

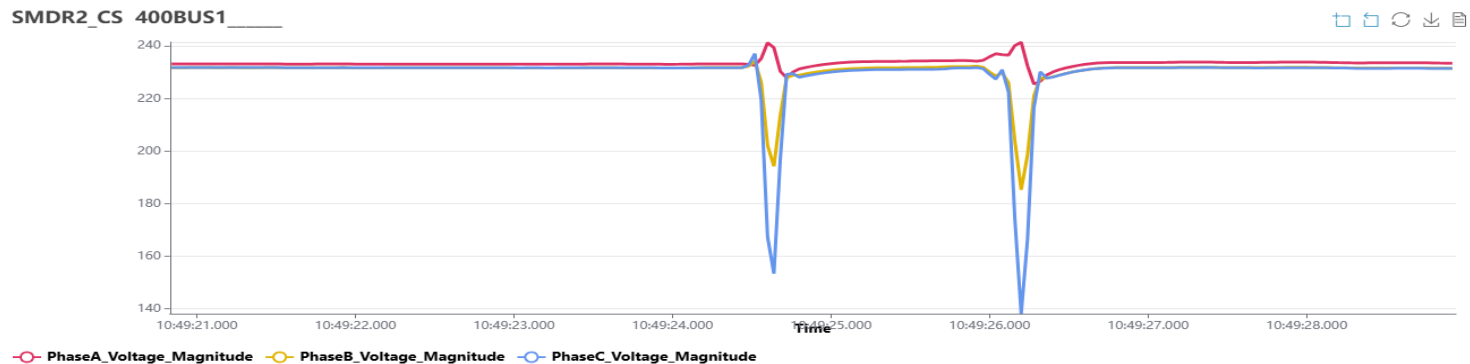
III. Single/Multiple Element Tripping with Protection Violation

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
1	400KV-GUDDIGUEDEM-HINDUJA-1	As per the reports submitted, the triggering incident was B-G fault in the line. At GUDDIGUEDEM end, the fault was sensed in carrier aided Z2 and B pole opened AR operated and was successful but due to the fault after around 300ms from AR operation led to tripping of the line with a delay of around 250ms only upon receiving carrier signal. At HINDUJA end, the fault was sensed in Z1 and B pole opened. At both ends, A/R operated the line tripped on persistent fault.	21-05-2026 10:49	APTRANSCO: 1. Non operation of SOTF/ToR where in the subsequent fault is within 300ms of AR operation but delayed fault clearance on Z2 needs review	

	GUDDIGUEDEM	HINDUJA
FIR	Single phase to ground fault on B phase operated	HNPCCL-Guddigudem Line-1 Tripped on B-Phase to ground fault. A/R operated but tripped on persistent fault.
DR	DR Trigger Time:21-05-2026 10:49:24.629 PHS-STFWL3, PHS-STFWPE PHS-STND ZONE2 START, ZONE4 START EF START CARR RCV CH1 CAR_RECEIVED, ZCOM CRL MAIN CB OP B M1 PROTN OPTD, NOT USED, ZCOM TRIP,	DR Trigger Time:21-05-2026 10:49:24.606 TUV1-START, TUV2-START, TUV1-TRIP TRIP, TRIP-B, ZM01-TRIP, ZM01-START, ZM02-START, ZM03-START, ZM04-START, PHS-STFWL3, PHS-STFWPE, CARR_SEND AR_LO, TR_B_MAIN_CB TUV1-START, TUV2-START, TUV1-TRIP PHS-STFWL3, PHS-STFWPE TRIP, TRIP-B, ZM01-TRIP, ZM01-START, ZM02-

	TIE CB 3P TR, MAIN_TRIP B, TIE_TRIP R, TIE_TRIP Y, TIE_TRIP B, AR-START FAULT LOOP B M_PREP 3PH TR FF_BLKU, LINEVT FUSEFL PHS-STFWL3, PHS-STFWPE PHS-STND ZONE2 START, ZONE4 START EF START CARR RCV CH1 CAR_RECEIVED, ZCOM CRL MAIN CB OP R, MAIN CB OP B MAIN CB OP Y M1 PROTN OPTD, NOT USED, ZCOM TRIP, MAIN CB 3P TR, TIE CB 3P TR, MAIN_TRIP R, MAIN_TRIP Y, MAIN_TRIP B, TIE_TRIP R, TIE_TRIP Y, TIE_TRIP B, AR-START FAULT LOOP B	START, ZM03-START, ZM04-START, CARR_SEND AR_LO, TR_B_MAIN_CB TOV1_START ZM01-TRIP, ZM01-START, ZM02-START, ZM03- START, ZM04-START, PHS-STFWL3, PHS- STFWPE AR_LO AR BLK UV
EL	Same as DR	Same as DR
TR	Same as FIR	Same as FIR

PMU Analysis:



- From the PMU plot, B-G fault can be observed during the event without any delayed fault clearance

Deliberations:

1. APTRANSCO stated that, as per the reports submitted, the initiating event was a B-phase-to-ground fault on the 400 kV Guddigudem–Hinduja-I transmission line. At the Guddigudem end, the fault was detected in carrier-aided Zone-2 protection.
2. APTRANSCO further informed that, for the said fault, the B-phase carrier inter-tripping protection at the Guddigudem end operated on receipt of Zone-2 and carrier signals, resulting in the tripping of the B-phase circuit breaker. After a dead time of 1.0 second, the B-phase circuit breaker was successfully auto-reclosed.
3. APTRANSCO further informed that, after 273 ms from the successful auto-reclosure, the B-phase fault reappeared, leading to the operation of Zone-2 protection. Subsequently, after 208 ms from the recurrence of the fault, a carrier signal was received at the Guddigudem end from the Hinduja end. APTRANSCO stated that, since Hinduja is a generating station, a dead time of 1.5 seconds is adopted at the HNPCL end. Auto-reclosure onto the persistent fault after the expiry of the dead time resulted in the operation of Zone-1 protection at the Hinduja end and transmission of the carrier signal to the Guddigudem end. Consequently, the three-phase carrier inter-tripping protection operated on receipt of Zone-2 and carrier signals, resulting in the tripping of all three phases.
4. APTRANSCO further informed that the ToR function is expected to remain active for 500 ms after successful auto-reclosure operation. However, in the present case, the ToR function did not operate as expected. APTRANSCO informed that the issue would be verified during the next line shutdown.

Recommendations:

- ✚ **APTRANSCO to verify ToR operation at 400kV Guddigudem**

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
2	Multiple trippings at Jindal TPS	As per the reports submitted, the triggering incident is the Zone-1 R-G fault on the 400 kV BPS–Pavagada line. The fault was successfully cleared through auto-reclosure (AR). Simultaneously, the 400 kV Jindal–BPS-3 and 400 kV Jindal–BPS-4 lines tripped at the Jindal (JSW) end, while the corresponding breakers at the BPS end remained closed. During the disturbance, a Zone-3 start was detected in the Main-1 and Main-2 relays however, no master trip was initiated. The tripping of the 400 kV Jindal–BPS-3 and 400 kV Jindal–BPS-4 lines at the Jindal end is suspected to have occurred due to Ground Potential Rise (GPR) associated with the fault on the 400 kV BPS–Pavagada line.	23-05-2026 22:37	<u>JSW THERMAL</u> : Tripping of 400KV-JINDAL-BPS-3 & 4 on GPR issue	<u>JSW THERMAL</u> : Remote end breaker is in close condition, BPS L3 CB closed after checking at JSW end at 23.18

400KV-JINDAL-BPS-3

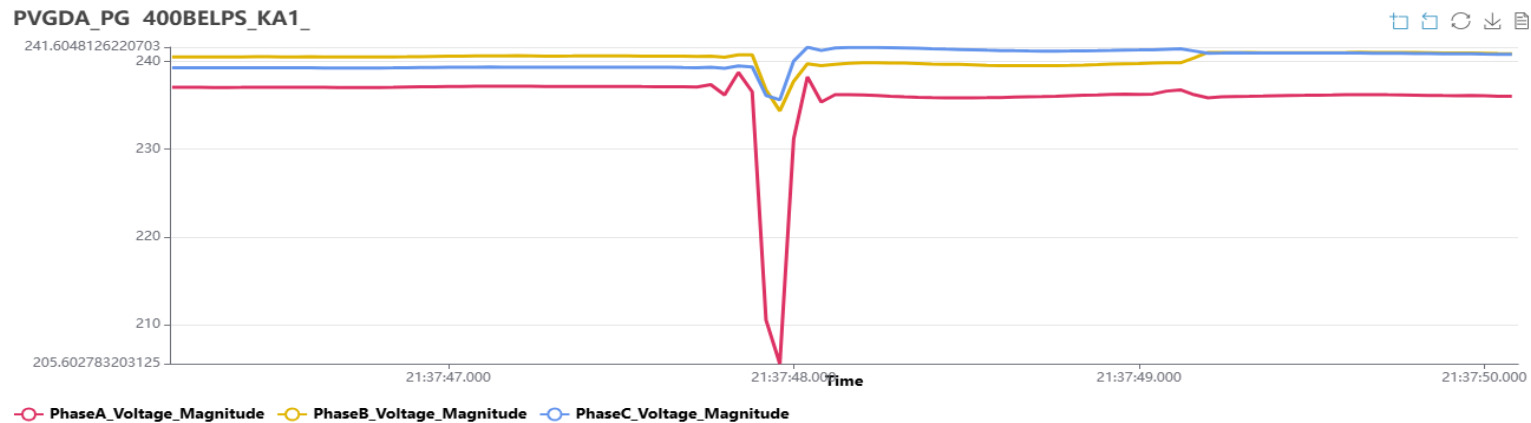
	JINDAL	BPS
FIR	A Z1 R-G fault was sensed on the BPS–Pavagada line. BPS to Pavagada line was AR successful Simultaneously, the JSW–BPS line tripped at the JSW end, whereas the BPS end breaker remained closed. During the event, a Z3 start was detected	NA

	in the M1 & M2 relay, but no master trip was initiated. The primary suspicion is that the trip at the JSW end occurred due to a rise in GP	
DR	DR Trigger Time:23-05-2026 21:37:47.911 CB R OPN, CB B OPN, CB Y OPN Z3_ST CB R OPN, CB Y OPN, CB B OPN OC_ST CB R OPN, CB Y OPN, CB B OPN, CB B OPN	NA
EL	NA	NA
TR	Same as FIR	NA

400KV-JINDAL-BPS-4

	JINDAL	BPS
FIR	A Z1 R-G fault was sensed on the BPS–Pavagada line. BPS to Pavagada line was AR successful Simultaneously, the JSW–BPS line tripped at the JSW end, whereas the BPS end breaker remained closed. During the event, a Z3 start was detected in the M1 & M2 relay, but no master trip was initiated. The primary suspicion is that the trip at the JSW end occurred due to a rise in GP	NA
DR	DR Trigger Time:23-05-2026 21:37:47.915 Any Start DIST Fwd, Z3	NA
EL	NA	NA
TR	Same as FIR	NA

PMU Analysis:



- From PMU, R-G fault is observed during the event.

Deliberations:

1. JSW stated that, as per the reports submitted, the initiating event was a Zone-1 R-phase-to-ground fault on the 400 kV BPS–Pavagada line. The fault was successfully cleared through auto-reclosure (AR). Simultaneously, the 400 kV Jindal–BPS-3 and 400 kV Jindal–BPS-4 lines tripped at the Jindal (JSW) end, whereas the corresponding breakers at the BPS end remained closed. During the disturbance, Zone-3 start indications were observed in both Main-1 and Main-2 relays; however, no master trip was initiated. JSW further informed that the tripping of the 400 kV Jindal–BPS-3 and 400 kV Jindal–BPS-4 lines at the Jindal end is suspected to have occurred due to Ground Potential Rise (GPR) associated with the fault on the 400 kV BPS–Pavagada line.
2. SRPC stated that the Ground Potential Rise (GPR) issue at the 400 kV Jindal Thermal Power Station switchyard is a recurring issue. In this regard, while analyzing tripping incidents during the 142nd monthly meeting of the Protection Coordination Sub-Committee (PCSC), the committee had opined to constitute an expert committee to visit the substation/switchyard, study the issue in detail and recommend suitable remedial measures.

3. Committee was constituted to analyse the GPR-related tripping incidents at the JSWEL switchyard. The committee carried out a site visit on 12.06.2026 and 13.06.2026 and subsequently submitted its observations and recommendations regarding the GPR issue.
4. SRPC noted that the present event had occurred prior to the visit of the expert committee and that another similar incident had also occurred on 14.06.2026, before the recommendations of the committee could be implemented.
5. SRPC advised JSW Thermal to implement all the recommendations of the expert committee pertaining to the GPR issue and to submit the compliance report to SRPC at the earliest

Recommendations:

- ✚ SRPC advised JSW Thermal to comply with all the recommendations of the expert committee pertaining to the Ground Potential Rise (GPR) issue, which were made during the site visit conducted on 12.06.2026 and 13.06.2026, and to submit the compliance report to SRPC at the earliest.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
3	Multiple Trippings at 400kV Gajwel SS	As per reports submitted, the triggering incident is the R-G fault on the 400 kV Gajwel–Narsapur-2 line, which resulted in Zone-1 protection operation and tripping of the line from both ends. Auto Reclosure (AR) was initiated at the Gajwel end, however, a Y-G fault occurred during the AR dead time, causing the line to trip again and remain out of service. Due to the common DIA configuration of the 400 kV Narsapur-2 and Chandulapur-1 feeders at Gajwel Substation, the 400 kV Gajwel–Chandulapur-1 line also operated on SOTF indication and tripped at the Gajwel end,	26-05-2026 21:40	<u>TGTRANSCO:</u> 400 kV Gajwel–Chandulapur-1 tripped at the Gajwel end on SOTF indication needs review for fault in 400KV-GAJWEL-NARSAPUR-2	<u>TGTRANSCO:</u> 1. Tie breaker SOTF logic will be checked while availing LC.

		while remaining in service at the Chandulapur end.			
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400KV-GAJWEL-CHANDALAPUR-1

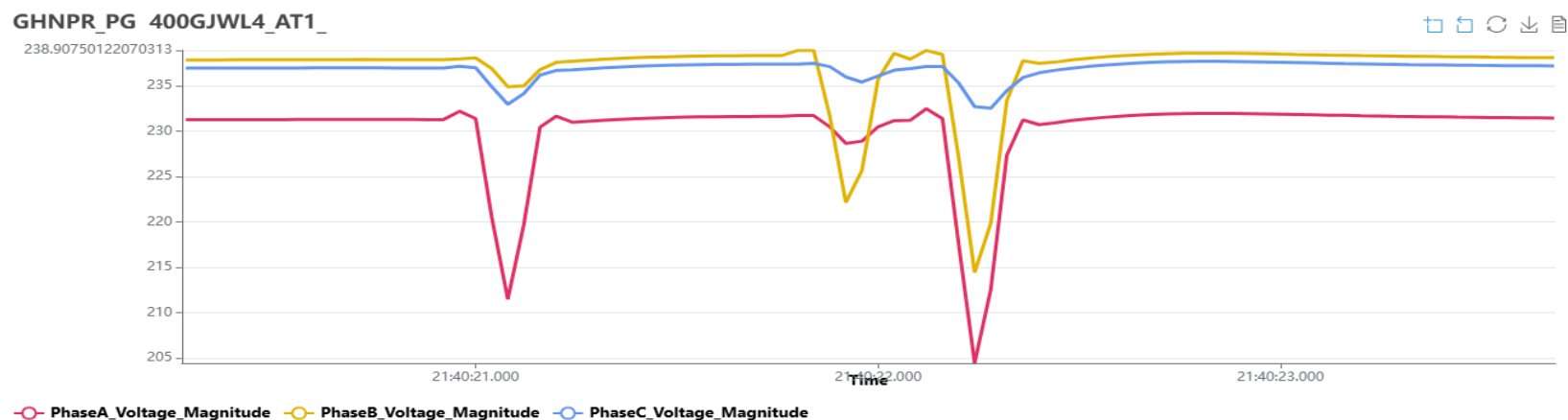
	GAJWEL	CHANDALAPUR
FIR	400kV Gajwel - Chandulapur Line -1 tripped on SOTF indications at Gajwel end only for single line to ground fault on 400kV Gajwel-Narsapur line-2 400kV Chandulapur -1 and 400kV Narsapur-2 feeders are on same DIA Tie breaker SOTF logic will be checked while availing LC.	Line is in service at Chandulapur end
DR	DR Trigger Time:26-05-2026 21:40:21.070 O/V START O/V START CB_CLS_TIE O/V START TIE 86A OPTD TIE 86B OPTD MAIN 86A OPTD CB_CLS_TIE MAIN 86B OPTD 86B RLY SUP	NA
EL	Same as DR	NA
TR	Same as FIR	Same as FIR

400KV-GAJWEL-NARSAPUR-2

	GAJWEL	NARSAPUR
FIR	Tripped on R-Phase to Ground, Zone-1 indications at Gajwel end. A/R operated and tripped again due to Y-phase to ground fault within AR dead time.	Tripped on R-Phase to Ground, Zone-1 indications at Gajwel end. Non operation of AR will be checked
DR	DR Trigger Time:26-05-2026 21:40:21.056 Any Start T1 Any Trip, Z1, DIST Sig. Send, Any Trip A L9-CB R OPEN L12-TI CB R OPEN L10-CB Y OPEN L11-CB B OPEN L13-TI CB Y OPEN, L14-TI CB B OPEN Any Start	DR Trigger Time:26-05-2026 21:40:21.065 PHS-STFWL1, PHS-STFWPE ZM02-START, ZM03-START, ZM04-START TRIP, TRIP-R, ZM01-TRIP, ZM01-START, CARR_SEND CARRIER_REC ZM04-START, PHS-STFWL2, PHS-STFWPE ZM02-START, ZM03-START TRIP, TRIP-R, TRIP-Y, TRIP-B, ZM01-TRIP, ZM01-START, CARR_SEND CB_CLS_TIE TRIP, TRIP-R, TRIP-Y, TRIP-B, SOTF-TRIP O/V START TIE 86A OPTD MAIN 86A OPTD MAIN 86B OPTD TIE 86B OPTD 86B RLY SUP PHS-STFWL1, PHS-STFWL2, PHS-STFWPE ZM01-TRIP, ZM01-START, ZM02-START, ZM03-START, ZM04-START, CARR_SEND CB_CLS_TIE
EL	CARR_SEND On	Same as DR

	TRIP On TRIP R-Y-B On ZM01-TRIP On PHS-STFWL2 On PHS-STFWL1 On	
TR	Same as FIR	Same as FIR

PMU Analysis:



- From PMU data, an R-G fault was initially observed with delayed fault clearance. Subsequently, a Y-G fault was recorded during A/R dead time

Deliberations:

1. TGTRANSCO informed that, for an R-phase-to-ground fault on the 400 kV Gajwel–Narsapur-2 feeder, auto-reclosure (A/R) operated successfully. However, within the A/R dead time, a subsequent Y-phase-to-ground fault occurred at the 400 kV Gajwel substation, resulting in tripping of the feeder.
2. TGTRANSCO further informed that, during the fault on the 400 kV Gajwel–Narsapur-2 feeder, the 400 kV Chandulapur–Gajwel-1 feeder, which is connected in the same Dia, also tripped on Switch-on-to-Fault (SOTF) indications at the 400 kV Gajwel substation.

3. TGTRANSCO informed that, as a remedial measure, the I>3 function on the 400 kV Chandulapur–Gajwel-1 feeder at the 400 kV Gajwel end has been disabled.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
4	Multiple trippings at 400kV Thenampatty SS of TANTRANSCO	As per the reports submitted, the triggering incident is a Y-G fault in the 400 kV Ottapidaram – Thennampatti-2 line. At Thenampatty end, the fault did not clear immediately and the fault was being fed through remote lines where 400 kV Kayathar – Thennampatti-1 tripped at Kayathar end and 400 kV Kayathar – Kanarpatti-1, and 400 kV Kayathar – Kanarpatti-2 lines tripped at Kanarpatti end on zone-3 protection. At the same time, SEPC GT-1 tripped on Earth Fault Protection at SEPC generating station.	28-05-2026 15:40	TANTRANSCO: Distance protection co-ordination to be checked at Thenampatty SS and in connected lines.	TANTRANSCO: 1. The reason for conversion of 1 Pole Trip to 3 Pole Trip by Main-2 Relay (MICOM P446) will be analyzed in the next Shutdown.

400KV-KAMUDHI-OTTAPIDARAM-1

	KAMUDHI	OTTAPIDARAM
FIR	Three Phase Trip	In the 400kV Ottapidaram SS, 400kV Ottapidaram - Kamuthi - 1 feeder was tripped at 16.33 Hrs on 28.05.2026. The Kamuthi-1 feeder tripped on 'R' Phase Earth Fault for a passing fault and AR Success at Ottapidaram end AR Lockout at Kamuthi end. Feeder tied at 17.18 hrs and found normal.
DR	DR Trigger Time:28-05-2026 16:33:01.894 PU_ZIIG PU_ZIIG	DR Trigger Time:28-05-2026 16:33:01.890 ANY START, Any Trip, CB1 Trip Output A, CB2 Trip Output A, ZONE1 START, Zone 1 Trip, ZONE-

	TRIP, TRIP1, TRIP2, PU_ZIG, TRIP_Z1G, TX_D RPHASE TRIP, NEUTRAL TRIP, DA1 LBB R TCB IN_RECEIPT_D, TRIP_SCHM_D BLK_CMD1 RCLS_LO1 DC1 TIE 3PH T DIA1 MCB R OP, DIA2 MCB Y OP, DIA3 MCB B OP, DIA4 TCB R OP, DIA5 TCB Y OP, DIA6 TCB B OP DR Trigger Time:28-05-2026 16:33:01.891 RL32-ANY START Any Trip, CB1 Trip Output A, CB1 Trip Output B, CB1 Trip Output C, Zone 1 Trip Aid 1 Dist. Trip DI10-AR BLOCK DI03-MCB B OPEN DI01-MCB R OPEN, DI02-MCB Y OPEN DI04-TCB R OPEN, DI05-TCB Y OPEN, DI06-TCB B OPEN DI14-21 3 PH OPD	2/3/4 START, Aided 1 Send AR Start, ARIP, AR Blocked DI08 CR REC CH1 Aid 1 Dist. Trip DI11 21M1X R OP DI01 MCB R OPEN DI07 CR REC CH2 DI04 TCB R OPEN CB1 Fail1 Trip Auto Close CB1
EL	-	CB1 Succ 1P AR ON Virtual Output30 ON Virtual Output32 ON 1P Reclaim Time ON Control CloseCB1 ON Auto Close CB1 ON AR Force CB1 3P ON Pole Dead A ON

		AR Blocked ON AR Start ON
TR	Same as FIR	Same as FIR

400KV/21KV SEPC-GT-1

	SEPC
FIR	During Occurrence of Earth Fault alarm in both Lines, Generator Transformer Earth Fault protection operated. Consequently, GT tripped and the generating unit got tripped.
DR	DR Trigger Time:28-05-2026 15:40:51.213 Any Start R1-86A TRIP, R2-86B TRIP, R3-GEN TRIP, R4-67/67N OP DR, IN1>2 Trip L2-86A OPTD
EL	Same as DR
TR	Same as FIR

400KV-OTTAPIDARAM-THENNAMPATTY-2

	OTTAPIDARAM	THENNAMPATTY
FIR	At 15.40 Hrs. on 28.05.2026, the 400kV Ottapidaram - Thenampatty - 2 feeder was tripped on 'Y' Phase to Ground fault and after 30msec the M2 Relay has issued 3 Pole Trip. Hence AR Lockout at Ottapidaram SS and Breakdown declared.	In 400kV Thenampatty SS, during a transient line fault in 400kV Ottapidaram-2 # on 28.05.2026 at 15.40 Hrs, Auto Reclose operated & Lockout initiated at Thenampatty end.
DR	DR Trigger Time:28-05-2026 15:40:51.703 UN_PU PU_ZIIG PU_ZIIG TRIP, TRIP1, TRIP2, PU_ZIG, TRIP_Z1G, TX_D GEN Yph TRIP, DA2 LBB Y TCB	DR Trigger Time:28-05-2026 15:40:51.729 SRC1 50DD OP GND DIST Z1 OP, CAR SEND CH1 On, CAR SEND CH2 On, Y PH TRIP On OSC TRIGGER On, TRIP 1-POLE, TRIP PHASE B MCB Y PH OPN On, TIE CB Y OPN On, MCB CLOSED On, TIE CB CLOSE On

	BLK_CMD1, DIA2 MCB Y OP DA1 LBB R TCB, DA3 LBB B TCB DIA5 TCB Y OP DIA1 MCB R OP, DIA3 MCB B OP GEN Bph TRIP GEN Rph TRIP, GEN Yph TRIP, 3PH_F DIA4 TCB R OP, DIA6 TCB B OP DR Trigger Time:28-05-2026 15:40:51.703 ANY START, ZONE-2/3/4 START Any Trip, CB1 Trip Output B, CB2 Trip Output B, ZONE1 START, Zone 1 Trip, Aided 1 Send AR Start, ARIP, AR Blocked CB1 Trip Output A, CB1 Trip Output C, CB1 Trip 3ph, CB2 Trip Output A, CB2 Trip Output C, CB2 Trip 3ph DI12 21M1X Y OP CB1 AR Lockout DI02 MCB Y OPEN DI05 TCB Y OPEN DI11 21M1X R OP, DI01 MCB R OPEN DI03 MCB B OPEN DI13 21M1X B OP DI04 TCB R OPEN	TIE CB R OPN On, TIE CB B OPN On SRC1 50DD OP SRC1 50DD OP SRC1 50DD OP MCB CLOSED On MTR 86A OPTD On, MTR 86B OPTD On MCB R PH OPN On, MCB Y PH OPN On, MCB B PH OPN On SRC1 50DD OP DR Trigger Time:28-05-2026 15:40:51.694 Any Start IN>1 Timer Block Any Trip, DIST Trip B, Z1 CB R PH OPEN_ 01 TIE_CB R OPN_14, TIE_CB Y OPN_15, TIE_CB B OPN_16 Any Pole Dead Any Start Any Pole Dead Any Start IN>1 Timer Block Z1 Any Trip, DIST Trip A, DIST Trip B, DIST Trip C CB Y PH OPEN_ 02, CB B PH OPEN_ 03 CB R PH OPEN_ 01, V>1 Start Any Pole Dead
EL	TOR Active ON All Poles Dead ON Pole Dead C ON TOC Active ON	CAR IN CH2 On (RI1) POWER SWING INNER POWER SWING MIDDLE POWER SWING OUTER

	CB1 Open 3 ph ON AR Force CB1 3P ON CB1 NoAR ON CB1 AR Lockout ON Trip 3ph ON Pole Dead A ON ARIP ON	MCB R-Y-B PH OPN On MTR 86B OPTD On MTR 86A OPTD On OPEN POLE OP A BREAKER 1 TRIP B BREAKER 2 TRIP B
TR	Same as FIR	Same as FIR

400KV-KAYATHAR-KANARPATTI-2

	KAYATHAR	KANARPATTI
FIR	Holding at Kayathar end	In 400kV Kanarpatti SS, 400 kV Kayathar-2 # tripped on 28.05.2026 at 15.40 hrs. The feeder got tripped at Kanarpatti SS end only. The feeder tripped with Zone-3 indication in Y Phase, during a Line-Ground (Y-Ph) fault in 400kV Thenampatty - Ottapidaram-2 # line.
DR	DR Trigger Time:28-05-2026 15:40:51.695 FD. Pkp DR Trigger Time:28-05-2026 15:40:51.697 Any Start, T1	DR Trigger Time:28-05-2026 15:40:52.508 OSG TRG On, GND DIST Z3 OP, FINAL 3PH OP On, AR BLOCK On SRC1 50DD OP DR Trigger Time:28-05-2026 15:40:51.705 Any Start, IN>1 Timer Block DIST Fwd, IN>1 Start Z3 Any Trip, DIST Trip A, DIST Trip B, DIST Trip C Any Pole Dead All Pole Dead
EL	Same as DR	TIE CB CLS R-Y-B On CB CLOSE-R-Y-B On SOTF ENABLED On

		OSG TRG On BREAKER 1 OPEN BREAKER 2 OPEN OSCILLOGRAPHY TRIG'D FAULT RPT TR On AR BLOCK On TRIP LED On FINAL 3PH OP On CB HLTY On
TR	Same as FIR	Same as FIR

400KV-KAYATHAR-THENNAMPATTY-1

	KAYATHAR	THENNAMPATTY
FIR	400kV Kayathar - Thenampatty -1 tripped with Y, G, Zone 3 on 28.05.2026 at 15.40 Hrs. 400kV Kayathar - Thenampatty -1 Main & Tie Breaker tripped only at Kayathar end. At Thenampatty end Holding. Feeder tied in Kayathar end at 28.05.2026/16.27 Hrs.	Holding at Thenampatty end.
DR	DR Trigger Time:28-05-2026 15:40:51.694 FD. Pkp TRIP_Y, ZONE_3_TRIP, CB1.Trp, Y_PHASE, Y_PHASE TRIP_R, TRIP_B MAIN_CB_R_PH_OPEN, TIE_CB_Y_PH_OPEN MAIN_CB_Y_PH_OPEN, MAIN_CB_B_PH_OPEN, TIE_CB_R_PH_OPEN	DR Trigger Time:28-05-2026 15:40:51.697 Any Start

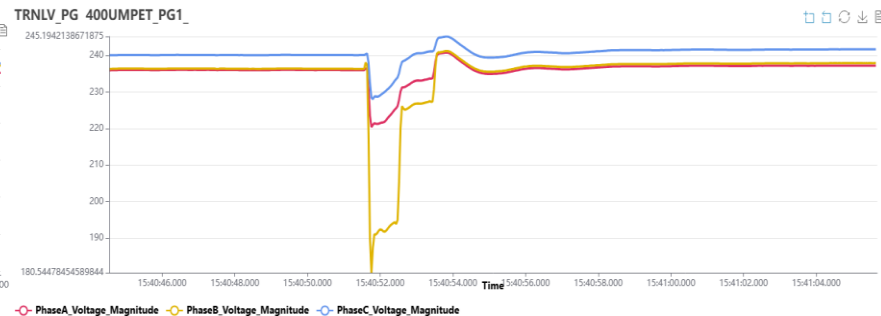
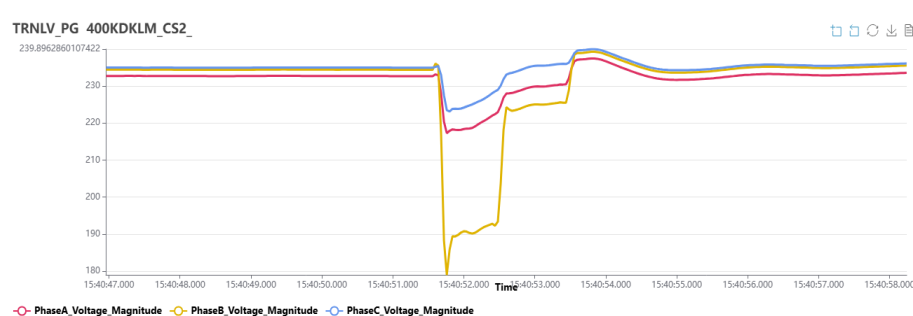
	TIE_CB_B_PH_OPEN CB1.25. Ok_fDiffChk DR Trigger Time:28-05-2026 15:40:51.695 Any Start, IN>1 Start Dist. Start N DIST Fwd Z3 Any Trip, DIST Trip A, DIST Trip B, DIST Trip C, 3 PH TRP GRP A, Trip M CB R TC-1, Trip M CB Y TC-1, Trip M CB B TC-1, Trp Tie CB R TC1, Trp Tie CB Y TC1, Trp Tie CB B TC1, M CB Ph R LBB&AR, M CB Ph Y LBB&AR, M CB Ph B LBB&AR, Trip M CB R TC-2, Trip M CB Y TC-2, Trip M CB B TC-2 M CB R PH OPEN, M CB Y PH OPEN, TIE CB R PH OPEN, TIE CB Y PH OPEN M CB B PH OPEN, TIE CB B PH OPEN Any Pole Dead Dist. Start N	
EL	Same as DR	Same as DR
TR	Same as FIR	Same as FIR

400KV-KAYATHAR-KANARPATTI-1

	KAYATHAR	KANARPATTI
FIR	Holding at Kayathar end	In 400kV Kanarpatti SS, 400kV Kayathar - 1 feeder tripped on 28.05.2026 at 15.40 hrs. The feeder got tripped at Kanarpatti SS end only. The feeder tripped with zone-3 indication in 'Y' Phase, during a Line-

		Ground (Y - Ph) fault in 400kV Thennampatty-Ottapidaram-2 feeder line.
DR	DR Trigger Time:28-05-2026 15:40:51.695 FD. Pkp DR Trigger Time:28-05-2026 15:40:51.697 Any Start, T1	DR Trigger Time:28-05-2026 15:40:52.508 OSG TRG On, GND DIST Z3 OP, FINAL 3PH OP On, AR BLOCK On SRC1 50DD OP DR Trigger Time:28-05-2026 15:40:51.705 Any Start, IN>1 Timer Block DIST Fwd, IN>1 Start Z3 Any Trip, DIST Trip A, DIST Trip B, DIST Trip C Any Pole Dead All Pole Dead
EL	Same as DR	TIE CB CLS R-Y-B On CB CLOSE-R-Y-B On SOTF ENABLED On OSG TRG On BREAKER 1 OPEN BREAKER 2 OPEN OSCILLOGRAPHY TRIG'D FAULT RPT TR On AR BLOCK On TRIP LED On FINAL 3PH OP On CB HLTY On
TR	Same as FIR	Same as FIR

PMU Analysis:

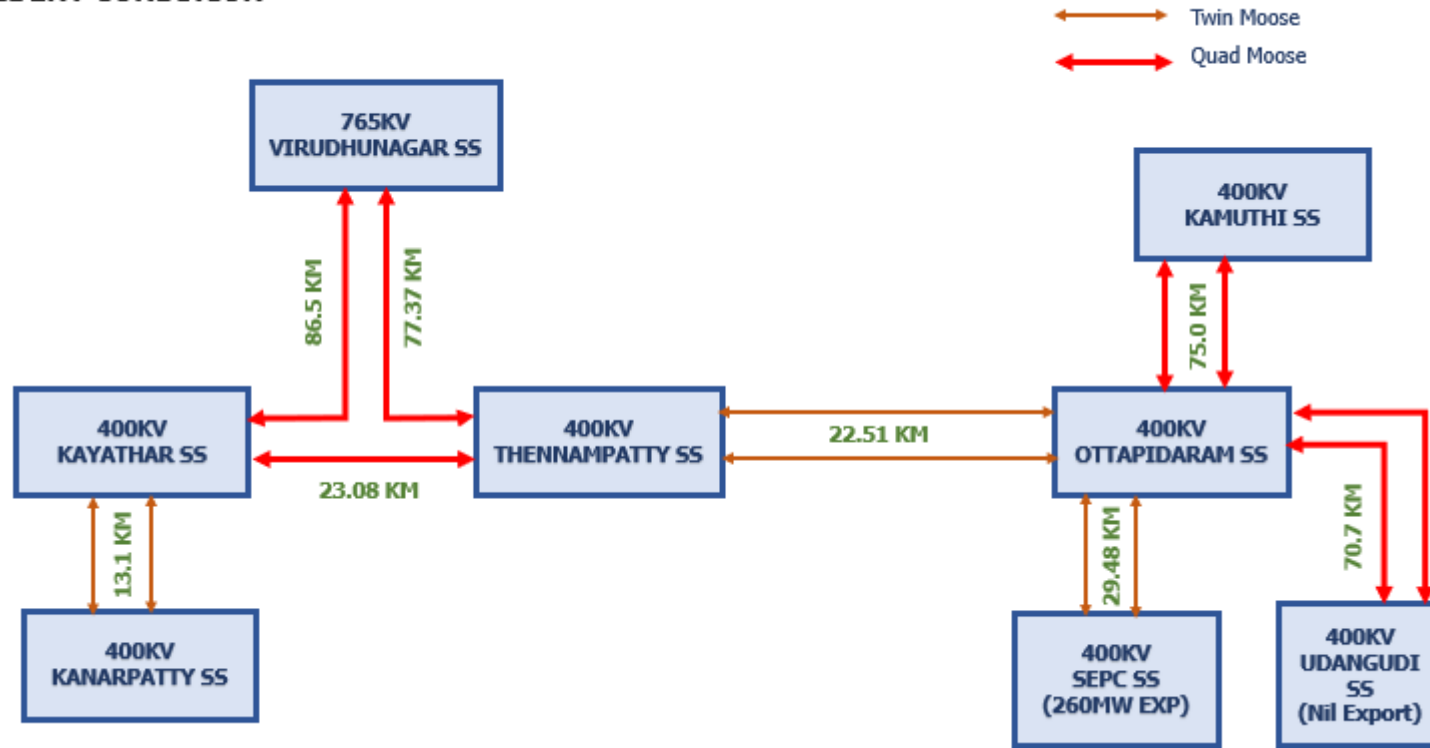


➤ From the PMU plot, Y-G fault can be observed with delayed fault clearance

Deliberations:

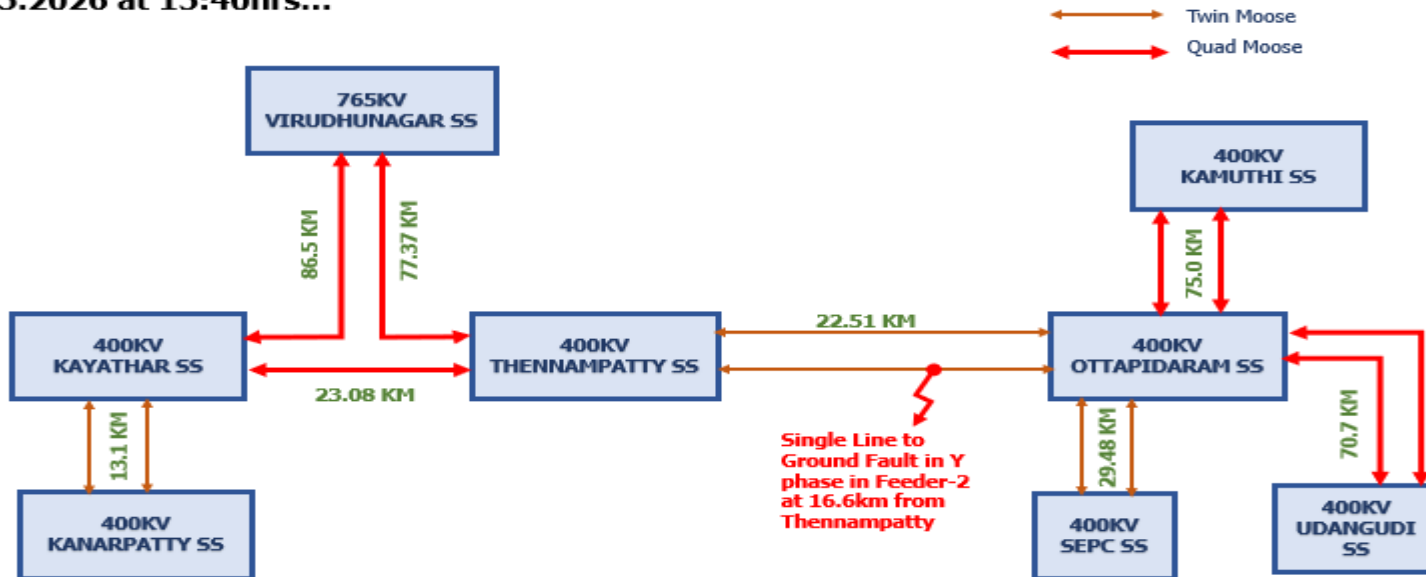
1. TANTRANSCO stated that as per the reports submitted, the triggering incident is a Y-G fault in the 400 kV Ottapidaram – Thennampatti-2 line. At Thenampatty end, the fault did not clear immediately and the fault was being fed through remote lines where 400 kV Kayathar – Thennampatti-1 tripped at Kayathar end and 400 kV Kayathar – Kanarpatti-1, and 400 kV Kayathar – Kanarpatti-2 lines tripped at Kanarpatti end on zone-3 protection. At the same time, SEPC GT-1 tripped on Earth Fault Protection at SEPC generating station.
2. TANTRANSCO presented the Prefault system connectivity as follows.

ANTECEDENT CONDITION

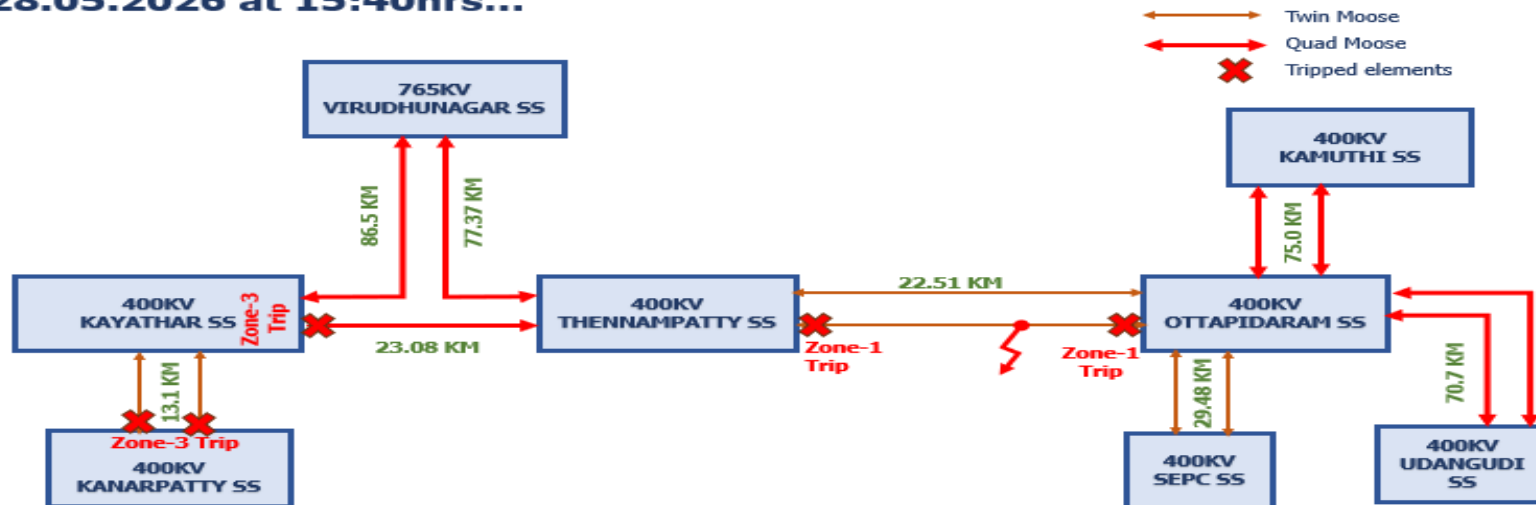


3. TANTRANSCO presented the connectivity during the fault as follows.

On 28.05.2026 at 15:40hrs...



On 28.05.2026 at 15:40hrs...



4. TANTRANSCO informed that Single Line to Ground fault in Y phase (Location – 16km from Thenampatty) on 28.05.2026 at 15.40 hrs.
5. At 400KV Thenampatty end:
 - TANTRANSCO informed that, on analysis of the disturbance recorder (DR), both Main-1 and Main-2 relays detected the fault within Zone-1 in the Y-phase and issued a single-pole trip command to the Y-phase breaker.
 - TANTRANSCO further informed that the DR recorded a fault current of 8.1 kA in the Y-phase along with a significant dip in the Y-phase-to-neutral voltage to 75 kV (33%). However, despite the Y-phase trip command being issued by the relays, the R-phase breaker pole was found to have opened, as indicated by the reduction of the R-phase-to-neutral voltage to zero, while the fault current in the Y-phase continued to persist.
 - TANTRANSCO further informed that, due to the inadvertent opening of the R-phase pole, the R-phase-to-neutral voltage collapsed to zero. Since there was no source contribution from the remote end, the measured R-phase voltage remained zero while the fault current in the Y-phase continued to persist.
 - TANTRANSCO further informed that, due to the voltage dip in both the R and Y phases, the polarization voltage required for impedance computation and phase selection was unavailable. Consequently, the Zone-1 trip elements in both Main-1 and Main-2 relays dropped out immediately, within 100 ms of the fault, following the opening of the R-phase breaker.
 - TANTRANSCO stated that, after completion of the auto-reclosure (AR) dead time, the relays-initiated AR closing and the R-phase breaker pole was successfully reclosed.
 - TANTRANSCO further informed that, as no protection elements remained active after the inadvertent opening of the R-phase pole, the Y-phase breaker-failure initiation signal to the LBB relay also dropped. Accordingly, the breaker failure protection did not operate. TANTRANSCO also informed that the directional earth-fault protection did not operate, as it was blocked by the pole-open logic in the Main-2 relay and, in the Main-1 relay, due to the non-availability of polarization voltage.
 - TANTRANSCO stated that, after the R-phase voltage was restored, the fault current in the Y-phase continued to persist. Since the fault was detected by the relay within the reclaim time, a three-phase trip was initiated by the Main-2 relay (Micom P444), resulting in the tripping of the feeder breaker.

- TANTRANSCO further informed that the fault current persisted beyond the Zone-3 time setting of 800 ms, due to which the corresponding protection elements at the 400 kV Kayathar and 400 kV Kanarpatty substations operated under Zone-3 protection.

6. 400KV OTTAPIDARAM end:

- TANTRANSCO informed that, on analysing the disturbance recorder (DR), both Main-1 and Main-2 relays detected the fault within Zone-1 in the Y-phase; however, instead of issuing a single-pole trip command, the relays issued a three-phase trip command to the breaker.
- TANTRANSCO further informed that the reason for the non-operation of single-pole tripping and auto-reclosure is yet to be ascertained and would be verified during the next line clearance of the feeder.
- TANTRANSCO stated that, although the fault location was within the Zone-3 reach of the 400 kV Ottapidaram–Thennampatty Line-1, Zone-3 protection did not operate at the Ottapidaram end, possibly due to weak source conditions, as only the 400 kV Kamuthi substation was available as the source. TANTRANSCO further informed that there was no generation from Udangudi and that the generating transformer at the SEPC end had tripped.
- TANTRANSCO further informed that directional earth fault (DEF) initiation was observed in the generating transformer at the SEPC and subsequently reset, and the reason for the same would be analysed.
- TANTRANSCO stated that the Zone-3 reach setting at the Ottapidaram end would be verified for the 400 kV Ottapidaram–Thennampatty Line-1 feeder.

7. 400KV KAYATHAR end:

- TANTRANSCO informed that the 400 kV Kayathar–Thennampatty line tripped under Y-phase Zone-3 protection, resulting in three-pole tripping of the breaker.
- TANTRANSCO further informed that the Zone-2 setting at the Kayathar end had been configured to cover up to 50% of the shortest line connected to Thennampatty, which are 400 kV Ottapidaram-1 and Ottapidaram-2 lines (Quad Moose conductor, 22.51 km). Since the fault location was beyond this reach, Zone-2 protection did not operate.
- TANTRANSCO stated that the Zone-3 setting at the Kayathar end had been configured to cover up to 110% of the longest line

connected to Thenampatty, which is 400 kV Virudhunagar line (Quad Moose conductor, 77.37 km). Accordingly, the fault location was within the Zone-3 reach setting.

- TANTRANSCO further informed that, since the Y-phase fault current persisted beyond the Zone-3 operating time and the fault location was within the Zone-3 reach setting, the operation of Zone-3 protection at the 400 kV Kayathar substation was in order.

8. 400KV KANARPATTY end:

- TANTRANSCO informed that the 400 kV Kanarpatty–Kayathar Line-1 and Line-2 tripped under Y-phase Zone-3 protection, resulting in three-pole tripping of the breakers.
- TANTRANSCO further informed that the Zone-3 setting at the Kanarpatty end had been configured based on 110% of the longest line connected to the Kayathar substation, which are 400 kV Karaikudi-1 and Karaikudi-2 lines (Quad Moose conductor, 191 km). Accordingly, the fault location on the Thennampatty–Ottapidaram line fell within the Zone-3 reach setting.
- TANTRANSCO stated that, since the Y-phase fault current persisted beyond the Zone-3 operating time and the fault location was within the Zone-3 reach setting, the operation of Zone-3 protection in both the Kayathar feeders at the 400 kV Kanarpatty substation was in order.

9. 400KV KAMUTHI end:

- As 400kV Kamuthi SS is the remote & weak source for feeding this fault there was no Zone start in 400kV Ottapidaram 1 & 2 feeders at Kamuthi end.

10. 765 KV VIRUDHUNAGAR end:

- TANTRANSCO informed that, since the 400 kV Kayathar substation was the only source feeding the fault and was directly connected to the fault location through the shortest feeder, namely the 400 kV Kayathar–Thennampatty line, no Zone start was observed in the 400 kV Thennampatty feeder at the 765 kV Virudhunagar substation end.

11. Remedial action taken by TANTRANSCO at 400kV Thenampatty SS

- At THENNAMPATTY SS, the breaker & relays in 400kV Ottapidaram-2 were tested on 29.05.2026.
- It was observed that in the 400kV Breaker Marshalling box, the R & Y phase cables (both tripping & status wires) were

interchanged due to ferruling mix up.

- The wiring was set right, the breaker single pole trip from both Main-1 & Main-2 relays were checked and operation of the correct breaker pole for each trip was ensured.
- The operation of Auto-reclosure & LBB functions was also tested and found to be in order.

12. SRPC advised TANTRANSCO to submit the detailed analysis report on the non-operation of single-pole tripping and auto-reclosure in the 400 kV Ottapidaram–Thennampatty Line-1 feeder.
13. SRPC advised TANTRANSCO to verify and confirm the correctness of all control, tripping and status wiring connections in the breaker marshalling boxes of similar bays to avoid recurrence of such incidents.
14. SRPC advised TANTRANSCO to analyse the non-operation of Zone-3 protection at the Ottapidaram end and to review and validate the Zone-3 reach settings of the 400 kV Ottapidaram–Thennampatty Line-1 feeder.
15. SRPC advised TANTRANSCO to investigate the operation and subsequent reset of the directional earth fault (DEF) element at the SEPC generating transformer and submit the analysis report.
16. SRPC further advised TANTRANSCO to carry out a comprehensive review of the protection coordination, breaker wiring schemes, auto-reclosure logic and breaker failure protection associated with the affected feeders and submit the compliance report to SRPC.

Recommendations:

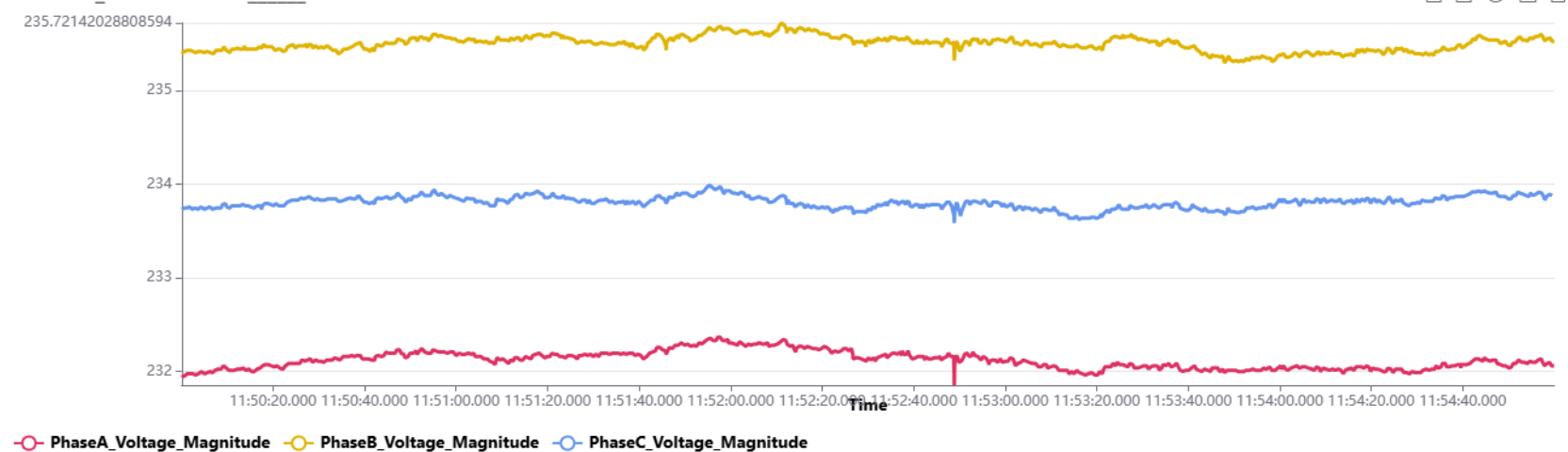
- ✚ TANTRANSCO to submit the detailed analysis report on the non-operation of single-pole tripping, Main-2 relay tripping initiation instead of Main-1 relay and auto-reclosure in the 400 kV Ottapidaram–Thennampatty Line-1 feeder at 400KV Ottapidaram.
- ✚ TANTRANSCO to verify and confirm the correctness of all control, tripping and status wiring connections in the breaker marshalling boxes of similar bays at 400kV Thennampatty SS to avoid recurrence of such incidents.
- ✚ TANTRANSCO to analyze the non-operation of Zone-3 protection at the Ottapidaram end. To review and validate the Zone-3 reach settings of the 400 kV Ottapidaram–Thennampatty Line-1 feeder.
- ✚ TANTRANSCO to investigate the operation and subsequent reset of the directional earth fault (DEF) element at the SEPC generating transformer and submit the analysis report.
- ✚ TANTRANSCO to carry out a comprehensive review of the protection coordination, breaker wiring schemes, auto-reclosure logic and breaker failure protection associated with the affected feeders and submit the compliance report to SRPC.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
5	400KV-GAJWEL-CHANDALAPUR-2	As per the reports submitted, the triggering incident was a relay maloperation at the Chandulapur end without any indications. The relay operated spuriously only during loading on DC Battery Source-1. Upon inspection, it was observed that 47 cells in Battery Set-1 had become open-circuited. The issue was subsequently rectified, and the battery feeder was charged and restored to service. At GAJWEL end, Line is in service	29-05-2026 11:26	TGTRANSCO: Spurious tripping of the line due to issue in DC supply.	

	GAJWEL	CHANDALAPUR
FIR	Line is in service at Gajwel end	400kV Chandulapur –Gajwel Line -2 tripped without indications spuriously at Chandulapur end only during DC battery source-1 loading. Observed 47 number cell got opened in battery set-1, which is rectified and charged the feeder.
DR	NA	DR Trigger Time:29-05-2026 11:52:26.704 M CB Rph Open, M CB Yph Open, M CB Bph Open T CB Rph Open, T CB Yph Open T CB Bph Open
EL	NA	Same as DR
TR	Same as FIR	Same as FIR

PMU Analysis:

GHNPR_PG 400BUS2 _____



➤ From the PMU plot, No fault was observed

Deliberations:

1. TGTRANSCO stated that the 400 kV Chandulapur–Gajwel Line-2 tripped spuriously at the Chandulapur end without any protection indications during the pilot cell measurement of DC Battery Source-1.
2. TGTRANSCO further informed that 47 cells in Battery Set-1 were found to be open-circuited.
3. TGTRANSCO informed that the defective cells were rectified and the feeder was subsequently charged.
4. As a remedial measure, TGTRANSCO observed an issue with the off-time delay contactor of 63GLX1, which is connected in parallel with the 63GLX2 contactor, in the CGL make circuit breakers.
5. TGTRANSCO further informed that the time delay setting of the contactor had been increased to the maximum value from the earlier setting of 1 second.

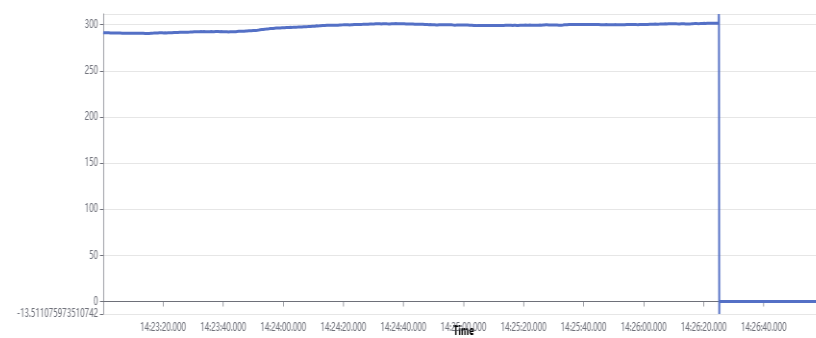
6. SRPC enquired about the disturbance recorder (DR) time synchronization issue at the 400 kV Chandulapur substation. In response, TGTRANSCO informed that there was no issue with the GPS time synchronization system at the Chandulapur substation.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
6	400KV-KOPPAL-KUDGI_PG-2	As per reports submitted, Line got tripped due to human error at Kudgi end and 3ph tripping was observed during Bus-II SD Work by M/s WRSR (ADANI). At Koppal end, DT was received which was sent by Kudgi end and 3ph tripped	29-05-2026 14:25	PGCIL SR-2: Sending DT to Koppal end needs review.	

	KOPPAL	KUDGI_PG
FIR	DT received from Kudgi end	DT sent during Bus-II SD Work by M/s WRSR (ADANI)
DR	DR Trigger Time:29-05-2026 14:26:25.230 L8 DT REC CH1, R7 GRP-A TRIP, R8 GRP-B TRIP, L23 T GRP-A OPTD 3PH_GR_B_OPTD, L5 T CB Y OPN, L1 M CB R OPN, L2 M CB Y OPN, L3 M CB B OPN, L4 T CB R OPN, L6 T CB B OPN	DR is not uploaded
EL	Same as DR	NA
TR	NA	Same as FIR

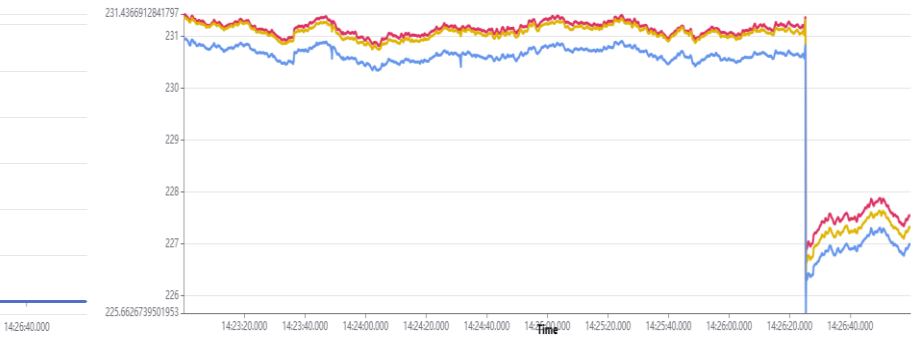
PMU Analysis:

KOPPL_PG 400KDG14_PG2_



MW Line

KOPPL_PG 400KDG14_PG1_



PhaseA_Voltage_Magnitude PhaseB_Voltage_Magnitude PhaseC_Voltage_Magnitude

KOPPL_PG 400KDG14_PG2_



PhaseA_Voltage_Magnitude PhaseB_Voltage_Magnitude PhaseC_Voltage_Magnitude

➤ From the PMU plot, tripping of the line can be observed

Deliberations:

1. PGCIL SR-II informed that, on 29.05.2026 at 14:25 hrs, the 400 kV Kudgi–Koppal Line-2 tripped during busbar relay testing works being carried out by M/s Adani.
2. PGCIL SR-II further informed that the complete diameter comprising bays 422, 423 and 424 belongs to M/s Indigrd.

3. PGCIL SR-II stated that, at the Kudgi GIS substation, commissioning works associated with the 765 kV substation and connected 400 kV bays are presently being carried out by M/s Adani. As part of the planned activities, augmentation works of the 400 kV busbar are under execution by M/s Adani, for which the 400 kV GIS Bus-2 along with bays 420, 421, 423 and 424 had been kept under shutdown since 27.05.2026. PGCIL SR-I further informed that the said works are being supervised by M/s Indigrid.
4. PGCIL SR-II informed that, during busbar relay testing in the 423 tie bay LBB relay by the testing agency deputed by M/s Adani, a direct transfer trip (DT) signal was inadvertently transmitted to the remote end of Bay 422, resulting in the tripping of the 400 kV Kudgi–Koppal Line-2 from the remote end.
5. PGCIL SR-II stated that the standard operating procedure (SOP) for busbar relay testing had already been shared with M/s Adani and the testing agency. However, due to improper feedback to the testing kit during busbar relay testing by the agency deployed by M/s Adani, the LBB protection operated, leading to the tripping incident.
6. SRPC noted that a similar incident had also occurred during the 143rd PCSC meeting. SRPC observed that, the present incident occurred due to improper execution of the testing procedure despite the standard operating procedure (SOP) for busbar relay testing having already been shared to the M/s Adani and the testing agency. SRPC further observed that, if M/s Adani and the testing agency had strictly adhered to the prescribed SOP during the testing activities, the incident could have been avoided.
7. SRPC advised M/s Adani and the testing agency to strictly adhere to the prescribed Standard Operating Procedure (SOP) during busbar relay testing and other protection testing activities to avoid recurrence of such incidents. Furthermore, M/s Adani and the testing agency were advised to ensure proper verification of the testing setup and feedback connections before commencing the tests.
8. SRPC advised NTPC Kudgi to upload the DR as per the IEGC section 37.2 (c) and CEA grid Standard 15.3-time line.

Recommendations:

4. M/s Adani and the testing agency to strictly adhere to the prescribed Standard Operating Procedure (SOP) during busbar relay testing and other protection testing activities to avoid recurrence of such incidents. M/s Indigrid is advised to supervise the works.

⚡ NTPC Kudgi to upload the DR as per the IEGC section 37.2 (c) and CEA grid Standard 15.3-time line.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
7	Multiple trippings at Nagarjunasagar	As per reports submitted, the triggering incident is the maloperation of the 400 kV Busbar Protection Relay at Nagarjunasagar (PG) Substation during relay testing on 400 kV Bus-1, which was under shutdown for AMP works. Due to the relay maloperation, Direct Trip DT signals were issued, resulting in the tripping of the 400 kV Nagarjunasagar (PG)–Khammam (PG)-1, Nagarjunasagar (PG)–Mehboobnagar-1, and Nagarjunasagar (PG)–Ramagundam-2 transmission lines.	29-05-2026 17:14	PGCIL SR-1: 1. BBP mal operated under shutdown for AMP work needs check.	

400KV-NAGARJUNASAGAR_PG-MEHBOOBNAGAR-1

	NAGARJUNASAGAR_PG	MEHBOOBNAGAR
FIR	400KV BUS_1 shutdown availed at N'Sagar SS for AMP works. While testing Bus bar relay, relay mal operated and tripped the line.	Tripped on Direct Trip received indications at Veltore end. `
DR	DR Trigger Time:29-05-2026 17:14:53.411 OSC TRIGGER On, BB_OPD On T CB_RO On, T CB_YO On, T CB_BO On VT_FF_M2 On	DR Trigger Time:29-05-2026 17:14:53.489 DT RECV CH-1 DT RECV CH-2 GR-A OPERATED GR-B OPTD TIE_PREP_3ph MAIN_PREP_3ph TOV1_START

EL	86B TRIP RLY OPT BB1 PROTN. OPTD. DT SEND CH ½ PSWNG BLK DTECT M1/2 DT SEND CH ½ TIE R-Y-B PHASE OPEN	Same as DR
TR	Same as FIR	Same as FIR

400KV-NAGARJUNASAGAR_PG-RAMAGUNDAM-2

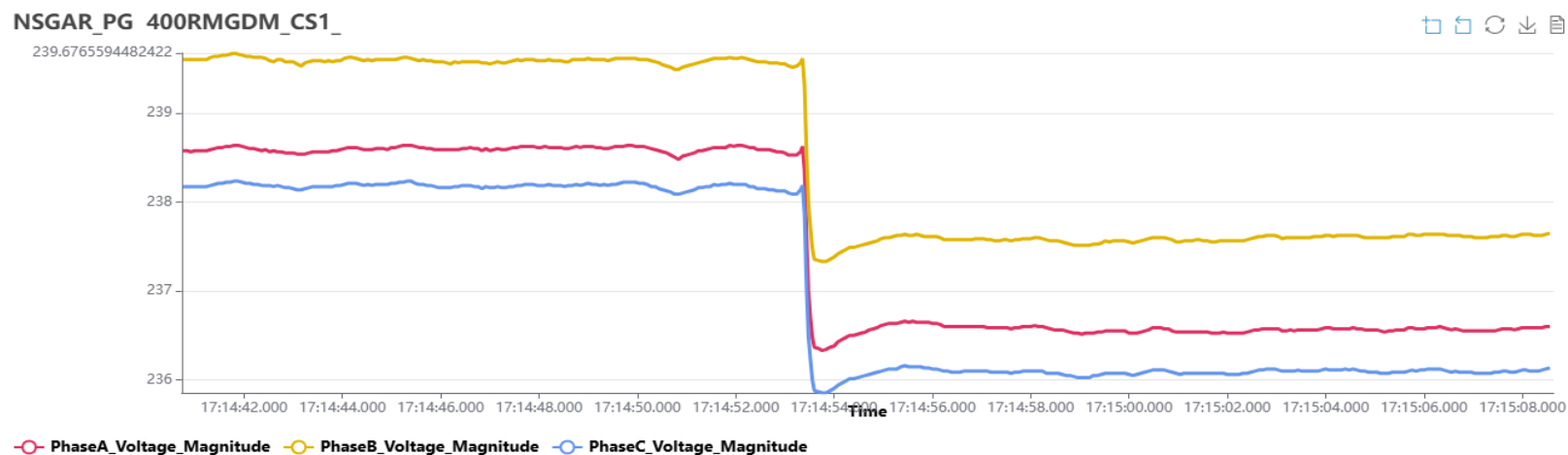
	NAGARJUNASAGAR_PG	RAMAGUNDAM
FIR	400KV BUS_1 shutdown availed at N'Sagar SS for AMP works. While testing Bus bar relay, relay maloperated and tripped the line.	DT RECD from remote end and line tripped.
DR	DR Trigger Time:29-05-2026 17:14:53.411 BUSBAR_OPTD 3PH_GR_B_OPTD TIE_CB_B_OPEN TIE_CB_R_OPEN TIE_CB_Y_OPEN	DR Trigger Time:29-05-2026 17:14:53.478 85LO_OPTD 85LO_OPTD M_CB_OPN_R M_CB_OPN_B M_CB_OPN_Y PHS-STPE FF_BLKU, FF_BLKZ OV_START, OV_STG1_START PHS-STPP FF_BLKU, FF_BLKZ PHS-STPP FF_BLKU, FF_BLKZ PHS-STPP FF_BLKU
EL	86B TRIP RLY OPT BB1 PROTN. OPTD.	Same as DR

	DT SEND CH ½ PSWNG BLK DTECT M1/2 DT SEND CH ½ TIE R-Y-B PHASE OPEN	
TR	Same as FIR	Same as FIR

400KV-KHAMMAM_PG-NAGARJUNASAGAR_PG-1

	KHAMMAM_PG	NAGARJUNASAGAR_PG
FIR	400KBV Busbar relay Maloperated at N'Sagar SS and DT received at Khamma SS	400KV BUS_1 shutdown availed at N'Sagar SS for AMP works. While testing Bus bar relay, relay maloperated and tripped the line.
DR	DR Trigger Time:29-05-2026 17:14:53.532 MAIN_CB_R_OPEN, O/V_STG1_ST MAIN_CB_Y_OPEN, MAIN_CB_B_OPEN, TIE_CB_R_OPEN, TIE_CB_B_OPEN TIE_CB_Y_OPEN	DR Trigger Time:29-05-2026 17:14:53.444 TIE_CB_R_OPEN, TIE_CB_B_OPEN TIE_CB_Y_OPEN O/V_STG1_ST All Pole Dead
EL	DT RCVD CH ½ 86A TRIP RLY OPT 86B TRIP RLY OPT	86B TRIP RLY OPT BB1 PROTN. OPTD. DT SEND CH ½ PSWNG BLK DTECT M1/2 DT SEND CH ½ TIE R-Y-B PHASE OPEN
TR	Same as FIR	Same as FIR

PMU Analysis:



➤ From PMU data 400KV-NAGARJUNASAGAR_PG-RAMAGUNDAM-1 incident is observed at 17:14:53 hr on the same day.

Deliberations:

1. PGCIL SR-I informed that, during busbar protection testing works at the 400 kV Nagarjunasagar substation, multiple elements tripped on operation of busbar protection at 17:14:53 hrs. The following lines were affected:
 - 400 kV Nagarjunasagar–Khammam Line-1
 - 400 kV Nagarjunasagar–Ramagundam Line-2
 - 400 kV Nagarjunasagar–Mehboobnagar Line
2. PGCIL SR-I stated that testing of the Bus-1 busbar relay (CUA) was carried out by injecting fault current into the PU1A(Peripheral Unit) relay associated with the 400 kV Nagarjunasagar–Khammam-3 line. During the testing, the charged lines along with their associated tie bays, namely Mehboobnagar, Ramagundam Line-2 and Khammam Line-1, tripped on busbar protection.
3. PGCIL SR-I further informed that all Bus-1 connected Peripheral Units (PU)-A, except 401 PU-A, had been kept in overhaul (test)

mode for carrying out the testing.

4. PGCIL SR-I informed that CT ratio verification, measurement checks and circuitry fault tests had been completed on 401 PU-A prior to the testing.
5. PGCIL SR-I stated that, during the testing, a current of 1.25 A was injected into the R-phase, following which Khammam Line-1, Ramagundam Line-2 and Mehboobnagar line tripped instantaneously.
6. Upon verification of the internal event records, PGCIL SR-I observed that the RL-03 contact had extended the tripping command even when the relay was in overhaul (test) mode. PGCIL SR-I further informed that, in the other feeders connected to Bus-1, RL-03 had been kept as a spare contact and, accordingly, those feeders did not trip.
7. PGCIL SR-I stated that, in the retrofitted protection scheme carried out in 2017, the RL-03 contact had been utilized for LBB back-trip functionality.
8. PGCIL SR-I further informed that, as per the P741/P43 relay manual, RL-01, RL-02 and RL-03 are fixed general trip contacts and operate during busbar differential protection and LBB back-trip even when the relay is in overhaul (test) mode.

Peripheral Unit P743:

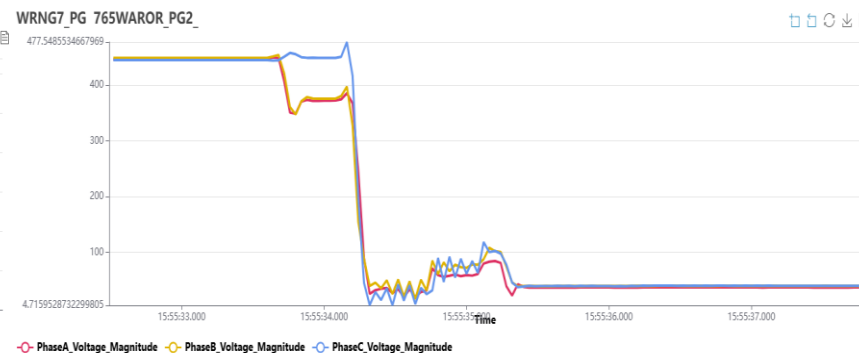
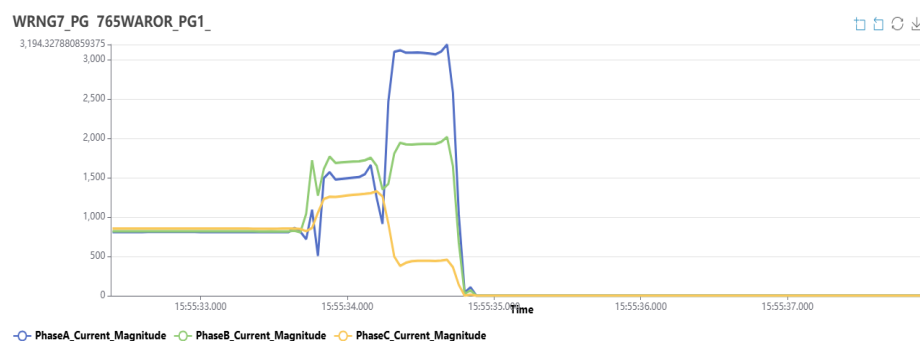
Relay Contact Number	P740 Relay Text	P740 Relay Conditioner	Function
1	Relay Label 01	Pick-up 0/0	Trip 87BB or 50BF backtrip (fixed)
2	Relay Label 02	Pick-up 0/0	Trip 87BB or 50BF backtrip (fixed)

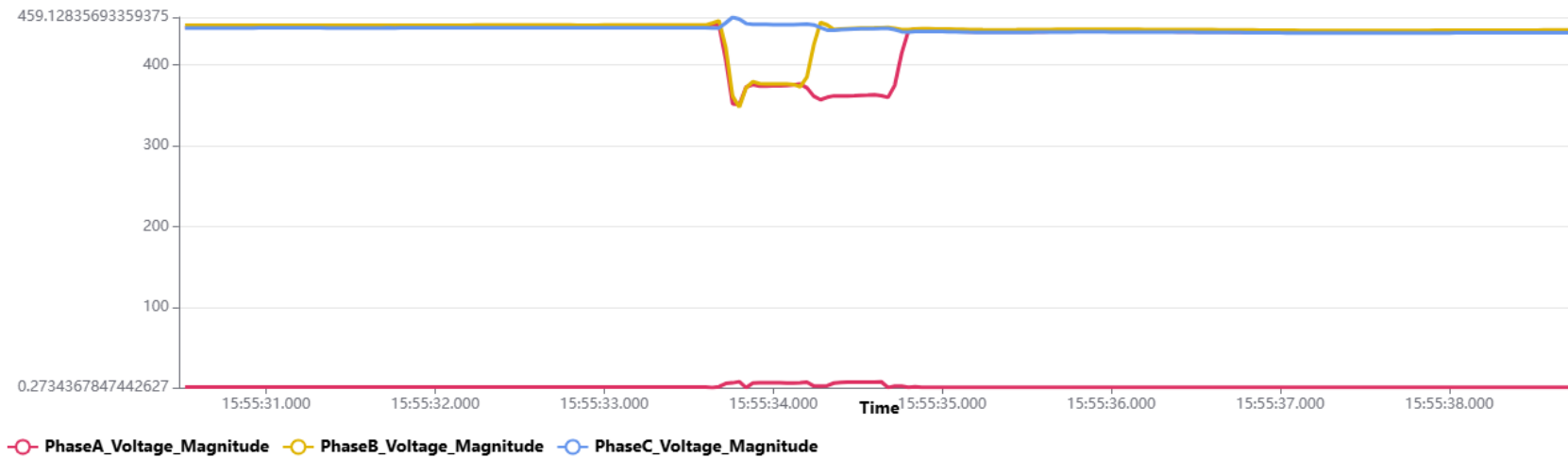
Relay Contact Number	P740 Relay Text	P740 Relay Conditioner	Function
3	Relay Label 03	Pick-up 0/0	Trip 87BB or 50BF backtrip (fixed)
4	Relay Label 04	Pick-up 0/0	Circuit Breaker failure
5	Relay Label 05	Pick-up 0/0	Circuit Breaker failure or out of service
6	Relay Label 06	Pick-up 0/0	Circuit Breaker failure retrip
7	Relay Label 07	Pick-up 0/0	Trip or Dead Zone Fault
8	Relay Label 08	Pick-up 0/0	Circuit Breaker or Isolator status alarm
9	Relay Label 09	Pick-up 0/0	Circuit Breaker failure retrip phase A
10	Relay Label 10	Pick-up 0/0	Circuit Breaker failure retrip phase B
11	Relay Label 11	Pick-up 0/0	Circuit Breaker failure retrip phase C
12	Relay Label 12	Pick-up 0/0	Not Mapped
13	Relay Label 13	Pick-up 0/0	Not Mapped
14	Relay Label 14	Pick-up 0/0	Not Mapped
15	Relay Label 15	Pick-up 0/0	Not Mapped
16	Relay Label 16	Pick-up 0/0	Not Mapped

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
8	765KV-WARANGAL(NEW)-WARORA-2	As per the reports submitted, the triggering incident was B-G fault in the line. At Warangal end, the fault was sensed in zone-2 and the line tripped with a delay of around 440ms.	31-05-2026 15:55	<u>ADANI ATL</u> : Non operation of carrier aided zone-2 protection at Warangal end.	

	WARANGAL	WARORA
FIR	FIR is not uploaded	NA
DR	DR Trigger Time:31-05-2026 16:14:26.019 Any Start L18 REF OPD Any Start	NA
EL	Zone-2	NA
TR	NA	NA

PMU Analysis:





- From OMU, B-G fault can be observed with a delayed fault clearance of around 440ms.

No response from the M/s ADANI ATL during the agenda discussion

Recommendations:

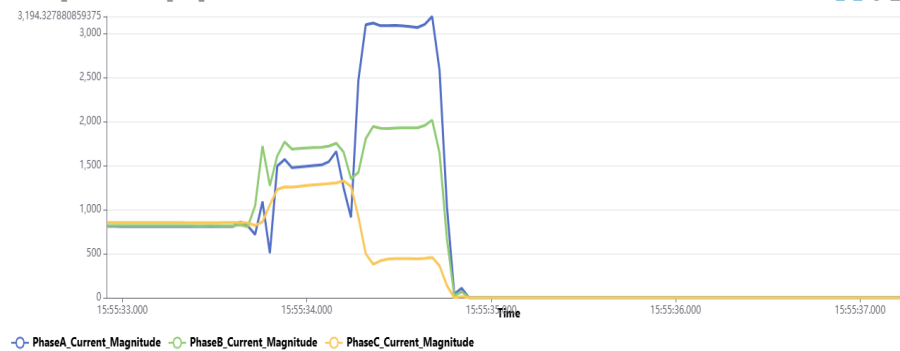
- ✚ M/s ADANI ATL advised to submit the detailed report on the incident

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
9	765KV-WARANGAL(NEW)-WARORA-1	As per the reports submitted, the triggering incident was RY fault on the 765KV-WARANGAL(NEW)-WARORA-1 line. At WARANGAL(NEW) end, the fault was detected in Z2 and 3-phase tripped after 450 ms without receiving any carrier trip signal.	31-05-2026 15:55	<u>ADANI ATL:</u> Non operation of carrier aided zone-2 protection at Warangal end.	

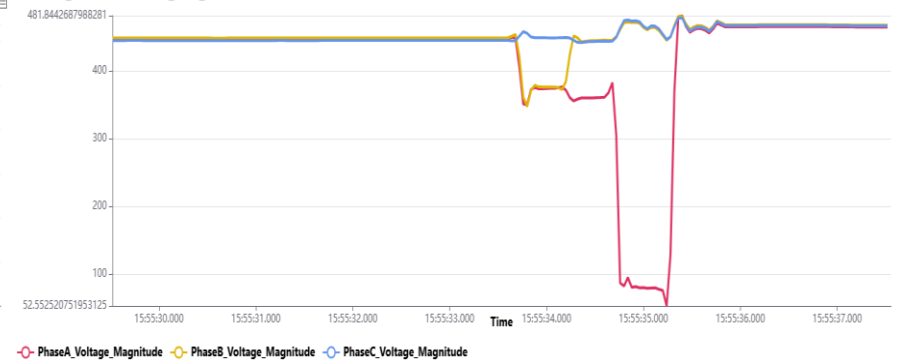
	WARANGAL	WARORA
FIR	FIR is not uploaded	NA
DR	DR Trigger Time:31-05-2026 15:55:33.741 Any Start T1 Z2, Z3 T1 Z2, Z3 L22 GRP-B OPTD Any Trip, DIST Trip A, DIST Trip B, DIST Trip C, T2, R7 TO GRP-A TR, R8 TO GRP-B TR, R33 A/R L/O M CB, R34 A/R L/O T CB L4 86A OPTD L15 T CB Y OPN, L2 MN CB Y OPN L1 MN CB R OPN, L3 MN CB B OPN	NA
EL	OSCILLOGRAP~ On GND DIST Z2	NA
TR	NA	NA

PMU Analysis:

WRNG7_PG 765WAROR_PG1_



WRNG7_PG 765WAROR_PG1_



- From the PMU plot, RY fault can be observed with delayed fault clearance of around 450ms.

No response from the M/s ADANI ATL during the agenda discussion

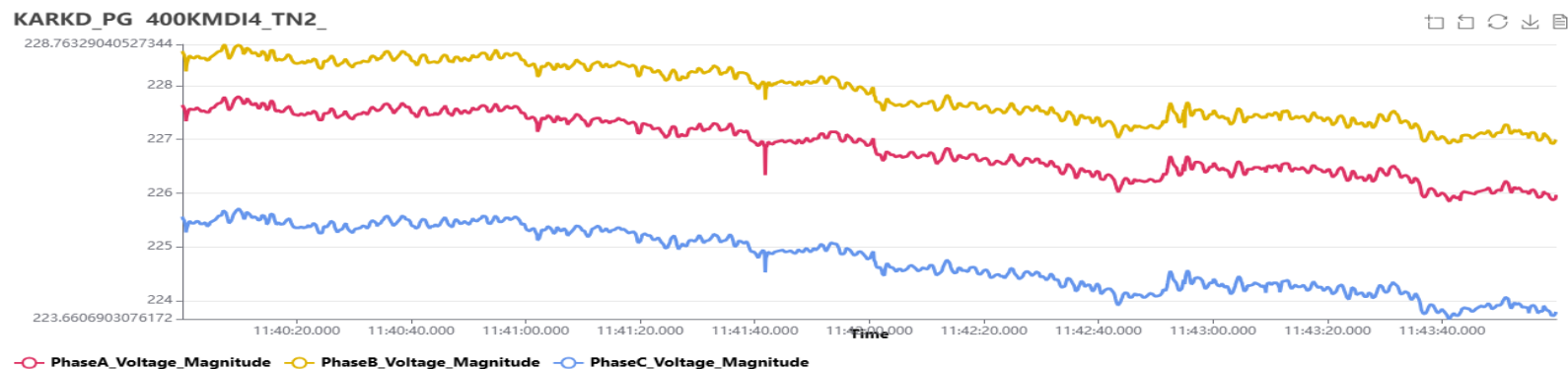
Recommendations:

- ✚ M/s ADANI ATL advised to submit the detailed report on the incident

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
10	400KV-OTTAPIDARAM-SEPC-2	As per the reports submitted, line got tripped on Bus-2 G2 compartment SF6 gas pressure low detected due to cable fault at SEPC end. DT was received from remote end and 3ph tripped at Ottapidaram end.	08-06-2026 11:42	<u>SEPC</u> : Line-2 tripped following the detection of low SF ₆ gas pressure in the Bus-2 G2 compartment needs review.	<u>SEPC</u> : Cable changed and fault rectified

	OTTAPIDARAM	SEPC
FIR	DT RECEIVED	Bus-2 G2 compartment SF6 gas pressure low detected due to cable fault and line-2 tripped
DR	DR Trigger Time:08-06-2026 11:42:00.763 DIC1 DT RCV 1, DIC1 DT RCV 1 BLK_CMD1 DIA2 MCB Y OP, DIA3 MCB B OP DIA1 MCB R OP	NA
EL	Same as DR	NA
TR	NA	Same as FIR

PMU Analysis:



➤ From the PMU plot, It can be observed that there is no fault

No response from the M/s SEPC during the agenda discussion

Recommendations:

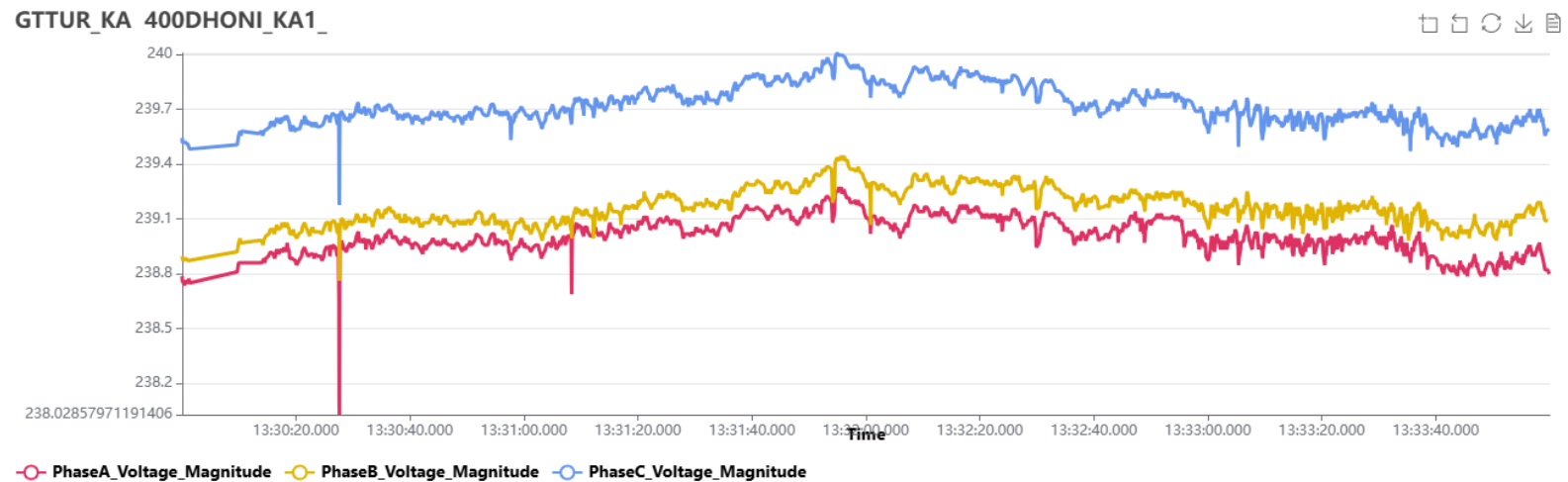
- ✚ M/s SEPC advised to submit the detailed report on the incident

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
11	400KV-DONI-GUTTUR-1	As per the reports submitted, the circuit breaker (CB) tripped only at the Guttur end, suspected to have been caused by a malfunction of the SF ₆ safe trip contactor due to a loose contact.	08-06-2026 13:32	<u>KPTCL</u> : Tripping of the line due to SF6 safe trip contactor mal function	<u>KPTCL</u> : same day LC availed & checked no abnormalities found hence test charged stood ok

	DONI	GUTTUR
FIR	Doni line CB tripped at Guttur end only	400 kV Doni Guttur line tripped at Guttur end. No trippings at Doni end
DR	NA	NA
EL	NA	MAIN CB Y-PH OPEN MAIN CB B-PH OPEN MAIN CB R-PH OPEN 89L ISOLATOR OPEN STUB PROTECTION OPTD DT SEND CH-1 CB CMD DIRECT TRIP SEND CH-2 TIE CB OPEN 400KV TIE CB OPEN TIE CB R-PH OPEN TIE CB Y-PH OPEN TIE CB B-PH OPEN 86.2 TRIP RELAY OPTD 86.1 TRIP RELAY OPTD LBB 3 PHASE INITIATION DIRECT TRIP RECEIVE-CH1 DIRECT TRIP RECEIVE CH-2 MAIN-1 PROTECTION OPTD OVER VOLTAGE START VT FUSE FAIL VT FUSE FAIL OVER CURRENT OPTD STAGE-2 EARTH FAULT NON DIRECTIONAL OPTD 86.2 TRIP RELAY OPTD 86.1 TRIP RELAY OPTD LBB 3 PHASE INITIATION

		DIRECT TRIP RECIEVE-CH1 DIRECT TRIP RECEIVED CH-2 MAIN-1 PROTECTION OPTD OVER VOLTAGE START VT FUSE FAIL VT FUSE FAIL OVER CURRENT OPTD STAGE-2 EARTH FAULT NON DIRECTIONAL OPTD ZONE-2 OPTD ZONE-1 OPTD ZONE-4 OPTD ZONE-3 OPTD CARRIER AIDED TRIP CB MANUAL CLOSE
TR	Same as FIR	Same as FIR

PMU Analysis:



➤ No fault can be observed from PMU plot

Deliberations:

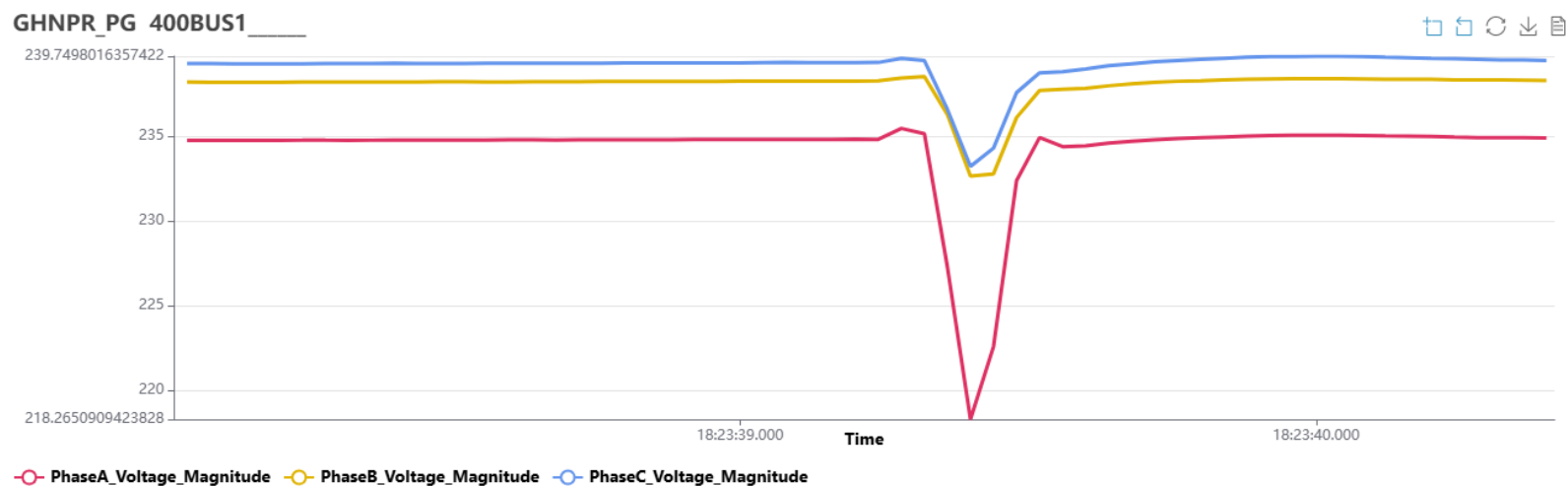
1. KPTCL stated that, as per the reports submitted, the circuit breaker tripped only at the Guttur end, while the line remained charged from the Doni end. KPTCL further informed that the tripping was suspected to have been caused by the malfunction of the SF₆ safe-trip contactor due to a loose contact.
2. KPTCL informed that the line had tripped at the Guttur end due to the sudden drop out of the SF₆ safe-trip contactor (trip-before-lockout contactor) in the R-phase pole of the 400 kV Doni line circuit breaker.
3. As a temporary remedial measure, KPTCL informed that the trip-before-lockout contacts associated with the R-phase pole had been isolated to avoid spurious tripping. KPTCL further informed that action is being taken to replace the density monitor switch of the R-phase pole of the 400 kV Doni line circuit breaker.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
12	400KV/220KV SUNDILA-ICT-3	As per the reports submitted, the triggering incident was R-G fault in 400kV Singareni Ramadugu Line-1. A/R operated and the line was holding. At the same time, 400KV/220KV SUNDILA-ICT-3 tripped on Relay Maloperation at Sundila. The Relay testings and all Transformers testings were done but no fault found and charged the ICT. 315MVA ICT-3 tripped on operation of differential protection.	08-06-2026 18:23	TGTRANSCO: Tripping of 400KV/220KV SUNDILA-ICT-3 on differential protection maloperation for external fault.	TGTRANSCO: The relay testing and all transformer testing were done but no fault found and charged the ICT.

	SUNDILA-ICT-3
FIR	315MVA ICT-III tripped on operation of differential protection. The relay testings and all transformer testings were done but no fault found and charged the ICT.
DR	DR Trigger Time:08-06-2026 18:23:39.384 SRC1 50DD OP, XFMR PCNT DIFF 2ND A, XFMR PCNT DIFF 2ND B, XFMR PCNT DIFF 2ND C, XFMR PCNT DIFF 5TH A, XFMR PCNT DIFF 5TH B, XFMR PCNT DIFF 5TH C

	OSC TRIGGER ON (VO64) OSC TRIGGER ON (VO64) OSC TRIGGER ON (VO64), XFMR PCNT DIFF OP R9 GENERAL TRIP CLOSED (CO9), R1 HV 86A TRIP CLOSED (CO1), R2 LV 86A TRIP CLOSED (CO2), R3 T 86A TRIP CLOSED (CO3) OSC TRIGGER ON (VO64) L11 LV GRPA OPTD ON (CI11) L10 LV GRPB OPTD ON (CI10) XFMR PCNT DIFF 2ND A, XFMR PCNT DIFF 2ND B, XFMR PCNT DIFF 2ND C
EL	Same as DR
TR	NA

PMU Analysis:



- From the PMU plot, R-G fault can be observed during the event without any delayed fault clearance

Deliberations:

1. TGTRANSCO stated that, as per the reports submitted, the initiating event was an R-phase-to-ground fault on the 400 kV Singareni–Ramadugu Line-1. Auto-reclosure (A/R) operated successfully and the line remained in service. Simultaneously, the 400/220 kV, 315 MVA Sundila ICT-III tripped at the Sundila substation due to an apparent relay maloperation.
2. TGTRANSCO further informed that the 315 MVA ICT-III had tripped on the operation of differential protection.
3. TGTRANSCO stated that relay testing and all the necessary transformer tests were carried out, and all test results were found to be satisfactory. Subsequently, the ICT was charged.
4. As a remedial measure, TGTRANSCO informed that the tripping issue has been referred to the original equipment manufacturer (OEM), and their response is awaited.
5. SRPC advised TGTRANSCO to furnish the OEM report detailing the reasons for the tripping of the 400/220 kV, 315 MVA Sundila ICT-III at the earliest.

Recommendations:

- ✚ TGTRANSCO to furnish the OEM report detailing the reasons for the tripping of the 400/220 kV, 315 MVA Sundila ICT-III at the earliest.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
13	Tripping of 400KV/220KV JULURUPADU-ICT-1 &2	As per the reports submitted, 400KV/220KV Julurpadu ICT-1&2 tripped without any protection relay indications.	10-06-2026 09:56	TGTRANSCO: ICTs tripped without any protection relay indications	

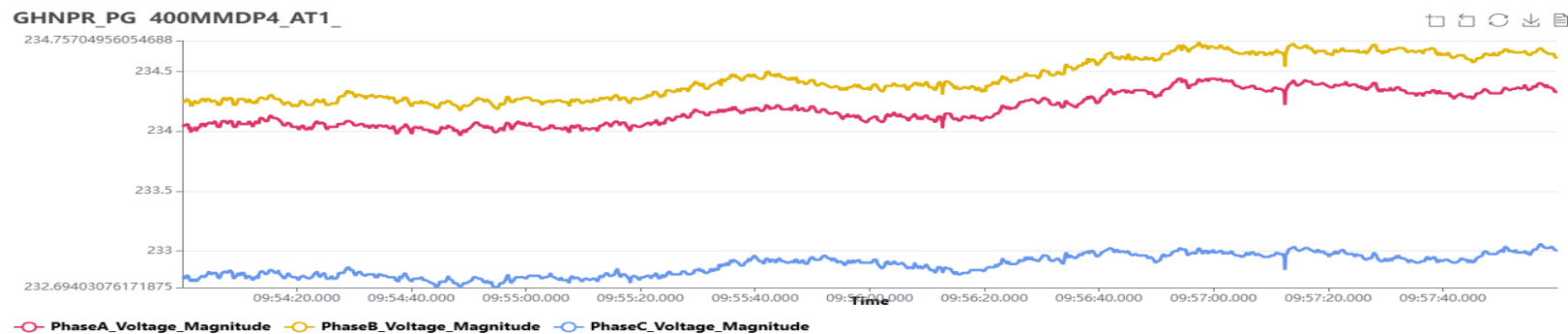
400KV/220KV JULURUPADU-ICT-1

	JULURUPADU-ICT-1
FIR	315MVA ICT-I&II LV breakers tripped without any protection operation / indications. LV breakers tripping observed during restoration of DC supply.
DR	NA
EL	OE_CL_R-PH_POS Open OE_CL_Y-PH_POS Open OE_CL_B-PH_POS Open
TR	NA

400KV/220KV JULURUPADU-ICT-2

	JULURUPADU-ICT-2
FIR	315MVA ICT-I&II LV breakers tripped without any protection operation / indications. LV breakers tripping observed during restoration of DC supply.
DR	NA
EL	OE_CL_R-PH_POS Open OE_CL_Y-PH_POS Open OE_CL_B-PH_POS Open
TR	NA

PMU Analysis:



- From PMU, no fault is observed during the event.

Deliberations:

1. TGTRANSCO informed that, as per the reports submitted, 400/220 kV Julurpadu ICT-I and ICT-II tripped without any protection relay indications.
2. TGTRANSCO further informed that the 315 MVA ICT-I and ICT-II LV breakers tripped without any protection operation or indications.
3. TGTRANSCO stated that the tripping of the LV breakers was observed during the restoration of the DC supply.
4. TGTRANSCO further informed that an issue was identified with the off-time delay contactor of 63GLX1, which is connected in parallel with the 63GLX2 contactor, in the CGL make breakers.
5. As a remedial measure, TGTRANSCO informed that the wiring associated with the 63GLX1 contactor has been modified. TGTRANSCO further stated that discussions have been held with the OEM regarding the replacement of the faulty contactor and the modification of the wiring scheme.
6. SRPC advised TGTRANSCO to submit the compliance report on the modifications carried out in the wiring scheme and the replacement of the faulty 63GLX1 contactor in the CGL make breakers, along with the details of the corrective actions taken, at the earliest.

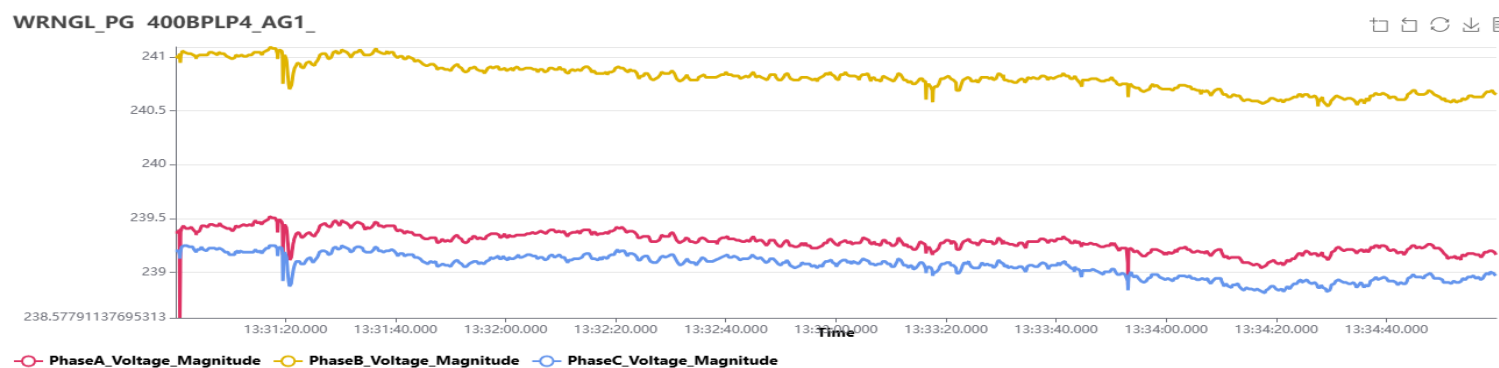
Recommendations:

- ✚ TGTRANSCO to submit the compliance report on the modifications carried out in the wiring scheme and the replacement of the faulty 63GLX1 contactor in the CGL make breakers at 400KV JULURUPADU.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
14	400KV/220KV BHOOPALAPALLY-ICT-2	As per the reports submitted, 500 MVA ICT 2 LV breaker tripped without indications at 400KV/220KV BHOOPALAPALLY due to DC earth leakage. It is reported that TGTRANSCO Rectified DC earth leakage found in 204 bay (100 MVA PTR-2) and charged the ICT	11-06-2026 13:33	<u>TGTRANSCO</u> : Tripping of ICT on DC Earth fault	<u>TGTRANSCO</u> : Rectified DC earth leakage found in 204 bay (100MVA PTR-2) and charged the ICT.

	BHOOPALAPALLY-ICT-2
FIR	500MVA ICT-II LV breaker tripped without indications at 400/220kV SS KTPP Bhupalapally due to suspected DC earth leakage. Rectified DC earth leakage found in 204 bay (100MVA PTR-2) and charged the ICT.
DR	NA
EL	NA
TR	Same as FIR

PMU Analysis:



➤ From the PMU plot, It can be observed that there is no fault

Deliberations:

1. TGTRANSCO stated that, as per the reports submitted, the 500 MVA ICT-II LV breaker at the 400/220 kV Bhupalapally substation tripped without any protection indications due to suspected DC earth leakage.
2. TGTRANSCO reported that DC earth leakage was identified in Bay No. 204 associated with the 100 MVA PTR-II and that the leakage was subsequently rectified.
3. As a remedial measure, TGTRANSCO informed that the DC earth leakage in Bay No. 204 (100 MVA PTR-II) had been rectified and the ICT was subsequently charged.
4. SRPC advised TGTRANSCO to thoroughly examine the healthiness of the DC supply system at the 400kV Bhupalapally substation, including the DC cables, wiring schemes, wiring diagrams, contactors and associated auxiliary circuits, and to identify and rectify any deficiencies to prevent recurrence of such incidents.
5. TGTRANSCO was further advised to submit the status of the corrective measures taken to SRPC.

Recommendations:

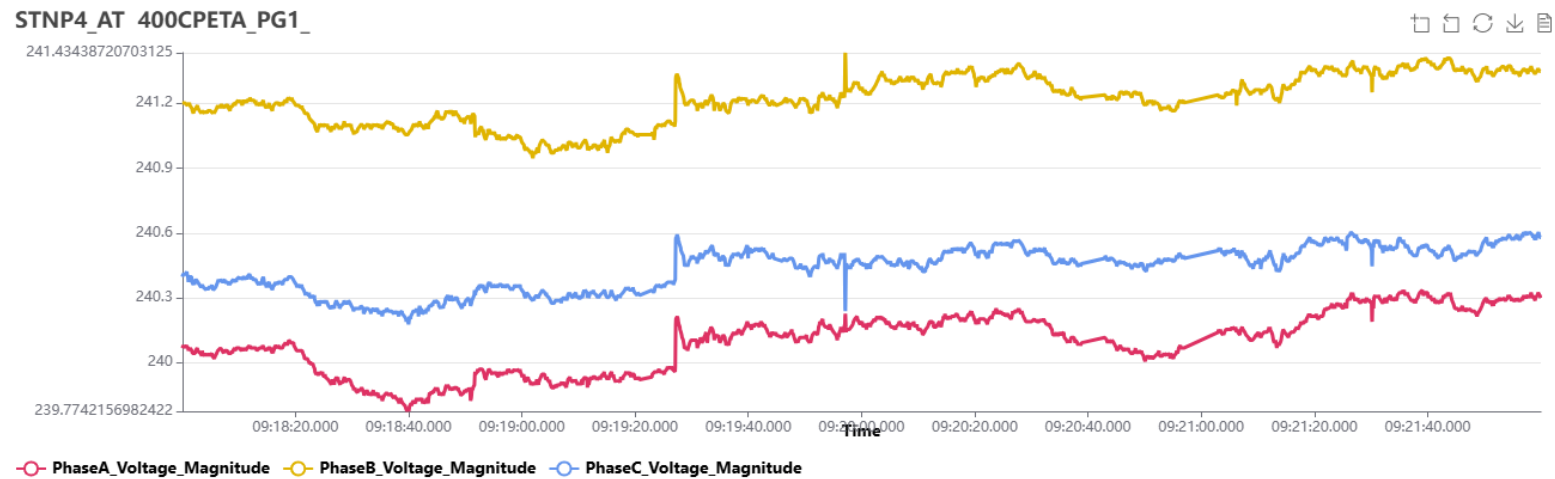
- ✚ TGTRANSCO to thoroughly examine the healthiness of the DC supply system at the 400kV Bhupalapally substation, including the DC cables, wiring schemes, wiring diagrams, contactors and associated auxiliary circuits, and to identify and rectify any deficiencies to prevent recurrence of such incidents. TGTRANSCO was further advised to submit the status of the corrective measures taken to SRPC.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
15	400KV/220KV SATTENPALLY-ICT-3	As per the reports submitted, ICT tripped on PRV maloperation.	13-06-2026 09:19	<u>APTRANSCO</u> : Tripping of ICT on PRV maloperation	<u>APTRANSCO</u> : DGA Conducted result found satisfactory

	SATTENPALLY-ICT-3
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FIR	DGA Conducted result found satisfactory
DR	DR Trigger Time:13-06-2026 09:18:51.713 L23-SPR TRIP, L23-SPR TRIP L6-86B OPTD, L6-86B OPTD DR Trigger Time:13-06-2026 09:18:51.702 L2-86B OPTD DR Trigger Time:13-06-2026 09:18:51.700 L1-86B OPTD
EL	R Y B PH Open TIE 86BX TRIP RELAY OPERATED 86 B OPTD SET 86B OPTD OPERATED
TR	Same as FIR

PMU Analysis:



➤ From the PMU plot, it can be observed that there is no fault

Deliberations

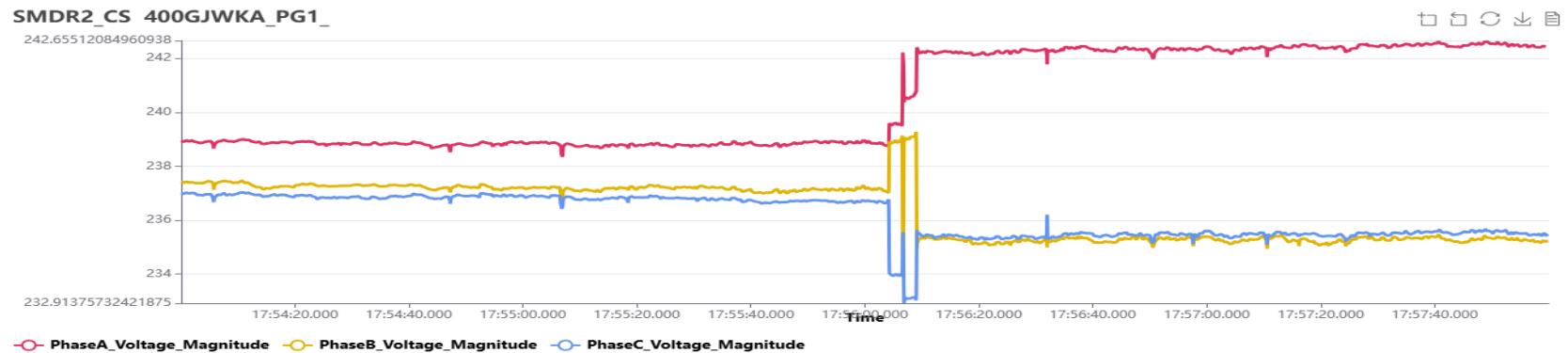
1. APTRANSCO informed that, on 13.06.2026 at 09:18 hrs, the 400/220 kV, 500 MVA ICT-3 (Toshiba make) tripped due to the operation of the Sudden Pressure Relay (SPR).
2. APTRANSCO further informed that, in accordance with the recommendations of the OEM, Dissolved Gas Analysis (DGA) and Insulation Resistance (IR) tests were carried out and the test results were found to be satisfactory. The same was communicated to the OEM.
3. APTRANSCO informed that, in response, the OEM opined that the operation of the SPR might have been caused by vibrations or transient disturbances in the system, indicating a possible mal-operation of the relay, and accordingly accorded clearance for charging of the ICT.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
16	400KV-SIMHADRI-GAZUWAKA-1	As per the reports submitted, Line was not tripped at Simhadri end, both main and tie breaker was in closed condition. During the tripping of 400kV Gazuwaka-Kalpaka 1&2 feeders, DC/AC mixing issue was suspected to be occurred in 412 bay. Subsequently, (41252) Y-pole of Main CB of 400kV Gazuwaka Simhadri-1 got opened inadvertently and other two poles tripped on PD relay. As the Tie CB is already tripped due to tripping of Kalpaka-2 feeder, the feeder got isolated at Gazuwaka end.	17-06-2026 17:56	PGCIL SR-1: 1. Reason for mixing of AC and DC signals sources during the event. 2. Inadvertent opening of Main CB Main CB of 400kV Gazuwaka Simhadri-1	

	SIMHADRI	GAZUWAKA
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FIR	Line was not tripped at our end our both main and tie breaker was in closed condition.	During the tripping of 400kV Gazuwaka-Kalpaka 1&2 feeders, DC/AC mixing issue was suspected to be occurred in 412 bay. Subsequently, 41252 (Main CB of Simhadri-1 got opened inadvertently. As the Tie CB is already tripped due to tripping of Kalpaka-2 feeder, the feeder got isolated at Gazuwaka end.
DR	NA	DR Trigger Time:17-06-2026 17:56:09.082 M/T_PLDSC M CB_BO M CB_RO DR Trigger Time:17-06-2026 17:56:04.145 M CB_YO M CB_YO M/T_PLDSC M CB_RO, M CB_BO
EL	NA	Same as DR
TR	Same as FIR	NA

PMU Analysis:



➤ No fault is observed from the PMU plot of the event.

Deliberations:

1. Tripping sequence:

S.NO	Lines & Elements	Tripping time	Remarks
1	Kalapaka Line-2 (Line Belongs to APTRANSCO)	17:10	Tripped on Persisting B-G Fault due to Jumper snapping
2	Kalapaka Line-1 (Line Belongs to APTRANSCO)	17:10	Tripped on Persisting R-G Fault due to OPGW snapping.
3	Simhadri Line-1	17:56	Main CB tripped and tie CB closed due to DC fluctuations caused by Kalpaka bays
4	ICT-3	19:14	Tripped on IV Over current Protection as per the settings due to closure of tie CB due to DC fluctuations

2. Root cause of DC fluctuations



TC-1 & 2 Assembly (Faulty)



TC1 & TC2 Continuity

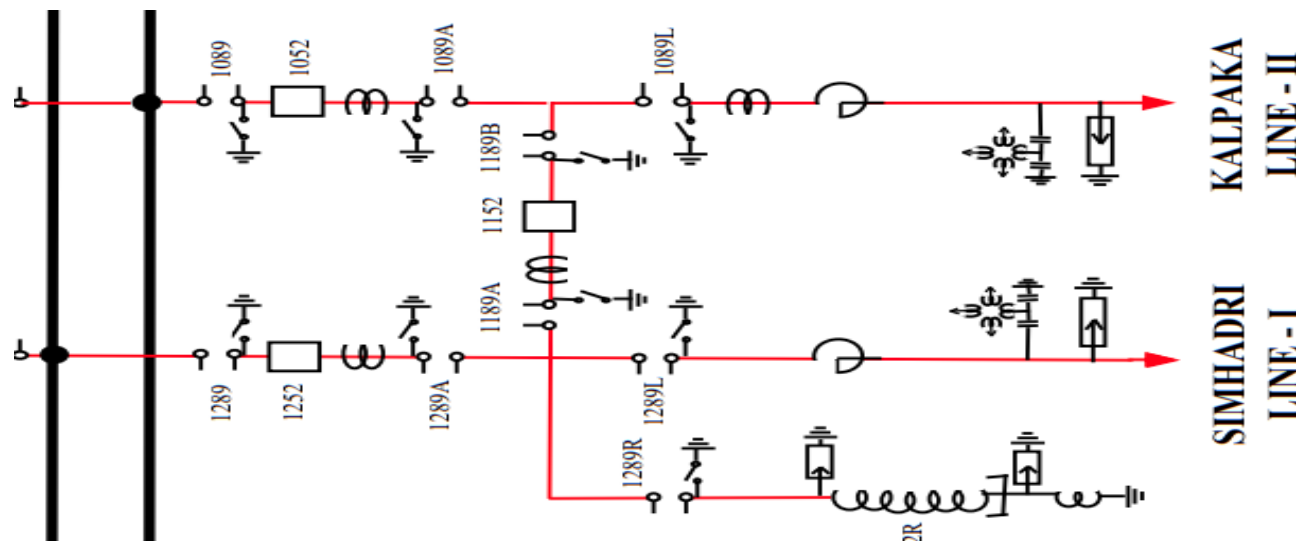


Inadvertent Opening/ Closing of CB poles:

- Trip coil-1 & trip coil-2 in R-Ph also got failed due to which DC mixing has happened.
- Cracks Observed on R Phase Close coil. The coil is found to be earthed.

3. Analysis of Tripping of Simhadri-1

- It was verified the DC voltages were very stable prior to the tripping.
- At the time of tripping, fluctuations were noticed in both sources initially it was presumed to be AC & DC mixing, but later after detailed analysis it is confirmed that the fluctuations were due to failure of Trip coils in 252 CB.
- During the DC Fluctuations, the Y-phase pole of Main Breaker 1252 opened and subsequently other poles opened on PD.
- At the same time, tie CB (1152CB) got closed inadvertently due to DC fluctuations.
- After Isolation of DC of 252 CB, the Main & TIE CB's verified for Close and open operation. Thereafter, Simhadri-I was taken into service.
- Further Individual Bay SD were availed and verified the IR of all the cables in 1152 & 1252 and no issue noticed.
- However, in 1152 CB, suspected close contactor in control room is replaced as precautionary measure and 1252 CB all wiring were tightened.
- The issue in 252 CB was rectified and CB taken into service and there was no issue observed since then.

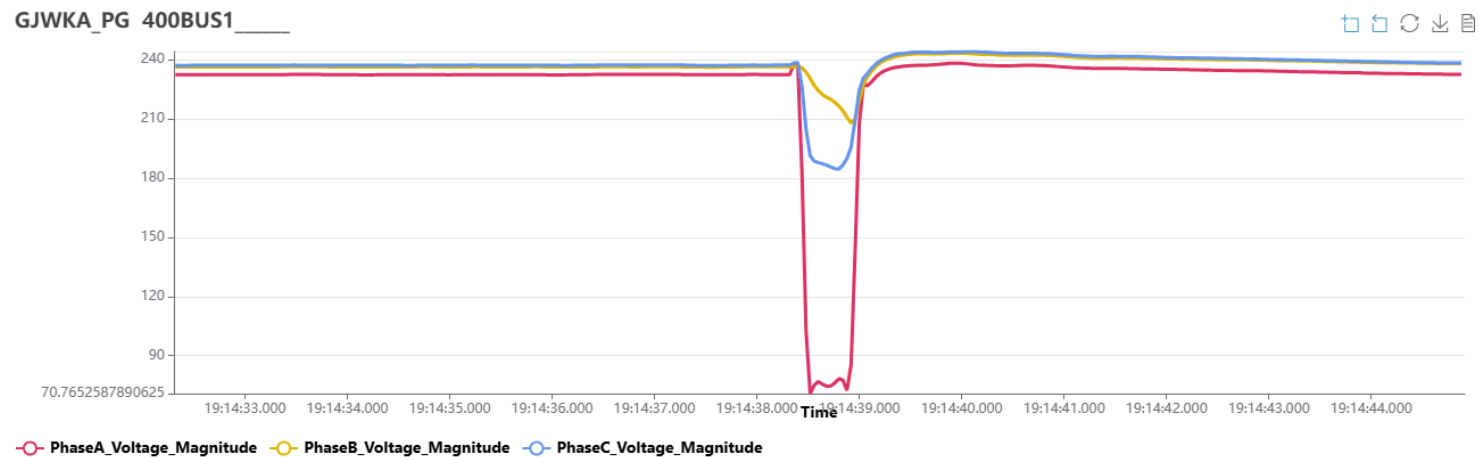


4. PGCIL SR-I informed that as per the event records and history, the DC voltage at Gajuwaka had remained stable, and no mal-operations attributable to DC supply issues were reported in the past.
5. In the present incident, fluctuations in the DC voltage were observed due to an issue with the Trip Coil (TC) and Close Coil (CC) circuits. Subsequently, the root cause was identified and rectified in the 252 kV Circuit Breaker (CB). Following rectification, the DC system stabilized and the issue was resolved.
6. PGCIL SR-I further informed that Simhadri Line -1 was also taken into service. The Circuit Breaker tripping and closing operations observed during the incident were attributable to the DC voltage fluctuations, which were not observed after stabilization of the DC supply.
7. The ICT-3 tripping is as per the adopted protection settings, and no abnormality or protection system issue was observed in this regard.
8. SRPC advised PGCIL SR-I to keep the DC supply at 400KV GAZUWAKA under observation.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
17	400KV/220KV GAZUWAKA-ICT-3	As per the reports submitted, during antecedent conditions, 400kV Kalpaka-Gazuwaka 1&2 feeders tripped at 17:11 Hrs 17.06.2026 due to R-G fault in 400kV Kalpaka-Gazuwaka 1 & B-G fault in 400kV Kalpaka-Gazuwaka 2. During the instant of tripping, it is reported that mixing of DC/AC sources were observed. Subsequently at 19:14 hrs, R-Pole of 40252 (Tie CB of 400kV Gajuwaka-Kalpaka Line-1 and 400kV ICT-3) got closed inadvertently. The closing of R-Pole resulted in feeding of fault through ICT-3 and which in-turn caused the operation IV Back-up over current protection in 400KV/220KV GAZUWAKA-ICT-3 and the ICT got tripped.	17-06-2026 19:15	PGCIL SR-1: 1. Reason for mixing of AC and DC signals sources during the event. 2. Inadvertent closing of Tie CB R-pole of 400kV Gazuwaka-Kalpaka Line-1 and 400kV ICT-3	

	GAZUWAKA-ICT-3
FIR	400kV Kalpaka-Gazuwaka 1&2 feeders were tripped on 17:11 Hrs/17.06.2026. During the instant of tripping, mixing of DC/AC sources were observed. Subsequently at 19:14 hrs, R-Pole of 40252 (Tie CB of 400kV Gazuwaka-Kalpaka Line-1 and 400kV ICT-3) got closed inadvertently. As 400kV Gazuwaka-Simhadri-1 feeder was already tripped on line fault, the closing of R-Pole resulted in feeding of fault through ICT-3 and which in-turn causes the operation IV Back-up over current protection. 400kV ICT-3 got tripped on 19:14 hrs.
DR	DR Trigger Time:17-06-2026 19:14:38.908 GRA_TRP_RLY OPTD, GRB_TRP_RLY OPTD, GRA_IT_RLY OPTD, GRB_IT_RLY OPTD, 67/67N OPTD, 67/67N OPTD, GENERAL TRP
EL	Same as DR
TR	Same as FIR

PMU Analysis:



- From the PMU plot, R-G fault can be observed during the event with a delay of around 480ms.

Deliberations:

1. Tripping sequence:

S.NO	Lines & Elements	Tripping time	Remarks
1	Kalapaka Line-2 (Line Belongs to APTRANSCO)	17:10	Tripped on Persisting B-G Fault due to Jumper snapping
2	Kalapaka Line-1 (Line Belongs to APTRANSCO)	17:10	Tripped on Persisting R-G Fault due to OPGW snapping.
3	Simhadri Line-1	17:56	Main CB tripped and tie CB closed due to DC fluctuations caused by Kalpaka bays
4	ICT-3	19:14	Tripped on IV Over current Protection as per the settings due to closure of tie CB due to DC fluctuations

2. Root cause of DC fluctuations



TC-1 & 2 Assembly (Faulty)



TC1 & TC2 Continuity

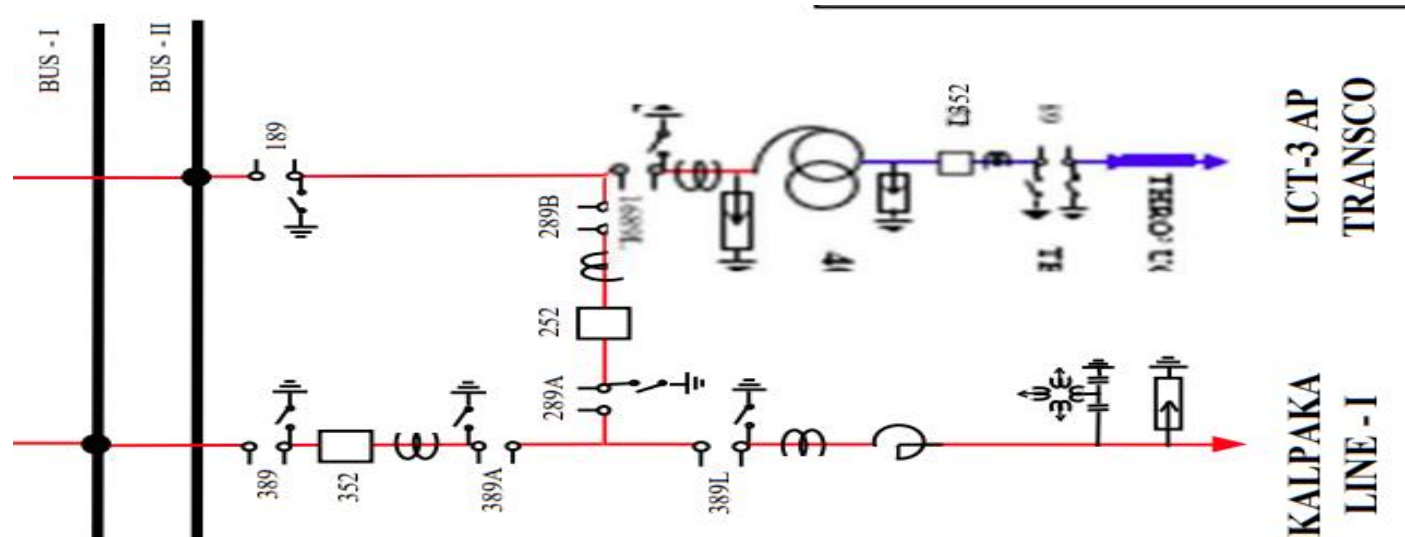


Inadvertent Opening/ Closing of CB poles:

- Trip coil-1 & trip coil-2 in R-Ph also got failed due to which DC mixing has happened.
- Cracks Observed on R Phase Close coil. The coil is found to be earthed.

3. Tripping of ICT-3:

- At 17:10 hrs Kalpaka-1 tripped due to OPGW (Optical Ground Wire) snapping and ICT-3 remained in service and did not trip during this event.
- At 19:14 hrs To isolate DC fluctuations, DC supply to 252 CB was switched off. The fluctuations stopped.
- But, the R-phase pole of breaker 252 closed unintentionally.
- This inadvertent closure energized/fed the faulted section.
- As a result, fault current flowed through ICT-3.
- ICT-3 tripped on IV over current ($I > 1$) protection as per the adopted settings.
- Tripping of ICT-3 is as per the adopted settings. The tripping is in order.



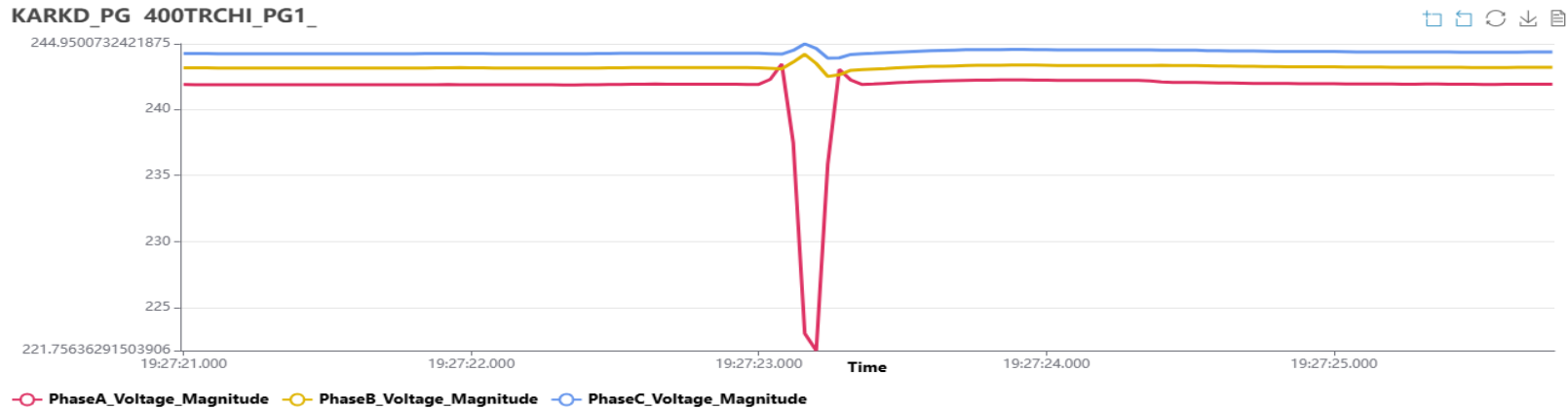
4. PGCIL SR-I informed that as per the event records and history, the DC voltage at Gajuwaka had remained stable, and no mal-operations attributable to DC supply issues were reported in the past.
5. In the present incident, fluctuations in the DC voltage were observed due to an issue with the Trip Coil (TC) and Close Coil (CC) circuits. Subsequently, the root cause was identified and rectified in the 252 kV Circuit Breaker (CB). Following rectification, the DC system stabilized and the issue was resolved.

6. PGCIL SR-I further informed that Simhadri Line -1 was also taken into service. The Circuit Breaker tripping and closing operations observed during the incident were attributable to the DC voltage fluctuations, which were not observed after stabilization of the DC supply.
7. The ICT-3 tripping is as per the adopted protection settings, and no abnormality or protection system issue was observed in this regard.
8. SRPC advised PGCIL SR-I to keep the DC supply at 400KV GAZUWAKA under observation.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
18	400KV/230KV VELLALAVIDUTHI-ICT-3	As per the reports submitted, 400KV/230KV VELLALAVIDUTHI-ICT-3 tripped on 86 master relay without any indication. It is reported that on inspection, DC leakage in Breaker control cable is observed and damaged wires were replaced with spare ones. However, the same could not be verified due to non-submission of DR and EL and from PMU R-G fault is observed during the event.	19-06-2026 19:27	<u>TANTRANSCO</u> : Tripping of 400KV/230KV VELLALAVIDUTHI-ICT-3 without any indications due to DC leakage in CB cable.	<u>TANTRANSCO</u> : Damaged wires were replaced with spare one

	VELLALAVIDUTHI-ICT-3
FIR	86 master relay actuated without any indication. Hence tripping of ICT3 observed
DR	NA
EL	NA
TR	Same as FIR

PMU Analysis:



➤ From PMU, R-G fault is observed during the event.

Deliberations:

1. TANTRANSCO informed that the 400/230 kV Vellalaviduthi ICT-III tripped on operation of the 86-master relay without any protection indications. TANTRANSCO further informed that, upon inspection, DC leakage and damage in the breaker control cable were observed, and the damaged cores were replaced with healthy spare cores.
2. TANTRANSCO stated that no fault was observed at the Vellalaviduthi end during the incident. Further, ICT-III had tripped without any relay operation, and no disturbance recorder (DR) or event logger (EL) records were available, due to which the exact cause of tripping could not be conclusively established.
3. TANTRANSCO also informed that PMU data indicated an R-phase-to-ground fault on the 230 kV Karaikudi–Karambayam line at the time of the incident, for which auto-reclosure was successful at both ends.
4. SRPC advised TANTRANSCO to ensure the proper functioning of the disturbance recorder (DR) and event logger (EL) systems at 400KV VELLALAVIDUTHI SS so that all future events are adequately recorded for detailed analysis.

Recommendations:

- ⚡ TANTRANSCO to ensure the proper functioning of the disturbance recorder (DR) and event logger (EL) systems at 400KV VELLALAVIDUTHI SS.

IV. Non-operation of Auto recloses during transient fault

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
1	400KV-GAJWEL-RAMAGUNDAM-1	As per the reports submitted, the triggering incident was Y-G fault in the line. At GAJWEL end, the fault was sensed in Z1, line tripped, A/R did not operate. At RAMAGUNDEM end, the fault was sensed in carrier aided Z2, Y pole opened, A/R operated and was successful but in 8 sec again fault sensed in Y phase and the line tripped on zone-2 protection.	24-05-2026 13:20	<u>TGTRANSCO</u> : Non operation of A/R at Gajwel end	<u>TGTRANSCO</u> : Non operation of A/R will be checked

TGTRANSCO Vide Mail dated 06.07.2026 has furnished the following information

- Tripped on Y-Phase to Ground, Zone-1 indications at Gajwel end.

Remedial Actions taken:

- LC availed on 03-07-2026 and checked for non-operation of A/R. Observed A/R was in OFF condition and the same is rectified.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
2	220KV-KOTHAGUDEM_TPS-TIRUVURU-1	As per the reports submitted, the triggering incident was R-G fault in the line at a distance of 19km from Kothagudem end. At KOTHAGUDEM end, the fault was sensed in Z1, R-pole opened and the line tripped on suspected pole discrepancy after 1.5s. At TIRUVURU end, the fault was sensed in	24-05-2026 15:27	<u>TGGENCO</u> : Non operation of A/R at KTPS end needs review	

		carrier aided Z2, R-pole opened, A/R operated and was successful.			
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Recommendations:

- ⚡ TGGENCO to rectify the Auto Reclosure issue in 220KV-KOTHAGUDEM_TPS-TIRUVURU-1 at 220kV KTPS

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
3	400KV-GAJWEL-RAMAGUNDAM-1	As per the reports submitted, the triggering incident was Y-G fault in the line. At GAJWEL end, the fault was sensed in Z1, and the line tripped with no A/R operation. At RAMAGUNDAM end, the fault was sensed in carrier aided Z2, Y pole opened, A/R operated and was successful and line was holding	24-05-2026 16:09	<u>TGTRANSCO:</u> Non operation of A/R at Gajwel end needs review	<u>TGTRANSCO:</u> Non operation of A/R will be checked

TGTRANSCO Vide Mail dated 06.07.2026 has furnished the following information

- Tripped on Y-Phase to Ground, Zone-1 indications at Gajwel end.

Remedial Actions taken:

- LC availed on 03-07-2026 and checked for non-operation of A/R. Observed A/R was in OFF condition and the same is rectified.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
4	765KV-WARANGAL(NEW)-CHILAKALURIPETA-1	As per the reports submitted, the triggering incident was R-G fault in the line. At Warangal end, the fault was sensed in Z1, R pole opened, A/R did not operate and the other two poles tripped after around	26-05-2026 23:50	<u>ADANI ATL:</u> Non operation of A/R at Warangal end	

		1200ms. At Chilakaluripeta end, the fault was sensed in Z1, R pole opened, A/R did not operate and the line tripped in Main CB but after around 1s, the line tripped in Tie CB after around 3s.		<u>PGCIL SR-1</u> : Non operation of A/R at Chilakaluripeta end	
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PGCIL SR-1 Vide Mail dated 06.07.2026 has furnished the following information

At Chilakaluripeta SS

1. Main-1 & main-2 relays have initiated single phase tripping and AR was initiated. However, other two poles of main CB tripped on AR lockout after 980ms. Main BCU events got erased due to generation of multiple unnecessary events.
2. Tie BCU did not initiate AR close and the other two poles of tie CB tripped on PD.
3. The last AR operation of Cpeta-Warangal-1 line was successful on 12.03.2026.
4. The case was referred to M/s WKTL for analysis.

Recommendations:

- ✚ ADANI_ATL to rectify the Auto Reclosure issue in 765KV-WARANGAL(NEW)-CHILAKALURIPETA-1 at 765KV-WARANGAL(NEW)

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
5	765KV-WARANGAL(NEW)-WARORA-1	As per the PMU, B-G fault is observed in 765KV-WARANGAL(NEW)-WARORA-1. At Warangal end, the fault was sensed in zone-1. A/R did not operate and the line tripped.	31-05-2026 16:14	<u>ADANI ATL:</u> Non operation of A/R at Warangal end	

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
6	220KV-Chintur-BG Kothur-1	As per the reports submitted, the triggering incident was R-G fault in the line. At Chintur end, the fault was a slow developing fault and was sensed in Z2 after receiving carrier signal at a distance of 85km, and the line tripped with a delay of around 400ms. At BG Kothur end, the fault was sensed in Z1 at a distance of 1.5km, A/R did not operate and the line tripped.	31-05-2026 23:28	<u>TGTRANSCO:</u> Non operation of A/R at BG Kothur end	<u>TGTRANSCO:</u> Non operation of A/R will be checked

TGTRANSCO Vide Mail dated 06.07.2026 has furnished the following information

- Tripped on R-Phase to Ground, Zone-1 indications at BG Kothur end.
- A/R not operated at BG Kothur end.

Remedial Actions taken:

- Non operation of AR will be checked by availing LC.

Recommendations:

- ✚ TGTRANSCO to rectify the Auto Reclosure issue in 220KV-Chintur-BG Kothur-1 at BG Kothur end.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
7	400KV-TIPPAPUR-JANAGAON-1	As per reports submitted, the triggering incident was R-G fault in the line. At both ends, the fault was sensed in Z1 at a distance of 52km from Tippapur end and at a distance of 22km from Jangaon end, R pole opened, A/R operated and was successful. At Jangaon end, A/R did not operate and the line tripped after 1s.	06-06-2026 02:24	<u>TGTRANSCO:</u> Non operation of A/R at Jangaon end.	<u>TGTRANSCO:</u> Non operation of Main breaker A/R at Jangoan end will be checked

TGTRANSCO Vide Mail dated 06.07.2026 has furnished the following information

- Tripped on R-Phase to Ground, Zone-1 indications at Jangoan end. A/R operated and successful at both ends
- Main breaker A/R not operated at Jangoan end

Remedial Actions taken:

- Non operation of AR will be checked by availing LC on 10-07-2026.

Recommendations:

- ✚ TGTRANSCO to rectify the Auto Reclosure issue in 400KV-TIPPAPUR-JANAGAON-1at Jangaon end.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
8	220KV-KOTHAGUDEM_TPS-TIRUVURU-1	As per the reports submitted, the triggering incident was R-G fault in the line at a distance of 26km from Kothagudem end and 61km from Tiruvuru end. At KOTHAGUDEM end, the fault was sensed in Z1, R-pole opened and the line tripped on suspected pole discrepancy. At TIRUVURU end, the fault was sensed in Z1, R-pole opened, A/R operated and was successful.	06-06-2026 14:54	<u>TGGENCO</u> : Non operation of A/R KTPS end	

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
9	400KV-KTPS_VII-KHAMMAM_PG-1	As per the reports submitted, the triggering incident was R-G fault in the line. At KTPS end, the fault was sensed in Z1 at a distance of 18km, A/R did not operate and the line tripped. At Khammam end, the fault was sensed in Z1, Main A/R successful but Tie CB was in non-auto mode (Khammam - Asupaka- Tie Bay)	11-06-2026 01:24	TGGENCO: Non operation of A/R at KTPS end	

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
10	400KV-GAZUWAKA-KALPAKKA-2	As per the reports submitted, the triggering incident was B-G fault in the line. At Gazuwaka end, the fault was sensed in Z1 at a distance of 2km, B pole opened. A/R operated and the line tripped on persistent fault. At Kalpakka end, the fault was sensed in zone-1, A/R did not operate and the line tripped.	17-06-2026 17:10	APTRANSCO: Non operation of A/R at Kalpakka end	APTRANSCO: Jumper rectification carried out

APTRANSCO Vide Mail dated 03.07.2026 has furnished the following information

- Triggering incident was B-G fault in the line. Due to presence of Carrier failure during the incident, 3Ph trip operated at Kalapaka end for Zone-1, B-Ph protection operation. Hence AR was not operated.

Remedial action taken:

- On 18/06/26 healthy Carrier communication in channel1&2 was restored.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
11	400KV-NCTPS_STAGE_II-MANALI-1	As per the reports submitted, the triggering incident was Y-G fault in the line due to Y phase suspension insulator failure at location 58. At Manali end, the fault was sensed in Z1 at a distance of 67km, Y pole opened and A/R operated the line tripped due to persistent fault. At NCTPS end, the fault was sensed in Z1 at a distance of 12km, all 3 poles of Tie CB tripped pole opened in main CB and within dead time of MCB, DT received from remote end and the line tripped without A/R operation.	18-06-2026 15:23	TNPGCL: Non operation of Tie CB A/R at NCTPS_STAGE_II end	TNPGCL: Y phase suspension insulator at location :58 is to be replaced

TANTRANSCO Vide Mail dated 04.07.2026 has furnished the following information

- For a single line to ground fault in Y phase, Main CB AR successful & TOR operated for subsequent fault & Tie CB Lockout trip initiated.
- At NCTPS end AR scheme is enabled in BCU which has no facility for checking the line voltage. Hence after TOR trip of Main CB at Manali end, DT extended to NCTPS to avoid reclosure with fault.

Recommendations:

- ✚ TNPGCL to rectify the Auto Reclosure issue in 400KV-NCTPS_STAGE_II-MANALI-1 at NCTPS_STAGE_II end.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
12	400KV-NCTPS_STAGE_II-MANALI-1	As per the reports submitted, the triggering incident was Y-G fault in the line. At both ends, the fault was sensed in zone-1. At	20-06-2026 19:24	TNPGCL: Non operation of A/R at NCTPS end.	TNPGCL: AR attempt was made by BCU

		Manali end, Y-pole opened, A/R operated and the line was holding. At NCTPS end, all 3 poles in Tie CB have tripped and main CB Y-pole opened. However, Main CB A/R did not operate and the line tripped on PD relay after around 3s.			(Alstom-C264), but Yph CMR input to BCU couldn't reset, hence AR close pulse wasn't issued by BCU. Pole discrepancy trip was observed on MCB. CMR- Yph relay is to be replace for successful AR function.
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TANTRANSCO Vide Mail dated 04.07.2026 has furnished the following information

- For a single line to ground fault in B phase, AR successful in Main & Tie CB at Manali end

V. PLCC Maloperation-related Events

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
1	400KV-MALKARAM-SURYAPET-1	As per the reports submitted, the triggering incident is the PLCC maloperation at Suryapet end and Spurious DT signal sent from analog protection couplers while DCRM testing on 400KV Suryapet-Julurupadu feeder tie breaker. Line is in service at Suryapet end. DT was received and 3ph tripped at Malkaram end.	06-06-2026 10:59	<u>TGTRANSCO:</u> PLCC maloperation at Suryapet end	

TGTRANSCO Vide Mail dated 06.07.2026 has furnished the following information

- Line is in service at Suryapet end
- Spurious DT signal sent from analog protection couplers while DCRM testing on 400kV Suryapet- Julurupadu-1 feeder tie breaker on 06-06-2026 at 10:59Hrs.
- Similar incident occurred on 08-06-2026 at 11:59Hrs while DCRM testing on 400kV Suryapet- Julurupadu-2 feeder tie breaker

Remedial Actions taken:

- Replacement of analog protection coupler with digital protection coupler is under progress.

Recommendations:

- ✚ TGTRANSCO to rectify the **PLCC maloperation** issue in **400KV-MALKARAM-SURYAPET-1** all lines at Suryapet end.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
2	400KV-NCTPS_STAGE_II-VALLUR-1	As per the reports submitted, the triggering incident is the PLCC maloperation. At NCTPS end, Spurious Direct Trip command received from Vallur end which caused 3ph tripped. At Vallur end breaker did not trip.	07-06-2026 12:28	TNPGCL end: Receiving DT at NCTPS end.	

Recommendations:

- ✚ TNPGCL to rectify the PLCC maloperation issue in 400KV-NCTPS_STAGE_II-VALLUR-1at NCTPS end.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
3	400KV-MALKARAM-SURYAPET-1	As per the reports submitted, the triggering incident is the PLCC maloperation at Suryapet end and Spurious DT signal sent from analog protection couplers while DCRM testing on 400KV Suryapet-Julurupadu feeder tie breaker. Line is in service at Suryapet end. DT was received and 3ph tripped at Malkaram end.	08-06-2026 11:59	TGTRANSCO: Sending DT from Suryapet end needs review.	TGTRANSCO: Replacement of analog protection coupler with digital protection coupler is under progress

TGTRANSCO Vide Mail dated 06.07.2026 has furnished the following information

- Line is in service at Suryapet end and Spurious DT signal sent from analog protection couplers while DCRM testing on 400kV Suryapet- Julurupadu-1 feeder tie breaker on 06-06-2026 at 10:59Hrs.

- Similar incident occurred on 08-06-2026 at 11:59Hrs while DCRM testing on 400kV Suryapet- Julurupadu-2 feeder tie breaker

Remedial Actions taken:

- Replacement of analog protection coupler with digital protection coupler is under progress.

S. No.	Event	Event Analysis	Outage Date & time	Points for Review	Remedial Actions Furnished
4	400KV- GUDIWADA- VEMAGIRI_AP-2	As per the reports submitted, the triggering incident is the PLCC maloperation at Gudiwada end. The earth leakage found in outgoing cable connected to PLCC Protection coupler panel. On observation in PLCC Protection coupler unit, the control unit DTPC 02 failed and some cards are burnt and blackish formed. Hence, DT was received, the line tripped only at Gudiwada end	18-06-2026 12:36	<u>APTRANSCO:</u> Receiving DT at Gudivada end.	<u>APTRANSCO:</u> Normalcy restored after isolating the supply and cables connected to PLCC Protection coupler panel at 18:28 Hrs. on 18.06.2026. On 19.06.2026, the burnt PLCC cards replaced with spare ones. Thus, normalcy restored.

APTRANSCO Vide Mail dated 03.07.2026 has furnished the following information

- The line tripped at Gudiwada end only on DT signal received condition due to burning of cards in DTPC panel at Gudiwada SS.

Remedial action taken:

- On 19/06/26, burnt cards were replaced with healthy cards.

VI. DR Time Synchronization Issues Related Events

Sl. No	Element	Date & Time	Station at which DR time synchronisation was not observed
1	220KV-SRISAILAM_RIGHT_BANK-NAGARJUNASAGAR_TS-1	21-05-2026 09:01	SRISAILAM_RIGHT_BANK - 220KV
 APGENCO to review the DR Time Synchronization issue at SRISAILAM_RIGHT_BANK - 220KV			
2	400KV-SRISAILAM_LEFT_BANK-DINDI-2	21-05-2026 19:27	SRISAILAM_LEFT_BANK - 400KV
TGGENCO Vide Mail dated 08.07.2026 has furnished the following information			
➤ DR Time Synchronization was not observed at 400KV SLBHES			
3	400KV-YADADRI TPP-DINDI-2	21-05-2026 19:27	YADADRI TPP - 400KV
TGGENCO Vide Mail dated 07.07.2026 has furnished the following information			
➤ It is verified from the DR and EL and found that the time sync is in order.			
4	400KV-YADADRI TPP-DINDI-1	21-05-2026 19:27	YADADRI TPP - 400KV
TGGENCO Vide Mail dated 07.07.2026 has furnished the following information			
➤ It is verified from the DR and EL and found that the time sync is in order.			
5	220KV-RENIGUNTA-NAGIRI-1	21-05-2026 22:49	NAGIRI - 220KV
APTRANSCO Vide Mail dated 03.07.2026 has furnished the following information			
➤ No DR time sync available at 220kV Nagari SS.			
6	765KV-KURNOOL_PG-KURNOOL_PG_III-2	21-05-2026 23:40	KURNOOL_PG_III - 765KV

PGCIL SR-1 Vide Mail dated 06.07.2026 has furnished the following information			
➤ Time synch Verified. ➤ No issue in POWERGRID end.			
7	765KV-KURNOOL_PG-KURNOOL_PG_III-2	21-05-2026 23:40	KURNOOL_PG - 765KV
PGCIL SR-1 Vide Mail dated 06.07.2026 has furnished the following information			
➤ Time synch Verified. ➤ No issue in POWERGRID end.			
8	GOOTY-SWS - 220KV	22-05-2026 07:38	GOOTY-SWS - 220KV
APTRANSCO Vide Mail dated 03.07.2026 has furnished the following information			
➤ DR time sync is in order at Gooty 220kV SWS.			
9	220KV-SRISAILAM_RIGHT_BANK-DINDI-1	22-05-2026 11:02	SRISAILAM_RIGHT_BANK - 220KV
10	400KV-ILFS-NAGAPATTNAM_PS-1	22-05-2026 12:45	NAGAPATTNAM_PS - 400KV
PGCIL SR-2 Vide Mail dated 06.07.2026 has furnished the following information			
➤ Time Sync Checked and found OK			
11	220KV-SRISAILAM_RIGHT_BANK-DINDI-1	22-05-2026 12:46	SRISAILAM_RIGHT_BANK - 220KV
12	220KV-GARIVIDI-MARADAM-2	23-05-2026 11:57	GARIVIDI - 220KV
APTRANSCO Vide Mail dated 03.07.2026 has furnished the following information			
➤ It will be attended soon.			
🚧 APTRANSCO to review the DR Time Synchronization issue at GARIVIDI - 220KV			
13	220KV-GARIVIDI-MARADAM-1	23-05-2026 11:57	MARADAM - 220KV

APTRANSCO Vide Mail dated 03.07.2026 has furnished the following information			
➤ DR time sync is in order at Maradam SS.			
14	230KV-TTGS-Ettayapuram-1	24-05-2026 13:21	Ettayapuram - 230KV
15	Ettayapuram - 230KV	24-05-2026 13:21	Ettayapuram - 230KV
✚ NTPC Ettayapuram to review the DR Time Synchronization issue at Ettayapuram - 230KV			
16	400KV-GAJWEL-CHANDALAPUR-1	26-05-2026 21:40	CHANDALAPUR - 400KV
TGTRANSCO Vide Mail dated 06.07.2026 has furnished the following information			
➤ No GPS time synchronization issue at Chandulapur SS.			
➤ At Ramadugu SS, there is issue with GPS Antenna, the same will be rectified in 45 days.			
➤ At 400kV Gajwel substation, time synchronization issue is rectified on 27-05-2026.			
17	400KV-RAMADUGU-GAJWEL-2	26-05-2026 21:54	RAMADUGU - 400KV
TGTRANSCO Vide Mail dated 06.07.2026 has furnished the following information			
➤ No GPS time synchronization issue at Chandulapur SS.			
➤ At Ramadugu SS, there is issue with GPS Antenna, the same will be rectified in 45 days.			
➤ At 400kV Gajwel substation, time synchronization issue is rectified on 27-05-2026.			
18	400KV-GHANAPUR-GAJWEL-1	27-05-2026 06:02	GAJWEL - 400KV
TGTRANSCO Vide Mail dated 06.07.2026 has furnished the following information			
➤ No GPS time synchronization issue at Chandulapur SS.			
➤ At Ramadugu SS, there is issue with GPS Antenna, the same will be rectified in 45 days.			
➤ At 400kV Gajwel substation, time synchronization issue is rectified on 27-05-2026.			
19	GAJWEL - 220KV	27-05-2026 06:02	GAJWEL - 220KV

TGTRANSCO Vide Mail dated 06.07.2026 has furnished the following information			
➤ No GPS time synchronization issue at Chandulapur SS. ➤ At Ramadugu SS, there is issue with GPS Antenna, the same will be rectified in 45 days. ➤ At 400kV Gajwel substation, time synchronization issue is rectified on 27-05-2026.			
20	400KV-GAJWEL-RAMAGUNDAM-1	27-05-2026 06:02	GAJWEL - 400KV
TGTRANSCO Vide Mail dated 06.07.2026 has furnished the following information			
➤ No GPS time synchronization issue at Chandulapur SS. ➤ At Ramadugu SS, there is issue with GPS Antenna, the same will be rectified in 45 days. ➤ At 400kV Gajwel substation, time synchronization issue is rectified on 27-05-2026.			
21	GAJWEL - 400KV	27-05-2026 06:02	GAJWEL - 400KV
TGTRANSCO Vide Mail dated 06.07.2026 has furnished the following information			
➤ No GPS time synchronization issue at Chandulapur SS. ➤ At Ramadugu SS, there is issue with GPS Antenna, the same will be rectified in 45 days. ➤ At 400kV Gajwel substation, time synchronization issue is rectified on 27-05-2026.			
22	400KV/220KV GAJWEL-ICT-1	27-05-2026 06:02	GAJWEL - 400KV
TGTRANSCO Vide Mail dated 06.07.2026 has furnished the following information			
➤ No GPS time synchronization issue at Chandulapur SS. ➤ At Ramadugu SS, there is issue with GPS Antenna, the same will be rectified in 45 days. ➤ At 400kV Gajwel substation, time synchronization issue is rectified on 27-05-2026.			
23	400KV/220KV GAJWEL-ICT-2	27-05-2026 06:02	GAJWEL - 400KV
TGTRANSCO Vide Mail dated 06.07.2026 has furnished the following information			

	➤ No GPS time synchronization issue at Chandulapur SS. ➤ At Ramadugu SS, there is issue with GPS Antenna, the same will be rectified in 45 days. ➤ At 400kV Gajwel substation, time synchronization issue is rectified on 27-05-2026.		
24	400KV-KALVENDAPATTU-VALLUR-1	28-05-2026 06:15	KALVENDAPATTU - 400KV
PGCIL SR-2 Vide Mail dated 06.07.2026 has furnished the following information			
	➤ Time Sync Checked and found OK		
25	400KV-KAMUDHI-OTTAPIDARAM-1	28-05-2026 16:34	OTTAPIDARAM - 400KV
TANTRANSCO Vide Mail dated 04.07.2026 has furnished the following information			
	➤ At both ends checked on 01/07/2026 relays sync with GPS. Further both end DR triggered at 28-05-2026 16:33:01.890 (Ottapidaram end) & 28-05-2026 16:33:01.891 Kamuthi end.		
26	400KV-KAMUDHI-OTTAPIDARAM-1	28-05-2026 16:34	KAMUDHI - 400KV
TANTRANSCO Vide Mail dated 04.07.2026 has furnished the following information			
	➤ At both end checked on 01/07/2026 relays sync with GPS. Further both end DR triggered at 28-05-2026 16:33:01.890 (Ottapidaram end) & 28-05-2026 16:33:01.891 Kamuthi end.		
27	220KV-HOODY-MALUR-1	29-05-2026 17:35	MALUR - 220KV
 KPTCL to review the DR Time Synchronization issue at MALUR - 220KV			
28	220KV-HOODY-MALUR-1	29-05-2026 17:35	HOODY - 220KV
 KPTCL to review the DR Time Synchronization issue at HOODY - 220KV			
29	400KV-HASSAN-HEBBANAHALLI-1	30-05-2026 21:39	HEBBANAHALLI - 400KV
 KPTCL to review the DR Time Synchronization issue at HEBBANAHALLI - 400KV			

30	400KV-MYSORE-KOZHIKODE-1	31-05-2026 16:05	MYSORE - 400KV
PGCIL SR-2 Vide Mail dated 06.07.2026 has furnished the following information			
➤ Time Sync Rectified.			
31	220KV-HAROHALLI-SOMANAHALLI-1	31-05-2026 20:07	SOMANAHALLI - 220KV
✚ KPTCL to review the DR Time Synchronization issue at SOMANAHALLI - 220KV			
32	SABARIGIRI - 220KV	02-06-2026 06:37	SABARIGIRI - 220KV
KSEB Vide Mail dated 07.07.2026 has furnished the following information			
➤ SABARIGIRI - 220KV (02-06-2026 - 06:37) - GPS Signal Issue			
✚ KSEBL to review the DR Time Synchronization issue at SABARIGIRI - 220KV			
33	400KV-ALAMATHY-SUNGAVARACHATRAM-2	03-06-2026 20:43	SUNGAVARACHATRAM - 400KV
TANTRANSCO Vide Mail dated 04.07.2026 has furnished the following information			
➤ Ethernet switch issue was there. This has to be attended			
✚ TANTRANSCO to review the DR Time Synchronization issue at SUNGAVARACHATRAM - 400KV			
34	400KV-NELLORE_PG-VIJAYAWADA-1	09-06-2026 18:36	NELLORE_PG - 400KV
PGCIL SR-1 Vide Mail dated 06.07.2026 has furnished the following information			
➤ Time synch Verified.			
➤ No issue in POWERGRID end.			
35	400KV-NELLORE_PG-VIJAYAWADA-1	09-06-2026 18:36	VIJAYAWADA - 400KV
✚ APTRANSCO to review the DR Time Synchronization issue at VIJAYAWADA - 400KV			

36	400KV-KTPS_VII-KHAMMAM_PG-1	11-06-2026 01:24	KHAMMAM_PG - 400KV
PGCIL SR-1 Vide Mail dated 06.07.2026 has furnished the following information At Khammam SS ➤ Main-1 relay (Siemens 7SA522) is Time Synchronized with GPS. ➤ The Main-2 relay is REL670, and Time synchronization provision is not available. ➤ The case has been intimated to TRANSCO for relay replacement/ card upgradation for enabling GPS time synch.			
37	400KV-LKPPL_STG2-VIJAYAWADA-2	11-06-2026 05:02	LKPPL_STG2 - 400KV
 LKPPL to review the DR Time Synchronization issue at LKPPL_STG2 - 400KV			
38	400KV-ALAMATHY-TIRUVALAM_TN-2	12-06-2026 11:49	ALAMATHY - 400KV
TANTRANSCO Vide Mail dated 04.07.2026 has furnished the following information ➤ Bay Owned by M/s. PGCIL. Replacement of relay proposed by PGCIL SR-II			
39	220KV-SRISAILAM_RIGHT_BANK-NAGARJUNASAGAR_TS-1	13-06-2026 11:29	SRISAILAM_RIGHT_BANK - 220KV
40	220KV-AMBEWADI-PONDA-2	13-06-2026 13:08	AMBEWADI - 220KV
 KPTCL to review the DR Time Synchronization issue at AMBEWADI - 220KV			
41	400KV-ALAMATHY-SUNGAVARACHATRAM-1	16-06-2026 17:23	SUNGAVARACHATRAM - 400KV
TANTRANSCO Vide Mail dated 04.07.2026 has furnished the following information ➤ Ethernet switch issue there. This has to be attended			
42	400KV-GAZUWAKA-KALPAKKA-1	17-06-2026 17:10	KALPAKKA - 400KV

APTRANSCO Vide Mail dated 03.07.2026 has furnished the following information			
➤ DR time sync is in order at 400kV Kalapaka SS.			
43	400KV-SRISAILAM_LEFT_BANK-SATTENPALLY-1	17-06-2026 22:51	SRISAILAM_LEFT_BANK - 400KV
TGGENCO Vide Mail dated 08.07.2026 has furnished the following information			
➤ DR Time Synchronization was not observed at 400KV SLBHES			
44	NCTPS STG3 - 765KV	20-06-2026 16:07	NCTPS STG3 - 765KV
 TNP&GCL to review the DR Time Synchronization issue at NCTPS STG3 - 765KV			
45	765KV-ARIYALUR-NCPS-1	20-06-2026 16:07	ARIYALUR - 765KV
TANTRANSCO Vide Mail dated 04.07.2026 has furnished the following information			
➤ Relay sync with GPS.			
46	765KV-ARIYALUR-NCPS-2	20-06-2026 16:07	ARIYALUR - 765KV
TANTRANSCO Vide Mail dated 04.07.2026 has furnished the following information			
➤ Relay sync with GPS.			