

Detailed Report

Date of Submission : 10-06-2026 13:10

GAJWEL - 400KV tripped at **27-05-2026 06:02** and restored at **27-05-2026 20:06**

Summary of Event (घटना का सारांश) :

- i. On 27-05-2026 at 06:02hrs, 220kV B-phase Bus-1 PT got blasted causing 220kV Bus-1 busbar protection operation and tripping of all the elements connected to 220kV Bus-1 at 400/220/132kV SS Gajwel.
- ii. 315MVA ICT-1 & 500MVA ICT-2 HV breakers (Main & Tie) tripped on inter trip.
- iii. Simultaneously 400kV Bus-1 LBB protection operated and tripped all the elements connected to 400kV Bus-1 at 400/220/132kV SS Gajwel.
- iv. From the DRs, it is observed that even though there is no fault on Bus Reactor Tie breaker (directly connected to bus-1 because of half dia) PU relay initiated backtrip command to CU without any external LBB relay initiation resulting in tripping of all elements connected to 400kV Bus-1.
- v. During the above trippings, there was heavy gale and lightning near the substation surroundings.
- vi. There was no load loss due to the above tripping.
- vii. GPS Time Sync issue observed in 400kV CU & PU DRs.

Time and Date of the event (घटना का समय और दिनांक) : 27-05-2026 06:02

Name of the Substation/Generating Station/Pooling Station : GAJWEL - 400KV

affected (Along with Voltage level) :

Event Category (श्रेणी के साथ इवेंट प्रकार) : GI-2

Location/Control Area (स्थान/नियंत्रण क्षेत्र) : TELANGANA

Configuration of Bus (HV/LV) . Along with details of Bus split Operation (if any) :

Bus Configuration Type : One and half breaker

Bus Coupler Status : NA

Bus 1 Connected Elements	Bus 2 Connected Elements	Bus 3 Connected Elements	Bus 4 Connected Elements
1. 400KV-GAJWEL-CHANDALAPUR-1 2. 400KV-GAJWEL-CHANDALAPUR-2 3. 400KV-GAJWEL-RAMAGUNDAM-1 4. 400KV-GHANAPUR-GAJWEL-1	1. 400KV-GAJWEL-NARSAPUR-2 2. 400KV-GAJWEL-NARSAPUR-1 3. 400KV/220KV GAJWEL-ICT-2 4. 400KV/220KV GAJWEL-ICT-4 5. 400KV/220KV GAJWEL-ICT-3 6. 400KV/220KV GAJWEL-ICT-1		

Station Connectivity / SLD during antecedent : Enclosed

Weather Conditions : Rainy, Thunders, Windy

Elements under outage prior to the event : 1. 400KV-RAMADUGU-GAJWEL-2
2. 400KV-RAMADUGU-GAJWEL-1

Other Information (Antecedent Cnditions) :

Renewable Energy Trip : False

Details of SPS Operation (if any): : False

Reason of tripping : Relay Maloperation

Load and Generation Loss (लोड और जेनरेशन हानि) :

Total Generation Loss (MW)	Total Load Loss(MW)
0 MW	0 MW

Duration of interruption (रुकावट की अवधि) :

Details of Equipment Failure (if any during the event): :

Equipment Type	Equipment Make
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List of elements tripped during the event :
1. 400KV-GHANAPUR-GAJWEL-1
2. 400KV/220KV GAJWEL-ICT-2
3. 400KV/220KV GAJWEL-ICT-1
4. 400KV-GAJWEL-RAMAGUNDAM-1

Station Connectivity/SLD during the event : Enclosed

Analysis of the event :
i. On 27-05-2026 at 06:02hrs, 220kV B-phase Bus-1 PT got blasted causing 220kV Bus-1 busbar protection operation and tripping of all the elements connected to 220kV Bus-1 at 400/220/132kV SS Gajwel.
ii. 315MVA ICT-1 & 500MVA ICT-2 HV breakers (Main & Tie) tripped on inter trip.
iii. Simultaneously 400kV Bus-1 LBB protection operated and tripped all the elements connected to 400kV Bus-1 at 400/220/132kV SS Gajwel.
iv. From the DRs, it is observed that even though there is no fault on Bus Reactor Tie breaker (directly connected to bus-1 because of half dia) PU relay initiated backtrip command to CU without any external LBB relay initiation

resulting in tripping of all elements connected to 400kV Bus-1.

v. During the above trippings, there was heavy gale and lightning near the substation surroundings.

vi. There was no load loss due to the above tripping.

vii. GPS Time Sync issue observed in 400kV CU & PU DRs.

Protection / Operational Issues observed :

Restoration Details :

DR Time synchronization issues observed (सुरक्षा/ प्रचालन समस्या) : True

Remedial Measures Taken (सुधारात्मक सुझाव) :

- i. Replaced the damaged 220KV Bus-1 PT and charged the Bus.
- ii. Replaced the suspected cable of reactor tie bay LBB relay to tie PU on 05-06-2026.
- iii. Rectified the CU & PU DRs GPS time sync issue on 27-05-2026.

Relay/PLCC Operation Details :

Control Panel Anunciation : Trip 50 BF Zone-I operated

Main I Relay Indications : LBB back trip 50 BF zone-I Operated

Main II Relay Indications : NIL

Other Relay Indications :

PLCC Counter Increment I/T :

PLCC Counter Increment D/T :

Fault Current Value (kAmp) : None

LA Counter :

Remarks :

Attachments

: 1. [SLD/Connectivity Diagram](#)