



Agenda  
for  
**151<sup>st</sup> PCC Meeting**

**Date:18.09.2025**  
**Eastern Regional Power Committee**  
**14, Golf Club Road, Tollygunge**  
**Kolkata: 700 033**

## **EASTERN REGIONAL POWER COMMITTEE**

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

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#### **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.**

#### **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.**

##### **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.**

**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.**

**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
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.**

**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**

**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.

**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
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.

**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.**

**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 at **Annexure B.9.**

**Members may discuss.**

## PART- C: OTHER ITEMS

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

As per IEGC 2023 Clause 15(6), 15(7) all users shall submit protection performance indices of previous month by 10<sup>th</sup> of every month to ERPC and ERLDC along with reasons for performance indices less than unity of individual element wise protection system to the respective RPC and action plan for corrective measures. For the month of Aug'25, detailed list is attached at **Annexure C.1**.

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

Sl.no	Utility Name	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/ WBPDC	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.**

**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.

S. No.	Utility Name	Date of receipt
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.**

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

The decisions of previous PCC meetings are attached at **Annexure C.3**.

**Members may update.**


**ग्रिड-इंडिया**  
**GRID-INDIA**

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

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

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 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.
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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 (रुकावट की अवधि): 00:50 Hrs.

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

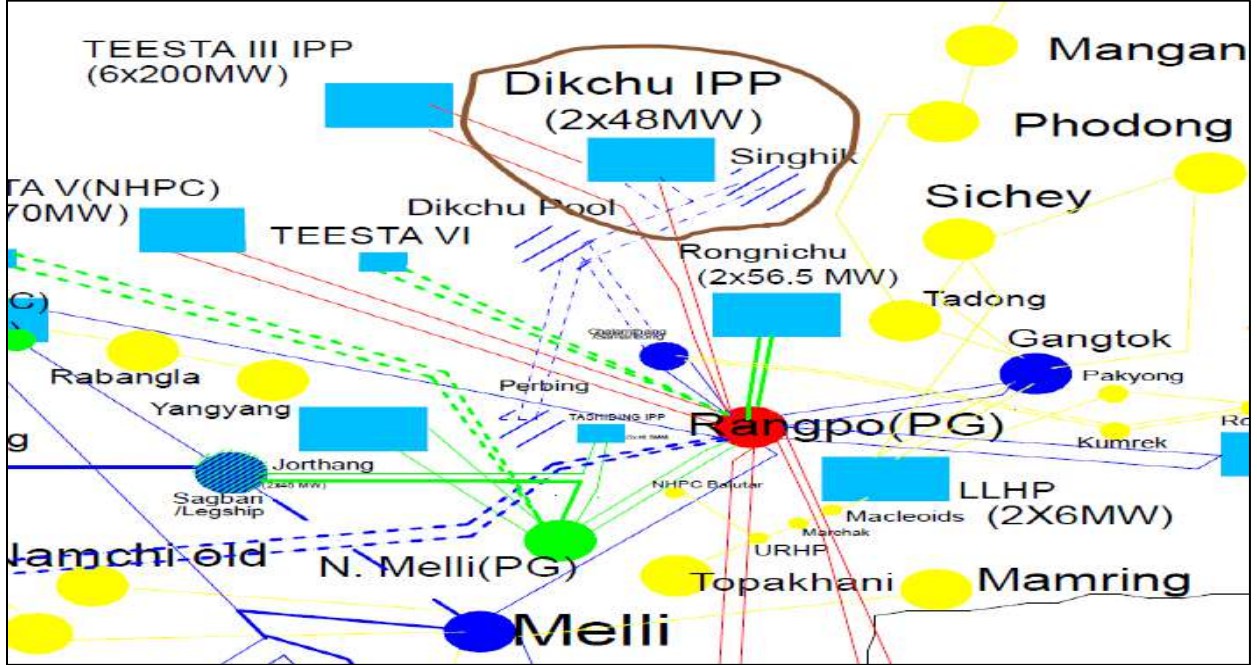


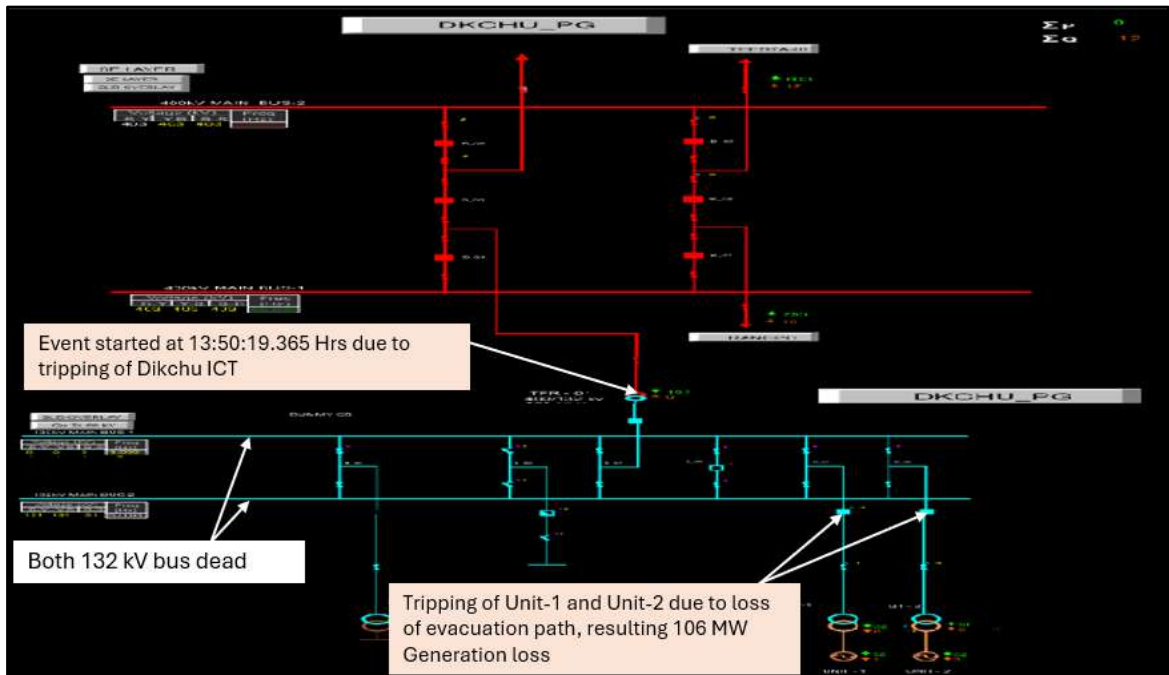
Figure 1: Network across the affected area

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

10. Major Elements Tripped (प्रमुख ट्रिपिंग):

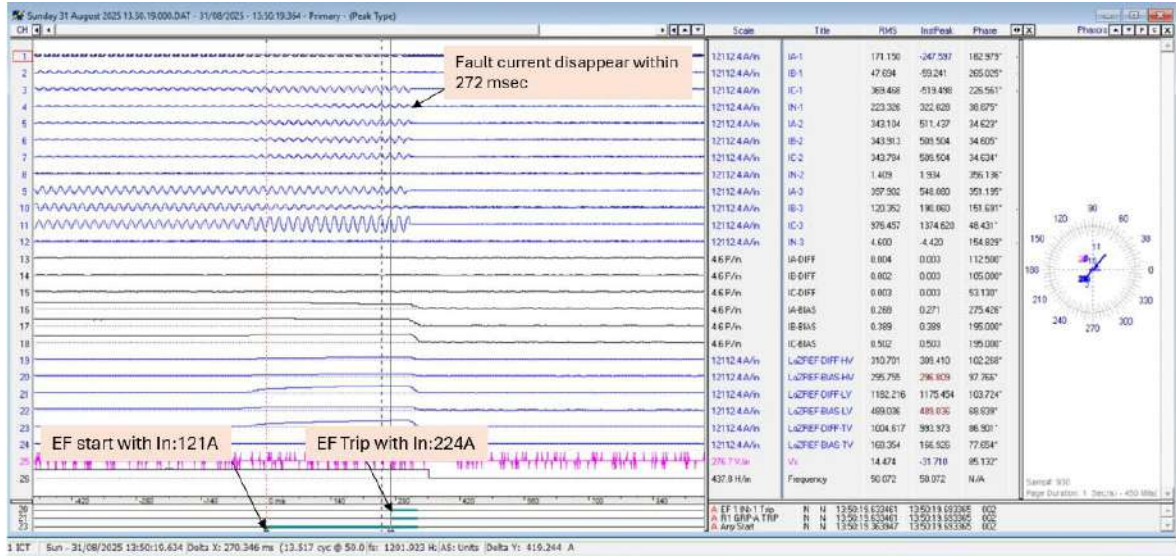
क्र०स०	नाम	Trip time (hh:mm:ss)	उप केंद्र 1 रिले संकेत	उप केंद्र 2 रिले संकेत	Restoration time in Hrs
2	400/132kV, 270 MVA ICT at Dikchu	13:50:19	HV side B/U over current EF protection operated		14:41
3	Dikchu Unit-1		Over frequency/Overspeed		14:49
4	Dikchu Unit-2		Over frequency/Overspeed		14:55

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

कार्यालय : 14, गोल्फ क्लब रोड, टॉलिंगंज, कोलकाता - 700033  
Office : 14, Golf Club Road, Tollygunge, Kolkata - 700033  
CIN : U40105DL2009GOI188682, Website : www.erfdc.in, E-mail : erdcinfo@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
Pre-Event (घटना पूर्व)	50.00	32922	24845	201	1513
Post Event (घटना के बाद)	50.00	32922	24810	201	1473

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

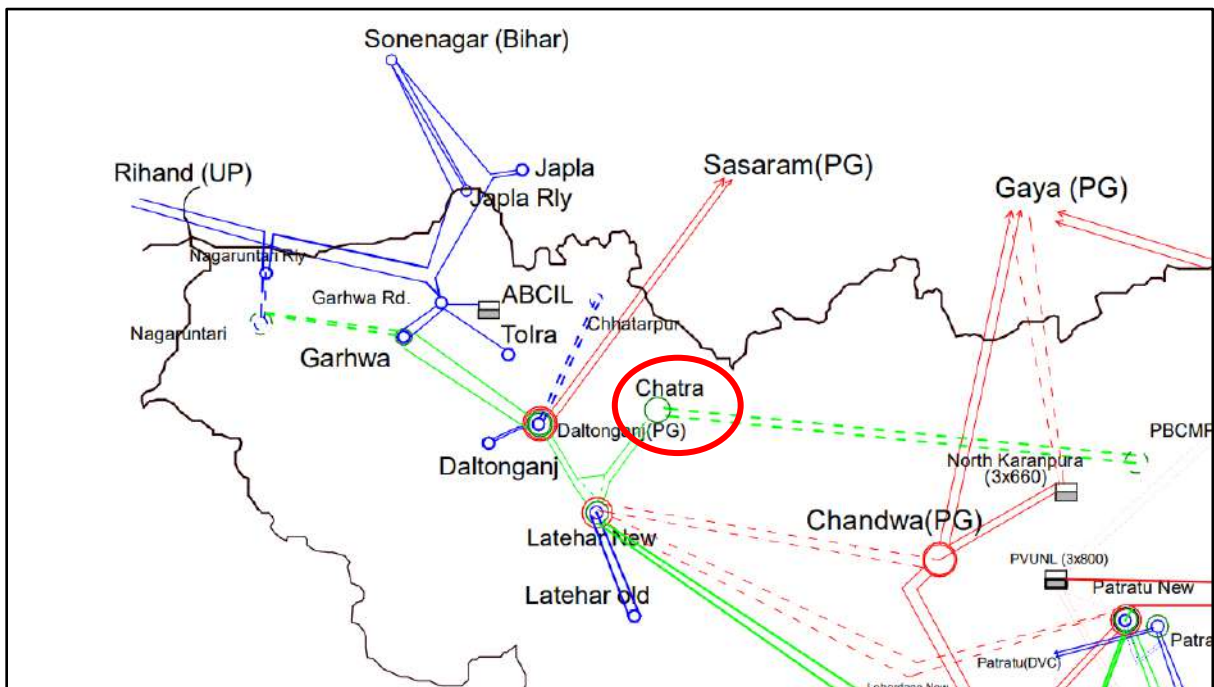
Important Transmission Line/Unit if under outage	Nil
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(महत्वपूर्ण संचरण लाइने/ विद्युत उत्पादन इकाइयां जो बंद हैं)	
Weather Condition (मौसम स्थिति)	Normal.

**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**


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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

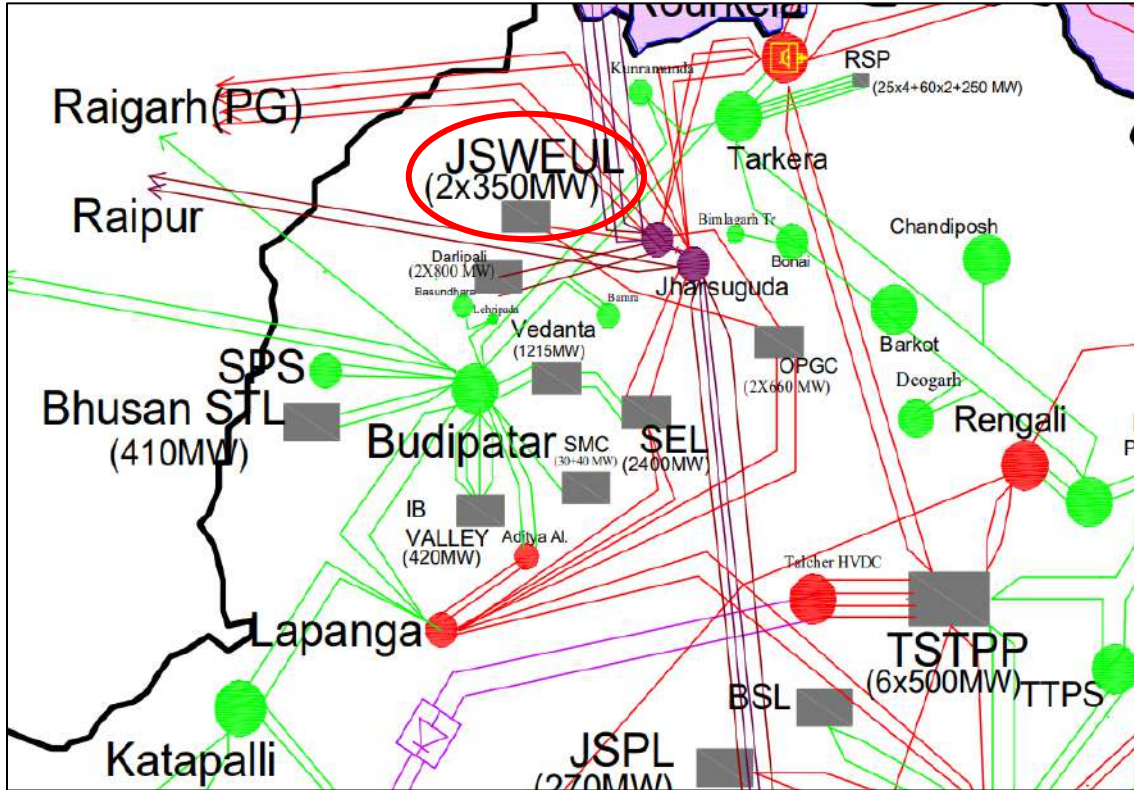
*\*Pre and post data of 1 minute before and after the event*

Important Transmission Line/Unit if under outage (महत्वपूर्ण संचरण लाइने/ विधुत 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**

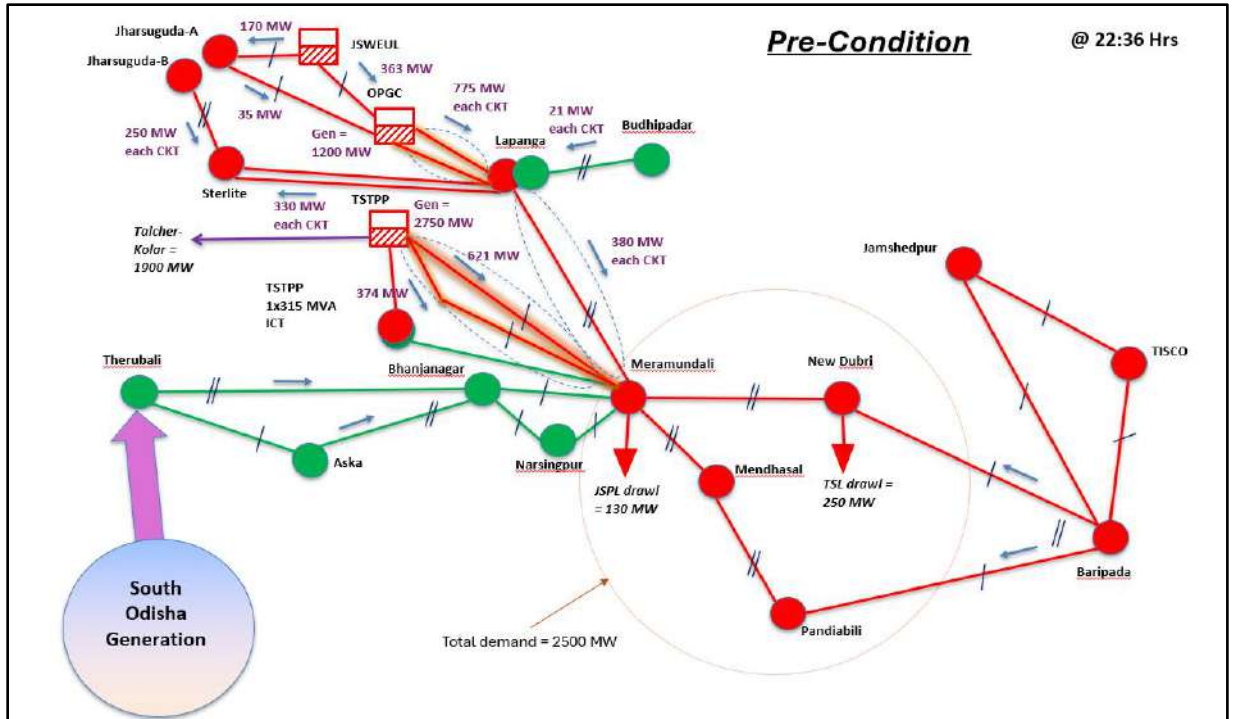
9. Details of Equipment Failure (if any during the event) (उपकरण विफलता का विवरण): NIL

**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

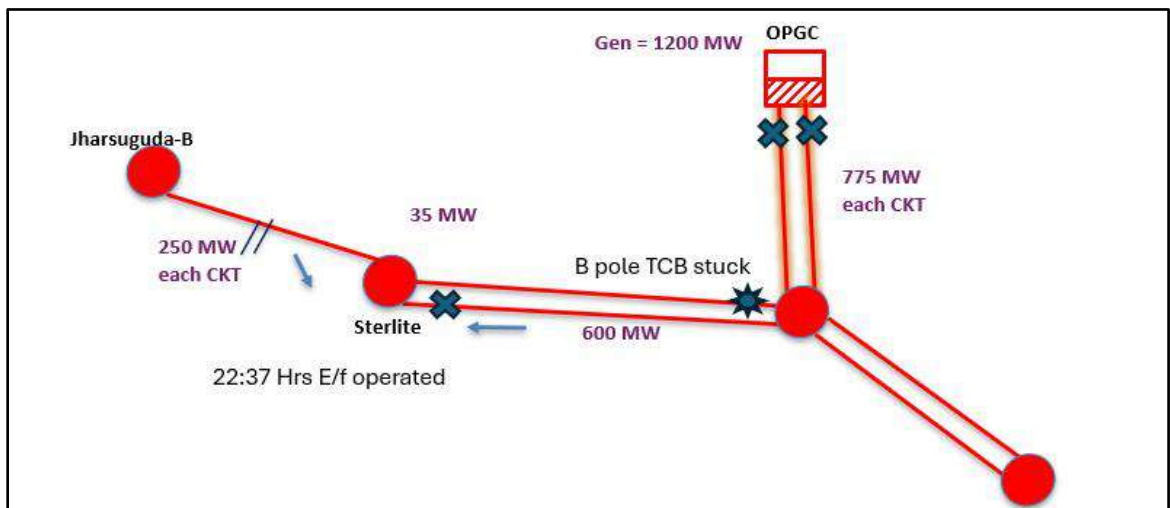
Sr. No.	Time_ 12/08/2025	Event Summary
1	22:36:52 Hrs	During opening of 400kV Lapanga-Sterlite circuit-1, B phase of Tie CB failed to open(stuck).
2	22:37:00 Hrs	400kV Lapanga-Sterlite circuit-2 got tripped from Sterlite end on DEF.
3	22:37:31 Hrs	400kV Lapanga-OPGC circuit-2 got tripped on DEF at OPGC 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):**



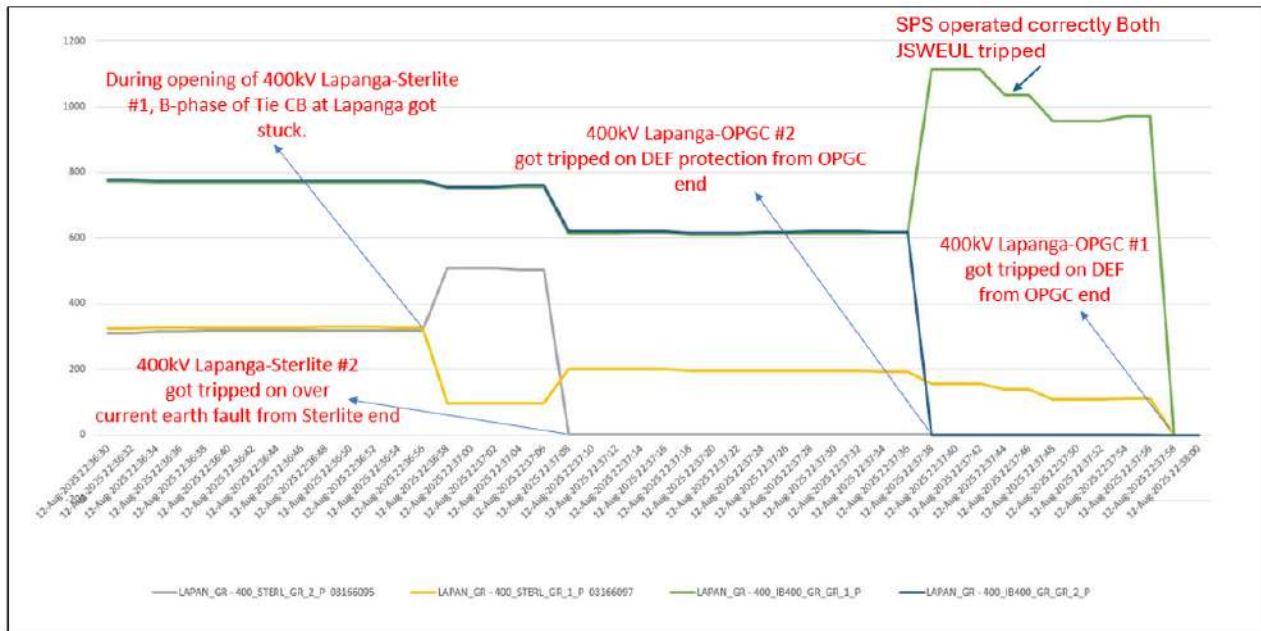
**Figure 2: Flow pattern prior to the tripping**

- 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)

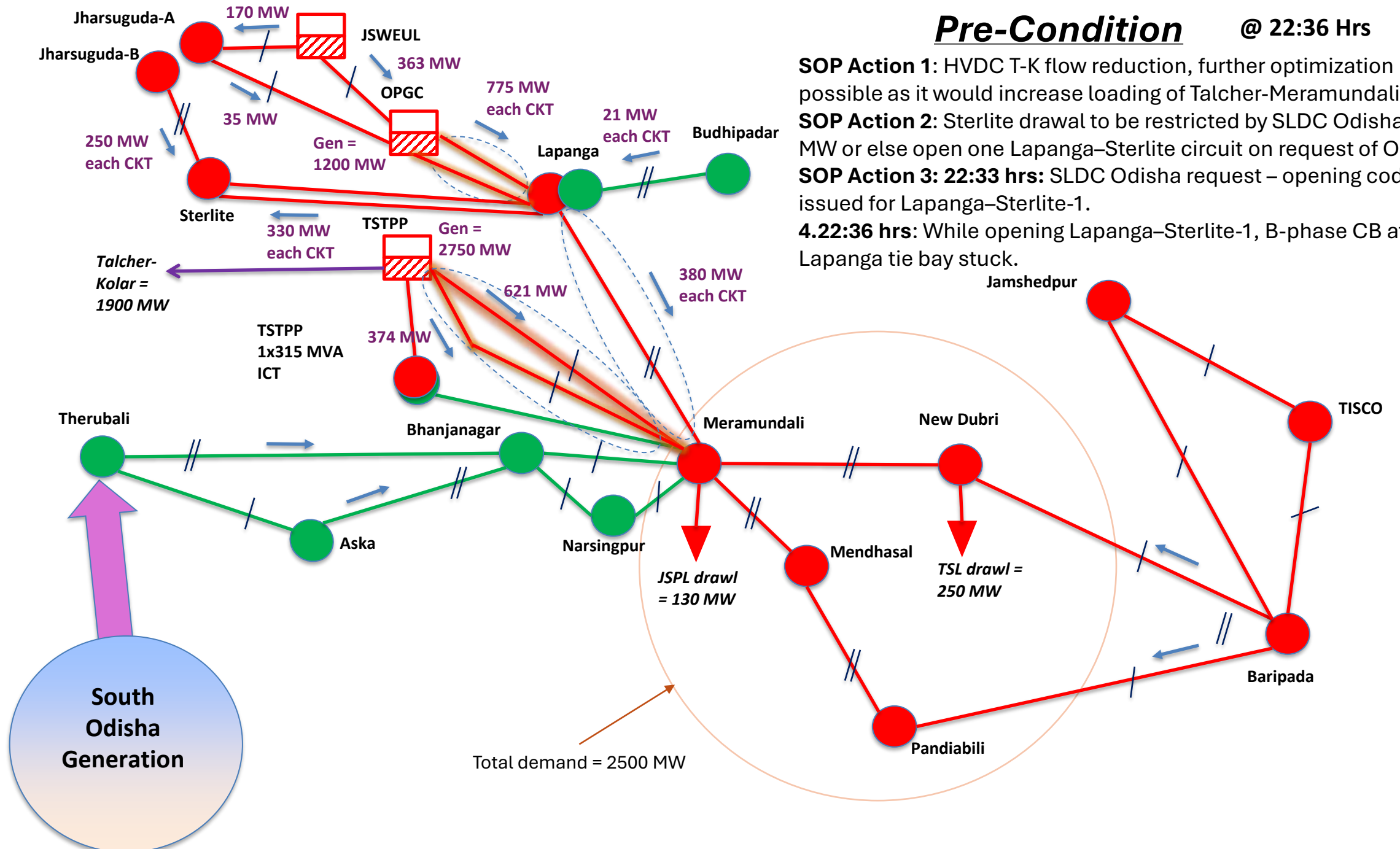


On 12.08.2025

# Near Miss Event at Odisha

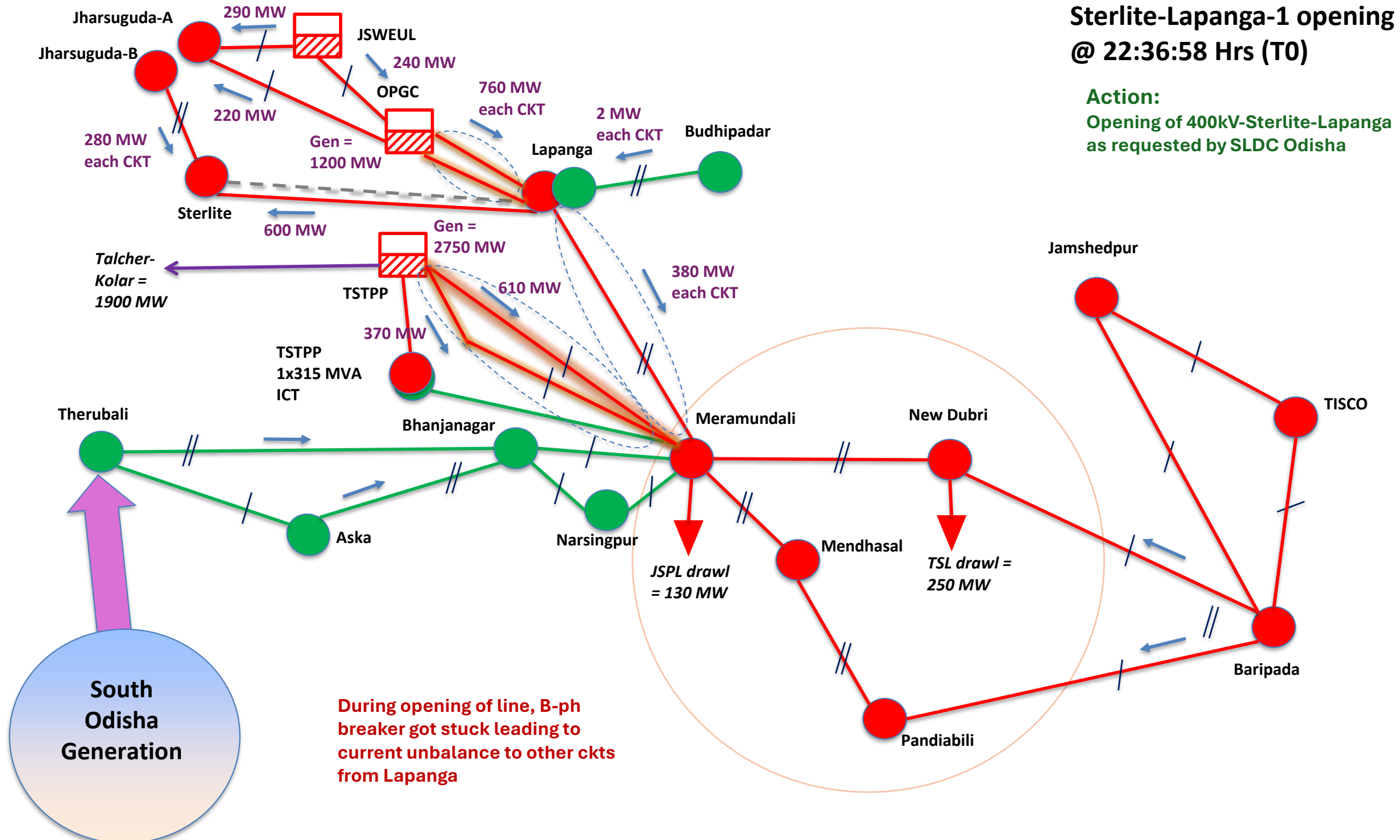
# Pre-Condition @ 22:36 Hrs

- SOP Action 1:** HVDC T-K flow reduction, further optimization not possible as it would increase loading of Talcher-Meramundali D/c.
- SOP Action 2:** Sterlite drawal to be restricted by SLDC Odisha  $\leq 900$  MW or else open one Lapanga–Sterlite circuit on request of Odisha
- SOP Action 3: 22:33 hrs:** SLDC Odisha request – opening code issued for Lapanga–Sterlite-1.
- 4.22:36 hrs:** While opening Lapanga–Sterlite-1, B-phase CB at Lapanga tie bay stuck.



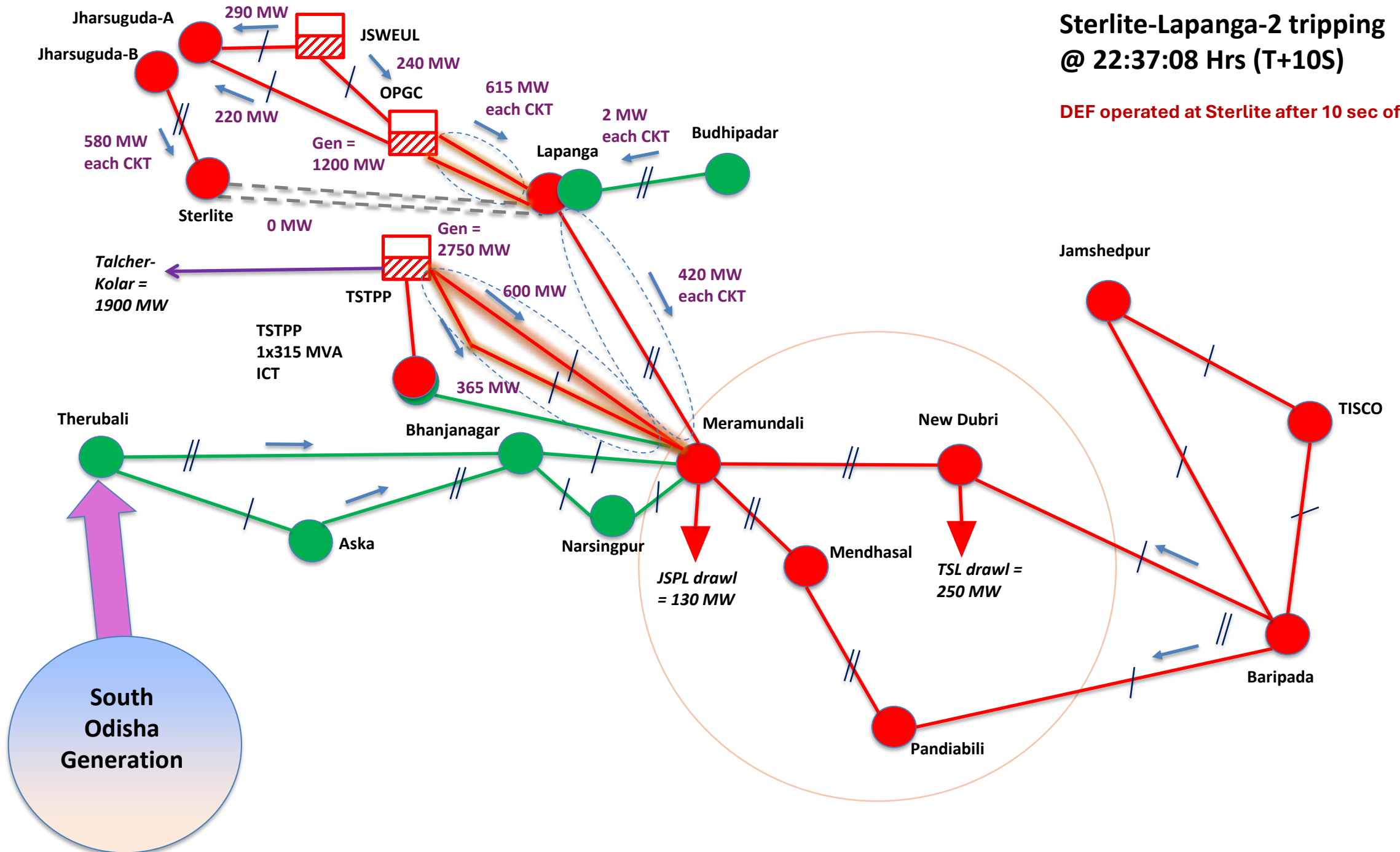
# Sterlite-Lapanga-1 opening @ 22:36:58 Hrs (T0)

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



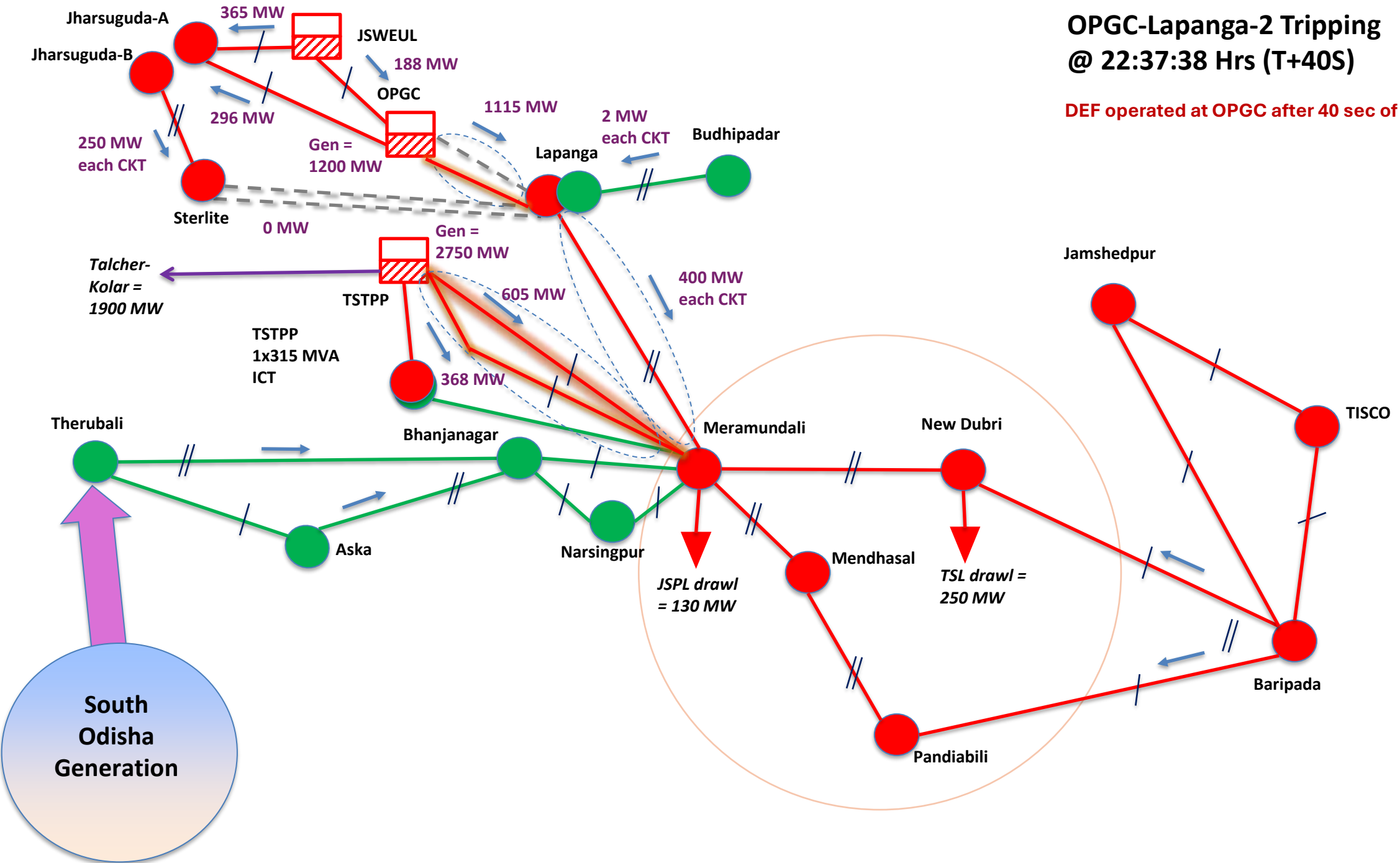
# Sterlite-Lapanga-2 tripping @ 22:37:08 Hrs (T+10S)

DEF operated at Sterlite after 10 sec of T0



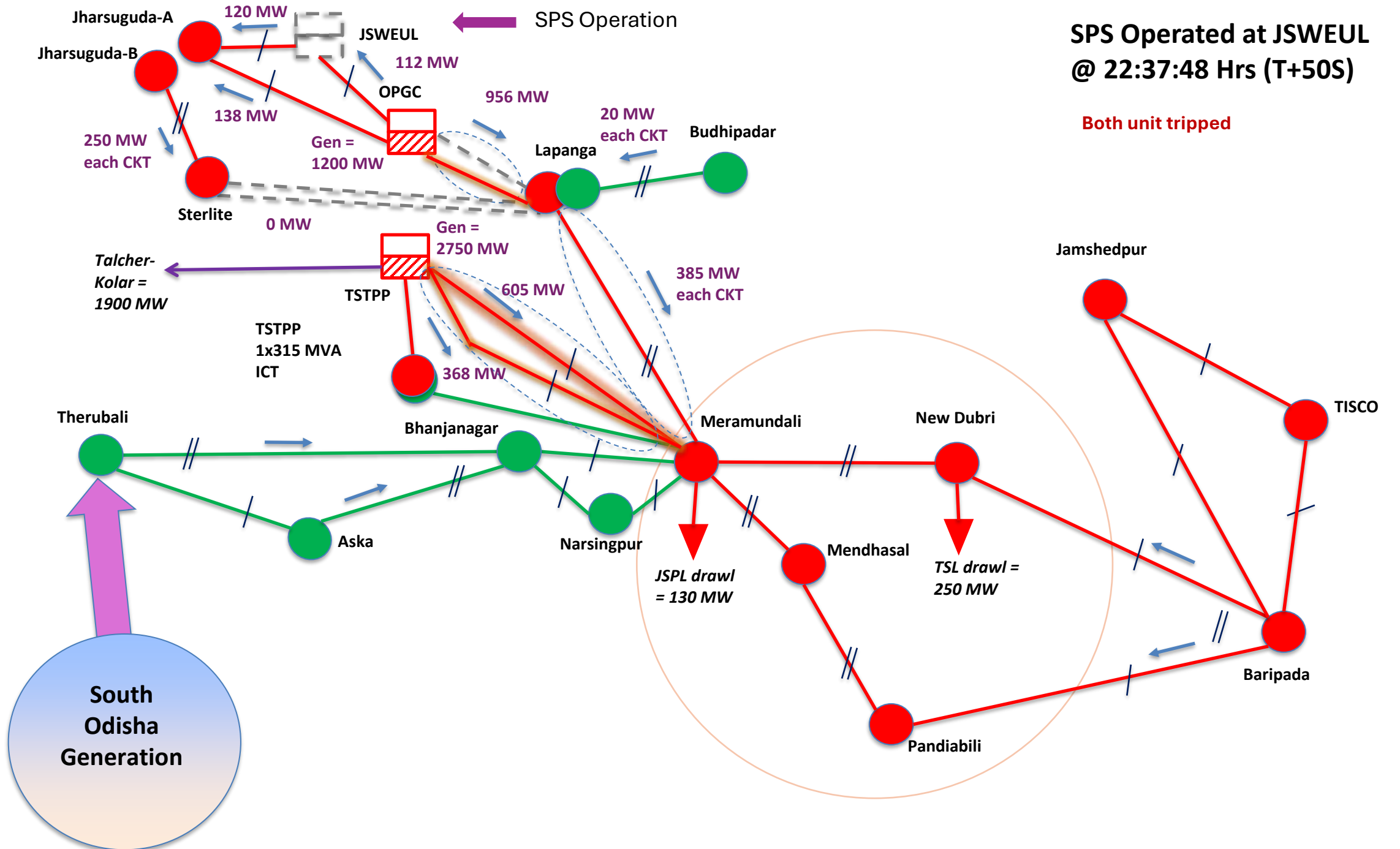
# OPGC-Lapanga-2 Tripping @ 22:37:38 Hrs (T+40S)

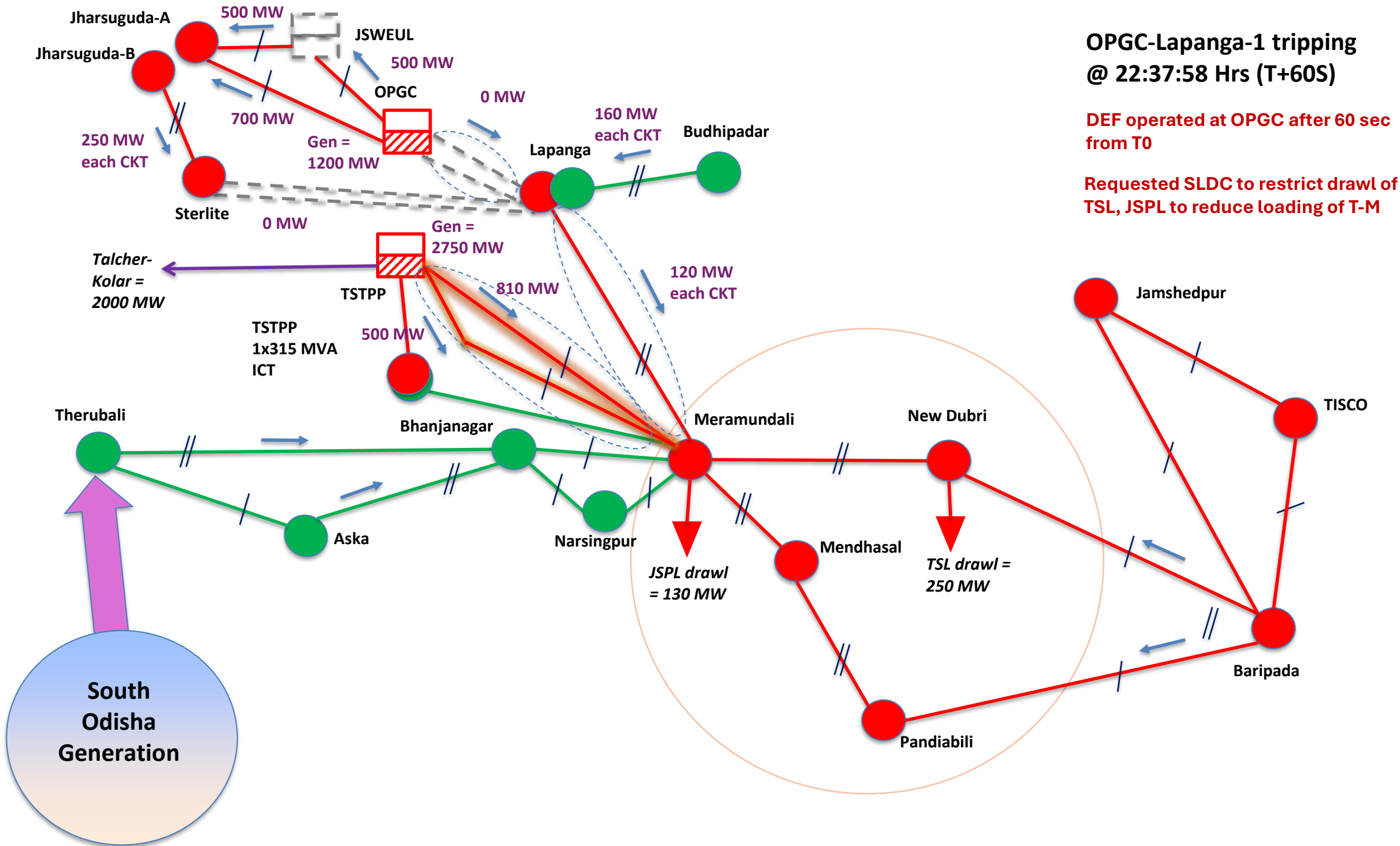
DEF operated at OPGC after 40 sec of T0

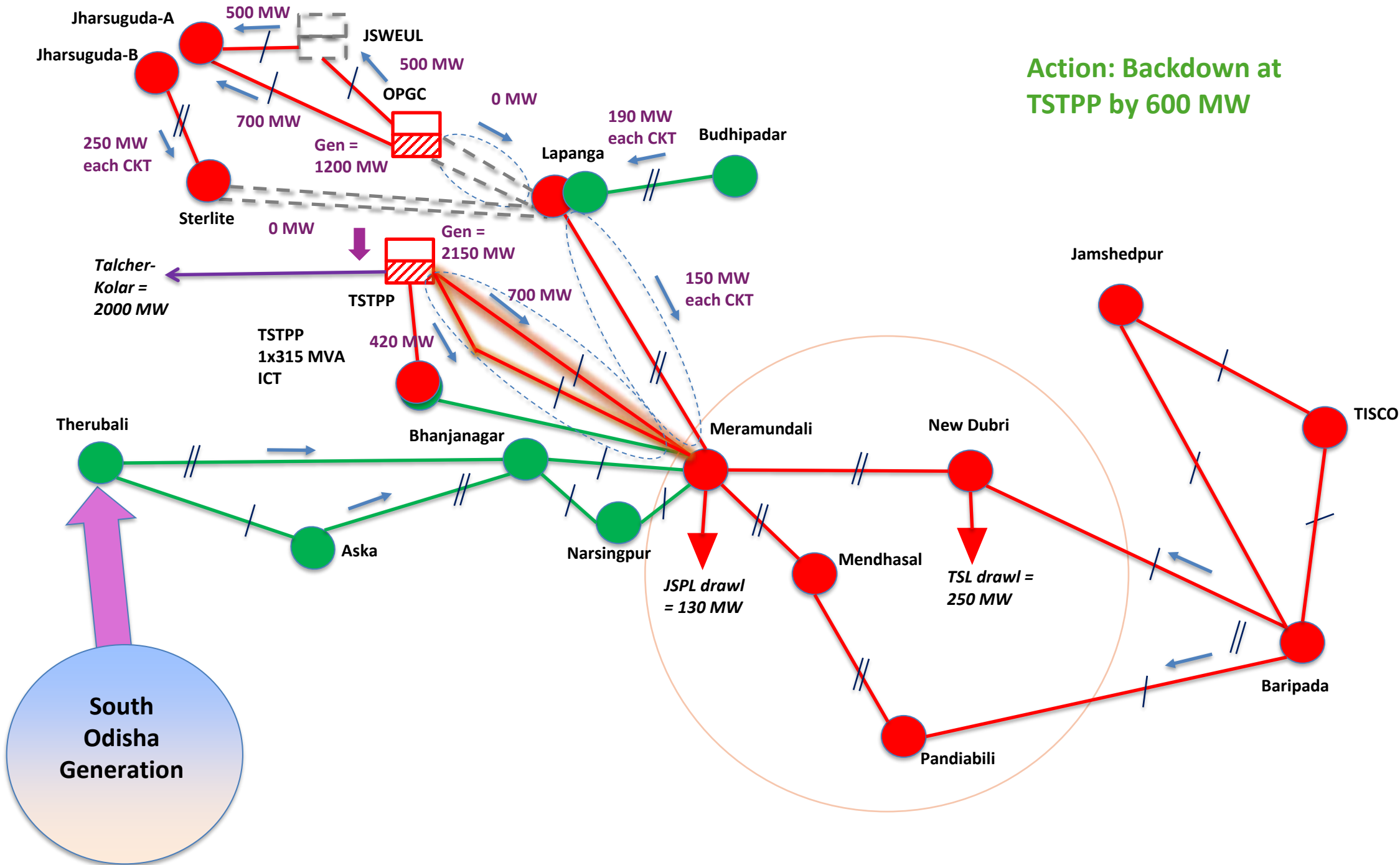


# SPS Operated at JSWEUL @ 22:37:48 Hrs (T+50S)

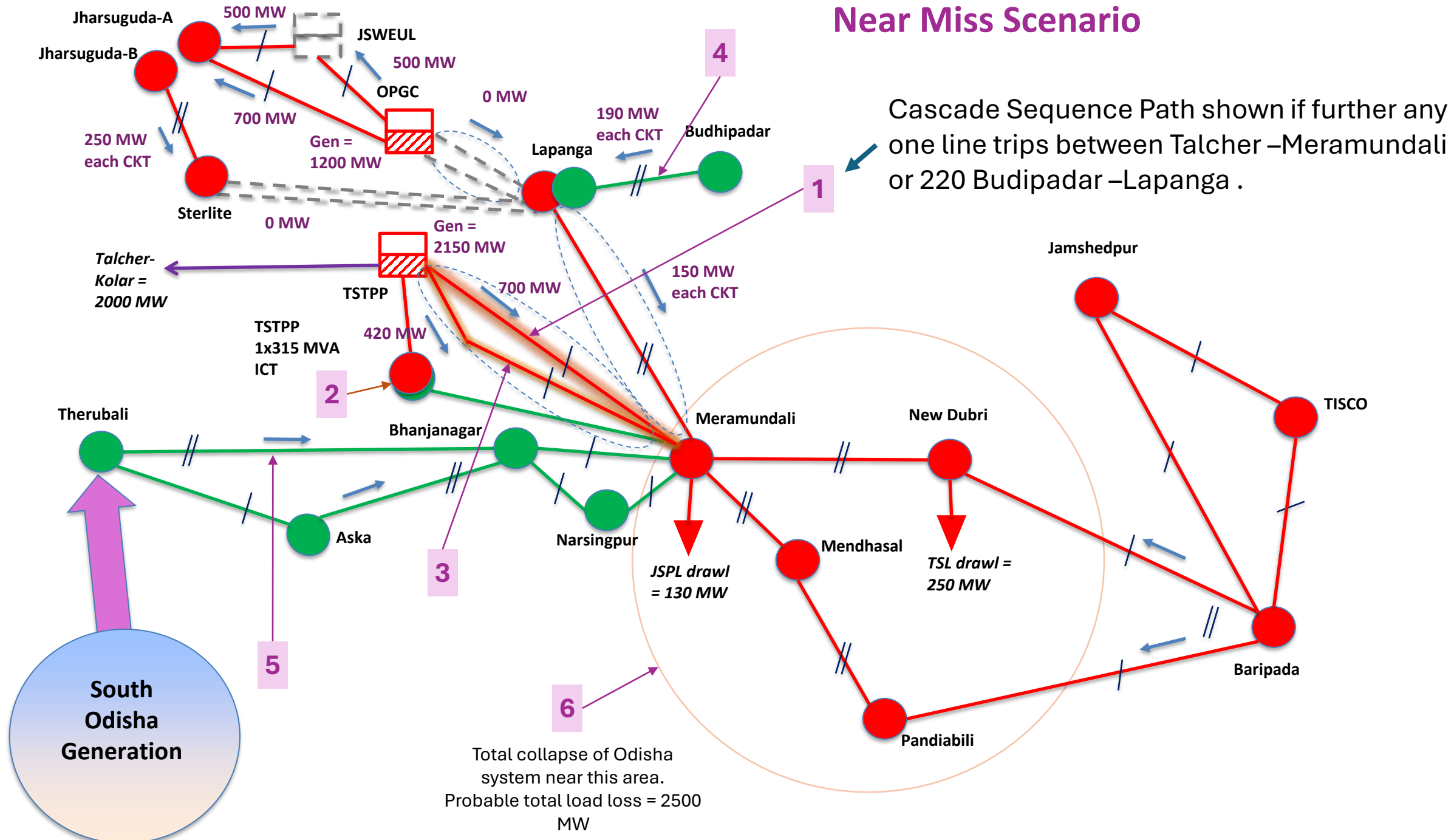
Both unit tripped



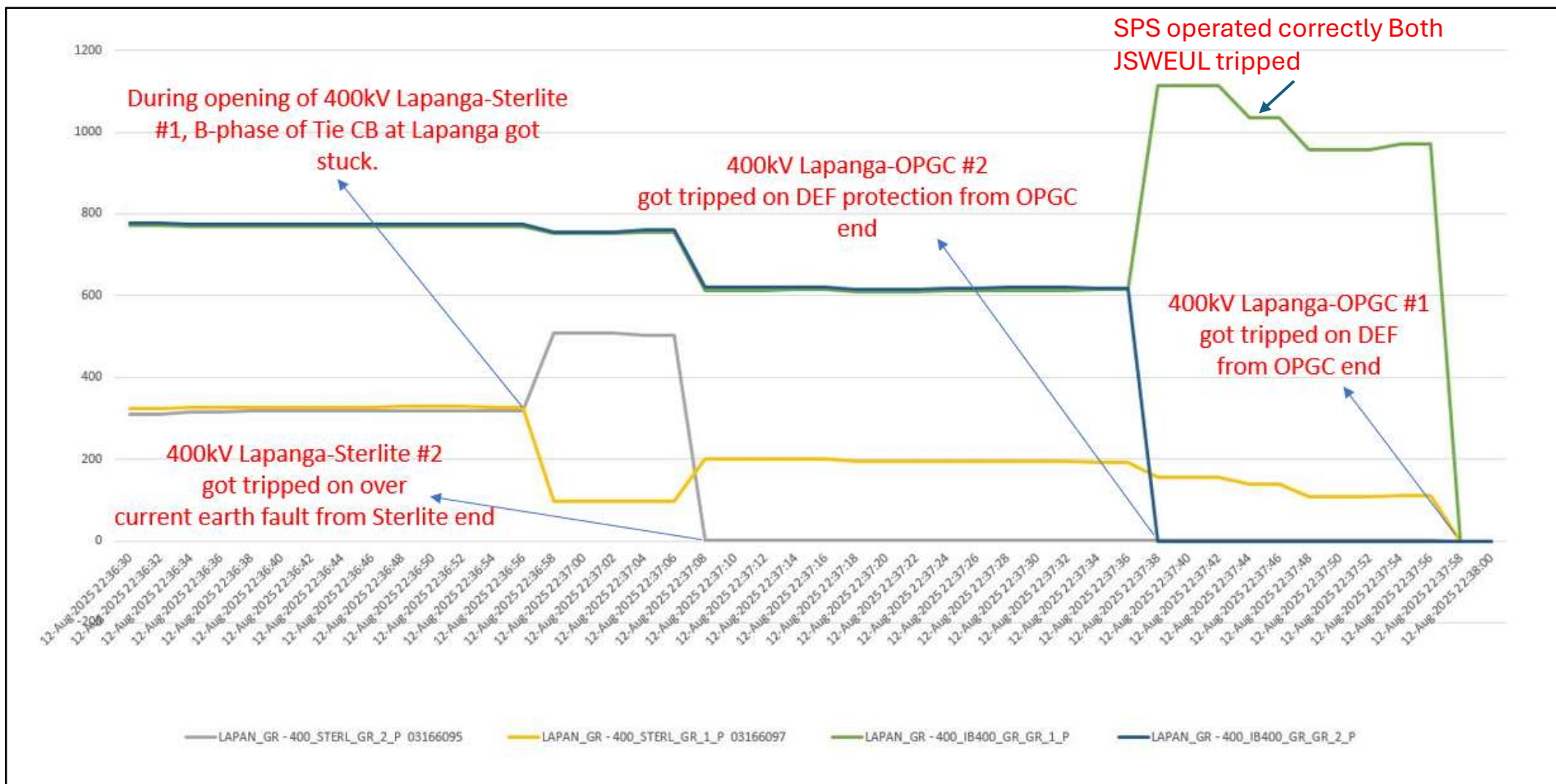




# Near Miss Scenario



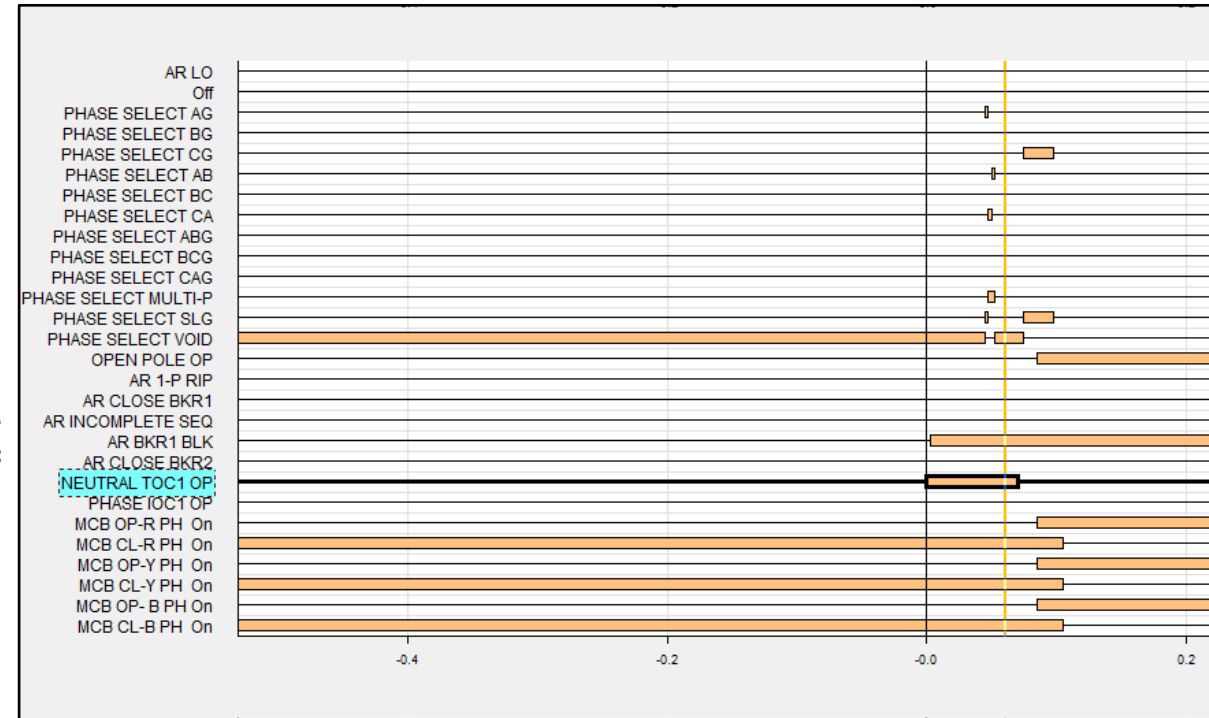
## Sequence of operation and Flows



## 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.

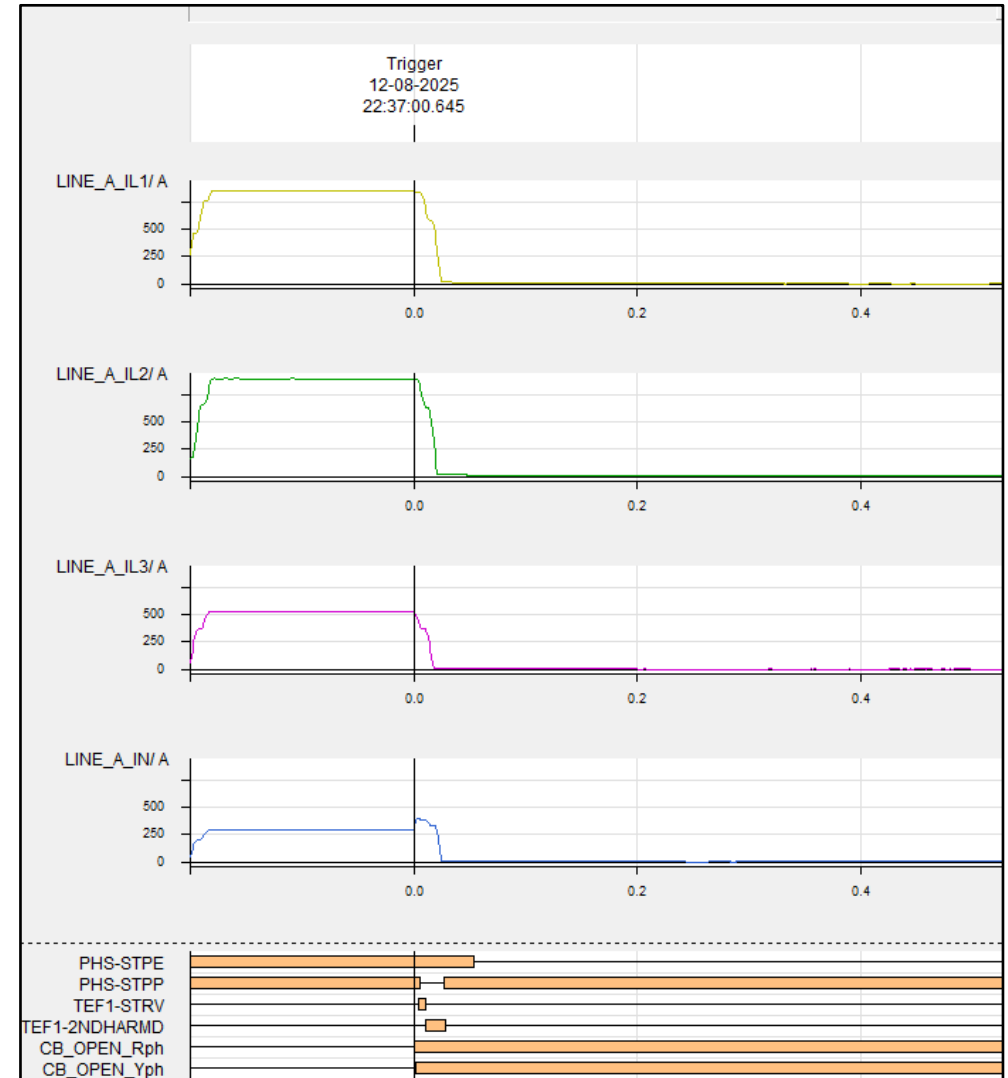


**DR of 400kV Lapanga-OPGC #1 at OPGC end 3**

## **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**



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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

## List of 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	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 UTILITY
1	400KV-ARAMBAGH-PPSP-1	01-08-2025	09:55	01-08-2025	19:53	-	PPSP- C Ph, Z1, 66.3 km, 4.09 KA	B-Earth	100 msec	As per PMU, three phase tripping for phase to ground fault.			NO	NO	WBSE TCL	WBSET CL
2	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.			NA	YES	PG ER-II	BHUTAN
3	220KV-JODA-RAMCHANDRAPUR-1	02-08-2025	11:54	02-08-2025	12:44	A/R successful	Ramchandrapur end: D/P, Z-1, 13.7 km,	Y-Earth	100 msec	A/r successful from Joda end and three phase tripping from Ramchandrapur end. JUSNL may explain.		DR length needs to increase to 3 sec.	YES	YES	OPTCL	JUSNL
4	400KV-BIHARSARIF(PG)-MUZAFFARPUR(PG)-2	03-08-2025	11:59	03-08-2025	20:45	Biharsariff : B_N, FC - 6.19 kA, FD 47.55 km	MZF(PG)-B-ph, FC:4.798 kA, FD:68.42 Km, Z-1	B-Earth	100 msec	A/r failed after 1 sec.			YES	YES	PG ER-I	PG ER-I
5	220KV-SITAMARHI-MOTIPUR-1	04-08-2025	07:12	06-08-2025	16:33	Motipur: FD: 39.93 KM, FC-IR-5.240 KA, IY-1.073 kA	SITHMARHI: R-N, Z1 , 0.3 KM , 18.2 KA	R-Earth	100 msec	A/r failed after 1 sec		DR length needs to increase to 3 sec.	YES	YES	PMTL	BSPTCL

6	400KV-BIHARSARIFF(PG)-BANKA(PG)-1	04-08-2025	14:25	06-08-2025	18:01	Biharsariff end : FD: 36.6KM, B_N, FC=8.5kA, Z-1,	Banka end: FD:168.6 Km, B_N, Z-1, FC=3.1kA	B-Earth	100 msec	Line tripped in reclaim time.			YES	YES	PG ER-I	PG ER-I
7	220KV-KATAPALLI-BOLANGIR(PG)-1	04-08-2025	16:21	04-08-2025	16:33	A/r successful	Trip from Bolangir end only; BN fault, Z-1, FC-2.83 kA, FD-27.1	B-Earth	100 msec	A/r successful from Katapalli end and three phase tripping from Bolangir end. PG Odisha may explain.			YES	NO	OPTCL	PG ODISHA
8	220KV-JODA-RAMCHANDRAPUR-1	05-08-2025	13:22	05-08-2025	13:57	-	Ramchandrapur - RN fault, FC-3.22kA, Distance 51.3km	R-Earth	100 msec	A/r successful from Joda end and three phase tripping from Ramchandrapur end. JUSNL may explain.	DR length needs to increase to 3 sec.		YES	YES	OPTCL	JUSNL
9	400KV-GORAKHPUR-MOTIHARI-1	05-08-2025	20:52	05-08-2025	22:18	Motihari : Y_N, FD - 7.9 km, FC - 10.38 kA	Gorakhpur : Y_N, FD-169.8 km, FC-3.205kA	Y-Earth	100 msec	A/r failed after 1 sec.			NO	YES	NRLDC	DMTCL
10	765KV-JHARSUGUDA-RAIPUR PS (DURG)-1	06-08-2025	07:18	06-08-2025	10:30	Jharsuguda End: Y_N, Z-1, FC=20.112kA, FD=20.06 KM	Y-Earth, Z-1	Y-Earth	100 msec	A/r failed after 1 sec.			YES	NO	PG ODISHA	WRLDC
11	400KV-LAPANGA-STERLITE-1	06-08-2025	11:21	06-08-2025	17:22	At Lapanga=Ir-19.15kA,Z1 and Dist-7.2km,	At Vedanta=Ir,Z1,Dist-7.7km	R-Earth	100 msec	A/r failed after 1 sec from Sterlite end and A/r not attempted from Lapanga end. OPTCL may explain.			YES	NO	OPTCL	OPTCL
12	400KV-GORAKHPUR-MOTIHARI-1	07-08-2025	04:58	07-08-2025	11:14	Motihari: Z-1, Y-N, fc-3.08kA, fd-155.9 km	Gorakhpur : Y-N, FD-16.4Km,FC-12.19	Y-Earth	100 msec	A/r failed after 1 sec.			YES	NO	NRLDC	DMTCL
13	220KV-TENUGHAT-BIHARSARIFF-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.			NO	NO	JUSNL	BSPTCL

14	400KV-GORAKHPUR-MOTIHARI-1	09-08-2025	01:12	09-08-2025	14:45	Motihari: YN fault, FC 9.52 kA, FD 8.1 km.	Y-Earth, Z-1	Y-Earth	100 msec	A/r failed after 1 sec.			NO	YES	NRLDC	DMTCL
15	220KV-BUDHIPADAR-KORBA-1	09-08-2025	12:46	09-08-2025	16:34	R/I at Budhipadar: Z2, B-N, FD 144.7 km, FC 1.04 kA	Korba : B_N, FD 3.03 km	B-Earth	400 msec	Line tripped in Z-2 protection from Budhipadar end. OPTCL may explain.			YES	NA	OPTCL	WRLDC
16	400KV-ALIPURDUAR (PG)-BINAGURI-3	09-08-2025	15:35	09-08-2025	18:37	R/I at Alipurduar : B_N, FD 87 km, FC 2.5 kA	Binaguri end: B_N, FD 50km, FC 4.3 kA;	B-Earth	100 msec	Line tripped in reclaim time.			YES	YES	PG ER-II	PG ER-II
17	400KV-BINAGURI-RANGPO-1	09-08-2025	16:04	09-08-2025	17:23	R/I at Binaguri: R_B, FD 95.19 km, FC Ir 4.365 kA Ib 4.365 kA	Rangpo : R-B, FD 12.31 km, FC - Ir 9.101 kA, Ib 9.274 kA	R-B	100 msec	Line tripped on phase to phase fault.			YES	YES	PG ER-II	PG ER-II
18	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.			YES	YES	PG ER-II	PG ER-II
19	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.			YES	NO	PG ER-II	DVC
20	400KV-GORAKHPUR-MOTIHARI-2	11-08-2025	05:27	11-08-2025	16:10	Motihari: R-N, FC : 9.1 KA, FD: 11.1 KM	R-Earth, Z-1	R-Earth	100 msec	A/r failed after 1 sec.			NO	YES	NRLDC	DMTCL
21	400KV-KHARAGPUR-CHAIBASA-2	12-08-2025	10:37	12-08-2025	16:35	Kharagpur: B_N, 33.7 km, 7.21 kA	Chaibasa: B_N, 148.6km, 2.3 KA	B-Earth	100 msec	A/r failed after 1 sec.			YES	YES	WBSE TCL	PG ER-I

22	220KV-TENUGHAT-BIHARSARIFF-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.			NO	NO	JUSNL	BSPTCL
23	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			YES	YES	PG ER-II	PG ER-I
24	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	B-Earth	100 msec	A/r failed after 1 sec	DR length needs to increase to 3 sec.		YES	YES	PMTL	BSPTCL
25	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.			YES	NO	PG ER-II	BANGLADESH
26	400KV-BINAGURI-BONGAIGAON-1	16-08-2025	11:37	16-08-2025	12:59	BONGAIGAON: : 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.			YES	NO	PG ER-II	NER
27	400KV-ALIPURDUAR (PG)-BINAGURI-3	16-08-2025	12:27	16-08-2025	16:22	ALIPURDUAR :B-N, 43.8KM, 4.7KA	BINAGURI : B-N, 75.13KM, 5.2KA	B-Earth	100 msec	Line tripped in reclaim time.			YES	YES	PG ER-II	PG ER-II
28	220KV-CHANDIL-RANCHI-1	16-08-2025	12:59	16-08-2025	18:15	Chandil end:- Zone 1 tripping, distance-51.9 km, Ia-0.04 kA, Ib-0.01 kA, Ic-2.14 kA.	Ranchi: B-G, 32.6 KM, 3.94 KA	B-Earth	100 msec	A/r failed after 1 sec			YES	YES	PG ER-I	JUSNL
29	220KV-BUDHIPADAR-KORBA-1	16-08-2025	20:13	16-08-2025	22:49	Budhipadar end: RN fault, FC- 2.93 kA, FD- 53km	Korba end: RN fault, FC -1.65 kA, FD- 105 km	R-Earth	350 msec	R pole tripped within 100 msec and after 350 msec remaining pole got tripped. OPTCL may explain.			YES	NO	OPTCL	WRLDC

30	765KV- JHARSUGUDA- RAIPUR PS (DURG)-1	17-08-2025	19:05	17-08-2025	23:42	Jharsuguda: Y-B , FD 203.1 km, Iy= Ib= 12.6KA	-	Y-B	100 msec	Line tripped on phase to phase fault.			YES	NO	PG ODISH A	WRLDC
31	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	B-Earth	100 msec	A/r failed after 1 sec.			YES	YES	PMTL	BSPTCL
32	220KV- DALTONGANJ- CHATRA-1	19-08-2025	08:14	19-08-2025	09:23	Daltonganj : Y_B, Fault Distance 132.327 km, Ib 1.57 kA, Iy 1.582 kA	Chatra : Y-B phase Zone-1 Ir=86.4A, Iy=1.15kA, Ib=1.07kA Fault Distance:-55.31km	Y-B	350 msec	Line tripped in Z-2 protection from Daltonganj due to carrier not received and in Z-1 protection from Chatra end. JUSNL			YES	YES	PG ER- I	JUSNL
33	400KV-PVUNL- PATRATU-2	19-08-2025	13:06			DEF operated at Patratu end	DT recived at PVUNL end	No Fault	NA	DEF operated at Patratu end. JUSNL may explain.			NO	YES	NTPC	JUSNL
34	400KV-PVUNL- PATRATU-1	19-08-2025	13:06	19-08-2025	21:32	DEF operated at Patratu end	DT recived at PVUNL end	No Fault	NA	DEF operated at Patratu end. JUSNL may explain.			NO	YES	NTPC	JUSNL
35	220KV- DARBHANGA(DMTC L)-LAUKAHI-2	21-08-2025	17:30	21-08-2025	18:24	Darbhang 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 Darbhang end and three phase tripping from Laukahi end. BSPTCL may explain.			NO	YES	DMTC L	BSPTCL
36	220KV-BUDHIPADAR KORBA-2	22-08-2025	09:30	22-08-2025	12:28	Budhipadar: Pole Discrepancy due to DC Leakage	-	No Fault	NA	Line tripped without any line fault due to PDR operated at Budhipadar end. OPTCL may explain.			YES	NO	OPTC L	WRLDC
37	220KV-BUDHIPADAR KORBA-2	22-08-2025	12:48	22-08-2025	14:50	Budhipadar: Pole Discrepancy due to DC Leakage	-	No Fault	NA	Line tripped without any line fault due to PDR operated at Budhipadar end. OPTCL may explain.			YES	NO	OPTC L	WRLDC

38	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.			NA	NO	PG ER-II	BHUTAN
39	400KV-JEERAT-BAKRESWAR-1	25-08-2025	12:59	25-08-2025	18:52	Jeerat: Z1, Y Ph, 29.59 KM, 2.39 KA	Bakreswar: Y Ph, 123 KM, 1.21 KA	Y-Earth	100 msec	A/r failed after 1 sec.			YES	NO	WBSE TCL	WBPDCL
40	400KV-LAPANGA-OPGC (IB THERMAL)-2	25-08-2025	14:05	25-08-2025	14:10	DT received at Lapanga end	-	No Fault	NA	DT received at Lapanga end. OPTCL may explain.			YES	NO	OPTCL	OPTCL
41	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.			YES	YES	PG ER-II	BHUTAN
42	220KV-BOLANGIR (PG)-KESINGA-1	26-08-2025	13:10	26-08-2025	14:15	R/I at Bolangir A/R successful	Kesinga : R_N, Fault distance - 58.7 Kms, F Current Ir - 1.6 kA	R-Earth	100 msec	A/r successful from Bolangir end and three phase tripping for phase to ground fault from OPTCL end. OPTCL may explain.			YES	NO	PG ODISHA	OPTCL
43	400KV-JEERAT-BAKRESWAR-1	26-08-2025	14:16	26-08-2025	14:32	Relay at Jeerat: Y-ph, Z1, Dist -27.5KM, If-10.67KA	Relay at BkTPP end: Y-ph Z1, Dist-124KM, If-3.01KA	Y-Earth	100 msec	A/r failed after 1 sec.			YES	NO	WBSE TCL	WBPDCL
44	400KV-LAPANGA-OPGC (IB THERMAL)-2	26-08-2025	16:26	26-08-2025	17:42	LAPANGA: r_b, 8 KM, 16kA	-	R-B	100 msec	Line tripped on phase to phase fault.			YES	NO	OPTCL	OPTCL
45	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.			YES	YES	PG ER-I	PMJTL

46	400KV-BINAGURI-TALA-1	27-08-2025	11:45	27-08-2025	13:12	Binaguri: R-B-N, 136.8 km, Ir:3.5 kA, Ib:2.8 kA;	Tala :R_N, 1.9 km, 9.74 kA	R-B-N	100 msec	Line tripped on phase to phase fault.			YES	YES	PG ER-II	BHUTAN
47	400KV-BINAGURI-TALA-2	27-08-2025	11:45	27-08-2025	12:44	Birpara: 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.			YES	YES	PG ER-II	BHUTAN
48	220KV-SAHARSA(PMTL)-KHAGARIA(NEW)-1	27-08-2025	18:09	28-08-2025	18:13	Khagaria: R ph, Zone-1, Distance - 57.06km, Ir-599.8A	Saharsha - R_N, fd - 11 km , FC - 9 KA	R-Earth	100 msec	A/r failed after 1 sec			YES	YES	PMTL	BSPTCL
49	400KV-TENUGHAT-PVUNL-1	27-08-2025	20:24	28-08-2025	00:34	Tripped due to O/C protection.(Load>196 MW)		No Fault	NA	Line tripped on O/C protection as per protection scheme.			YES	YES	JUSNL	PVUNL
50	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	-	Y-B	100 msec	Line tripped on phase to phase fault.			YES	YES	PMTL	BSPTCL
51	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;	Y-B	100 msec	Line tripped on phase to phase fault.			YES	YES	PG ER-I	BSPTCL
52	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.			YES	NO	DMTCL	BSPTCL
53	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.			YES	NO	JUSNL	BSPTCL

54	400KV-PPSP-BIDHANNAGAR-1	30-08-2025	12:09	30-08-2025	12:36	BIDHANNAGAR relay: Z1, RN fault, FD 41 km, fc 5.7 kA	PPSP: Z1, RN fault, FD 135 km,	R-Earth	100 msec	Three phase tripping for phase to ground fault. WBSETCL may explain.			NO	YES	WBSE DCL	WBSET CL
55	400KV-NEW DUBURI-MEERAMUNDALI-1	30-08-2025	18:33	30-08-2025	19:26	DT received at N Duburi end.	Tripped due to faulty multiplication relay.	No Fault	NA	Line tripped from Meramundali end due to faulty multiplication relay at Meramundali end and DT send to N Duburi end.			YES	YES	OPTCL	OPTCL
56	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.			YES	NO	JUSNL	BSPTCL
57	400KV-JHARSUGUDA-ROURKELA-3	31-08-2025	02:48	31-08-2025	03:20	R-Earth, Z-2, FC-Ir-4.17kA	R-Earth, Z-1, A/r successful from Raourkela end.	R-Earth	350 msec	A/r successful from Rourkela end and three phase tripping for phase to ground fault in Z-2 protection from Jharsuguda end due			YES	YES	PG ODISHA	PG ODISHA
58	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	B-Earth	100 msec	Line tripped on Y-phase ground fault and after 80 msec remaining phase tripped on B-Earth fault from both end.			NO	YES	PMTL	BSPTCL

## 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**

## 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							

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 (DB+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			

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 Buchz 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	

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 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'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.

# 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(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

ENICL, OGPTL, PKTCL

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 Purma-Bharshuf Line CKT-1 (NPRN-BSF# 1)								-	-	-	-	-	-NA	-NA	-NA	No events in the month of August 25
		400 kv (Quad) D/C Purma-Bharshuf 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 - 20.06 KA - 20.12 Y RA - 7.6 B RA - 5.3	KM - 144 KA - 2.3	1.00	1.00	-	-	-	-	-NA	1	1	Line tripped due to Y- phase to B-phase to Earth fault.
		400kV D/C LALO POINT (T. No. - 130) - Sundargarh							-	-	-	-	-	-NA	-NA	-NA	No events in the month of August 25	
		400kV D/C OPGC-LALO 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 KA - 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		

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.	
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.	
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.	
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.	
<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.	JUSNL representative informed that they are in process of hiring surveyor to check the clearance issue. It was informed that no tripping was observed in the line in recent times.
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.	BSPTCL representative informed time synchronization will be completed soon.

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.	PG representative informed that carrier has not been implemented for the line. PCC advised OPTCL representative to coordinate with PG representative in order to implement carrier and subsequently auto-recloser for in these lines.
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