preventive maintenance of switchgear as per CEA Grid standard regulation 2010 to prevent unwanted protection operation and mechanical issues.  
(Near miss report attached in annexure -1)



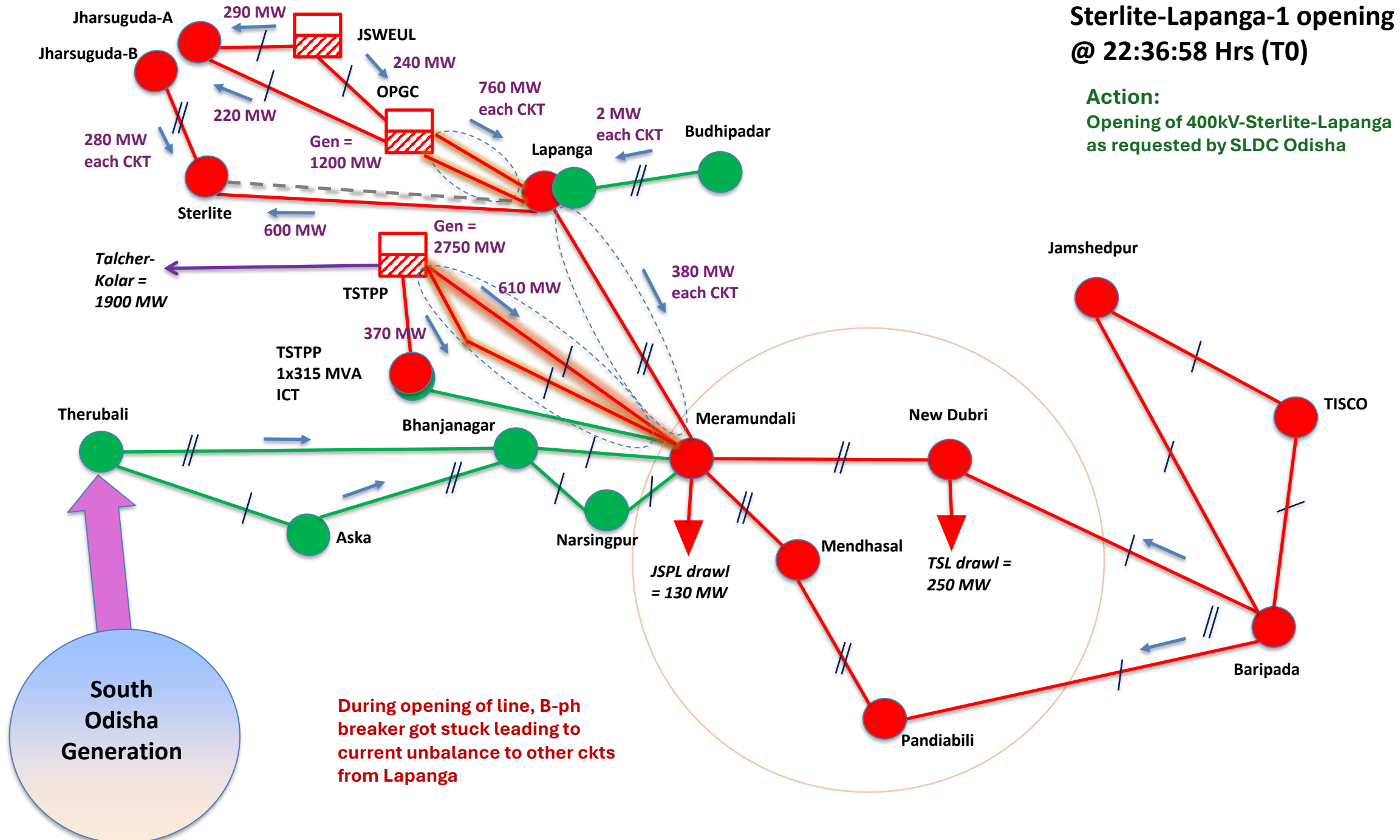
On 12.08.2025

# Near Miss Event at Odisha



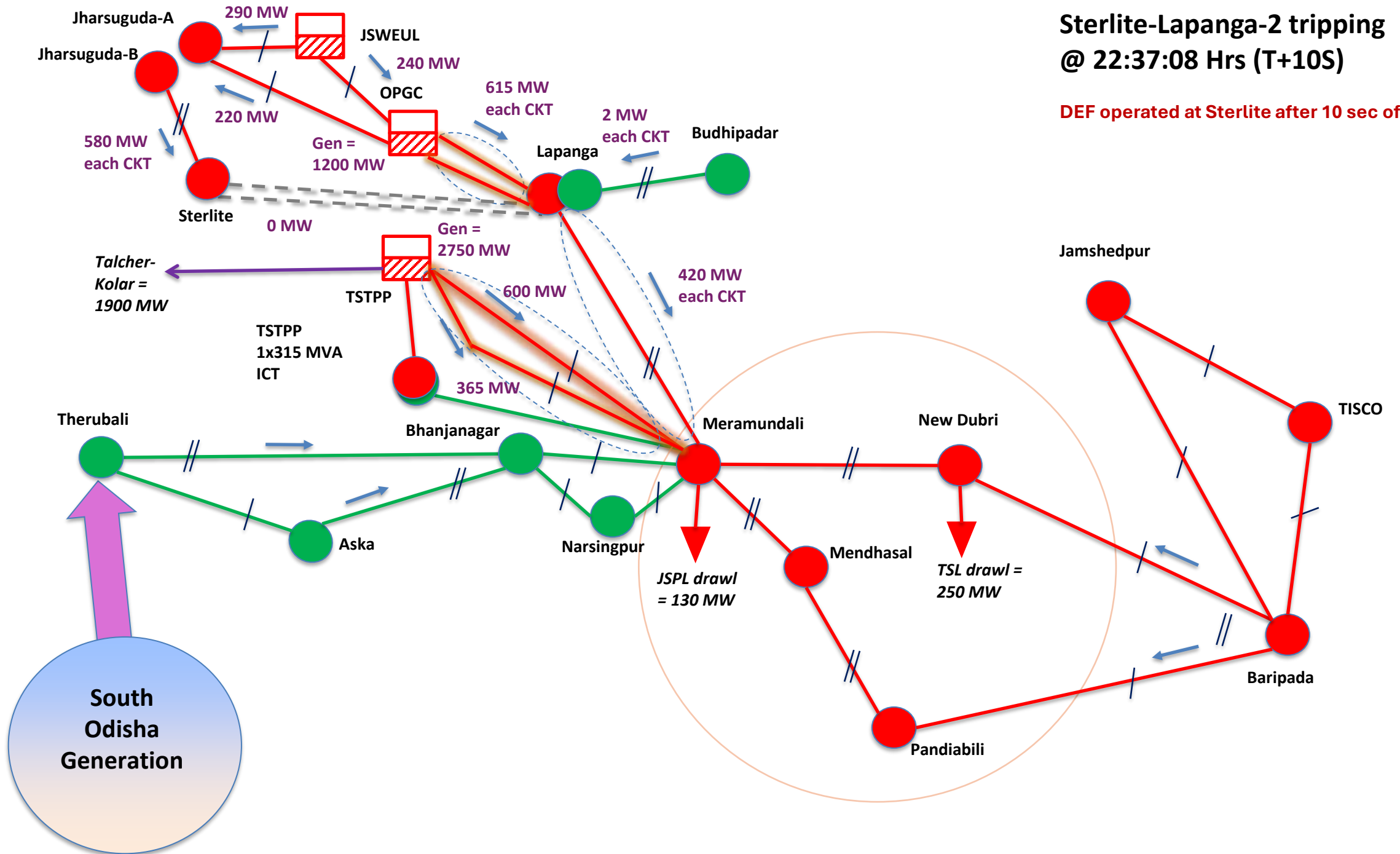
# Sterlite-Lapanga-1 opening @ 22:36:58 Hrs (T0)

**Action:**  
Opening of 400kV-Sterlite-Lapanga as requested by SLDC Odisha



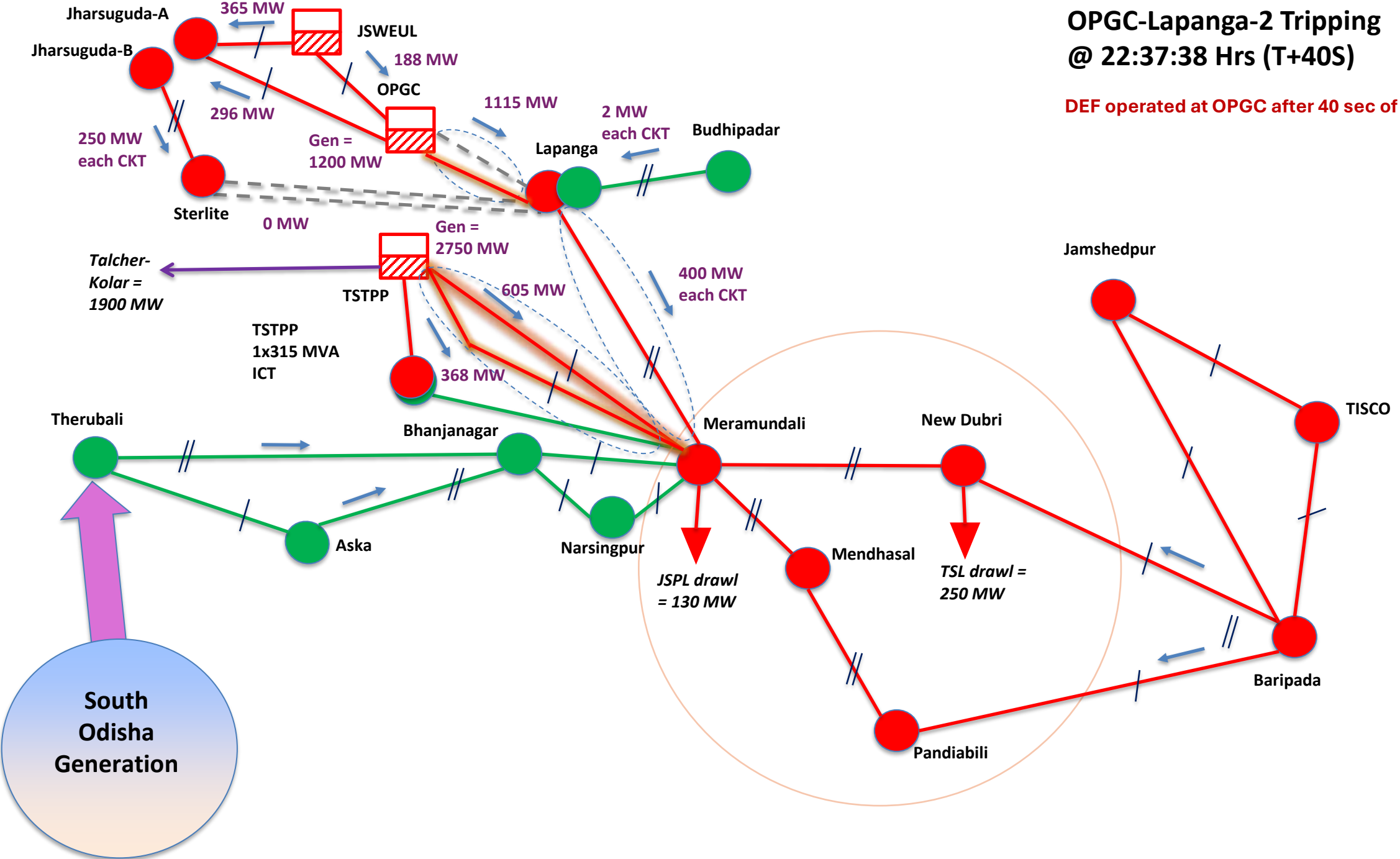
# Sterlite-Lapanga-2 tripping @ 22:37:08 Hrs (T+10S)

DEF operated at Sterlite after 10 sec of T0



# OPGC-Lapanga-2 Tripping @ 22:37:38 Hrs (T+40S)

DEF operated at OPGC after 40 sec of T0



Jharsuguda-A  
Jharsuguda-B

250 MW each CKT

365 MW

JSWEUL

188 MW

OPGC

Gen = 1200 MW

1115 MW

2 MW each CKT

Budhipadar

Sterlite

0 MW

Gen = 2750 MW

Talcher-Kolar = 1900 MW

TSTPP

605 MW

400 MW each CKT

TSTPP 1x315 MVA ICT

368 MW

Therubali

Bhanjanagar

Meramundali

New Dubri

Aska

Narsingpur

Mendhasal

TSL drawl = 250 MW

JSPL drawl = 130 MW

Baripada

Pandiabili

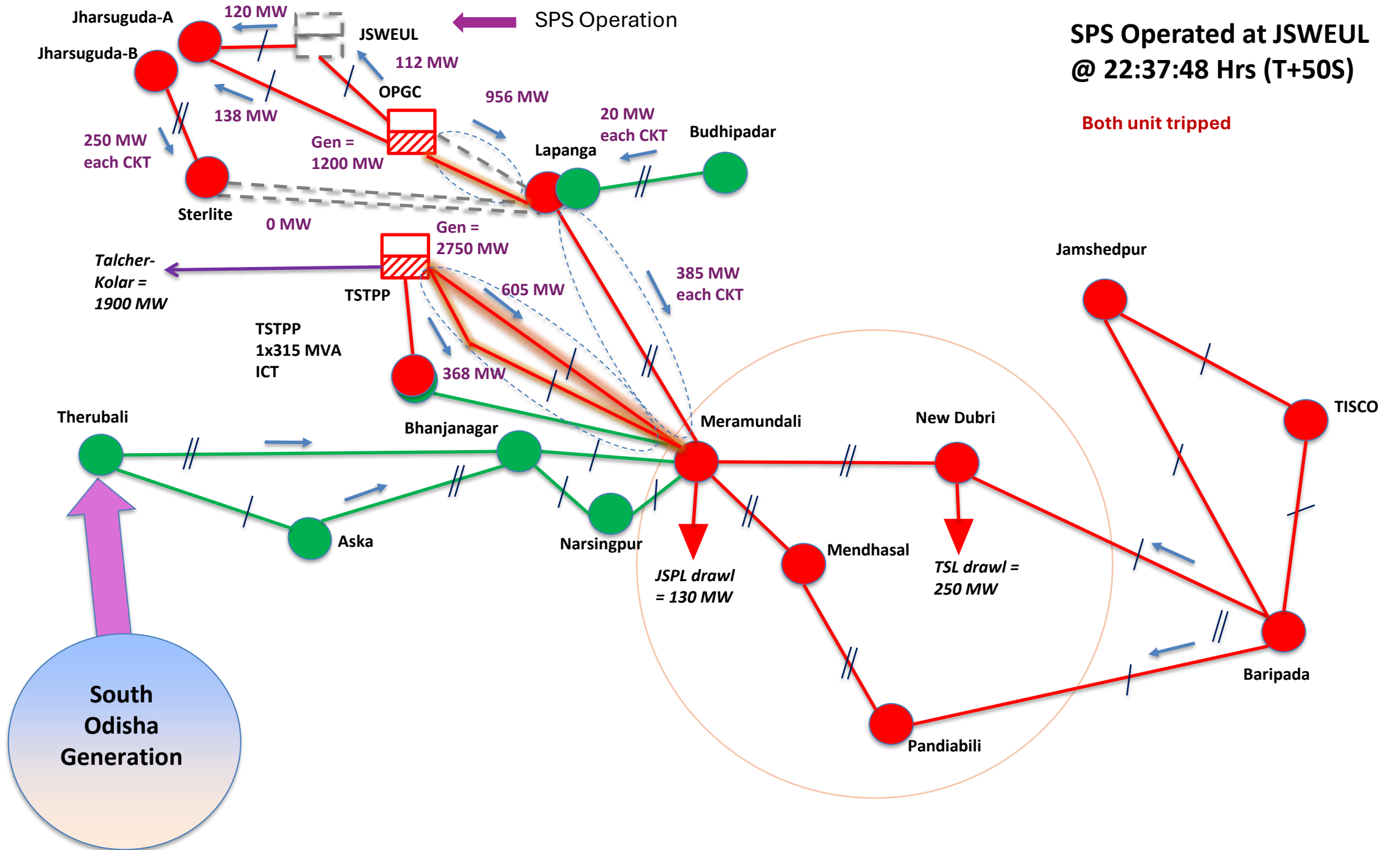
Jamshedpur

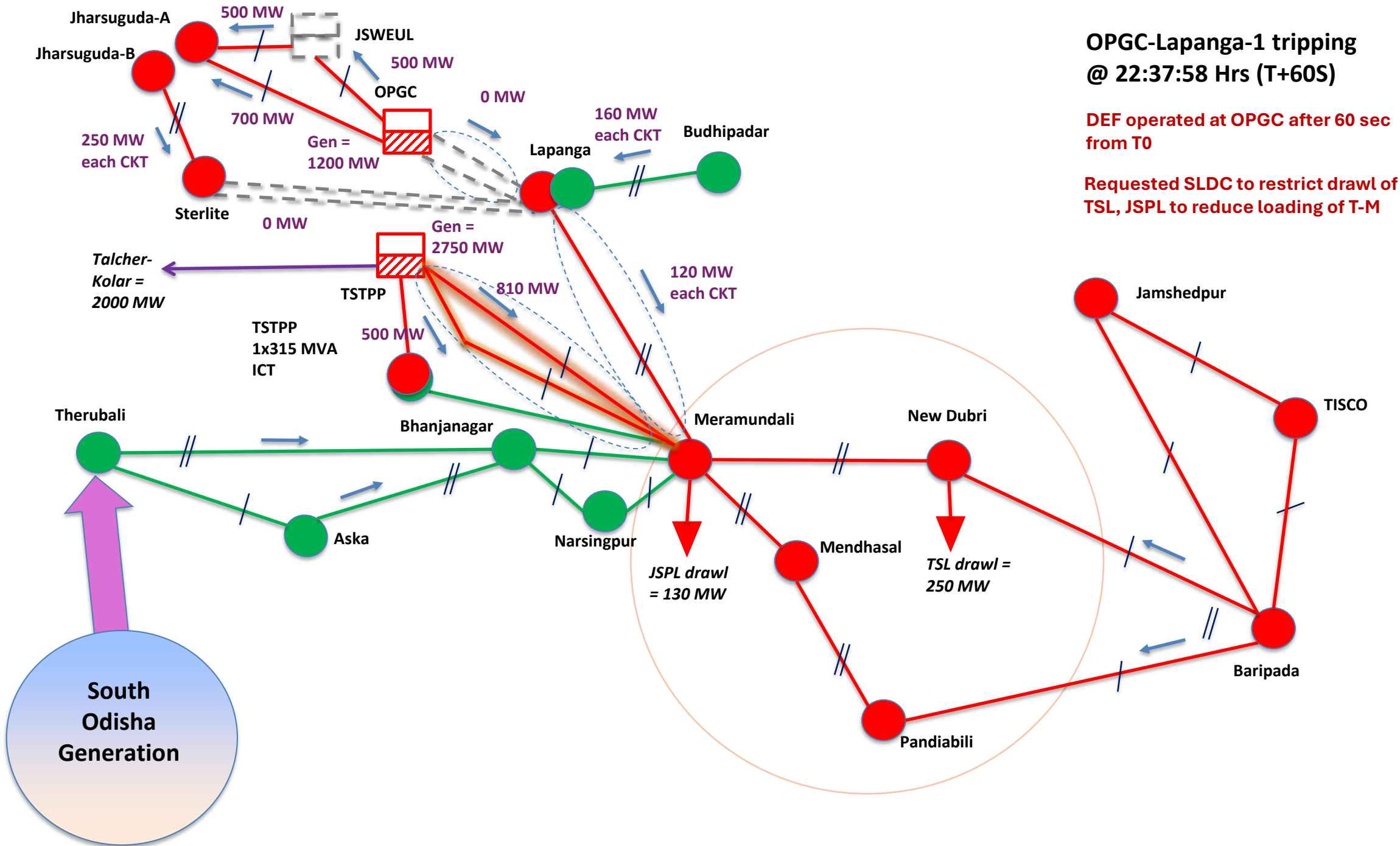
TISCO

South Odisha Generation

# SPS Operated at JSWEUL @ 22:37:48 Hrs (T+50S)

Both unit tripped





**OPGC-Lapanga-1 tripping  
@ 22:37:58 Hrs (T+60S)**

**DEF operated at OPGC after 60 sec  
from T0**

**Requested SLDC to restrict drawl of  
TSL, JSPL to reduce loading of T-M**

**South  
Odisha  
Generation**

Jharsuguda-A

Jharsuguda-B

250 MW  
each CKT

500 MW

JSWEUL

500 MW

OPGC

0 MW

700 MW

Gen =  
1200 MW

Lapanga

160 MW  
each CKT

Budhipadar

Sterlite

0 MW

Gen =  
2750 MW

TSTPP

810 MW

120 MW  
each CKT

Talcher-  
Kolar =  
2000 MW

TSTPP  
1x315 MVA  
ICT

500 MW

Therubali

Bhanjanagar

Meramundali

New Dubri

Jamshedpur

TISCO

Aska

Narsingpur

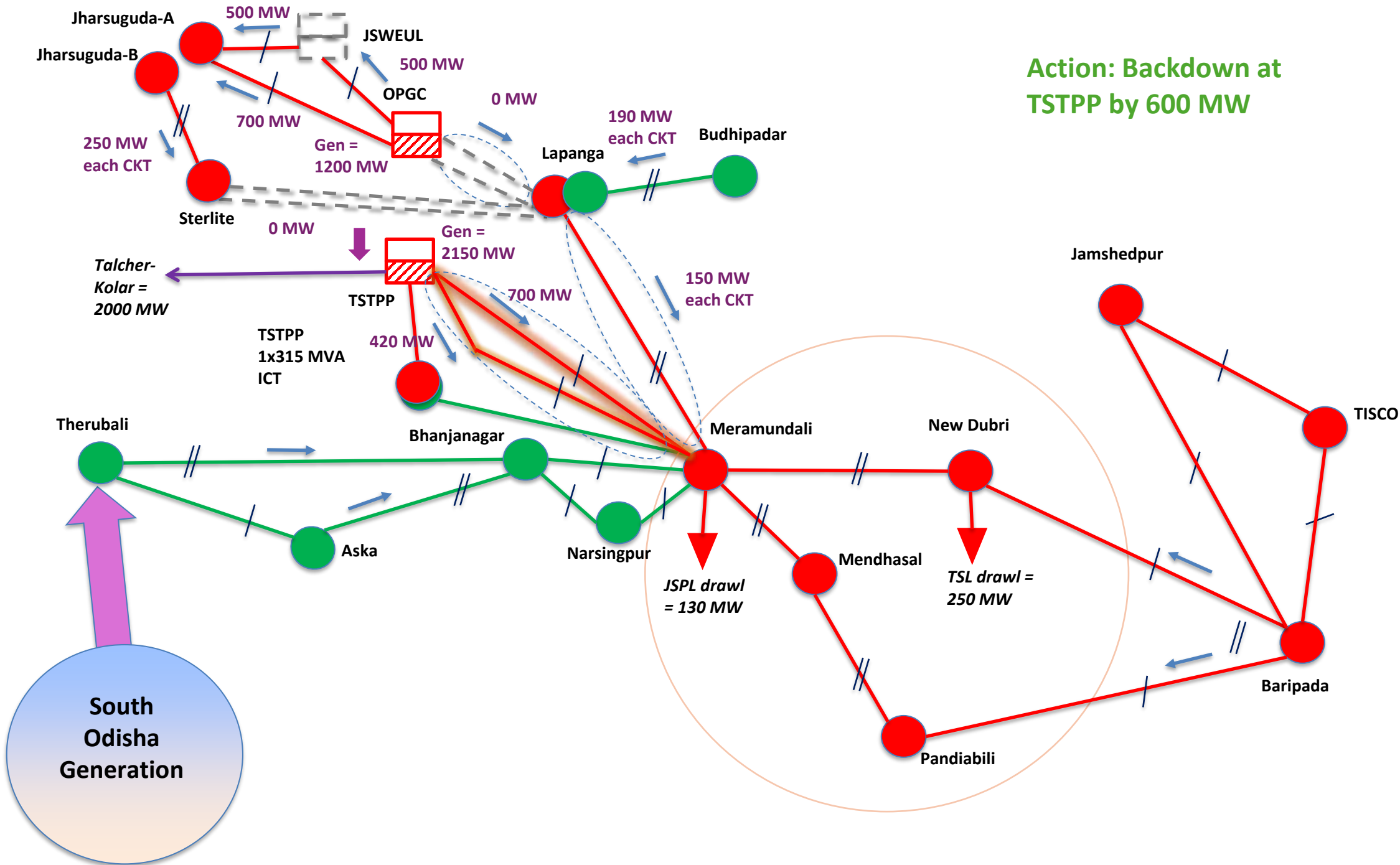
Mendhasal

TSL drawl =  
250 MW

JSPL drawl =  
130 MW

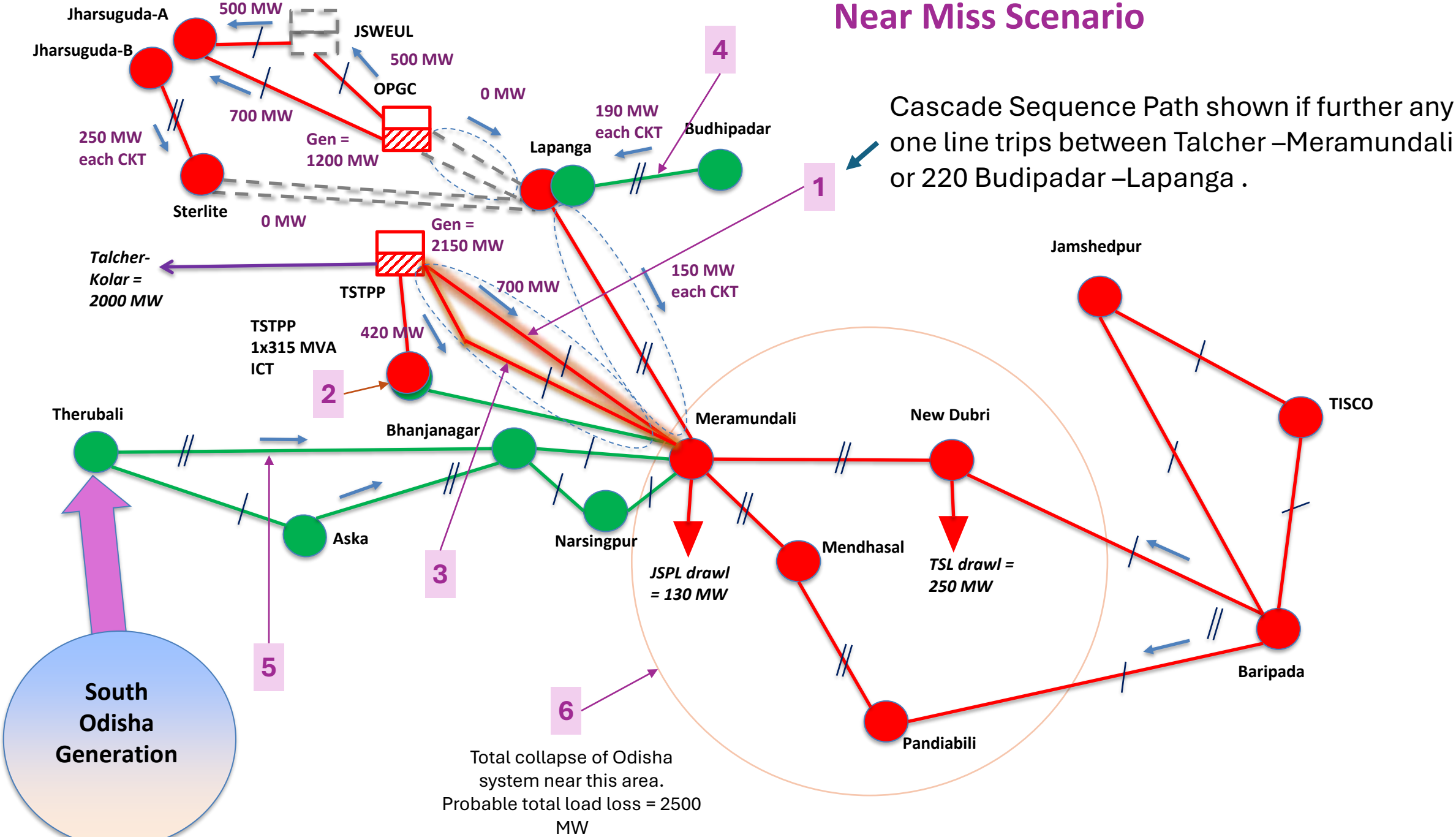
Baripada

Pandiabili

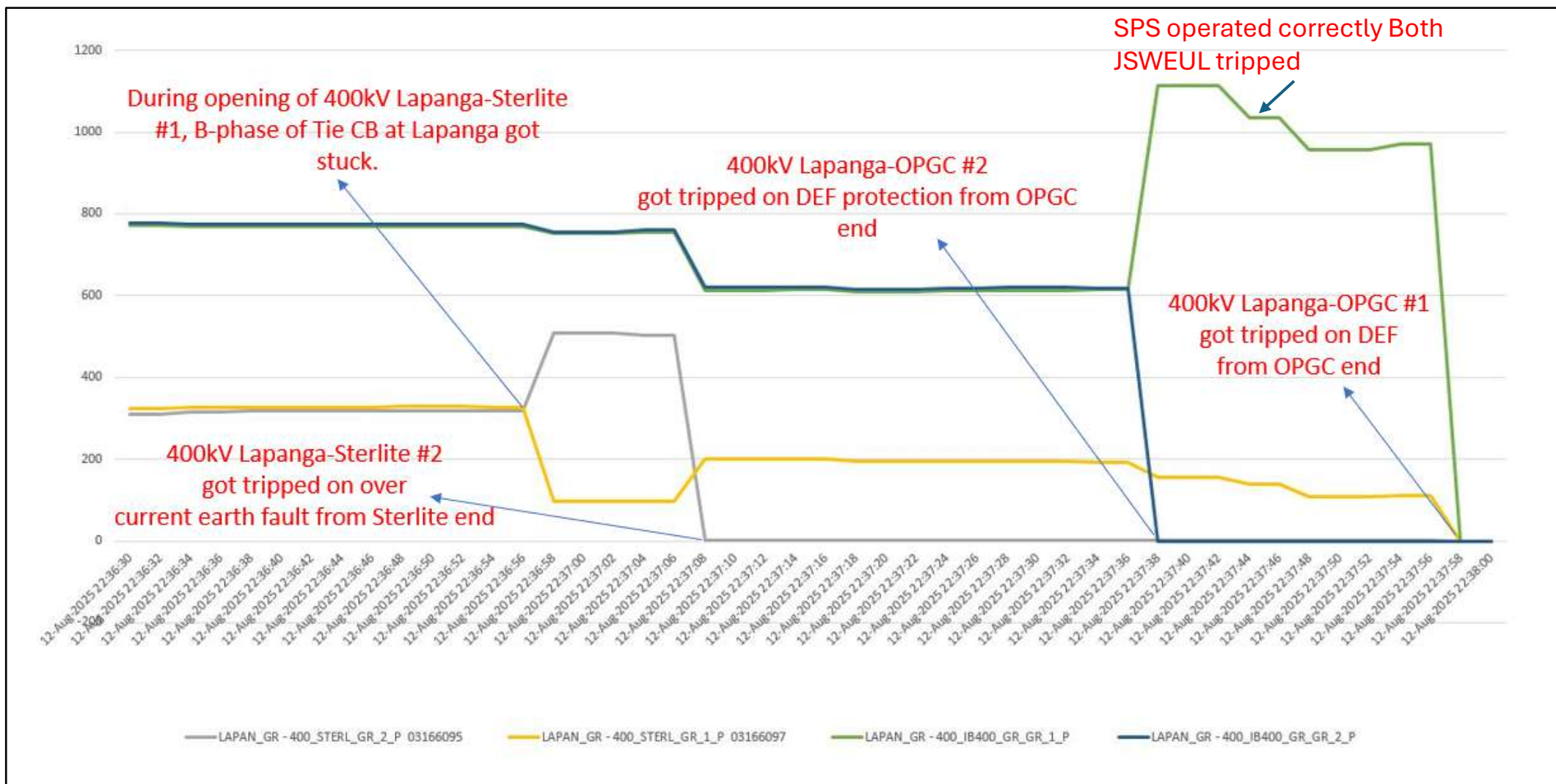


Action: Backdown at TSTPP by 600 MW

# Near Miss Scenario



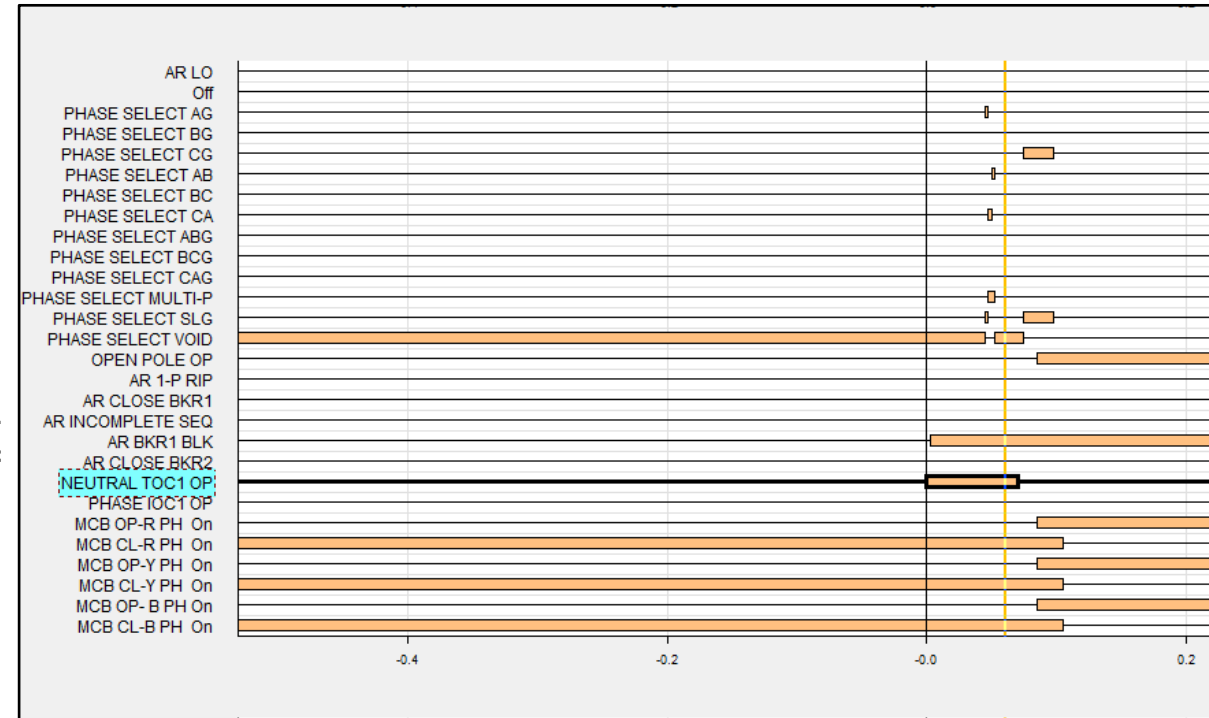
## Sequence of operation and Flows



## Protection Observation:

### At OPGC end:

- ❑ 400kV OPGC-Lapanga D/C tripped from OPGC end on over current earth fault and DT send to Lapanga end.
- ❑ As per ERPC protection philosophy O/C earth fault should be in directional nature.
- ❑ As per DR of 400kV Lapanga Sterlite D/C, Neutral TOC operated which is non-directional in nature and pickup current is 200 A(10 % of base current).
- ❑ During charging of 400kV Lapanga-OPGC D/C, line could not be synchronized immediately at OPGC end due to conservative angular separation setting in auto synchro-check relay which was 10 degree. Angular separation setting in auto synchro-check relay increased to 20 degree.

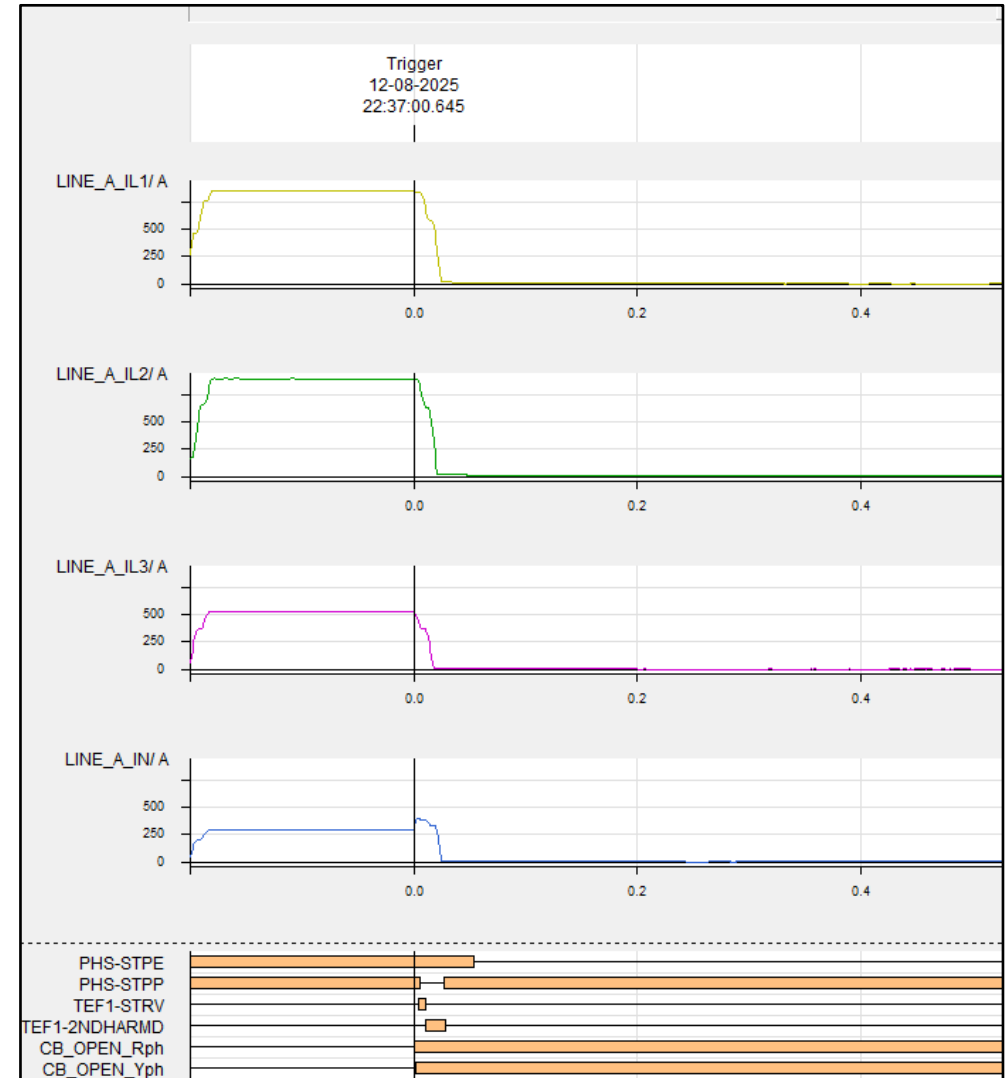


**DR of 400kV Lapanga-OPGC #1 at OPGC end 3**

## **Protection Observation:**

### **At Sterlite end:**

- ❑ 400kV Sterlite-Lapanga #2 tripped from Sterlite end on over current earth fault protection.
- ❑ DEF protection didn't operate for 400kV Lapanga-Sterlite #1 at Sterlite end.(E/F setting kept non-directional at Sterlite end with pickup current 200 A).
- ❑ As per ERPC protection philosophy O/C earth fault should be in directional nature but at Sterlite end non-directional O/C earth fault setting is enabled with pickup current is 200 A(10 % of base current).



**DR of 400kV Lapanga-Sterlite #2 at Sterlite end**

**THANK YOU**



**ग्रिड-इंडिया**  
**GRID-INDIA**

**ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड**  
(भारत सरकार का उद्यम)  
**GRID CONTROLLER OF INDIA LIMITED**  
(A Government of India Enterprise)



[formerly Power System Operation Corporation Limited (POSOCO)]

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

कार्यालय : 14, गोल्फ क्लब रोड, टॉलिंगंज, कोलकाता - 700033

Office : 14, Golf Club Road, Tollygunge, Kolkata - 700033

CIN : U40105DL2009GOI188682, Website : www.erldc.in, Tel.: 033 23890060/0061

**ERLDC / SO / 2025-26/505**

**Date:10.09.2025**

To,

**General Manager (O&M)**

**NTPC Kahalgaon, Bhagalpur**

**Bihar-813214**

**Sub:** Maloperation of protection system & unwanted generation loss at 400kV Kahalgaon Sub-station on 07.09.2025.

Dear Sir,

With reference to the subject, it may be intimated that the grid incident occurred at 11:13 Hrs on 07-09-2025 is because of mal-operation of the protection system . The details are as follows-

Sl. No	Name of the Tripping element	Relay Indication	Remarks
1	400 kV Kahalgaon-Farakka-2 line	DP, Z-1, YE, FD: 6.9 Kms	Y-Earth fault in line. Y-pole Main CB stuck at Kahalgaon.
2	400 kV Bus-3 along with associated CBs	LBB operation	LBB operation operated due to stuck of Y-pole of Main CB of 400kV Farakka-2.
3	Tripping of Unit-5 & 6(500 MW each) connected to 400 kV Bus-4	LBB operation	Unwanted tripping of Units due to LBB operation.

The above incident led to Generation loss of **510 MW (Unit # 5 & 6)**, which is a matter of serious concern as it could have resulted into a major grid disturbance in Eastern Region.

It may also be noted that a similar incident of 400 kV Main Bus-1 tripping on LBB protection operation due to CB stuck was also observed on 17.08.2025, This is raising significant concern about the reliability of the protection system at Kahalgaon.

In addition, it is also observed that A/r not operated multiple times as per scheme during transient line fault. These led to tripping of line from Kahalgaon end whereas A/r successful in far end. The issue has already been discussed multiple times in OCC & PCC meeting and a special meeting was held on 29.08.2025 to deliberate on the protection issues at Kahalgaon. (MOM of meeting attached in annexure #1)

In view of the above, your good-self is requested to look into the issues and take necessary corrective action at earliest to avoid such unwanted operation of protection system. A detailed report on findings and remedial measures taken/ to be taken may kindly be shared with ERLDC and ERPC as per Grid code.

Your cooperation in this matter is highly solicited to ensure, reliable and secure integrated grid operation.

Yours sincerely

(D. Biswas)  
General Manager (SO)

Copy: For kind information please.

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

पंजीकृत कार्यालय : बी-9, प्रथम तल, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली - 110016

Registered Office : B-9, 1st Floor, Qutab Institutional Area, Katwaria Sarai, New Delhi - 110016

Website : www.grid-india.in

(Annexure:1)

## **Minutes of Meeting held on 29<sup>th</sup> August'25 on Protection issues in Kahalgaon (NTPC)**

An online meeting was held on 29<sup>th</sup> August 2025 with participation from Kahalgaon (NTPC), ERPC and ERLDC to discuss unintended protection operation at Kahalgaon NTPC station. The following are agenda points:

1. Multiple tripping and generation loss (Unit #1-210 MW) on 20/07/2025.
2. Bus tripping at 400kV Kahalgaon S/s due to LBB operation during charging of Durgapur#2 line on 17/08/2025.
3. Auto-reclose (A/r) issue observed during tripping of line on phase to ground fault in the past month.
4. DR submission and configuration related issues.
5. Protection performance indices submission on monthly basis (Compliance of IEGC 2023 Clause 15(6), 15(7)).

### **Deliberation of the discussion as follows:**

#### **1. Multiple tripping and generation loss (Unit #1-210 MW) on 20/07/2025:**

- a. ERLDC presented the sequence of events for multiple elements tripping on 20<sup>th</sup> July'25 and outage of 400 kV Bus-I on 17<sup>th</sup> August'25 on LBB operation, highlighting multiple protection issues at 400 kV Kahalgaon (NTPC) Substation.
- b. ERLDC highlighted concerns regarding unwanted operation of Back Up Earth Fault protection of Station Auxiliary Transformer (SAT) for fault in the 132 kV Kahalgaon (NTPC) -Kahalgaon (BSPTCL) line, leading to tripping of Unit-1(Generation loss of **210 MW**).
- c. Kahalgaon (NTPC) team explained that Station Auxiliary Transformer (SAT) tripped due to low TMS setting of 0.1 with pickup secondary current of 200 mA. Since the UAT of unit-1 was out of service since February 2025, auxiliary supply was taken from SAT. Thus, outage of the SAT resulted in Unit-1 tripping.
- d. As remedial measures, Kahalgaon (NTPC) informed that the Z-III time setting of 132 kV Kahalgaon (NTPC) -Kahalgaon (BSPTCL) Line was reduced to 350 msec from 1000 msec and TMS of B/U EF setting of SAT was revised to 0.2 from 0.1.
- e. As per ERPC protection philosophy, NTPC should revert the Z-III-time delay of 132 kV Kahalgaon (NTPC) -Kahalgaon (BSPTCL) to its original value. NTPC to ensure proper protection setting coordination of SAT B/U EF settings with recorded fault current during the event to avoid unwanted tripping.
- f. ERLDC pointed out issues related to disturbance recorder (DR) standardization for the 132 kV Kahalgaon (NTPC) -Kahalgaon (BSPTCL) line. NTPC is requested to standardize DR digital channels, configure DR duration with pre-fault 500 msec and post-fault 2.5 sec in line with ERPC guidelines.

**2. Bus tripping at 400kV Kahalgaon S/s due to LBB operation during charging of Durgapur#2 line on 17/08/2025:**

- a. ERLDC expressed concerns on account of non-operation of the main CB (R-pole and Y-pole) of 400 kV Kahalgaon (NTPC)- Durgapur Line-2 during PDR and DEF operation. This resulted in tripping of 400 kV main Bus-1 due to LBB operation.
- b. Kahalgaon (NTPC) informed that the issue was due to a K10 contactor in the closing/tripping circuit. The contactor has been replaced and CB tested successfully. Forum advised NTPC to ensure preventive maintenance of CBs and associated accessories.
- c. The forum advised to incorporate the missing Vn analog channel in DR and NTPC agreed.
- d. NTPC Kahalgaon is requested to review DEF pickup setting in view of breaker pole discrepancy and high fault levels to avoid unwanted DEF operation. NTPC agreed to refer the matter to their engineering team.

**3. Auto-reclose (A/r) issue observed during tripping of line on phase to ground fault in the past month:**

- a. ERLDC highlighted five instances of non-operation of A/r at Kahalgaon (NTPC), despite successful A/R at the remote end, resulting in unnecessary three-phase tripping for single-phase faults.
- b. It is required to review and test A/R logics by NTPC to ensure successful reclosing for transient faults for enhancing system reliability. NTPC agreed to resolve the settings of A/R.

**4. DR submission and configuration related issues:**

ERLDC raised concerns on non-submission of DR and EL outputs, which hampered fault analysis. NTPC assured timely submission of DR and EL data in compliance with IEGC timelines and confirmed that pending SOPR report for July 2025 will be submitted within a week. Forum reiterated IEGC requirement to submit SOPR by the **10th** of every month.

Forum emphasized the importance of proper relay setting coordination, reliable functioning of auto-reclose schemes, DR standardization, preventive CB maintenance and strict adherence to IEGC reporting timelines.

**Members Present:**

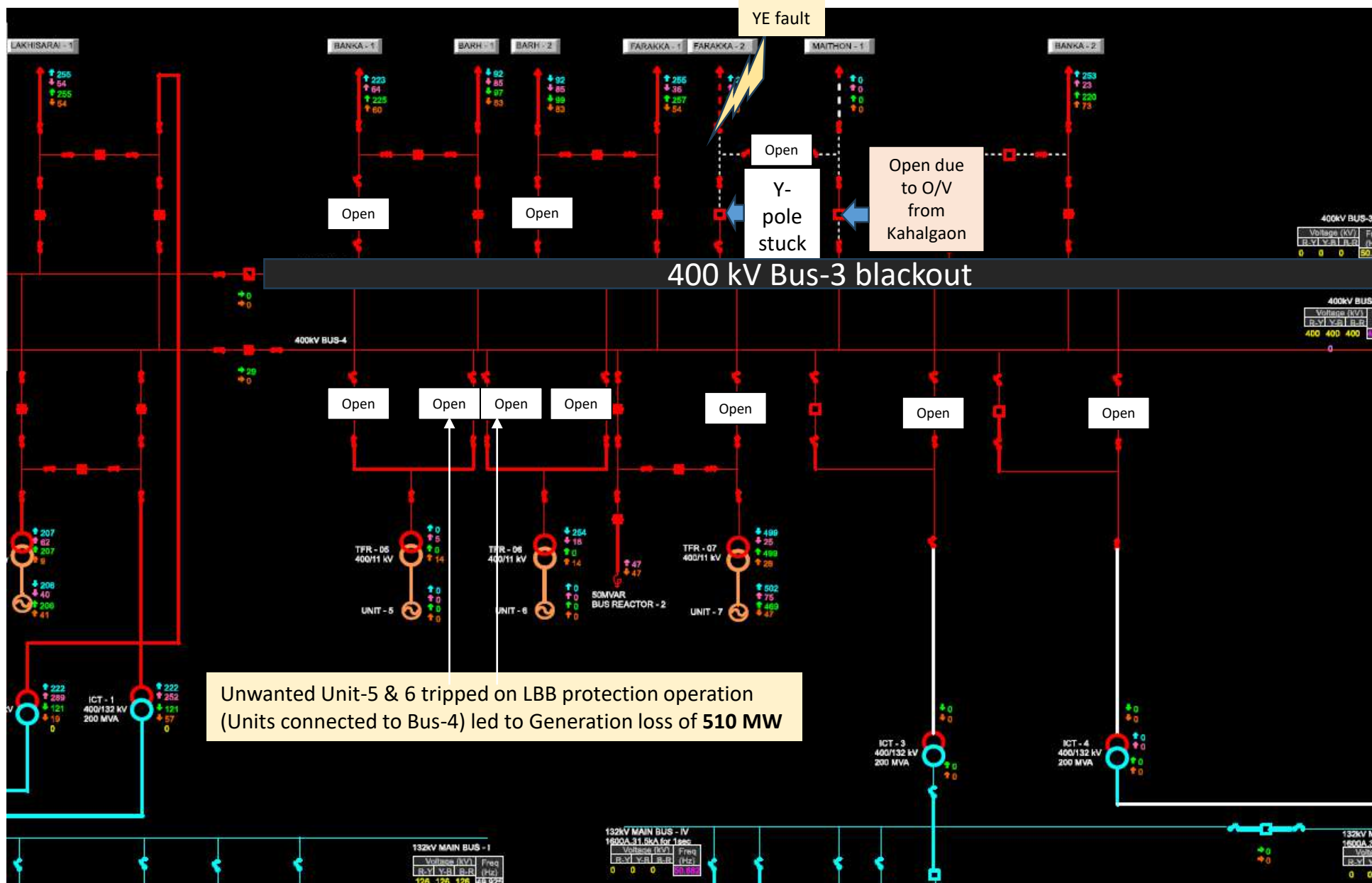
1. Deborshi, Kahalgaon(NTPC), AGM
2. Lily Choudhury, Kahalgaon(NTPC),Sr Manager
3. P. P. Jena, EE, ERPC
4. Manas Das, DGM(SO), ERLDC, GRID-INDIA
5. Bilash Achari, DGM (SO), ERLDC, GRID-INDIA
6. Bimal Swargiary, DGM (SO), ERLDC, GRID-INDIA
7. Alok Pratap Singh, CM (SO), ERLDC, GRID-INDIA

# Grid Incident at 400/132 kV Kahalgaon S/S

Date and Time: **11:13 hrs of 07-09-2025**

# Description of Event

- At 11:13 hrs, **Y-E fault** occurred on 400 kV Kahalgaon–Farakka line-2.
- 400 kV Tie bays of Maithon-1 and Farakka-2 line at Kahalgaon tripped.
- 400 kV Main bay of Farakka-2 line at Kahalgaon (connected to Main Bus-3) **failed to open.**
- LBB (Local Breaker Backup) protection operated, leading to tripping of all CBs connected to **400 kV Main Bus-3.**
- 400 kV Kahalgaon–Maithon line-1 tripped on **Overvoltage protection.**
- In addition, the **Main CBs of Kahalgaon Unit#5 and Unit#6** (connected to Main Bus-4) also tripped, led to **Generation loss of 510 MW**



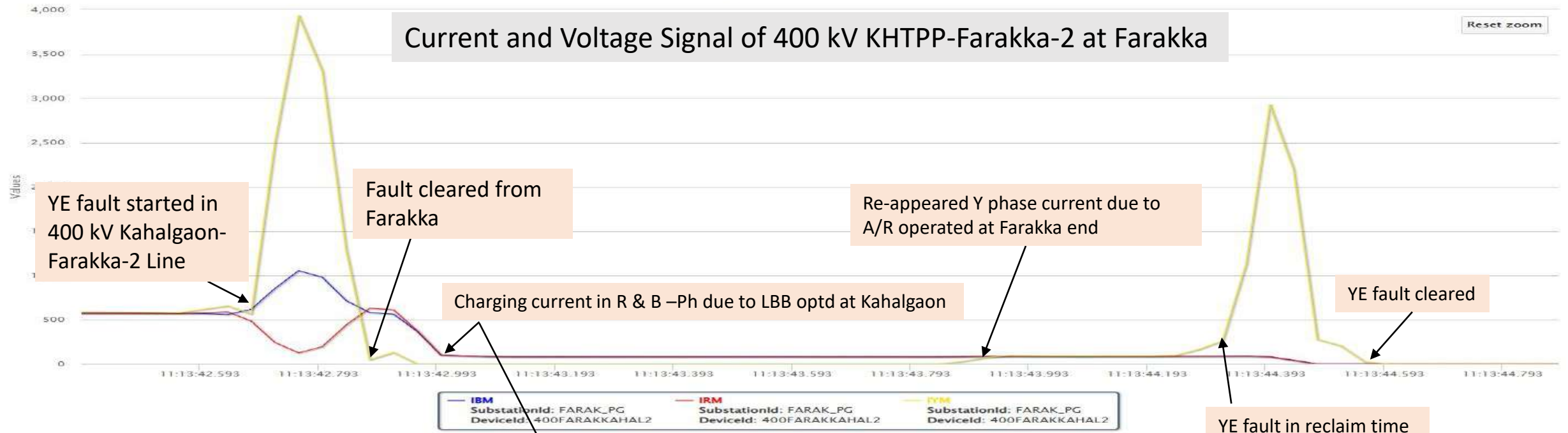
Unwanted Unit-5 & 6 tripped on LBB protection operation (Units connected to Bus-4) led to Generation loss of 510 MW

SLD of 400 kV Kahalgaon Sub Station

# R Y B Phase Current

07/09/2025 11:13:40.000 To 07/09/2025 11:13:47.080

## R Y B Current

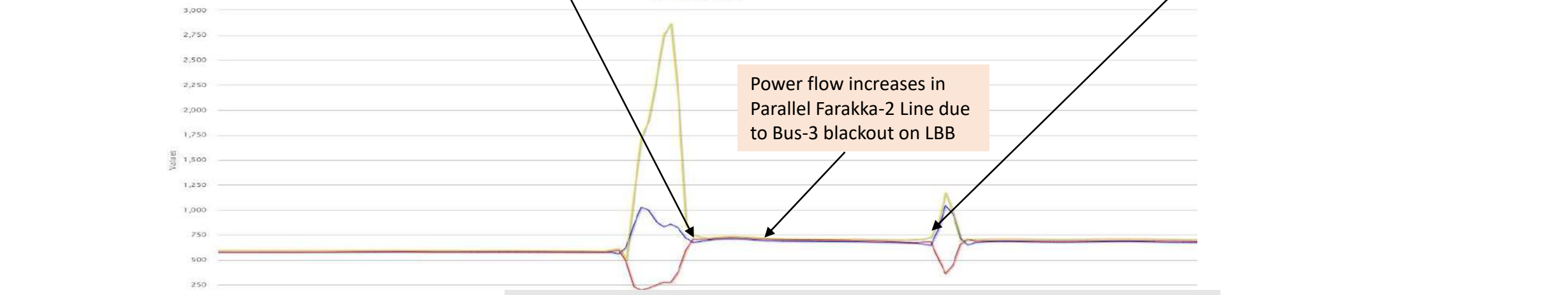


Current and Voltage Signal of 400 kV KHTPP-Farakka-2 at Farakka

# R Y B Phase Current

07/09/2025 11:13:40.480 To 07/09/2025 11:13:45.960

## R Y B Current



Current Signal of 400 kV Kahalgaon-Farakka-1 at KHTPP

# Protection System Issues Identified



## Identify non-opening of Y-pole circuit breaker on 400 kV main bay

Y-pole circuit breaker on 400 kV Kahalgaon-Farakka-2 main bay failed to open, causing fault persistence.



## Report unintended LBB tripping of Unit-5 and Unit-6 main bays

Unintended Local Breaker Backup (LBB) tripping at Bus-4 caused significant generation loss of **510 MW** affecting Units 5 and 6.



## Document unexpected overvoltage protection trip on 400 kV line

Overvoltage protection unexpectedly tripped the 400 kV Maithon-Kahalgaon-1 line, disrupting grid stability.

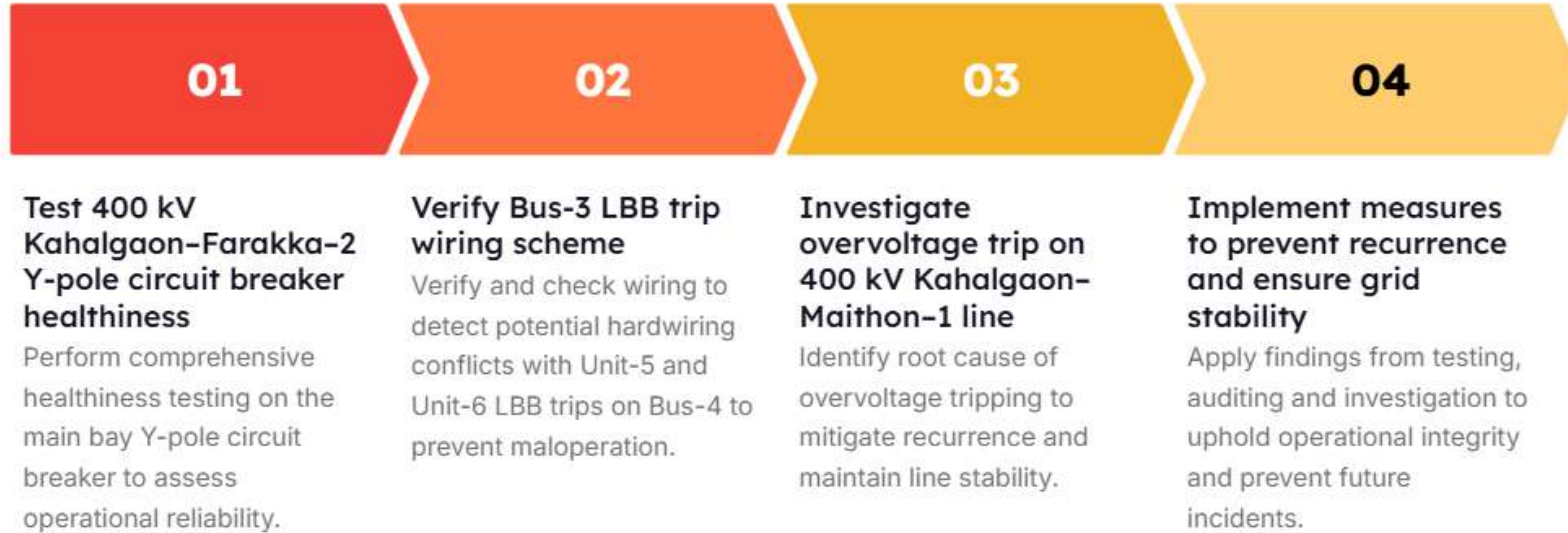


## Recall historical circuit breaker stuck event causing blackout

On 17-08-2025 at 20:44 hrs, a similar CB stuck event during switching operations of 400 kV Kahalgaon-Durgapur -2 caused a 400 kV Bus-I blackout.

# Operational and Protection Health Recommendations

Recommended immediate actions to ensure grid stability at Kahalgaon substation



THANK YOU

SL NO.	Name of Feeder/Element	Date of Tripping	Tripping Time	Tripping Upto	Time of Interruption	Nature of Tripping	Relay Indication	Remarks	
<b>315 MVA ICT-1 &amp; 2</b>									
9.	315 MVA ICT-I	19.08.2025	11:15	20:15	09	00	Forced	86.1 & 86.2	<p><b><u>Due to DC Fault</u></b>                      + to Ground : 0.43V                      -To Ground : 235.57V                      +ve to -ve : 236V</p> <p><b><u>After Rectification work on 20/08/2025:</u></b>                      + to Ground : 124V                      -To Ground : 112V                      +ve to -ve : 236V</p> <p>During investigation, following rectification has been carried out:-</p> <ul style="list-style-type: none"> <li>(a) Tapping of open wire has been done in 220KV Future BCU Panel.</li> <li>(b) 89LE of Letehar-2 (Open Loop wire which touches the body has been rectified)</li> <li>(c) Fire Fighting Annunciation Panel TB-8 damage connection wire has been replaced with spare one.</li> </ul> <p><b>Weather Condition:</b>                      Continuous Rain</p>
		19.08.2025	21:27	-	-	-	-	-	
		20.08.2025	-	11:48	14	21	Forced	86.1 & 86.2	
		20.08.2025	12:52	18:12	05	20	Forced	86.1 & 86.2	
10.	315 MVA ICT-II	19.08.2025	13:06	18:40	05	34	Forced	86.1 & 86.2	<p>Due to arc formation in B-phase of T/F HV Side Isolator. Weather Condition: Rainy and Strom</p>

## List of important transmission lines in ER which tripped in August-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	PMU Location	DR Configuration Discrepancy (Local End)	DR Configuration Discrepancy (Remote End)	DR/EL RECEIVED FROM LOCAL END	DR/EL RECEIVED FROM REMOTE END	LOCAL END UTILITY	REMOTE END UTILITY	Utility Response and Root Cause of Tripping
1	400KV-ALIPURDUAR (PG)-PUNASANGCHUN-2	01-08-2025	15:37	01-08-2025	18:26	Not tripped.	Pole discrepancy at PUNASANGCHUN end	No Fault	-	Pole discrepancy operated at Bhutan end.	Alipurduar			NA	YES	PG ER-II	BHUTAN	Line tripped only from Bhutan end due to issue at their end. No tripping at Alipurduar end.
2	220KV-TENUGHAT-BIHARSARIF-1	08-08-2025	10:14	08-08-2025	11:26	Biharsariff :B-N, 138.7km, IB-1.083kA	Tenughat : B-N , IB-1.011KA, 43.5 kM	B-Earth	100 msec	Three phase tripping for phase to ground fault.	Biharsariff			NO	NO	JUSNL	BSPTCL	PLCC issue persisting since long . As stated earlier .ERPCC intervention required ,as it involves Inter state Transmission line.
3	400KV-ALIPURDUAR (PG)-BINAGURI-3	09-08-2025	15:35	09-08-2025	18:37	Alipurduar : B ,N, FD 87 km, FC 4.3kA	Binaguri end: B ,N, FD 50km, FC 4.3 kA;	B-Earth	100 msec	Line tripped in reclaim time.	Binaguri			YES	YES	PG ER-II	PG ER-II	A/R was successful through main & tie bay. However, fault re-appeared after 2.5 sec of the first fault. Hence, 3 phase trip happened due to fault within reclaim time. Protection operated properly at PG ER-2 end.
4	400KV-BINAGURI-RANGPO-1	09-08-2025	16:04	09-08-2025	17:23	Binaguri : B ,N, FD 95.19 km, FC 4.3kA	FD 12.31 km, FC - 4.9.101 kA	R-B	100 msec	Line tripped on phase to phase fault.	Binaguri			YES	YES	PG ER-II	PG ER-II	Phase to phase fault and 3 phase trip happened. Protection operated properly at PG ER-2 end.
5	400KV-NEW JEERAT-SUBHASGRAM(PG)-1	10-08-2025	08:09	10-08-2025	15:21	New Jeerat: R- Ph fault, Z-1, 48.30km,5.863kA	Subhasgram: R-Ph, Z-1,44.8km,5.97kA	R-Earth	100 msec	A/r failed after 1 sec.	New Jeerat			YES	YES	PG ER-II	PG ER-II	A/R attempted but tripped on persisting fault. Protection operated properly at PG ER-2 end.
6	220KV-MAITHON-DHANBAD-2	10-08-2025	19:16	11-08-2025	03:24	Maithon: Y ,N, 9.42 km, 11.02 kA, A/r successful;	Dhanbad: Y ,N, 32.4 km, 3.2 kA	Y-Earth	100 msec	A/r successful from Maithon end and three phase tripping from Dhanbad end. DVC may explain.	Maithon			YES	NO	PG ER-II	DVC	A/R was successful at Maithon end. Protection operated properly at PG ER-2 end.
7	220KV-TENUGHAT-BIHARSARIF-1	12-08-2025	13:06	12-08-2025	13:43	Biharsharif: R ,N, 127.2 km, 1.188 Ka	Tenughat: R ,N, 62.38 km, 1.722 kA	R-Earth	100 msec	Three phase tripping for phase to ground fault.	Biharsariff			NO	NO	JUSNL	BSPTCL	PLCC issue persisting since long . As stated earlier .ERPCC intervention required ,as it involves Inter state Transmission line.

8	400KV-MALDA(PG)-NEW PURNEA-2	13-08-2025	06:03	13-08-2025	06:56	R/I at Malda : Y_N, FD 66.646 km, FC 5.186 kA	New Purnea: Y_N, Z-1, FD 68.01km FC 2.249 kA	Y-Earth	100 msec	Line tripped in reclaim time from Malda end and only Y pole tripped in reclaim time further after 1.2 sec three phase tripping occurred from Purnea. PG ER-1 may explain.	Malda			YES	YES	PG ER-II	PG ER-I	A/R was successful. However, after 1.5Sec of the first fault, it reappeared again and line was tripped on fault within reclaim time. Protection operated properly at PG ER-2 end.
9	400KV-BAHARAMPUR-BHERAMARA-4	15-08-2025	17:58	16-08-2025	10:24	Baharampur : R-N,FD=69.29KM, FC=4.566KA,	-	R-Earth	100 msec	A/r failed after 1 sec.	Baharampur			YES	NO	PG ER-II	ANGLADES	A/R attempted but tripped on persisting fault. Protection operated properly at PG ER-2 end.
10	400KV-BINAGURI-BONGAIGON-1	16-08-2025	11:37	16-08-2025	12:59	BONGAIGON: : B-N, 84.31KM, Z-1, 4.20 KA	Binaguri end; B-N,130.101KM, 3.095KA.	B-Earth	100 msec	A/r failed after 1 sec.	Binaguri			YES	NO	PG ER-II	NER	A/R attempted but tripped on persisting fault. Protection operated properly at PG ER-2 end.
11	400KV-ALIPURDUAR (PG)-BINAGURI-3	16-08-2025	12:27	16-08-2025	16:22	PURDUAR B-N, 43.8KM, 4	NAGURI : B-N, 75.13KM, 5.2	B-Earth	100 msec	Line tripped in reclaim time.	Siliguri			YES	YES	PG ER-II	PG ER-II	A/R was successful. However, after 2.8sec of the first fault, it reappeared again and line was tripped on fault within reclaim time. Protection operated properly at PG ER-2 end.
12	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	21-08-2025	17:30	21-08-2025	18:24	Darbhangha end Relay RN fault, FC – 2.77 kA, FD-51km, Z-1.	Laukahi end:RN fault, zone - 1, distance 34.1KM, FC-3.22KA,	R-Earth	100 msec	A/r successful from Darbhanga end and three phase tripping from Laukahi end. BSPTCL may explain.	Muzafarpur			NO	YES	DMTCL	BSPTCL	PLCC issue
13	400KV-ALIPURDUAR (PG)-PUNASANGCHUN-2	23-08-2025	22:49	29-08-2025	10:19	Not tripped	Tripped from Punasangchun end only	No Fault	NA	Tripped from Bhutan end only.	Binaguri			NA	NO	PG ER-II	BHUTAN	Line tripped only from Bhutan end due to issue at their end. No tripping at Alipurduar end.
14	220KV-BIRPARA-MALBASE-1	26-08-2025	12:08	26-08-2025	12:49	Birpara: A/R successful, Y ph, 39.2 km, 4.28 kA (Bhutan jurisdiction)	-	Y-Earth	100 msec	A/R successful at Birpara end and line tripped from Bhutan end only.	Binaguri			YES	YES	PG ER-II	BHUTAN	A/R was successful at Birpara end. Protection operated properly at PG ER-2 end.
15	765KV-NEW RANCHI-MEDINIPUR-1	26-08-2025	19:12	27-08-2025	18:27	New Ranchi: Y-N, 210.4 km, 3.9 kA	Medinipur: Y-N, 21 KM, 7.22 kA	Y-Earth	100 msec	A/r failed after 1 sec.	New Ranchi			YES	YES	PG ER-I	PMJTL	A/R attempted but tripped on persisting fault. Protection operated properly at PG ER-2 end.

16	400KV-BINAGURI-TALA-1	27-08-2025	11:45	27-08-2025	13:12	Binaguri: R-B-N, 136.8 km, I <sub>r</sub> :3.5 kA, I <sub>b</sub> :2.8 kA;	Tala :R_N, 1.9 km, 9.74 kA	R-B-N	100 msec	Line tripped on phase to phase fault.	Binaguri			YES	YES	PG ER-II	BHUTAN	Phase to phase fault and 3 phase trip happened. Protection operated properly at PG ER-2 end.
17	400KV-BINAGURI-TALA-2	27-08-2025	11:45	27-08-2025	12:44	A/R successful, Y ph, 39.2 km, 4.28 kA (Bhutan jurisdiction)	Tripped from Bhutan end only.	Y-Earth	100 msec	A/r successful from Binaguri end and three phase tripping from Bhutan end.	Binaguri			YES	YES	PG ER-II	BHUTAN	A/R was successful at Binaguri end. Protection operated properly at PG ER-2 end.
18	220KV-DARBHANGA (DMTCL)-MOTIPUR-1	29-08-2025	13:00	29-08-2025	16:57	B-Earth, Z-1	Autorecloser successful from Motipur end only	B-Earth	100 msec	A/r successful from Motipur end only. A/r not attempted from Darbhanga end and after 2 sec PDR operated. DMTCL may explain.	Muzafarpur			YES	NO	DMTCL	BSPTCL	A/r successful from Motipur end only. A/r not attempted from Darbhanga end and after 2 sec PDR operated.
19	220KV-TENUGHAT-BIHARSARIFF-1	30-08-2025	10:42	30-08-2025	11:18	Tenughat: Ia 216A, Ib 1.761kA, Ic 318A, Zone 01, Distance 72.89km	Biharshariff: phase B-N, Z-1, Ia-96.02A, Ib-1.443kA, Ic-66.27A,	B-Earth	100 msec	Three phase tripping for phase to ground fault.	Biharsariff			YES	NO	JUSNL	BSPTCL	PLCC issue persisting since long . As stated earlier ,ERPC intervention required ,as it involves Inter state Transmission line.
20	220KV-TENUGHAT-BIHARSARIFF-1	31-08-2025	12:24	31-08-2025	12:49	TTPS :- Zone 1 trip, Y phase fault, Distance-73.48 km, Ia-51.71 A, Ib-1.657 kA, Ic-156.8 A	Z-1, Y-Earth	Y-Earth	100 msec	Three phase tripping for phase to ground fault.	Biharsariff			YES	NO	JUSNL	BSPTCL	PLCC issue persisting since long . As stated earlier ,ERPC intervention required ,as it involves Inter state Transmission line.

Protection Performance Indices for the month of Aug'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)						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		Nc						Nu		Nf	
						End A	End B	End A	End B	End A	End B					End A	End B	End A	End B
1	132kVARA-DUMRAON(BSPTCL)-1	05-08-2025	18:08:00	05-08-2025	18:37:00	TRIPPED FROM BOTH ENDS DUE TO Y-N FAULT. FAULT DETAILS-ARA(AFAS)-FD-23.629KM FC-3.255KA FAULT IS UNDER BSPTCL JURISDICTION	Other Utility	1	NA	0	NA	0	NA	1	1	1			
2	132kVARA-DUMRAON(BSPTCL)-1	01-08-2025	09:27:00	01-08-2025	10:15:00	TRIPPED FROM BOTH ENDS DUE TO Y-N FAULT. ARA (SITE) M1: FD- 7.57KM, FC-6.37KA FAULT IS UNDER BSPTCL JURISDICTION	Other Utility	1	NA	0	NA	0	NA	1	1	1			
3	220kV GAYA-DEHRI(BSPTCL)-1(LILO PART.)	28-08-2025	20:59:00	30-08-2025	20:32:00	TRIPPED DUE TO Y-B PHASE FROM BOTH ENDS. GAYA AFAS-M1: FD-47.23KM, FC- 7.3KA. FAULT IS UNDER BSPTCL JURISDICTION	Other Utility	1	NA	0	NA	0	NA	1	1	1			
4	220kV RANCHI-CHANDIL(JUSNL)	16-08-2025	12:33:00	16-08-2025	18:15:00	TRIPPED FROM BOTH ENDS DUE TO B-N FAULT. RANCHI SITE DETAILS-M1-FD-31.3 KM FC-3.58 KA FAULT IS UNDERJUSNL JURISDICTION.	Other Utility	1	NA	0	NA	0	NA	1	1	1			
5	220kV RANCHI-CHANDIL(JUSNL)	25-08-2025	21:11:00	25-08-2025	21:11:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO Y-N FAULT. RANCHI(SITE): M1- FD- 15.80KM, FC- 6.43KA FAULT IS UNDER JUSNL JURISDICTION		1	NA	0	NA	0	NA	1	1	1			
6	220kV RANCHI-CHANDIL(JUSNL)	20-08-2025	12:45:00	20-08-2025	12:45:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO B-N FAULT RANCHI SITE DETAILS-M1-FD-31.9 KM FC-3.64 KA FAULT IS UNDER JUSNL JURISDICTION		1	NA	0	NA	0	NA	1	1	1			
7	220kV SASARAM-NADOKHAR(BSPTCL)-1	28-08-2025	17:19:00	28-08-2025	18:16:00	TRIPPED FROM NADOKHAR END ONLY DUE TO PROBLEM AT NADOKHAR END	Other Utility	1	NA	0	NA	0	NA	1	1	1			
8	400kV BANKA BIHARSARIF-1	04-08-2025	14:25:00	06-08-2025	18:01:00	TRIPPED FROM BOTH ENDS DUE TO B-N FAULT, LIGHTENING AND THUNDERSTORM REPORTED NEAR FAULT AREA. FAULT DETAILS-BIHARSHRIF(SITE)-M1-FD-36.6KM, FC-8.594KA. 120KN PORCELAIN INSULATOR DECAPPED AT LOC 466 (DA+0) AND X-ARM BENT AT LOC 465 (DA+0)		1	1	0	0	0	0	1	1	1			
9	400kV BIHARSHARIF-MUZAFFARPUR-2	03-08-2025	11:59:00	03-08-2025	20:45:00	TRIPPED DUE TO B-N FAULT FROM BOTH ENDS , LIGHTENING AND THUNDERSTORM REPORTED NEAR FAULT AREA. FAULT DETAILS-BIHARSHRIF(SITE)- M1-FD-46.7KM FC-6.245KA, CLR INSULATOR BURNT AT LOC-137 (DA+0)		1	1	0	0	0	0	1	1	1			
10	400kV KISHANGANJ-SAHARSA-4(LILO PORTION)	21-08-2025	16:17:00	21-08-2025	16:17:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO Y-N FAULT FAULT DETAILS-SAHARSA(SITE)-M1-FD-58.019KM FC-4.114KA FAULT UNDER ATL JURISDICTION.		1	1	0	0	0	0	1	1	1			
11	400kV KODERMA(DVC)-BIHARSHARIF-1	18-08-2025	11:47:00	18-08-2025	11:47:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO Y-N FAULT DUE TO LIGHTENING AND THUNDERSTORM AROUND THE FAULT AREA. BIHARSHARIF(SITE): M1-FD-53.29KM, FC-3.682KA.		NA	1	NA	0	NA	0	1	1	1			
12	400kV KODERMA(DVC)-BOKARO(BVNL)-1	28-08-2025	17:02:00	28-08-2025	19:14:00	TRIPPED FROM BOTH ENDS DUE TO R-N FAULT DUE TO LIGHTENING AND THUNDERSTORM AROUND THE FAULT AREA. KODERMA (SITE): FD-69.90KM, FC-4.9KA. FLASHOVER ON INSULATOR DISC FROM CONDUCTOR, WHITE SPOT ON CC RING AND BLACK SPOT ON ARCING HORN IN TOP PHASE AT LOC-207		NA	NA	NA	NA	NA	NA	NA	NA	NA			
13	400kV KODERMA(DVC)-GAYA-1	02-08-2025	04:53:00	02-08-2025	04:53:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO B-N FAULT, LIGHTENING AND THUNDERSTORM REPORTED NEAR FAULT AREA. GAYA(AFAS): M1: FD- 43.949KM, FC- 9.54KA KODERMA SITE DETAILS- FD- 122.2KM, FC- 3.83KA		NA	1	NA	0	NA	0	1	1	1			
14	400kV MOTIHARI(DMTCL)-GORAKHPUR-1	05-08-2025	20:52:00	05-08-2025	22:18:00	TRIPPED FROM BOTH ENDS DUE TO Y-N FAULT. MOTIHARI END DETAILS:- M1-FC-10.38KA,FD-7.9KM, M2-FC-10.67KA,FD-7.864KM FAULT IS UNDER DMTCL JURISDICTION		NA	NA	NA	NA	NA	NA	NA	NA	NA			
15	400kV MOTIHARI(DMTCL)-GORAKHPUR-1	22-08-2025	05:44:00	22-08-2025	05:44:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO B-N FAULT DURING LIGHTENING AND THUNDERSTORM AROUND THE FAULT AREA. MOTIHARI:M1-FD-134KM, FC-2.40KA GORAKHPUR:M1-FD-36.87KM, FC-7.895KA		NA	NA	NA	NA	NA	NA	NA	NA	NA			
16	400kV MOTIHARI(DMTCL)-GORAKHPUR-1	07-08-2025	04:58:00	07-08-2025	11:14:00	TRIPPED FROM BOTH ENDS DUE TO Y-N FAULT, LIGHTENING AND THUNDERSTORM REPORTED NEAR FAULT AREA. MOTIHARI:M1-FD-155.9KM, FC-3.08KA GORAKHPUR(AFAS):M2-FD-16.47KM, FC-12.19KA INSULATOR DECAPPED FOUND AT LOC-890		NA	NA	NA	NA	NA	NA	NA	NA	NA			
17	400kV MOTIHARI(DMTCL)-GORAKHPUR-1	09-08-2025	01:12:00	09-08-2025	14:45:00	TRIPPED FROM BOTH ENDS DUE TO Y-N FAULT. MOTIHARI END DETAILS:- M1-FD-8.1KM FC-9.52KA, FAULT IS UNDER DMTCL JURISDICTION		NA	NA	NA	NA	NA	NA	NA	NA	NA			
18	400kV MOTIHARI(DMTCL)-GORAKHPUR-1	22-08-2025	05:41:00	22-08-2025	05:41:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO B-N FAULT DURING LIGHTENING AND THUNDERSTORM AROUND THE FAULT AREA. MOTIHARI:M1-FD-134.8KM, FC-2.41KA GORAKH:M1-FD-35.9KM, FC-7.907KA		NA	NA	NA	NA	NA	NA	NA	NA	NA			
19	400kV MOTIHARI(DMTCL)-GORAKHPUR-2	11-08-2025	05:27:00	11-08-2025	16:10:00	TRIPPED FROM BOTH ENDS DUE TO R-N FAULT. MOTIHARI END DETAILS:- M1-FD-11.1KM FC-9.10KA FAULT IS UNDER DMTCL JURISDICTION		NA	NA	NA	NA	NA	NA	NA	NA	NA			
20	400kV NEW RANCHI-CHANDWA-1	23-08-2025	08:58:00	23-08-2025	08:58:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO R-N FAULT. CHANDWA AFAS DETAILS- M2: FD- 31.582KM, FC- 7.419 KA.		1	1	0	0	0	0	1	1	1			
21	400kV RAGHUNATHPUR(DVC)-MAITHON-1	31-08-2025	11:23:00	31-08-2025	11:23:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO Y-N FAULT. MAITHON (AFAS) M2: FD- 45.89KM, FC-6.81KA. RAGHUNATHPUR SITE DETAILS- M1: FD- 4.27KM, FC- 15.99KA, M2: FD- 4.2KM, FC- 16.15KA. FAULT IS UNDER DVC JURISDICTION		NA	NA	NA	NA	NA	NA	NA	NA	NA			
22	400kV RAGHUNATHPUR(DVC)-MAITHON-1	21-08-2025	13:09:00	21-08-2025	13:09:00	A/R SUCCESSFUL FROM BOTH ENDS DUE TO B-N FAULT MAITHON(SITE): M1: FD- 12.70KM, FC- 10.37KA		NA	NA	NA	NA	NA	NA	NA	NA	NA			
23	400kV RANCHI-ROURKELA-2	31-08-2025	02:36:00	31-08-2025	02:36:00	A/R SUCCESSFULLY OPERATED FROM BOTH ENDS DUE TO Y-N FAULT DURING LIGHTENING AND THUNDERSTORM AROUND FAULT AREA. ROURKELA SITE DETAILS- M1: FD- 13.01KM, FC- 14.78KA, M2: 13KM, FC- 16KA.		1	NA	0	NA	0	NA	1	1	1			

List of important transmission lines in ER which tripped in August-2025									END-A						END-B					
Sl. No.	LINE NAME	TRIP DATE	TRIP TIME	RESTORATION DATE	RESTORATION TIME	LOCAL END UTILITY	REMOTE END UTILITY	Utility Response and Root Cause of Tripping	Nc	Nu	Nf	Dependability Index (Ne/(Nc+Nf))	Security Index (Ne/(Nc+Nu))	Reliability Index (Ne/(Nc+Nu+Nf))	Nc	Nu	Nf	Dependability Index (Ne/(Nc+Nf))	Security Index (Ne/(Nc+Nu))	Reliability Index (Ne/(Nc+Nu+Nf))
1	400KV-ALIPURDUAR (PG)-PUNASANGCHUN-2	01-08-2025	15:37	01-08-2025	18:26	PG ER-II	BHUTAN	Line tripped only from Bhutan end due to issue at their end. No tripping at Alipurduar end.	1			1	1	1						NA
2	400KV-ALIPURDUAR (PG)-BINAGURI-3	09-08-2025	15:35	09-08-2025	18:37	PG ER-II	PG ER-II	A/R was successful through main & tie bay. However, fault re-appeared after 2.5 sec of the first fault. Hence, 3 phase trip happened due to fault within reclaim time. Protection operated properly at PG ER-2 end.	1			1	1	1	1			1	1	1
3	400KV-BINAGURI-RANGPO-1	09-08-2025	16:04	09-08-2025	17:23	PG ER-II	PG ER-II	Phase to phase fault and 3 phase trip happened. Protection operated properly at PG ER-2 end.	1			1	1	1	1			1	1	1
4	400KV-NEW JEERAT-SUBHASGRAM(PG)-1	10-08-2025	08:09	10-08-2025	15:21	PG ER-II	PG ER-II	A/R attempted but tripped on persisting fault. Protection operated properly at PG ER-2 end.	1			1	1	1	1			1	1	1
5	220KV-MAITHON-DHANBAD-2	10-08-2025	19:16	11-08-2025	03:24	PG ER-II	DVC	A/R was successful at Maithon end. Protection operated properly at PG ER-2 end.	1			1	1	1						NA
6	400KV-MALDA(PG)-NEW PURNEA-2	13-08-2025	06:03	13-08-2025	06:56	PG ER-II	PG ER-I	A/R was successful. However, after 1.5sec of the first fault, it reappeared again and line was tripped on fault within reclaim time. Protection operated properly at PG ER-2 end.	1			1	1	1						NA
7	400KV-BAHARAMPUR-BHERAMARA-4	15-08-2025	17:58	16-08-2025	10:24	PG ER-II	BANGLADESH	A/R attempted but tripped on persisting fault. Protection operated properly at PG ER-2 end.	1			1	1	1						NA
8	400KV-BINAGURI-BONGAIGAON-1	16-08-2025	11:37	16-08-2025	12:59	PG ER-II	NER	A/R attempted but tripped on persisting fault. Protection operated properly at PG ER-2 end.	1			1	1	1						NA
9	400KV-ALIPURDUAR (PG)-BINAGURI-3	16-08-2025	12:27	16-08-2025	16:22	PG ER-II	PG ER-II	A/R was successful. However, after 2.8sec of the first fault, it reappeared again and line was tripped on fault within reclaim time. Protection operated properly at PG ER-2 end.	1			1	1	1	1			1	1	1
10	400KV-ALIPURDUAR (PG)-PUNASANGCHUN-2	23-08-2025	22:49	29-08-2025	10:19	PG ER-II	BHUTAN	Line tripped only from Bhutan end due to issue at their end. No tripping at Alipurduar end.	1			1	1	1						NA
11	220KV-BIRPARA-MALBASE-1	26-08-2025	12:08	26-08-2025	12:49	PG ER-II	BHUTAN	A/R was successful at Birpara end. Protection operated properly at PG ER-2 end.	1			1	1	1						NA
12	765KV-NEW RANCHI-MEDINIPUR-1	26-08-2025	19:12	27-08-2025	18:27	PG ER-I	PMJTL	A/R attempted but tripped on persisting fault. Protection operated properly at PG ER-2 end.				NA			1			1	1	1
13	400KV-BINAGURI-TALA-1	27-08-2025	11:45	27-08-2025	13:12	PG ER-II	BHUTAN	Phase to phase fault and 3 phase trip happened. Protection operated properly at PG ER-2 end.	1			1	1	1						NA

14	400KV-BINAGURI-TALA-2	27-08-2025	11:45	27-08-2025	12:44	PG ER-II	BHUTAN	A/R was successful at Binaguri end. Protection operated properly at PG ER-2 end.	1			1	1	1	NA
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Protection Performance Indices for the month of August-25 (In compliance of Clause 15(6) of IEGC 2023)															
S. No.	Name of the element	Tripping Date	Tripping Time	Reason (Relay indication)		Nc		Nu		Nf		Dependability Index (Nc/(Nc+Nf))	Security Index (Nc/(Nc+Nu))	Reliability Index (Nc/(Nc+Nu+Nf))	Remarks (Reason for performance indices less than 1)
				End A	End B	End A	End B	End A	End B	End A	End B				
1	400 KV-JHARSUGUDA 765 KV-400 KV-ROURKELA 400KV-3	31-08-2025	02:48:00	Line Tripped at Jharsuguda end in Z-2 timing due to non-receipt of Carrier at 02:48Hrs on 31.08.2025 & AR Successful at Rourkela end. Relay Indication from SNG end: Main-1, Z-2, R-N, F/C- 2.70kA, F/L- 109.2 KM Main-2, Z-2, R-N, F/C- 3.165kA, F/L- 116.3KM Relay Indication from RKL end: Main-1, Zone-1, R-N, F/C- 25 kA, F/L- KM Main-2, Zone-1, R-N, F/C- 24.6kA, F/L-5.9 KM		0	1	1	0	1	0	0.5	0.5	0.33333333	Line Tripped at Jharsuguda end in Z-2 timing due to non-receipt of Carrier at 02:48Hrs on 31.08.2025 & AR Successful at Rourkela end. End to end checking of PLCC channels is under progress.
2	765 KV-JHARSUGUDA 765 KV-765 KV-RAIPUR-1	17-08-2025	19:05:00	Line tripped on Ph-Ph fault M1:Z1, YBN Fault; 205.4 km; 7.65 kA M2:Z1, YBN Fault; 117.1 km; 2.03 kA		1	1	0	0	0	0	1	1	1	
3	765 KV-JHARSUGUDA 765 KV-765 KV-RAIPUR-1	06-08-2025	07:18:00	Line tripped on Persistent fault M1:Z1, YN Fault; 20.63 km; 18.1 kA M2:Z1, YN Fault; 20.7 km; 17.9 kA		1	1	0	0	0	0	1	1	1	
4	400 KV-KEONJHAR400KV-2	05-08-2025	14:59:00	ICT-2 at Keonjhar tripped on Buchtz trip.		1	1	0	0	0	0	1	1	1	Protection operated correctly. Internal inspection is under progress
5	220 KV-BOLANGIR 400KV-220 KV-KATAPALLI220KV-1	04-08-2025	16:21:00	Line tripped on B-G Fault, PLCC not available in this line , line belongs to OPTCL M1: Z1, Fault Current: 2.83 KA, Fault Distance: 27.1 KM M2: Z1, Fault Current: 3.59 KA, Fault Distance: 24.1 KM		1	1	0	0	0	0	1	1	1	

## NTPC Barh

<b>Month</b>	<b>August</b>						
<b><u>Date</u></b>	<b><u>Line tripping</u></b>	<b><u>Cause of Tripping</u></b>	<b><u>Tripping Analysis</u></b>	<b><u>Correct Operations at NTPC Barh (Nc)</u></b>	<b><u>Failed operations at NTPC Barh(Nf)</u></b>	<b><u>Number of Unwanted Operation (Nu)</u></b>	<b><u>Number of incorrect operations (Ni= Nf+Nu)</u></b>
No Line Tripping							

## Performance Indices of Darlipali STPP for Aug'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-Aug-2025 - NTPC Kahalgaon**

Sl. No.	Name of ELEMENT	Tripping Date	Tripping Time	Restoration Date	Restoration Time	Person-Relay indication		Nc		Su		Sf		Dependability Index (Nc/Nc+A)	Security Index (Nc/Nc+A) x 100	Reliability Index (Nc/Nc+N) x 100	Remarks/Reason for performance indices less than 1	Analysis for the event
						End A	End B	End A	End B	End A	End B	End A	End B					
1	132KV Kh Lafmata Line	02.08.2025	9:03	02.08.2025	10:13	ZONE-01		1		0		0		1	1	1		Zone - 1, R ph fault. Fault Current 544kA. Distance 13.3 Km
2	400KV Dgp - 2 Tie bay CH-1752	03.08.2025	16:32	09.08.2025	8:15	ZONE-01		0		1		1		0	0	0		Zone - 1, R phase. Distance 33km. Fault Current 9.55 kA. AAR operated. Line remained charged through main bus. Tie Bus A/R unsuccessful.
3	400KV Bus - 1 (all bays connected to 400KV Bus - 1)	17.08.2025	20:44	17.08.2025	21:15	LBR operated of Kh Dgp Line - 2 Main bus 1852		0		1		1		0	0	0		While synchronizing Kh dgp Line - 2 main CB after charging of new line reactor, Main CB 1852 R pole did not close, which triggered P1. However N pole did not open, resulting in LBR operation tripping 400KV Bus - 1. AUCB's connected to 400KV Bus - 1 got 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

*AGM*  
17/9/25

Checked by

*Debnishi*  
17/9/25

Reviewed by

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असिस्टेंट मैनेजर (प्रोटेक्शन/ईएमडी) / AGM (O&M.E.M.D.)  
एनटीपीसी लिमिटेड / NTPC Limited  
कहलगाँव, भागलपुर / Kahalgaon, Bhagalpur

Protection Performance Indices for the month of August'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 (Reason for performance indices less than 1)	
						End A	End B	End A	End B	End A	End B	End A	End B					
1	220KV-SITAMARHI-MOTIPUR-1	04-08-2025	07:12	06-08-2025	16:33	SITHMARHI: R-N, Z1 , 0.3 KM , 18.2 KA	Motipur: FD: 39.93 KM, FC-IR-5.240 KA, IY-1.073 kA			1	0		0	1		1		
2	220KV-TENUGHAT-BIHARSARIFF-1	08-08-2025	10:14	08-08-2025	11:26	Tenughat : B-N , IB- 1.011KA, 43.5 kM	Biharsariff :B-N, 138.7km, IB-1.083kA			0	0		1	0		0	0	PLCC issue persisting since long . As stated earlier_ERPC intervention required ,as it involves Inter state Transmission line.
3	220KV-TENUGHAT-BIHARSARIFF-1	12-08-2025	13:06	12-08-2025	13:43	Tenughat: R_N, 62.38 km, 1.722 kA	Biharshariff: R_N, 127.2 km, 1.188 Ka			0	0		1	0		0	0	PLCC issue persisting since long . As stated earlier_ERPC intervention required ,as it involves Inter state Transmission line.
4	220KV-SITAMARHI-MOTIPUR-2	14-08-2025	09:09	14-08-2025	23:39	B-Earth, Z-1, FC-3.98 kA	B-Earth, Z-1			1	0		0	1		1	1	
5	220KV-SAHARSA(PMTL)-KHAGARIA(NEW)-2	19-08-2025	06:52	2025-08-20	17:55	Saharsa: B-N , FC-7.5 KA, FD-14 KM	Khagaria: B ph, Zone-1, Dist-53.67km, FC-2.125kA			1	0		0	1		1	1	
6	220KV-DARBHANGA(DMTCL)-LAUKAHI-2	21-08-2025	17:30	21-08-2025	18:24	Darbhanga end Relay RN fault, FC – 2.77 kA, FD- 51km, Z-1.	Laukahi end:RN fault, zone -1, distance 34.1KM, FC- 3.22KA,			0	0		1	0		0	0	PLCC issue
7	220KV-SAHARSA(PMTL)-KHAGARIA(NEW)-1	27-08-2025	18:09	28-08-2025	18:13	Saharsa - R_N , fd - 11 km , FC - 9 KA	Khagaria: R ph, Zone-1, Distance - 57.06km, Ir- 599.8A			1	0		0	1		1	1	
8	220KV-SAHARSA(PMTL)-KHAGARIA(NEW)-1	28-08-2025	19:24	29-08-2025	17:58	R-Phase Y-Phase B-Phase Tripped Zone-1 Tripped F.D.: 58.63km Ia: 20.35A Ib: 2.521kA	Z1,YB			1	0		0	1		1	1	
9	220KV-DEHRI-GAYA-1	28-08-2025	20:59	30-08-2025	20:32	Dehri : Y_N, F Dist 19 km,	R/I at Gaya : F Dist 46 km, Y_B,;			1	0		0	1		1	1	
10	220KV-DARBHANGA (DMTCL)-MOTIPUR-1	29-08-2025	13:00	29-08-2025	16:57	B-Earth, Z-1	Autorecloser successful from Motipur end only			1	0		0	1		1	1	A/r successful from Motipur end only, A/r not attempted from Darbhanga end and after 2 sec PDR operated.
11	220KV-TENUGHAT-BIHARSARIFF-1	30-08-2025	10:42	30-08-2025	11:18	Tenughat: Ia 216A, Ib 1.761kA, Ic 318A, Zone 01, Distance 72.89km	Biharshariff: phase B-N, Z-1, Ia-96.02A, Ib-1.443kA, Ic- 66.27A,			0	0		1	0		0	0	PLCC issue persisting since long . As stated earlier_ERPC intervention required ,as it involves Inter state Transmission line.
12	220KV-TENUGHAT-BIHARSARIFF-1	31-08-2025	12:24	31-08-2025	12:49	TTPS - Zone 1 trip, Y phase fault, Distance-73.48 km, Ia- 51.71 A, Ib-1.657 kA, Ic-156.8 A	Z-1, Y-Earth			0	0		1	0		0	0	PLCC issue persisting since long . As stated earlier_ERPC intervention required ,as it involves Inter state Transmission line.
13	220KV-SITAMARHI-MOTIPUR-2	31-08-2025	08:22	2025-09-02	18:49	SITAMARHI(PG) End: B_N, Z-1,20.2KM,6.36 kA;	MOTIPUR End: B_N,Z-1,29 KM,4.66 kA			1	0		0	1		1	1	

Protection Performance Indices for the month of August' 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 Ramchandrapur - Joda	02-08-2025	11:54	02-08-2025	12:41	YN, Z1, IB - 1.66 kA		1		1		0		1	0.5	0.5	Carrier unhealthy due to breaking of OPGW at Tower no- 08 from RCP end
2	220 kV Dumka II (Madanpur) - Godda - 01	03-08-2025	15:25	03-08-2025	15:41	Operation of SPS		1		0		0		1	1	1	
3	220 kV Dumka II (Madanpur) - Godda - 02	03-08-2025	15:25	03-08-2025	15:41	Operation of SPS		1		0		0		1	1	1	
4	220 kV Ramchandrapur - Joda	06-08-2025	13:22	03-08-2025	13:57	RN, Z1, 51.3 km, IR - 3.22 kA		1		1		0		1	0.5	0.5	
5	220KV -CHATRA - DALTONGANJ -1	07-08-2025	04:47	07-08-2025	14:45	Tripped due to short circuit in DTPC panel		1		1		0		1	0.5	0.5	Caught fire in DTPC panel of the feeder due to short circuit
6	220KV CHATRA - Latehar	07-08-2025	04:47	07-08-2025	07:03	Tripped due to short circuit in Daltonganj feeder's DTPC panel		1		1		0		1	0.5	0.5	Caught fire in DTPC panel of the Daltonganj feeder due to short circuit
7	220 KV Latehar-Lohardaga - 01	07-08-2025	09:47	07-08-2025	10:22	DT Received		1		1		0		1	0.5	0.5	
8	220 kV Jasidih - Giridih - 01	10-08-2025	20:29	10-08-2025	20:51												
9	221 kV Jasidih - Giridih - 01	10-08-2025	22:09			RN, Z1, 3.849 km, IR - 3.83 kA		1		1		0		1	0.5	0.5	
10	220 kV Chandil - Ranchi (PG)	16-08-2025	12:59	16-08-2025	18:15	BN, Z1, 64.2 km, IB - 1.56 kA, AR successful; tripped in reclaim time		1		0		0		1	1	1	
11	220KV-DALTONGANJ-CHATRA-1	19-08-2025	08:14			YB, Z1, 55.31 km, IY- 1.15 kA, IB - 1.07 kA		1		0		0		1	1	1	
12	220 kV Ramchandrapur - Joda	19-08-2025	10:50			No tripping from Ramchandrapur end		1		0		0		1	1	1	
13	220 kV Ramchandrapur - Joda	19-08-2025	12:12			No tripping from Ramchandrapur end		1		0		0		1	1	1	
14	400 kV Patratu - PUVNL - 01	19-08-2025	13:06	19-08-2025	21:21	Earth fault		1		1		0		1	0.5	0.5	Due to incorrect earth fault setting; anti theft earth fault setting of M2 relay was not revised.
15	400 kV Patratu - PUVNL - 02	19-08-2025	13:06	19-08-2025	21:26	Earth fault		1		1		0		1	0.5	0.5	
16	220 kV Govindpur - TVNL - 01	19-08-2025	13:06			BN, Z1, 70.32 km, IB - 1.023 kA, 3Ph tripping for 1Ph fault.		1		1		0		1	0.5	0.5	Carrier unhealthy
17	220 kV Govindpur - TVNL - 01	21-08-2025	12:34	21-08-2025	12:56	RN, Z1, 72.18 km, IR - 1.12 kA, 3Ph tripping for 1Ph fault.	RN, Z1, 15.75 km, IR - 3.60 kA,	1		1		0		1	0.5	0.5	Carrier unhealthy
18	220 kV Govindpur - TVNL - 02	21-08-2025	18:04	21-08-2025	18:39	RN, Z1, 9.14 km, IB - 4.11 kA, 3Ph tripping for 1Ph fault.		1		1		0		1	0.5	0.5	Carrier unhealthy
19	220 kV Govindpur - Madanpur - 02	21-08-2025	18:04	22-08-2025	12:45			1		0		0		1	1	1	
20	220 kV Dumka II (Madanpur) - Godda - 01	27-08-2025	20:27	03-08-2025	20:53	Operation of SPS		1		0		0		1	1	1	After tripping of unit - 1 at TVNL
21	220 kV Dumka II (Madanpur) - Godda - 02	27-08-2025	20:27	03-08-2025	20:53	Operation of SPS		1		0		0		1	1	1	

Protection Performance Indices for the month of AUGUST '25 (In compliance of Clause 15(6) of IEGC 2023)																		
Sl. No.	Name of the element	Tripping Date	Tripping Time	Restoration Date	Restoration Time	Reason (Relay indication)		Nc		Nu		Nf		Dependability Index (Nc/(Nc+Nf))	Security Index (Nc/(Nc+Nu))	Reliability Index (Nc/(Nc+Nu+Nf))	Remarks (Reason for performance indices less than 1)	Analysis of the event
						End A	End B	End A	End B	End A	End B	End A	End B					
1	Manikchak-Malda PG # 1	01.08.25	04:16:00	01.08.25	04:40:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1		
2	Manikchak-Malda PG # 2	01.08.25	07:46:00	01.08.25	07:57:00	Zone-1,Y-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1		
3	Manikchak-Malda PG # 2	01.08.25	10:34:00	01.08.25	11:01:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1		
4	Manikchak-Malda PG # 2	01.08.25	19:04:00	01.08.25	21:37:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	#		
5	Manikchak-Malda PG # 2	01.08.25	22:35:00	02.08.27	16:42:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1		
6	Malda-Malda PG #1	02.08.25	18:00:00	02.08.25	18:50:00	Tripped only PG End		1		0		0		1	1	1		
7	Malda-Malda PG #2	02.08.25	18:00:00	02.08.25	21:21:00	Tripped only PG End		1		0		0		1	1	1		
8	MANIKCHAK-MALDA PG # 1	02.08.25	20:55:00	02.08.25	21:35:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1		
9	MANIKCHAK-MALDA PG # 2	02.08.25	18:18:00	02.08.25	19:21:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1		
10	MANIKCHAK-MALDA PG #1	07.08.25	20:12:00	07.08.26	20:49:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1		
11	KHARAGPUR-CHAIBASA#2	12.08.25	10:37:00	12.08.25	16:35:00	Zone-1, B- Phase, A/R Close, A/R L/O		1		0		0		1	1	1		
12	KURSEUNG-RANGIT #1	16.08.25	04:55:00	16.08.25	05:39:00	Zone-1,Y-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1		
13	MANIKCHAK-MALDA PG # 1	22.08.25	16:26:00	22.08.25	17:07:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1		
14	MANIKCHAK-MALDA PG # 1	22.08.25	23:28:00	22.08.25	23:48:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1		
15	JEERAT-BKTPP	25.08.25	12:59:00	25.08.25	13:17:00	Zone-1, Y- Phase, A/R Close, A/R L/O		1		0		0		1	1	1		
16	JEERAT-BKTPP	25.08.25	13:17:00	25.08.25	18:52:00	Zone-1, Y- Phase, A/R Close, A/R L/O		1		0		0		1	1	1		
17	JEERAT-BKTPP	26.08.25	14:16:00	26.08.25	14:32:00	Zone-1, Y- Phase, A/R Close, A/R L/O		1		0		0		1	1	1		
18	MANIKCHAK-MALDA PG #1	30.08.25	01:24:00	30.08.25	01:49:00	Zone-1,R-phase, CS ,CR ,3-phase Trip		1		0		0		1	1	1		
19	DURGAPUR -PPSP #1	30.08.25	12:09:00	30.08.25	12:36:00	Zone-1,R-phase, CS ,CR A/R L/O		1		0		0		1	1	1		
20	SATGACHIA 500 MVA TR#2	31.08.25	19:01:00	01.09.25	02:52:00	Differential protection optd.		1		0		0		1	1	1		

PROTECTION PERFORMANCE INDICES AS PER TRIPPING LIST OF 151TH PCC MEETING AGENDA FOR THE MONTH OF AUGUST 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	220 KV JODA-RAMACHANDRAPUR-1	02-08-2025	11:54	02-08-2025	12:44	A/R successful	Z-1/13.7KM	1	1	0	0	0	0	END A=1,END B=1	END A=1,END B=1	END A=1,END B=1	A/R FROM JODA END BUT 3PH TRIP FROM R.C.PUR END.
2	220 KV JODA-RAMACHANDRAPUR-1	05-08-2025	13:22	05-08-2025	13:57	A/R successful	Z-1/R-N/2.22 KA/51.3KM	1	1	0	0	0	0	END A=1,END B=1	END A=1,END B=1	END A=1,END B=1	A/R FROM JODA END BUT 3PH TRIP FROM R.C.PUR END.
3	220 KV BUDHIPADAR-KORBA-1	09-08-2025	12:46	09-08-2025	16:34	Z-2/B-N/1.04 KA/44.7 KM	Z-1/B-N/3.03 KM	1	1	0	0	0	0	END A=1,END B=1	END A=1,END B=1	END A=1,END B=1	LINE TRIPPED LN ZONE-2 FROM BUDHIPADAR END IN 400 msec.
4	220 KV BUDHIPADAR-KORBA-1	16-08-2025	20:13	16-08-2025	22:49	Z-1/R-N/2.93KA/53 KM	Z-1/R-N/1.65KA/105 KM	1	1	0	0	0	0	END A=1,END B=1	END A=1,END B=1	END A=1,END B=1	" R" PH POLE TRIPPED IN 100 msec AFTER 350 Msec remaining pole got tripped.
5	220 KV BUDHIPADAR-KORBA-2	22-08-2025	09:30	22-08-2025	12:28	POLE DISCREPENCY DUE TO DC LEAKAGE	NO TRIP	1	0	1	0	1	0	END A=1/2,END B=0	END A=1/2,END B=0	END A=1/3,END B=0	LINE TRIPPED WITHOUT ANY FAULT DUE TO PDR OPERATION AT BUDHIPADAR END.
6	220 KV BUDHIPADAR-KORBA-2	22-08-2025	12:48	22-08-2025	14:50	POLE DISCREPENCY DUE TO DC LEAKAGE	NO TRIP	1	0	1	0	1	0	END A=1/2,END B=0	END A=1/2,END B=0	END A=1/3,END B=0	LINE TRIPPED WITHOUT ANY FAULT DUE TO PDR OPERATION AT BUDHIPADAR END.
7	400 KV LAPANGA-OPGC -2	25-08-2025	14:05	25-08-2025	14:10	DT RECEIVED AT LAPANGA END	TRIPPED DUE TO DT	0	1	0	1	0	1	END A=0,END B=1/2	END A=0,END B=1/2	END A=0,END B=1/3	LINE TRIPPED AT LAPANGA END DUE TO DT RECEIVED FROM OPGC END.
8	220 KV BOLANGIR (PG)-KESINGA	26-08-2025	13:10	26-08-2025	14:15	A/R successful	Z-1/R-N/1.6 KA/58.7KM	1	1	0	0	0	0	END A=1,END B=1	END A=1,END B=1	END A=1,END B=1	A/R SUCCESSFUL AT BOLANGIR PG END BUT 3-PHASE TRIPPED OCCURED DUE TO CABLE FAULT AT KESINGA END.
9	400 KV LAPANGA-OPGC -2	26-08-2025	16:26	26-08-2025	17:42	R-B/16 KA/8KM	NO TRIP	1	0	1	0	1	0	END A=1/2,END B=0	END A=1/2,END B=0	END A=1/3,END B=0	LINE TRIPPED DUE TO PH-PH FAULT.
10	400 KV NEW DUBURI-MRDL-1	30-08-2025	18:33	30-08-2025	19:26	DT RECEIVED ATNEW DUBURI END	TRIPPED DUE TO FAULTY MULTIFUNCTION RELAY	0	1	0	1	0	1	END A=0,END B=1/2	END A=0,END B=1/2	END A=0,END B=1/3	LINE TRIPPED FROM MRDL END DUE TO FAULTY MFR RELAY AT MRDL END AND DT SENT TO NEW DUBURI END.

# APNRL

ADHUNIK POWER AND NATURAL RESOURCES LIMITED 2 X 270 MW																			
Protection Performance Indices for the August' 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.																			

Protection Performance Indices for the month of August'2025																		
Sr.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	400 KV Moshari - Gonskpur Circuit - 1	05-Aug-25	20:52 Hr	05-Aug-25	22:18 Hr	Moshari End: Line tripped in Zone-1, Y-Phase Fault, FC>10.38kA, FD> 7.9km. NOTE:- A/R is initiated but not successful.	Line Tripped in Zone-2, Y-Phase fault	1	1	0	0	0	0	1	1	1		Reason: heavy rain and lightning thunder.
2	400 KV Moshari - Gonskpur Circuit - 1	09-Aug-25	01:12 Hr	09-Aug-25	14:45 Hr	Moshari End: Line tripped in Zone-1, Y-Phase Fault, FC>9.98kA, FD> 8.3km. NOTE:- A/R is initiated but not successful.	Line Tripped in Zone-2, Y-Phase fault	1	1	0	0	0	0	1	1	1		Reason: Insulator Failure/Manufacturing defect. Note: Deccan Make Insulator.
3	400 KV Moshari - Gonskpur Circuit - 2	11-Aug-25	5:27 Hr	11-Aug-25	16:10 Hr	Moshari End: Line tripped in R-Phase Fault, FC>9.10kA, FD>11.1km. NOTE:- A/R is initiated but not successful.	Line Tripped in Zone-2, R-Phase fault	1	1	0	0	0	0	1	1	1		Reason: Insulator Failure/Manufacturing defect. Note: Deccan Make Insulator.

# ENICL, PKTCL, OGPTL

Protection Performance Indices for the month of August-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 Bongsigoon - Alipurdhar line CKT-1(BNG- ALIP #1)							-	-	-	-	-	-	-NA	-NA	-NA	No events in the month of August 25
		400 kv (Quad ) D/C Bongsigoon - Alipurdhar line CKT-2(BNG- ALIP #2)							-	-	-	-	-	-	-NA	-NA	-NA	No events in the month of August 25
		400 kv (Quad) D/C Purulia-Bharsharif Line CKT-1 (NPRN-BSF# 1)								-	-	-	-	-	-NA	-NA	-NA	No events in the month of August 25
		400 kv (Quad) D/C Purulia-Bharsharif Line CKT-2 (NPRN-BSF# 2)								-	-	-	-	-	-NA	-NA	-NA	No events in the month of August 25
		400 kv (Quad) D/C Alipurdhar - Siliguri line CKT-1(ALIP- SLG #1)								-	-	-	-	-	-NA	-NA	-NA	No events in the month of August 25
2	ODISHA GENERATION PHASE - II LIMITED	400 kv (Quad ) D/C Alipurdhar - Siliguri line CKT-2(ALIP- SLG #2)							-	-	-	-	-	-NA	-NA	-NA	No events in the month of August 25	
		765kV D/C Jharsuguda(Bandargarh)-Raipur post CKT-2							-	-	-	-	-	-NA	-NA	-NA	No events in the month of August 25	
		400kV D/C IB-OPGC-Jharsuguda(Bandargarh) Ckt-1								-	-	-	-	-	-NA	-NA	-NA	No events in the month of August 25
		400kV D/C IB-OPGC-Jharsuguda(Bandargarh) Ckt-1								-	-	-	-	-	-NA	-NA	-NA	No events in the month of August 25
		765kV D/C Jharsuguda(Bandargarh)-Raipur post CKT-1	06-08-2025	07:18:00	06-08-2025	10:30:00	KM - 20.06 KA - 20.12	KM - 280.3 KA - 31.57	1.00	1.00	-	-	-	-	-NA	1	1	Line tripped due to Y- phase to Earth fault.
3	PURULLA KHARAGPUR TRANSMISSION COMPANY LIMITED	765kV D/C Jharsuguda(Bandargarh)-Raipur post CKT-1	17-08-2025	19:05:00	17-08-2025	23:42:00	KM - 203 Y RA - 7.6 B RA - 5.3	KM - 144 Y RA - 6 B RA - 6	1.00	1.00	-	-	-	-	-NA	1	1	Line tripped due to Y- phase to B-phase to Earth fault.
		400kV D/C LILD POINT (T. No. - 130) - Sundargarh								-	-	-	-	-	-NA	-NA	-NA	No events in the month of August 25
		400kV D/C OPGC-LILD POINT (T. No. - 130)								-	-	-	-	-	-NA	-NA	-NA	No events in the month of August 25
		400 kV Chabasa-Kharsagar D/C line CKT- 1								-	-	-	-	-	-NA	-NA	-NA	No events in the month of August 25
		400 kV Chabasa-Kharsagar D/C line CKT- 2	12-08-2025	10:37:00	12-08-2025	16:33:00	KM - 33.7 RA - 7.2	KM - 146.9 RA - 2.3	1.00	1.00	-	-	-	-	-NA	1	1	Line tripped due to B-Phase to Earth fault.
400 KV/D/C New Rancho-New Purulia Line: CKT-1								-	-	-	-	-	-NA	-NA	-NA	No events in the month of August 25		
400 KV/D/C New Rancho-New Purulia Line: CKT-2								-	-	-	-	-	-NA	-NA	-NA	No events in the month of August 25		



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

Sl. No.	Name of the Element	Tripping Date	Tripping Time	Restoration Date	Restoration Time	Reason (Relay indication)		Nc		Nu		Nf		Dependability index (Nc/ (Nc+Nf))	Security Index (Nc/ (Nc+Nu))	Reliability Index (Nc/ (Nc+Nu+Nf))	Remarks (Reason for performance indices less than 1)
						End A	End B	End A	End B	End A	End B	End A	End B				
1	220KV TTPS-Bihar Shariff T/L	08.08.2025	10:13 HRS	08.08.2025	11:26 HRS	EARTH FAULT Z1 43.51 Km		1		1		0		1.0000	0.5000	0.5000	
2	220KV TTPS-Bihar Shariff T/L	12.08.2025	13:06 HRS	12.08.2025	13:43 HRS	EARTH FAULT Z1 62.38 Km		1		1		0		1.0000	0.5000	0.5000	
3	400 KV ICT-2	13.08.2025	19:01 HRS	13.08.2025	20:13 HRS	OVER CURRENT SPS		1		0		0		1.0000	1.0000	1.0000	
4	400 KV ICT-2	13.08.2025	20:14 HRS	13.08.2025	21:04 HRS	OVER CURRENT SPS		1		0		0		1.0000	1.0000	1.0000	
5	220KV TTPS-GOVINDPUR CKT 1 T/L	19.08.2025	13:06 HRS	19.08.2025	13:48 HRS	OVER CURRENT Z1 32.12 Km		1		1		0		1.0000	0.5000	0.5000	
6	220KV TTPS-GOVINDPUR CKT 1 T/L	21.08.2025	12:34 HRS	21.08.2025	12:56 HRS	OVER CURRENT Z1 15.75 Km		1		1		0		1.0000	0.5000	0.5000	
7	220KV TTPS-GOVINDPUR CKT 2 T/L	21.08.2025	18:04 HRS	21.08.2025	18:39 HRS	OVER CURRENT Z1 69.07 Km		1		1		0		1.0000	0.5000	0.5000	
9	400 KV TTPS-PVUNL T/L	27.08.2025	20:24 HRS	28.08.2025	00:34 HRS	DT RECEIVED		1		0		0		1.0000	1.0000	1.0000	
10	220KV TTPS-Bihar Shariff T/L	30.08.2025	10:42 HRS	30.08.2025	11:22 HRS	EARTH FAULT Z1 72.89 Km		1		1		0		1.0000	0.5000	0.5000	
11	220KV TTPS-Bihar Shariff T/L	31.08.2025	12:24 HRS	31.08.2025	12:49 HRS	EARTH FAULT Z1 73.48 Km		1		1		0		1.0000	0.5000	0.5000	

## NOTE:

Nc is the number of correct operations at internal power system faults

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

Nu is the number of unwanted operations.

Ni is the number of incorrect operations and is the sum of Nf and Nu



SI No.	Name of the incidence	PCC Recommendation	Latest status
<b>150<sup>th</sup> PCC Meeting</b>			
1.	Repeated Disturbance at 400 kV Dikchu HEP	PCC observed that there were repeated disturbances occurred at Dikchu HEP in recent months and opined that a comprehensive third party protection audit needs to be carried out for Dikchu HEP at the earliest.  Dikchu was advised to share relay settings, test report of relays to ERPC/ERLDC.	<i>Issue is already discussed in <b>Item B.1.</b></i>
2.	Total Power Failure at 220 kV Tenughat (TVNL) S/s & 220 kV Govindpur (JUSNL) S/s on 17th July 2025 at 13:53 Hrs	PCC advised TVNL and BSPTCL to resolve the issue bilaterally and implement carrier communication along with auto-recloser scheme for 220kV Tenughat Biharsarif line at the earliest.	<i>Issue is already discussed in <b>Item B.8.</b></i>
3.	Total Power Failure at 220 kV Goraul (BSPTCL) S/s on 7th July 2025 at 14:31 Hrs	BSPTCL was advised to configure the DR time window as per ERPC Guidelines.	<i>BSPTCL representative said that replacement of BCU is in progress and it is expected that issue will be resolved in 2 months.</i>
4.	Repeated tripping of 220KV-DALTONGANJ-CHATRA-1 in July 2025	PCC advised JUSNL representative to resolve carrier issue for the line at the earliest.	<i>Issue is already discussed in <b>Item B.2.</b></i>
<b>149<sup>th</sup> PCC Meeting</b>			
5.	Total Power Failure 220 kV Chatra (JUSNL) S/s on 8th June 2025 at 10:48 Hrs	PCC once again advised JUSNL to check phase to phase clearance issues for the line.	<i>JUSNL representative informed that phase to phase clearance for line has been checked and no abnormality was found. She further informed that trimming of vegetation is also in progress.</i>
6.	Total Power Failure 220 kV Kishangunj (BSPTCL) S/s on 12th June 2025 at 18:24 Hrs	PCC advised BSPTCL to time synchronize bus bar relay with GPS at earliest.	<i>In 151<sup>st</sup> PCC, BSPTCL representative updated that the issue will be resolved by one month.</i>

7.	Repeated tripping of 132kV-BARIPADA(PG)-BHOGARAI-1 and 132kV-BARIPADA(PG)-JALESWAR-1 in June 2025	PCC advised OPTCL representative to share relay settings at their end to ERPC/ERLDC along with issues being faced due to PG end settings. It further opined that auto-recloser can be enabled at PG end to avoid tripping of lines in transient faults.	<i>In 151<sup>st</sup> PCC Meeting, OPTCL representative updated that Powergrid will implement carrier communication scheme for these lines at both ends and cost will be shared by OPTCL and PG.</i>