

Details of Grid Events during the Month of June 2023 in Northern Region



Sl.No.	Category of Grid Event (GI for 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HEMM)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid*		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
1	GI-2	Rajasthan	04-Jun-2023 00:10	04-Jun-2023 01:24	1:14	0	0	0.000	0.000	48075	56181	i) As reported, at 00:10hrs, multiple 765kV lines at Bhadla2(PG) i.e., 765kV Bhadla2-Fatehgarh2 ckt-1 & 2 and 765kV Bhadla2-Ajmer ckt-1 tripped during heavy thunderstorm with lightning, windstorm and rain. Details of the tripping are as follows: a. 765kV Bhadla2-Fatehgarh2 ckt-1 tripped on Y-N phase to earth fault (fault sensed in zone-2 at Fatehgarh2 as per DR) with fault distance of 50.99 mtrs. and fault current of 14kA from Bhadla2(PG). b. 765kV Bhadla2-Fatehgarh2 ckt-2 tripped on R-N phase to earth fault (fault sensed in zone-2 at Fatehgarh2 as per DR) with fault distance of 71.68 mtrs. and fault current of 14kA from Bhadla2(PG). c. 765kV Bhadla2-Ajmer ckt-2 tripped on permanent R-N phase to earth fault with fault distance of 290 mtrs. and fault current of 11kA from Bhadla2(PG). ii) As per PMU, the details of the event is given below: a. At 00:10:13:00hrs, transient Y-N fault occurred on 765kV Bhadla2-Fatehgarh2 ckt-2 and line successfully auto-reclosed. Then at 00:10:16:920hrs, again R-N fault occurred on 765kV Bhadla2-Fatehgarh2 ckt-2 within reclaim time and hence the line tripped (3-phase-tripped). b. At 00:10:15:320hrs, transient R-N fault occurred on 765kV Bhadla2-Fatehgarh2 ckt-1 and line successfully auto-reclosed. Then at 00:10:16:880hrs, again Y-N fault occurred on 765kV Bhadla2-Fatehgarh2 ckt-1 within reclaim time and hence the line tripped (3-phase-tripped). c. At 00:10:20:280hrs, 765kV Bhadla2-Ajmer ckt-1 tripped on permanent R-N fault with unsuccessful auto-reclose. iii) As per SCADA, no generation/load loss is observed in Rajasthan control area.	1) 765kV Bhadla2(PG)-Fatehgarh2(PG) Ckt-1 2) 765kV Bhadla2(PG)-Fatehgarh2(PG) Ckt-2 3) 765kV Bhadla2(PG)-Ajmer(PG) Ckt-1
2	GI-1	Rajasthan	05-Jun-2023 08:37	05-Jun-2023 11:26	2:49	175	0	0.382	0.000	45767	51259	i) Total generation of 220kV TPGEI evacuates through 220 KV TATA Noorsar_SL_BKN PG (TPGEI)-Bikaner(PG) (TPGEI) Ckt. As per PMU, during antecedent condition generation of 220kV TPGEI was ~175MW. ii) As reported, 220 KV TATA Noorsar_SL_BKN PG (TPGEI)-Bikaner(PG) (TPGEI) Ckt tripped on B-N phase to earth fault with fault current of 15 kA and fault distance of 0.79km from Bikaner(PG) end. iii) As per PMU at Bikaner(PG) and Fatehgarh2(PG), B-N phase to earth fault with fault clearing time of 80ms is observed. (There is Phase sequence configuration issue in PMU at Bhadla(PG) end and same has been communicated to POWERGRID for necessary actions at their end). iv) As per SCADA, generation loss of approx. 175MW is observed in NR Solar generation.	1) 220 KV TATA Noorsar_SL_BKN PG (TPGEI)-Bikaner(PG) (TPGEI) Ckt
3	GI-2	Haryana	06-Jun-2023 00:10	06-Jun-2023 08:46	8:36	0	0	0.000	0.000	48645	60550	i) 400/220kV Daulatabad(HV) S/s has one and half breaker bus scheme. 400/220kV 315MVA ICT-1,2,3,384 and 400kV Daulatabad-Ghanonda D/C were connected at 400kV Bus-2 and the rest of the elements i.e., 400kV Daulatabad-Gurgaon(PG) D/C & 400kV Daulatabad-Jhajjar(APCP) D/C were connected at 400kV Bus-1. ii) As per PMU, DR/EL & tripping report received, sequence of the event are as follows: a) At 00:10:35:400hrs, B-N phase to earth fault occurred on 400 KV Gurgaon(PG)-Daulatabad(HV) (HV) Ckt-2. On this fault, A/R started at Daulatabad end, however line tripped from both end on DT received from Gurgaon(PG) end within ~60msec of A/R start. b) Further at 00:10:36:500hrs, B-N phase to earth fault occurred on 400 KV Gurgaon(PG)-Daulatabad(HV) (HV) Ckt-1. On this fault, A/R started at Daulatabad end, however line tripped from both end on DT received from Gurgaon(PG) end within ~50msec of A/R start. c) DT received from Gurgaon(PG) end might be due to PLC misoperation. POWERGRID has been communicated regarding the same to take necessary corrective actions at their end. d) At the same time, Bus bar protection of 400kV Bus-2 at Daulatabad also mal-operated and all the Main CB connected at 400kV Bus-2 opened. As reported, there was some issue in bay unit of ICT-4. Issue has been already taken up with OEM (Siemens). e) Due to operation of bus bar protection, 400/220kV 315MVA ICT-3&4 tripped. f) During same time, 400/220kV 315MVA ICT-2 at Daulatabad was also hand tripped. As reported, there was some issue in auxiliary contacts of CB at LV side of ICT-2. Issue w.r.t. ICT-2 has been corrected. g) Further, it is also observed that, on tripping command of Bus bar protection of bus bar-2, Y & B ph pole of CB of ICT-4 tripped instantaneously however, R-ph pole of CB didn't open and it later opened after ~1300msec on D/C E/F protection operation. As reported, issue w.r.t. ICT-4 CB has been taken up. iii) As per SCADA, no change in demand of Haryana control area is observed.	1) 400 KV Gurgaon(PG)-Daulatabad(HV) (HV) Ckt-1 2) 400 KV Gurgaon(PG)-Daulatabad(HV) (HV) Ckt-2 3) 400kV Bus 2 at Daulatabad(HV) 4) 400/220 kv 315 MVA Bt 4 at Daulatabad(HV) 5) 400/220 kv 315 MVA ICT 3 at Daulatabad(HV) 6) 400/220 kv 315 MVA ICT 2 at Daulatabad(HV)
4	GI-2	Uttar Pradesh	06-Jun-2023 23:59	07-Jun-2023 00:35	0:36	0	170	0.000	0.280	49804	60627	i) 400/132kV Mau(UP) has double main transfer bus scheme at both 400kV & 132kV level. During antecedent condition, 400/132 kv 200 MVA ICT 1 & 2 at Mau(UP) were carrying approx. 105MW & 400/132 kv 200 MVA ICT 3 was carrying ~73MW. Bus at 132kV side were running in split mode. ICT-1&2 were connected to one bus and ICT-3 was at another bus. ii) As reported, at 23:59 hrs on 06th Jun23, Y-phase CT at Mau end of 132kV Mau-Semari Jamalpur ckt-2 damaged. On this fault, 400/132 kv 200 MVA ICT 1 & 2 at Mau(UP) both tripped on over current earth fault protection operation. At the same time, 132kV Mau-Semari Jamalpur ckt-2 also tripped. iii) As per PMU & DR, Y-N phase to earth fault which converted into Y-B-N double phase to earth fault with delayed clearance of 440msec is observed. iv) As per DR of 400/132kV ICT-2 at Mau(UP), non-directional E/F protection started, however trip signal is not high. Details of protection operation in ICT-2 need to be reviewed. v) As per SCADA, change in demand of approx. 170MW is observed in UP control area. vi) As reported, damaged Y-ph CT has been replaced on 07th June 2023.	1) 132kV Mau-Semari Jamalpur ckt-2 2) 400/132 kv 200 MVA ICT 1 at Mau(UP) 3) 400/132 kv 200 MVA ICT 2 at Mau(UP)
5	GI-1	Haryana	06-Jun-2023 01:06	06-Jun-2023 04:14	3:08	0	240	0.000	0.418	46363	57451	i) 220/66kV Palwal(HS) S/s has double main bus scheme. ii) As reported, at 01:06hrs, R-phase common jumper of bus isolator of 220/66kV 160MVA ICT-1 got disconnected from suspension insulator string due to breaking of hardware of suspension insulator string during high speed wind and subsequently it touched the B-phase of 220kV bus, which resulted in bus fault. 220 KV Prithala (GPTL)-Palwal(HV) (HVPNL) Ckt-1 & 2 tripped during the event. iii) As per DR at Palwal(HS) (end), 220 KV Prithala (GPTL)-Palwal(HV) (HVPNL) Ckt-1 & 2 tripped on R-B-N double phase to ground fault sensed in zone-4 (indicating bus fault) with fault current of approx. 5.2kA in R-phase and 5.5kA in B-phase and fault clearing time of approx. 400ms. iv) As per PMU at Prithala, R-B-N double phase to ground fault with the delayed clearance of 360msec is observed. v) As per SCADA, change in demand of approx. 240MW in Haryana control area is observed.	1) 220 KV Prithala (GPTL)-Palwal(HV) (HVPNL) Ckt-1 2) 220 KV Prithala (GPTL)-Palwal(HV) (HVPNL) Ckt-2
6	GD-1	Himachal Pradesh	09-Jun-2023 16:01	09-Jun-2023 17:11	1:10	60	0	0.104	0.000	57580	65913	i) During antecedent condition, 220kV Budhi-Lahal ckt was already under shutdown in order to avoid reverse power flow. 35 MW Budhi HPS (PP) - UNIT 1 & 2 were generating approx. 25MW and 35MW respectively and total 60MW of generation was evacuating through 220 KV Chamera_3-Budhi Ckt. ii) As reported, at 16:01 hrs, 220 KV Chamera_3(NH)-Budhi(LB) (LB) Ckt tripped on B-N phase to earth fault during heavy rain and thunderstorm. Due to this, 35 MW Budhi HPS (PP) - UNIT 1 & 2 tripped due to loss of evacuation path. iii) As per PMU at jalandhar(PG), B-N phase to earth fault with fault clearing time of 80msec is observed. iv) As per SCADA, no change in demand is observed in HP control area. v) As per SCADA, generation loss of approx. 60MW is observed at Budhi HPS(PP).	1) 220 KV Chamera_3(NH)-Budhi(LB) (LB) Ckt 2) 35 MW Budhi HPS (PP) - UNIT 1 3) 35 MW Budhi HPS (PP) - UNIT 2

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						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
7	GI-1	Jammu & Kashmir and Ladakh	09-Jun-2023 15:30	09-Jun-2023 19:31	4:01	110	0	0.185	0.000	59332	66437	i) During antecedent condition, 110 MW Kishanganga - UNIT 1 & 3 were generating approx. 110MW each. 110 MW Kishanganga - UNIT 2 was already under shutdown. 110 MW Kishanganga - UNIT 2, 220 KV Kishanganga(NH)-Delina(PGD) (PG) Ckt-1 and 220 KV Kishanganga(NH)-Wagora(PG) (PG) Ckt-2 were connected to 220KV Bus 2 at Kishanganga(NH) and rest of the elements were connected to 220KV Bus 1 at Kishanganga(NH). ii) As reported, at 15:30hrs, R phase CT failure occurred at 110 MW Kishanganga - UNIT 3. This led to bus bar protection operation of 220KV Bus 2 at Kishanganga(NH) which further led to tripping of all the elements connected to Bus-2. iii) As per PMU at Kishanganga(NH), R-phase to ground fault is observed in the system with fault clearance time of 80ms. iv) As per SCADA, no change in demand is observed at B&L and Ladakh control area. v) As per SCADA, generation loss of approx. 110MW is observed at Kishanganga(NH).	1) 220KV Bus 2 at Kishanganga(NH) 2) 220 KV Kishanganga(NH)-Delina(PGD) (PG) Ckt-1 3) 110 MW Kishanganga - UNIT 3 4) 220 KV Kishanganga(NH)-Wagora(PG) (PG) Ckt-2
8	GD-1	Haryana	09-Jun-2023 21:09	09-Jun-2023 22:35	1:26	0	370	0.000	0.551	52604	67125	i) 220/132KV Mohana(Haryana) has double main bus scheme at both 220KV & 132KV level. There are six 220KV lines connected at 220KV level i.e., 220KV Mohana-Sonapat(PG) D/C, 220KV Mohana-Sampla (Haryana) D/C and 220KV Mohana-Samalakra (Haryana) D/C. Samalakra is further connected to 220KV Chhajpur(Haryana) which is further connected to 400/220KV Panipat(BBMB). ii) As reported, at 21:09 hrs on 09th Jun23, R-phase CT at Mohana end of 220 KV Mohana(HV)-Sonapat(PG) (HVPLN) Ckt-1 damaged and line tripped. At the same time, two limbs of CB at Mohana end of 220 KV Mohana(HV)-Sonapat(PG) (HVPLN) Ckt-2 also damaged and ckt-2 also tripped. iii) As per telephonic communication with Mohana S/As, fault was 2-4 from Mohana end having time delay setting of 1sec and bus bar protection operation was also not healthy due to issue in isolator status, hence fault didn't clear. Further, 220KV Mohana-Sampla (Haryana) D/C tripped in 2-2 from Sampla end. 220KV Mohana-Samalakra (Haryana) D/C also became dead due to tripping of 220KV Panipat-Chhajpur ckt-1&2 due to conductor snapping. With this, 220/132KV Mohana S/As became dead. iv) At 22:35hrs, supply to Mohana S/As was restored through 220KV Mohana-Sampla (Haryana) D/C. v) As per DR received from Sonapat(PG) end, 220 KV Mohana(HV)-Sonapat(PG) (HVPLN) Ckt-1 tripped within 120msec on R-N fault and 220 KV Mohana(HV)-Sonapat(PG) (HVPLN) Ckt-2 tripped with the delay of ~360msec on B-N fault in 2-2. vi) As per PMU, R-N fault which cleared within 120msec followed by delayed clearance of 360 msec is observed. vii) As per SCADA, change in demand of approx. 370MW is observed in Haryana control area.	1) 220 KV Mohana(HV)-Sonapat(PG) (HVPLN) Ckt-1 2) 220 KV Mohana(HV)-Sonapat(PG) (HVPLN) Ckt-2 3) 220KV Mohana-Sampla ckt-1 4) 220KV Mohana-Sampla ckt-2
9	GI-2	Uttar Pradesh	10-Jun-2023 16:15	10-Jun-2023 16:51	0:36	0	130	0.000	0.202	55771	64245	i) 400/132KV Mau(UP) has double main transfer bus scheme at both 400KV & 132KV level. During antecedent condition, 400/132 KV 200 MVA ICT 1 & 2 at Mau(UP) were carrying approx. 70MW & 400/132 kv 200 MVA ICT 3 was carrying ~86MW. Bus at 132KV side were running in split mode. ICT-1&2 were connected to one bus and ICT-3 was at another bus. ii) As reported, at 16:15 hrs on 10th Jun23, B-phase CT at Mau end of 132KV Mau-Semari Jamalpur ckt-2 damaged. On this fault, 400/132 kv 200 MVA ICT 1 & 2 at Mau(UP) both tripped on over current earth fault protection operation. At the same time, PRV protection also operated in ICT-1. iii) As per PMU & DR, Y-N phase to earth fault with delayed clearance of 720msec is observed. iv) As per DR of 400/132KV ICT-2 at Mau(UP), trip signal is not high. SLDC-UP has been communicated regarding the same and to review the protection operation details. v) As per SCADA, Change in demand of approx. 130MW is observed in UP control area. vi) As reported, damaged R-ph CT has been replaced on 11th June 2023 and testing of ICT-1 w.r.t. PRV protection operation has also been done, testing results were found ok and ICT-1 was charged at 18:24 hrs on 13th Jun23.	1) 132KV Mau-Semari Jamalpur ckt-2 2) 400/132 kv 200 MVA ICT 1 at Mau(UP) 3) 400/132 kv 200 MVA ICT 2 at Mau(UP)
10	GI-2	Punjab	10-Jun-2023 11:32	10-Jun-2023 12:23	0:51	0	385	0.000	0.563	60081	68344	i) 400/220KV Patiala(PG) has double main transfer bus scheme at 220KV level. During antecedent condition, 400/220 kv 315 MVA ICT 1 & 2 and 400/220 kv 500 MVA ICT 3 at Patiala(PG) were carrying approx. 66MW, 66MW and 103MW respectively. Bus coupler was in closed condition. ii) As reported, 220KV Bus-1 at Patiala(PG) was under planned outage which was reviewed at 11:19 hrs of 10.06.2023. At 11:32 hrs, during switching of load from Bus-1 to Bus-2, due to some breaker issue in 220KV Patiala(PG)-Bahadurgarh(PS) (PSTCL) ckt, bus bar protection operated at 220KV level of 400/220KV Patiala(PG) leading to tripping of both 220KV Bus-1&2 at Patiala(PG). iii) As per FIR received from SLDC-Punjab, 220 KV Patiala(PG)-Ablowal(PS) (PSTCL) Ckt-1 tripped on B-N phase to earth fault (fault sensed in zone-2 from Ablowal end) with fault distance of 12.61km and fault current of 4.495 kA from Ablowal(PS) end and 220 KV Patiala(PG)-Ablowal(PS) (PSTCL) Ckt-2 tripped on B-N phase to earth fault (fault sensed in zone-2 from Ablowal end) with fault distance of 10.35km and fault current of 4.749 kA from Ablowal(PS) end. iv) As per PMU at Patiala(PG), B-N phase to earth fault converted to B-N double phase to earth fault with delayed clearance of 360msec is observed. v) As per SCADA, change in demand of approx. 385MW is observed in Punjab control area.	1) 220KV Bus 1 at Patiala(PG) 2) 220KV Bus 2 at Patiala(PG) 3) 220 KV Patiala(PG)-Ablowal(PS) (PSTCL) Ckt-1 4) 220 KV Patiala(PG)-Ablowal(PS) (PSTCL) Ckt-2 5) 220 KV Patiala(PG)-Nabha(PS) (PSTCL) Ckt-1 6) 220 KV Patiala(PG)-Nabha(PS) (PSTCL) Ckt-2 7) 220 KV Patiala(PG)-Bahadurgarh(PS) (PSTCL) Ckt-2 8) 400/220KV 315MVA ICT-1 at Patiala(PG) 9) 400/220KV 315MVA ICT-2 at Patiala(PG) 10) 400/220KV 500MVA ICT-3 at Patiala(PG)
11	GD-1	Himachal Pradesh, Haryana	13-Jun-2023 18:52	13-Jun-2023 20:37	1:45	0	110	0.000	0.179	49760	61331	i) 220/132KV Pinjore(HP) has double main bus scheme at both 220KV & 132KV level. During antecedent condition, power was coming through 220KV Panchkula(HR) - Pinjore(HR) Ckt 1 & 2 from Panchkula end to Pinjore end and power was going out from Pinjore end to Baddi end through 220KV Baddi(HP) - Pinjore(HR) Ckt 1 & 2. Remaining power was being fed to the 132KV feeders at Pinjore through 220/66KV 100 MVA ICT-1&2 at Pinjore(HR). ii) As reported, at 18:52 hrs, 220KV Panchkula(HR) - Pinjore(HR) Ckt 1 & 2 tripped due to stormy weather (DPR operated). Due to this tripping, power flow through 220KV Baddi(HP) - Pinjore(HR) Ckt 1 & 2 and 220/66KV 100MVA ICT-1 & 3 at Baddi(HP) became zero (lines on no-load condition and lines were radially feeding the ICTs). iii) At 20:10 hrs, 220KV Baddi(HP) - Pinjore(HR) Ckt 1 & 2 manually tripped from Pinjore end for safety purposes. iv) After restoration of 220KV Panchkula(HR) - Pinjore(HR) Ckt 1 & 2, attempt was taken to close both 220KV Baddi(HP) - Pinjore(HR) Ckt 1 & 2, 220KV Baddi(HP) - Pinjore(HR) Ckt 1 held, but 220KV Baddi(HP) - Pinjore(HR) Ckt 2 tripped due to B-phase jumper of wave-trip snap at Pinjore(HR) end. Due to tripping of 220KV Baddi(HP) - Pinjore(HR) Ckt 2, 220KV Baddi(HP) - Pinjore(HR) Ckt 1 again manually tripped to avoid overloading on ckt-1. v) As per PMU, B-N phase to earth fault with delayed clearance of 280msec followed by R-N phase to earth fault with delayed clearance of 800msec is observed. vi) As per SCADA, change in demand of approx. 110MW is observed in HP control area.	1) 220KV Panchkula(HR) - Pinjore(HR) Ckt 1 2) 220KV Panchkula(HR) - Pinjore(HR) Ckt 2 3) 220KV Baddi(HP) - Pinjore(HR) Ckt 1 4) 220KV Baddi(HP) - Pinjore(HR) Ckt 2
12	GD-1	Punjab	14-Jun-2023 20:08	15-Jun-2023 00:39	4:31	0	115	0.000	0.180	52021	63848	i) 220/66KV Khassal(PS) has single bus scheme at both 220KV & 66KV level. During antecedent condition, power was coming through 220 KV Amritsar(PG)-Khassal(PS) (PSTCL) Ckt-1 & 2 from Amritsar end to Khassal end and power was going out to Chogawan and Civil lines Amritsar end through 220 KV Chogawan(PS) -Khassal(PS) (PSTCL) ckt and 220 KV Khassal(PS)-Civil lines Amritsar (PS) (PSTCL) ckt respectively. Remaining power was being fed to the 66KV feeders at Khassal through 220/66KV ICT-1&2 at Khassal(PS). ii) As reported, at 20:06 hrs, 220 KV Chogawan(PS) -Khassal(PS) (PSTCL) ckt and 220 KV Khassal(PS)-Civil lines Amritsar (PS) (PSTCL) ckt tripped due to tower collapse (stormy weather). iii) Again at 20:08 hrs, 220 KV Amritsar(PG)-Khassal(PS) (PSTCL) Ckt-1 tripped on B-N phase to earth fault with fault distance of 23 km from Amritsar(PG) end. 220 KV Amritsar(PG)-Khassal(PS) (PSTCL) Ckt-2 also tripped during the same time, but line didn't trip from Powergrid end, as reported. Due to this tripping, 220/66KV Khassal(PS) S/As became dead. iv) As per DR of 220 KV Amritsar(PG) (DR end)-Khassal(PS) (PSTCL) Ckt-1, B-N phase to earth fault with delayed clearance of 360msec followed by B-N phase to earth fault with fault current of ~7.08kA from Amritsar(PG) end and fault clearing time of ~520ms. v) As per SCADA, SDC, 220 KV Chogawan(PS)-Civil lines Amritsar (PS) (PSTCL) ckt also tripped during the same time (reason yet to be shared). vi) As per PMU at Amritsar(PG), B-N phase to earth fault with fault clearance time of 80msec is observed at 20:06hrs and B-N phase to earth fault with delayed fault clearance time of 520msec is observed at 20:08hrs. vii) As per SCADA, change in demand of approx. 115MW is observed in Punjab control area.	1) 220 KV Chogawan(PS) -Khassal(PS) (PSTCL) ckt 2) 220 KV Khassal(PS)-Civil lines Amritsar (PS) (PSTCL) ckt 3) 220KV Amritsar(PG)-Khassal(PS) (PSTCL) Ckt-1 4) 220 KV Amritsar(PG)-Khassal(PS) (PSTCL) Ckt-2

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						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
13	GI-1	Punjab	18-Jun-2023 00:07	18-Jun-2023 01:30	1:23	0	350	0.000	0.516	52638	67807	i) 220/132/66kV Wadala(PS) and 220/132/66kV Verpal(PS) has double main bus scheme at 220kV level. ii) As reported, at 00:07hrs, 220/132kV ICT 1 & 4 at Wadala(PS) tripped (exact reason of tripping yet to be shared). As per SCADA, during the same time, 220/132kV ICT 2, 3, 4 & 5 at Verpal(PS) along with all the 132kV feeders at Verpal(PS) also tripped and 132kV buses at Verpal(PS) became dead. iii) As per SCADA SOE, 132kV Wadala-Batla dkt-1, 2 & 3, 132kV Wadala-Hargo dkt-1 and 132/11kV ICT 2 at Wadala(PS) also tripped during the same time. iv) As per information received from SLDC Punjab, at 00:14 hrs, R-phase CT of 220 kV Verpal(PS) –Amritsar(PG) dkt-2 blasted at Verpal(PS) end. Further, fire was also observed in the cable of 220 kV Verpal(PS) –Amritsar(PG) dkt-1. As per SCADA, during the same time, 220 kV Verpal(PS) –Wadala(PS) dkt-1 and 220 kV Verpal(PS) –Wadala(PS) dkt-2 also tripped. v) As per information received from CPCC2, 220kV Verpal(PS) –Amritsar(PG) dkt-1 tripped only from Verpal(PS) end and line remained charged from Amritsar(PG) end. vi) As per DR of 220 kV Verpal(PS) –Amritsar(PG) (end) dkt-2, R-N phase to earth fault (fault sensed in zone-2) is observed with fault current of approx. 27.55kA in R-phase and fault clearing time of 345ms. vii) As per PMU at Amritsar(PG), Y-N phase to earth fault with delayed clearance of 440msec is observed at 00:07hrs and R-N phase to earth fault with delayed clearance of 240msec is observed at 00:14hrs. viii) As per SCADA, change in demand of approx. 315MW at 00:07hrs and 350MW at 00:14hrs is observed in Punjab control area.	1) 220/132kV ICT 1 at Wadala(PS) 2) 220/132kV ICT 4 at Wadala(PS) 3) 220/132kV ICT 3 at Verpal(PS) 4) 220/132kV ICT 4 at Verpal(PS) 5) 220/132kV ICT 5 at Verpal(PS) 6) 220 kV Verpal(PS) –Wadala(PS) dkt-1 7) 220 kV Verpal(PS) –Wadala(PS) dkt-2 8) 220 kV Verpal(PS) –Amritsar(PG) dkt-1 9) 220 kV Verpal(PS) –Amritsar(PG) dkt-2
14	GD-1	J&K	19-Jun-2023 08:28	19-Jun-2023 11:44	3:16	0	190	0.000	0.329	12580.51111	57677	i) During antecedent condition, active power loading of 220 kV Kishenpur(PG)-Barn(JK) (PDD JK) Ckt-1 & 2 was approx. 98MW each. ii) As reported, at 08:28hrs, 220 kV Kishenpur(PG)-Barn(JK) (PDD JK) Ckt-1 & 2 tripped on B-N phase to phase fault from Barn end only. iii) As per DR of 220 kV Barn(JK)-Kishenpur(PG) Ckt-1 & 2, at Kishenpur end, B-N fault in Z-2 is observed which cleared in ~160msec. iv) As per PMU at Kishenpur(PG), B-N fault which cleared in 160msec is observed. v) As per SCADA, load loss of approx. 190MW occurred in J&K control area.	1) 220 kV Kishenpur(PG)-Barn(JK) (PDD JK) Ckt-1 2) 220 kV Kishenpur(PG)-Barn(JK) (PDD JK) Ckt-2
15	GD-1	Rajasthan	20-Jun-2023 05:21	20-Jun-2023 07:36	2:15	0	280	0.000	0.480	13178.68333	58276	i) 400/220kV Ratangarh(Raj) has double main & transfer bus scheme at 220kV side. ii) During antecedent condition, 400/220 kV 315 MVA ICT 2 at Ratangarh(RS) and 220kV feeders to Badnu, Sikar(PG)-II, Ratangarh-I and Khethri-I connected at 220kV Bus-B. Remaining elements were connected at 220kV Bus-A. iii) As reported at 05:21 hrs, B-ph bus jumper of 220 kV Ratangarh-Badnu (Raj) Ckt broke and created B-N phase to earth bus fault on 220kV bus-B. 220kV Badnu ckt tripped in Z-1 from Ratangarh end (distance relay at Ratangarh end sensed fault in Z-1, forward direction due to issue of Improper bus-fault selection by relay in case of near fault). iv) 220kV Bus bar protection was in blocked condition due to some circuitry fault and hence, bus bar protection didn't operate. v) Continuous pickup and reset of Z-4 is observed in adjacent 220kV lines connected at 220kV Bus-B due to which none of the lines tripped in Z-4 from Ratangarh end (Z-4 time delay setting is kept as 160msec at Ratangarh end). As fault was still persisting 220kV lines connected at 220kV Bus-B tripped from remote end on distance protection operation in Z-2. Rajasthan has been communicated to check the operation of Z-4 distance protection at Ratangarh end. v) 220kV Ratangarh-Sikar Ckt-1 connected at 220kV Bus-A also tripped in Z-4 as bus coupler breaker opened with the time delay more than Z-4 time delay (160msec). vi) After approx. 600msec of the fault, 400/220kV 315MVA ICT-2 at Ratangarh(Raj) tripped on over current E/F protection operation and fault cleared with the tripping of this ICT. vii) 220kV Badnu S/s became dead during the tripping event as it was having feeding from 400/220kV Ratangarh(Raj) only. ix) As per SCADA, change in load of approx. 280MW is observed in Rajasthan control area. x) As informed by Rajasthan, issue w.r.t. bus bar protection at 220kV side of 400/220kV Ratangarh(Raj) has been corrected and bus bar protection is now healthy and in service.	1) 400/220 kV 315 MVA ICT 2 at Ratangarh(RS) 2) 220 kV Ratangarh(RS)-Sikar(PG) (PG) Ckt-1 3) 220 kV Ratangarh(RS)-Sikar(PG) (PG) Ckt-2 4) 220 kV Ratangarh-Badnu (Raj) Ckt 5) 220 kV Ratangarh-Ratangarh(220) (Raj) Ckt-1 6) 220 kV Ratangarh-Khethri (Raj) Ckt-1
16	GD-1	J&K	25-Jun-2023 16:36	25-Jun-2023 18:25	1:49	0	230	0.000	0.440	7191.232639	52294	i) During antecedent condition, 220 kV MirBazar(PDD)-NewWanpoh(PG) (PDD JK) Ckt-1, 220kV Pampore- Mirbazar D/C were not in service. 220 kV MirBazar(PDD)-NewWanpoh(PG) (PDD JK) Ckt-1 was out since 14:55 hrs of the 25th June 2023 for routine maintenance of the line. Active power loading of 220 kV MirBazar(PDD)-NewWanpoh(PG) (PDD JK) Ckt-2 was 231MW. ii) As reported, at 16:36hrs, 220 kV MirBazar(PDD)-NewWanpoh(PG) (PDD JK) Ckt-2 tripped on R-N fault in line. iii) As per DR at NewWanpoh(PG) end of 220 kV MirBazar(PDD)-NewWanpoh(PG) (PDD JK) Ckt-2, zone-1 distance protection operated with fault current of 8.7kA. iv) Due to tripping of 220 kV MirBazar(PDD)-NewWanpoh(PG) (PDD JK) Ckt-2, supply to Mirbazar S/s got affected. v) As per PMU at Kishenpur(PG), R-N fault which cleared within 100msec is observed. vi) As per SCADA, load loss of approx. 230MW occurred in J&K control area. vii) Further, at around 17:12hrs, ~80MW load was restored by charging 220kV Pampore- Mirbazar D/C and complete load of Mirbazar restore at 18:25 hrs with the charging of 220 kV MirBazar(PDD)-NewWanpoh(PG) (PDD JK) Ckt-2.	1) 220 kV Mir Bazar(PDD)-NewWanpoh(PG) (PDD JK) Ckt-2
17	GD-1	J&K	26-Jun-2023 14:56	26-Jun-2023 17:56	3:00	0	225	0.000	0.369	54411	61047	i) During antecedent condition, active power loading of 220 kV Kishenpur(PG)-Barn(JK) (PDD JK) Ckt-1 & 2 was approx. 112MW each. Both the circuit are on same tower and line length is 35km. ii) As reported, at 16:56hrs, 220 kV Kishenpur(PG)-Barn(JK) (PDD JK) Ckt-2 tripped on R-Y phase to phase fault. Fault currents were Ir=6kA & Iy=3kA and fault distance was ~20km from Kishenpur end. At the same time, 220 kV Kishenpur(PG)-Barn(JK) (PDD JK) Ckt-1 also tripped. Fault distance ~32km from Kishenpur end. iii) As per DR of 220 kV Kishenpur(PG)-Barn(JK) (PDD JK) Ckt-1 & 2 at Kishenpur end, 220 kV Kishenpur(PG)-Barn(JK) (PDD JK) Ckt-1 tripped on R-Y fault in Z-1 from Kishenpur end instantaneously and 220 kV Kishenpur(PG)-Barn(JK) (PDD JK) Ckt-2 tripped with delay of ~160msec from Kishenpur end on R-Y fault in Z-2. iv) As per SCADA, load loss of approx. 225MW occurred in J&K control area. v) Further at 17:56hrs, 220 kV Kishenpur(PG)-Barn(JK) (PDD JK) Ckt-2 was charged which again tripped at 20:38hrs on phase to earth fault and revived back at 21:49hrs. vi) Later at 00:11hrs on 27th June 2023, 220 kV Kishenpur(PG)-Barn(JK) (PDD JK) Ckt-2 was taken under shutdown and both the circuits revived at 04:02 hrs.	1) 220 kV Kishenpur(PG)-Barn(JK) (PDD JK) Ckt-1 2) 220 kV Kishenpur(PG)-Barn(JK) (PDD JK) Ckt-2
18	GI-2	Uttar Pradesh	26-Jun-2023 06:37	26-Jun-2023 08:37	2:00	0	0	0.000	0.000	44268	49165	i) 400/220kV Shahjahanpur (PG) has double main transfer bus scheme at 220kV level. During antecedent condition, 400/220 kV 500 MVA ICT 1 & 2 at Shahjahanpur (PG) were carrying approx. 40MW and 36MW respectively. Bus coupler was in closed condition. ii) As reported, at 06:37 hrs, bus bar protection of 220kV Bus-2 operated on R-N bus fault and elements connected to bus-2 i.e., 400/220 kV 500 MVA ICT 1 at Shahjahanpur(PG), 220 kV Azispur (UP)-Shahjahanpur(PG) (UP) Ckt-2 and 220 kV Shahjahanpur(PG)-Shahjahanpur(UP) (UP) Ckt-1 tripped. iii) Bus coupler breaker opened instantaneously and 220kV bus-1 at Shahjahanpur (PG) and elements connected to it remained intact. iv) As per PMU at Lucknow(PG), R-N phase to earth fault which cleared within 80msec is observed. v) As per SCADA, no change in demand in Uttar Pradesh control area.	1) 220kV Bus 2 at Shahjahanpur(PG) 2) 400/220 kV 500 MVA ICT 1 at Shahjahanpur(PG) 3) 220 kV Azispur (UP)-Shahjahanpur(PG) (UP) Ckt-2 4) 220 kV Shahjahanpur(PG)-Shahjahanpur(UP) (UP) Ckt-1

Details of Grid Events during the Month of June 2023 in Northern Region



Sl No.	Category of Grid Event (GI for 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HEMM)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid*		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
19	GD-1	Punjab	29 Jun-2023 21:07	29 Jun-2023 22:50	1:43	0	995	0.000	1.512	47358	65805	i) As reported, at 21.07hrs, earth wire of 220 KV Moga(PG)-Mehal- Kalan(PS) (PSTCL) Ckt-1 & 2 snapped between Moga S/s Gantry and tower location no. 1. This led to bus bar protection operation of 220kV bus -1 at Moga(PG) due to fault @ 220 KV Moga(PG)-Mehal- Kalan(PS) (PSTCL) Ckt-2. Due to this, 220 KV Moga(PG)-Moga(PS) (PSTCL) Ckt-4, 400/220 kv 500 MVA ICT 1 at Moga(PG) and 400/220 kv 315 MVA ICT 4 at Moga(PG) tripped. ii) 220 KV Moga(PG)-Mehal- Kalan(PS) (PSTCL) Ckt-1 (connected at 220kV Bus-2) tripped due to DT received at Moga(PG) end. During the same time, 220 KV Moga(PG)-Ajitwal(PS) (PSTCL) Ckt-1 (connected at 220kV bus-2) also tripped on R-Y-N double phase to earth fault. iii) As per DR of Moga(PG) end, R-N phase to earth fault (I _r =30.739A, fault sensed in zone-1) followed by Y-B phase to phase fault (I _y =30.839A, I _b =30.566A) are observed in 220 KV Moga(PG)-Mehal-Kalan(PS) (PSTCL) Ckt-2, fault distance was 70m from Moga(PG) end. At the same time, R-Y-N double phase to earth fault (I _r =42.666A, I _y =44.111kA) with fault clearance time of 90ms is observed in 220 KV Moga(PG) (end)-Ajitwal(PS) (PSTCL) Ckt-1, fault distance was 0.6m from Moga(PG) end. iv) As per SCADA SOE, 220/66 kv ICT 2 at Mehal- Kalan(PS) and 220KV Moga(PS)-Baghapurana(PS) Ckt-1 also tripped during the same time (Reason yet to be shared). v) As per PMU at Allahabad(PG), multiple faults are observed. vi) Whole event leads to load loss of Baghapurana (feeding through Mogan (Punjab)), Jagraon (feeding through Ajitwal) and load of Mehal-Kalan. As per SCADA, change in demand of approx. 995 MW is observed in Punjab control area. vii) As reported, 220 kv Baghapurana & Jagraon load revived within 5-10 minutes.	1) 220 KV Moga(PG)-Mehal- Kalan(PS) (PSTCL) Ckt-1 2) 220 KV Moga(PG)-Mehal- Kalan(PS) (PSTCL) Ckt-2 3) 220 KV Moga(PG)-Ajitwal(PS) (PSTCL) Ckt-1 4) 220 KV Moga(PG)-Moga(PS) (PSTCL) Ckt-4 5) 400/220 kv 500 MVA ICT 1 at Moga(PG) 6) 400/220 kv 315 MVA ICT 4 at Moga(PG)

Details of Grid Events during the Month of June 2023 in Western Region



Sl No.	Category of Grid Event (GI 1or 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid*		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
1	GI-2	WR	04-Jun-23 14:32	04-Jun-23 15:17	0:45	-	81	-	0.002	63854	53546	At 14:32 Hrs/04.06.2023, 400 kV Lonikhand-Pune tripped due to wave trap blast at Lonikhand end and 400 kV Lonikhand-Lonikhand-II 1 tripped due to LA blast at Lonikhand end. At the same time 400 kV Lonikhand-Chakan and 400 kV Karjat-Lonikhand-II 1&2 also tripped due to reverse zone protection and Overvoltage ST1 protection respectively. Load loss of 81 MW occurred due to the event.	Tripping of 1. 400 kV Lonikhand-Pune 2. 400 kV Lonikhand-Lonikhand-II 1&2 3. 400 kV Lonikhand-Chakan 4. 400 kV Karjat-Lonikhand-II 1&2
2	GI-2	WR	04-Jun-23 15:20	04-Jun-23 19:48	4:28	1260	-	0.020	-	64330	52843	At 15:20 hrs/04.06.2023, multiple elements at 765/400kV Kotra PS tripped due to multiple equipment failures on the account of heavy rains and thunderstorm. Total Generation loss of 1260 MW occurred due to tripping of units at SKS (2*300 MW) (due to loss of evacuation path), REGL (1*600 MW) and DB Power (1*600 MW) (due to generator protection). 765/400kV ICT-2,3 & 4 and 765kV BR-2 tripped on differential protection. 765kV Kotra-Champa D/C, 400kV Kotra-SKS D/C, 400kV Kotra-Lara 2 & 400kV Kotra-REGL 2 tripped on distance protection operation.	Tripping of 1. 765 kV Kotra-Champa 1&2 2. 765 kV Kotra-Bus Reactor 2 3. 765/400 kV Kotra-ICT 2,3&4 4. 400 kV Kotra- Lara 2 5. 400 kV Kotra- REGL 2 6. 400 kV Kotra- SKS 1&2 7. SKS Unit 1,2 (300 MW each) 8. REGL unit 1 (600 MW) 9. DB Power Unit 1(600 MW)
3	GI-1	WR	11-Jun-23 14:48	11-Jun-23 15:28	0:40	-	-	-	-	70128	61843	At 14:48 Hrs/11-06-2023, 220 kV Borivali- Tarapur line tripped on R-E fault from Tarapur end. As the fault was not cleared from Borivali end, 220 kV Borivali Bus 1 and all the elements connected to it tripped on LBB protection operation. There was no load loss due to the event.	Tripping of 1.220kV Borivali-Tarapur 2.220kV Borivali - Bolsar 3.220kV Borivali -Kharghar 4.220kV Borivali -Bhandup 5.220kV Borivali -Tata 4 6.220kV Borivali - Adani Borivali 1 7.220kV Borivali- AdaniGorai 2 8.220kV Borivali- Adani Aarey 2
4	GI-2	WR	13-Jun-23 09:46	13-Jun-23 10:13	0:27	-	-	-	-	70427	60866	At 09:46 Hrs / 13-06-2023, 400kV Padghe Nagothane 1 tripped on Y-B Fault. At the same time R-phase CT (towards Bus side) of 400 kV Dabhol-Nagothane 1 failed & resulted in Bus bar protection operation and tripping of all connected feeders along with Bus coupler at 400 kV Nagothane. Load loss of 160 MW occurred due to LTS operation at Wadhkal region due to the event.	Tripping of 1. 400 kV Nagothane-Padghe 1&2 2. 400 kV Nagothane-Buses 1&2 3. 400 kV Dabhol-Nagothane 1&2 4. 400/220 kV Nagothane-ICTs 1,2&3
5	GI-1	WR	13-Jun-23 13:30	13-Jun-23 16:16	2:46	280	-	0.004	-	71471	61063	At 13:30 Hrs / 13-06-2023, 220 kV Ratadiya-Bhuj 2 conductor snapped from the B-Phase CT side jumper clamp and touched gantry of 220kV Ratadiya Bus 1. This resulted in Bus bar protection operation and tripping of the line along with 220/33 kV Ratadiya-ICTs 2&4. As Bus coupler was kept in open condition, Generation loss of 280 MW occurred at Ratadiya (AGEMPL) wind power station.	Tripping of 1. 220 kV Ratadiya-Bhuj 2 2. 220 kV Ratadiya Bus 1 3. 220/33 kV Ratadiya ICTs 2&4
6	GD-1	WR	13-Jun-23 17:46	13-Jun-23 18:17	0:31	-	170	-	0.003	72782	59196	At 17:46 Hrs / 13-06-2023, 220 kV Kala – New Kharadpada 1 tripped on R-E fault. 220 kV Kala-New Kharadpada 1 was already under planned shutdown. 220 kV Bus Coupler at 220 kV Kharadpada was in open condition and the load on 220 kV Kharadpada Bus 2 was fed radially from Kala s/s through New Kharadpada. With the tripping of 220 kV Kala – New Kharadpada 2, 220 kV New Kharadpada substation went dark. 220 kV New Kharadpada-Kharadpada D/C became dead and H/T later by site. Load loss of around 170 MW is occurred due to the event.	Tripping of 1. 220 kV Kala-New Kharadpada 1 2. 220 kV Kharadpada-New Kharadpada 1&2 3. 220 kV New Kharadpada-Reliance 1&2

Details of Grid Events during the Month of June 2023 in Western Region



Sl No.	Category of Grid Event (GI 1or 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid*		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
7	GD-1	WR	15-Jun-23 16:36	15-Jun-23 18:03	1:27	-	-	-	-	69518	58686	At 16:36 Hrs / 15-06-2023, 220 kV Bachhau-Bhuvad 1&2 tripped at 16:36 hrs on B phase to earth fault. Prior to the event, WTGs were manually stopped by site due to high wind speed because of Biparjoy cyclone. No generation was present at Bhuvad (ReNew) wind station during the event.	Tripping of 1. 220 kV Bachhau-Bhuvad 1&2 2. 220/33 kV Bhuvad-ICT 1&2
8	GD-1	WR	15-Jun-23 18:49	15-Jun-23 21:15	2:26	5	-	0.000	-	68762	56724	At 18:49 Hrs / 15-06-2023, 220 kV Bhuj-Dayapar 1 tripped on B phase to earth fault. Generation loss of 5 MW occurred at 220 kV Dayapar (INOX) wind station due to loss of evacuation path.	Tripping of 1. 220 kV Bhuj-Dayapar 1
9	GD-1	WR	16-Jun-23 01:23	16-Jun-23 06:19	4:56	-	-	-	-	69469	57709	At 01:23 Hrs / 16-06-2023, 220 kV Bhuj-Naranpar 2 tripped on B phase to earth fault. Prior to the event, WTGs were auto cut out due to high wind speed because of Biparjoy cyclone. No generation was present at 220 kV Naranpar (GIWEL-III) wind power station during the event	Tripping of 1. 220 kV Bhuj-Naranpar 1
10	GD-1	WR	16-Jun-23 06:23	16-Jun-23 17:59	11:36	-	-	-	-	66883	56556	At 06:23 Hrs / 16-06-2023, 220 kV Bhuj-Gadhsisa 1 tripped on Y-B phase to phase fault due to broken wave trap isolator pad clamp. Prior to the event, WTGs were manually stopped by site due to high wind speed because of Biparjoy cyclone. No generation was present at Gadhsisa (ReNew AP2) wind power station during the event	Tripping of 1. 220 kV Bhuj-Gadhsisa 1
11	GD-1	WR	16-Jun-23 08:05	16-Jun-23 09:58	1:53	-	-	-	-	62256	54794	At 08:05 Hrs / 16-06-2023, 220 kV Jamkhambaliya-Khakharda 1 tripped on vector surge protection operation due to Biparjoy cyclone effect. Prior to the event, WTGs were auto cut out due to high wind speed because of Biparjoy cyclone. No generation was present at Khakharda (Apraava) wind power station during the event	Tripping of 1. 220 kV Jamkhambaliya-Khakharda 1
12	GD-1	WR	16-Jun-23 09:22	16-Jun-23 12:07	2:45	-	-	-	-	62005	55432	At 09:22 Hrs / 16-06-2023, 220 kV Bachhau-Ostro 1 tripped on B phase to earth fault. At the same time 220 kV Bachhau-Ostro 1 also tripped. Prior to the event, WTGs were out due to high wind speed because of Biparjoy cyclone. No generation was present at Ostro (ReNew) wind power station during the event	Tripping of 1. 220 kV Bachhau-Ostro 1&2
13	GD-1	WR	16-Jun-23 10:23	16-Jun-23 17:01	6:38	-	-	-	-	60256	56252	At 10:23 Hrs / 16-06-2023, 220 kV Jamkhambaliya-Khakharda 1 tripped on vector surge protection operation due to Biparjoy cyclone effect. Prior to the event, WTGs were auto cut out due to high wind speed because of Biparjoy cyclone. No generation was present at Khakharda (Apraava) wind power station during the event	Tripping of 1. 220 kV Jamkhambaliya-Khakharda 1
14	GD-1	WR	16-Jun-23 11:11	16-Jun-23 11:46	0:35	-	-	-	-	60024	55917	At 11:09 Hrs / 16-06-2023, 765/400 kV Lakadia-ICT 1 tripped on DC earth fault. Prior to the event, 765/400 kV Lakadia-ICT 2 tripped at 06:54 hrs / 16-06-2023 on Buchholz relay operation. With the tripping of these 765/400 kV Lakadia ICTs, 400 kV Jamkhambaliya was radially connected to 400 kV Bachhau through 400 kV Lakadia. At 11:11 hrs, 400 kV Bachhau-Lakadia 1&2 tripped on B phase to earth fault and Y-B phase to phase fault respectively. With these tripping, 400 kV side of Lakadia & 400/220 kV Jamkhambaliya substations became dark. No generation loss was reported during the event.	Tripping of 1. 765/400 kV Lakadia-ICT 1 2. 400 kV Bachhau-Lakadia 1&2 3. 400 kV Jamkhambaliya-Lakadia 1&2 4. 220 kV Jamkhambaliya-Sidhpur 1
15	GD-1	WR	16-Jun-23 11:55	16-Jun-23 13:27	1:32	30.9	-	0.001	-	60768	54982	At 11:55 Hrs / 16-06-2023, 220 kV Bhuj-Nanavalka 1 tripped on R phase to earth fault due to insulation failure at Tower 10/15. Generation loss of 30.9 MW occurred at 220 kV Nanavalka (Alfanar) wind power station due to loss of evacuation path.	Tripping of 1. 220 kV Bhuj-Nanavalka 1

Details of Grid Events during the Month of June 2023 in Western Region



Sl No.	Category of Grid Event (GI 1or 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid*		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
16	GD-1	WR	16-Jun-23 14:15	16-Jun-23 19:06	4:51	-	-	-	-	61122	55386	At 14:15 Hrs / 16-06-2023, 220 kV Bhuj-Baranda 1 tripped on B phase to earth fault. Prior to the event, all WTGs tripped due to high wind speed because of Biparjoy cyclone. No generation was present at 220 kV Baranda (Avikaran) wind power station during the event	Tripping of 1. 220 kV Bhuj-Baranda 1
17	GD-1	WR	16-Jun-23 14:15	16-Jun-23 15:48	1:33	-	-	-	-	61122	55386	At 14:15 Hrs / 16-06-2023, 220 kV Bhuj-Kotda Madh 1 tripped due to false DT signal recieved at Kotda Madh end. Prior to the event, all WTGs tripped due to high wind speed because of Biparjoy cyclone. No generation was present at 220 kV Kotda Madh (Alfanar) wind station during the event	Tripping of 1. 220 kV Bhuj-Kotda Madh 1
18	GD-1	WR	16-Jun-23 17:20	16-Jun-23 23:08	5:48	20	-	0.000	-	64867	55094	At 17:20 Hrs / 16-06-2023, 220 kV Bhuj-Kotda Madh 1 tripped due to false DT signal recieved at Kotda Madh end. Generation loss of 20 MW occured at 220 kV Kotda Madh (Alfanar) wind power station due to loss of evacuation path.	Tripping of 1. 220 kV Bhuj-Kotda Madh 1
19	GD-1	WR	30-Jun-23 03:34	30-Jun-23 15:19	11:45	37.3	-	0.001	-	56406	46115	At 03:34 Hrs / 30-06-2023, 220 kV Bhuj-Kotda Madh 1 tripped on R phase to earth fault. Generation loss of 37.3 MW occurred at Kotda Madh (Alfanar) wind power plant due to the event,	Tripping of 1. 220 kV Bhuj-Kotda Madh 1
20	GI-1	WR	30-Jun-23 03:42	30-Jun-23 17:34	13:52	173.4	-	0.003	-	56244	46120	At 03:42 Hrs / 30-06-2023, 220 kV Bhuj-Ratadia 2 tripped on R phase to earth fault due to R phase suspension insulator got punctured at tower number 3. Generation loss of 173.4 MW occurred at Ratadia (AGEMPL) wind power plant due to the event,	Tripping of 1. 220 kV Bhuj-Ratadia 2 2. 220 kV Ratadiya Bus 1 3. 220/33kV Ratadiya ICT-2 & 4

Details of Grid Events during the Month of June 2023 in Southern Region



Sl No.	Category of Grid Event (GI for 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t.Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Name of Elements (Tripped/Manually opened)
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
1	GD-1	Kerala	03-Jun-23 23:36	03-Jun-23 23:41	5mins	0	377	0.00%	0.77%	46118	49250	Complete Outage of 220kV/110kV Ambalathara SS, 220kV/110kV/11kV Kanhirode SS, 220kV/110kV/11kV Mylatty SS, 220kV/110kV/33kV Taliparamba SS, and 220kV/110kV Thalassery SS of KSEB: 220kV/110kV Ambalathara SS, 220kV/110kV/11kV Kanhirode SS, 220kV/110kV/11kV Mylatty SS, 220kV/110kV/33kV Taliparamba SS, and 220kV/110kV Thalassery SS are being radially fed through 220kV Kanhirode Areakode and 220kV Areakode Orkattery lines. As per the reports submitted, the triggering incident was RYB-N fault in 220kV Kanhirode Areakode and 220kV Kanhirode Orkattery lines. Tripping of both lines resulted in a complete outage of 220kV/110kV Ambalathara SS, 220kV/110kV/11kV Kanhirode SS, 220kV/110kV/11kV Mylatty SS, 220kV/110kV/33kV Taliparamba SS, and 220kV/110kV Thalassery SS.	1. 220kV Kanhirode Areakode 2. 220kV Kanhirode Orkattery
2	GD-1	Tamil Nadu	06-Jun-23 10:59	06-Jun-23 12:03	1 hrs 4 mins	49.8	63	0.09%	0.12%	52462	53706	Complete Outage of 230kV/110kV/22kV Karaikudi_TN of TANTRANSCO: During antecedent conditions, all elements were connected to 230kV Bus-2 at 230kV/110kV/22kV Karaikudi_TN. As per the reports submitted, the triggering incident was an R-phase Bus side jumper cut in 230kV Karaikudi_TN Karaikudi_PG line-2. Immediately, 230kV Bus-2 BBP operated and all the elements connected to the Bus tripped. This resulted in a complete outage of 230kV/110kV/22kV Karaikudi_TN SS.	1. 230kV Karaikudi_TN Karaikudi_PG line-1&2 2. 230kV Karaikudi_TN Kavanur line-1,2,3&4 3. 230kV Karaikudi_TN Valuthur 4. 230kV Karaikudi_TN NT Kudy Line-1 4. 230kV/110kV Karaikudi_TN Transformer-1,2&3
3	GD-1	Karnataka	06-Jun-23 19:25	06-Jun-23 20:31	54mins	0	730	0.00%	1.49%	42379	48923	Tripping of 220kV Bus-2 of 400kV/220kV Hoody SS and Complete Outage of 220kV/66kV Exora SS, 220kV/66kV EDC SS, 220kV/66kV HAL SS, 220kV/66kV Vikas Tech Park SS and 220kV/66kV Sarjapur SS of KPTCL: As per the reports submitted, the triggering incident was B-N fault in 220kV Bus-2 at 400kV/220kV Hoody SS. This resulted in loss of power supply of 220kV Bus-2 of 400kV/220kV Hoody SS which further led to complete loss of supply at 20kV/66kV Exora SS, 220kV/66kV EDC SS, 220kV/66kV HAL SS, 220kV/66kV Vikas Tech Park SS, and 220kV/66kV Sarjapur SS.	1. 400kV/220kV Hoody ICT-2&3 2. All the lines connected to 220kV Hoody Bus-2
4	GD-1	Karnataka	07-Jun-23 09:47	07-Jun-23 10:22	35mins	0	135	0.00%	0.27%	52670	49457	Complete Outage of 220kV/66kV A'Halli SS of KPTCL: During antecedent conditions, 220kV Anthrasanahalli Nelamangala Line was under outage. The triggering incident was R-phase jumper cut in 220kV Anthrasanahally Tumkur Line-1 &2 and the lines tripped. Subsequently, the 220kV Anthrasanahally MRS Shimoga line was hand tripped in order to control over loading. Tripping of all these lines resulted in complete outage of 220kV/66kV A'Halli SS.	1. 220kV Anthrasanahally Tumkur Line-1 &2 2. 220kV Anthrasanahally MRS Shimoga line
5	GD-1	Telangana	08-Jun-23 08:20	08-Jun-23 13:52	5hrs 32mins	0	0	0.00%	0.00%	48318	46256	Complete Outage of 400kV Yadadri TPS generating station of TSGENCO and 400kV/220kV Damarcherla SS of TSTRANSCO: 400kV Yadadri TPS generating station is radially connected to 400kV/220kV Damarcherla SS. As per the reports submitted, the triggering incident was DC supply failure at 400kV/220kV Damarcherla SS causing all the CTDs of lines and transformers to operate and all these elements tripped. Tripping of all these lines and transformers at 400kV/220kV Damarcherla SS resulted in complete outage of 400kV Yadadri TPS generating station and 400kV/220kV Damarcherla SS.	1. 400kV Yadadri TPS Damarcherla line-1&2 2. 400kV/220kV Damarcherla ICT-1&2 3. 220kV Damarcherla Miryalaguda line-1&2
6	GD-1	Tamil Nadu	10-Jun-23 17:22	10-Jun-23 17:36	14mins	0	200	0.00%	0.43%	47635	46037	Complete Outage of 230kV/110kV/11kV Kadaperi SS of TANTRANSCO: 230kV/110kV/11kV Kadaperi SS was operating with single bus at 230kV level. As per the reports submitted, the triggering incident was B-N fault in 110kV Kadaperi SP Koil feeder and the fault was not cleared at Kadaperi end. Subsequently, remote ends of all 230kV lines connected to 230kV/110kV/11kV Kadaperi SS cleared the fault on the operation of DEF protection. Tripping of all 230kV lines resulted in a complete outage of 230kV/110kV/11kV Kadaperi SS.	1. 230kV Kadaperi Kalivendapattu 2. 230kV Kadaperi Sriperumbudur line-1&2 3. 230kV Kadaperi Alandur 4. 230kV Kadaperi Porur 5. 230kV/110kV Kadaeri Auto transformer-1,2&3
7	GD-1	Karnataka	11-Jun-23 11:53	11-Jun-23 19:53	8hrs	830	0	1.65%	0.00%	50232	47451	Complete Outage of 400kV YTPS Generating Station of KPCL: During antecedent conditions, 400kV BPS YTPS line-1 was under LC. As per the reports submitted, the triggering incident was YB fault in 400kV YTPS BPS line-2. Tripping of the only connected line resulted in complete outage of 400kV YTPS generating station.	1. 400kV YTPS BPS line-2

Details of Grid Events during the Month of June 2023 in Southern Region



Sl No.	Category of Grid Event (GI for 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t. Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Name of Elements (Tripped/Manually opened)
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
8	GD-1	Tamil Nadu	11-Jun-23 11:49	11-Jun-23 12:32	43mins	35	47	0.07%	0.10%	50236	47454	Complete Outage of 230kV/110kV/22kV Karaikudi_TN of TANTRANSCO: During antecedent conditions, all elements were connected to 230kV Bus-1 at 230kV/110kV/22kV Karaikudi_TN. As per the reports submitted, the triggering incident was an R-phase Bus side jumper cut between 230kV Karaikudi_TN Kavanur line-2 and 230kV Karaikudi_TN Karaikudi_PG line-2 at 230kV Karaikudi_TN end. Immediately, 230kV Bus-1 BBP operated and all the elements connected to the bus tripped. This resulted in a complete outage of 230kV/110kV/22kV Karaikudi_TN SS.	1. 230kV Karaikudi_TN Karaikudi_PG line-1&2 2. 230kV Karaikudi_TN Kavanur line-1,2,3&4 3. 230kV Karaikudi_TN Valuthur 4. 230kV Karaikudi_TN NT Kudy Line-1 4. 230kV/110kV Karaikudi_TN Transformer-1,2&3
9	GD-1	Karnataka	12-Jun-23 18:20	12-Jun-23 19:26	1hr 6mins	0	163	0.00%	0.35%	41479	46021	Complete Outage of 220kV/66kV Exora SS, 220kV/66kV Sarjapur SS and 220kV/66kV Vikas Tech Park SS of KPTCL : As per the reports submitted, the triggering incident was R-N fault in 220kV Hoody Malur line. Since the line is radially feeding 220kV/66kV Exora SS, 220kV/66kV Sarjapur SS and 220kV/66kV Vikas Tech park SS , tripping of this line resulted in complete outage of 220kV/66kV Exora SS, 220kV/66kV Sarjapur SS and 220kV/66kV Vikas Tech Park SS.	220kV Hoody Malur
10	GD-1	Tamil Nadu	16-Jun-23 14:48	16-Jun-23 15:25	37mins	0	100	0.00%	0.17%	54400	57672	Complete Outage of 230kV/110kV Acharapakkam SS of TANTRANSCO: As per the reports submitted, the triggering incident was B-N fault in 230kV Acharapakkam Villupuram line. Subsequently, 230kV Acharapakkam Maps line tripped on over loading at MAPS end. Tripping of both lines resulted in complete outage of 230kV/110kV Acharapakkam SS.	1. 230kV Acharapakkam Villupuram 2. 230kV Acharapakkam MAPS
11	GI-2	Tamil Nadu	03-Jun-23 15:02	03-Jun-23 16:56	1hr 54mins	0	0	0.00%	0.00%	51769	56162	Tripping of 400kV Bus-1 of 400kV/230kV/110kV SVChatram SS of TANTRANSCO: As per the reports submitted, the triggering incident was LBB maloperation in 400kV Pandy SV Chatram line at SV Chatram end causing all the Main CBs connected to Bus-1 to trip. At the same time, due to non-availability of Tie CB, DT was sent to remote ends of 400kV Alamathy SVChatram Line-2 and 400kV NCTPS SV Chatram Line-2 and both these lines tripped.	1. 400kV Alamathy SV Chatram Line-2 2. 400kV NCTPS SV Chatram Line-2
12	GI-1	Tamil Nadu	05-Jun-23 17:53	05-Jun-23 18:23	30mins	275	0	0.63%	0.00%	43486	48350	Tripping of 230kV Bus of 230kV/110kV Sanganeri SS of TANTARNSCO: 230kV/110kV Sanganeri SS is operating with single bus configuration at 230kV level. As per the reports submitted, the triggering incident was LBB operation at Sanganeri end while hand-tripping 230kV Kayathar Sanganeri. This resulted in tripping of all the elements connected to 230kV Bus. 110kV Bus was intact during the event.	1. 230kV Kayathar Sanganeri 2. 230kV Sanganeri SR Pudur 3. 230kV Sanganeri Udayathur 4. 230kV Sanganeri Abishegappatty 5. 230kV/110kV Sanganeri Transformer-1&2
13	GI-1	Karnataka	10-Jun-23 16:10	10-Jun-23 19:15	3 hrs 5 mins	0	0	0.00%	0.00%	51007	51245	Tripping of 220kV Bus-1 of 400kV/220kV Munirabad SS of PGCIL SR-1: During antecedent conditions, at 400kV/220kV Munirabad SS, main circuit breaker of 220kV Munirabad Lingapur line-2 was bypassed and the line was charged through Bus Coupler by connecting to 220kV Bus-1. At 16:10hrs, 220kV Munirabad Lingapur line-1 was hand tripped, and subsequently, 220kV Munirabad Lingapur line-2 tripped at Munirabad end as the Bus Coupler tripped on over current protection. Since this is the only line connected to Bus-1 at Munirabad, this resulted in the de-energization of 220kV Bus 1 of 400kV/220kV Munirabad SS.	1. 220kV Munirabad Lingapur line-1&2
14	GI-1	Andhra Pradesh	17-Jun-23 13:43	17-Jun-23 14:54	1hr 11mins	0	0	0.00%	0.00%	53795	54721	Tripping of 220kV Bus-2 of 220kV Vizag Switching Station of APTRANSCO: As per the reports submitted, the triggering incident was Y-N fault in 220kV Bus-2 at 220kV Vizag Switching Station. Immediately, 220kV Bus-2 BBP operated and all the elements connected to 220kV Bus-2 tripped.	1. 400kV/220kV Gajuwaka ICT-1&2 2. 220kV VSS MRS line-1&2 3. 220kV VSS Kalpakka line-2

Details of Grid Events during the Month of June 2023 in Eastern Region



SI No.	Category of Grid Event	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t. Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
	(G1 or 2/ GD-1 to GD-5)					Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
1	GD-1	Chandil	10.06.2023 17:00	16.06.2023 17:29	00:29	0	170	0.00%	0.71%	28176	23927	At 17:00 Hrs, 220 kV Ramchandrapur-Chandil tripped due to operation of LBB at Chandil S/s leading to total supply failure at Chandil S/s as 220 kV Ranchi-Chandil was under breakdown and 220 kV Santaldih-Chandil was switched off to limit loading of 220 kV Ramchandrapur-Chandil, which remained as the only source for Chandil. Around 170 MW load loss occurred at Chandil.	220 kV Ramchandrapur-Chandil
2	GD-1	Lapanga, OPGC	10.06.2023 17:27	10.06.2023 19:09	01:42	580	0	2.03%	0.00%	28542	24579	At 16:21 Hrs, 400 kV Meramundali-Lapanga-1 tripped due to Y_N fault. Subsequently, at 16:25 Hrs, 400 kV Meramundali-Lapanga-2 tripped due to R_B_N fault. While taking charging attempt of 400 kV Meramundali-Lapanga 1 at 17:27 Hrs, 400 kV Side of Lapanga S/s and 400 kV OPGC S/s became dead. U#4 at OPGC also tripped due to loss of evacuation path. Generation loss of around 585 MW occurred at OPGC.	400 kV Meramundali-Lapanga D/c 400 kV Lapanga-Sterlite D/c 400 kV Jharsuguda-OPGC D/c 400/220 kV ICT-1&2 at Lapanga 660MW U#4 at OPGC
3	GD-1	Atri, Narendrapur	16.06.2023 10:40	16.06.2023 11:11	00:31	0	244	0.00%	0.94%	30517	26051	At 10:02 Hrs, HVDC Talcher-Kolar Pole-1 blocked, leading to high loading of 400 kV TSTPP-Meramundali D/c and 400 kV Meramundali-Mendhasal D/c. To control loading of these lines, load reconfiguration was being done in downstream at Narendrapur and Atri. Load of Aska, New Aska and Purushottampur which were fed from Bhanjagar was shifted to Narendrapur. Entire load of Narendrapur and Atri was put on single line i.e., 220 kV Therubali-Narendrapur. This line got overloaded and tripped, leading to total supply failure at Narendrapur and Atri S/s. Total 244 MW load loss occurred at Narendrapur and Atri.	220 kV Therubali-Narendrapur 220 kV Narendrapur-Atri D/c 220 kV Atri-infocity 220/132 kV ATR-1&2 of Narendrapur 220/132 kV AR-1&2 at Atri 132 kV Atri-Samuka 132 kV Atri-Banki
4	GD-1	Teesta-3, Dikchu	28.06.2023 02:28	28.06.2023 02:56	00:28	1410	0	4.96%	0.00%	28420	21099	At 02:28 Hrs, Resistive fault struck 400 kV Rangpo-Teesta 3 and 400 kV Rangpo-Dikchu and both lines tripped. 400 kV Teesta 3-Dikchu also tripped at the same time. All six units at Teesta 3 and two units at Dikchu tripped leading to generation loss of around 1410 MW (Teesta 3: 1304 MW, Dikchu-106 MW)	400 kV Teesta 3-Dikchu 400 kV Rangpo-Dikchu 400 kV Teesta 3-Rangpo

Details of Grid Events during the Month of June 2023 in North Eastern Region



Sl No.	Category of Grid Event (G1 for 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM:SS)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t. Antecedent Generation/Load in the		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
1	GD 1	Zuangtui, Saitual, Serchip, Vankal and Khawzawi areas of Mizoram Power System	06-Jun-23 00:10	06-Jun-23 00:53	0:43:00	0	21	0.00%	0.75%	1785	2811	Zuangtui, Saitual, Serchip, Vankal and Khawzawi areas of Mizoram Power System were connected with rest of NER grid through 132 kV Melriat(PG) -Zuangtui & 132 kV Zuangtui - Saitual lines. 132 kV Lunglei-Serchhip line was under shutdown to avoid overloading of 132 kV Alzawi-Lungmual line. At 00:10 Hrs on 06.06.2023, 132 kV Melriat(PG) -Zuangtui & 132 kV Zuangtui - Saitual lines tripped. Due to tripping of these elements, Zuangtui, Saitual, Serchip, Vankal and Khawzawi areas of Mizoram Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in these areas. Power supply was extended to Zuangtui, Saitual, Serchip, Vankal and Khawzawi areas of Mizoram Power System by charging 132 kV Melriat-Zuangtui line at 00:53 Hrs on 06.06.2023.	132 kV Melriat(PG) -Zuangtui & 132 kV Zuangtui - Saitual lines
2	GD 1	Zuangtui, Saitual, Serchip, Vankal and Khawzawi areas of Mizoram Power System	06-Jun-23 01:58	06-Jun-23 02:21	0:23:00	0	18	0.00%	0.62%	1767	2924	Zuangtui, Saitual, Serchip, Vankal and Khawzawi areas of Mizoram Power System were connected with rest of NER grid through 132 kV Melriat(PG) -Zuangtui line.132 kV Lunglei-Serchhip line was under shutdown to avoid overloading of 132 kV Alzawi-Lungmual line. 132 kV Zuangtui - Saitual line was under tripped condition since 00:10 Hrs on 06.06.2023. At 01:58 Hrs on 06.06.2023, 132kV Melriat(PG)-Zuangtui line tripped. Due to tripping of this element, Zuangtui, Saitual, Serchip, Vankal and Khawzawi areas of Mizoram Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in these areas. Power supply was extended to Zuangtui, Saitual, Serchip, Vankal and Khawzawi areas of Mizoram Power System by charging 132 kV Melriat-Zuangtui line at 02:21 Hrs on 06.06.2023	132 kV Melriat(PG) -Zuangtui line
3	GD 1	Zuangtui, Saitual, Serchip, Vankal and Khawzawi areas of Mizoram Power System	06-Jun-23 13:40	06-Jun-23 14:15	0:35:00	0	51	0.00%	1.70%	1707	3008	Zuangtui, Saitual, Serchip, Vankal and Khawzawi areas of Mizoram Power System were connected with rest of NER grid through 132 kV Melriat(PG) -Zuangtui line. 132 kV Lunglei-Serchhip line was under shutdown to avoid overloading of 132 kV Alzawi-Lungmual line.132 kV Zuangtui - Saitual line was under tripped condition since 00:10 Hrs on 06.06.2023. At 13:40 Hrs on 06.06.2023, 132 kV Melriat(PG) -Zuangtui line tripped. Due to tripping of this element, Zuangtui, Saitual, Serchip, Vankal and Khawzawi areas of Mizoram Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in these areas Power supply was extended to Zuangtui, Saitual, Serchip, Vankal and Khawzawi areas of Mizoram Power System by charging 132 kV Melriat-Zuangtui line at 14:15 Hrs on 06.06.2023	132 kV Melriat(PG) -Zuangtui line
4	GD 1	Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System	06-Jun-23 17:38	06-Jun-23 18:14	0:36:00	0	25	0.00%	0.82%	2217	3059	Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System were connected with rest of NER grid through 132 kV Balipara-Tenga line. At 17:38 Hrs on 06.06.2023, 132 kV Balipara-Tenga line tripped. Due to tripping of this element, Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in these areas. Power supply was extended to Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System by charging 132 kV Balipara-Tenga line at 18:14 Hrs on 06.06.2023.	132 kV Balipara-Tenga line
5	GD 1	Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System	08-Jun-23 09:39	08-Jun-23 10:40	1:01:00	0	23	0.00%	0.78%	1857	2934	Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System were connected with rest of NER grid through 132 kV Balipara-Tenga line. At 09:39 Hrs on 08.06.2023, 132 kV Balipara-Tenga line tripped. Due to tripping of this element, Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in these areas. 132 kV Balipara-Tenga line was declared faulty at 10:40 Hrs on 08.06.2023. Power supply was extended to Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System by charging 132 kV Balipara-Tenga line at 19:15 Hrs on 08.06.2023.	132 kV Balipara-Tenga line
6	GD 1	Lumshnong area of Meghalaya Power System	08-Jun-23 15:24	08-Jun-23 15:32	0:08	0	13	0%	0%	1850	2929	Lumshnong area of Meghalaya Power System was connected with rest of NER grid through 132 kV Khleihriat-Lumshnong line. 132 kV Lumshnong-Panchgram line was under planned shutdown since 05:12 Hrs on 08.06.2023. At 15:24 Hrs on 08.06.2023, 132 kV Khleihriat-Lumshnong line tripped. Due to tripping of this element, Lumshnong area of Meghalaya Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in this area. Power supply was extended to Lumshnong area of Meghalaya Power System by charging 132 kV Khleihriat-Lumshnong line at 15:32 Hrs on 08.06.2023.	132 kV Khleihriat-Lumshnong line
7	GD 1	Lumshnong area of Meghalaya Power System	08-Jun-23 15:48	08-Jun-23 16:10	0:22	0	10	0%	0%	1826	2898	Lumshnong area of Meghalaya Power System was connected with rest of NER grid through 132 kV Khleihriat-Lumshnong line. 132 kV Lumshnong-Panchgram line was under planned shutdown since 05:12 Hrs on 08.06.2023. At 15:48 Hrs on 08.06.2023, 132 kV Khleihriat-Lumshnong line tripped. Due to tripping of this element, Lumshnong area of Meghalaya Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in this area. Power supply was extended to Lumshnong area of Meghalaya Power System by charging 132 kV Khleihriat-Lumshnong line at 16:10 Hrs on 08.06.2023.	132 kV Khleihriat-Lumshnong line

Details of Grid Events during the Month of June 2023 in North Eastern Region



Sl No.	Category of Grid Event (G1 for 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM:SS)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
8	GD 1	Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System	08-Jun-23 21:55	08-Jun-23 22:47	0:52:00	0	16	0.00%	0.50%	2135	3169	Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System were connected with rest of NER grid through 132 kV Balipara-Tenga line. At 21:55 Hrs on 08.06.2023, 132 kV Balipara-Tenga line tripped. Due to tripping of this element, Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in these areas. Power supply was extended to Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System by charging 132 kV Balipara-Tenga line at 22:47 Hrs on 08.06.2023.	132 kV Balipara-Tenga line
9	GD 1	Rokhia area of Tripura Power System	09-Jun-23 05:40	09-Jun-23 06:24	0:44:00	19	8	1.12%	0.33%	1701	2392	Rokhia area of Tripura Power System was connected with rest of NER grid through 132 kV Monarchak - Rokhia and 132 kV Rokhia -Agartala D/C lines. At 05:40 Hrs on 09.06.2023, 132 kV Monarchak - Rokhia and 132 kV Rokhia -Agartala D/C lines tripped. Due to tripping of these elements, Rokhia area of Tripura Power System got separated from rest of NER Grid and subsequently collapsed due to load generation mismatch in this area. Power supply was extended to Rokhia area of Tripura Power System by charging 132 kV Rokhia - Agartala 1 line at 06:24 Hrs on 09.06.2023.	132 kV Monarchak - Rokhia and 132 kV Rokhia - Agartala D/C lines
10	GD 1	Daporizo, Basar, Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System	10-Jun-23 12:02	10-Jun-23 13:04	1:02:00	0	22	0.00%	0.88%	1748	2503	Daporizo, Basar, Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System were connected with the rest of NER Grid through 132 kV Daporizo - Ziro line. At 12:02 Hrs on 10.06.2023, 132 kV Daporizo - Ziro Line tripped. Due to tripping of this element, Daporizo, Basar, Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System got separated from the rest of NER Grid and subsequently collapsed due to no source available in these areas. Power supply was extended to the Daporizo, Basar, Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System by charging 132 kV Daporizo - Ziro line at 13:04 Hrs on 10.06.23.	132 kV Daporizo - Ziro line
11	GD 1	New Umtru Generating Station of Meghalaya Power System	12-Jun-23 22:00	12-Jun-23 22:23	0:23:00	36	0	1.30%	0.00%	2759	3036	New Umtru Generating Station of Meghalaya Power System was connected with the rest of NER Grid through 132 kV EPIP II - New Umtru and 132 kV Umtru - New Umtru lines. At 22:00 Hrs on 12.06.2023, 132 kV EPIP II - New Umtru and 132 kV Umtru - New Umtru lines tripped. Due to tripping of these elements, New Umtru Generating Station of Meghalaya Power System got separated from rest of NER Grid and subsequently collapsed due to loss of evacuation path. Power supply was extended to New Umtru Generating Station of Meghalaya Power System by charging 132 kV EPIP II - New Umtru line at 22:23 Hrs on 12.06.2023.	132 kV EPIP II - New Umtru and 132 kV Umtru - New Umtru lines
12	GD 1	Leshka Generating Station of Meghalaya Power System	13-Jun-23 23:01	13-Jun-23 23:22	0:21	84	0	3%	0%	2941	2914	Leshka Generating Stations of Meghalaya Power System was connected with rest of NER grid through 132 kV Myntdu Leshka - Khleihriat D/C lines. At 23:01 Hrs on 13.06.2023, 132 kV Myntdu Leshka - Khleihriat D/C lines tripped. Due to tripping of these elements, Leshka Generating Stations of Meghalaya Power System got separated from rest of NER Grid and subsequently collapsed due to loss of evacuation path. Power supply was extended to Leshka Generating Station of Meghalaya Power System by charging 132 kV Myntdu Leshka - Khleihriat D/C lines at 23:22 Hrs on 13.06.2023.	132 kV Myntdu Leshka - Khleihriat D/C lines
13	GD 1	Leshka Generating Station of Meghalaya Power System	14-Jun-23 03:08	14-Jun-23 03:25	0:17	42	0	2%	0%	2623	2311	Leshka Generating Station of Meghalaya Power System was connected with rest of NER grid through 132 kV Myntdu Leshka - Khleihriat D/C lines. At 03:08 Hrs on 14.06.2023, 132 kV Myntdu Leshka - Khleihriat D/C lines tripped. Due to tripping of these elements, Leshka Generating Station of Meghalaya Power System got separated from rest of NER Grid and subsequently collapsed due to loss of evacuation path. Power supply was extended to Leshka Generating Station of Meghalaya Power System by charging 132 kV Myntdu Leshka - Khleihriat 1 line at 03:25 Hrs on 14.06.2023.	132 kV Myntdu Leshka - Khleihriat D/C lines
14	GD 1	Ningthoukhong, Churachandrapur and Thanlon areas of Manipur Power System	15-Jun-23 11:02	15-Jun-23 11:51	0:49	0	19	0%	1%	2281	1753	Ningthoukhong, Churachandrapur and Thanlon areas of Manipur Power System were connected with rest of NER grid through 132 kV Loktak - Ningthoukhong, 132 kV Imphal (PG) - Ningthoukhong and 132 kV Ningthoukhong - Churachandpur D/C lines. 132kV Kakching - Churachandpur and 132kV Elangkangpokpi - Churachandpur were under tripped condition since 12:21 Hrs on 08.06.2023. At 11:02 Hrs on 15.06.2023, 132 kV Loktak - Ningthoukhong, 132 kV Imphal (PG) - Ningthoukhong and 132 kV Ningthoukhong - Churachandpur D/C lines tripped. Due to tripping of these elements, Ningthoukhong, Churachandrapur and Thanlon areas of Manipur Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in these areas. Power supply was extended to Ningthoukhong, Churachandrapur and Thanlon areas of Manipur Power System by charging 132 kV Imphal (PG) - Ningthoukhong line at 11:51 Hrs on 15.06.2023.	132 kV Loktak - Ningthoukhong, 132 kV Imphal (PG) - Ningthoukhong and 132 kV Ningthoukhong - Churachandpur D/C lines

Details of Grid Events during the Month of June 2023 in North Eastern Region



Sl No.	Category of Grid Event (G1 for 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM:SS)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t. Antecedent Generation/Load in the		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
15	GD 1	Ningthoukhong, Churachandrapur and Thanlon areas of Manipur Power System	16-Jun-23 13:25	16-Jun-23 14:07	0:42	0	11	0%	1%	2878	1978	<p>Ningthoukhong, Churachandrapur and Thanlon areas of Manipur Power System were connected with rest of NER grid through 132 kV Loktak - Ningthoukhong, 132 kV Imphal (PG) - Ningthoukhong and 132 kV Ningthoukhong - Churachandpur 1 lines. 132 kV Kakching - Churachandpur and 132kV Elangkangpokpi - Churachandpur were under tripped condition since 12:21 Hrs on 08.06.2023. Also, 132 kV Ningthoukhong - Churachandpur 2 line was under outage since 11:02 Hrs on 15.06.2023</p> <p>At 13:25 Hrs on 16.06.2023, 132 kV Loktak - Ningthoukhong, 132 kV Imphal (PG) - Ningthoukhong and 132 kV Ningthoukhong - Churachandpur 1 lines tripped. Due to tripping of these elements, Ningthoukhong, Churachandrapur and Thanlon areas of Manipur Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in these areas.</p> <p>Power supply was extended to Ningthoukhong, Churachandrapur and Thanlon areas of Manipur Power System by charging 132 kV Imphal (PG) - Ningthoukhong line at 14:07 Hrs on 16.06.2023.</p>	132 kV Loktak - Ningthoukhong, 132 kV Imphal (PG) - Ningthoukhong and 132 kV Ningthoukhong - Churachandpur 1 lines
16	GD 1	Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System	17-Jun-23 07:07	17-Jun-23 08:01	0:54	16.7	32.7	1%	2%	2852	1676	<p>Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System were connected with rest of NER grid through 132 kV Balipara-Tenga line.</p> <p>At 07:07 Hrs on 17.06.2023, 132 kV Balipara-Tenga line tripped. Due to tripping of this element, Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System got separated from rest of NER Grid and subsequently collapsed due to load generation mismatch in these areas.</p> <p>Power supply was extended to Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System by charging 132 kV Balipara-Tenga line at 08:01 Hrs on 17.06.2023.</p>	132 kV Balipara-Tenga line
17	GD 1	Monarchak and Rabindranagar areas of Tripura Power System	18-Jun-23 07:02	18-Jun-23 08:02	1:00	60	3	2%	0%	2733	1804	<p>Monarchak and Rabindranagar areas of Tripura Power System were connected with rest of NER grid through 132 kV Monarchak - Rokhia line. 132 kV Monarchak - Udaipur line was under Planned Shutdown from 06:49 Hrs of 18.06.2023.</p> <p>At 07:02 Hrs on 18.06.2023, 132 kV Monarchak - Rokhia line tripped. Due to tripping of this element, Monarchak and Rabindranagar areas of Tripura Power System got separated from rest of NER Grid and subsequently collapsed due to load generation mismatch in these areas.</p> <p>Power supply was extended to Monarchak and Rabindranagar areas of Tripura Power System by charging 132kV Monarchak-Udaipur line at 08:02 Hrs on 18.06.2023.</p>	132 kV Monarchak - Rokhia line
18	GD 1	Panchgram area of Assam Power System	18-Jun-23 08:06	18-Jun-23 08:23	0:17	0	15	0%	1%	2612	1899	<p>Panchgram area of Assam Power System was connected with rest of NER grid through 132 kV Lumshong - Panchgram, 132 kV Hallakandi - Panchgram and 132 kV Badarpur - Panchgram lines. 132 kV Srikona - Panchgram line was under outage due to tower collapse since 14.01.2019.</p> <p>At 08:06 Hrs on 18.06.2023, 132 kV Lumshong - Panchgram, 132 kV Hallakandi - Panchgram and 132 kV Badarpur - Panchgram lines tripped. Due to tripping of these elements, Panchgram area of Assam Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in this area.</p> <p>Power supply was extended to Panchgram area of Assam Power System by charging 132 kV Hallakandi - Panchgram line at 08:23 Hrs on 18.06.2023.</p>	132 kV Lumshong - Panchgram, 132 kV Hallakandi - Panchgram and 132 kV Badarpur - Panchgram lines
19	GD 1	Dhaligaon, Barpeta, Joghghopa, Gosaigaon, IOCL load and part load of Bornagar areas of Assam Power System	18-Jun-23 12:29	18-Jun-23 12:35	0:06	0	55	0%	3%	2600	1867	<p>Dhaligaon, Barpeta, Joghghopa, Gosaigaon, IOCL load and part load of Bornagar areas of Assam Power System were connected with rest of NER grid through 132 kV BTPS - Dhaligaon D/C lines. 132 kV Nalbari-Barpeta line was under shutdown to avoid overloading of 132 kV BTPS-Dhaligaon D/C lines and 132 kV Gosaigaon - Gauripur line was under shutdown to avoid overloading of 132 kV BTPS - Kokrajhar D/C lines.</p> <p>At 12:29 Hrs on 18.06.2023, 132 kV BTPS - Dhaligaon D/C lines tripped. Due to tripping of these elements, Dhaligaon, Barpeta, Joghghopa, Gosaigaon, IOCL load and part load of Bornagar areas of Assam Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in these areas.</p> <p>Power supply was extended to Dhaligaon, Barpeta, Joghghopa, Gosaigaon, IOCL load and part load of Bornagar areas of Assam Power System by charging 132 kV BTPS - Dhaligaon 1 line at 12:35 Hrs on 18.06.2023.</p>	132 kV BTPS - Dhaligaon D/C lines
20	GD 1	Panchgram area of Assam Power System	18-Jun-23 13:00	18-Jun-23 13:23	0:23	0	18	0%	1%	2633	1768	<p>Panchgram area of Assam Power System was connected with rest of NER grid through 132 kV Lumshong - Panchgram and 132 kV Hallakandi - Panchgram lines. 132 kV Badarpur-Panchgram line was under planned shutdown for installation, wiring, testing of distance relay. 132 kV Srikona - Panchgram was under outage due to tower collapse since 14.01.2019.</p> <p>At 13:00 Hrs on 18.06.2023, 132 kV Lumshong - Panchgram and 132 kV Hallakandi - Panchgram lines tripped. Due to tripping of these elements, Panchgram area of Assam Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in this area.</p> <p>Power supply was extended to Panchgram area of Assam Power System by charging 132 kV Hallakandi - Panchgram line at 13:23 Hrs on 18.06.2023.</p>	132 kV Lumshong - Panchgram and 132 kV Hallakandi - Panchgram lines

Details of Grid Events during the Month of June 2023 in North Eastern Region



Sl No.	Category of Grid Event (G1 to 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM:SS)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
21	GD 1	Dhaligaon, Barpeta, Jogighopa, IOCL load and part load of Bornagar areas of Assam Power System	20-Jun-23 22:37	20-Jun-23 22:42	0:05	0	56	0%	2%	3058	2285	Dhaligaon, Barpeta, Jogighopa, IOCL load and part load of Bornagar areas of Assam Power System were connected with rest of NER grid through 132 kV BTPS - Dhaligaon D/C lines. 132 kV Nalbari-Barpeta line was under shutdown to avoid overloading of 132 kV BTPS - Dhaligaon D/C lines. 132 kV Gosaigaon - Dhaligaon line was under shutdown to avoid overloading of 132 kV BTPS - Kokrajhar D/C lines. At 22:37 Hrs on 20.06.2023, 132 kV BTPS - Dhaligaon D/C lines tripped. Due to tripping of these elements, Dhaligaon, Barpeta, Jogighopa, IOCL load and part load of Bornagar areas of Assam Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in these areas. Power supply was extended to Dhaligaon, Barpeta, Jogighopa, IOCL load and part load of Bornagar areas of Assam Power System by charging 132 kV BTPS - Dhaligaon 1 line at 22:42 Hrs on 20.06.2023.	132 kV BTPS - Dhaligaon D/C lines
22	GD 1	Rangia, Kamalpur, Amingaon, Nalbari, part load of Sishugram, and part load of Bornagar areas of Assam Power System	21-Jun-23 04:59	21-Jun-23 05:29	0:30	0	68	0%	4%	3054	1711	Rangia, Kamalpur, Amingaon, Nalbari, part load of Sishugram, and part load of Bornagar areas of Assam Power System were connected with rest of NER grid through 220 kV Rangia - BTPS 1 & 132 kV Rangia-Motonga lines. 220kV Rangia - BTPS 2 line was declared faulty. 132 kV Rangia - Sipajhar, 132kV Rangia - Tanga and 132kV Amingaon - AIMS lines were under shutdown to avoid overloading of 220kV Rangia - BTPS D/C lines. 132 kV Nalbari - Barpeta was under shutdown to avoid overloading of 132 kV BTPS - Dhaligaon D/C lines. At 04:59 Hrs on 21.06.2023, 220 kV Rangia - BTPS 1 & 132 kV Rangia-Motonga lines tripped. Due to tripping of these elements, Rangia, Kamalpur, Amingaon, Nalbari, part load of Sishugram, and part load of Bornagar areas of Assam Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in these areas. Power supply was extended to Rangia, Kamalpur, Amingaon, Nalbari, part load of Sishugram, and part load of Bornagar areas of Assam Power System by charging 132 kV Rangia-Motonga line at 05:29 Hrs on 21.06.2023.	220 kV Rangia - BTPS 1 & 132 kV Rangia-Motonga lines
23	GD 1	Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System	21-Jun-23 13:46	21-Jun-23 14:33	0:47	17	23	1%	1%	2622	2285	Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System were connected with rest of NER grid through 132 kV Balipara - Tenga line. At 13:46 Hrs on 21.06.2023, 132 kV Balipara - Tenga line tripped. Due to tripping of this element, Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System got separated from rest of NER Grid and subsequently collapsed due to load generation mismatch in these areas. 132 kV Balipara - Tenga line was declared faulty at 14:33 Hrs on 21.06.2023. Power supply was extended to Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System by charging 132 kV Balipara - Tenga line at 21:41 Hrs on 21.06.2023.	132 kV Balipara - Tenga line
24	GD 1	Dhaligaon, Barpeta, Jogighopa, Gossaigaon, IOCL load, Bornagar and Nalbari areas of Assam Power System	21-Jun-23 21:06	21-Jun-23 21:12	0:06	0	135	0%	5%	3165	2833	Dhaligaon, Barpeta, Jogighopa, Gossaigaon, IOCL load, Bornagar and Nalbari areas of Assam Power System were connected with rest of NER grid through 132 kV BTPS - Dhaligaon D/C lines. 220 kV Rangia - BTPS D/C lines were under outage due to tower collapse at loc.no. 452. 132 kV Rangia-Nalbari, 132kV Rangia-Bornagar and 132kV Gossaigaon-Gauripur lines were under shutdown to avoid overloading of 132 kV BTPS-Dhaligaon D/C lines. At 21:06 Hrs on 21.06.2023, 132 kV BTPS - Dhaligaon D/C lines tripped. Due to tripping of these elements, Dhaligaon, Barpeta, Jogighopa, Gossaigaon, IOCL load, Bornagar and Nalbari areas of Assam Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in these areas. Power supply was extended to Dhaligaon, Barpeta, Jogighopa, Gossaigaon, IOCL load, Bornagar and Nalbari areas of Assam Power System by charging 132 kV BTPS-Dhaligaon 1 line at 21:12 Hrs on 21.06.2023.	132 kV BTPS - Dhaligaon D/C lines
25	GD 1	Dhaligaon, Barpeta, Jogighopa, Gossaigaon, IOCL load, Bornagar and Nalbari areas of Assam Power System	21-Jun-23 22:34	21-Jun-23 22:39	0:05	0	111	0%	4%	3150	2520	Dhaligaon, Barpeta, Jogighopa, Gossaigaon, IOCL load, Bornagar and Nalbari areas of Assam Power System were connected with rest of NER grid through 132 kV BTPS - Dhaligaon D/C lines. 220 kV Rangia - BTPS D/C lines were under outage due to tower collapse at loc.no. 452. 132 kV Rangia-Nalbari, 132kV Rangia-Bornagar and 132kV Gossaigaon-Gauripur lines were under shutdown to avoid overloading of 132 kV BTPS-Dhaligaon D/C lines. At 22:34 Hrs on 21.06.2023, 132 kV BTPS - Dhaligaon D/C lines tripped. Due to tripping of these elements, Dhaligaon, Barpeta, Jogighopa, Gossaigaon, IOCL load, Bornagar and Nalbari areas of Assam Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in these areas. Power supply was extended to Dhaligaon, Barpeta, Jogighopa, Gossaigaon, IOCL load, Bornagar and Nalbari areas of Assam Power System by charging 132 kV BTPS - Dhaligaon 1 line at 22:39 Hrs on 21.06.2023.	132 kV BTPS - Dhaligaon D/C lines

Details of Grid Events during the Month of June 2023 in North Eastern Region



Sl No.	Category of Grid Event (G1 for 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM:SS)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
26	GD 1	400/220 kV Misa Substation and Smaguri areas of Assam Power System	22-Jun-23 23:04	22-Jun-23 23:45	0:41	0	62	0%	2%	3165	2526	<p>400/220 kV Misa Substation and Smaguri areas of Assam Power System were connected with rest of NER grid through 400 kV New Mariani - Misa D/C, 400 kV Balipara - Misa D/C, 400 kV Silchar - Misa 2, 220 kV Misa - Dimapur D/C, 220 kV Misa - Byrnihat(Killing) D/C and 220 kV Misa - Samaguri D/C lines. 400 kV Silchar - Misa 1 line was under outage because it tripped on charging attempt after shut down return at 20:08 Hrs on 22.06.2023.</p> <p>At 23:04 Hrs on 22.06.2023, 400 kV New Mariani - Misa D/C, 400 kV Balipara - Misa D/C, 400 kV Silchar - Misa 2, 220 kV Misa - Dimapur D/C, 220 kV Misa - Byrnihat(Killing) D/C and 220 kV Misa - Samaguri D/C lines tripped. Due to tripping of these elements, 400/220 kV Misa Substation and Smaguri areas of Assam Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in these areas.</p> <p>Power supply was extended to 400/220 kV Misa Substation and Smaguri areas of Assam Power System by charging 220 kV Dimapur - Misa line 2 at 00:45 Hrs on 23.06.2023.</p>	400 kV New Mariani - Misa D/C, 400 kV Balipara - Misa D/C, 400 kV Silchar - Misa 2, 220 kV Misa - Dimapur D/C, 220 kV Misa - Byrnihat(Killing) D/C and 220 kV Misa - Samaguri D/C lines
27	GD 1	Rangia area of Assam Power System	25-Jun-23 02:16	25-Jun-23 02:40	0:24	0	21	0%	1%	2160	2707	<p>Rangia area of Assam Power System was connected with rest of NER grid through 132 kV Rangia-Motonga line. 220 kV BTPS-Rangia D/C lines were under outage due to tower collapse at loc.no. 452. 132kV Rangia - Sipajhar & 132kV Rangia - Tangla lines were under shutdown to avoid overloading of 132 kV Sonabil-Ghoramari & 132 kV Sonabil-Depota lines. 132 kV Rangia-Kamalpur D/C lines were under shutdown to avoid overloading of 132 kV Kahilipara - AIMS line.</p> <p>At 02:16 Hrs on 25.06.2023, 132 kV Rangia-Motonga line tripped. Due to tripping of this element, Rangia area of Assam Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in this area.</p> <p>Power supply was extended to Rangia area of Assam Power System by charging 132 kV Tangla-Rangia line at 02:40 Hrs on 25.06.2023.</p>	132 kV Rangia-Motonga line
28	GD 1	Rangia area of Assam Power System	25-Jun-23 11:50	25-Jun-23 11:55	0:05	0	21	0%	1%	2102	2584	<p>Rangia area of Assam Power System was connected with rest of NER grid through 132 kV Rangia-Motonga line. 220 kV BTPS-Rangia D/C lines were under outage due to tower collapse at loc.no. 452. 132kV Rangia - Sipajhar & 132kV Rangia - Tangla lines were under shutdown to avoid overloading of 132 kV Sonabil-Ghoramari & 132 kV Sonabil-Depota lines. 132 kV Rangia-Kamalpur D/C lines were under shutdown to avoid low volatage at 132kV Rangia Substation.</p> <p>At 11:50 Hrs on 25.06.2023, 132 kV Rangia-Motonga line tripped. Due to tripping of this element, Rangia area of Assam Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in this area.</p> <p>Power supply was extended to Rangia area of Assam Power System by charging 132 kV Rangia - Motonga line at 11:55 Hrs on 25.06.2023.</p>	132 kV Rangia-Motonga line
29	GD 1	Rangia area of Assam Power System	25-Jun-23 14:37	25-Jun-23 14:48	0:11	0	21	0%	1%	2101	2650	<p>Rangia area of Assam Power System was connected with rest of NER grid through 132 kV Rangia-Motonga line. 220 kV BTPS-Rangia D/C lines were under outage due to tower collapse at loc.no. 452. 132kV Rangia - Sipajhar & 132kV Rangia - Tangla lines were under shutdown to avoid overloading of 132 kV Sonabil-Ghoramari & 132 kV Sonabil-Depota lines. 132 kV Rangia-Kamalpur D/C lines were under shutdown to avoid overloading of 132 kV Kahilipara - AIMS line.</p> <p>At 14:37 Hrs on 25.06.2023, 132 kV Rangia-Motonga line tripped. Due to tripping of this element, Rangia area of Assam Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in this area.</p> <p>Power supply was extended to Rangia area of Assam Power System by charging 132 kV Rangia - Tangla line at 14:48 Hrs on 25.06.2023.</p>	132 kV Rangia-Motonga line
30	GD 1	Meluri & Kiphire areas of Nagaland Power System	26-Jun-23 10:24	26-Jun-23 10:53	0:29	15	4	1%	0%	2409	2657	<p>Meluri & Kiphire areas of Nagaland Power System were connected with rest of NER grid through 132 kV Kohima-Meluri line.</p> <p>At 10:24 Hrs on 26.06.2023, 132 kV Kohima-Meluri line tripped. Due to tripping of this element, Meluri & Kiphire areas of Nagaland Power System got separated from rest of NER Grid and subsequently collapsed due to load generation mismatch in these areas.</p> <p>Power supply was extended to Meluri & Kiphire areas of Nagaland Power System by charging 132 kV Kohima-Meluri line at 10:53 Hrs on 26.06.2023.</p>	132 kV Kohima-Meluri line
31	GD 1	Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System	27-Jun-23 03:52	27-Jun-23 04:30	0:38	7.8	18.8	0%	1%	2349	2424	<p>Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System were connected with rest of NER grid through 132 kV Balipara - Tenga line.</p> <p>At 03:52 Hrs on 27.06.2023, 132 kV Balipara - Tenga line tripped. Due to tripping of this element, Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System got separated from rest of NER Grid and subsequently collapsed due to load generation mismatch in these areas.</p> <p>Power supply was extended to Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System by charging 132 kV Balipara - Tenga line at 04:30 Hrs on 27.06.2023.</p>	132 kV Balipara - Tenga line

Details of Grid Events during the Month of June 2023 in North Eastern Region

Sl No.	Category of Grid Event (G1 to 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM:SS)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
32	GD 1	Churachandrapur and Thanlon areas of Manipur Power System	28-Jun-23 19:03	28-Jun-23 19:57	0:54	0	10	0%	0%	2658	3230	<p>Churachandrapur and Thanlon areas of Manipur Power System was connected with rest of NER grid through 132 kV Ningthoukhong -Churachandpur 1 line. 132 kV Kakching - Churachandpur and 132kV Elangkangpokpi - Churachandpur lines were under outage since 12:21 Hrs on 08.06.2023. Also, 132 kV Ningthoukhong - Churachandpur 2 line was under outage since 11:02 Hrs on 15.06.2023.</p> <p>At 19:03 Hrs on 28.06.2023, 132 kV Ningthoukhong -Churachandpur 1 line tripped. Due to tripping of this element, Churachandrapur and Thanlon areas of Manipur Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in these areas.</p> <p>Power supply was extended to Churachandrapur and Thanlon areas of Manipur Power System by charging 132 kV Ningthoukhong - Churachandpur 1 line at 19:57 Hrs on 28.06.2023.</p>	132 kV Ningthoukhong - Churachandpur 1 line