

Detailed Report

Date of Submission : 30-07-2026 17:36

GREENKO_PSP - 400KV tripped at 25-07-2026 19:20 and restored at 25-07-2026 19:45

Summary of Event (घटना का सारांश) : On 25.07.2026 at 19:20 hrs, GREENKO PSP was operating in generator mode with Units 1, 3, 4, 5, and 6 in service, generating approximately 1200 MW.

During a system under-frequency disturbance, all generating units tripped. Concurrently, Bus Sectionalizer-2 and Bus Coupler-1 operated, resulting in the isolation and outage of Main Bus-2 (MB-2).

Subsequent investigation of protection records indicated that 400 kV Busbar Protection Main-2 detected a Bay-412 Circuit Breaker Failure (CBF) initiation condition. The relay measured an abnormal B-phase current of approximately 2935 A, causing Busbar Protection Main-2 to operate and trip all bays connected to MB-2, leading to the bus outage.

Time and Date of the event (घटना का समय और दिनांक) : 25-07-2026 19:20

Name of the Substation/Generating Station/Pooling Station affected (Along with Voltage level) : GREENKO_PSP - 400KV

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

Location/Control Area (स्थान/नियंत्रण क्षेत्र) : ANDHRA PRADESH

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

Bus Configuration Type : Double main and transfer bus scheme

Bus Coupler Status : NA

Bus 1 Connected Elements	Bus 2 Connected Elements	Bus 3 Connected Elements	Bus 4 Connected Elements
1. 400KV- GREENKO_CPSS- GREENKO_PSP-2 2. 400KV/11KV GREENKO_PSP- ST-2 3. 400KV/18KV GREENKO_PSP- GT-5 4. 400KV/18KV GREENKO_PSP- GT-7	1. 400KV/18KV GREENKO_PSP- GT-6 2. 400KV/18KV GREENKO_PSP- GT-8	1. 400KV- GREENKO_CPSS- GREENKO_PSP-1 2. 400KV/18KV GREENKO_PSP- GT-1 3. 400KV/18KV GREENKO_PSP- GT-3 4. 400KV/11KV GREENKO_PSP- ST-1	1. 400KV/18KV GREENKO_PSP- GT-2 2. 400KV/18KV GREENKO_PSP- GT-4

Station Connectivity / SLD during antecedent :

Weather Conditions : Normal

Elements under outage prior to the event :
1. 400KV/18KV GREENKO_PSP-GT-1
2. 400KV/18KV GREENKO_PSP-GT-3
3. 400KV/18KV GREENKO_PSP-GT-4
4. 400KV/18KV GREENKO_PSP-GT-5
5. 400KV/18KV GREENKO_PSP-GT-6
6. GREENKO_PSP - 400KV - Bus 2

Other Information (Antecedent Cnditions) : PSP is operating in Generator mode during this time Units 1,3,4,5 and 6 units are running with 1200 MW load.

Renewable Energy Trip : False

Details of SPS Operation : False
(if any):

Reason of tripping : Protection setting

Load and Generation Loss :
(लोड और जेनरेशन हानि)

Total Generation Loss (MW)	Total Load Loss(MW)
1200 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.

Station Connectivity/SLD during the event :

Analysis of the event : Under Frequency protection operated at 49.485 Hz and initiated a trip command ; subsequently, Busbar Protection Main-2 detected CBF initiation in B-phase of Bay 412 (Unit-6) then 96.2 operated, and MB-2 became dead.

Protection / Operational Issues observed :

Restoration Details :
1)Unit-2 was restored at 19:45 Hrs
2)Unit-3 was restored at 19:48 Hrs
3)Unit-5 was Restored at 19:51 Hrs
4)Unit-6 was Restored at 19:57 Hrs
5)Unit-7 was taken in to service at 19:59 Hrs in place of Unit-4

6)Unit-8 was taken in to service at 19:56 Hrs
in place of Unit-4

7)MB-2 was Charged at 19:56 Hrs

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

Remedial Measures Taken : Recommended settings have been
(सुधारात्मक सुझाव) implemented

Relay/PLCC Operation :
Details

Control Panel Anunciation : UNDERFREQUENCY_STAGE2_TRIP

Main I Relay Indications : 81U TRIP

Main II Relay Indications : 81U TRIP

Other Relay Indications :

PLCC Counter Increment I/T :

PLCC Counter Increment D/T :

Fault Current Value (kAmp) : None

LA Counter :

Remarks :

Attachments :